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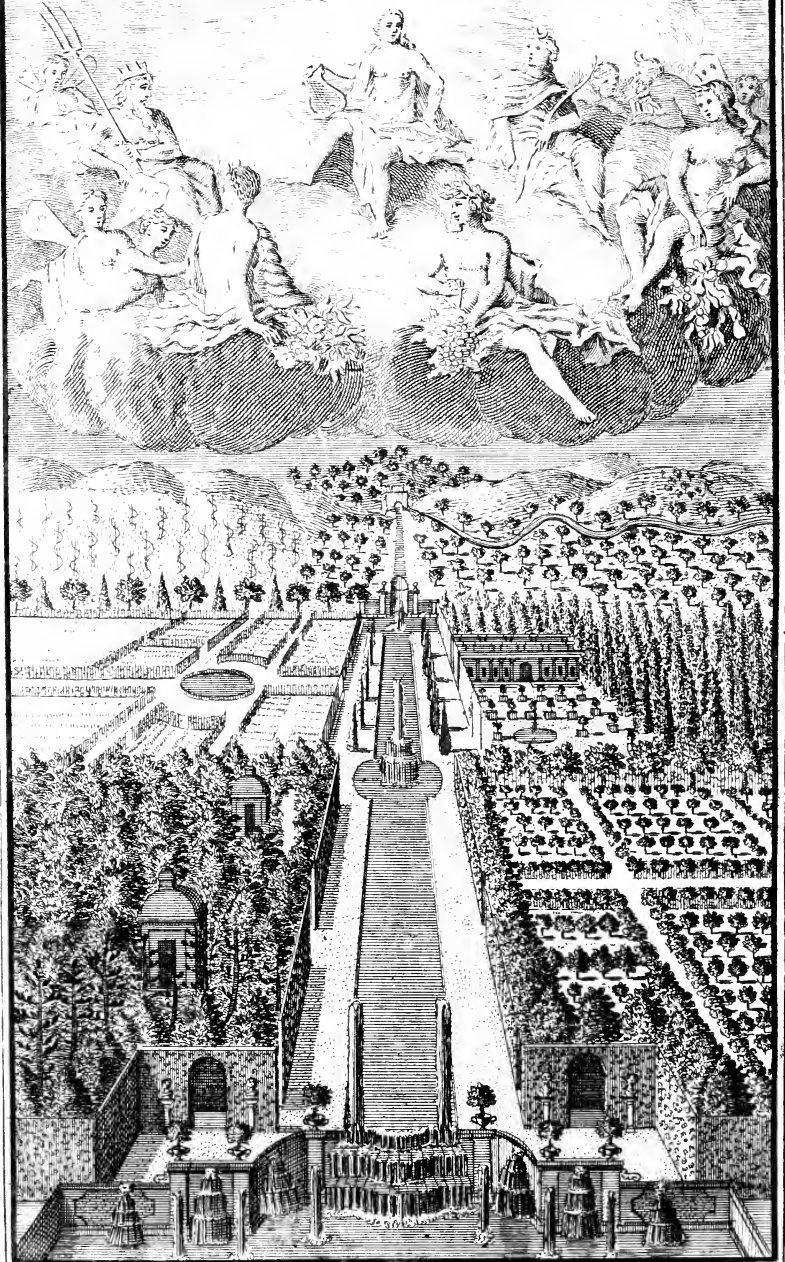


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Frontispiece.



B. Cole Sculp.

THE  
Gardeners Dictionary :

Containing the METHODS of

CULTIVATING *and* IMPROVING

THE

Kitchen, Fruit *and* Flower Garden,

AS ALSO THE

*Physick Garden, Wilderness, Conservatory,*

AND

V I N E Y A R D.

---

Abridg'd from the FOLIO EDITION,

By the AUTHOR, PHILIP MILLER,

Gardener to the Worshipful Company of Apothecaries, at  
their BOTANICK-GARDEN, in *Chelfea*, and F. R. S.

---

IN TWO VOLUMES.

---

— *Digna manet divini gloria ruris.*

VIRG. GEO.

---

V O L. I.

---

L O N D O N :

Printed for the AUTHOR, and Sold by C. RIVINGTON,  
at the *Bible and Crown*, in *St. Paul's Church-Yard*.

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TREASURE ROOM v.1

To the RIGHT HONOURABLE

THE

EARL of DERBY,

This ABRIDGMENT of the

Gardeners Dictionary,

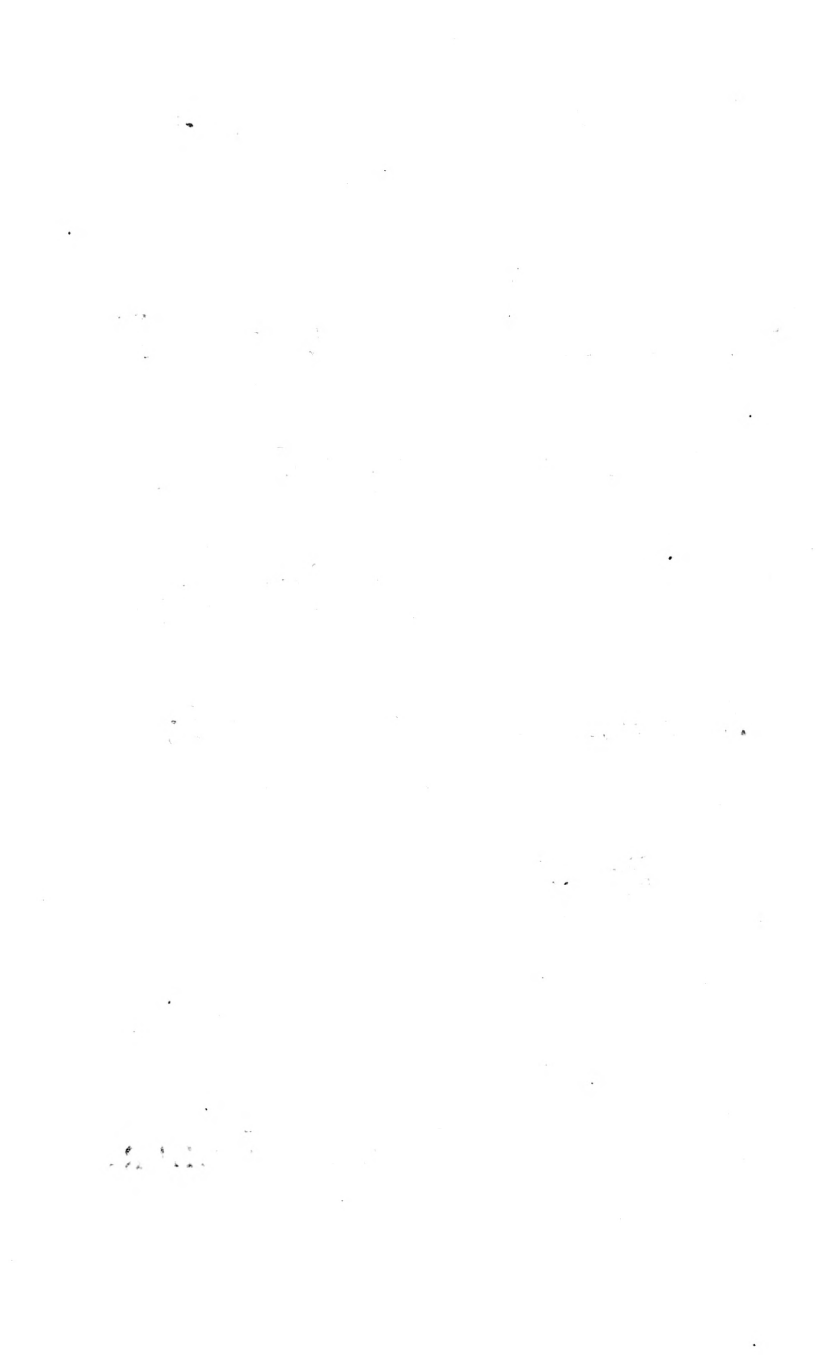
*Is Most Humbly Inscribed;*

By HIS LORDSHIP'S,

*Most Obedient Humble Servant,*

PHILIP MILLER.

38446







# THE PREFACE.



*THE Folio Edition of this Work having met with so Kind a Reception from the Publick, as that two pretty large Impressions have been almost sold off; I need not Trouble the Reader with an Account of a Book which is now become so Publick.*

*What I shall say, by way of Preface, in this Place, is to inform the Reader, That in this Abridgment, I have taken in all the practical*

*practical Part of Gardening, and have likewise enumerated all the Species of Plants which were in the Folio Editions; but have omitted the Etymology of the Names, the Explanation of Words, and the philosophical Part, as being less useful to common Gardeners.*

*I have also left out the Kalendar, that having been enlarged and published separately, since the first Edition of this Work came out; which being printed in a pocket Volume, of the Size of these two, may be added as a third, and will make this Edition compleat, with regard to the practical Part of Gardening.*

*I have also added some few Articles which were omitted in the Folio Editions; which additional Articles and Corrections, are intended to be published separately, for the Purchasers of the two former Editions, agreeable to the Promise I made in the Preface to those Impressions.*

*My*

*My Design in publishing of this Abridgment, is not to lessen the Value of the Folio Editions, that being far from my Thoughts; but as the Price of the Folio was too great for many Persons who are employed in the practical Part of Gardening, I was desired by some of my Friends to set about this Work.*

*To which I was the rather induc'd, as it might prevent an Abridgment from injudicious Hands, by which not only my Interest in the Copy would have suffer'd; but the Publick would have been impos'd on with an inaccurate Performance, publish'd, according to the Practice now so commonly, tho' basely, pursu'd, with Intention of sharing the Profits of an Author's Labour, without giving him any Consideration for it.*

*And, indeed, I soon found that this Apprehension was far from being Groundless, and that it was highly proper to hasten this Work; for an Advertisement was inserted in the publick Papers, of an Abridgment  
being*

*being nearly finish'd by other Hands, and would soon be sent to the Press.*

*This determin'd me to press the Work forward as fast as my other Business would permit; and I humbly hope, my good Friends and kind Favourers, will not be displeas'd either with the Attempt or the Performance.*





T H E

# Gardeners Dictionary.

A B

A B



BELE Tree. *vide* Populus.

ABIES; The Firr Tree.

The Characters of this Tree are,

*It is ever-green;*

*the Leaves are single, and for the most part produced on every Side the Branches; the Male Flowers (or Catkins) are placed at remote Distances from the Fruit on the same Tree; the Seeds are produced in Cones, which are squamose.*

The Species of this Tree, which are at present to be found in the English Gardens, are,

1. ABIES; *Taxi folio; fructu fursum spectante.* Tourn. The Silver, or Yew-leaved Firr Tree.

2. ABIES; *Tenuiori folio; fructu deorsum inflexo.* Tourn. The Common Fir or Pitch Tree; sometimes called, The Norway or Spruce Firr.

3. ABIES; *Minor; pectinatis foliis; Virginiana; conis parvis subrotundis.* Pluk. Alm. The Virginian Firr Tree, with small roundish Cones.

4. ABIES; *Taxi folio; fructu longissimo, deorsum inflexo.* The Yew-

leav'd Firr Tree, with long hanging Cones, commonly called, The Long-con'd Cornish Firr.

5. ABIES; *Picea foliis brevibus; conis minimis.* Rand. The Pitch-leav'd Firr Tree, with small Cones.

6. ABIES; *Picea foliis brevioribus; conis parvis, biuncialibus laxis.* Rand. The shortest Pitch-leav'd Firr Tree, with loose Cones.

7. ABIES; *Taxi foliis; odora Balsami Gileadensis.* Raii Hist. App. The Balm of Gilead Firr. *Vulgo.*

8. ABIES; *Taxi folio; fructu rotundiore, obtuso.* The Yew-leav'd Firr Tree, with round Cones, by some called, The Balm of Gilead Firr.

The first and second Sorts of Firrs are very common in most Gardens, and Plantations of ever-green Trees; and the second Sort is very common in the Woods of Norway, and is the Tree that affords the white Deals.

These Trees were (not many Years since) much esteemed for Ornaments in ever-green Gardens; but the Leaves and lower Branches decaying and soon falling off, so as to render the under Par of the

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Tree

Tree bald and unflightly, together with their destroying every Thing that grows under them, they are not at present in so much Request.

The third Sort Dr. *Plukenet* mentions to have been formerly growing in the Bishop of *London's* Garden at *Fulham*, but hath been since destroy'd, and hath been retriev'd again from Seeds sent from *New-England* by Mr. *Moore*, which were sown by Mr. *Fairchild* of *Hoxton*, who raised several Plants from them, and found it hardy enough to resist our severest Cold in the open Ground.

The fourth Sort was brought many Years since from *America*, and was planted in *Devonshire*, where are now large Trees of this Kind, which annually produce ripe Seeds, from whence the Gardens near *London* have been supplied. This Tree grows to be very large, and makes a beautiful Figure, the under Part of the Leaves being of a whitish, and the upper Part of a glaucous or Sea-green Colour, and are closely set upon the Branches. This Tree is also very hardy.

The fifth and sixth Sorts were also brought from *America*, and planted in *Devonshire* and *Cornwall*, and are by the Inhabitants of those Countries used to make Spruce Beer, and are by them called the *Spruce Firrs*; but since any of these Sorts may be used for the same Purpose, this Appellation doth no more belong to these than any other of the Kinds.

These Trees grow much closer and thicker than the common Firr; nor are their Branches and Leaves so apt to decay and fall off, which renders them more valuable.

The seventh and eighth Sorts are promiscuously called *The Balm of Gilead Firrs*, but they are very distinct, according to the Branches,

which I had sent me from *Devonshire* and *Cornwall*, The seventh Sort Mr. *Ray* mentions in the Supplement to his *History of Plants*, as growing in the Duke of *Beaufort's* Gardens at *Badmington*. It was also in the Bishop of *London's* Garden at *Fulham* some Years since. This Sort produces long Cones, which are sharp-pointed, and stand erect upon the Branches, emitting a large Quantity of a resinous Matter; the Branches grow flat, and the Leaves are very short.

The other Sort produces Cones somewhat like those of the Cedar of *Libanus*; the Leaves are of a darker Green, and are produced thicker on every Side of their Branches, so that it is one of the most beautiful Trees of all the Firr-kind.

The Leaves of these two Trees being bruised between the Fingers, emit a very strong Balsamic Smell, which hath given Occasion to some to believe, that the *Balm of Gilead* was an Exudation from one of these Trees, from whence they received their Names; but this is known to be a Mistake, that curious Balsam being the Production of a Tree very different from this Class.

Before I proceed to say any thing of the Culture of these Trees, I shall beg Leave to add the Sorts of *Pines* to the *Firrs*, which altho' separated to a great Distance by the Alphabetical Order here followed, yet have a near Alliance both in their classical Distribution, and also in their Culture; and are by the unskilful in Botany, frequently confounded together.

PINUS; The Pine Tree.

The Characters of this Tree are, *The Leaves are ever-green, longer than those of the Firr, and are produced by Pairs out of each Sheath or Covering.*

The *Species* of this Tree, to be found in the *English Gardens*, are,

1. PINUS; *sativa*, C. B. *Pin.* 491. The manured Pine.

2. PINUS; *sylvestris*, C. B. *Pin.* 491. The Pinaster, or Wild Pine.

3. PINUS; *Americana*, *quinis ex uno folliculo setis, longis, tenuibus triquetris ad unum angulum per totam longitudinem minutissimis crenis asperatis*. *Pluk. Amalth.* 171. This is commonly called Lord Weymouth's Firr, or Pine.

4. PINUS; *Americana*; *foliis praelongis subinde ternis; conis plurimum confertum nascentibus*. *Cat. Plant. Ang.* The Cluster, or Large-Bunch'd Pine.

5. PINUS; *sylvestris; foliis brevibus glaucis, conis parvis albenibus*. *Raii Syn.* 2. 288. The Scotch Pine, commonly called Scotch Firr.

6. PINUS; *Americana, palustris*. The Swamp Pine. *Vulgo*.

The first, second, and fifth Sorts are very common in *England*; but the third and fourth are in very few Gardens. The third was raised several Years ago in the Duke of *Beaufort's* Gardens at *Badmington*, and is now growing in the Earl of *Pembroke's* Gardens, where it thrives very well, and is become a large Tree.

In the Year 1724 some fresh Seeds of this Kind were sent over from *Carolina*, from which I raised some Plants in the *Physic Garden*, which, altho' but small, stand in the open Ground, and resist the Winter's Cold very well. The fourth Sort is 'now growing in the Bishop of *London's* Garden at *Fulham*, and is a very large Tree, producing ripe Cones almost every Year; from whence several young Trees have been raised by several Nursery-Men near *London*. The

Leaves of this Tree are commonly three, produced from each Sheath; and the Cones grow in great Clusters. On a Branch, which was taken from the old Tree, I counted 39 Cones in one Bunch.

The sixth Sort is very proper to continue Plantations of these evergreen Trees, when it may so happen, that a moist swampy Soil may intervene (as it many times doth) between rising Ground, and in which Part we could not carry either the Avenue or other Plantation on with Trees of the same Kind, all the other Sorts being, for the most Part, mountainous Plants; so that here is an Advantage, which could not be other ways obtained, that should encourage Gentlemen to cultivate as many of the foreign Trees, as can be by any means naturalized to our Climate, tho' the Uses of them are not immediately known; for it is certain that Time will discover something, either for Use, or Beauty, in most of them.

Beside these, Mr. *Ray*, in his valuable *History of Plants*, hath mentioned seven or eight other Species: But as there are at present scarcely any of them in *England* (and if they were brought hither by curious Persons, their Culture would nearly agree with those above mentioned); the only Difference to be observed is, to shelter such as come from warmer Climates for the two or three first Years, after which Time I am persuaded most of the resinous Trees will do well with us abroad; therefore I shall forbear mentioning any more Sorts, referring the curious Reader to the valuable Book before cited.

These Trees are all raised from Seeds taken out of their polypermous Cones. The way to get out the Seeds is, either by expoling the

Cones to a gentle Fire, or by soaking them all Night in Water, which will cause their squamosè Cells to open, and readily emit their Seeds; but this ought not to be done, until you are ready to sow them, which is best perform'd in the Beginning of *March*.

The manner of sowing them (if for large Plantations) is as followeth; After your Ground hath been ploughed to loosen the Earth, and destroy the Weeds (especially if the Ground is subject to Heath or Furze) it must be ploughed two or three times, and the Roots carefully grubbed up, the more effectually to destroy these spreading Plants, which would otherwise soon overrun and spoil your young Plantation. This being done, you may with a Spade level the Earth in small Spots at about every six Feet square: In which Spots you may sow ten or twelve Seeds, covering them about a Quarter of an Inch thick with some of the same Mould broken fine, and the great Stones taken out (but not sifted, for Reasons hereafter mentioned); when this is done, it will be a good way to lay upon each of these Spots some Peas-Haulm, Furze, or any other light Covering, to prevent the rapacious Birds from destroying your young Plants, just as they peep out of the Ground (they being very fond of the Husk or Coat of the Seed, which the young Plants bring up on their Heads); which Covering will also prevent the drying Winds and Sun from piercing the Ground, and destroying your Seed. This Covering may remain some time after the Plants are come up, provided it is not laid over-thick, nor too close, which would thereby draw and weaken the Plants by preventing the Ingress of the Air. When this

Haulm or Covering is taken off, it will be necessary to draw a little loose Earth round the Stems of your young Plants, to strengthen them, as also to stick some Furze over them, to prevent the Sun from scorching them, which is very hurtful to these Plants while young. In each of these Spots (if your Seed was good) you may reasonably expect 6 or 8 Plants to come up, which may remain together until the third Year; but in the mean time it will be a very good way to preserve your young Plants, to lay a little Litter, or some Mulch upon the Surface, and round the Stems of the Plants, to guard against severe Frost in Winter, and extreme Drought in Summer. This being carefully performed, would save the Trouble of watering, and be more serviceable to your Plants.

The third Year after sowing, you may remove some of these Plants into another Plantation (which Ground ought to be prepared as before directed). The best Season for this Work is towards the latter End of *March*, and Beginning of *April*, the Weather mild, but not when the Easterly drying Winds blow, which presently dry the small Fibres of these Plants when out of the Ground. The Distance these Trees ought to be planted (if for a close Plantation) may be about eight Feet square, which Distance will be found sufficient; for if they be planted at too great a Distance, they are subject to shoot out many lateral Branches, which will retard their upright Growth.

In removing these Plants, they should be taken up with as much Earth as possible; but Care must be had not to hurt the Roots of those Plants left in these small Spots,



Spots, which should be two of the best Plants in each, and filling up the Holes made in taking out the Plants, with some of the neighbouring Mould, to prevent the Extremity of their Fibres from drying.

When your Plants are set in the new Plantation, a Quantity of small Stakes should be provided to fasten the young Trees that the Wind may not blow them out of the Ground, and before cover the Roots with short Litter, as before directed; then give them a gentle Watering to settle the Earth to the Roots; and if the Weather should prove very dry, you may repeat this gentle Watering two or three times; but be sure not to over water, which, I may venture to say, hath killed more new-set Trees of all Sorts, than the Want of Water, or any other Accident whatever; therefore once for all, I would advise to have especial Regard that all new-set Trees are well mulch'd with short Litter, or Turf, but to have a great care not to water too much nor too often, which rots the young Fibres as fast as they are pushed forth, as I have often experienc'd; and have a great Care not to cut any of the Branches or Heads of these Trees, which is very hurtful (especially to all those of the resinous kind.)

The Soil in which these Trees chiefly delight, is chalky Hills: And where there have been not above six or eight Inches of Mould upon the Surface, I have seen the most vigorous Trees; as at a Seat belonging to the Hon. Sir *John Guise*, near *Great Marlow*, in *Buckinghamshire*, where there are vast Numbers of these Trees which drop their Seeds, and

spring up without any Care or Culture. Notwithstanding these Trees chiefly delight in the beforementioned Soil, yet will they thrive tolerably well in a poor Gravel (provided it be not too light and sandy) or in a strong Soil (if not too wet) but they love a moderate Elevation; and the *Silver* and *Common Firr*, with the *manured Pine*, require some Shelter from the North and East Winds, but the *Scotch Pine* and *Pinafter*, will grow on the North or East Side, or even upon the Summit of high Hills.

These Trees do not delight in dunged or rich Soils; but observe it is much the better way to train up any sort of Plant in a Soil nearly akin to that you intend to plant them in, and not (as is too often the Practice) make a Nursery upon a good rich Soil, when the Trees there raised are designed for a poor barren Soil; and this I believe to be the Reason why Plantations of Trees procured from rich Nurseries are often seen to make but a poor Progress, if they live.

These two Trees left in each Spot, should not continue longer than six or seven Years together, when you should remove the least thriving Tree, leaving only one of the strongest in each Place; in the doing of which, great Care should be taken not to disturb the Roots of those left. The Season for this Work is before directed. These Trees which you now remove, will be of great Service for planting Vista's, or Ampitheatres of Ever-greens, or for Clumps in different Parts of Wilderneises; in the doing of which, observe to plant the *Scotch Pine* and *Pinafter* on the backward Part of these  
Plant-

Plantations, these being the quickest and largest growing Trees (in our Country), and are the best able to resist strong Winds.

But I shall return to give some Account of the Way practis'd in raising these Trees in smaller Nurseries, for the planting Avenues, or other Lines of Trees, which Method will do very well for the *Cedar*, *Larich*, or most other Exotick Trees of these Kinds (provided they come not from too hot a Country.) You must provide yourself with some shallow Cases, not above six or eight Inches deep, and in Length and Breadth in Proportion to the Quantity of Seeds designed to be sown therein; but I would advise not to have them too big, which will render them immovable, and it is upon this Account I chuse to have them sowed in Cases, *viz.* That they may be moved to any Position, and, if need be, carried into Shelter, in the Winter. The Bottom of these Cases should be bored full of Holes to let out the superfluous Moisture. Upon each of these Holes, should be laid a Piece of Tile, or an Oyster Shell, to prevent the Earth from stopping the Holes; and if the Bottom of the Cases were covered with small Stones, or any dry Rubbish, it would the better drain off the Moisture, and keep the Soil loose about the Roots of the young Plants.

The Soil which I chiefly prefer to fill these Cases with, should be taken from Pasture Ground, not too stiff, nor over light. This should have a Mixture of Lime Rubbish, and, (if inclining to a Clay) should also have a good Quantity of Sea-Sand mix'd therewith, and by no means sift or screen this Mould, as is most

commonly practis'd, but only take out the very large Stones, which might obstruct the Growth of your Plants: for when all the Stones are sifted out of Mould, the smaller Particles of Earth do so closely join together, as in wet Weather to become one solid Mass, and thereby prevent the Moisture from draining off, which will rot the Fibres of whatever is planted or sown therein; and when the Heat of Summer comes on the Surface of this sifted Earth, it will thereby be dried to a hard Crust, so as to prevent the Moisture from equally penetrating it.

Your Cases being filled as before directed, lay the Surface of the Mould even, and thereon sow your Seeds pretty thick, covering it with some of the same Earth broken fine, about a quarter of an Inch thick, laying thereon some Furze, as before directed. These Cases should be placed to have the Morning Sun, but must be skreened from the Sun in the Heat of the Day, by Trees or Hedges, but by no means place them near a Wall or Pale, which would reflect too great a Heat upon them, and would very much prejudice the Plants while young. These Cases should be gently watered whenever there may be Occasion, but remember not to over-water, as was before hinted.

The Season for this Sowing, is the same as was directed for larger Plantations. A little after *Michaelmas* it will be convenient to remove some of the Earth upon the Surface, which, by this time, will often grow mossy; but this must be done with abundance of Care, lest the young Plants should thereby be disturb'd; and then lay thereon a little dry fresh  
Earth

Earth (well mix'd with Rubbish, or Sand, to keep it from retaining the Wet) observing not to let any of it remain upon the Tops of your young Plants: This will strengthen them the better to endure the Winter's Cold: And at this time it will be convenient to remove the Cafes into a warmer Situation, as under some South Hedge, and raise them from the Ground with Bricks, that they may be kept the drier, and if it proves frosty, it will be necessary to lay some Furze (or such like light Covering) to guard them from the Injuries thereof: but I would not advise the Housing, unless they are of such Sorts as are brought from hotter Countries. They may remain in these Cafes till the second Year, at which time it will be convenient to remove them into Nurseries, where they may stand for four or five Years. The best Season for this Work, is towards the latter End of *March*, or the Beginning of *April*. The Manner of performing it being the same as was directed for larger Plantations. I shall refer to that; only I must beg leave to observe, that if the Soil you intend to plant them in, be a strong Clay, it will be necessary to raise a little Hill of lighter Earth, whereon to plant each Tree; and if Trees of this kind are removed at a larger Growth, it will be absolutely necessary to raise a Hill for each Tree (especially if the Soil be a Gravel, or Chalk) and not, as is too often the Practice, dig a Hole into the Gravel, Chalk, or Clay, and fill it with Mould, and therein plant the Tree. This is next akin to planting them in Cisterns, which will hold the Water, and rot the Fibres: And

if it so happens that the Trees live four or five Years, yet, after that, when the Roots are spread to the Extremity of these Holes, and can get no farther, the Trees grow knotty and stunted, and, perhaps, in a few Years die. The not observing this, is the Reason we see so few Plantations in so thriving a State as might be wish'd for.

These Trees are very often at a Stand, during three or four Years after planting, but when once they have establish'd themselves in their new Quarters, will sufficiently recompence for that, by shooting near 2 Yard annually; and some of these Trees will grow to a prodigious Magnitude: as sometimes to above an hundred Feet: and it hath been a Matter of Concern, to several ingenious Persons, that these Trees have not been more propagated, since they have so many Excellencies to recommend them, *viz.*

1. The Facility of their Propagation.
2. Their delighting to grow in such Places where few other Trees will thrive.
3. Their requiring no Culture or Dressing, after the first five or six Years.
4. Their Uniformity and Beauty.
5. Their perpetual Verdure and Sweetness: And lastly, Their great Usefulness in many Parts of Life.

The whole of which may be seen at large in that *Valuable History of Plants* written by Mr. Ray, Vol. II. Page 1400. *et.*

The Seeds of these Trees, if preserv'd in the Cones, will keep good for many Years. I have been inform'd of a Gentleman, who sow'd some Pine Seeds which were taken out of a Cone upwards of twenty Years old, and had some Plants from them; but from my own Knowledge,

I can assure that Seeds taken from Cones five Years old, grow very well, which is of singular Use to know; for since their Seeds will grow so old, we need not despair of bringing them from the most distant Parts of the World, (provided they are brought in the Cones) for otherwise they will keep but a short time, which is the Reason why the Seeds of the *Silver Firr* are so rarely good; for the Cones of this Tree when ripe, fall to Pieces on the first Touch, and scatter out their Seeds, but the Seeds of all the Kinds of Pines are with some Difficulty, taken out of the Cones; therefore it would be a very good Method to preserve the Seeds of Firrs in dry Sand, until the Spring of the Year, which is the proper Season for sowing them.

ABROTANUM, or Southernwood;

This Plant is better known by its outward Appearance than by any distinct Characters which can be given of it, agreeing in most Parts with the *Wormwood*, from which it is not easy to separate it.

Of this Plant there are six or seven different Sorts, which are Natives of *Europe*; but there are not above two of them common with us in the *English* Gardens, which are,

1. ABROTANUM; *mas angustifolium majus*. C. B. Pin. Common Southernwood.

2. ABROTANUM; *mas angustifolium minus*. C. B. Pin. The lesser and Narrower-leav'd Southernwood.

These two Sorts are easily increas'd, by planting Cuttings, in a shady Place, in any of the Spring or Summer Months. The first of these Sorts is sometimes used in

Physick, being accounted good to destroy Worms in Children.

It is used in Gardens as an Under-shrub, and may be kept to a handsome round Head; but it is chiefly raised by the Gardeners near *London* to furnish the Balconies of the Citizens, in the Spring and Summer Months; it enduring the Smoak of the City better than most other Shrubs or Plants, and affords (to some People) a grateful Smell.

ABROTANUM FOEMINA. Vide *Santolina*.

ABSINTHIUM; Wormwood.

The Characters of this Plant are,

*It hath an indeterminate Stalk, branching out into many small Shoots which are furnish'd with Spikes of naked Flowers hanging downward; the Leaves are hoary, and of a bitter Taste.*

There are many Varieties of the Sea Wormwoods in *England*, which are promiscuously gather'd by the Herb-Women, and sold in the *London-Markets* for the *Roman* Wormwood, and are thought by some preferable to that; but as these are for the most part accidental Varieties, so I shall only mention those Sorts which are cultivated in the Gardens.

1. ABSINTHIUM; *vulgare majus*, J. B. Common Wormwood,

2. ABSINTHIUM; *Ponticum tenuifolium incanum*, C. B. Pin. True *Roman* Wormwood.

3. ABSINTHIUM; *maritimum lavenderula folia*, C. E. Pin. Sea Wormwood, with Leaves like Lavender.

4. ABSINTHIUM; *insipidum, absinthio vulgari simile*, C. B. Pin. The insipid Wormwood; it is foliaceous like the Common, as not easily to be distinguish'd, but by smelling and tasting the Herb, unless by such  
this

as are very skilful in Botany; but this Sort is not very commonly met with in *England*.

5. ABSINTHIUM; *Arborescens*, *Lob. Icon. 753*. Tree Wormwood.

The first of these Sorts is very common in *England*, in the Roads and upon Dunghills; but it is also planted in Gardens, for common Use: The second, third, and fourth Sorts are only found in curious Gardens of Plants. They are all easily raised, by planting of Cuttings and Slips in any of the Summer Months. The Roman and Sea Wormwoods are great Creepers at the Root, and will soon spread over a large Piece of Ground. The Tree Wormwood rises to be a Shrub five or six Foot high, and is kept in Gardens as a Rarity, and was formerly preserved in Green-houses, but hath been found hardy enough to endure our Winters abroad, if planted in Places shelter'd from the Northern Winds: This Shrub makes an agreeable Variety, in small Quarters of Ever-Greens or Flowering Shrubs; the hoary Leaves which continue all the Year fresh, strike the Eye at a great Distance, and have a good Effect in diversifying the Prospect: This Shrub is easily rais'd from Cuttings, planted in any of the Summer Months, (under a Hedge or Wall) where they may have only the Morning Sun; and being frequently water'd, will take Root in a Month or six Weeks Time, when they may be remov'd to any Places where they are design'd to remain; observing in this (as in many other Shrubs and Plants which are Natives of a warmer Climate) to place them in a dry Situation: Wet, especially in Winter, is the most destructive to all these Sorts of Plants.

ABUTILON, [the Name is *Arabick*] Yellow Mallow.

The *Characters* of this Plant are, *It hath the whole Appearance of the Mallow, in both Leaves and Flowers; The Flower hath a single Cup; the Seeds, which are shap'd like a Kidney, are each of them lodg'd in a separate Cell.*

There are three or four *Species* of this Plant known in *Europe*, as,

1. ABUTILON, *Dod.* The common Yellow Mallow.

2. ABUTILON *Indicum*: *J. B.* The Indian Yellow Mallow.

3. ABUTILON *Carolinianum*, *rep-tans alcea foliis gilvo flore, Act. Phil.* The Carolina *Abutilon*, with Leaves like the Vervain Mallow.

4. ABUTILON *Americanum amplif-simo folio caule villosa*, *Plum.* The large leav'd American *Abutilon*, with woolly Stalks.

5. ABUTILON *Americanum, fructu subrotundo, pendulo, & capsulis vesicariis crispis conflato.* *Rand.* The American *Abutilon*, with roundish pendulous Fruit, whose Seed-Vessel is like a swell'd Bladder.

There are several other Varieties mention'd by *Plumier*, in his Catalogue of *American* Plants; but as these Plants have little Beauty, and are chiefly preserved in the Gardens of those only that are curious in Botany, I shall pass them over with bare naming, and only beg Leave to observe, That Mr. BRADLEY late PROFESSOR, of BOTANY at *Cambridge*, was greatly mistaken, in saying it grows wild in *England*; but it is plain he knew not the Plant, for he takes it for the *Althaa*, or Marsh Mallow.

ACACIA, Egyptian Thorn, or Binding Bean Tree.

The *Characters* of this Tree are, *It hath ramose or branching Leaves; the Flowers adhere closely, and form*

a kind of Sphere or Globe; the Siliqua or Pods are hard and thick, inclosing several Seeds, which are separated by transverse Diaphragms from each other, and are closely surrounded with a sweetish pulpy Substance.

There are a great Variety of these Trees cultivated in the Gardens of England and Holland, which have been brought from Africa and America; and are some of them hardy enough to endure our Winters Abroad (especially such as are Natives of North America); others are very tender, and are only to be kept in the warmest Stoves. I shall first set down the Names of such as are to be met with in the English Gardens, and then give some Account of their Culture.

The Species of this Tree are,

1. ACACIA *Americana abrua foliis triacanthos, sive ad axillas foliorum spina triplici donata*; Pluk. Mantif. 1. The American *Acacia*, with triple Thorns; or the largest-horn'd *Acacia*, commonly call'd, The Locust Tree in the West-Indies.

2. ACACIA *Americana palustris abrua foliis spinis rarioribus*. Water *Acacia* from Corolina, with very few Spines.

3. ACACIA *vera*. F. B. The true Egyptian *Acacia*.

4. ACACIA *Indica, foliis scorpioides leguminosa, siliquis fuscis teretibus resinosis*. H. L. The Indian *Acacia* with taper resinous Pods.

5. ACACIA; *similis Mexiocana, spinis cornu similibus*. Breyn. The great horn'd *Acacia*, *Vulgò*.

6. ACACIA, *quodammodo accedens, sive Ceratia & Acacia media Jamaicensis spinosa, bigeminatis foliis, flosculis flamineis, atronitente, fructu siliquis intortis*. Pluk. Phyt.

*Acacia*, with branching Leaves, and twisted Pods.

7. ACACIA; *arborea, major, spinosa, pinnis quatuor majoribus, subrotundis, siliquis varia intortis*. Sloan. Cat. Plant. Fam. large four leav'd *Acacia*, with twisted Pods.

8. ACACIA *folio lentisci, sempervirens, spinis vidua*. Hort. Amst. Ever-green *Acacia*, without Thorns.

9. ACACIA, *non spinosa, flore albo, staminibus longis; foliorum pinnis latiusculis, glabris, & auritis*. Houst. *Acacia* without Thorns, and white Flowers, having long Filaments, and broad smooth Leaves.

10. ACACIA; *humilis, non spinosa, foliis subtus incanis; florum staminibus longis, rubentibus*. Houst. Dwarf *Acacia* without Thorns, and red Flowers, having long Filaments.

11. ACACIA, *Americana, non spinosa, flore purpureo, staminibus longissimis, siliquis planis, villosis, pinnis foliorum tenuissimis*. Houst. American *Acacia* without Thorns, and purple Flowers, having very long Filaments, flat hairy Pods, and very narrow Leaves.

12. ACACIA, *spinosa, foliorum pinnis tenuissimis, glabris, floribus globosis, luteis; spinis longissimis*. Houst. Prickly *Acacia* with very narrow smooth Leaves, round yellow Flowers, and very long Thorns.

13. ACACIA, *non spinosa, flore albo; foliorum pinnis latiusculis glabris; siliquis longis, planis*. Houst. White flowering *Acacia* without Thorns, having broad smooth Leaves, and long flat Pods.

14. ACACIA, *non spinosa, tenuifolia, villosa; floribus globosis albis; siliquis brevibus hirfutis*. Houst. Narrow

row leav'd hairy *Acacia* without Thorns, having round white Flowers, and short hairy Pods.

15. *ACACIA, non spinosa; latiore folio, villoso; floribus globosis albis; siliquis brevibus hirsutis.* Houst. Broad leav'd hairy *Acacia*, having round white Flowers, and broad hairy Pods.

16. *ACACIA, non spinosa; floribus globosis albis; foliorum pinnis tenuissimis glabris; siliquis ad singula grana tumidis.* Houst. *Acacia* without Thorns, having round white Flowers, very narrow smooth Leaves, and jointed Pods.

The first of these *Acacia's* Dr. Plukenet mentions to have been rais'd in the Garden of the Bishop of London at Fulham, about the Year 1698, since which Time it hath been rais'd in great Plenty in several Gardens near London, where there are several very large Trees. This Sort hath produced Flowers in the Physick Garden at Chelsea, which are very small, and of an herbaceous Colour; and in the Year 1729, it produced ripe Fruit in the Gardens of the Bishop of London at Fulham. The Seeds of this Tree are frequently brought over from Virginia and Carolina, by the Name of Locust, which, I suppose, is a general Name for most Trees which produce Pods, in which are contained a sweetish Pulp surrounding the Seeds.

The second Sort is nearly allied to the first, but hath very few Thorns; the Shoots, are greener and the Tree is of quicker Growth. The Seeds of this Tree were sent from Carolina Anno 1724, by Mr. Catesby, by the Name of *Water Acacia*, as being an Inhabitant of wet Soils. The Flowers of this Tree have not yet appear'd in England, so that I can give no

Account how this differs in that Particular from the first.

The third Sort is the Tree from whence the true *Succus Acaciae* is taken; which although mention'd as a Native of Egypt, yet is also found in divers Parts of America, from whence the Seeds of this Tree have been sent into England, which have been rais'd in several Gardens near London.

The fourth Sort is the most common Kind in Jamaica, Barbadoes, and the other warm Parts of America, and hath, for the Sweetness of its Flowers, been dispers'd thro' most Parts of Europe; which although a Native of the warmer Parts of the Indies, yet hath been made familiar to the Italian Gardens, and is cultivated in great Plenty in Portugal and Spain.

The fifth Sort is, at present, very rare in England, and only to be found in some curious Gardens. This Tree produces its Spines by Pairs, which are extreme large and crooked, and of a whitish Colour; but I don't remember ever to have seen this Flower.

The sixth Sort was brought from the Bahama Islands by Mr. Catesby, Anno 1726. The Seeds of this Plant (which are flat, and one half of a beautiful red Colour, the other half a deep Black) grow in long twisted Pods which, when the Seeds are ripe, open on one Side, and let the Seeds out; which hanging by a small Thread for some time out of the Pods, make a very agreeable Prospect: The Leaves of this Tree branch out and divide into many Ramifications; the Lobes are roundish and placed in a very regular Order: The Flowers have not as yet appear'd in England, but from a Painting done from the Plant

Plant in the Country, they seem to be very beautiful.

The seventh Sort was brought from *Jamaica*, and is growing in the *Physick Garden* at *Chelsea*: This hath four large Lobes to each Leaf; the Spines are short, stiff, and crooked, and the Seeds grow in twisted Pods. This Plant is well describ'd in *Sir Hans Sloan's Natural History of Jamaica*.

The eighth Sort was brought first into *England* from *Holland*, and is probably a Native of *Africa*. This Plant is an Ever-green, and without Spines, which is peculiar to this Sort alone. The Flowers of this Tree I have never yet seen.

The ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, fifteenth and sixteenth Sorts, were discovered by Doctor WILLIAM HOUSTOUN, in *Jamaica*, at *Veracruz*, and *Camppechy*, and sent into *England*, Anno 1730, where are many of them now growing; but they have not as yet produced their Flowers in *Europe*.

These Trees are all propagated by sowing their Seeds on a hot Bed in the Spring of the Year, which will in a short time appear above Ground, when you should prepare another fresh Hotbed, which if intended for such Sorts as are very tender, should be pretty warm; but if for such as are brought from the Northern Parts of *America*, should be of a very moderate Heat; then you should be provided with a Quantity of small Half-penny Pots, which should be fill'd with fresh light sandy Earth; these should be plung'd into the Hot-bed, and as soon as the Earth in the Pots is warm, which will be in about 24 Hours, you should take up the young Plants carefully out of the

first Hot-bed, planting a single one in the Middle of each of these Pots, giving them a gentle Watering to settle the Earth to their Roots, and screening them with Mats over the Glasses, from the Heat of the Sun until they have taken Root; after which Time you must give them Air, by raising the Glasses in Proportion to the Heat of the Weather, or to the Constitution of the Plants.

The first and second Sort being very hardy, may have a greater Proportion of Air, and by *Midsummer* should have the Glasses intirely taken off, that they may be hardened to endure the open Air by Degrees: These, the first and second Winter, should be sheltered in a common Hot-bed Frame, until they are grown woody; after which Time (in the Spring of the Year) they may be turn'd out of the Pots into the open Ground, where they are intended to remain; which should be in Wilderness Quarters; or Clumps of Trees, where they may be shelter'd from the Fury of violent Winds, otherwise they will be very subject to split thereby.

When these Trees have arisen to the Height of 8 or 10 Feet, they will then make very strong and vigorous Shoots; which should be annually shortned, that the Heads of the Trees may be closer, and their Branches by this Means, will be much less liable to break with Winds, than when they are permitted to remain at full Length, and the Trees will be much the handsomer.

The fourth, fifth, and eighth Sorts are tenderer, and should be kept in the Hot-beds till *July*, when they may be exposed to the Air by Degrees, though the Glasses



Glasses should not be quite remov'd from them the first Year: These must be set in a Stove the first and second Winters, while young, as being then pretty tender; but when they are grown woody, will endure in a good Green-house very well, and may be expos'd in Summer-time, with Oranges, Myrtles, &c. These, if kept in a Green-house, will require but little Water in Winter, especially those which shed their Leaves, as being at that Season incapable of discharging a Redundancy of Moisture; their Leaves, which were the greatest Instruments in throwing off superfluous Moisture by Perpiration, being gone, the whole Tree seems to remain for a certain Time in a State of Rest.

The third, sixth, seventh, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, fifteenth, and sixteenth Sorts are very tender, especially while young, and therefore should have a Hot-bed of *Tanner's Bark*; and as they increase in Bulk, should be shifted into bigger Pots; The Earth for these should be a little lighter, and more inclined to a Sand than for the other Sorts, but never give them too big Pots, which is full as bad to these as to *Orange Trees*; neither give them too much Water especially in Winter: The third, ninth, twelfth, fifteenth and sixteenth Sorts, being the hardest Kinds, will, when grown to be woody, stand in a common Stove amongst *Guava's*, *Viburnums*, &c. which should be kept to the Point of temperate Heat in Winter; and in the Summer-time, in warm Weather, may enjoy the free open Air: But the sixth, seventh, tenth, eleventh and fourteenth Sorts must have a Bark

Stove in Winter, nor should they be expos'd to the open Air in Summer, at least for four or five Years, until they are grown very woody, for they are very tender, and with great Difficulty preserv'd in this Climate: The Stove in which these should be placed in Winter, must be kept up to about twenty Degrees of Heat above the temperate Point, as mark'd on Mr. *Fowler's Botanical Thermometers*: These should have very little Water in Winter, but in the Summer-time will require frequent Refreshings, though at that Season it should not be given them in great Quantities at one time. The sixth Sort is an Ever-green, but the seventh sheds its Leaves just before the new ones come on, so that it is naked of Leaves about a Month or six Weeks in the Spring of the Year; which hath occasion'd some People to throw them away as dead, when if they had let them remain, they would have come out fresh again. This I thought proper to mention, in order to caution People not to be too hasty in throwing out Trees for dead, but preserve them through the succeeding Summer, to see if there is any Life left in them; for I have known several Plants which, after having been given over by skillful Persons for dead, have the *July* following, shot out vigorously again; and others, which have been destroy'd to the Surface of the Earth, have risen again from the Root.

The first and sixth Sorts are figur'd in Dr. *Plukenet's Phytographia*. The third Sort is figur'd in most of the old Botanick Writers, as *John Bauhin*, *Dodoneus*, *Parkinson*, &c. The Pods of this Kind

Kind are jointed and compressed into a Sort of Isthmus between every Seed. The fourth Sort is extremely well figur'd, and describ'd in the *Hortus Farnesianus* by *Aldinus*. The fifth Sort is very well figur'd, and describ'd in the *Hortus Amstelodamensis*. The seventh Sort is figur'd in *Piso's* History of *Brazil*; but the second, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, fifteenth, and sixteenth Sorts are new, and not figur'd in any Botanick Books.

ACACIA Germanorum; vide *Prunus Sylvestris*.

ACACIA Virginiana, vide *Pseudoacacia*.

ACAJOU, or Cajou. The Cashew Nut.

The Characters are,

The Cup of the Flower (which is produced at the Extremity of a Foot-stalk) is oblong, and quinquefid; the Flower consists of one Leaf, which is divided into five long, narrow Segments; in the Bottom of the Calyx is the Ovary, which becomes a soft Pear-shap'd Fruit, upon the Apex of which grows a Vessel, in which is contained one Kidney-shap'd Seed.

There is but one Species of this Plant yet known; which is,

ACAJOU; *Thev. Franc. Antarct.* The Cashew Nut.

This Tree is very common in many Parts of *America*, particularly in *Jamaica* and *Barbadoes*, where it grows to be a very large Tree, but with us in *England* (notwithstanding all the Care it can possibly have) will rarely stand through our Winters; or if it is by Art preserved, in very warm Stoves, yet is so very slow of Growth, especially after the first Year, as scarcely to be discern'd in its Progress.

The Seeds of this Tree, if sown in a good Hot-bed in the Spring of the Year, will in a short time appear above Ground, in so strong a Manner that any one, who hath not been conversant with this Plant, would imagine it to be of very quick Growth; for I have known these Plants in two Months from the time of sowing their Seeds above six Inches in Height, and very strong; which in about two Months time more have been at a Stand, from which time they have scarcely advanced two Inches in a Year, with all the Art and Skill which could be used to them; nor have I ever seen a Plant of this Kind above two Feet high, though I have had some of them that have been three or four Years old: They are also in their own Country of very slow Growth, rarely producing either Flowers or Fruits, until they are 15 or 16 Years old from Seeds, so that the Inhabitants of the *West-Indies* plant them from large Branches taken from the old Trees, which with them take Root very well, and in two Years time produce Fruits.

The Plants of this Kind which are raised in *England*, should be planted in small Pots fill'd with fresh, light, rich Earth, and must be plung'd into a Hot-bed of *Tanner's Bark*, and often refresh'd with Water: these should be kept in Winter, in a Bark Stove, amongst the tenderest Exotick Trees, and should not be expos'd to the open Air even in the hottest Season.

One Plant of this Kind flowered in the Garden of *Sir Charles Wager*, at *Parson's-Green*, near *Fulham*, though not above two Years old,

old, but it soon after perish'd without producing any Fruit.

The Seeds of this Tree are the *Anacardium Occidentale*, or Western Anacardium of the Shops: The outer Covering of this Seed is very full of a sharp, acrid Oil, which will give great Pain to the Mouth, if bitten or chew'd; if burnt off by a Candle, it will emit a Flame of various Colours: The Kernel within is very sweet, and esteem'd wholesome.

ACANTHUS, *Eranca Ursa*, or Bear's-breech.

The Characters of this Plant are,

The Leaves are somewhat like those of the Thistle; the Flowers are lobated; the under Lip of the Flower is divided into three Segments, which in the Beginning is curled up in Form of a short Tube; in the Place of the upper Lip are produced the Stamina, which support the Pointals; the Cup of the Flower is composed of Leaves, which are prickly; the upper Part of which is bent over like an Arch, and supplies the Defect of the upper Lip of the Flower; the Fruit is of an oval Form, which is divided in the middle into two Cells, each containing one single smooth Seed.

There are four Species of this Plant to be found in the Gardens of the Curious, viz.

1. ACANTHUS; *sativus*; vel *mollis* *Virgilii*. C. B. The smooth-leav'd Garden Bear's-breech.

2. ACANTHUS; *aculeatus*. C. B. The prickly Bear's Breech.

3. ACANTHUS; *rarioribus* & *bre-  
vioribus aculeis munitus*. Tourn. The middle Bear's-breech, with short Spines.

4. ACANTHUS; *Lusitanicus*; *am-  
plissimo folio lucido*. The Portugal Bear's-breech, with large shining Leaves.

The first Sort is what is used in Medicine, and is supposed to be the *Mollis Acanthus* of *Virgil*. The Leaves of this Plant are cut upon the Capitals of the *Corinthian* Pillars, and were formerly in great Esteem with the *Romans*.

They are all very pretty Varieties, and fit for large Gardens, but should have a warm Situation, and a dry Soil. They are easily propagated by parting the Roots in *February* or *March*, or by Seeds sown at the same Time. The second and third Sorts are apt to creep at the Root, therefore should have Room, and must not be planted amongst other Flowers, lest they overgrow and destroy them.

ACER; The Maple Tree.

The Characters are,

It hath jagged, or angular Leaves; the Seeds grow two together in hard winged Vessels.

There are in England 8 or 9 Species of this Tree, viz.

1. ACER; *majus*, *multis falso platanus*. *J. B.* The greater Maple, falsely called, The Sycamore Tree.

2. ACER; *majus*, *foliis eleganter variegatis*. *Hort. Edin.* The greater Maple, with striped Leaves, commonly called, The striped Sycamore.

3. ACER; *campestre* & *minus*. C. E. The common, or lesser Maple.

4. ACER; *Virginianum*, *folio majore*, *subtus argenteo*, *supra viridi splendente*. *Pluk. Phyt.* The *Virginian* flowering Maple.

5. ACER; *Americanum*, *folio majore*, *subtus argenteo*, *supra viridi splendente*, *floribus multis coccineis*. The *American* flowering Maple, with larger Bunches of scarlet Flowers.

6. ACER; *maximum*, *foliis trifidis*, *vel quinquefidis*, *Virginianum*. *Pluk. Phyt.* The *Virginian* Ash-leav'd Maple.

7. ACER;

7. ACER; *platanoides*. *Munt.* The Norway Maple, with Plane Tree Leaves.

8. ACER; *platanoides, foliis elegantior variegatis.* The Strip'd Norway Maple.

These Trees are easily propagated by sowing the Seeds, soon after they are ripe, in an open Bed of common Earth, covering them about half an Inch thick with light sandy Earth; the Spring following they will appear above the Ground, and if kept clear from Weeds, will grow above a Foot high the first Summer: The *Michaelmas* following, (if they are thick in the Seed-bed) you may take out a Part of them, and transplant into a Nursery in Rows at three Feet Distance, and two Feet asunder in the Rows; in which Place they may remain three or four Years, when they would be large enough to plant out for good.

The first Sort is very proper to make Plantations near the Sea, or to shelter such Plantations of Trees, as are too near situated thereto: This Tree thrives, and resists the Spray, which is usually blown from the Sea, better than most other Trees do. The variegated Sort is also raised from Seeds of the same Kind: Most of the Plants so raised will be as finely striped as the old Plant, from whence the Seeds were taken, which is not common to many other variegated Plants.

The common Maple is too well known to need any particular Account, it being a very common Tree in Hedge-rows in most Parts of *England*; it is raised in the same Manner with the former.

The *Virginian* flowering Maple was raised from Seeds, which were brought from *Virginia* many Years since by Mr. *John Tradescant*, in his Garden at *South Lambeth* near *Vaux-*

*hall*, and since in the Gardens of the Bishop of *London* at *Fulham*, where it has flowered for several Years, and produces ripe Seeds, from whence several Trees have been raised: It may be also propagated by laying down the young Branches early in the Spring, giving them a little Slit at a Joint, by which means they will take sufficient Root by that time twelve Months, to be transplanted out: They require a Situation a little defended from the North East Winds, especially while young. This Tree commonly flowers in the Beginning of *April*, and the Seeds are ripe in five or six Weeks after; at which Time they should be sowed; for they are very apt to perish, if kept long out of the Ground.

The other flowering Maple was sent from *America* to Sir *Charles Wager*, and flourishes in his curious Garden at *Parson's-Green* near *Fulham*: The Flowers of this Kind come out in very large Clusters, and surround the younger Branches, so as to appear at a small Distance covered therewith. This Tree is at present very rare in *Europe*, but as it produces ripe Seeds in *England*, so it is to be hoped it will in Time be more common in the Gardens of the Curious.

The Ash-leav'd Maple is a very strong shooting Tree, and is in *Virginia* one of the largest Trees of this Kind: It must be planted in Places not too much exposed to violent Winds, it being subject to split therewith. This Tree ripens Seeds very well in *England*, by which Means it is easily propagated, or by laying down the Branches, as directed for the flowering Maple.

The *Norway* Maple grows with us to a very large Size, equalling the greater Maple for Bulk, and I believe

lieve, will answer the same Purposes, for sheltering Plantations near the Sea, and is by far the handsomer Tree near an Habitation; for the greater Maple is very subject to exude a sweet clammy Juice from the Pores of the Leaves, which lodges upon the Surfaces thereof, and thereby intices vast Quantities of Insects, which eat the Leaves full of Holes, and render them very unsightly.

The *Norway* Maple has a milky, sharp Juice, so that few Insects care to prey thereon; by which Means the Leaves are seldom eat or defaced: This Tree is also raised by Seeds, of which it affords great Quantities, which will rise and grow equally as well as the common Sort.

The variegated Kind is propagated by inoculating a Bud of the striped Kind into one of the plain Sort, tho' I am not at present sure, whether it will take upon any other Sort of Maple, not having made the Experiment; but I believe it can scarce fail: Most, if not all the other Sorts of Maples, take very well upon each other.

There is another Sort of Maple, which is very common in *Virginia*, and is known by the Name of the *Sugar Maple*; from which Tree the Inhabitants of that Country make a very good Sort of Sugar, and in large Quantities: But this Tree is at present very rare in *Europe*; tho' I am of Opinion, that the People make Sugar from more than one Sort of Maple; Mr. *Ray* and Dr. *Lister* prepared a tolerable good Sort of Sugar from our greater Maple, by tapping some of the Trees in their bleeding Season; and I have observed, upon cutting off a Branch of the Ash-leaved Maple in *February*, a great Quantity of a very sweet

Juice hath flowed out for several Days together.

The Timber of the common Maple is far superior to the Beech for all Uses of the Turner, particularly, Dishes, Cups, Trenchers, and Bowls; and when it abounds with Knots, (as it very often doth) it is highly esteemed by the Joiners for Inlayings, &c. and also, for the Lightness of the Wood, is often employed by those that make *Musical* Instruments; and for the Whiteness of its Wood, is in great Request for Tables, &c.

ACETOSA; Sorrel.

The Characters are;

This Plant agrees with the Dock in all its Characters, and only differs in having an acid Taste.

There are several Varieties of this Plant, which are cultivated by the Curious in Botany; but there are not above two or three Sorts, which are worthy propagating for Use, which I shall mention, passing over the rest as Varieties fit only for the Curious to amuse with.

1. ACETOSA; *pratensis*. C. B. The Common or Meadow Sorrel.

2. ACETOSA; *Muscovitica, sterilis*. M. H. The Northern barren Sorrel.

3. ACETOSA; *rotundifolia, hortensis*. C. B. The Round-leaved or French Sorrel.

The first of these Sorts, tho' but small in the Fields, yet when sown in Gardens, will produce large fair Leaves, and is the same Sort, which is commonly cultivated in Gardens. It must be sown early in the Spring, in a shady moist Border; and if the Plants are afterward planted out in another shady Border, four or six Inches square, it will produce larger Leaves, and continue longer. This is the common Sorrel used in Medicine; but the Northern barren Sor-

rel is preferred to it in the Kitchen-Garden, it rarely running to Seed, but is increased by parting the Roots either in Spring or Autumn, and is fit for Use all the Year round.

The Round-leaved (or French) Sorrel is the most grateful Acid, and is preferred to the other two Sorts for Kitchen Use; it is also a medicinal Plant, and should not be wanting in any good Garden: It is a great Runner at the Root, by which Means it is easily propagated, and must be planted at a large Distance, a Foot Square at least; it will agree better with an open Situation than the other two Sorts.

ACETOSELLA; *vile Oxys.*

ACHILLÆA; is Millefolium.

ACINOS; Stone, or Wild Basil.

The Characters are;

*It hath Leaves like those of the lesser Basil; the Cup of the Flower is oblong and furrowed; the Flowers are produced in Bunches on the Top of little Footstalks, which arise from between the Footstalk of the Leaf, and the Stalk of the Plants, in which it differs from Scyphium.*

The Species are;

1. ACINOS; *multis.* I. B. Wild Basil.

2. ACINI; *pulchra species,* J. B. Broad-leaved *Austrian* Wild Basil.

The first of these Plants is very common on dry arable Land in many Parts of *England*, but especially on gravelly or chalky Hills: It is an annual Plant, sowing itself, and rising again early in the Spring: This is not cultivated in Gardens, nor doth it care to grow on a good Soil; but it may be propagated in a dry poor Soil by sowing the Seeds, as soon as they are ripe. This Plant hath been brought to the Markets by the Herb-Women for the Mountain Peley.

The second Sort is preserved in

curious Botanic Gardens, but is a Plant of no great Beauty or Use.

ACONITUM; Wolf's-Bane;

The Characters are;

*It hath circumscrib'd roundish divided Leaves; the Flowers consist of four Leaves, which are shaped like a Monk's Hood: Each of these Flowers are succeeded by three or more Pods, which contain several rough Seeds; the most Part of these Species are deadly Poison.*

There are several Sorts of this Plant in the Botanic Gardens Abroad; but in *England* we have not above five Sorts, which are,

1. ACONITUM; *lycoctonum, luteum,* C. B. The yellow poisonous Wolf's-Bane.

2. ACONITUM; *luteum, majus, ampliore caule, amplioribusque foliis.* Dod. The largest yellow Wolf's-Bane.

3. ACONITUM; *caeruleum, sine napellus.* II. C. B. The large blue Wolf's-Bane.

4. ACONITUM; *salutiferum, sine Authora.* C. B. The wholesome Wolf's-Bane.

5. ACONITUM; *pyramidale, multiflorum,* H. R. Par. The Pyramidal many flowering Wolf's-Bane, or Monk's-hood.

The fifth Sort of Wolf's-Bane is very common in almost all old Gardens, and is usually known by the Name of Monk's-hood, the Flower resembling a Friar's Cowl, from whence it had that Name; the Flowers of this Kind are commonly brought to Market in *May*, to furnish Flower Pots for Chimnies; but it being a very poisonous Plant, should not be put in the Way of Children, lest they should prejudice themselves therewith: The Roots of this Plant increase abundantly, soon over-running a large Piece of Ground, there-

therefore should be confin'd in some abject Part of the Garden, or planted under Trees, it being very hardy, and growing in almost every Soil or Situation.

The yellow Sorts are less common, and are only preserv'd in the Gardens of the Curious; they flower in *June* and *July*, and are increas'd by parting the Roots in *Autumn*, but must have a more open Exposure than the Blue.

The wholesome Kind is rarely to be met with in the *English* Gardens, although it is equally as hardy as any of the other Sorts: This is increas'd as the other Sorts, but requires a looser Soil than they do: This is sometimes us'd in *Physick*, and is supposed to be an Antidote to the Poison of the Wolf's-Bane.

ACONITUM HYEMALE; or Winter Wolf's-Bane.

The Characters are;

The Leaves are like those of the Wolf's-Bane; the Flowers (which are produced in the Center of the Leaves) are like those of the Ranunculus; with many Stamina, or Threads in the Center, and in all other Respects agree with the Hellebore; so which the learned Dr. Boerhaave hath made it a Congener.

This is one of the earliest Flowers in the Spring, often appearing by the Middle of *January*, for which reason it deserves a Place in every curious Garden; it is very apt to increase by the Root, but should not be too often transplanted: The best Time to remove the Roots is in *May* or *June*, just as the green Leaves are decay'd, before they are quite gone off, it being very difficult afterwards to find the Roots: This Plant will thrive in almost any Soil or Situation.

ACRIVIOLA; commonly call'd *Nasturtium Indicum*, or *Indian Cress*.

The Characters are;

The Leaves are round, umbilicated, and placed alternately; the Stalks are trailing; the Cup of the Flower is quinquesid; the Flowers consist of five Leaves, which are in Form of a Violet the Seeds are roundish, and rough, three of them succeeding each Flower.

There are five Varieties of this Plant in the *English* Gardens, viz.

1. ACRIVIOLA; *Frid. Cas. T. 935.* The lesser Indian Cress.

2. ACRIVIOLA; *flore sulphureo.* Boerb. The lesser yellow Indian Cress.

3. ACRIVIOLA; *maxima, odorata.* Boerb. The great Indian Cress.

4. ACRIVIOLA; *maxima odorata, flore sulphureo.* Boerb. The great yellow Indian Cress.

5. ACRIVIOLA; *maxima, odorata, flore plezo.* The great double Nasturtium, or Indian Cress.

The four first Sorts are commonly sow'd in *March* or *April*, in a good Soil and warm Situation: They are great Climbers, and should have a Hedge or Palisado to run upon, to prevent their lying upon the Ground, which is apt to rot them: They begin to flower in *June* or *July*, and continue till the Frost comes, which soon destroys the whole Plant, unless shelter'd therefrom. The Flowers are very good in Sallads, and are much in Use to garnish Dishes: The unripe Seeds afford a warm agreeable Pickle.

The double Sort producing no Seeds, is only increased by planting Cuttings in any of the Summer Months, and must be carefully preserv'd in Winter, it being very subject to rot, if kept too close, or if it hath too much

Water in Witner, but must be intirely kept from Frosts.

This Plant, if confined in Pots fill'd with poor Soil, will be less subject to ramble, and much more productive of Flowers; whereas if it is planted in the full Ground, or potted in a rich Mould, it will extend its Branches to a great Distance, and the Flowers will be very thinly placed upon the Plant, so that the greatest Beauty of the Plant, which consists in the Number of its Flowers, is lost. The Flowers of this Kind are much better to garnish Dishes than those of the single; but for Use, the single is preferable to this in Salads, being of a warmer Taste; as is observ'd of all single Flowers, that they are preferable to the Double of the same Kinds, for medicinal, or other Uses, as being much stronger in Smell and Taste; for the Multiplicity of Petals deprive the Flowers of the Organs, for Generation, in which are contain'd the Essence of the Flower.

ADHATODA, The Malabar Nut.

The Characters are;

The Leaves grow opposite; The Cup of the Flower is oblong, and consists of one Leaf; the Flower is monopetalous, of an anomalous Figure, and consists of two Lips; the uppermost is crooked, and is rais'd in Form of an Arch; the under Lip is divided into three Segments, and hangs downward; the Ovarium becomes the Fruit which is in Form of a Club, and is divided into two Cells, in which are contained flat Hart-shap'd Seeds.

There are but two Species of this Plant known at present, which are,

1. ADHATODA; *Zeylanensium*. H. L. The common Malabar Nut.

2. ADHATODA; *Indica*; *folio sa-ligno, flore albo*. Boerh. The Willow leav'd Malabar Nut, commonly call'd, The Snap Tree.

These Plants are both rais'd by Cuttings, planted in any of the Summer Months, which must be shaded, and frequently water'd; about August they will have taken Root, and must then be transplant-ed into Pots, fill'd with light sandy Earth, mixed with rotten Dung: They must have a good Green-house in Winter, and require often but gentle Waterings: In the Summer they may be expos'd to the open Air, but should be shelter'd, by Hedges or Trees, from strong Winds. These Trees do frequently flower in England, but have never, that I have heard of, produced any Fruit with us.

ADIANTHUM; *i. e.* Maiden-hair.

ADONIS, or FLOS ADONIS, Bird's-Eye, or Pheasant's Eye.

The Characters are;

The Leaves are like Fennel, or Camomile; the Flowers consist of many Leaves, which are expanded in Form of a Rose; the Seeds are collected into oblong Heads.

There are but three Varieties of this Plant to be met with in the English Gardens, *viz.*

1. ADONIS; *hortensis, flore minore atrorubente*. C. B. The common red Bird's-Eye.

2. ADONIS; *sylvestris, flore luteo, foliis longioribus*. C. B. The long-leav'd yellow Bird's-Eye.

3. ADONIS, *bellebori radice, euphthalmi flore*. H. L. The Hellebore-rooted Pheasant's Eye, commonly call'd, The Fennel-leav'd black Hellebore.

The first of these Sorts is very common in England, and is sown in open Borders as an annual flower-



flowering Plant, to adorn Gardens: The best Time to sow it is in *August*, soon after the Seeds are ripe, when it rarely fails to grow, and is very hardy, seldom being hurt by Cold.

These Plants will flower in *June* and *July*, and the Seeds will ripen soon after; but those which are sown in the Spring very often fail to grow, or at least remain till *June* or *July* before they appear, so that they seldom produce good Seeds the same Year, and rarely live over the Winter after flowering.

This Plant grows wild in some Parts of *England*, particularly near the River *Medway* about three Miles above *Rocheſter* Bridge.

The yellow Sort is uncommon in *England*, and only to be found in some curious Gardens: This makes a pretty Diversity with the former, and must have the same Culture.

The third Sort is still more rare than any of them: it is an abiding Root, and is increas'd by parting the Roots in *August*, or by sowing the Seeds, soon after they are ripe in light sandy Earth: The Seedlings will be two Years before they blow, but the Off-sets will flower the succeeding Spring: this produces its Flowers in *March*, or early in *April*, and is not a despicable Plant in the most curious Gardens.

This Plant is used in Medicine by the  *Germans*, as the true *Hellebore*.

AGERATUM; Maudlin.

The Characters are;

The Flowers are digested into loose Umbels; but, in other Respects, it is very like the *Coastmary*.

There are several Species of this Plant preserved in the Botanic

Gardens; but as there are not above three Sorts which (either for Use or Beauty) deserve to be cultivated; I shall only mention those, and pass over the rest.

1. AGERATUM; *foliis ferratis*. C. B. The common Maudlin.

2. AGERATUM, *quæ ptarmica incana, pinnulis cristatis*. T. Voy. The hoary Oriental Maudlin.

3. AGERATUM; *Peruvianum, arborum folio lato, serrato*. Boerb. The Peruvian Tree Maudlin, *falsly call'd*, The Jesuit's Bark Tree.

The first of these Plants is propagated in Gardens, for medicinal Use; it is increased by parting the Roots either in Spring or Autumn, and requires a light Soil and open Situation, where it will thrive abundantly.

The second Sort is somewhat tender, and must have a dry Soil, and warm Situation: This is increas'd by planting the Cuttings in any of the Summer Months. This Plant was supposed by the Ancients to be what produced the Worm-Seed; but this is confuted by all the Moderns: However, it deserves a Place in a Garden, for its fine hoary Leaves, together with its Umbels of yellow Flowers, which continue most Part of the Summer.

The third Sort grows to a Shrub of eight and ten Feet in Height; it is increased by planting the Cuttings in any of the Summer Months, or by laying down the Branches: It requires frequent Waterings, and must be housed in hard Winters, but will endure our common Winters in the open Air. This Tree when it first came into *England*, was supposed to be the Tree from which the *Peruvian Bark* was taken; but this has been confuted

futed long since: There is no great Beauty in it, but it may have a Place in a Collection for its Oddness.

AGNUS CASTUS; *vide* Vitex.

AGRIFOLIUM; *vide* Aquifolium.

AGRIMONIA; Agrimony.

The *Characters* are;

The *Leaves* are rough, hairy, femated, and grow alternately on the Branches; The *Calyx* (or Flower-cup) consists of one Leaf, which is divided into five Segments; The *Flowers* have five or six Leaves, and are form'd into a long Spike, which expand in Form of a Rose: The *Fruit* is oblong, dry and prickly, like the Burdock; in each of which are contain'd two Kernels.

There are several Varieties of this Plant, but two of them only deserve our Care, *viz.*

1. AGRIMONIA, *Officinarium* Town. The common or Medicinal Agrimony.

2. AGRIMONIA, *odorata* Camer. The sweet smelling Agrimony.

The first of these Sorts is common in the Hedges in many Parts of England, and is the Sort commonly used in Medicine; but should not be wanting in a Garden: It will grow in almost any Soil or Situation; and is increas'd by parting the Roots in Autumn or by sowing the Seeds soon after they are ripe.

The sweet-smelling Agrimony is by some prefer'd to the common Sort for medicinal Uses; but however it is certainly the most grateful to infuse for pectoral Decoctions, and makes a pleasant Sort of Tea: it is propagated as the common Sort, but requires an open Exposure

AIR; By *Air* is meant all that fluid expanded Mass of Matter which surrounds our Earth, in which we live and walk, and which we are continually receiving and casting out again by Respiration.

*Air* is a principal Cause of the Vegetation of *Plants*, an Instance of which we have from Mr. Ray, in the *Philosophical Transactions*, of Lettice-Seed, that was sown in the Glass Receiver of the *Air Pump*, which was exhausted and clear'd from all *Air*, which grew not at all in eight Days Time; whereas some of the same Seed that was sown at the same Time in the open *Air*, was risen to the Height of an Inch and an half in that Time; but the *Air* being let into the empty Receiver, the Seed grew up to the Height of two or three Inches in the Space of one Week.

Another Instance of the Usefulness of the *Air* in Vegetation, is the *Sedum*, which will push out Roots without Earth and Water, and live for several Months: And some Sorts of Aloes, if hung up in a Room intirely secur'd from Frosts, will remain fresh for some Years, tho' they will sensibly lose in their Weight.

*Air* is capable of penetrating the porous and spongy Parts of *Plants*, and being there contracted, and dilating itself again.

The *Air* operates also within the Bowels of the Earth, and by its Subtily perspiring through the Pores, assists in the Rarefaction of the Crudities of the Earth, and in the dispelling all superfluous Moisture, entring into the very Pores and Veins of the Trees, *Plants*, Herbs, &c. carrying along with it those Salts contain'd either in  
itself,

Itself, or lodg'd in the Earth; which Salts or Juices are alter'd according to the several Figures or Dimensions of the different Strainers or Vessels of those several Plants which grow upon the same Spot of Earth, which is so impregnated with these Salts: And thence those Varieties in Taste and Smell proceed, notwithstanding they all receive their Nourishment from the same Stock that is lodg'd in the Earth.

The *Air* also affects the Branches, Leaves, and Flowers of Trees, Plants and Herbs, entering and perspiring thro' them, and even thro' the Bark and Body of the Tree; and by the same Kind of Subtily it does, by its refreshing Breezes, moderate the Intenfities of the Sun-beams, cooling, clearing, blowing, opening and extending all the Off-spring of Nature.

The *Air* fixes and insinuates its aerial Substance into the liquid Sap of Vegetables, and as all the Agitations in Nature proceed from the Contrariety of Parts inhabiting together; so, in this, aerial and liquid Substances being mix'd, cause this Agitation and Motion in Vegetables, or, more properly, set it all into a Ferment (whether it be in the Roots or in the Stem) and rises by Co-operation of the Sun (which is the third Agent in Vegetation) up to the Top of a Tree, &c. as Liquids rise by Fire to the Top of the containing Vessel.

This *Air*, we find, produces a vibratory Motion in several Bodies, and particularly in Plants; the *Air* Vessels thereof do the Office of Lungs: For the *Air* contain'd in them, sometimes contracting and sometimes expanding, accor-

ding as the Heat is increas'd or diminish'd, presses the Vessels, and eases them again by Turns, and thus promotes a Circulation of their Juices, which could scarce be otherwise effected.

*Air*, says the learned Mr. *Hales*, is a fine elastick Fluid, with Particles of very different Natures floating in it, whereby it is admirably fitted by the great Author of Nature to be the Breath of Life of Vegetables as well as Animals, without which they can no more live nor thrive than Animals can.

As a Proof of the great Quantities of *Air* in Vegetables, he refers to the third Chapter of his excellent Treatise of *Vegetable Statics*. where, he says, in the Experiments on *Vines*, the great Quantity of *Air* was visible, which was continually ascending through the Sap in the Tubes; which manifestly shews what Plenty of it is taken in by Vegetables, and is perspired off with the Sap thro' the Leaves.

He adds several Experiments, as to an *Apple-Branch*, *Apricot-Branch*, *Birch*, and other Plants, to prove the same Thing.

And Dr. *Grew* has observ'd, that the Pores are so large in the Trunks of some Plants, as in the better Sort of thick walking Canes, that they are visible to a good Eye without a Glass; but, with a Glass, the Cane seems as if stuck at top full of Holes with great Pins, so large as very well to resemble the Pores of the Skin in the Ends of the Fingers, and Ball of the Hand.

Whence it may be thought probable, that the *Air* freely enters Plants not only with the principal Fund of Nourishment

by the Roots, but also through the Surface of their Trunks and *Leaves*, especially at Night, when they are changed from a perspiring, to a strongly imbibing State.

Mr. *Hales* likewise tells us, that in all those Experiments that he try'd to this Purpose, he found, that the *Air* entred very slowly at the Bark of young Shoots and Branches, but much more freely thro' old Bark; and that, in different Kinds of Trees, it had different Degees of more or less free Entrance.

And likewise, that there is some *Air* both in an elastick and unelastick State mix'd with the Earth (which may well enter the Roots with the Nourishment) he found by several Experiments, which he gives in the before mentioned Treatise.

The *Air* is very instrumental in the Production and Growth of Vegetables, both by invigorating their several Juices, while in an elastick active State, and also by greatly contributing in a fix'd State, to the Union and firm Connexion of the several constituent Parts of those Bodies, viz. their *Water, Fire, Salt, and Earth*.

To conclude, by reason of those Properties of the *Air* before-mentioned, it is very serviceable to Vegetables, in that it blows up, and breaks open the Clouds, those Treasures of Rain, which fertilizes the vegetable Kind.

The *Air* also helps to waſte away or diſperſe thoſe foggy humid Vapours, which ariſe from the Earth, and would otherwiſe ſtagnate, and poiſon the whole Face of the Earth.

The *Air*, by the Aſſiſtance of the *Sun*, aſſumes and ſublimates thoſe

Vapours into the upper Regions; and theſe foggy humid Vapours are, by this Sublimation, and the coercive Power of the *Air* and *Sun*, rarefied and made of ſecond Uſe in Vegetation.

And, on the contrary, to the benign Quality of the *Air*, which is ſo many Ways ſubſervient to Vegetables; ſo it is alſo ſometimes, and upon ſome Accounts, injurious and pernicious to them; not only to the ligneous, herbaceous, and flowery Parts above, but alſo to the Roots and Fibres below: For in that the *Air* penetrates into the Earth, it is eaſy to be concluded, that a dry, huſky, ſcorching *Air* may be very prejudicial to the tender Fibres of new-planted Trees.

It may be likewiſe ſuppos'd, that all Bodies of Earth are more or leſs capable of imbibing the fluid *Air*, and of attracting ſuch Salts, as either the *Air* can give, or the *Earth* is capable of receiving.

ALATERNOIDES; a Sort of Alaternus.

The Characters are;

*This differs from the Alaternus, in having three Seeds joined together in the Manner of the Tithymalus, ( or Spurge ) whereas the Alaternus has three Seeds incloſed with one common Covering, and appears to be a ſingle Berry, till it is opened.*

There are at preſent but three Species of this Plant known in the *Engliſh Gardens*, viz.

1. ALATERNOIDES; *Africana, Lauri ferrate folio. Com. præb.* The *African Alaternoides*, with ſerrated Bay-leaves.

2. ALATERNOIDES; *Africana, Eri-ca foliis, floribus albicantibus & muscoſis. H. Amſt.* The *African Alaternoides*, with Leaves like the Heath, and white Flowers.

3. ALATERNOIDES; *Africana, Tephii, legitimi Imperati folio, flore viridi.* H. Amst. The African *Alaternoides*, with Leaves like the true Orpine of *Imperatus*, and green Flowers.

The first of these Sorts has been an old Inhabitant in the *English* Gardens, and is still continued by Persons, that are curious in Collections of Plants; but it hath no very great Beauty, being with great Difficulty reducible to any tolerable Shape, and the Flowers (which but seldom appear with us) afford no great Prospect, being very small, and of a greenish yellow Colour.

This is easily increased by planting Cuttings in any of the Summer Months, in a shady Border, which do readily take Root, but must be potted and housed in Winter with Myrtles, &c.

The second Sort has been lately introduced amongst us, and is at present rare in *England*; this is a very beautiful Plant, producing large Tufts of fine white Flowers in *November, December, and January*, which is a Season that few Plants are in Flower in the Green-house.

This is thought pretty difficult to increase; but I planted only six Cuttings of it in a Pot of light fresh Earth, and plunged the Pot into a cool Bed of Tanner's Bark in *September*; and five of the six Cuttings grew, and made fine Plants.

And I believe that to be the best Season to plant the Cuttings, it being the Time, when the Plant begins to shoot, and prepare for flowering.

This must be housed, and kept in the same Green-house with Oranges, &c.

The third Sort is yet more rare than the second, and is in very few Gardens at present; this is increas'd

by planting Cuttings in *June* or *July*, keeping them shaded and watered, 'till they have taken Root: At *Michaelmas* they must be potted, and housed with the second Sort; but this is not near so fine a Plant as that is.

ALATERNUS; or Ever-green Privet.

This Tree, Mr. *Bradley* says, is distinguished from the *Phillyrea* only by the Leaves of this being placed alternately upon the Branches; whereas those of the *Phillyrea* are produced by Pairs opposite to each other: But this is not the real Difference, as he might have known, had he but examin'd the Fruit of the two Trees, or look'd into any of the modern Botanick Writers who have distinguish'd the *Alaternus* from the *Phillyrea*; because it hath three Seeds inclosed in each Berry, whereas the *Phillyrea* has but one.

We have six or seven Varieties of this Tree in the *English* Gardens, viz.

1. ALATERNUS; 1. *Clusii* *Hisp.* This is commonly called, The Broad-leav'd, or Common *Phillyrea*.

2. ALATERNUS; 1. *Clusii foliis ex luteo variegatis.* The blotch'd *Phillyrea*, *vulgo*.

3. ALATERNUS; seu *Phylica, foliis angustioribus, & profundius serratis.* H. L. The Narrow-leav'd *Alaternus*, with saw'd Edges.

4. ALATERNUS; seu *Phylica aurea, sive foliis ex luteo variegatis.* The Dutch Gold-edg'd *Alaternus*, *vulgo*.

5. ALATERNUS; seu *Phylica argentea, sive foliis ex albo variegatis.* The Silver *Phillyrea*, *vulgo*.

6. ALATERNUS; *minori folio.* *Tourn.* The Small-leav'd *Alaternus*.

The two first Sorts are very common in most old Gardens, and were formerly

formerly in much Request to make Ever-green Hedges, but are of late almost wholly disus'd for that Purpose: The Branches are very apt to shoot strong, and require often clipping in Summer, to keep them handsome; and their being subject to be displac'd by strong Winds, or great Snows, together with their being liable to suffer in hard Winters, have justly excluded them from fine Gardens.

However these, with the third and sixth Sorts, are very proper for Wildernesses of Ever-greens, or to plant in Clumps, where, by the Diversity of their Leaves, and different Shades of Green, they very much add to the Beauty of such Plantations.

The three first Sorts will grow to the Height of sixteen or eighteen Feet, and, if suffer'd to grow without clipping, are very hardy, (especially if they grow close together, or amongst other Trees) which will prevent the Frost from piercing the Bark of the Stems, which is often the Cause of their Destruction.

The fourth and fifth Sorts are tenderer than any of the other, and require some Shelter in hard Weather, or are planted against warm Walls in Court-yards, &c. to cover them; where, if they are well kept, and not suffer'd to grow from the Walls, they afford an agreeable Prospect.

These Sorts are all increas'd by laying down the young Branches in the Spring; which in one Year's Time will have taken Root, and may be then transplanted out either into a Nursery, or into the Places, where they are to remain. These Trees delight most in a light, dry, sandy, stony Soil, in which, tho' they do not shoot so strong as in a

moist rich Earth, yet are they less subject to be hurt in Winter.

ALCEA; Vervain Mallow.

The Characters are;

It hath the whole Habit of the Mallow, or Althæa; but differs from both, in having its Leaves deeply divided.

The Species are,

1. ALCEA; *tenuifolia, crispata*. F. B. The narrow-leav'd curl'd Vervain Mallow.

2. ALCEA; *folio rotundo, laciniato*. C. B. The round cut-leav'd Vervain Mallow.

3. ALCEA; *Afra, frutescens, flore parvo purpureo*. Hort. Pifs. Shrubby African Vervain Mallow, with a small purple Flower.

4. ALCEA; *Afra, frutescens, folio grossularia, flore parvo rubro*. Boerh. Ind. Shrubby African Vervain Mallow, with Gooseberry Leaves, and a small red Flower.

5. ALCEA; *Afra, frutescens, grossularia folio ampliore, unguibus florum atro-rubentibus*. Rand. Shrubby African Vervain Mallow, with larger Gooseberry Leaves, and a flesh-colour'd Flower with a dark red Bottom.

The first Sort is a common Plant in the Fields; and altho' sometimes us'd in Physick, yet is seldom cultivated in Gardens, except in those curious for Botanick Collections, in which Gardens there are several Varieties. The second Sort is the most common in Germany, and is what the College has directed to be us'd in Medicine; but the first being the common Sort in England, is generally substituted in its Room. These are rarely cultivated but in Physick Gardens, and are easily propagated by any, that are curious, by sowing their Seeds in the Spring in almost any Soil or Situation.

The third, fourth, and fifth Sorts were originally brought from the *Cape of Good Hope* into the curious Gardens in *Holland*, from whence they have been dispers'd into many other Countries. These Plants are propagated by Seeds ( which they produce annually in great Plenty ); which should be sown on a Bed of fine Earth in *March*, covering the Seeds about a Quarter of an Inch thick with the same light Earth; in *April* the young Plants will appear, when they must be carefully clear'd from Weeds; and if the Season should be dry, they must be often refresh'd with Water: When these Plants are about six Inches high, they should be carefully taken up, and transplanted into Pots, fill'd with fresh light Earth, and plac'd in a shady Situation, until they have taken Root; after which Time they may be expos'd with other hardy Exoticks 'till *October*, when they must be remov'd into the Green-house with *Myrtles*, *Oleanders*, &c. where they should have as much free Air as possible in mild Weather, and must be often water'd. These Plants are pretty hardy, and only require to be protected from hard Frost. They will grow to the Height of ten or twelve Feet, and do flower most Part of the Year, which renders them worthy of a Place in every good Garden.

ALCHIMILLA; Ladies-Mantle. ]

The Characters are;

The Leaves are serrated; the Cup of the Flower is divided into eight Segments, which are expanded in Form of a Star; the Flowers are collected into Bunches upon the Tops of the Stalks; the Seed-vessels contain for the most Part two Seeds in each.

The Species are,

1. ALCHIMILLA; *vulgaris*. C. B. Common Ladies Mantle.

2. ALCHIMILLA; *Alpina, pubescens, minor*. H. R. Par. The lesser woolly Ladies-Mantle.

3. ALCHIMILLA; *Alpina, quinquefolia, folio subius argenteo*. Tourn. The *Alpine* five-leav'd Ladies-Mantle, with the under Part of the Leaves white.

The first Sort is a Plant sometimes us'd in Physick, and is gather'd frequently in moist Meadows at some Distance from *London*. This may be kept in a Garden, if planted in a moist Soil, and is increas'd by parting the Roots.

The second Sort is a much less Plant than the first, and is woolly or soft to the Touch; but this Plant, when cultivated in a good Soil, will grow to be almost as big as the first.

The third Sort is found wild in *Westmorland*, and other Northern Parts of *England*: This with the two former are preserv'd in curious Botanic Gardens; but as there is little Beauty in them, they are seldom planted in Gardens for Pleasure: They are all propagated by parting their Roots, or sowing their Seeds soon after they are ripe.

ALDER-TREE; *vide* Alnus.

ALESANDER, or. ALEXANDER; *vide* Smyrniūm.

ALKEKENGİ; Winter Cherry.

The Characters are;

It hath a Flower, which consists of one Leaf, and is expanded at the Top, but of a pentagonal Figure; the Fruit ( which is about the Bigness of a Cherry ) is inclos'd in the Cup of the Flower, which swells over it in Form of a Bladder.

There are several Varieties of this Plant cultivated by the curious Botanists, but there is but one of them, that is either useful or ornamental, which is the *Alkekengi Officinarius*

Tourn.

*Town.* or the common medicinal Winter Cherry.

This Plant produces round red Fruit about the Size of a large Cherry; which is inclos'd in a small Bladder, which in *Autumn* changes to a reddish Colour, and opens, and shews its beautiful red Fruit, which continues 'till *November*, or sometimes later, before it falls off; for which 'tis chiefly kept in Gardens: It is very apt to creep far underground, by which it soon spreads over a large Spot of Ground; therefore should be confin'd in Pots; which, if set in the Shade, and frequently water'd, will very much add to its Fruitfulness; for when the Roots have Liberty, they spend themselves in spreading, and become less fruitful, than when confin'd in Pots.

ALLELUJAH; *vide Oxys.*

ALLIARIA; Sauce alone, or Jack by the Hedge; *vide Hesperis.*

ALLIUM; Garlick.

The Characters are;

*It hath a bulbous Root consisting of many small Tubercles included in the Coverings ( or Coats ) thereof; the Leaves are plain; the Flowers consist of six Leaves, which are form'd into a Corymbus upon the Top of the Stalks; the Flowers are succeeded by subrotund Fruit, which are divided into three Cells, in which are contain'd roundish Seeds.*

There are several Varieties of this Plant, which differ in their Leaves, Manner of flowering, Shape and Size of their Bulbs, &c. but there are not above two or three Sorts, which are cultivated for Use, *viz.*

1. ALLIUM; *sativum.* C. B. The Common or Manur'd Garlick.

2. ALLIUM; *sativum, alserum, sive Allioprasum, caulis summo circumvoluto.* C. B. The Rocambole.

3. ALLIUM; *sylvestre, latifolium.* C. B. Ramson's; *vulgo.*

The two first Species are easily propagated by planting the Cloves, or small Bulbs, in *August* or *September*, in Beds about four or five Inches Distance from each other, keeping them clean from Weeds. About the Beginning of *June* the Leaves should be tied in Knots, to prevent their spindling, or running to Seed, which will greatly enlarge the Bulb: in the Middle of *July* the Leaves will begin to wither and decay, at which Time they should be taken out of the Ground, and hang'd up in a dry Room, to prevent their rotting; and may be thus preserv'd for Winter Use.

The third Sort was formerly in greater Esteem than at present, it being rarely cultivated in Gardens, but is found wild in moist, shady Places in many Parts of *England*; and may be cultivated by planting the Roots in a moist, shady Border at almost any Time of the Year; but the best Season is in *July*, just as the green Leaves are decaying.

ALMOND-TREE; *vide Amygdalus.*

ALMOND DWARF; *vide Perseica.*

ALNUS; The Alder-Tree.

The Characters are;

*It hath Leaves resembling those of the Hazel; the Male Flowers ( or Katkins ) are produc'd at remote Distances from the Fruit on the same Tree; the Fruit is squamose, and of a conical Figure.*

There are three Species of this Tree in *England*, *viz.*

1. ALNUS; *rotundifolia, glutinosa, viridis.* C. B. The Common or Round-leav'd Alder.

2. ALNUS; *folio oblongo, viridi.* C. B. The Long-leav'd Alder.

3. ALNUS;



3. ALNUS; *vulgaris, sub conis ligulis membranaceis rubris donata.* Raii Syn. Ed. 3. The Scarlet Alder.

This Sort was found in a Meadow near Long-leet, by Mr. Brewer, some Years since; but it is a Matter of Doubt, whether it is a distinct Species, or some accidental Variety.

These Trees delight in a very moist Soil, where few other Trees will thrive, and are a great Improvement to such Lands: They are propagated either by Layers, or planting of Truncheons about three Feet in Length, in February, or the Beginning of March, which should be sharpen'd at one End, and the Ground loosen'd with an Instrument, before they are thrust into it, lest by the Hardness of the Soil the Bark should be torn off, which may occasion their Miscarriage. They should be thrust into the Earth at least two Feet, to prevent their being blown out of the Ground by strong Winds.

If you raise them by laying down the Branches, it must be perform'd in February or March; and by the February following they will have taken Root sufficient to be transplanted out; which must be done by digging a Hole, and loosening the Earth in the Place, where each Plant is to stand, planting the young Tree at least a Foot and a half deep, cutting off the Top to about nine Inches above the Surface, which will occasion them to shoot out many Branches.

The Distance these Trees should be plac'd, (if design'd for a Coppice) is six Feet square; and, if the small lateral Shoots are taken off in the Spring, it will very much strengthen your upright Poles, provided you leave a few small Shoots at Distances upon the Body thereof, to detain the Sap for the Increase of its Bulk.

These Trees may be also planted on the Sides of Brooks, (as is usual for Willows) where they will thrive exceedingly, and may be cut for Poles every third or fourth Year. This Wood is in great Request with the Turners, and will endure a long Time under-ground, or to be laid in Water.

ALNUS, NIGRA BACCIFERA, *vide* Frangula.

ALOE.

The Characters are;

The Leaves are thick and succulent, and for the most Part beset with Spines on the Edges: The Flower consists of one Leaf, is tubulous, and cut into six Segments at the Top, like the Hyacinth: The Fruit is oblong and cylindrical, which is divided into three Cells, in which are contain'd flat, and for the most Part semicircular Seeds.

There is a great Variety of this Plant in the curious Gardens of Botany in England, which are Natives both of the East and West Indies; but most of the curious Sorts were brought from the Cape of Good Hope. I shall first enumerate their Kinds, and then proceed to their Culture.

1. ALOE; *Americana muricata.* F.B. The common large American Aloe.

2. ALOE; *Americana minor.* Mart. The lesser American Aloe.

3. ALOE; *Americana ex Vera Cruce, foliis angustioribus, minus glaucis.* H. Beaum. The Narrow-leav'd Aloe from Vera Cruce.

4. ALOE; *Americana ex Vera Cruce, foliis latioribus & glaucis.* H. A. The Broad-leav'd Aloe from Vera Cruce.

5. ALOE; *Americana, folio viridi rigidissimo foetido, Piet. dicta indigenis.* H. Beaum. The broad Green-leav'd Aloe from Curasso, with black Spines.

6. ALOE; *Americana, folio viridi serrato*, Silk Grass, *dicta*. The American Aloe, with green serrated Leaves, call'd in the West-Indies, Silk-Grass.

7. ALOE; *Americana sobolifera*. H. L. The American Aloe, which produces young Plants out of the Flower-Stems.

8. ALOE; *vulgaris*. C. B. The common Barbados Aloe.

9. ALOE; *Africana foliis glaucis, margine & dorsi parte superiore spinosis, flore rubro*. Com. Pral. The African stalky Aloe, with glaucous serrated Leaves and red Flowers.

10. ALOE; *Africana caulescens, foliis spinosis, maculis ab utraque parte albicantibus notatis*. H. A. The common large spotted African Aloe, falsely call'd, The Carolina Aloe.

11. ALOE; *Africana caulescens, foliis spinosis, maculis ab utraque parte albicantibus obscurioribus, magis glaucis quam precedens*. Boerb. The large spotted African Aloe, with Leaves more glaucous i. e. bluer or grayer than the former.

12. ALOE; *Africana arborescens, montana non spinosa, folio longissimo, plicatili, flore, rubro*. H. A. The African Aloe Tree, with flat long smooth Leaves without Spines.

13. ALOE; *Africana caulescens, foliis glaucis, caulem amplectentibus dorso integro spinoso*. Com. Rar. The African stalk'd Aloe, with glaucous Leaves surrounding the Stalks, and Spines growing on the Back of the Leaves.

14. ALOE; *Africana caulescens foliis glaucis, brevioribus, caulem amplectentibus foliorum parte interna*

& externa nonnihil spinosa. Com. Rar. The African Aloe, with shorter glaucous Leaves, surrounding the Stalks, and Spines within and outside of the Leaves.

15. ALOE; *Africana caulescens foliis glaucis, brevissimis, foliorum summitate interna & externa nonnihil spinosa*. Com. Rar. The African Aloe, with the shortest glaucous Leaves, and Spines on both Sides of the Leaves at the Extremity.

16. ALOE; *Africana, humilis, spinis inermibus & verrucis obfita*. Com. Rar. The Dwarf African Aloe, with Leaves arm'd with Spines and Warts, commonly call'd the Hedge-hog Aloe.

17. ALOE; *Africana humilis, foliis ex albo & viridi variegatis*. Com. Rar. The Dwarf African Aloe, with green and white variegated Leaves, commonly called the Partridge Breast Aloe.

18. ALOE; *Africana erecta, triangularis & triangulari folio viscoso*. Com. Rar. The upright triangular-leav'd viscous Aloe.

19. ALOE; *Africana erecta rotunda folio parvo, & in acumen rigidissimum exeunte*. Com. Rar. The upright African Aloe, with small sharp pointed Leaves.

20. ALOE; *Africana flore rubro, folio triangulari verrucis & ab utraque parte albicantibus notato*. H. A. The triangular-leav'd African Aloe, with white Tubercles on every Part of the Leaf, and red Flowers.

21. ALOE; *Africana margaritifera minor*. H. A. The small Pearl Aloe.

22. ALOE; *Africana folio in summitate triangulari margaritifera*

*fera, flore subviridi. H. A.* The greater Pearl Aloe; vulgò.

23. ALOE; *Africana foliis planis conjugatis carinatis verrucosis, caule & flore corallii colore. Boerb. Ind.* The African Aloe, with plain fleshy Leaves growing opposite, and are full of Tubercles, with red Flowers.

24. ALOE; *Africana minima, atroviridis, spinis herbaceis numerosis ornata, Boerb. Ind.* The least African Aloe, with dark green Leaves, which are set very thick with greenish Spines.

25. ALOE; *Africana flore rubro, folio maculis albicantibus ab utraque parte notato. H. A.* The Tongue Aloe; vulgò.

26. ALOE; *Africana foliis planis latioribus minime serratis, carinatis, caule & flore corallii colore. Boerb. Ind.* The broad-leav'd Tongue Aloe; vulgò.

27. ALOE; *Africana foliis longis conjugatis, supra cavis margariferis, flore rubro elegantissima. Boerb. Ind.* The Pearl Tongue Aloe; vulgò.

28. ALOE; *Africana caulescens, folio crasso obscure viridi, spinis ad latera & in dorso armato. Boerb. Ind.* The stalky African Aloe, with thick dark green Leaves arm'd with Spines on the Backside of the Leaves.

29. ALOE; *Africana caulescens, foliis glaucis caulem amplectentibus. H. A.* The stalky African Aloe, with glaucous Leaves surrounding the Stalks.

30. ALOE; *Africana caulescens, foliis minus glaucis caulem amplectentibus, floribus rubris.* The Sword Aloe; vulgò.

31. ALOE; *Americana foliis ex albo & viridi eleganter variegatis. Hort. Beaum.* The strip'd American Aloe.

32. ALOE; *Africana, brevissimo, crassissimoque folio, flore subviridi. H. A.* The Cushion Aloe; vulgò.

33. ALOE; *Africana folio triangulo longissimo & angustissimo, floribus luteis foetidis. H. L.* The African Aloe, with long narrow triangular Leaves, and stinking yellow Flowers, commonly call'd, Iris Uvaria.

34. ALOE; *Guineensis, radice geniculata, foliis e viridi & atro undulatum variegatis. Com. Pral.* The Guiney Aloe, with knotted Roots, and undulated variegated Leaves.

35. ALOE; *Zeylanica, pumila, foliis variegatis. Par. Bar.* The Dwarf Zeylon Aloe, with variegated Leaves.

36. ALOE; *Africana caulescens, foliis minus glaucis caulem amplectentibus, dorsi parte suprema spinosa. Com. Rar.* The stalky African Aloe, with less glaucous Leaves surrounding the Stalks, with Spines on the Backside of the Leaves at the Extremity.

37. ALOE; *India Orientalis, serrata, succotrina vera, flore Phœnicio. H. Beaum.* The Succotrine Aloe.

38. ALOE; *Africana, sessilis, foliis carinatis verrucosis. Hort. Elth.* Dwarf African Aloe, with fleshy warted Leaves.

39. ALOE; *Barbadensis, mitior, late virens & splendens. Hort. Elth.* Barbados Aloe, with shining green Leaves, and few Spines.

The Soil in which these Plants thrive best, is, one half fresh light Earth from a Common, (and if the Turf is taken with it, and rotted, it is much better); the rest should be white Sea-Sand, and sifted Lime-Rubbish, of each an equal Part; mix these together six or eight Months at least before

fore it is used, observing to turn it over often in this Time.

The first of these *Aloes* is very hardy, in respect to Cold, and has, in mild Winters, endured abroad, being planted in a very dry Soil, and under a South Wall; but may be kept in Pots or Tubs in a common Greenhouse with Oranges, Myrtles, &c. but must have very little Moisture in Winter. Most of the other Sorts are better preserv'd in an airy Glass-Case, in which there is a Stove to make a little Fire in very bad Weather; to dry and warm the Air in foggy, cold, or wet Weather; and to prevent the Frost from entering the House.

The fifth, sixth, seventh, eighteenth, thirty-fourth and thirty-fifth Sorts require a greater Share of Heat to preserve them in Winter, and should be set in a good Stove, and kept nearly to the Degree of Heat (mark'd upon Mr. Fowler's Botanical Thermometers) ten Degrees above temperate. Indeed most of the other Sorts may be kept in the same Temperature of Heat in Winter, but then you must observe, that the greater the Heat is in Winter in which you keep them, the more Water they will require: And if they are well manag'd in this Heat, they will grow very much in Winter, therefore great Care must be taken in the severe Cold, that it doth not enter the House, nor that the Heat be at that Time less'n'd; as also how you begin to give them Air in the Spring, for the extream Parts of the Plants will be rendered very tender, by their growing freely in Winter, and the least Check to their Growth at that

Season is very often their Destruction.

About the Beginning of *June*, most People (in *England*) set their Pots of *Aloes* out of the House; but, if this be done, they should be set under the Shelter of Hedges, or Trees, to screen them from the Violence of the open Sun and Wind, which, in a few Days, will otherwise change their Colour, and very much diminish their Beauty; and very often the great Rains which fall in *June* and *July*, either rot or fill them with so much Moisture, as, in Winter to be liable to Destruction; with the least Cold; therefore, upon the whole, it is much more adviseable to keep them most Part of the Year in the House (as is the constant Practice in *Holland*) giving them, in good Weather, as much free open Air as is possible, and screening them with Mats, Shutters, or Tarpawlines over the Glasses, from the great Heat of the Sun in the Middle of the Day.

In the Middle of *July* is a very proper Season to shift these Plants; at which Time you may take them out of the Pots, and with your Fingers open the Roots; and shake out as much of the Earth as possible, taking off all dead or mouldy Roots, but do not wound or break the young fresh ones: Then fill the Pot about three Parts full of the above-mentioned Earth (putting a few Stones in the Bottom of the Pot, to drain off the Moisture;) and after placing the Roots of the Plant in such a Manner as to prevent their interfering too much with each other, put in as much of the  
same

same Earth, as to fill the Pot almost to the Rim, and observe to shake the Plant, so as to let the Earth in between the Roots, and then with your Hand settle it close to the Roots of the Plant, to keep it steady in the Pot; then water them gently, and set them abroad in a shady Place, where they may remain for three Weeks, giving them gentle Waterings, if the Weather proves hot and dry.

Toward the latter End of *August*, in a dry Day, remove them into the House again, observing to give them as much free open Air as possible, while the Weather holds warm; but, if the Nights are cool, you must shut up the Glasses, and give them Air only in the Day; and as the Cold increases, you must decrease opening the Glasses, but observe to give them gentle Waterings often, till the Middle of *October*, when you must abate them, according to the Heat of the House in which they are kept.

The first Sort may be set abroad in the Beginning of *May*, and remain there till *October*; and, in dry Weather, must have frequent, but gentle Waterings, and should be shifted every Year, taking off all the Suckers and rotten Roots, which, if suffer'd to remain on, will greatly retard the Growth of the Plant.

The thirty-third Sort is very hardy, and should be planted abroad under a good South-wall, where it will thrive and increase much faster than if kept in Pots, and will produce much stronger Flowers.

*How increas'd.*] These *Aloes* are all increas'd by Off-sets, which should be taken from the Mother

Plant, at the Time when they are shifted, and must be planted in very small Pots, filled with the same Earth, as was directed for the old Plants; but if in taking the Suckers off, you observe that Part which join'd to the Mother Root to be moist, you must let them lie out of the Ground in a shady dry Place two or three Days to dry before they are planted, otherwise they are very subject to rot.

After planting, let them remain in a shady Place (as was before directed in shifting the old Plants) for a Fortnight, when you should remove them to a very moderate Hot-bed, plunging the Pots therein, which will greatly facilitate their taking new Roots; but observe to shade the Glasses in the Middle of the Day, and to give them a great deal of Air.

Toward the End of *August*, begin to harden these young Plants, by taking off the Glasses in good Weather, and by raising them at other times with Bricks, that the Air may freely enter the Bed, which is absolutely necessary for their Growth, and to prepare them to be remov'd into the House, which must be done towards the End of *September*, and manag'd as before directed for the old Plants.

Most of the *African* Sorts of *Aloes* do produce Flowers with us annually, when grown to a sufficient Size, which is often the second, and seldom more than the third or fourth Year, after planting from Off-sets; but the *American Aloes* (which do, for the most Part, produce their Flower-stems immediately from the Center of the Plant) seldom flower till they are of a considerable

derable Age, and this but once during the Life of the Plant; for when the Flower-stem begins to shoot from the Middle of the Plant (which, for the most Part, is of a large Size, and grows to a great Height) it draws all the Moisture and Nourishment from the Leaves, so that, as that advances, the Leaves decay; and when the Flowers are fully blown, scarce any of the Leaves remain alive; but whenever this happens, the old Root sends forth a numerous Quantity of Off-sets for Increase; and it is not till this Time, that some of these Sorts can be increas'd, especially the seventh Sort, which never produces any young Plants until it flowers, at which Time the Flower-stem is beset with small Heads from Bottom to Top, which being taken off, and planted, will grow as well as Suckers from the Roots.

This *Aloe*, which, with us, seldom makes a very large Plant, hath yet produced Flower-stems of a considerable Size, and fifteen Foot in Height. The Flowers are little less than those of the large Sort. I can't here forbear taking Notice of a vulgar Error or two relating to the large *American Aloe*, which is, that it never flowers until it is an hundred Years old, which is a Mistake; since we have had several of them flower in *England*, some of which were known not to exceed fifty Years old; and others, which flower'd many Years ago, cannot be suppos'd to have been in *England* so long as to arrive at that Age, since they were thought too tender for our Climate at that Time, when Green-houses were not known; as may be seen by

looking into *Gerard's* and *Parkinson's* Herbals.

Another common Error is, that when the Flower opens, it makes a Report like that of firing a Gun: This is sufficiently confuted by all those, who have been where these Plants have flower'd: But I suppose the Rise of this Story might proceed from some Persons saying, when one of these Plants flower'd, it made a great Noise; meaning thereby, that whenever one of them flower'd in *England*, it was spread abroad as an uncommon Thing, and occasion'd a great Noise amongst the neighbouring Inhabitants; most of whom usually repair to see it, as a Thing, that rarely happens, and as a great Curiosity.

The *African Aloes* do for the most Part afford Plenty of Suckers, by which they are increas'd: But those few, that do not, may be most of them propagated by taking off some of the under Leaves, laying them to dry for three or four Days, as was directed for the Off-sets; then plant them in the same Soil, as was directed for them, putting that Part of the Leaf, which did adhere to the old Plant, about an Inch, or an Inch and half (according to the Size of the Leaf) into the Earth, giving them a little Water to settle the Earth about them; then plunge the Pots into a moderate Hot-bed, observing to screen them from the Violence of the Sun, and give them gentle Refreshings with Water: The best Season for this is in *June*, that they may push out Heads before Winter.

ALOIDES; *Boerb. Ind.* *Stratiotes foliis Aloes femine longo. Gund. Raii Syn.* The Water *Aloe*, or Fresh-water *Soldier*.

This Plant is found in large standing Waters in the Isle of *Ely*, and in *Lincolnshire*; but will not grow in a Garden:

Garden: But if young Plants be put into an open Canal in the Spring, they will thrive and propagate therein.

ALOPECUROS, Fox-tail; a Kind of Grass.

ÆSCHYNOMENE; *vide* Mimosa.

ALSINE; Chick-weed.

ALTHÆA; Marsh-mallow.

The Characters are;

*It is in all respects like the Mallow; but the Leaves of these are generally more soft and woolly.*

There are several Kinds of this Plant, some of which rise to the Height of eight or ten Feet, and become woody: These are proper Ornaments for Quarters of Wilderness-work, to intermix with flowering Shrubs and Trees: They begin to flower toward the latter End of May, and continue till October, (if the Weather proves good): Their long Continuance in Flower, together with their great Variety of soft woolly Leaves, renders them worthy of a Place in the best Gardens of Flowering-Trees.

The different Species of these known in England, are;

1. ALTHÆA; *frutescens, folio acuto, parvo flore.* C. B. The shrubby Marsh-mallow, with sharp-pointed Leaves, and small Flowers.

2. ALTHÆA; *frutescens, Lusitana, folio ampliore, minus incano.* Tourn. The Portugal shrubby Marsh-mallow, with large, and less-hoary Leaves.

3. ALTHÆA; *frutescens, Lusitana, folio rotundiori undulato.* Tourn. The Portugal shrubby Marsh-mallow, with rounder, and undulated Leaves.

4. ALTHÆA; *frutescens, folio bryonia.* C. B. The shrubby Marsh-mallow, with briony Leaves.

5. ALTHÆA; *flore majore.* C. B. The large-flower'd Marsh-mallow.

6. ALTHÆA; *Dioscoridis, & Plinii.* C. B. The Common Marsh-mallow.

7. ALTHÆA; *folio rotundiori, aut minus acuminato.* Suther. The Rounder-leav'd Marsh-mallow.

These Plants are all easily rais'd from Seeds, which must be sown in March in a light dry Soil, and in two Month's Time they will be fit to transplant in the Places where they are to remain for good, or put into Pots; that when they are remov'd, the Earth may be turn'd out of the Pots without disturbing the Roots; for these Shrubs will not bear a Remove, (when grown to any considerable Stature); the Roots being for the most Part compos'd of strong woody Parts, and have very few small Fibres, so that the Earth is subject to fall intirely off upon removing them; and if it so happen to grown Plants, they rarely are made to thrive afterwards.

The second Year these Shrubs begin to flower, and one single Plant, (if suffer'd to seed) will produce enough to raise many hundred Plants: They are impatient of Wet in Winter, therefore should be planted in a dry, rubbishy, or sandy Soil, where they will stand much better, than in a strong rich Earth; but they are seldom longer-liv'd, than five or six Years (with us), especially if suffer'd to flower, and seed plentifully every Year; therefore the best Way to preserve them is, to cut off the extreme Parts of the Branches in July, that they may make fresh Shoots before Winter; this will also make their Heads more regular, than if they were suffer'd to grow rude.

They may be also rais'd by planting Cuttings in May in a light Soil, keeping them shaded, and often refreshing them with Water, until they have taken Root.

The five first-mention'd Sorts are all Strangers to our Country, and are only to be found in the Gardens of the Curious : The two last Sorts grow wild in many Parts of *England*, and are by some propagated in Gardens for physical Use : These two Sorts are also rais'd from Seeds, or by parting the Roots early in the Spring, and will grow in almost any Soil or Situation. These two die down to the Ground annually, and rise again the succeeding Spring.

#### ALYSSON.

The *Characters* are ;

The *Flowers* consist of four Leaves, which are expanded in Form of a Cross : The *Fruit* is short and smooth, in which are contain'd many roundish Seeds.

There are two or three *Species* of this Plant, which for their Beauty deserve a Place in the most curious Gardens ; viz.

1. ALYSSON ; *Creticum, saxatile, foliis undulatis incanis*. T. Cor. The *Alysson* of *Candia*, with hoary undulated Leaves.

2. ALYSSON ; *halimi folio, semper-virens*. Tourn. The *Alysson*, with Sea Purslane Leaves.

3. ALYSSON ; *Alpinum, hirsutum, luteum*. Tourn. The Yellow Alpine *Alysson*, with hairy Leaves.

The first of these Sorts will grow to be near two Foot high, with a woody Stem, and may be form'd into a regular Head ; and being planted in the middle of Borders, in a Flower-garden, is a very great Ornament thereto : It produces large Quantities of bright yellow Flowers in the Beginning of *April*, which continue 'till some Time in *May*, (especially if the Weather proves cool) : When it is in Flower, the whole Plant appears at a little Distance to be nothing but Flowers, the Leaves and Stem being quite hid, until you come near the Plant.

This Plant is hardy ; and altho' brought from a more Southerly Climate, yet, if planted in a dry, lean, or rubbishy Soil, will endure our severest Winters abroad : It is increas'd by sowing the Seeds in *March*, in a light sandy Soil, or by planting Cuttings in *April*, or *May* ; which are very apt to take Root, if kept shaded in the Heat of the Day, and gently refresh'd with Water.

The second Sort seldom continues above two or three Years with us, and must therefore be often sown to preserve it ; or if the Seeds are suffer'd to fall, and remain upon the Ground, the Plants will rise without any Trouble : This Plant spreads itself upon the Ground, and never rises to any Height : It produces at the Extremity of its Branches very pretty Tufts of small white Flowers ; of which the Plant is seldom destitute for six or seven Months successively ; for which Reason it deserves a Place in the Gardens of the Curious : This will also grow from Cuttings, if planted and manag'd as the former.

The third Sort is a very humble Plant, rarely rising with us above two or three Inches high : It produces abundance of small yellow Flowers early in the Spring, when few other Flowers appear, for which it is valuable : It is increas'd by parting the Roots in *Autumn*, and requires a light sandy Earth, and to be expos'd only to the Morning Sun.

AMARANTOIDES ; *Globe Amaranthus*, or Ever-lasting Flower ; and by the *French* l' *Immortal*.

The *Characters* are ;

The *Flowers* are small, and cut into four Segments, which are collected into squamose Heads ; from each of these Scales is produc'd a single Flower : The *Ovary* in the Bottom of the Flower becomes a roundish crooked Seed, which



is contain'd in a thin Pellicule, or Skin.

There are at present four or five Varieties of this Plant in *England*, but there are but two of them valuable for a Garden of Pleasure; the other Sorts produce smaller Flowers, and are much later, and require a great Heat to bring them to flower tolerably with us. The two best Sorts were brought from the *East-Indies* into *Europe*; but the other Sorts we have receiv'd from *Barbados*. I shall only mention the valuable Sorts, and pass over the other, as fit only for the Curious in Botany.

1. AMARANTOIDES; *Lychnidisfolio, capitulis purpureis*. *Tourn.* The Purple Globe *Amaranthus*, or Eternal Flower.

2. AMARANTOIDES; *Lychnidisfolio, capitulis argenteis*. The white (or silver-colour'd) Globe *Amaranthus*, or Eternal Flower.

The first of these Plants is now become very common in every curious Garden near *London*, but the latter is at present a great Rarity: I receiv'd the Seeds of this Plant from *James Theobald*. Esq; with several other curious Seeds, which he procur'd from *China*; several of which succeed very well in the Physick Garden at *Chelsea*.

These Plants are some of the greatest Beauties amongst the whole annual Tribe: They must be sown very early in a good Hot-bed, and treated, as will be hereafter directed for the *Amaranths*, with this Difference only, that these must have a greater Share of Heat, and be forwarded more in the Spring.

These Flowers, if gather'd, before they decay on the Plant, and kept in a dry Place, will remain in Beauty for some Years, especially if they are not too much expos'd to the Air: They are therefore very proper

Ornaments for Ladies to wear in their Hair, and are far preferable to any artificial Flowers whatever: The Purple and White of these Flowers, together with some Varieties of the *Elichrysum's* and *Xeranthemum's*, will make a curious Variety of dry Flowers for Basons to adorn Rooms in the Winter Season, when few other Kinds are to be had.

The *Portuguese* and *Spaniards* are very fond of these Flowers, and cultivate great Quantities of them in their Gardens for adorning their Places of Worship in the Wintertime. The Seeds of this Plant being closely surrounded with a thin Skin, appear to some Persons, who are unacquainted therewith, to be only a chaffy Substance without any good Seeds; for the Seeds, which are small, and of a roundish Form, seldom quit this Covering, unless rubb'd out; but if the Seeds are sown with these Coverings over them, they will come up full as well, as if taken out.

If the *Autumn* should prove cold or wet, it will be very necessary to remove the Pots with these Plants into Shelter, otherwise they will not perfect their Seeds; especially if they were not sown very early in the Spring. If these Pots are preserv'd in a good Green-house, their Flowers will make a very pretty Variety amongst other Plants, and will continue until the middle or latter End of *November*, provided the Weather proves not too cold: But what Flowers you intend to preserve, should be gather'd soon after they arrive at their proper Bigness; for if they are suffer'd to remain very long after, the under Part of their Heads will change brown, and decay.

AMARANTHUS, or AMARANTUS.

The Characters are;

The Flowers have seemingly no Petals; the Cup of the Flower is dry and multifid; the Seeds are includ'd in membranaceous Vessels, which, when come to Maturity, burst open either transversely or horizontally, after the manner of Purslane and Pimpernel, in each of which is contained one or more roundish Seeds.

There are a vast Variety of these Plants, both in the East and West-Indies; many of which are extremely beautiful, and as much deserve our Care as any of the flowery Tribe. I shall here take Notice of the several Varieties which are cultivated in the English Gardens for their Beauty, omitting the other more common or less worthy Sorts, as more fit for a Botanical Disquisition.

1. AMARANTHUS, *maximus*. C. B. The Tree *Amaranthus*; vulgô.

2. AMARANTHUS, *maximus*, *paniculâ longâ pendulâ, semine rubello*. Raii Hist. The long pendulous *Amaranthus*, with reddish-coloured Seeds, commonly call'd, Love lies a Bleeding.

3. AMARANTHUS, *spica albescente habitiore*. Martyn. Hist. *Amaranth*, with a thick whitish Spike.

4. AMARANTHUS, *cristatus, flore rubicundissimo*. H. R. Par. Cock's-comb *Amaranth*, with red Flowers.

5. AMARANTHUS, *cristatus, colore kermesino*. Boerb. Carmine-colour'd Cock's-comb *Amaranth*.

6. AMARANTHUS, *cristatus, colore aureo*. Boerb. Gold-colour'd Cock's-comb *Amaranth*.

7. AMARANTHUS, *cristatus, colore purpureo*. Boerb. Purple Cock's-comb *Amaranth*.

8. AMARANTHUS, *cristatus, colore luteo*. Boerb. Yellow Cock's-comb *Amaranth*.

9. AMARANTHUS, *Sinensis, foliis variis, paniculâ eleganter plumosâ*. Martyn. Hist. Chinese *Amaranth*, with variegated Leaves, and a fine feather'd Panicle.

10. AMARANTHUS, *tricolor*. H. Eyst. The three-coloured *Amaranth*.

11. AMARANTHUS; *bicolor*. The two-coloured *Amaranth*.

All these Sorts of *Amaranths* must be sown on a good Hot-bed in February, or the Beginning of March at farthest; and in about a Fortnight's Time (if the Bed is in good Temper) the Plants will rise, when you must prepare another Hot-bed, covered with good rich light Earth, about four Inches thick; then raise up the young Plants with your Finger, so as not to break off the tender Roots, and prick them into your new Hot-bed about four Inches Distance, every way, giving them a gentle Watering to settle the Earth to their Roots: But in doing this, be very cautious not to bear the young Plants down to the Ground by hasty watering, which rarely rise again, or at least so as to recover their former Strength in a long Time, but very often rot in the Stems, and die quite away.

In the Heat of the Day keep them screen'd with Mats from the great Heat of the Sun, and give them Air by raising up the Glasses with a small Stone; and if the Glasses are wet, it will be proper to turn them every Day (in good Weather) that they may dry; for the Moisture, which is occasion'd by the Fermentation of the Dung, and Perspiration of the Plants, is of a noxious Quality, and very unkindly to Plants; so that if the Weather happens to prove bad, that you can't turn your Glasses, it will

will be of great Service to your Plants, to wipe off all the Moisture two or three times a Day with a Woollen Cloth, to prevent its dropping upon the Plants: When your Plants are firmly rooted, and begin to grow, you must observe to give them Air every Day (more or less, as the Weather is cold or hot) to prevent their drawing up too fast, which greatly weakens their Stems.

In about three Weeks or a Month's Time, these Plants will have grown so as to meet, and will stand in need of another Hot-bed, which should be of a moderate Temper, and covered with the same rich Earth about six Inches thick, in which they should be planted (observing to take 'em up with as much Earth about their Roots as possible) seven or eight Inches Distance every Way, giving them some Water to settle the Earth about their Roots; but be very careful not to water them heavily, so as to bear down the Plants, (as was before directed) and keep them shaded in the Heat of the Day, until they have taken fresh Roots, and be sure to refresh them often (but gently) with Water, and give them Air in Proportion to the Heat of the Weather, covering the Glasses with Mats every Night, lest the Cold chill your Beds, and stop the Growth of the Plants.

In the Beginning of *May* you must provide another Hot-bed, which should be covered with a deep Frame, that your Plants may have Room to grow: Upon this Hot-bed you may set as many three-penny Pots as can stand within the Compass of the Frame; these Pots must be filled with good rich Earth, and the Cavities

between each Pot filled up with any common Earth, to prevent the Heat of the Bed from evaporating, and filling the Frame with noxious Streams; then with a Trowel, or some such Instrument, take up your Plants (from the former Hot-bed) with as much Earth as possible to the Roots, and place each single Plant in the Middle of one of the Pots, filling the Pot up with the Earth before describ'd, and settle it close to the Root of the Plant with your Hands; water them gently, as before, and shade them in the Heat of the Day from the Violence of the Sun, by covering the Glasses with Mats; refresh them often with water, and give them a good Quantity of Air in the Day-time.

In about three Weeks more, these Plants will have grown to a considerable Size and Strength, so that you must now raise the Glasses very much in the Day-time; and when the Air is soft, and the Sun is clouded, draw off the Glasses, and expose them to the open Air, and repeat this as often as the Weather will permit, which will harden them by Degrees to be remov'd abroad into the Places where they are to remain the whole Season. But 'tis not adviseable to set these Plants out until a Week in *July*, observing to do it when the Air is perfectly soft, and, if possible, in a gentle Shower of Rain.

Let them at first be set near the Shelter of a Hedge for two or three Days, where they may be screen'd from the Violence of the Sun, and strong Winds, to which they must be inur'd by Degrees: These Plants, when grown to a good Stature, perspire very freely, and must be every Day refresh'd with

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Water, if the Weather proves hot and dry, otherwise they will stunt, and never produce their Plumes so fine as they would do if taken Care of.

This is the proper Management, in order to have fine *Amaranths*; which, if rightly follow'd, and the Kinds are good, in a favourable Season, will produce wonderful large fine Flowers, and are the greatest Ornament to a good Garden for upwards of two Months: By this Method I have had Plants five or six Foot high, with Crests near a Foot in Breadth; and I am persuaded, if the Kind is good, (and there is no Want of Dung, or Conveniencies) in a kindly Season, they will grow much larger.

In the Beginning of *September*, the *Amaranths* will have perfected their Seeds, so that you must make Choice of the largest, most beautiful, and best branching Plants of each Kind for Seed; which you should remove under Shelter, (especially if the Weather proves wet or the Nights frosty) that the Seeds may be maturely ripen'd; and, in the Choice thereof, be sure never to take any Seeds from Side-Branches, nor from the Neck of the Plume, but such only as are produced in the Middle thereof, which in many Plants, perhaps, may be but a small Quantity; but I do assure you, it is those only you can depend upon to have your Kinds good the succeeding Year,

### AMBROSIA.

The Characters are;

It hath male flosculous Flowers, which are produced on separate Parts, of the same Plant from the Fruit, and have no visible Petals: The Fruit which succeeds the female Flowers, is shaped like a

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Club, and is prickly, containing one oblong Seed in each.

The Species are;

1. AMBROSIA; *Maritima*. C. B. The Maritime or Sea *Ambrosia*.
2. AMBROSIA; *Maritima*, *Artemisia*, *foliis inodoris elatior*. H. L. Taller unfavoury Sea *Ambrosia*.
3. AMBROSIA; *Canadensis*, *altissima*, *hirsuta*, *Plataei folio*. Tourn. The tallest *Canada Ambrosia*, with rough Plane-tree Leaves.

The first of these Sorts may be sown early in the *Spring*, in a Border under a warm Wall or Pale, where it will come up very well; and when the Plants are strong enough to remove, they may be planted into the like warm Borders, where they will flower, and perfect their Seeds in *Autumn*; but if they have not a right Position, they seldom produce good Seeds in this Country.

The second and third Sorts are brought from *America*, where they are very common Weeds, but with us should be sown upon a gentle Hot-bed in the *Spring* of the Year; and when the Plants are come up, should be transplanted upon another moderate Bed, and expos'd to the open Air by Degrees: And in *May* they should be planted out into a warm Border; but, if possible, in a very poor Soil, which will check their luxuriant Growth, and cause them to flower and seed much sooner than they would do if planted in a rich Soil. These Plants have no great Beauty to recommend them, but for Variety they may be admitted into large Gardens.

### AMMI, Bishop's-weed.

The Characters are;

This is an umbelliferous Plant, with small striated Seeds: The Petals  
of

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of the Flower are unequal, and shap'd like an Heart.

The Species are ;

1. AMMI ; *majus*. C. B. The greater Bishop's-weed.

2. AMMI ; *majus, foliis plurimum incis, & nonnihil crispis*. C. B. The greater Bishop's-weed, with fine cut Leaves.

3. AMMI ; *perenne*. M. Um. Perennial Bishop's-weed.

The Seeds of the first and second Kind should be sown in an open Situation early in the Spring ; and when the Plants are young, they may be prick'd out into Beds of sandy Soil, at about six Inches Distance from each other, observing to water them, until they have taken fresh Root ; after which Time they will require no more Care, but to keep them clear from Weeds ; and if the Season proves good, they will ripen their Seeds in *Autumn*.

The Seeds of the first Sort are us'd in Medicine : The second is a Variety of the first, which is accidental from the same Seeds : The third is an abiding Plant, which multiplies very fast by its Root, which is very apt to spread far under-ground ; for which Reason it should never be planted in a good Garden. These are all Varieties fitter for a Botanick, or Physick Garden, than for Gardens of Pleasure.

AMOMUM PLINII ; *vide* Solanum.

AMORIS POMUM ; *vide* Lycopersicon.

AMPHITHEATRES ; or Temples of View erected on a double Rising, are great Ornaments to a large and noble Garden. If this Hill or rising Ground is of a semi-circular Figure, it will still be the better.

These *Amphitheatres* are form'd

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of Ever-greens, as *Hollies*, *Phillyrea's* *Laurustinus's*, *Bays*, &c. observing to plant the shortest growing Trees in the Front, and the tallest Trees behind, as *Pines*, *Firrs*, *Cedars* of *Lebanon*, &c.

AMYGDALUS ; The *Almond*-Tree.

The Characters are ;

*It hath Leaves and Flowers very like those of the Peach-Tree, but the Fruit is longer, and more compress'd ; the outer green Coat is thinner and drier when ripe, and the Shell is not so rugged.*

The following Sorts are propagated for Sale in the Gardens near *London*.

1. AMYGDALUS ; *fativa, fructu majore*. C. B. P. The common large *Almond*.

2. AMYGDALUS ; *dulcis, putamine molliori*. C. B. P. The Sweet *Almond*, with tender Shells.

3. AMYGDALUS ; *amaræ*. C. B. P. The Bitter *Almond*.

4. AMYGDALUS ; *fativa, flore albo*. The white flowering *Almond*.

There is also another Tree, which is preserv'd in some curious Gardens, that bears the Name of an *Almond* ; but I have been inform'd by Persons, who have seen the Flowers and Fruits of this Tree, that 'tis not of this Kind ; yet as it hath not receiv'd any other Title, that I know of, and as I never had an Opportunity to examine it myself, I shall mention it by its former Name, *viz.*

5. AMYGDALUS ; *Æthiopica, fructu holoferico*. *Breyer. Cent.* The *Æthiopian Almond*, with Scarlet Fruit.

The first, second, and third Sorts are chiefly cultivated in *England* for the Beauty of their Flowers, which are produc'd early in the Spring, when few other Things appear ; which

which renders them worthy of a Place in the best Gardens, where being intermix'd with other flowering Trees, either in Wilderness Quarters, or in Walks, they afford a very agreeable Prospect.

They are propagated by inoculating a Bud of these Trees into a Plumb, Almond, or Peach-stock, in the Month of *July*; (the Manner of this Operation see under the Article of *Inoculation*.) The next Spring, when the Buds shoot, you may train them up either for Standards, or suffer them to grow for half Standards (according to your own Fancy); and the second Year, after budding, they may be remov'd to the Places, where they are to remain. The best Season for transplanting these Trees (if for dry Ground) is in *October*, as soon as the Leaves begin to decay; but for a wet Soil *February* is much preferable; and observe always to bud upon Plumb-stocks for wet Ground, and Almonds or Peaches for dry.

The *Almond* with white Flowers is a greater Curiosity than either of the former; and being intermix'd with the other Sorts, and a few of the Cherry Plumb-Trees, which flower all together, add very much to the Beauty of these Plantations: This Sort, with white Flowers, is more difficult to increase than either of the former, and will not take upon a Plumb-stock, but must be either budded on a Peach or Almond.

The Sort with large Fruit produces almost every Year large Quantities with us in *England*, which if eaten before they are too dry, are little inferior to those we receive from abroad; but if kept too long, they are very apt to shrivel up, and lose their Plumpness; but in other respects are very good.

The *Æthiopian* Sort is tender, and requires a good Green-house to preserve it in Winter: It is increas'd by planting Cuttings (that are tender, with a Joint of the last Year's Wood) in any of the Summer Months, in Pots of good light Earth, plunging them into a moderate Hot-bed, and keeping them shaded in the Heat of the Day, giving them frequent Refreshings with Water: After they have taken Root, you must begin to harden them by Degrees to endure the open Air, a little before they are hous'd, which will render them fitter to endure the Winter; for if they are too much drawn in Summer, they are very often destroy'd in Winter.

These Trees may be expos'd to the open Air, with Oranges, &c. (in a well-shelter'd Place) during the Months of *June*, *July*, and *August*; but must be hous'd, before the hoary Frosts fall, which will very much prejudice them, if left abroad: They must have a very good Green-house in Winter, and gentle Waterings, as you observe the Leaves to curl: But be sure not to over-wet them in Winter; which if once done, is seldom to be got dry again 'till Spring, and will be very prejudicial to the neighbouring Plants, by the great Damp it will occasion in the House.

ANACAMPSEROS; *Telephium*, or *Rhodia Radix*; in *English*, Orpine, Live-ever, or Rose-root.

The Characters are;

*It hath a perennial Root: The Leaves, Stalks, Flowers, and Fruit, are like those of the House-leek; but the Leaves of this Plant do not grow in a circumscrib'd Order, as do those of the House-leek; but the Plant arises with a Stalk, upon which the Leaves are plac'd on every Side: The Flowers grow*

grow in Umbels upon the Tops of the Stalks.

These Plants are seldom preserv'd in Gardens of Pleasure; therefore I shall pass them over here, with only observing, that any of these Species may be cultivated by planting their Cuttings in any Part of the Summer, (except the *Rhodia Radix*, which is only propagated by parting the Roots, either in Spring, or Autumn): These all love a dry Soil, and are very hardy.

There is one Sort of this Plant, which grows wild in many Parts of *England*; which is the Sort sometimes us'd in Medicine, and which was some Years since in great Esteem to form green Chimney-pieces for the Summer Season, which some People were very dextrous in making, by framing a Parcel of Laths together of the just Dimension of the Place, where it was to stand; and then fastening this Plant to the several Parts of it, so as to cover the whole with Green; and altho' this was only perform'd with Cuttings of the Plant, yet by giving the Whole a gentle Watering once a Week, the Plant would not only live, but shoot in Length, and continue fresh for two Months, and appear very handsome.

ANANAS; The Pine-Apple.

This Fruit (which is justly esteem'd for the Richness of its Flavour, as it surpasses all the known Fruits in the World) is produc'd from an herbaceous Plant, which hath Leaves somewhat resembling those of an *Aloe*, and are for the most part saw'd on their Edges, but are much thinner, and not so juicy as the *Aloe*: The Fruit resembles the Cones of the *Pine-Tree*, from whence it is suppos'd to have its Name.

Where this Plant is a Native, I believe it is hard to determine; but it was brought from the Factories in the *East Indies*, and planted in the hottest Islands of the *West Indies*, where they are in great Plenty and extraordinary Goodness: But it hath been very lately, that it was introduc'd into the *European* Gardens, so as to produce Fruit: The first Person, who succeeded in this Affair, was Monsieur *Le Cour* of *Leyden* in *Holland*, who, after a great many Trials with little or no Success, did at length hit upon a proper Degree of Heat and Management, so as to produce Fruit equally as good (tho' not so large) as those which are produc'd in the *West Indies*, as hath been often affirm'd by Persons, who have liv'd many Years there; and 'tis to this worthy Cultivator of Gardening, who did not spare any Pains or Expence to accomplish it, that all the Lovers thereof are oblig'd for introducing this King of Fruits amongst them; and it was from him, that our Gardens in *England* were first supply'd, tho' we have since had large Quantities brought from *America*. I can't here avoid taking Notice of a common Error, which prevails amongst many People, which is, that the Plants brought from *America* are not so good as those, which came from M. *Le-Cour*; but it is a great Mistake; for were the People who sent over these Plants from *America*, careful to send the best Kinds, there would be found no Difference; for M. *Le Cour* had his from thence at first, as his Gardener assur'd me; and I have seen as good Fruit produc'd from *American* Plants, as any I have yet seen, and some much larger, than any I saw in M. *Le Cour*'s Garden.

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There are several Varieties of this Plant, but I think the Sort with deep green Leaves, and yellow Fruit ( which is what the People of the *West Indies* call the *Queen Pine* ) is what succeeds best with us ; but I observe more of what they call the *Red Pine* ( which is a Sort, that has brown Leaves, and the Fruit is of a reddish Colour, before ripe, but afterwards changes to a deep Yellow ) sent to *England*, than any other Sort, and I suppose is the most common Sort there : This sometimes produces very large Fruit, but is seldom so well tasted as the *Queen Pine*, and is very subject to produce very large Heads upon the Top of the Fruit : This Sort seems to be the hardiest of any we have in *England*, and is very apt to increase ; by which Means it is become the most common of any amongst us.

There is another Sort with very smooth Grass-green Leaves, which was rais'd from Seeds taken out of a rotten Fruit, which came from the *West Indies* to the late *Henry Heathcote*, Esq; from whom I receiv'd one Plant, which hath produc'd Fruit, and is the most valuable Kind yet known : This, I am told, is what the *Americans* call the *King Pine* : And I have lately receiv'd some young Plants, by the Name of the *Surinam-Pine*; the Fruit of which, by the Account I receiv'd of it, is quite green when ripe, and of an excellent Flavour: I also observ'd in one Garden in *Holland*, a Sort with very narrow Leaves, without any Serratures on the Edges; but what Sort of Fruit it produc'd, I could not learn.

These Plants are propagated by planting the Heads which grow upon each Fruit; or by Suckers produc'd from the old Stems, which must be planted in Pots above five

or six Inches over at top, fill'd with good fresh light Earth, mix'd with a little very rotten Dung, which must be often turn'd to blend them the better together, giving them a little Water to settle the Earth to their Roots; then plunge them into a well-temper'd Bed of Tanner's Bark. For the Manner of making these Beds, I shall refer you to the Article of *Hot-beds*.

Take care to give them frequent but gentle Refreshings with Water, and if your Bed should decline its Heat, it will be proper to add a little fresh Bark thereto, which must be mix'd with the old, and will cause it to ferment again, and increase the Heat of your Bed.

Observe also as the Nights grow cold in *August* and *September*, to increase your Covering over the Glasses, that by this means, your young Plants may be furnish'd with strong Roots before Winter: Toward the latter End of *October*, you must remove these Plants out of the Bark-bed into the Stove, (especially those Plants that are strong enough to produce Fruit the next Year, disposing them regularly on the Stands so as not to crowd each other, nor their Leaves to interfere, if you have Room enough in your Stove to prevent it.

During the Winter-Season, you must observe to keep the Stove to a good Temper of Heat, (never suffering the Spirit in the Thermometer to fall below the Degree of Heat which is assign'd them on Mr. *Fowler's* Botanical Thermometers;) nor should the Spirit be ever rais'd much above ten Degrees more, for too great a Heat would forward their Fruiting too much, and Cold would prevent it for that Season, so that the middle Degree of Heat is best: Forget not to refresh them with



with Water (which should be plac'd in the same Stove at least twenty-four Hours before used, that the Cold may be taken off) at least once a Week or oftener, according to the Temper of your Stove, or as you find the Earth in the Pots to require it.

Your Plants thus manag'd, will, by the Beginning of *February*, or soon after, shew their Bud for Fruit in the Center of the Plant, and must therefore be diligently kept forwarded by gently increasing the Heat of the Stove, and often repeating your Watering: In the middle of *February*, you must prepare your Tan for the Hot-bed, which should be made at least a Month before the Plants are set into it, that the great Heat of the Bed may be over, which would be subject to burn the extreme Parts of the Roots, and thereby give so great a Check to the Plants, as not to be recovered again in two Months: and this very often spoils the Fruit, by retarding the Growth of the Plant; so that whenever they begin to recover their Vigour, that Nourishment which should have been employ'd to increase the Bulk of the Fruit, is all spent in furnishing a large Top or Crown to a small insignificant Fruit.

Toward the middle or latter End of *March* (according as you find the Bed in Temper, or the Weather favourable) you may remove your Plants into the Bark-bed (plunging the Pots at first but half-way into the Bark) that the sudden Heat to their Roots may not be violent, but observe to keep your Glasses cover'd in bad Weather and in the Night, that you may preserve a constant warm Air in the Bed; and if it should happen to prove very hot in the Day, give

them a little Air, by raising the Glasses with a small Stone; and if the Sun should shine very hot upon the Glasses, it would be advisable to shade them in the middle of the Day, from the Violence thereof, which (especially at their first coming out of the Stove) would alter and change the Colour of the Plants, and be very prejudicial to them.

In about three Weeks, or a Month's time after your Plants were set into the Bark, you may raise them up again, and stir the Surface of the Bark with a small Dung-fork, and plunge the Pots down to their Rims therein; for by this time there will be no Danger of hurting their Roots with Heat; and observe to give them frequent Waterings, as they shall require it; and at this Time you may shift such of your Plants as do not fruit, into larger Pots (if they require it;) and if you stir up the Earth on the Surface of the Pots where there is Fruit, and take it out with your Hands, filling them up again with good fresh Earth, it will be of great Service to your Fruit; but have a Care in this Operation not to let any Earth in amongst the Leaves of the Plant, nor to disturb the Roots too much, both which will be hurtful to them.

During the Summer Season, give them frequent Waterings, and shade them from the Violence of the Sun in very hot Days, and give them Air, by raising the Glasses in Proportion to the Warmth of the Bed and Heat of the Weather; and if you find your Bed grow cold, you must stir up the Bark with a Dung-fork almost to the Bottom; loosening and breaking the Lumps; and if you add a  
little

little fresh Bark to it, it will increase the Heat, and then plunge the Pots into it again; this may be repeated two or three times in a Summer, according to the Temper of the Bed; by which means your Plants will be always kept in a growing State. These few Rules, if rightly observ'd, will, I doubt not, afford the Practitioner Success. As for the Contrivance of *Stoves*, I shall refer the Reader to the Article on that Subject, where he will be furnish'd with their several Descriptions.

The Time of this Fruit's ripening is from the Beginning of *July* till *September*; after which Time the Fruits that ripen are seldom well-tasted, the Season being so far spent, that we have not Heat enough to correct the Crudities, which are imbib'd in the long Nights from the Vapours of the Bed, and their own Perspiration in the Day-time.

The Manner of judging when they are mature, is by the strong Smell they emit, like that of ripe Fruits, and by gently pressing the Protuberances of the Fruit with your Thumb and Finger; and if they give Way, it is a certain Sign of Ripeness: Nor will this Fruit keep above three or four Days at most, if suffer'd to remain on the Plant, before its high Flavour will be lost; and if cut, it should not be kept above twenty four Hours at most, if you would eat it in Perfection; but if you would keep them back a little Time, you should do it, before they are quite ripe, or soon after they begin to change the Colour; which may be effected by allowing them a greater Share of Air in the Day-time, and by screening the Glasses with Mats in the Heat of the Day.

This Fruit should be serv'd up to Table intire, without breaking off the Crown, (as is by some practis'd)

which greatly spoils the high Flavour of the Fruit by letting out a Part of its Juice, and by opening the Fruit to imbibe the moist Particles floating in the Air of the Place, where it is kept, which greatly flattens that delicate Poignancy, which is always found in a fresh kindly Fruit of this Sort.

When the Fruit is to be eat, you may take the Stalk thereof in one Hand, and the Crown of the Fruit in the other, and by gently twisting it, they will readily part, and the Crown will come out more intire, and fit for planting, than if cut off, and the Fruit will be less injur'd: Then you may cut it into transverse Slices in Proportion to the Company, that is to eat of it, laying them singly on a Plate; the outside Coat must be par'd off, as in many other Fruits, which would be troublesome in eating; the Inside of a good Fruit will cut almost as firm as a Nectarine, and is of a most delicious Flavour, and very full of Juice, and is justly term'd the King of Fruits.

ANAPODOPHYLLON; Duck's-foot, or *Pomum Maiale*, i. e. May-apple.

The Characters are;

*The Cup of the Flower consists of one Leaf: The Flowers are hexapetalous: The Foot-stalk of the Flower comes out from the Stalk of the Leaf: The Fruit is in Shape of an Urn, in which are contain'd many roundish simbriated Seeds.*

This Plant was brought from *America*, and is by some of the Inhabitants call'd Black Snake-Root, and by others the *May Apple*; I suppose, because in that Month the Fruit of this Plant is nearly ripe, and is of an oval Shape, in some measure resembling a small Apple. We have but one Species of this Plant in *England*, that I know of, which is,

ANAPODOPHYLLON; *Canadense Morini*. Tourn. The Canada Duck's-foot of Morin.

This Plant is very hardy, enduring our sharpest Winters in the open Ground; it is increas'd by parting the Roots in *August*, after the green Leaves decay: It loves a moderate dry Soil, and for the Oddness of the Plant may merit a Place in a good Garden, although it is of no great Beauty.

#### ANATOMY; A Dissection.

Anatomy of Plants is a cutting, dividing, or separating the Parts or Members of Plants, in order to discover the Size, Form, Structure, and Uses of their several Vessels, for the better promoting their Culture.

Anatomists have observ'd a great Similitude betwixt the mechanick Frame of Plants and Animals: The Parts of Plants seeming to bear a constant Analogy to those of Animals; and the Oeconomy, both Vegetable and Animal, seem to be form'd on the same Model.

The Parts of a Plant are the *Root*, the *Wood*, the *Bark*, and the *Pith*.

1. The *Roots* of the Plants are spongy Bodies, whose Parts are dispos'd for the easy Admittance of certain humid Particles, which are prepar'd in the Ground. The Quality of the Root is found much to depend upon the Size of its Vessels and Pores.

Monsieur *Reneaume* supposes the *Root* of a Plant to do the Office of all the Parts in the *Abdomen* of Animals, which serve to Nutrition, as the Stomach, Intestines, &c.

Doctor *Boerhaave* considers the *Roots* of Plants to be compos'd of a Number of absorbent Vessels, which are analogous to the *Lacteals* in Animals.

2. The *Wood*: This is consider'd, as consisting of *capillary Tubes*, run-

ning parallel from the *Root* throughout the *Stalk*: Some call the *capillary Tubes* arterial Vessels, because the Sap rises from the *Root* thro' these. The Apertures of these Tubes are for the most part too minute to be perceiv'd by the bare Eye, unless in a Piece of Charcoal, Cane, or the like.

3. The *Bark* is the exterior Part of Trees, serving them for a Skin or Covering: It is generally of a spongy Texture, and communicates with the *Pith* by a Multiplicity of small Fibres passing thro' the *capillary Tubes*, of which the *Wood* consists; so that the *Roots* having imbib'd the proper Nutriment of the Tree, it is carry'd up by the Warmth of the Sun thro' the fine arterial Vessels of the Tree to the Top of it, and being there condens'd by the Cold, it does by its own Gravity return down by the Vessels, which lie between the *Wood* and the inner *Bark*, which do the Office of Veins; and as it passes by, leaves such Parts of its Juice, as the Texture of the *Bark* will receive, and requires for its Support.

4. The *Pith* is the inward central Part of a Tree or Plant, answering to the *Medulla* or Marrow of an Animal: As for its Substance, it consists of little transparent Globules chain'd or link'd together, somewhat like the Bubbles, that compose the Froth of Liquor.

Some suppose that the Circulation of the Sap is effected by means of the *Pith*, others by the *Bark*, and others by the *Wood*.

*Borelli*, in his Book *De motu Animalium*, supposes the tender growing Shoot to be distended like soft Wax by the Expansion of the Moisture in the spongy *Pith*, which dilating Moisture, he concludes, is hinder'd from returning back, while it expands by the Sponginess

of the *Pith* without the Help of Valves.

And the Reverend Mr. *Hales* is of Opinion indeed, that 'tis very probable, that the Particles of Water, that immediately adhere to, and are strongly imbib'd into, and attracted by every Fibre of the spongy *Pith*, will suffer some Degree of Expansion, before they can be detach'd by the Warmth of the Sun from each attracting Fibre; and consequently the Mass of spongy Fibres, of which the *Pith* consists, must therefore be extended.

The *Trunk* and *Branches* of a Tree bear a Resemblance to the exterior Members and Limbs of an Animal, which it may subsist without, tho' the Rotting and Mortification of them do oftentimes occasion a total Destruction of it. Accordingly the like Effects are found from the wounding or lopping of a Tree, as from the wounding or cutting off a Limb, as an Extravasation, Callus, or the like.

A *Leaf* is Part of a Plant extended into Length and Breadth in such a Manner, as to have one Side distinguishable from the other. The Leaves, according to *Malpighius*, consist of so many interwoven Utricles, as to be not much unlike a pulmonary Net, and serve instead of Lungs to the Plant, as the Perspiration and Respiration are chiefly perform'd thereby. In the Day-time, when the Heat hath rarefy'd the mounting Juices, so as to become specifically lighter than the Air, they flow out thro' the Pores of the Leaves, and do evaporate, which is the Occasion of the Leaves becoming so flaccid in very hot Weather; but in the Night, when by the Cold the Juices are more condens'd, then the Leaves are erected again, and do draw in a great Share of Nourishment from

the Air. These Leaves we may observe to be of different Textures on each Side, the upper Surface being for the most part smooth, the better to shoot off redundant Moisture, while the under Surface is many times of a rough and cottony Texture, by which it is capable of retaining the Moisture; for which Reason we find, if by ill Management, &c. the Shoots of Trees are so nail'd to a Wall, &c. as to turn the Surfaces of the Leaves the wrong Side upwards, the Shoot is at a Stand, until the Leaves have obtain'd their proper Disposition. These Leaves, as the learned Mr. *Hales* observes, are carefully distributed at small Distances throughout the whole Length of the Shoots, and serve as so many jointly acting Powers, plac'd at different Stations, thereby with more Ease to draw Plenty of Sap to the extending Shoot.

A *Flower* is the more tender Part of a Plant, remarkable for its Colour, or Form, or both, cohering with the Rudiment of the Fruit, and contains the Organs of Generation: Some of these Flowers contain the Male Organs, as the *Stamina* and *Apices*, which are loaded with the *Farina Fœcundans*, which, when ripe, is scatter'd into those Flowers, which are Female, and consist only of an *Ovarium*, which is surrounded with the Petals: Other Flowers there are, which have both Sexes contain'd in the same Flower; these are call'd *Hermaphrodite Flowers*.

A *Fruit* is not that Part of a Plant, which is eatable, but rather the Seeds with their Covering should be call'd the Fruit. This Covering cherishes the Seeds, until they come to Maturity and so defends them from the Injuries of the Weather, as that they are not hurt thereby, and also prepares the Juices design'd for their  
Nou-

Nourishment, that it may with Ease enter their small Bodies in a just Proportion.

ANCHUSA; Alkanet.

This is a *Species* of Buglos, that hath a red Root; it is brought over from the Southern Parts of *France*, and is us'd in Medicine; this Plant will grow in almost any Soil, ( but delights most in a sandy light Earth ) it must be sown in *March*, in the Place, where it is to remain; for it has a Tap-root, and seldom thrives well, when transplanted: These Roots with us have not that fine Colour, nor are so good for Use, as those brought from warmer Countries, where I suspect they are dy'd.

ANDROSÆMUM; Tutſan or Park-leaves.

This Plant grows wild in many Parts of *England*, and is seldom preserv'd in Gardens; it delights in shady Places, growing for the most part under Hedges or Trees.

ANEMONE; Wind-flower.

The *Characters* are.

*It hath a simple Stalk, which is surrounded by a Leaf: Upon the Top of the Stalk is produc'd one naked Flower, which consists of many Petals, ( or Flower Leaves ) with many Stamina or Threads in the Center; the Seeds are collected into an oblong Head, which are surrounded with a copious Down.*

There is a great Variety of these Flowers preserv'd in the Gardens of the curious Florists, which are commonly divided into two Classes, *viz.* the Broad and Narrow-leav'd Sorts: Under each of these Divisions there is a great Variety, which differ in the Shape, Colour, or Size of the Flower. To mention all the particular Sorts which are preserv'd in one Garden only, would be tiresome to the Reader, and of little Use: I shall therefore proceed to the Culture

of them; and first of the Soil proper to blow them to great Advantage.

Take a Quantity of fresh untry'd Earth ( from a Common, or some other Pasture-land ) that is of a light sandy Loam or hazel Mould; observing not to take it above ten Inches deep below the Surface, and if the Turf be taken with it, the better, provided it hath Time to rot, before it is us'd: Mix this with a third Part of rotten Cow-dung, and lay it in a Heap, keeping it turn'd over, at least once a Month, the better to mix it, and rot the Dung and Turf, and to let it have the Advantages of the free Air: In doing this Work, be careful to rake out all great Stones, and break the Clods, ( but I would by no means approve of sitting or screening the Earth, which I have found very hurtful to many Sorts of Roots ); for when Earth is made very fine, upon the first great Rains in Winter or Spring, the small Particles thereof join closely together, and form one solid Mass, so that the Roots often perish for Want of some small Stones to keep the Particles asunder, and make Way for the tender Fibres to draw Nourishment for the Support of the Root.

This Earth should be mix'd twelve Months, before it is us'd, if possible; but if you are constrain'd to use it sooner, you must turn it over the oftener, to mellow and break the Clods; and observe to rake out all the Parts of the Green-sward, that are not quite rotten, before you use it; which would be prejudicial to your Roots, if suffer'd to remain. The Beginning of *September* is a proper Season to prepare the Beds for Planting, ( which, if in a wet Soil, should be rais'd with this Sort of Earth six or eight Inches above the Surface of the Ground, lying at the

Bottom some of the Rakings of your Heap to drain off the Moisture ; but in a dry Soil three Inches above the Surface will be sufficient ) : This Soil should be laid at least a Foot thick, so that you must take out the former Soil of the Beds to make Room for it.

And observe, in preparing your Beds, to lay them ( if in a wet Soil ) pretty round, to shoot off the Water, but in a dry one let it be nearer to a Level : Your Earth should be laid in the Beds at least a Fortnight or three Weeks, before you plant the Roots, that it may settle ; and when you plant them, stir the upper Part of the Soil about six Inches deep with a Spade ; then rake it even and smooth, and with a Stick draw Lines each Way of your Bed at four Inches Distance, so that the Whole may be in Squares, that your Roots may be planted regularly ; then with your three Fingers make a Hole in the Center of each Square about three Inches deep, laying therein a Root with the Eye uppermost ; and when you have finish'd your Bed, with the Head of a Rake draw the Earth smooth, so as to cover the Crown of the Roots about two Inches thick.

The best Season for planting these Roots, if for forward Flowers, is about the Middle or latter End of *September* ; and for those of a middle Season any Time in *October* ; but observe to perform this Work, if possible, at or near the Time of some gentle Showers : For if you should plant them, when the Ground is perfectly dry, and there should no Rain fall for three Weeks or a Month after, the Roots will be apt to grow mouldy upon the Crown ; and if they once get this Distemper, they seldom come to good after.

You may also reserve some of your *Anemone* Roots till after *Christ-*

*mas*, before you plant them, lest by the Severity of the Winter your early planted Roots should be destroy'd, which does sometimes happen in very hard Winters, and in Places, where they are not cover'd, or taken Care of : These Roots will flower a Fortnight or three Weeks after those, which were planted in *Autumn*, and do many times blow equally as fair, especially if it prove a moist Spring, or that Care be taken to refresh them with Water.

But then the Increase of these Roots will not be near so great as those of your first planting, provided they were not hurt in Winter, and it is for this Reason all those, that make Sale of these Roots, are forward in planting ; for altho' it may happen, by sharp pinching Frosts in the Spring, that their Flowers are not so double and fair as those planted a little later, yet if they can preserve the green Leaves of the Plants from being destroy'd, the Roots will greatly increase in Bulk ; but in such Gardens, where these Flowers are preserv'd with Care, there is always Provision made to cover them from the Injuries of the Weather, by arching the Beds over with Hoops, or some such Thing, and covering them with Garden-Mats or Cloths in frosty Nights and bad Weather, especially in the Spring of the Year, when their Buds begin to appear ; for otherwise, if you plant the best, and most double Flowers, the black Frosts and cutting Winds in *March* will cause them to blow single, by destroying the Thrum, that is in the Middle of the Flower, and this many times hath occasion'd People to think they were cheated in the Purchase of their Roots, when it was wholly owing to their Neglect in covering them.

In the Beginning of *April* your first planted Roots will begin to flower, which will continue for three Weeks, or more, according to the Heat of the Weather, or Management in covering them during the Heat of the Day with Mats or Cloths; then the second planted Sorts will come in to succeed them, and these will be follow'd by those planted in the Spring, so that you may have these Beauties continu'd for near two Months together, or sometimes longer, if the Season prove favourable.

Toward the Middle or latter End of *May*, the Leaves of the first blown Roots will decay; at which Time you must take them out of the Ground, clearing them from the decay'd Stalks, and washing them, to take the Earth clean from the Roots; then spread them on a Mat, in a dry shady Place, 'till they are perfectly dry'd; when you may put them up in Bags, and hang them out of the Reach of Mice, or other Vermin, which will destroy many of the Roots, if they can come at them.

Observe also to take up the latter planted Roots, so soon as their Leaves decay; for if they are suffer'd to remain long after in the Ground, and there should fall some Showers of Rain, they would soon put forth fresh Fibres, and make new Shoots, when it would be too late to remove them: At the Time when you take up the Roots, is the proper Season for breaking or parting them, which may be done by separating those that you would chuse to make all possible Increase from, into as many Parts as you can conveniently, provided each one of them have a good Eye or Bud; but those you intend to blow strong, should by no means be parted too small, which greatly weakens their flowering.

The principal Colours in *Anemonies* are White, Red, Blue, and Purple, and these in some of them are curiously intermix'd; but the most prevailing Colours amongst our *English* rais'd *Anemonies*, are White and Red; but of late we have receiv'd from *France* great Varieties of Blues and Purples, which are exceeding fine Flowers: We should therefore observe in planting the Roots, to distribute the different Colours, so as to make an agreeable Mixture of each in every Bed, which will greatly add to their Beauty.

But since all the fine Varieties of these Flowers were first obtain'd from Seeds, no good Florist, that hath Garden-Room, should neglect to sow their Seeds; in order to which, we should provide ourselves with a Quantity of good single (or Poppy) *Anemonies*, as they are call'd, of the best Colours, and such as have strong Steins, large Flowers, and other good Properties; these should be planted early, that they may have Strength to produce good Seed, which will be ripe in three Weeks or a Month's Time, after the Flowers are past, when you must carefully gather it, otherwise it will be blown away in a short Time, it being inclos'd in a downy Substance. You must preserve this Seed 'till the Beginning of *August*, when you may either sow it in Pots, Tubs, or a well prepar'd Bed of light Earth; in the doing of it you must be careful not to let your Seeds be in Heaps, to avoid which, is a Thing little understood, and is what I have been inform'd of by Mr. *Obadiah Lowe* Gardener at *Battersea*, who hath for several Years rais'd large Quantities of these Flowers from Seeds; his Manner is thus:

After having level'd his Bed of Earth, in which he intends to sow

his Seeds, he rubs the Seeds well between his Hands with a little dry Sand, in order to make them separate the better; then he sows them as regularly as possible over the Bed; but as these Seeds will still adhere closely together, he takes a strong Hair Brush, and gently sweeps over the whole Bed, observing not to brush off the Seeds; this Brush will so separate the Seeds, if carefully manag'd, as not to leave any intire Lumps; then gently sift some light Earth, about a Quarter of an Inch thick, over the Seeds; and if it should prove hot, dry Weather, it will be adviseable to lay some Mats upon the Bed in the Heat of the Day, and now and then give it a little Water upon the Mats, which will prevent the washing of the Seeds out of the Ground; but be sure to uncover the Bed at all times, when there are gentle Showers; and as the Heat of the Weather decreases, so may you begin to uncover your Bed.

In about two Months after sowing, your Seeds will begin to appear, if the Season has prov'd favourable, or your Care in Management hath not been wanting, otherwise they many times remain a whole Year in the Ground. The first Winter after their appearing above Ground they are subject to Injuries from hard Frosts, or too much Wet, against both of which you must equally defend them; for the Frost is very apt to loosen the Earth, so that the young Plants are often turn'd out of the Ground, after which a small Frost will destroy them, and too much Wet often rots their tender Roots, so that all your former Trouble may be lost in a short Time for Want of Care in this Particular; nor do I know of any Thing more destructive to these tender Plants, than the cold black Frosts and Winds of

*February* and *March*, from which you must be careful to defend them, by placing a low Reed Fence on the *North* and *East* Sides of the Bed, which may be moveable, and only fasten'd to a few Stakes to support it for the present, and may be taken quite away, as the Season advances, or remov'd to the *South* and *West* Sides of the Bed, to screen it from the Violence of the Sun, which often impairs these tender Plants.

As the Spring advances, if the Weather should prove dry, you must gently refresh them with Water, which will greatly strengthen your Roots; and when the green Leaves are decay'd, if your Roots are not too thick to remain in the same Bed another Year, you must clear off all the Weeds and decay'd Leaves from the Bed, and sift a little more of the same prepar'd good Earth, about a Quarter of an Inch thick, over the Surface, and observe to keep them clear from Weeds during the Summer Season, and at *Michaelmas* repeat the same Earthing, and if your Roots succeed well, many of them will flower the second Year, when you may select all such as you like, by marking them with a Stick; but I would not have you destroy any of them until after the third Year, when you have seen them blow strong, at which Time you will be capable to judge of their Goodness.

But if your Roots are too thick in the Seed-bed to remain, you must, so soon as their green Leaves are decay'd, sift the Earth of your Bed thro' a very fine Sieve, in order to get out the Roots, which can be no otherways found, as being small, and so nearly the Colour of the Ground; but in doing of this, observe not to disturb the Ground too deep, so as to endanger the burying any of the Roots; for notwithstanding all your



your Care, many small Roots will be left behind: Therefore, so soon as you have sifted your whole Bed, and taken out all the Roots you can find, you must level the Earth of your Bed again, and let it remain till next Year, when you will find a plentiful Crop of Roots come up again. The young Roots, which you take up must be dry'd, as was directed for the old ones, but should be planted again three Weeks before them, that they may increase in Strength, so as to flower strongly the succeeding Year.

**ANEMONOIDES**; *Wood Anemomy*; vulgô.

The Characters are;

The Root is perennial, and for the most Part grumose and creeping; the Leaves are finely cut, three of which, for the most part, surround the Stalk; it hath a single Flower upon each Stalk, which consists of many Leaves, and are expanded in Form of an Anemone, having many Stamina or Threads in the Middle; the Seeds are collected into an Oblong Head, and are, in Shape, like those of the Ranunculus, having no Down adhering to them.

The Species are;

1. **ANEMONOIDES**; *flore albo*. Boerb. Ind. Wood Anemone with White Flowers.

2. **ANEMONOIDES**; *flore ex purpurâ rubente*. Boerb. Ind. Wood Anemone with purplish Red Flowers.

3. **ANEMONOIDES**; *flore majore, intensiore ceruleo*. Boerb. Ind. Wood Anemone with large deep Blue Flowers.

4. **ANEMONOIDES**; *flore albo pleno*. Boerb. Ind. Wood Anemone with double White Flowers.

5. **ANEMONOIDES**; *flore pleno purpureo*. Boerb. Ind. Wood Anemone with double Purple Flowers.

6. **ANEMONOIDES**; *flore pleno ceruleo majore*. Wood Anemone with large double Blue Flowers.

The first of these Plants is found wild in the Woods in most Parts

of England, the other Varieties I have gathered in great plenty, in the Wildernesses belonging to the Gardens at *Wimbleton* in *Surrey*, which were, probably, at first taken from some Woods in England; in this Place they increase so fast, that the Surface of the Ground is cover'd with them in the Spring; and what is more remarkable, that there the large blue and double Sorts are the most common: These Plants are very pretty Ornaments to Wilderness Quarters, or shady Walks in the Spring of the Year, continuing a long Time in Flower, and by their agreeable wild Appearance, have a very pleasing Effect to the Eye.

The best Season for transplanting these Flowers is in *May*, when the Leaves are decaying: for if they are suffer'd to remain until the Leaves are quite gone, it will be very difficult to find their Roots, which are nearly the Colour of the Earth: If these Roots are permitted to remain in a Garden undisturb'd, they will multiply exceedingly, and produce great Quantities of Flowers; but if they are often remov'd, it will destroy 'em; therefore they should be planted in such shady Parts of Wildernesses as are seldom digged,

**ANEMONOSPERMOS**.

The Characters are;

It hath a hemispherical scaly Cup; The Flower is radiated like the Ragwort; but the Seeds are copiously surrounded with a pappous Down, as are those of the Anemone.

The Species are;

1. **ANEMONOSPERMOS**; *Africana folio Jacobeæ, flore luteo, extus Puniceo*. Boerb. Ind. The African Anemonospermus, with Leaves like Ragwort, and Flowers which are yellow within, and red on the Outides.

2. ANEMONOSPERMOS; *Africana folio, Cardui Benedicti, florum radiis intus Allicantious. H. A.* The *African Anemonospermus*, with Leaves like the *Blessed Thistle*, and the Rays of the Flower are white on the Inside.

3. ANEMONOSPERMOS; *Africana, folio Jacobæ tenuiter laciniato, flore aurantio pulcherrimo. Boerb. Ind.* The *African Anemonospermus*, with slender divided *Ragwort*-leaves and fair *Orange-colour'd* Flowers.

4. ANEMONOSPERMOS; *Africana, folio & facie Taraxaci incanis. Par. Bat.* The *African Anemonospermus* with Leaves like *Dandelion*, but are hoary.

These Plants were originally brought from about the *Cape of Good Hope* into the curious Gardens in *Holland*, where they have been propagated, and from whence they have been distributed into the several Parts of *Europe*, where they are now growing.

They are propagated by planting Cuttings of them in a Bed of light fresh Earth in any of the Summer Months, observing to shade them from the Heat of the Sun until they have taken Root, as also to refresh them often with Water, and in six Weeks or two Months after planting, they will be rooted sufficiently; at which Time you should transplant them into Pots fill'd with the like fresh Earth, setting the Pots in a shady Place until the Plants are settled in their new Earth: After which Time you should expose them to the open Air until the latter End of *October*, or later, according as you find the Weather is favourable, when you must remove the Pots into the *Green-houſe*, where they should be plac'd as near the Window as possible, that they may have a good Quantity of free Air at all times, when the Weather is mild; nor should they be over-

hung by other Plants, which would occasion them to take a Mouldiness, and rot; you must also frequently refresh them with Water, but give them but a little at each Time during the Winter-Season; but in Summer they will require a greater Plenty, as also to be often repeated.

These Plants being pretty hardy, are only hurt by great Frosts; they may therefore be kept in the same House with *Myrtles*, and also expos'd in the Summer with them; they will require to be shifted out of their Pots twice every Year, viz. in the Beginning of *June*, and again in *August*; at which Times you should cut off a good Quantity of the Roots round the Outside of their Balls (but be very careful not to shake the Earth intirely from the Roots); and at these Times you should prune off the straggling Branches, the better to form their Heads into a regular Figure; but do not shorten their Branches, for that would cut off their Flower-Buds.

The fourth Sort is annual, and therefore only to be propagated by Seeds (which Way also the other Sorts may be increas'd, if we have good Seeds, which are but rarely obtain'd in *England*); the Seeds should be sown on a moderate Hot-bed in the Spring; and when the Plants are come up, they should be transplanted into Pots of fresh Earth, and plung'd into another very moderate Hot-bed to bring them forward, and afterwards expos'd to the open Air by Degrees; but the fourth Sort is very subject to be destroy'd by small Insects, which prey upon the Plants; you should therefore carefully wash them off, whenever they appear thereon.

The three first Sorts should be frequently renew'd from Cuttings; for when they grow old, they are very subject

subject to decay in Winter, by which the Species are sometimes lost, where it hath been neglected to raise young Plants.

They are all very pretty Ornaments to a Green-house; for their Flowers are produc'd in almost every Month of the Year, which, together with the Diversity of their Leaves, greatly adds to the Variety, when intermix'd with other Plants.

ANETHUM; Dill.

The Characters are;

It hath a slender fibrous annual Root; the Leaves are like those of Fennel; the Seeds are oval, plain, streak'd, and border'd.

The Species are;

1. ANETHUM; *hortense*. C. B. Common or Garden Dill.

2. ANETHUM; *verum*, *Pernambucense*. Zan. The true Dill of Pernambucoq.

3. ANETHUM; *segerum*, *semine minori*. Virid. Lujur. Corn Dill, with lesser Seeds.

The first of these Sorts is that, which is cultivated for Use; the other two are Varieties, which are preserv'd as Curiosities in Botanick Gardens.

These Plants are propagated by sowing their Seeds early in the Spring in light rich Earth, where they will come up, and grow very strong in a short Time, provided they have Room; therefore the better Way is, when the Plants are come up, to hoe them out, as is practis'd for Onions, Carrots, &c. leaving the Plants about eight or ten Inches asunder every Way, observing to keep them clear from Weeds; and when the Seeds begin to be form'd, you should cut up those that are intended to be put into the Pickle for Cucumbers, leaving those that are intended for the Use of the Seeds, until they are ripe; at which Time it should be cut, and spread up-

on a Cloth to dry, and then beat out for Use; and if you let the Seeds fall upon the Ground, they will arise the next Spring without any Care, so that the Trouble of sowing their Seeds may be spar'd.

ANGELICA.

The Characters are;

It hath wing'd Leaves, which are divided into large Segments; the Stalks are hollow and jointed; the Flowers (which grow in an Umbel upon the Tops of the Stalks) consist of five Leaves, and are succeeded by two large channel'd Seeds.

The Species are;

1. ANGELICA; *sativa*. C. B. Common or Manur'd Angelica.

2. ANGELICA; *hylvestris*, *major*. C. B. Greater wild Angelica.

3. ANGELICA; *lucida*, *Canadensis*. Corn, Shining Canada Angelica.

4. ANGELICA; *montana*, *perennis*, *Aquilegia folio*. Tourn. Mountain Perennial Angelica, with Columbine Leaves.

There are several other Species of this Plant, which are preserv'd in the curious Botanick Gardens; but as there are at present no particular Uses, which these are apply'd to, so it would be needless to enumerate them here.

The Common Angelica delights to grow in a very moist Soil. The Seeds of this Plant should be sown soon after it is ripe; for if it is kept until the Spring, seldom one Seed in forty of it will grow. When the Plants are come about six Inches high, they should be transplant'd at a large Distance; for their Leaves extend very wide. The best Place for this Plant is upon the Sides of Ditches, or Pools of Water, where being planted about two Feet asunder, they will thrive exceedingly: The second Year after sowing they will shoot up to flower; therefore, if you have a

mind to continue their Roots, you should cut down these Stems in *May*, which will occasion their putting out Heads from the Sides of the Roots, whereby they may be continu'd for many Years; whereas, if they had been permitted to feed, their Roots would perish soon after.

The Gardeners near *London* propagate great Quantities of this Plant, for which they have a great Demand from the Confectioners, who make a Sweetmeat with the tender Stalks of it, cut in *May*.

This Plant is also us'd in Medicine, as are also the Seeds; therefore, where it is cultivated for the Seeds, there should be new Plantations annually made to supply the Places of those which die.

The second Sort grows wild by the Ditches Sides in many Parts of *England*, and is rarely propagated in a Garden.

The other two Sorts may be propagated by sowing their Seeds in the Manner, as was directed for the common Sort; but should be planted in a drier Soil.

ANIL; The Indigo Plant.

The Characters are;

*It hath pennated (or wing'd) Leaves, which are terminated by a single Lobe at the Extremity; the Flowers (which are for the most part dispos'd in a Spike) consist of five Leaves, and are of the Papilionaceous Kind, the uppermost Petal (or Standard) being larger than the others, and is rounder, and lightly furrow'd on the Side; the lower Leaves (or Petals) are short, and terminate in a Point: In the Middle of the Flower is situated the Style, which afterwards becomes a jointed Pod, containing one Cylindrical Seed in each Partition.*

The Species are;

1. ANIL; *sive Indigo Americana, siliquis in fascicula medium contortis. L.*

*Merchand. Mem. Ac. Reg. Scien. Anno 1718.* The true Indigo, with Pods shap'd like a Sickle.

2. ANIL; *sive Indigo Americana, fruticosa, argentea, floribus è viridi purpureis. siliquis falcatis. Coluteæ affinis fruticosa, argentea, floribus spicatis è viridi purpureis, siliquis falcatis. Sloan. Cat. Jam.* The wild Indigo; *vulgò.*

3. ANIL; *sive Indigo, siliquis latis aliquantulum incurvis. Emerus, Indicus, siliquâ aliquantulum incurvâ; ex quo Indigo. Breyn.* Indigo with broad Pods a little crooked.

The first and third of these Species are Annuals with us; the Seeds of these must be sown on a Hot-bed in the Spring of the Year; and when the Plants are come up two Inches high, they should be transplanted into small Pots fill'd with good fresh Earth, and the Pots plung'd into a Hot-bed of Tanners Bark; and when the Plants have obtain'd some Strength, they must have a great Share of free Air, by raising the Glasses in the Day-time; and in *June* they may be expos'd to the open Air, by which time they will produce their Flowers, which will be succeeded by Pods in a very short time after, and in *August* their Seeds will be perfected.

The second Sort grows to the Height of five or six Feet, and will abide two or three Years (if it is preserv'd in a very warm Stove in Winter): This produces Spikes of Flowers from the Wings of the Leaves on the Sides of the Stems of the Plant, and doth sometimes perfect its Seeds in *England*. This must be rais'd in a Hot-bed, as was directed for the two former; but must not be expos'd to the open Air even in the hottest Weather.

The first and third Sorts are suppos'd to be promiscuously us'd to make the Indigo; but the first is the  
**common**

common Sort, which is cultivated in the *English* Plantations in *America*: But I have been assur'd by a Person of great Credit, that he has made as good Indigo from the second Sort, as any that was produc'd in our Plantations; and this being a much larger Plant will afford a greater Quantity from the same Compass of Ground, than any of the other two Species; and this Sort is also much hardier, and may be cultivated in such Places, where the first Sort will not grow; by which means great Improvements may be made with this Plant in our *American* Plantations.

ANISUM or ANISE. *Vide* Apium.

ANONA.

The Characters are;

It is a Tree growing to the Height of an Apple-tree; the Leaves are for the most part single and oblong; the Flowers do for the most part consist of three thick, narrow Petals, or Flower-leaves, and are produc'd single upon their Foot-stalks; these Flowers are succeeded by conical, squamous, or netted Fruit, which have a pulpy Substance surrounding the Cells, in which are contain'd oblong hard Seeds.

The Species are;

1. ANONA; *maxima, foliis latis splendidibus, fructu maximo, viridi, conoide, tuberculis seu spinulis innocentibus aspero.* Sloan. *Cat. Pl. Fam.* The Sour-Sop; *vulgô.*

2. ANONA; *maxima, foliis oblongis angustis, fructu maximo luteo, conoide, cortice glabro, in areolas distincto.* Sloan. *Cat. Pl. Fam.* The Custard-Apple; *vulgô.*

3. ANONA; *foliis odoratis minoribus, fructu conoide, squamoso, parvo, dulci.* Sloan. *Cat. Pl. Fam.* The Sweet-Sop; *vulgô.*

4. ANONA; *aquatica, foliis laurinis, atrovirentibus, fructu minore, conoide, luteo, cortice glabro, in areo-*

*las distincto.* Sloan. *Cat. Pl. Fam.* The Water or Sweet-Apple; *vulgô.*

5. ANONA; *foliis subtrus ferrugineis, fructu rotundo majore, laevi, purpureo, semine nigro, partim rugoso, partim glabro.* Sloan. *Cat. Pl. Fam.* The Star-Apple; *vulgô.*

6. ANONA; *foliis laurinis, glabris, viridi-fuscis, fructu minore, rotundo, viridi-flavo, scabro, seminibus fuscis, splendentibus, fissurâ albâ notatis.* Sloan. *Cat. Pl. Fam.* The Sappadilla or Naseberry-tree; *vulgô.*

7. ANONA; *maxima, foliis laurinis, glabris, viridi-fuscis, fructu minimo, rotundo, viridi-flavo, seminibus fuscis, splendentibus, fissurâ albâ notatis.* Sloan. *Cat. Pl. Fam.* The Bully-tree; *vulgô.*

These Trees are the Produce of the warmest Parts of the *West-Indies*, as in *Jamaica*, *Barbados*, &c. where they are cultivated for their Fruits, which are in those Countries in very great Esteem, especially the *Sappadilla*, which they value more than any of the other Sorts, and hath been but lately introduc'd into some of those Islands. It is very probable that none of these Trees were originally Natives of these Countries, but have been transplanted from some other Parts of the World; but being there planted, they thrive equally as well, as if it were their native Soil; the *Sappadilla* only excepted, which is of a tenderer Nature than the others.

The Seeds of these Trees are frequently brought over from the *West-Indies* to *England*; but there are at present but few of the Plants in Being amongst us, they being of so nice a Nature, as not to endure our open Air in Summer; nor will they live thro' the Winter, unless preserv'd in the warmest Stoves.

These Seeds should be sown in small Pots fill'd with rich light Earth  
early

early in the Spring ; and the Pots must be plung'd into a warm Bed of Tanners Bark, observing frequently to refresh the Earth in the Pots with Water ; but give them little each Time, lest by too much Moisture the Earth should be chill'd, and the Seeds be thereby starv'd. If the Seeds were fresh, and the Bed in a kindly Temper for Heat, the Plants will come up in about three Weeks or a Month's Time, and will make a considerable Progress in a short Time after ; therefore they should be transplanted, each Plant into a single Pot, being careful in doing it not to shake the Earth clean from the Roots ; then plunge the Pots into the same Hot-bed ( provided the Bark hath not lost its Heat, which if it has, it should be stirr'd up with a Dung-fork, mixing therewith some fresh Tan ) ; and give the Plants a little Water to settle the Earth to their Roots, observing to shade them from the Sun during the Heat of the Day, until they have taken fresh Root ; after which you must constantly refresh them with Water, as you will see Occasion, and give them Air, by tilting up the Glasses in Proportion to the Heat of the Weather, and the Bed, in which they are plung'd.

In about two Months after this, the Plants will have made a considerable Advance, and the Pots will be fill'd with their Roots ; you must therefore remove them into Pots of a little larger Size ; in doing of which you should take the Plant out of the small Pot with all the Earth about its Root ; then with a Knife gently trim off all the Roots, which are on the Outside of the Ball of Earth. and after having put some fresh Earth into the Bottom of the new Pot, place the Plant exactly in the Middle, filling the Vacancies round the Root, with the same fresh Earth ; then

plunge these Pots again into the Hot-bed, giving them Water and Air, as you shall judge necessary ; but observe in *August* to give them a great deal of fresh Air, whenever the Weather will permit, that they may be harden'd to go thro' the approaching Winter.

Towards the latter End of *September* you should be provided with a fresh Bark-bed in a Stove ( erected on Purpose for these, and other the like tender Plants ), into which you must remove the Pots, when the Bark has lain about ten Days to settle and heat ; but if upon opening the Bark, to plunge in the Pots, you find the Heat very great, you should set the Pots but half-way into the Bark at first, until the Heat is a little more abated, when you may sink them down to the Rims : During the Winter Season, you must be very moderate in watering them ; and also observe to keep the Stove in a due Temper of Heat ; the Warmth, in which they have best succeeded in Winter, is about ten Degrees above the temperate Point, as mark'd on Mr. *Fowler's* Thermometers.

In the Spring, *viz.* about the Middle of *March*, you should be provided with a fresh Parcel of Tan, which should be laid up in a Heap in some dry Place, about ten Days before it is us'd ; this Tan should be mix'd with the old Tan, already in the Stove, which should be stirr'd up, and well mix'd with the new ; this will add a fresh Heat to the Bed, whereby the Plants will be put into Motion, and begin to grow, which must be shifted into bigger Pots, as they advance, and in the Summer should have a good Quantity of Air, when the Weather is warm. With this Management I have several of these Plants in good Health, which are seven or eight Feet high ; some

of which have produc'd Flowers with me, but I have not had any Fruit form'd as yet.

ANONIS; Cammock, Petty Whin, or Rest-Harrow.

The Characters are;

*It hath a papilionaceous Flower, which is succeeded by a swelling Pod, which is sometimes long, and at other times short, is bivalve, and fill'd with Kidney-shap'd Seeds.*

The Species are;

1. ANONIS; *spinosa, flore purpureo*. C. B. Anonis or prickly Rest-Harrow, with purple Flowers.

2. ANONIS; *spinosa, flore albo*. C. B. Prickly Rest-Harrow, with white Flowers.

3. ANONIS; *spinis carens, purpurea*. C. B. Purple Rest-Harrow, without Prickles.

4. ANONIS; *spinis carens, candidis floribus*. C. B. Rest-Harrow, without Prickles and white Flowers.

5. ANONIS; *spicata, sive Alopecuroides, Lusitanica*. Hofm. Cat. Portugal Rest-Harrow, with Spikes of Purple Flowers.

6. ANONIS; *purpurea, verna, seu praeox, perennis, frutescens flore rubro amplo*. Mor. Hist. Early shrubby Purple Rest-Harrow, with ample Red Flowers.

7. ANONIS; *lutea, angustifolia, perennis*. Boerb. Ind. Yellow Narrow-leaf'd perennial Rest-Harrow.

8. ANONIS; *siliquis ornithopodii*. Boerb. Ind. Rest-Harrow, with Pods like the Bird's-Foot.

9. ANONIS; *Americana, folio latiori, subrotundo*. Tourn. American Anonis, with broad roundish Leaves.

The four first Sorts grow wild in divers Parts of England, and are seldom propagated in Gardens; the first Sort is us'd in Medicine; the Roots of this Plant spread very far under the Surface of the Ground, and are so tough, that in ploughing

the Land it often stops the Oxen; from whence it had its Name, *viz. Restia Bovis*; the second Sort is but a Variety of the first, differing only in the Colour of the Flower; the two others without Spines are often met with near the first.

The fifth, sixth, and seventh Sorts are beautiful Garden Plants; these are propagated by sowing their Seeds in the Spring of the Year in an open situated Bed of light Earth; and when the Plants are come up, they should be transplanted carefully either into Pots (fill'd with good fresh Earth) or into warm situated Borders; for they are subject to be destroy'd by hard Frosts: Therefore it is, that I would advise the preserving some Plants of each Kind in Pots, which may be shelter'd in the Winter under a common Hot-bed Frame, and the Spring following may be turn'd out of the Pots (preserving all the Earth to their Roots) and planted in a warm Border, where they may remain to flower; and if the Season is good, they will perfect their Seeds in August, or sooner.

The eighth and ninth Sorts are Annuals, and must therefore be sown every Spring; the eighth will do very well, if sown on a Bed of fresh Earth in the open Air, where it may remain to flower and seed; but the ninth should be sown on a moderate Hot-bed, and manag'd as is directed for the *Balsamina*; this will produce its Flowers in July, and the Seeds will ripen in September.

ANTIRRHINUM; Snap-dragon or Calves-snout.

The Characters are;

*It is a Plant with an anomalous Flower, consisting of one Leaf, which is divided, as it were, into two Lips; the upper of which is cut into two Parts, and the under into three Parts: Out of the*

*the Flower-cup arises the Pointal, fasten'd like a Nail in the hinder Part of the Flower, which afterwards turns to a Fruit resembling a Calf's Head, which is divided in the Middle by a Partition into two Cells, in which are contain'd many small Seeds.*

There are several Varieties of this Plant, which are worthy of a Place in large Gardens, for the Oddness of their Flowers, which continue blowing most Part of the Summer, and are very useful to compose Flower-pots to adorn Chimnies or Halls. The chief Sorts are,

1. ANTIRRHINUM; *latifolium, flore rubro, rictu luteo.* Boerb. The Broad-leav'd Snap-dragon, with red Flowers.

2. ANTIRRHINUM; *latifolium, flore albo, rictu luteo.* Boerb. The Broad-leav'd Snap-dragon, with white Flowers.

3. ANTIRRHINUM; *angustifolium, majus, peregrinum, flore ruberrimo.* H. R. Par. The large Narrow-leav'd Snap-dragon, with deep red Flowers.

4. ANTIRRHINUM; *angusto folio linearia, eleganter variegato, flore rubro, rictu luteo.* Boerb. The strip'd Snap-dragon.

All these Sorts are rais'd from Seeds, which should be sown in a dry Soil, and not too rich, in *April* or *May*; and in *July* may be planted out into large Borders, where they will flower the Spring following; or they may be sown early in the Spring, for flowering the same Autumn; but then they are not so likely to endure the Winter; and if the Autumn prove bad, they will not perfect their Seeds.

These Plants grow extremely well upon old Walls or Buildings, in which Places they will endure for several Years; whereas those planted in Gardens seldom last longer than

two Years, unless they are planted in a very poor Soil, and the Flowers often cropp'd, and not suffer'd to seed: But any of these Sorts may be continu'd by planting Cuttings in any of the Summer Months, which will easily take Root. The fourth Sort is tenderer than any of the former, and should therefore be planted in Pots fill'd with rubbishing dry sandy Soil, and shelter'd in Winter under a common Hot-bed Frame, observing to give them free open Air, by taking off the Glasses in mild Weather, and only covering them in very wet, or frosty Weather.

APARINE; Goose-grafs or Clivers.

This Plant grows wild almost every where, the Seeds sticking to the Cloaths of People, that pass by where they grow: It is sometimes us'd in Medicine; but is too common a Weed to be admitted into a Garden.

APIOS; The knobbed rooted Virginian Liquorice Vetch.

The Characters are;

*It has a climbing Stalk; the Leaves grow almost opposite, and fasten'd, as it were, to the Mid-rib; the Root is tuberous.*

There is at present but one Species of this Plant known to us; which is,

APIOS; *Americana Cornuti.* The American Apios of Cornutus.

This Plant hath large knob'd Roots, which part as they grow old; by which means the Plant is increas'd; for it rarely produces ripe Seeds with us: It is hardy, and will endure the Cold in the open Ground, if planted in a dry Soil; but is subject to rot with too much Wet in Winter: It dies to the Root every Autumn, and rises again the succeeding Spring, and will twist itself round a Pole, and grow to the Height of eight or ten Feet, and produce in *July* fine Spikes of Flowers: It hath also



also been planted near Arbours, where it hath cover'd them very well toward the latter End of Summer; but is cut down with the first Cold of Autumn.

APIUM; Parsley.

The Characters are;

The Leaves are divided into Wings, or grow upon a branch'd Rib, and are for the most part cut into small Segments: The Petals of the Flowers are whole, and equal; each Flower being succeeded by two gibbous channel'd Seeds.

1. APIUM; *bortense*, seu *petroselinum vulgo*. C. B. P. Common Garden Parsley.

2. APIUM; *vel petroselinum, crispum*. C. B. P. The Curl'd Parsley.

3. APIUM; *bortense, latifolium, maximâ, odoratissimâ, suavi, & eduli radice*. Boerb. The large Garden Parsley, with thick sweet eatable Roots.

4. APIUM; *Macedonicum*. C. B. Macedonian Parsley.

5. APIUM; *Anisum dictum, semine suaveolenti, majore*. Tourn. Parsley, with large sweet-scented Seeds, commonly call'd Anise.

6. APIUM; *palustre, & Apium officinarum*. C. B. P. Common Smallage.

7. APIUM; *dulce, Celeri Italarum*. H. R. Par. Vide *Celeri*.

The first Sort is an Herb so well known, that it is needless to say much concerning it. The best Season for sowing of it is the Beginning of February; for the Seeds remain a long Time in the Ground. It should have a moist light Soil, and should not be sown too thick; for when the Plants are very close to each other, neither the Leaves or Roots ever grow so large, as when they are allow'd a proper Space. I have frequently observ'd, where Parsley Seeds have been intermix'd with

Onion Seeds, and sown together, and the Plants hough'd out to a reasonable Distance, that they have grown to a large Size, and one Root has produc'd more Leaves than fifty, when sown in the ordinary Way.

This Plant is us'd in Medicine under the Name of *Petroselinum*.

The Curl'd Parsley is sown in some curious Gardens for garnishing Dishes; the Leaves, being curiously furbelow'd, answer this Purpose very well, and the Herb is equally as good for Use as the Common, it being only a Variety thereof. In order to have this large and fine, it should be sown very thin; or when it first comes up, transplant it out at the Distance of four Inches square; by which Management your Leaves will be extremely large and fair; and if you do not suffer it to seed, will endure three Years very well; but if it seeds, it will seldom continue good after.

The great Garden Parsley is at present little known to us in England; but in Holland it is very common in all their Markets; they bring these Roots in Bunches, as we do young Carrots, to Market in Summer; and the Roots are much of the same Size; it is call'd *Petroseline Wörtle* by the Dutch, who are very fond of it.

It may be cultivated by sowing the Seeds in good Ground early in the Spring; and in April, when the Plants are up, cut them out with a Hoe (as is practis'd for young Carrots) to about four or five Inches square, and keep them constantly clean from Weeds, and in July the Roots will be fit to draw for Use, and may be boil'd and eaten as young Carrots, and are very palatable and wholesome, especially for those, who are troubled with the Gravel.

The Macedonian Parsley is a Stranger in our Country, and not to be found,

found, except in curious Botanick Gardens: This Plant is propagated by sowing the Seed in the Spring of the Year, in an open well-expos'd Bed of fresh Earth; and in the Summer, when the Plants come up, they should be transplanted, some of them into Pots fill'd with fresh light Earth; and others into a well-shelter'd dry Border, where they may remain, until they flower, which is not before the second, and sometimes the third Year; but those, that were planted in Pots, should be shelter'd, during the Winter Season, under a Hot-bed Frame, giving them free open Air, whenever the Weather is mild. These Plants in the Spring following may be turn'd out of the Pots into the full Ground, that their Seeds may be the better maturated.

The *Anise* is a very difficult Plant to make grow with us; for altho' we have fresh Seeds from abroad, which will often come up very well, yet if there happens but a little wet or cold Weather in the Summer-time, the Plants will rot off, and die away. The best Method, I believe, is to raise the Plants upon a moderate Hot-bed early in the Spring; and when they are come up, prick them out again upon another Bed, that hath a little Warmth, observing to expose them to the open Air by Degrees, by which means they will have more Strength, and consequently be in less Danger of being hurt by bad Weather: But this Plant is not worth propagating for Use in *England*, since we can have the Seeds much better, and at a cheaper Rate, from *Italy*, than they can be produc'd here.

The sixth Sort is rarely cultivated in Gardens, but is gather'd by the Herb-Women, who supply the Markets with it on the Sides of Ditches, and in other watery Places, where

it grows wild in great Plenty. This is the *Apium* of the Shops, the Seeds of which are rang'd as one of the lesser warm Seeds, and the Root is one of the opening Roots.

APOCYNUM; Dogs-bane.

The Characters are;

The Leaves are produc'd opposite by Pairs upon the Branches; the Flower consists of one Leaf, which is cut into several Segments; from its Flower Cup arises the Pointal, which is fix'd like a Nail in the back Part of the Flower, and is afterwards chang'd into a Fruit, which is for the most part compos'd of two Capsules, or Pods, which open from the Base to the Top, inclosing many Seeds, which have a long pappous Down adhering to them: To this may be added, that the whole Plant abounds with a milky Juice.

There are several Sorts of this Plant cultivated in the curious Gardens of Plants, some of which are very beautiful, and deserve a Place in every good Garden: I shall mention the different Species of this Plant, which are cultivated in the *English* Gardens, and shall leave the Reader to select such of them, as he shall fancy to cultivate.

1. APOCYNUM; *erectum, latifolium, incanum, Syriacum, floribus parvis, obsolete purpurascensibus.* Par. Bat. The upright broad-leav'd hoary *Syrian* Dogs-bane, with purplish colour'd Flowers.

2. APOCYNUM; *erectum, Canadense, angustifolium.* Par. Bat. The upright narrow-leav'd *Canada* Dogs-bane.

3. APOCYNUM; *erectum, Canadense, latifolium.* Par. Bat. The broad-leav'd upright *Canada* Dogs-bane.

4. APOCYNUM; *Americanum, foliis Androsami majoris, flore Lillii Convallium suave-rubentis.* H. R. P. The *American* Dogs-bane, with Tut-

fan Leaves, and red Flowers, like the Lily of the Valley.

5. APOCYNUM; *erectum, fruticosum, folio subrotundo, viridante. Par. Bat.* The shrubby upright Dogsbane, with roundish green Leaves.

6. APOCYNUM; *erectum, Africanum, folio salicis angusto, glabro, fructu villoso. Par. Bat.* The upright willow-leav'd African Dogsbane, with hairy Fruit.

7. APOCYNUM; *Afrum, scandens, folio rotundo, subincano, nummularis. Boerb.* The African creeping Dogsbane, with Leaves like *Monywort*.

8. APOCYNUM; *erectum, folio oblongo, flore umbellato, petalis coccineis reflexis. Sloan. Cat.* The upright Dogsbane, with oblong Leaves, and scarlet Flowers, call'd by some *Bastard Ipecacuana*.

9. APOCYNUM; *Canadense, angustifolium, flore Aurantii. Mor. Pral.* The narrow-leav'd *Canada Apocynum*, with Orange-colour'd Flowers.

10. APOCYNUM; *Marylandicum, erectum, folio subrotundo, flore ruberimo.* The upright *Maryland Dogsbane*, with roundish Leaves, and deep red Flowers.

The first of these Dogsbanes is a prodigious Creeper at the Root, and will in a short Time overspread a large Compass of Ground; and must never be planted too near other Plants or Flowers, which would be overrun by this Plant, and destroy'd; but it may have a Place in some obscure Part of the Garden; for it is extremely hardy, and will thrive in almost any Soil or Situation: It grows to be six or seven Feet high, and produces large Umbels of Flowers, which have a strong sweet Smell, but are of a poisonous Nature, as are all the true *Apocynums*; and therefore should not be planted in the Way of Children, who may receive Damage by break-

ing any Part of the Plant, and letting the milky Juice, with which they abound, run upon the tender Part of their Flesh, which will be apt to blister it; these Flowers are sometimes succeeded by large oblong Pods, which contain a great Quantity of a soft cottony Substance, that adheres to the Seeds, and are of Service to transport them to a Distance when ripe. This Plant dies to the Root in Winter, and rises again the succeeding Spring.

The second, third, fourth, and tenth Sorts are all of them very hardy, and may be planted in the open Ground, but must have a dry Soil; these all of them produce large fine Flowers, and are propagated by parting their Roots in *March*, after the cold Weather is past; for they seldom produce ripe Seeds with us.

The fifth, sixth, seventh, and eighth Sorts are tender, and must be preserv'd in Pots, and hous'd in Winter.

The fifth and sixth Sorts will grow very shrubby, and sometimes to the Height of eight or nine Feet, and do produce Bunches of Flowers, which in the sixth Sort are of a whitish Green, and the fifth of a worn-out purple Colour, but are of no great Beauty or Smell. These are increas'd by planting Cuttings in any of the Summer Months in Pots of light sandy Earth, plunging them into a moderate Hot-bed, and shading them from the great Heat of the Sun, giving them gentle Refreshings of Water. These must have a good Green-house in Winter, and must not have too much Water in that Season.

The seventh Sort is a climbing Plant, and will twist itself round a Stake, and grow to the Height of seven or eight Feet, and in Summer will produce from the Joints small Umbels

Umbels of worn-out purple-colour'd Flowers, which are extremely sweet: This is propagated by laying down the young Shoots, which do easily take Root, or by parting the Roots of the old Plants.

The eighth Sort is the most tender of them all, and requires a moderate Stove to preserve it in Winter; this produces extreme beautiful scarlet Flowers, which often are succeeded by ripe Seeds: This Plant may be increas'd by planting the Cuttings in *June* in a moderate Hot-bed, but must have little Water, and be secur'd from the violent Heat of the Sun, and the Cold of the Nights; but the best Way to propagate them, is by sowing the Seeds in a Hot-bed in *March*; and when the Plants are come up, prick them into small Pots, and plunge them into another Hot-bed to bring them forward; and in *June* you may begin to expose them to the open Air; at which Time they will begin to flower; but it will be advisable to preserve one or two of the strongest in the Hot-bed, in order to procure good Seeds.

The ninth Sort is tolerably hardy, and only requires to be screen'd from the extreme Cold in Winter; and, I believe, if it were planted into the full Ground under a warm Wall, it would do very well; but as I have not yet try'd it, so I cannot affirm it will do: This Plant produces beautiful Umbels of Orange-colour'd Flowers, which abide most Part of the Month of *August*, and deserve a Place in the most curious Garden. This is propagated by parting the Roots in *March*, or sowing the Seeds, which in a good Season do ripen tolerably well with us.

#### APPLE Tree.

The Characters are;

The Fruit of this Tree is for the most part hollow'd about the Foot-stalk; the

Cells, in which the Seeds are lodg'd, are separated by cartilaginous Partitions; the Juice of the Fruit is sowerish; and the Tree is large and spreading: To this may be added, the Flowers consist of five Leaves, which expand in Form of a Rose.

There is a great Variety of these Fruits propagated in *England*, either for the Kitchen, the Desert, or to make Cyder. I shall mention the most curious Sorts for each Purpose, omitting the ordinary Kinds, as not worth naming, and shall then proceed to their Culture and Management.

A List of such Apples as are proper for a Desert, plac'd according to their Times of Ripening.

*White Juniting.*

*Margaret Apple.*

*Summer Pearmain.*

*Summer Queening.*

*Embroider'd Apple.*

*Golden Reinette.*

*La Calville d'Esse blanche, or Summer white Calville.*

*La Calville d'Esse rouge, or Summer red Calville.*

*Silver Pippin.*

*Aromatic Pippin.*

*La Reinette grise.*

*La Haute-bonte.*

*Royal Russeting.*

*Wheeler's Russett.*

*Sharp's Russett.*

*Le Fonouillet, or Pome d'anis, or*

*Spice Apple.*

*Golden Pippin.*

*Nonpareil.*

*L'Api, or Pomme d'Api.*

A List of such Apples as are prefer'd for Kitchen Use, plac'd nearly according to their Times of Ripening.

*Codling.*

*Summer Marygold.*

*Summer red Pearmain.*

*Holland Pippin.*

*Kentish Pippin.*  
*Le Courpendu ou Pomme de Bardin ;*  
 or, *The Hanging Body.*  
*Loan's Pearmain.*  
*French Reinette.*  
*French Pippin.*  
*Royal Ruffett.*  
*Monstrous Reinette.*  
*Winter Pearmain.*  
*Pomme Violette.*  
*Spencer's Pippin.*  
*Stone Pippin.*  
*Oaken Pin.*

A List of such Cyder Fruits as are in most Esteem for that Purpose.

*Devonshire Royal Wilding.*  
*Red Streak'd Apple.*  
*The Whitfour.*  
*Herefordshire Underleaf.*

*John Apple, or Deux-Anne's.*

The several Sorts of Apples are planted, either as Standards, in Orchards or Gardens, or Dwarfs, or in Espaliers, and sometimes against Walls : Those that are design'd for Standards, should be grafted on Crab-stocks, which are much hardier, and of longer Duration than any other Sort of Apple ; but those that are design'd for Dwarfs or Espaliers, may be grafted either on the Paradise-stock, Codling, or any other Sort of Apple-stock, that doth not shoot too freely. The Manner of *Grafting* will be describ'd under its proper Article ; and the Manner of raising and managing the Stocks will be explain'd in the Article of *Nurseries*, to which I refer the Reader, and proceed to the Manner of planting them out for good.

If you intend to make a new Orchard, the Soil should be plough'd ; if a Green-sward, at least twice before planting, that the Earth may be mellow'd, and imbibe the nitrous Particles of the Air, and that the Turf may be well rotted, and mix'd with the Earth ; but if it hath been

plough'd Ground, one good ploughing will be sufficient.

The best Season for planting these Trees, if the Soil is dry, is in *October*, as soon as the Leaves begin to decay ; but in a wet Soil it is best to defer it 'till *February*.

The Distance these Trees ought to be planted, is at least forty Feet square, that the Sun and Air may freely pass to every Part of the Tree, to dissipate all crude and unhealthy Vapours, which are either exhal'd from the Earth, or produc'd from the Perspiration of the Trees, and are many times the Cause of Blights, or are at least absorb'd again by the Trees, when in a State of Respiration, and must occasion the Fruit to be crude and ill-tasted, which is too often attributed to the Soil, when the only Cause of it may be their being too closely planted. This Distance many People will perhaps think too much ; but I dare say, it would be still better, could they be allow'd eighty Feet Distance Row from Row, and forty Feet in the Rows ; nor would I advise the Planting of Cherries, or any other Sort of Fruit-trees between them, 'till they are arriv'd to an Age of Maturity ; but rather, that the Ground between them should be plough'd, and till'd with Corn, or any other Crop, as if it were intirely open ; and it hath been experienc'd by several People in *Herefordshire*, and other Counties in *England*, that their Crops have been exceeding good, and their Trees much improv'd by the turning of the Soil ; for Want of which Culture, together with their close standing, we find vast Numbers of Orchards, that have scarcely a healthy Tree in them, the greatest Part of them being either canker'd, or cover'd over with Moss ; and how can we suppose to eat kindly Fruit from

distemper'd Trees? We may with as much Justice affirm, that a distemper'd Woman will give healthy Milk, which I believe no one will dare to say, tho' there is equally the same Probability in both.

And since I am upon this Article of close Planting, suffer me to make a little Digression, not altogether foreign to our present Purpose; which is to take Notice of a prevailing Error, in planting of Fruit-Gardens, like Wilderness-Trees, or Flowering-Shrubs, close together, and mixing the different Sorts of Fruits in each Division, in such a Manner, that no two Trees of the same Kind shall stand near each other, supposing each Tree to draw different Particles from the Ground for their Nourishment, and suffering them to grow, as they are naturally dispos'd, without ever pruning them, hereby hoping to have great Quantities of Fruit with very little Trouble after the first Planting.

Now granting this last Supposition to be true, (tho' I am fully convinc'd of the contrary) yet how absurd is it to think, that what little Fruit may be produc'd in this Way, can be equally so good or wholesome, as those which are the Product of healthy Trees, and have the Advantages of a free Air, and the Benefit of the kindly Sun, to correct and dissipate the Crudities of the Earth round the Roots, as also those moist Vapours, which are almost continually perspiring from the Trunks, Branches, and Leaves of these Trees, which, for Want of the Air's free Admittance, are constantly overing about the Trees in these Plantations? and in cold Weather, or the Night-time, when the Trees are in a State of Respiration, these rancid Vapours are imbib'd thro' the Pores of the Leaves, and mix'd with the Juices,

and are protruded thro' the Vessels, and enter the Fruits, whereby they must be render'd ill-tasted and unwholesome.

But as this Practice was introduc'd by some Persons, who were intirely ignorant of what they undertook, and set out upon wrong Principles of Philosophy, so, I hope, the Gentlemen, to whom this Method may be propos'd, will be so kind to themselves, as to wait a little, and see the Effect of those Plantations already made, before they set on Foot so wild a Project.

Indeed I am aware how many Enemies I shall raise, by retrenching the great Demand for Fruit-trees, which must of Necessity be made in the several Nurseries in *England*, if this Practice be continu'd; but as I shall thro' the whole Book deliver my Sentiments freely on every Article here treated of, aiming at nothing more than the Information of my Readers, so I hope there will be found none of my Profession of such mercenary Tempers, as to condemn me for telling Truth, tho' it may not always exactly agree with their present Interests: But enough of this at present; let us now return to our Planting.

When the Season for Planting is come, as was before directed, we must make Choice of good thriving Trees, of about three Years grafting; but by no means chuse old Trees, as is the Practice of some, thinking thereby to save Time; whereas a young thriving Tree will in three or four Years after Planting overtake one of these old ones, and make far better Trees in a few Years, than they ever will do: Nor should you take Trees from a rich Soil, to plant into a poor one, or from a wet Soil, for a dry one; but endeavour, if possible, to have your Trees from a Soil

as near in Quality to your own as possible, or rather from one that is not quite so good as yours.

In preparing these Trees for planting, cut off all broken or bruised Roots, or such as crows and gall each other, as also all small Fibres, which rarely survive a Remove, (unless the Trees are planted immediately after taking up, before the Wind has dry'd them) and are very subject to mold and rot, and are often prejudicial to the new Roots, by obstructing their Progress, and many times destroy them, soon after they are produc'd, by the spreading of the Mouldiness, which they had taken quite round the older Roots: You must also at the same Time take off some of the most luxuriant Branches, and shorten others, so as to reduce the Head to a handsome Figure, and moderate Size; but by no means cut and lop the Head in such an unmerciful Manner as some do; for a moderate Proportion of Head is absolutely necessary to furnish Nourishment to the Roots, until new ones are produc'd to supply the Heads; and the making large Wounds at both Parts of the Tree at the same Time must be very hurtful. Your Trees being thus prepar'd, make a Hole with a Spade, where each Tree is to stand, about two Feet deep, more or less, according to the Size of their Roots, and so likewise in Width, according to the same Proportion, making it level in the Bottom, and breaking all hard Clods: then place the Tree in the Centre of the Hole, as upright as possible; and while one Person keeps the Tree in its right Position, another should with a Spade break the Earth, and lay it in between the Roots, shaking the Tree, the better to let the Earth fall between every Root, that there may be no Cavity left; then with your Feet gently

press the Earth down to fasten and settle the Tree; and if the Weather proves dry, it will not be amiss to give each Tree a good Watering, which will fix the Earth to them, and greatly forward their Production of new Roots: You should also, if the Heads of the Trees are large, fix a Stake to each Tree, to prevent their being shaken with the Winds, which would disturb, and greatly injure the new Roots: And if the Season after planting should prove very dry, you must repeat your Waterings; but do not over-water them, which is a Fault many People are guilty of; for too much Wet rots all the new Roots, which are very tender for the first and second Years, and very subject to Damages during that Time; but if you can conveniently procure a Quantity of Green-sward, par'd from a Common, &c. and lay a little of it round the Foot of each Tree, so as to cover the Surface about three Feet round the Stem, with the Grass downwards; this will preserve the Ground from drying too fast, and render one Watering of more Service, than three or four would otherwise be. The next Winter after planting, this Turf will be rotted; you should therefore, early in February, when the great Frosts are over, gently dig up the Ground about each Tree, burying this rotten Turf in the Bottom, which will keep the Ground loose, and greatly promote the Growth of the Trees. An Orchard or Garden thus planted, and manag'd, will afford the Owner no small Pleasure, by the Advance the Trees will make, and must as greatly redound to his Profit.

I shall now proceed to give Directions for planting Dwarfs, either for Standards or Espaliers; tho' I must own, Dwarf Standard-trees are what I should never advise any Person to

plant; for their Heads do in time grow so large, that there is no getting near their Stems, so that the Ground between them is wholly useless for any Purpose; nor can the Sun reach to warm the Ground, and dissipate crude Vapours, so that the Fruit can never be so well-tasted, as those produc'd from *Espaliers*, which enjoy all the Advantages of Sun and free Air; but if you are determin'd to have Dwarf-trees, you must allow them a large Distance from each other; twenty-four Feet square is the least they should be planted; and when the Trees begin to make Shoots, they must be fasten'd down to Stakes, drove into the Ground all round the Tree as horizontally as possible; for if you suffer the Branches at first to grow upright, you can never after reduce them to a proper Figure, without either quite cutting down the Branches, or plashing and mangling them so much, as often to canker and decay the Tree. In pruning these Trees, great Care should be taken to keep their middle Part as free from Wood as possible, and not suffer their Branches to cross each other: The farther Particulars I shall refer to the pruning of *Espaliers*, which will also agree for *Dwarfs*, excepting what I have already mention'd.

*Espaliers* are commonly planted to surround the Quarters of a Kitchen-Garden, in which Place they have a very good Effect, if rightly planted and manag'd, rendring it not in the least inferior to the finest *Parterre*, or most finish'd Pleasure Garden; for what can be more agreeable, than to walk between regular Hedges of Fruit-trees, which early in the Spring are cover'd with beautiful Flowers, and in Summer and Autumn are charg'd with noble Fruits of different Kinds; and the Kitchen-

Stuff in the Quarters is intirely hid from Sight, and also screen'd from the Injuries of Weather?

In the Distribution of the Quarters, I would advise that they are not too small, which renders them unfit for many Sorts of Kitchen-stuff, and also occasions your *Espaliers* to be too near each other, which should always be avoided: The Extent of these Quarters ought to be in Proportion to the Bigness of the Garden; in a large Ground they may be two hundred and fifty Feet square, or three hundred Feet long, and one hundred Feet broad, according to the Figure of the Garden; and in small Gardens one hundred Feet square is as much as can be allow'd; and the Walks between the *Espaliers* should also be in Breadth according to the same Proportion. When your Ground is prepar'd for planting, you should endeavour to make Choice of Trees, which shoot nearly alike, to plant in each *Espalier*; by which means you may the better proportion their Distances, in order to have the *Espaliers* of an equal Height, and not to intermix weak-shooting Trees amongst the most luxuriant, which would occasion a very unsightly Hedge.

The Distance these Trees should be planted, if on Crab or Free Stocks, should be for large shooting Trees, twenty Feet, and, for the weaker, sixteen; but if they are on Paradise Stocks, ten or twelve Feet will be sufficient: The Manner of preparing and planting these Trees being the same with those before-mention'd, I shall not repeat it, but refer the Reader thereto; but only shall observe here, that it will be proper to head these Trees to about four Eyes above the Graft, and never to chuse Trees more than two Years old from the Time of grafting; for older  
Trees



Trees are not so subject to break out when headed, their Bark being for the most part hard, and the Wounds given to old Trees are not so soon heal'd as in young ones.

The Summer following you must provide a Parcel of small Stakes, of about three Feet long, to drive into the Ground on each Side of your Trees; four to each Tree will be sufficient; to these Stakes you must fasten the new Shoots, as they are produc'd, as horizontally as possible, and not suffer them to grow upright, as is the too common Practice of many; for the Branches being thus train'd in Summer, will want no Force or Violence to be us'd in Winter, to bring them to their proper Places, nor will their Shoots be so gross and stubborn.

If the Trees have taken kindly, it is very probable that all the four Eyes have produc'd Shoots; if so, at *Michaelmas* (which I would fix for the Time of pruning) cut the two uppermost Shoots to four Eyes each, in order to furnish your Tree with Branches, but the two undermost may be left six or eight Joints in Length, in Proportion to their Strength; but let me lay it down for a Rule, never to shorten any Shoots in Summer, unless it be to furnish Branches to fill up a Vacancy in the Espalier; and this should never be done after *May*; for Shoots which are produc'd after *Midsummer*, are never duly ripen'd, and prepar'd; so can never be proper either for the Production of Wood or Fruit.

But if your Trees have made but three Shoots the first Summer, then at *Michaelmas* shorten the uppermost to three Eyes, leaving it upright in the Middle of the Tree, and shorten the two Side-Branches to five or six Eyes, in Proportion to their Strength, training them as horizontally as pos-

sible; and if they should have produc'd but two Shoots the first Year, then it would be advisable to shorten both of these to four Eyes each, for Reasons before given.

The second Year you must observe to train in all new Shoots horizontally, as in the first, and to displace all fore-right Shoots, which will not come handsomely into the Espalier, as fast as they are produc'd, that they may not exhaust the Nourishment of the Tree: At *Michaelmas* shorten the Shoots in the middle Parts of the Tree, or where Branches are wanted to fill up Vacancies; but for ever after be cautious of unmerciful lopping or shortning of Branches; for the more you cut, the more they shoot; and there is no Way so sure in the Management of Pears and Apples, as to leave their Branches at full Length, where the Tree is fully supply'd with Wood, training them as horizontally as may be, which will prevent their luxuriant shooting; besides, in many Sorts of Fruits, the Blossom-buds are first produc'd at the Extremity of the last Year's Shoots, so that, if they are cut off, you destroy the greatest Part of your Crop.

These few Rules, with diligent Observation, will be sufficient for the well-regulating, and managing your Espaliers, so as to reap both Profit and Pleasure.

APPLES OF LOVE; *vide* Lycopersicon & Solanum.

MAD APPLES; *v.* Melongena.

APRICOCK or ABRICOT.

We have in the *English* Gardens about eight Sorts of this Fruit cultivated; which are,

1. The *Masculine Apricock*.
2. The *Orange Apricock*.
3. The *Algier Apricock*.
4. The *Roman Apricock*.
5. The *Turkey Apricock*.
6. The *Transparent Apricock*.

7. The *Breda Apricock*.

8. The *Bruxelles Apricock*.

These Fruits are all propagated by budding them on Plumb-stocks, and will readily take upon almost any Sort of Plumb, provided the Stock be free and thriving (except the *Bruxelles* Kind, which is usually budded on a Sort of Stock commonly call'd the *St. Julian*, which better suits this Tree, as being generally planted for Standards, than any other Sort of Plumb will do): The Manner of raising the Stocks, and budding these Trees, shall be treated of under their particular Articles, to which I refer the Reader, and shall proceed to their Planting and Management.

These Trees are all (except the two last Sorts) planted against Walls, and should have an *East* or *West* Aspect; for if they are planted full *South*, the great Heat causes them to be mealy, before they are well eatable.

The Borders under these Walls should be four Feet wide at least, and if it were more, the better; but I would never advise the making of them so deep, as is the general Custom; for if the Earth be two Feet thick, it is enough.

If your Ground is a wet cold Loam or Clay, you should raise your Borders as much above the Level of the Surface, as it will admit, laying some Stones or Rubbish in the Bottom, to prevent the Roots from running downward; but if you plant upon a Chalk or Gravel, you must remove it to a considerable Width, to make Room for a good Soil to be put in; but you need not go above two Feet deep at most.

The Soil I would in general advise to be us'd for these, and all other Sorts of Fruit-trees, is fresh untry'd Earth from a Pasture-Ground, taken

about ten Inches deep, with the Turf, and laid to rot and mellow at least twelve Months, before it is us'd; and this must be kept often turn'd, to sweeten and imbibe the nitrous Particles of the Air.

Your Borders being thus prepar'd, make Choice of such Trees as are but of one Year's Growth from budding; and if your Soil is dry, or of a middling Temper, you should prefer *October* as the best Season for planting, especially having at that Time a greater Choice of Trees from the Nurseries, before they have been pick'd and drawn over by other People. The Manner of preparing these Trees for planting being the same in common with other Fruit-trees, I shall refer the Reader to the Article of *Apple Trees*, where he will find it largely treated of: But do not cut off any Part of the Head at that Time, unless there are any strong fore-right Shoots, which will not come to the Wall, and may be taken quite away.

Your Trees being thus prepar'd, you must mark out the Distances they are to stand, which in a good strong Soil, or against a low Wall, should be eighteen Feet or more; but in a moderate one, sixteen Feet is a good reasonable Distance; then make a Hole where each Tree is to stand, and place its Stem about four Inches from the Wall, inclining the Head thereto; and after having fix'd the Tree in the Ground, nail the Branches to the Wall, to prevent their shaking; and cover the Surface of the Ground round the Root with rotten Dung, to keep out the Frost; in this State let it remain 'till *February*; when, if the Weather is good, you must un-nail the Branches of your Trees, so as not to disturb their Roots; and being provided with a sharp Knife, put your Foot close

close to the Stem of the Tree; and having plac'd your Left-hand to the Bottom of the Tree, to prevent its being disturb'd, with your Right-hand cut off the Head of the Tree to about four or five Eyes above the Bud, so that the sloping Side may be toward the Wall.

In the Spring, if the Weather proves dry, you must now and then give your Trees a gentle Refreshing with Water; in the doing of which, if you observe to water them, with a Rose to the Watering Pot, all over their Heads, it will greatly help them; and also lay some Turf in the Manner directed for Apples, or some other Mulch, round the Roots, to prevent their Drying during the Summer Season: As new Branches are produc'd, observe to nail them to the Wall in an horizontal Position; and such Shoots as are produc'd fore-right, must be intirely displac'd. This must be repeated as often as is necessary to prevent their hanging from the Wall; but by no means stop any of the Shoots, which are to remain in Summer.

At *Michaelmas*, when the Trees have done growing, you must un-nail their Branches, and shorten them in Proportion to their Strength: A vigorous Branch may be left eight or nine Inches long; but a weak one should not be left above five or six. I suppose many People will wonder at this Direction, especially having allow'd such a Distance between the Trees, as believing by this Management the Wall will never be fill'd; but my Reason for it is, that I would have no Part of the Wall left unfurnish'd with bearing Wood, which must consequently be the Case, if the Branches are left to a great Length at first; for it seldom happens, that more Buds than two or three will shoot for Branches, and these are for

the most part such as are at the extreme Part of the last Year's Wood; so that all the lower Part of the Shoots become naked, nor will they ever after produce Shoots: And this is the Reason we see so many Trees, which have their bearing Wood situated only in the extreme Part of the Tree.

When you have shorten'd the Shoots, be sure to nail them as horizontally as possible; for upon this it is, that the future Good of the Tree chiefly depends.

The second Summer observe, as in the first, to displace all fore-right Shoots, as they are produc'd, nailing in the other close to the Wall horizontally, so that the Middle of the Tree may be kept open; and never shorten any of the Shoots in Summer, unless to furnish Branches to fill vacant Places on the Wall, and never do this later than *April*, for Reasons before given in the Article of *Apples*. At *Michaelmas* shorten these Shoots, as was directed for the first Year, the strong ones may be left nine or ten Inches, and the weak ones six, or seven at most.

The following Year's Management will be nearly the same with these; but only observe, that *Apricocks* produce their Blossom Buds, not only upon the last Year's Wood; but also upon Cursons or Spurs, which are produc'd from the two Year's Wood: Great Care should therefore be had in the Summer Management, not to hurt or displace these; (but do not leave any Part of the Branches for Snags or Spurs, as is by many practis'd): Observe also to shorten your Branches at the Winter Pruning, so as to furnish fresh Wood in every Part of the Tree; and be sure to cut out intirely all luxuriant Branches, or displace them as soon as they are produc'd, which would exhaust

exhaust the Nourishment from the bearing Branches, which in my Opinion cannot be too strong, provided they are kindly; for the more vigorous your Tree is, the more likely it is to resist the Injuries of the Weather: And I have often seen Trees brought to so weak a Condition, as to be able only faintly to blow their Blossoms, and then most, or all of the bearing Branches have died; which has given Occasion to the Owner to imagine it was the Effect of a Blight, when in Reality it was only for Want of right Management: And I am fully persuaded, half the Blights we hear complain'd of, proceed from nothing else but this.

These few Rules, well executed, together with a little Observation and Care, will be sufficient; and to pretend to prescribe particular Directions for all the different Accidents, or Manner of treating Fruits, would be impossible; but I believe the Reader will find what has been said, if duly attended to, will answer his Design; for, without diligent Observation, there can be no such Thing as a skilful Manager, let him have never so many or good Instructions laid down to him.

The *Bruxelles* and *Breda Apricocks*, being for the most part planted for Standards, will require very little Pruning, or Management; only observe to take out all dead Wood, or such Branches as cross each other: This must be done early in *Autumn*, or in the *Spring*, after the cold Weather is past, that the Part may not canker, where the Incision is made.

The *Bruxelles* is by far the most delicious Fruit of all the *Apricocks*, and is greatly mended by growing on a Standard: It is ripe about the Beginning of *August*, and is of a middling Size.

AQUIFOLIUM *seu* AGRIFOLIUM; The Holly Tree.

The Characters are;

The Leaves are set about the Edges with long sharp stiff Prickles; the Berries are small, round, and for the most part of a red Colour, containing four triangular striated Seeds in each.

The Species are;

1. AQUIFOLIUM; *baccis rubris*. H. L. The Common Holly, with red Berries.

2. AQUIFOLIUM; *baccis luteis*. H. L. Yellow Berry'd Holly.

3. AQUIFOLIUM; *baccis albis*. White Berry'd Holly.

4. AQUIFOLIUM; *foliis ex luteo variegatis*. H. R. Par. *Aquifolium aureum*. Munt. H. 163. Yellow blotch'd Holly.

5. AQUIFOLIUM; *foliis ex albo variegatis*. H. L. White blotch'd Holly.

6. AQUIFOLIUM; *echinata folii superficiei*. Corn. 180. Hedge-hog Holly.

7. AQUIFOLIUM; *echinata folii superficiei; foliis ex luteo variegatis*. Yellow blotch'd Hedge-hog Holly.

8. AQUIFOLIUM; *echinata folii superficiei; limbis aureis*. Gold-edg'd Hedge-hog Holly.

9. AQUIFOLIUM; *echinata folii superficiei; limbis argenteis*. Silver-edg'd Hedge-hog Holly.

10. AQUIFOLIUM; *foliis longioribus, limbis & spinis ex unico tantum latere per totum argenteo pictis*. Pluk. Alm. 38. BRODERICK'S Holly; *vulgô*.

11. AQUIFOLIUM; *foliis subrotundis; limbis & spinis, utrinque argentatis; Aquifolium elegans*. D. Doct. Eales. Pluk. Alm. 38. EALES'S Holly; *vulgô*.

12. AQUIFOLIUM; *foliis oblongis, lucidis; spinis & limbis argenteis*. Sir THOMAS FRANKLIN'S Holly; *vulgô*.

13. AQUI-

13. AQUIFOLIUM; foliis oblongis, spinis & limbis argenteis. Hertfordshire White Holly.

14. AQUIFOLIUM; foliis subrotundis, limbis argenteis; spinulis & marginalibus purpurascensibus. BRIDGMAN'S Holly; vulgô,

15. AQUIFOLIUM; foliis oblongis, spinis & limbis flavescensibus. LONGSTAFF'S best Holly; vulgô.

16. AQUIFOLIUM; foliis oblongis lucidis, spinis & limbis aureis. BRADLEY'S best Holly; vulgô.

17. AQUIFOLIUM; foliis oblongis, spinis & limbis aureis. WISE'S Holly; vulgô.

18. AQUIFOLIUM; foliis subrotundis, spinis minoribus; foliis ex luteo elegantissimè variegatis. The British Holly; vulgô.

19. AQUIFOLIUM; foliis oblongis atrovirentibus, spinis & limbis aureis. BAGSHOT Holly; vulgô.

20. AQUIFOLIUM; foliis latissimis; spinis & limbis flavescensibus. Glory of the East Holly; vulgô.

21. AQUIFOLIUM; foliis oblongis, spinis majoribus, foliis ex aureo variegatis. Glory of the West Holly; vulgô.

22. AQUIFOLIUM; foliis subrotundis; spinis & limbis aureis. ASLET'S Holly; vulgô.

23. AQUIFOLIUM; foliis longioribus; spinis & limbis argenteis. The Union Holly; vulgô.

24. AQUIFOLIUM; foliis & spinis majoribus; limbis flavescensibus. Fine PHYLLIS Holly; vulgô,

25. AQUIFOLIUM; foliis minoribus; spinis & limbis argenteis. Painted Lady Holly; vulgô.

26. AQUIFOLIUM; foliis angustioribus; spinis & limbis flavescensibus. FULLER'S Cream Holly; vulgô.

27. AQUIFOLIUM; foliis oblongis, ex luteo & aureo elegantissimè variegato. Milk Maid Holly; vulgô.

28. AQUIFOLIUM; foliis oblongis

viridibus; maculis argenteis notatis. CAPEL'S mottled Holly; vulgô.

29. AQUIFOLIUM; foliis oblongis, spinis & limbis luteis. PARTRIDGE'S Holly; vulgô.

30. AQUIFOLIUM; foliis oblongis, spinis & limbis ocroluteis. MASON'S Copper colour'd Holly; vulgô.

31. AQUIFOLIUM; foliis parvis, interdum vix spinosis. Box-leav'd Holly; vulgô.

32. AQUIFOLIUM; foliis parvis, interdum vix spinosis, limbis foliorum argentatis. WHITMILL'S Holly; vulgô.

33. AQUIFOLIUM; Carolinianum; angustifolium, spinis raris brevissimis. CAROLINA Holly, with smooth Leaves; vulgô.

This Tree, tho' wild in many Parts of England, deserves a Place in large Gardens, as being very Ornamental to the Wilderness and Ever-green Garden; but especially when we take in the large Variety of beautiful variegated Sorts, of which we have a much greater Number than is to be found in any Part of Europe: These are all distinguish'd by the different Names of the Persons who first observ'd them, or from the Places where they grew.

I have seen in one Garden, viz. Mr. Christopher Gray's, near Fulham, above thirty different Varieties, which are either strip'd or blotch'd, with White, Yellow, or Copper Colour.

These Trees were formerly in much greater Request than at present, and there was scarce a small Garden of any Worth, but was fill'd with these Trees, which were clipp'd either into Pyramids, Balls, or some other Figures; but as this was crowding a Garden too much with one Sort of Plant, and the Fashion of clipp'd Greens going off,

so now they are almost wholly neglected: Such are the Changes in Mens Tempers and Fancies, that what is one Year esteem'd, is the next despis'd.

I would not here be thought to be an Advocate for clipp'd Trees; no, I am infinitely more delighted with a Tree in all its Luxuriancy of Branches, waving about with every Gust of Wind; but yet I think there is a great Beauty in these Trees, if rightly dispos'd in a Garden, but more-especially in such as are of a large Extent, by being intermix'd with other Sorts of Ever-greens, to form regular Clumps, or plac'd in Quarters of Ever-greens, or to form Columns at the Entrances of Wilderness Quarters, or to plant in Niches of Ever-green Hedges; in all which Places they have an agreeable Effect.

All the variegated Sorts are propagated by budding or grafting them on the *Plain Holly* Stocks; the best Time for budding them, is in *July*, and for grafting them, in *March*.

The Manner of raising the common *Hollies*, is by sowing the Berries, which, if sown as soon as ripe, will lie two Years in the Ground; you may therefore mix the Berries with dry Sand, and put them in a large Garden Pot, burying it in the Ground till the next *August* or *September*; and take them out and sow them on a Bed of common Earth, covering the Seeds about a quarter of an Inch with light Mould, and the Spring following the Plants will appear above Ground: But as this is a tedious Method, and the young Plants making but small Progress for the two or three first Years, so I would rather advise the purchasing of young Stocks, of about three or

four Years Growth, of some Nursery Men who raise them for Sale, and these will be fit to bud or graft the second Year after they are planted; or you may purchase young Plants, of the several Kinds, which have been budded or grafted two Years, and are generally sold very reasonable in the Nurseries, than to hazard the Budding them yourself, especially if you are not sure of being provided with Cuttings very near you.

*Hollies* are also planted for Hedges, and have been by some very much esteem'd for that Purpose; but the Leaves being very large, when these Hedges are clipp'd, they are generally cut in Pieces, and appear very ragged, otherwise they make a very durable strong Hedge, and very proper for an outside Fence of a Green Garden.

The best time for transplanting this Tree is in the Beginning of *April*, in moist Weather; and if the Season is good, and they are carefully remov'd, there will be little Danger of their growing; they may also be transplanted in *August*, if the Season proves moist, and they will put out Roots before Winter; but if you do it at this Season, you must be careful to mulch the Ground about the Roots, to keep the Frost from reaching them in Winter, which would be apt to destroy your new-planted Trees.

If the Trees are large you intend to remove, and have been growing some time in the Places where they stand, you should dig about them, and cut their Roots the Year before, that they may produce young Fibres, to keep the Earth from falling away from the Roots; and if you remove them to any Distance, it will be adviseable to put them into Baskets; and when you  
plant

plant them, you may either cut off the Sides of the Basket, or if they are but loosely made, suffer them to remain intire, for they will soon rot in the Ground.

You must also be very careful to supply your new-planted *Hollies* with Water, for the two first Years, if the Seasons prove dry; after this time there will be little Danger of their miscarrying.

### AQUILEGIA. Columbine.

The Characters are;

It hath Leaves like the Meadow Rue; the Flowers are pendulous, and of an anomalous Figure; the Pistil of the Flower becomes a membranous Fruit, consisting of many Husks or Pods; each of which contains many shining black Seeds.

The Species are;

1. AQUILEGIA; *sylvestris*. C. B. The Common wild Columbine.
2. AQUILEGIA; *stellata*, flore violaceo. Hort-Eyft. The starry Columbine, with violet colour'd Flowers.
3. AQUILEGIA; *hortensis*, *simplex*. C. B. The single Garden Columbine.
4. AQUILEGIA; *montana*, *magno flore*. C. B. Mountain Columbine, with large Flowers.
5. AQUILEGIA; *Canadensis*, *præcox*, *procerior*. H. R. Par. Early flowering Canada Columbine.
6. AQUILEGIA; *pumila*, *præcox*, *Canadensis*. Cornut. Dwarf early flowering Ganada Columbine.
7. AQUILEGIA; *hortensis*, *multiplex*, *flore magno caruleo*. C. B. Double Garden Columbine, with large blue Flowers.

There are great Varieties of this Plant, which are preserv'd in curious Gardens; the Flowers of which are very double, and beautifully variegated with Blue, Purple, Red and White. These are very orna-

mental Plants in Borders of large Gardens, producing their beautiful Flowers in *May* and *June*; and are very proper to mix with other Flowers, for Pots to adorn Chimnies or Halls, at that Season.

They are all rais'd by sowing the Seeds, or parting the old Roots, but the former Method is chiefly practis'd; for the old Roots are very apt to degenerate after they have blown two Years, and become quite plain.

The Seeds should be sown in a Nursery Bed in *August* or *September*; for the Seeds kept till Spring do seldom grow well; in the *March* following your young Plants will appear above Ground, you must therefore clear them from Weeds, and if the Season should be dry, refresh them with Water, that they may gather Strength.

In the Beginning of *May* these Plants will be strong enough to transplant; you must therefore prepare some Beds of good fresh undung'd Earth, planting them therein at eight or nine Inches Distance every way, keeping them clear from Weeds, and refreshing them with a little Water, as they may require it.

At *Michaelmas* you may remove them into the Borders of your Flower Garden, and the *May* following they will produce Flowers; but if you intend to maintain their Roots, you should not suffer them to seed, but crop off all their Flower-Stems so soon as the Flowers are past.

But in order to be sure of having no single or bad Flowers in your Borders, you may suffer them to remain in the nursery Beds until they have blown, at which time you may stick a Stake by each Root you fancy to preserve, and pull out

all the single or bad colour'd ones, and throw them away, cutting off all the Flowers from your best Roots so soon as they have shewn themselves, which will greatly add to the preserving them fair in their Colours; and these Roots will be strong enough to divide at *Michaelmas*, when you may transplant them into your Borders, but do not divide them too small, which will weaken their Bloom the succeeding Year.

In order to keep up a Succession of good Flowers, you should sow fresh Seeds every Year; and if you can meet with a Friend, at some Distance, who is furnish'd with good Flowers of this Kind, it will be very advantageous to both Parties, to exchange Seeds once in two Years, by which Means they will not be apt to degenerate into plain Colours.

ARALIA, Berry-bearing *Angelica*.

The Characters are ;

The Flower consists of many Leaves, which expand in Form of a Rose, which are naked, growing on the Top of the Ovary: These Flowers are succeeded by globular Fruit, which are soft and succulent, and are full of oblong Seeds.

The Species are,

1. ARALIA ; *Canadensis*. Tourn. *Canada* Berry-bearing *Angelica*.

2. ARALIA ; *caule aphylo, radice repente*. D. *Sarrazin*. Tourn. Berry-bearing *Angelica*, with a naked Stalk and a creeping Root.

3. ARALIA ; *arborescens, spinosa*. Vaill. *Angelica*-Tree, *vulgo*.

The two first Species die to the Surface every Year, and rise again the succeeding Spring, and in *July* and *August* produce their Flowers; and, if the Season is warm, do perfect their Fruit in *September*.

These are propagated either by sowing their Seeds, or by parting of their Roots; which last being the most expeditious Method, is commonly practis'd in *England*; for the Seeds often abide in the Ground until the second Year before they arise, and are two Years more before they flower.

They love a good fresh Soil, not too wet, and should be planted early in the Spring, and are very hardy in respect to Cold.

The third Sort grows with us to the Height of seven or eight Feet: It has produc'd Flowers in the *Physick-Garden* at *Chelsea* two or three times, but has not perfected its Seeds in *England* that I have yet heard.

This Shrub requires a dry Soil, and a warm Situation, otherwise it is subject to be injur'd by Frosts in the Winter: This is only propagated by Seeds, which are frequently brought from *America*.

ARBOR CAMPHORIFERA, *vide* Camphorifera.

ARBOR CORAL, *vide* Corallo-dendron.

ARBOR JUDÆ, *vide* Siliquastrum.

ARBOR VIRGINIANA, *Citria vel Limonia folio, Benzoinum fundens*. H. A. The Benjamin-Tree, *vulgo*.

This Tree is found in great Plenty in most Parts of *Virginia* and *Carolina*, from whence it is brought to *England*, and was for several Years preserv'd in Pots, and hous'd in Winter, but hath been since found to be hardy enough to resist the severest Cold of our Winters in the open Ground.

This Plant may be propagated by laying down the young Branches in the Spring of the Year, which, if they are supply'd with Water in

a dry



a dry Season, will be rooted enough by the next Spring to transplant.

These Trees produce small yellowish Flowers out of the young Wood, at two Seasons, viz. in *March* and *October*, but I never saw any Fruit succeed them. This Tree is kept in curious Gardens of Trees amongst many other of the same Country, but I don't know any extraordinary Beauty or Use that belongs to it: Indeed, when it was first introduc'd, it was generally believ'd, that the *Benjamin* of the Shops was an Exudation from this Tree, but it is now thought to proceed from a very different Tree.

*An.* ARBOR *Zeylanica*, *Cotini foliis*, *subtus lanugina villosis*, *floribus albis*, *cuculi modo laciniatis*. *Pluk. Phyt.* The Snow-drop Tree, *vulgo*.

This Tree is very hardy in respect to Cold, standing abroad in the open Air, without suffering from our severest Frosts, but is difficult to increase, the Layers being commonly two Years before they strike Root, nor will they root at all, unless the Branches are very young, and they are slit at a Joint, as is practis'd in laying of Carnations. When these Layers are rooted, they may be transplanted into small Quarters of flowering Shrubs, where, amongst those of a middling Growth, this Tree will add to the Variety.

ARBOURS. These were formerly in greater Esteem with us than at present; few Gardens were without cover'd Arbours and shady Seats, but of late they have been much rejected, and that not without good Reason; for besides the great Expence in their first erecting, they were a continual Charge in keeping them repair'd, for the

Wet soaking thro' the Leaves of the Trees to the Wood-work, was, by the continual Shade, and for Want of free Air, detain'd so long as to rot the Wood (which if wholly expos'd to the Weather, would have lasted seven or eight Years) in two or three; beside, the Seats are continually damp, and unhealthy; for which Reason, cover'd Seats or Alcoves are every where at this Time preferr'd to them.

*Arbours* are generally made of Lattice-work, either in Wood or Iron, and cover'd with *Elms*, *Limes*, *Horn-beam*, or with *Creepers*, *Honey-suckles*, *Jasmines*, or *Passiflowers*, either of which will answer the Purpose very well, if rightly manag'd.

ARBUTUS; The Strawberry-Tree.

The Characters are;

*It is ever-green; the Leaves are roundish, and serrated on the Edges; the Flowers consist of one Leaf, and are shap'd like a Pitcher; the Fruit is of a fleshy Substance, and, in its outward Appearance, very like a Strawberry, but is divided into five Cells, in which are contain'd many small Seeds.*

The Species are,

1. ARBUTUS; *folio serrato*. C. B. The common Strawberry-Tree.

2. ARBUTUS; *folio serrato; flore oblongo, fructu ovato*. *Michel. Hort. Pis.* Strawberry-Tree, with longer Flowers and Egg-shap'd Fruit.

3. ARBUTUS; *folio serrato; flore duplici*. Strawberry-Tree, with double Flowers.

This Tree has its Name from the Resemblance the Fruit bears to that of a *Strawberry*, but it is of an austere sour Taste; tho' I have been inform'd, that in *Ireland*, where this Tree abounds, the Fruit is sold, and eaten. In *England* they

are chiefly brought to the Markets with small Branches of the Tree, having small Bunches of Flowers upon them, and made up into Nosegays with other Flowers, and some Sprigs of the *Amomum Plinii*, or *Winter Cherry*, which at that Season are very acceptable, when there are few Flowers to be had.

The Time of this Fruit being ripe, is in *November*, at which Season the Flowers are blown for the next Year's Fruit; so that from the Time of flowering to the ripening of the Fruit, is one whole Year.

The best Method of propagating these Trees, is by sowing their Seeds, which should be preserv'd in dry Sand till *March*; at which Time you should sow them upon a very moderate Hot-bed, (which greatly promotes its Vegetation) covering it about a quarter of an Inch with light Earth, and screening it from Frosts or great Rains: Toward the Middle or latter End of *March* your young Plants will begin to appear; you must therefore keep them clear from Weeds, and give them frequent Waterings, as the Season may require; and if your Plants have done well, they will be, by *Autumn*, about five or six Inches high: But as these Trees are subject to receive Damage from Frosts, especially while they are young, therefore you must hoop the Bed over, that when bad Weather comes, you may cover it with Mats and Straw to keep out the Frost.

The Beginning of *April* following, you may transplant these Trees, each into a small Pot; but in doing of this, be very careful to take them up with as much Earth to their Roots as possible, for they are bad rooting Plants, and very sub-

ject to miscarry on being remov'd; and 'tis for this Reason that I advise their being put into small Pots; for when they have fill'd the Pot with Roots, they may be turn'd out into large Pots, or the open Ground, without any Hazard of their dying.

When you have put your young Plants into the small Pots, you should plunge them into another very moderate Hot-bed, to encourage their taking new Root, shading them from the Sun in the Middle of the Day, and giving them Water as they may require: In this Bed it will be proper to let the Pots remain most Part of the Summer; for if the Pots are taken out, and set upon the Ground, the Smallness of their Size will occasion the Earth in them to dry so fast, that Watering will scarcely preserve your Trees alive; but if they are kept growing all the Summer, they will be near a Foot high by the next Autumn; but it will be adviseable to screen them from the Frost during their Continuance in Pots, by plunging them into the Ground in a warm Place, and covering them with Mats in bad Weather.

When your Trees are grown to be three or four Foot high, you may shake them out of the Pots into the open Ground in the Places where they are to remain; but this should be done in *April*, that they may have taken good Root before the Winter, which would be apt to damage them if newly planted.

These Trees are tolerably hardy, and are seldom hurt, except in extreme hard Winters, which many times kills the young and tender Branches, but rarely destroys the whole Trees; therefore however  
dead

dead your Trees may appear after a hard Winter, yet I would advise you to let them remain till the succeeding Summer has sufficiently demonstrated what are living, and what are dead; for the Winter Anno 1728-9. gave us great Reason to believe most of the Trees of this Kind were destroy'd. and many People were so hasty, as to dig up, or cut down many of their Trees; whereas all those People who had Patience to let their Trees remain, found, that scarce one in five hundred fail'd to come out again the next Summer, and made handsome Plants that Season.

ARGEMONE, Prickly Poppy.

The Characters are;

*It hath an annual Root: The Leaves are lacinated, or jagged; which are terminated with Spines: The Flower consists of many Leaves, which expand in Form of a Rose: The Pointal of the Flower becomes a large trigonical Vessel, which is divided into three Cells, wherein are contain'd many globular black Seeds.*

There is but one Species of this Plant known, which is,

ARGEMONE; *Mexicana.* Tourn. The Prickly Poppy.

This is an annual Plant, which is very common in most Parts of the *West-Indies*, and is by the *Spaniards* call'd, *Fico del Inferno*, or the *Devil's Fig*; there is no great Beauty or Use in this Plant amongst us, that I know of; but whoever hath a Mind to cultivate it, should, at first, sow it on a Hot-bed, and in *June* transplant it out into the natural Borders, where, when once it has shed its Seed, there will not want a Supply of Plants for several Years after. I have been inform'd that Gumbouge is made from the Juice of this Plant.

ARIA THEOPHRASTI; with CRATÆGUS.

ARISARUM; The Herb Friar's Cowl.

ARISTOLOCHIA, Birthwort.

The Characters are;

*The Stalks are flexible; the Leaves are plac'd alternately on the Branches; the Flowers consist of one Leaf, and are of an anomalous Figure, hollow'd like a Pipe, and shap'd like a Tongue, generally hooked: The Flower-Cup turns to a membranous, and, for the most part, oval-shap'd Fruit, which is divided into five Cells, and full of flat Seeds.*

We have three or four Species of this Plant in the curious Gardens of Botany; which are,

1. ARISTOLOCHIA; *flore ex purpurâ nigro.* C. B. P. The round-rooted Birthwort.

2. ARISTOLOCHIA; *clematitis recta.* C. B. P. The Climbing Birthwort.

3. ARISTOLOCHIA; *Pistolochia dicta.* C. B. P. Spanish Birthwort.

4. ARISTOLOCHIA; *Pistolochia dicta, Cretica, folio smilacis sempervirens.* H. L. The Ever-green Birthwort from Crete.

The first and second of these Species are sometimes used in Medicine; the third and fourth Sorts are preserv'd in Botanick Gardens as Curiosities; the fourth Sort has been by several People thought to be the true Snake-Root: But this is known to be a Mistake.

The two first Sorts are very hardy, and are easily propagated by parting their Roots; but the third and fourth Sorts are tender, and must be shelter'd in Winter from the severe Frost, but are tolerably hardy, and have, in moderate Winters, stood abroad in a Border under a warm Wall: The last Sort I receiv'd from the Curious

rious Mr. Henry Hopkey, who gather'd it upon Gibraltar Hills, Anno 1727.

ARMENIACA; Apricock.

ARMERIUS; Sweet William;  
vide Caryophyllus Barbatus.

ARTEMISIA; Mugwort.

The Characters are;

The Flowers and Fruit of this Plant are very like those of the Worm-wood, but grow erect upon the Branches. The Florets are of a purplish Colour; and the Leaves, for the most part, terminate in sharp Points, are cut into many Segments, and are of a dark Green on the upper Side, and hoary on the under Side.

The Species are;

1. ARTEMISIA; *vulgaris, major, caule & flore purpurascens*. C. B. Common great Mugwort, with purplish Stalks and Flowers.

2. ARTEMISIA; *vulgaris, major, caule ex viridi albicante*. Tourn. Common great Mugwort, with whitish green Stalks.

3. ARTEMISIA; *foliis ex luteo variegatis*. H. R. P. The yellow strip'd Mugwort.

4. ARTEMISIA; *foliis ex albo variegatis*. The white strip'd Mugwort.

The first of these Species is very common upon dry Banks and Dung-hills in divers Parts of England, and is rarely admitted into a Garden. The second Sort is a Variety of the first, which is rarely found in England: But the third and fourth Sorts are only preserv'd in Gardens for the Beauty of their variegated Leaves. These Sorts may also be propagated by parting of their Roots either in Spring or Autumn, and will grow in almost any Soil or Situation; but as they are subject to spread very far, and soon over-run a large Spot of

Ground, so they should be confin'd, by cutting off their side Shoots to keep them within Compass; nor should they be planted too near to other Plants, lest, by their spreading Roots, they should over-bear and destroy them.

The first Species of this Plant is used in Medicine: The Plant is commonly gather'd by the Herb-women in the Fields, and brought to the Markets: It is from one Species of Mugwort, (and not improbably the first) that the famous Moxa, which is used to burn for curing the Gout, is taken, it being the Lanugo or downy Substance which adheres to the under Part of the Leaf.

ARTICHOKE.

The Characters are;

It is very like the Thistle, but hath large scaly Heads, which are shap'd somewhat like the Cone of the Pine-Tree; the Bottom of each Scale, as also at the Bottom of the Florets, is a thick fleshy eatable Substance.

The Species are;

1. CINARA; *hortensis; foliis aculeatis & non aculeatis*. C. B. The Garden Artichoke, with prickly and smooth Leaves.

2. CINARA; *hortensis; non aculeata, capite subrubente*. H. R. P. Garden Artichoke, without Prickles, and reddish Heads.

3. CINARA; *sylvestris, Bœtica*. Clus. Cur. Post. The wild Artichoke of Batia.

I thought proper to introduce this Class under the Name Artichoke, which being the generally receiv'd Name of the only valuable Species, it might be better here plac'd than under the Latin Name.

ARTICHOKE.

There is at present but one Sort of Artichoke cultivated in the Gardens

dens near *London*, which is that commonly known by the Name of the *Red Artichoke*; formerly the green Sort was the most common, but since the red Sort hath been introduc'd, the other has been rejected, as being vastly inferior in Goodness thereto.

The Manner of propagating this Plant, is from Slips or Suckers taken from the old Roots, in *February* or *March*, which, if planted in a good Soil, will produce large fair Fruit the *Autumn* following: But as this is a Plant which few Gardeners that have not been instructed in the Kitchen Gardens near *London*, understand to manage well, so I shall be the more particular in my Directions about it.

At the latter End of *February*, or in *March*, according to the Goodness of the Season, or Forwardness of the old *Artichoke* Stocks, will be proper time for dressing them, which must be thus perform'd. With your Spade remove all the Earth from about your Stock, down below the Part from whence the young Shoots are produced, clearing the Earth from between the Shoots, so as to be able to judge of the Goodness of each, with their proper Position upon the Stock; then make Choice of two of the clearest, straightest, and most promising Plants that are produc'd from the under-part of the Stock, which you are to let remain for a Crop; then with your Thumb, force off all the other Plants and Buds, close to the Head of the Stock from whence they are produc'd, and with your Spade draw the Earth about the two Plants which are left, and with your Hands close it fast to each of them, separating them as far asunder as they can conveniently be plac'd without breaking them,

observing to crop off the Tops of the Leaves which hang down, with your Hands: Your Ground being levell'd between the Stocks, you may sow thereon a small Crop of Spinage, which will be taken off before the *Artichokes* will cover the Ground; and be sure to keep them clear from Weeds; and toward the latter End of *April*, or the Beginning of *May*, when your Plants begin to shew their Fruit you must carefully look over your Stocks, and draw up all young Plants from them; which may have been produc'd since their Dressing, and cut off all Suckers which are produc'd from the Stems of the *Artichokes*, leaving only the principal Head, by which means your Fruit will be the larger; when your *Artichokes* are fit to gather, you must break, or cut them down close to the Surface of the Ground, that your Stocks may make strong fresh Shoots before *October*, which is the Season for Earthing, or, as the Gardeners term it, Landing them up: which is thus done;

Cut off all the young Shoots quite close to the Surface of the Ground, then dig between every Stock, raising all the Earth between each Row of Stocks into a Ridge, as is done in the common Method of trenching Ground, so as that the Row of *Artichokes* may be exactly in the Middle of each Ridge; this will be sufficient to guard them against Frost: And I would here recommend it to the Publick, as infinitely preferable to long Dung, which is by the Unskillful often used, and is the Occasion of their Fruit being small, and almost without any Bottoms to them; for there is not any thing so hurtful to these as new Dung being either buried near, or laid about them. Observe, that altho' I have mention'd

*October* as the Season for Earthing them, yet if the Weather proves mild, it may be deferr'd till any time in *November*.

When you have thus earth'd them up, you have nothing more to do till *February* or *March*, by which time they will have grown through the Ridge of the Earth; and when the Weather is proper, must be dress'd as was before directed.

When you have a Mind to make a new Plantation, after having digged and buried some very rotten Dung in the Ground you have allotted for that Purpose, make choice of such of your Plants as were taken from your old Stocks, which are clear, sound, and not woody, having some Fibres to their Bottom; then with your Knife cut off that knobbed woody Part, which join'd them to the Stock, and if that cuts crisp and tender, it is a Sign of its Goodness, but if tough and stringy, throw it away as good for nothing, and cut off the large outside Leaves pretty low, that the Middle, or Heart Leaves, may be above them; your Plants being thus prepar'd (if the Weather is very dry, or the Plants have been any time taken from the Stocks, it will be convenient to set them upright into a Tub of Water for three or four Hours before they are planted, which will greatly refresh them) you must then proceed to Planting, which must be done by ranging a Line cross the Ground, in order to their being plac'd exactly in a Row, and with a Measure Stick plant them at two Foot Distance from each other in the Rows; and if design'd for a full Crop, five Foot Distance Row from Row; your Plants must be set about four Inches deep, and the Earth clos'd very fast

to their Roots, observing, if the Season proves dry, to keep them water'd two or three times a Week, until they are growing, after which they seldom require any.

N. B. You might sow a thin Crop of Spinage upon the Ground before you plant your Plants, observing to clear it from about them after it is come up.

These Plants, in a kindly Season, or a moist Soil, will produce the largest and best *Artichokes*, some time in *August* and *September*, after all those from the old Stocks are past; so that if you intend to continue your *Artichokes* thro' the whole Season, you must plant fresh every Year, otherwise you can't possibly have Fruit longer than two Months.

If any of the Plants which you planted in the *Spring*, should not Fruit in the *Autumn*, you may, at the Season of Earthing your Roots, tie up the Leaves with a small Willow Twig, &c. and lay the Earth up close to it, so that the Top of the Plant may be above Ground; and when the Frost comes on, if you will cover the Top with a little Straw, or Pease Haulm, these Plants will produce Fruit in *Winter*, or early in the *Spring*.

But if you intend to plant other Things between your *Artichokes*, you must allow nine or ten Foot between the Rows, as is often practis'd by the Kitchen Gardeners near *London*, who sow the Ground between with Radishes or Spinage, and plant two Rows of Cauliflowers, at four Foot Distance Row from Row, and two Foot and a half Distance in the Rows between them; so that there is always five Foot allow'd for the *Artichokes* to grow; and in *May*, when the Radishes or Spinage are taken off, they

they sow a Row of Cucumbers for Pickling, exactly between the two Rows of Cauliflowers, at three Foot Distance from each other; and between the Rows of Cauliflowers and the *Artichokes*, plant a Row of Cabbages or Savoys for Winter Use, which, when the Cauliflowers are drawn off, and the *Artichokes* gather'd, will have full Liberty to grow; and by this means the Ground is fully employ'd thro' the whole Season.

In those which are planted at five Foot Distance Row from Row, you may plant in every other Row, a Line of Cabbages or Savoys, for Winter Use, which will be gone by the Time of landing them up; in the doing of which, you must lay the whole five Foot of Earth into one Ridge, except the Ground be extreme stiff, or the Plants young, in both which Cases you may lay only three Feet and a half; the same Compass of Ground must also be allow'd where they are planted at a wider Distance.

And, if in the Spring, you find your Stocks shoot very weak, which may have been occasion'd either by hard Frosts, or too much Wet, you must then uncover them, and with your Spade loosen and break the Earth about them, raising a small Hill about every Stock, leveling the rest between the Rows, which will greatly help them, and in three Weeks time after they are commonly fit to slip.

*ARTICHOKES* of *Jerusalem*; *vide* *Corona Solis*.

*ARUM*: *Wake Robin*, or *Cuckow* Pint.

The *Characters* are;

The *Leaves*, which are intire, are long and triangular, and ear'd or darter'd at the Base; the *Flower* consists of one Leaf, is of an anomalous

*Figure*, or *shap'd* like an *Ass's Ear*; from the Bottom of the Flower rises the Pointal, accompanied with a great many Embryo's, each of which becomes a roundish Berry, containing one or two roundish Seeds.

This Plant is call'd *Wake Robin*, from the sharp acrid Taste, which, if eaten, will occasion a violent Pain in every Part of the Mouth and Throat, attended commonly with a great Defluxion of Water.

There are several *Species* of this Plant cultivated in the Gardens of the Curious, but there are not above two or three of them which are entertain'd for their Beauty or Scarceness, which are;

1. *ARUM*; *Africanum*, *flore albo*, *odorato*. *Par. Bat.* The African *Arum*, with white sweet-smelling Flowers.

2. *ARUM*; *esculentum*, *Sagittariae foliis*, *viridi-nigricantibus*. *Sloan. Cat. Jam.* The American eatable *Arum*, with Leaves like Spearwort.

3. *ARUM*; *maximum* *Aegyptiacum*, *quod vulgo Colocasia*. *C. B.* The Egyptian *Arum*, vulgarly call'd *Colocasia*.

The first of these *Arums* produce, in the Spring, large white Flowers, upon a Pedicle two or three Foot long, making a handsome Shew in a Collection of Plants. The Flowers have a faint sweet Scent, but continue a long time blowing.

This is propagated by parting the Roots (which are knob'd) in *August*, when the green Leaves are decay'd, and must be planted in Pots fill'd with good rich Earth, and hous'd in Winter, with Oranges, &c.

The second and third Sorts are tenderer, and will not live thro' the Winter without a Stove; these

produce large fair Leaves, but have not produc'd any Flowers in *England* that I know of; the Roots of these two Sorts are quite of a different Nature from the other *Arums*, having a soft sweet Taste, somewhat resembling that of a *Hazel Nut*, and are very much eaten in *America*, as is also the last in *Egypt*.

These are propagated in the same manner as the first, but must be never expos'd to the open Air with us, which will soon deface their Leaves.

The common *Arum*, which is the Sort used in Physick, grows wild in most shady Banks near *London*; the best Season to gather their Roots for Use, is in *July* or *August*, when their green Leaves are decaying.

ARUNDO. The Reed.

The common *Reed* is so plentifully to be met with in the Marshes near the River of *Thames*, that it will be needless to say any thing thereof, it being so well known to every one; but for the Sake of two other Sorts, I have inserted this Article, which are:

1. ARUNDO; *sativa*, quæ *Donax Dioscoridis* & *Theophrasti*. C. B. The large manur'd Cane or Reed.

2. ARUNDO; *Saccharifera*. C. B. The Sugar Cane.

The first of these is what is brought from *Portugal* and *Spain*, and is used to make Fishing Rods, and also by the Weavers.

This Plant, altho' a Native of a warm Country, yet will bear the Cold of our severest Winters in the open Ground; it dies to the Surface in *Autumn*, and rises again the succeeding *Spring*; and if kept supplied with Water in dry Weather, will grow ten or twelve Foot high the same Summer, and is very proper to intermix with small

Trées and Shrubs, or tall Plants and Flowers in *Bosquettes*, where, by the Oddness of its Appearance, it will have a good Effect, in adding to the Variety: This is propagated by parting the Roots early in the Spring, before they begin to shoot, and will, in a Year or two, if your Ground be good, make very large Stools; so that from each Clump, you may have twenty or thirty large Canes produced.

The *Sugar Cane* is very tender, and cannot be preserv'd without a Stove; it is kept as a great Curiosity in the Gardens of such as love a Variety of Plants, as being the Plant from whence the Sugar is produc'd.

It will grow with us to the Height of eight or nine Foot, if carefully look'd after, and may be propagated by taking off the Side Shoots in the Spring, planting them in Pots of good rich Earth, plunging the Pots into a Hot-bed of *Tanners-Bark*, to promote their taking fresh Roots, and must be often water'd: The main Stem is very subject to decay with us in Winter, but the Root commonly pushes out many new Shoots; if this happens, you must mind to clear the young Shoots from the dead Leaves of the old Stem, which will greatly strengthen them.

ASARUM; *Afarabacca*.

The *Characters* are;

The *Calyx* (or Flower Cup) is divided into four Parts; the Fruit is divided into six Cells, which are fill'd with oblong Seeds; to which may be added, the Leaves are roundish, thick, and almost of the Colour of those of the *Ivy Tree*.

There are two Species of this Plant in the *English* Gardens, viz.

1. ASARUM. C. B. The common *Afarabacca*.

2. ASA-



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2. ASARUM; *Canalense*. *Cornut.*  
The *Canada* Asarabacca.

The first of these Sorts is very common, and hath been found wild in some Parts of *England*, tho' but rarely; it delights in a moist shady Place, and is increas'd by parting the Roots in *Autumn*: This is the Sort which is used in Medicine.

The *Canada* Sort is tolerably hardy, and will endure our common Winters in the open Ground, being rarely hurt but by great Rains, or planting it in a wet Soil. This is propagated as the other.

Both these Sorts preserve their green Leaves in Winter, which decay as their new ones are produc'd: Their Flowers appear in *April*, which grow so close to the Ground as not to be seen unless you put away the Leaves with your Hand: The first Sort produces ripe Seeds, but it is not worth the Trouble of sowing, it being two Years before these Plants will have any Strength, and they are much easier rais'd by Slips. The second very rarely produces good Seeds in *England*.

ASCLEPIAS; *Hirundinaria*, or Swallow-wort.

The Characters are;

*It hath a Flower consisting of one Leaf, which is divided into five Parts, expanded in Form of a Star: The Ovary becomes a Fruit, which is for the most part compos'd of two membranous Husks, which open from the Bottom to the Top, inclosing many Seeds, which are cover'd with a fine Down, and are fix'd to the Membrane, like as Scales are dispos'd upon the Skins of Fishes: This Plant hath no milky Juice, wherein it differs from the Dogsbane.*

There are six different Varieties of this Plant preserv'd in the Gardens of the Curious, viz.

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1. ASCLEPIAS; *albo flore*. *C. B.*  
The common Swallow-wort, with white Flowers.

2. ASCLEPIAS; *nigro flore*. *C. B.*  
The common Swallow-wort, with black Flowers.

3. ASCLEPIAS; *angustifolia, flore flavescente*. *H. R. Par.* The narrow-leav'd Swallow-wort, with yellow Flowers.

4. ASCLEPIAS; *Africana, aizoides*. *Tourn.* The *African* Swallow-wort, commonly call'd, *Fritillaria Crassa*.

5. ASCLEPIAS; *Africana, aizoides, flore pulchrè fimbriato*. *Com. Rar.* The *African* Swallow-wort, with fair hairy Flowers, commonly call'd, *Fritillaria Crassa major*.

6. ASCLEPIAS; *Africana, aizoides, folio compresso digitato & cristato*. *Boerb. Ind.* The *African* Swallow-wort, with crested Leaves, commonly call'd, The *Cockscumb Fritillaria*.

The three first Sorts are very hardy, and will endure the Winter's Cold in the open Ground; the first Sort is sometimes used in Medicine, and is for that Purpose preserv'd in the Physick Gardens; they are all three of them propagated by parting their Roots, either in *Spring* or *Autumn*, and will grow in almost any sort of Soil; they may be also rais'd from Seeds, which must be sown early in the *Spring*, in a Bed of common Earth, and the second Year the young Plants will produce Flowers, but these rarely produce any Seeds in *England*.

The fourth, fifth and sixth Sorts, are Natives of the *Cape of Good Hope*, and were first brought from thence into the *Dutch* Gardens, and were afterwards brought into *England*; these Plants are propagated by planting Cuttings in any

of the Summer Months, which Cuttings should be taken from the Plants, at least a Week before they are planted, and laid in a dry Place, that the Wound may be heal'd, and the Moisture evaporated, otherwise they are very subject to rot: these Cuttings must be planted in small Pots fill'd with a sandy Soil; and after having stood about a Week abroad in a shady Place, you may plunge the Pots into a very moderate Hot-bed, which will greatly forward their making new Roots; in about a Month's time after planting, you must begin to harden them, by exposing them to the open Air, but do not let them receive much Wet, which is a great Enemy to these Plants; and in the Beginning of September, you must house them with the smaller Sorts of *Aloes*, giving them very little Water in the Winter Season.

The fifth Sort is very subject to flower every Year, but the fourth and sixth Sorts flower but seldom; but neither of them is so apt to flower, if expos'd to the open Air in Summer; therefore it is the better way to let them remain in the House most Part of the Year, giving them as much free Air as possible when the Weather will permit, and never letting them have much Water: With this Management all the Sorts will thrive much better, and oftener produce Flowers.

Although there is no great Beauty in these Flowers when blown, yet for their extreme Oddness they well deserve a Place in every curious Collection of Plants.

These Flowers so much resemble in Smell stinking Flesh, that the Flies will cover them with their Eggs, which come so far as just

to have Life; but not finding proper Nutriment, they soon perish.

ASCYRUM; St. Peter's-wort.

The Character is;

This Plant differs from St. John's-wort, only in having a Pyramidal Seed Vessel, which is divided into five Cells.

We have only two Sorts of this Plant in England, viz.

1. ASCYRUM; *magno flore*. C. B. P. The large flowering St. Peter's-wort.

2. ASCYRUM; *Balearicum, frutescens, maximo flore luteo, foliis minoribus, subtus verrucosis*. *Salvador. Boerb. Ind. Myrto-Cistus Pennai. Clus. H.* The large flowering St. Peter's-wort from *Majorca*, with small warted Leaves.

The first of these Plants was sent into England by Sir George Wheeler, to the Physick Garden at Oxford, from Constantinople, where he found it wild; this Plant produces very large Flowers, with a great Number of Stamina or Threads in the Middle, and makes a very agreeable Shew in the Wilderness Quarters, or in shady Borders, where it chiefly delights to grow: It is very hardy, and increases greatly by its creeping Roots, which will soon overspread a Border; it is best when kept in small Tufts, and not suffer'd to run too much, which often prevents its flowering, by having too great a Quantity of Branches; the Flowers are produc'd in June and July, but it seldom perfects its Seeds with us. This will grow in almost any Soil.

The second Sort was first mention'd by Dr. Lobel, who receiv'd a dried Sample of this Plant from Dr. Penna, who found it in his Travels, and was by Lobel call'd *Myrto-Cistus*; the Flowers, as he thought, resembling the *Cistus* or  
Rock

*Rock Rose*, and the Leaves those of the *Myrtle*.

But this Plant was not known to any of the modern Botanists, until one Mr. *Salvadore*, an Apothecary, who liv'd at *Barcelona*, went into those Islands in search of Simples, where he found this Plant, and sending some Specimens thereof into *England* and *Holland*, which had some ripe Seeds in their Vessels, they were sown, and grew, from whence this Plant hath been spread into many curious Gardens.

This Plant is propagated, either from Seeds sown on a moderate Hot-bed in the Spring, or by planting Cuttings in the Summer Months in Pots of good Earth, which should be plung'd into an old Hot-bed, and kept water'd and shaded in the Heat of the Day, until they have taken Root, when you may by degrees expose it to the open Air, but it must be hous'd in Winter, with *Myrtles*, *Amomum Plinii's*, &c. being too tender to endure the Cold of our Winters in the open Ground, but may, with a slight Shelter, be easily preserv'd. It requires frequent, but gentle Waterings, and loves a loose sandy Soil, with a small Mixture of very rotten Dung.

This is worthy of a Place in every curious Collection of Plants, for the Beauty of its red Shoots, small crisp'd Leaves, and its continuing to flower most Part of the Year.

ASH-TREE; *vide* Fraxinus.

ASHES are esteem'd by some a good superficial Dressing of Corn and Meadow Land, as they give a new Ferment to such Lands as are in any Degree sluggish and unactive, and enrich those which are jejune and slow, being endow'd

with singular Qualities to make them prolifick.

All Sorts of *Ashes* do, indeed, contain in them a very rich fertile Salt, and are the best Manure of any to lay upon cold, wet Land, but then they ought to be kept dry, that the Rain may not wash away their Salt. Experience has shewn, that the *Ashes* of any Sort of Vegetable, are very advantageous to Land, by the Improvement that has been made in most Places in *England*, by burning Bean Stalks, Fern, Furze, Heath, Sedge, Straw, Stubble, &c.

*Coal-Ashes*, or such as are made of *Newcastle*, *Scotch*, and other Pit-Coal, are much recommended by some; but the first are most approv'd of, because they contain a greater Quantity of nitrous and sulphureous Matter than the others do, tho' the rest are good.

But these ought to be apply'd superficially, and not so near the Roots of Plants; and if so, there are few Plants but will receive Benefit by them, by their nitrous and sulphureous Qualities being wash'd down by the Rain, which will open by the Strength of Water, and cause it to heave in some Degree, as Lime will do when Water is thrown upon it.

*Wood-Ashes* are commended as the Principal of superficial Dressings for Land, in that they contain a vegetative kind of Salt.

*Kiln-Ashes*, *i. e.* such as are made of Straw, Furze, &c. are by some accounted as good as any of the spirituous Improvements of Lands that are lightish; but for such as are heavy, they are look'd upon as scarce solid and ponderous enough. These *Ashes*, the Maltsters in the *West-Country* sift over their Corn and Grass. These are suppos'd, by

their Heat, to cause a Fermentation, a Hollowness and Looseness in the Mould, by which means the Rains enter it the more easily, and dispose the Earth for giving up an Assumption of its vegetative Augment.

But these being light, ought never to be strew'd nor sifted in windy Weather, because they would be blown away; and if it can be so order'd as to be done just before Snow or Rain, it would be the better,

*Soap-Ashes*, (*i. e.* after the Soap-Boilers have done with them) are very proper for Lands that are very cold and sour, and to kill Weeds of all Sorts. And Sir *Hugh Plat* mentions one at *Ware*, who having a Piece of Land over-run with Broom and Furze, manur'd it with *Soap-Ashes*, and had an incredible Crop of Wheat for six Years successively.

*Pot-Ashes*, after the Pot-ash Men have done with them, are esteem'd good for most Sorts of Land; but as they have been wet, and so most of the Salt drawn off by the Lee, they ought to be laid on much thicker than other Ashes.

*Turf-Ashes* are very good for all Sorts of Land, but especially for Clay-Lands; but will be much better if mix'd with Lime.

But all these *Ashes* ought to be kept dry from the Time they are made till they are used, for else the Rains will both wash away their Goodness, and also make them clod, especially some of the last-mention'd, so that they will not spread.

And besides, one Load of *Ashes* that have been kept dry, will go as far as two that have been expos'd to the Rain: And *Coal-Ashes*, if

moisten'd with Chamber-lye or Soap-Suds, will greatly add to their Strength.

All calcin'd Vegetables cause a fiery Heat and Vegetation, and when Wet comes, set the Ground to work, by a subtle Insinuation, unlocking the Clods, and quickening the Sluggishness of the Earth; according to that establish'd Maxim among Naturalists, *That all Fermentation is caus'd by the Interposition or Mixtures of different Qualities one from the other.*

It is after this manner that *Coal-Ashes* operate so admirably in loosening and mouldering stiff, clayey Grounds, and as it is usually term'd, making it rough, ashy or sandy-like: And, after the same manner, Sand mix'd with Clay does well, especially when it is impregnated with saline Qualities.

ASPARAGUS; Sparagus or Sperrage, corruptly call'd Sparrow-grass.

There are several Varieties of this Plant which are kept in the Botanic Garden, as Curiosities: but there is but one Sort which is chiefly cultivated in the Kitchen-Gardens, and is one of the greatest Dainties of the Spring. I shall therefore treat of this Kind only, and omit mentioning the other Kinds in this Place.

The Garden *Asparagus* is propagated by sowing of the Seeds; in the procuring of which, you should be particularly careful, since the Goodness of your future Crop, in a great measure depends thereon: You should therefore get it from some Person of Integrity, or if you have an Opportunity of saving it your self, or in some other neighbouring Garden: You must look over the *Asparagus* Beds in  
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the Beginning of the Season, and mark some of the largest and fairest Buds with a Piece of Stick; which Buds, when they have branched out, may be fasten'd to a Stake thrust into the Ground to preserve it from breaking: These Buds will many of them produce great Numbers of red Berries, which should be suffer'd to remain upon the Branches until the latter End of *September*, when the Haulm will begin to decay; then cut off the Branches, and strip the Berries into a Tub, where they may lie in a Heap to sweat for three Weeks, by which means the outer Husks, will be rotten; then fill the Tub with Water, and with your Hands break all the Husks, by squeezing them between your Hands: These Husks will all swim upon the Water, but the Seeds will sink to the Bottom, so that by pouring off the Water gently, the Husks will be carry'd along with it, and by putting fresh Water two or three times, and stirring your Seed about, you will make it intirely clean; then spread your Seed upon a Mat, and expose it to the Sun and Air in dry Weather until it is perfectly dry; when you may put it into a Bag, and hang it up in a dry Place till the Beginning of *February*; at which Time you must prepare a Bed of good rich Earth, whereon you must sow your Seeds, (but not too thick, which will cause your Plants to be small) and having trod your Seed into the Ground, rake it over smooth.

In the following Summer, keep it diligently clear'd from Weeds, which will greatly add to the Strength of your Plants; and toward the latter End of *October*, when the Haulm is quite wither'd

you may spread a little rotten Dung over the Surface of the Ground, about half an Inch thick, which will preserve the young Buds from being hurt with the Frosts, &c.

The Spring following, your Plants will be fit to plant out for good, (for I would never chuse Plants of more than one Year's Growth, having very often experienc'd them to take much better than older, and to produce finer Roots); you must therefore prepare your Ground by trenching it well, burying therein a good Quantity of rotten Dung at the Bottom of each Trench, so that it may lie at least six Inches below the Surface of the Ground; then level your whole Plot very exactly, taking out all large Stones: but this should not be done long before you intend to plant your *Asparagus*, in which you must be govern'd according to the Nature of your Soil or the Season; for if your Soil is dry, and the Season forward, you may plant early in *March*; but in a wet Soil, it is better to wait till the End of that Month, or the Beginning of *April*, which is about the Season that the Plants are beginning to shoot. I know many People have advis'd the planting of *Asparagus* at *Michaelmas*; but this I have experienc'd to be very wrong, for in two different Years I was obliged to transplant large Quantities at that Season, but I had better thrown away the Plants, for upon Examination, in the Spring, I found most of the Roots were grown mouldy and decaying, and I am sure not one in five of them succeeded, and those which did, were so weak as not to be worth their standing.

The Season being now come, you must, with a narrow-prong'd Dung-fork, carefully fork up your Roots, shaking them out of the Earth, and separating them from each other, observing to lay their Heads even for the more convenient planting them, which must be perform'd in this manner :

Your Plot of Ground being levell'd, you must begin at one Side thereof, ranging a Line very tight cross the Piece, by which you must throw out a Trench exactly strait, and about six Inches deep, into which you must lay your Roots, spreading them with your Fingers, and placing them upright against the Back of your Trench, so that the Buds may stand forward, and be about two Inches below the Surface of the Ground, and at twelve Inches Distance from each other ; then with a Rake draw the Earth into the Trench again, laying it very level, which will preserve the Roots in their right Position : Then remove your Line a Foot farther back, and make another Trench in the like manner, laying therein your Plants, as before directed, and continuing the same Distance Row from Row, only observing between every four Rows to leave a Distance of two Feet four Inches for an Alley to go between the Beds to cut the *Asparagus*, &c.

Your Plot of Ground being finish'd and levell'd, you may sow thereon a small Crop of Onions, which will not hurt your *Asparagus*, and tread in your Seeds, raking your Ground level.

When your *Asparagus* is come up, (which will be in three Weeks or a Month after planting) you must with a small Hoe cut up all the Weeds, and thin your Crop of

*Onions* where they may have come up in Clusters: But this must be done carefully, and in dry Weather, that the Weeds may die as fast as they are cut up. This Work must be repeated about three times ; which if well done, and the Season not too wet, will keep the Ground clear from Weeds until the *Onions* are fit to be pull'd up, which is commonly the Beginning of *August*, and is known when their Greens fall down : When you have drawn off your *Onions*, you must clean your Ground well from Weeds, which will keep it clean till you earth the Beds ; which must be done in *October*, when the Haulm begins to decay, for if you cut off the Haulm while green, the Roots will shoot fresh again, which will greatly weaken them : This young Haulm should be cut off with a Knife, leaving the Stems two or three Inches above Ground, which will be a Guide for you to distinguish the Beds from the Allies ; then with a Hoe clear off all the Weeds into the Allies, and dig up the Allies, burying the Weeds in the Bottom, and throw the Earth upon the Beds, levelling it even, so that the Beds may be about four Inches above the Level of the Allies ; then you may plant a Row of *Colworts* in the Middle of the Allies, but do not sow or plant any thing upon the Beds, which would greatly weaken your Roots, nor would I ever advise the planting of *Beans* in the Allies, (as is the Practice of many) for it greatly damages the two out-side Rows of *Asparagus*. In this manner it must remain till Spring, when you must hoe over the Beds to destroy all young Weeds, and rake them smooth, and observe all the succeeding Summer to keep them

them clear from Weeds; and in *October* dig up the Allies again, as was before directed, earthing the Beds, &c.

In the Spring following you must gently stir the Earth of your Beds with a Dung-fork, to loosen it, that the Buds may not be obstructed by the Hardness of the Ground; but this must be done with great Care, otherwise the Buds will be broken, and the Crown of the Roots greatly damaged: Then rake the Earth smooth, just before the Buds do appear, which will destroy the young Weeds, and preserve the Beds clean till towards the Beginning of *May*, when the Weeds will begin to flourish, therefore the Beds must be then weeded, and all the succeeding Summer this must be repeated, as often as it is found necessary. At *Michaelmas* the Haulm must be cut down, and the Beds clear'd from Weeds, (as was directed for the first Year) observing, in digging of the Allies, to throw a greater Quantity of Earth upon the Beds, so that the Tops of the Roots may be covered at least five Inches, otherwise in cutting of the *Asparagus* (the following Summer) the Crown of the Roots will be in Danger of suffering by the Knife.

The third Spring after planting, you may begin to cut some of your *Asparagus*; therefore now you must fork up your Beds with a flat prong'd Fork made on purpose, and commonly call'd an *Asparagus Fork*: This must be done before the Buds shoot in the Spring, and with Care, not to fork too deep, so as to bruise the Head of the Root; then rake the Beds over smooth, just before the Buds appear above Ground, which will destroy all young Weeds, and keep your Beds clean a great

while longer than if left unrak'd, or done so soon as fork'd; and when your Buds appear about four or five Inches above Ground, you may then cut them; but it should be done sparingly, only taking the large Buds, and suffering the small to run up to strengthen the Roots; for the more you cut, the more the Roots will produce, but they will be the smaller, and sooner decay. When you cut a Bud, you must open the Ground with your Knife, (which should be very narrow and long in the Blade, and filed with Teeth like a Saw) to see whether there are any more young Buds coming up close by it, which might be either broken or bruise'd in cutting the other; then with your Knife saw it off about two Inches under Ground. This may appear a very troublesome Affair to People unacquainted with the practical Part; but those who are employ'd in cutting *Asparagus*, will perform a great deal of this Work in a short Time; but the Care in doing it is absolutely necessary to be observ'd by all that cut *Asparagus*.

The manner of dressing your *Asparagus*-Beds is every Year the same as directed for the second, *viz.* keeping them clear from Weeds, digging the Allies in *October*, and forking the Beds towards the End of *March*, &c. only observe every other Year to lay a little rotten Dung (from a *Melon* or *Cucumber*-Bed) all over your Beds, burying some in the Allies also, at the Time for digging them up: This will preserve the Ground in Heart to maintain your Roots in Vigour; and by which Management a Plot of good *Asparagus* may be continued for ten or twelve Years in Cutting, and will produce good Buds.

The Quantity of Ground necessary to be planted with *Asparagus*, to supply a small Family, should be at least six Rods; less than that will not do, for if you cannot cut one hundred at a time, it will scarcely be worth while, for you must be oblig'd to keep it after it is cut two or three Days to furnish enough for one Mess; but for a larger Family, twelve Rods of Ground should be planted, which, if a good Crop, will furnish two or three hundred each Day in the Height of the Season.

But as there are several People who delight in having early *Asparagus*, which is become a very great Trade in the Kitchen-Gardens near London, so I shall give proper Directions for the obtaining it any time in Winter.

You must first be provided with a Quantity of good Roots (either of your own raising, or purchas'd from such Gardeners as plant for Sale) that have been two Years planted out from the Seed-bed; and having fix'd upon the Time when you would willingly have your *Asparagus* fit to cut, about six Weeks before, you should prepare a Quantity of new Stable Horse-dung, which shou'd be thrown in a Heap for a Week or more, to ferment; then dig out a Trench in the Ground where you intend to make the Bed, the Width of the Frames that are design'd to cover it, and the Length in Proportion to the Quantity you intend to have, (which if design'd only to supply a small Family, three Lights at a time will be sufficient): Then lay down your Dung into the Trench, working it very regularly, and beat it down very tight with a Fork, laying it at least three Feet in Thickness; then put your Earth

thereon about six Inches thick, breaking the Clods, and laying it level, and at one End begin laying your Roots against a little Ridge of Earth, rais'd about four Inches high: Your Roots must be laid as close as possible one to the other in Rows with their Buds standing upright: And between every Row lay a small Quantity of fine Mould, observing to keep the Crown of the Roots exactly level: When you have finish'd laying your Bed with Roots, you must lay some stiff Earth up to the Roots on the Out-sides of the Bed, which are bare, to keep them from drying, and thrust two or three sharp-pointed Sticks, about two Feet long, down between the Roots in the Middle of the Bed at a Distance from each other. The Use of these Sticks are to let you know what Temper of Heat your Bed is in, which you may find by drawing up the Sticks, and feeling the lower Part; and if after the Bed has been made a Week, you find it doth not heat, you may lay a little Straw or Litter round the Sides, or upon the Top, which will greatly help it; and if you find it very hot, it will be adviseable to let it remain wholly uncover'd, and to thrust a large Stick into the Dung on each Side of the Bed in several Places, to make Holes for the great Steam of the Bed to pass off, which in a short time will reduce the Bed to a moderate Heat.

After your Bed has been made a Fortnight, you must cover the Crown of the Roots with fine Earth about two Inches thick; and when the Buds appear above Ground through that Earth, you must again lay on a fresh Parcel about three Inches thick; so that in the Whole it may be five Inches above the



the Crowns of the Roots, which will be sufficient.

Then you must make a Band of Straw (or long Litter) about four Inches thick, which you must fasten round the Sides of the Bed, so that the upper Part may be level with the Surface of the Earth on the Top of the Bed: This must be fasten'd with straight Sticks about two Feet long, sharpen'd at the Points to run into the Bed, and upon this Band you must set your Frames, and put your Glasses thereon; but if after your Bed hath been made three Weeks, you find the Heat decline, you must lay a good Lining of fresh hot Dung round the Sides of the Bed, which will add a fresh Heat thereto; and in bad Weather, as also every Night, keep the Glasses cover'd with Mats and Straw, but in the Day-time let it be all taken off, especially whenever the Sun appears, which shining through the Glasses will give a good Colour to the *Asparagus*.

A Bed thus made, if it works kindly, will begin to produce Buds for cutting in about five Weeks, and will hold about three Weeks in cutting, which, if rightly plant-ed with good Roots, will produce in that time about three hundred Buds in each Light; so that if you would continue your *Asparagus* until the Season of the Natural being produc'd, you must make a fresh Bed every three Weeks, until the Beginning of *March*, from the Season of your first Bed being made; for if your last Bed is made about a Week in *March*, it will last till the Season of natural *Asparagus*, and the last Beds will come a Fort-night sooner to cut than those made about *Christmas*, and the Buds will be larger and better colour'd,

as they enjoy a greater Share of the Sun.

If you intend to follow this Method of forcing early *Asparagus*, you must keep planting every Year a Quantity which you shall judge necessary, (unless you intend to buy it from some other Garden): The Quantity of Roots necessary to plant one Light, is commonly known by the Measure of the Ground where they grew, for in a good Crop, where few Roots are missing, one Rod of Ground will furnish enough for a Light: But those who propagate *Asparagus*, with a Design to take it up for Forcing at two Years End, plant six Rows in each Bed, at ten Inches Distance only, and lay the Plants in the Rows about eight Inches asunder, which will be a sufficient Distance, as they are design'd to remain but two Years. The best Ground for planting *Asparagus* to have large Roots for Hot-beds, is a low moist rich Soil; but for those that are to remain for a natural Produce, a middling Soil, neither too wet nor too dry: But a fresh sandy Loam, when well dung'd, is preferable to any other.

ASPEN-Tree; *vide* Populus.

ASPERULA; Woodroof.

This Plant grows wild in shady Woods in many Parts of *England*, and flowers in *April* and *May*, and is sometimes used in Medicine.

ASPHODELUS; Kingspear.

The Characters are;

The Stalk is round, smooth, strong, and branchy; the Leaves are like those of a Leek, but stronger and narrower; the Flowers are divided commonly as far as the Basis, naked, stellated, embracing the Ovary like a Calix: the Apex of the Ovary puts forth six Stamina and a long Tube

*Tube from the Center, which becomes a roundish Fruit, carnous, triangular, divided into three Partitions, in which are inclos'd triangular Seeds.*

There are three or four Varieties of this Plant which are well worth preserving in all curious Flower-Gardens, viz.

1. ASPHODELUS; *luteus & flore & radice.* C. B. The yellow *Asphodel* or *Kingspear*.

2. ASPHODELUS; *albus, ramosus, mas.* C. B. The great white branching *Asphodel* or *Kingspear*.

3. ASPHODELUS; *albus, non ramosus.* C. B. The white unbranched *Asphodel* or *Kingspear*.

4. ASPHODELUS; *Allobrogicus, magnoflore Lili.* H. L. The large flowering Savoy *Asphodel* or *King-spear*.

These Plants are all of them extreme hardy, and will prosper in almost any Soil that is not too stiff or wet, which is subject to rot the Roots in Winter: The Way to increase them is, by parting their Roots in *August*, before they shoot up their fresh green Leaves. These Plants growing pretty tall, are proper for large Borders, or to mix with Flowers of large Growth, in small Quarters or *Boisquettes* in *Wilderness-work*, but must not be planted in Borders of small Flowers, where, by their large spreading Roots they would destroy their weaker neighbouring Plants.

The yellow Sort multiplies very fast by Roots, and will soon overspread a large Border, if suffer'd to remain unremov'd, or the Side-Roots are not taken off: But the other Sorts are not so productive of Shoots from their Sides, and are much better kept within Bounds. They may all be rais'd from Seeds, which should be sown in *August*; and the *August* following, may be

transplanted out into Nursery Beds or Borders, and will produce Flowers the second Year. The yellow and large-branch'd *Asphodels* are sometimes used in Medicine.

ASPLENIUM or *Ceterach*; *Spleenwort* or *Miltwaste*.

The Characters are;

The Leaves are like those of the *Polypody*, but less, and pretty round, notched toward the Side, downy, having a squamous Dust, in which, by the Help of a Microscope, membranous [Capiulæ] or Seed-pods lying close to one another, are perceiv'd, every one furnished with a little round Rope, which by its Construction opening the Fruit into two Parts, pours forth certain very small Seeds; the Root is fibrous. This Plant thrives in stony Places, as in Walls, &c.

This Plant is of the Fern-kind, and grows upon old moist shady Walls in divers Parts of England, but is seldom propagated in Gardens.

ASTER; *Starwort*.

The Characters are;

It hath a fibrous Root, the Leaves are for the most part intire, and are plac'd alternately on the Branches; the Stalks are branch'd; the Flowers are radiated, specious, and have a scaly Cup: the Seeds are included in a downy Substance.

There is a great Variety of these Plants which are preserv'd in Botanick Gardens, from which I shall only select some of the most beautiful, as very proper Ornaments in Borders of large Gardens, when few other Flowers are in Beauty.

1. ASTER; *Atticus, caruleus, vulgaris.* C. B. The Italian blue *Starwort*.

2. ASTER; *Pyrenaicus, praxox, flore caruleo majore.* Dod. The early

early Pyrenean *Starwort*, with large blue Flowers.

3. ASTER; *Nova Anglia, altissimus, hirsutus, floribus maximis purpureo-violaceis. Par. Bat. Prod.* The tall rough New-England *Starwort*, with large purple Flowers.

4. ASTER; *Nova Anglia, latifolius, paniculatus, floribus saturate violaceis. H. L.* The broad-leav'd panicled New-England *Starwort*, with deep violet-colour'd Flowers.

5. ASTER; *Nova Anglia, umbellatus, floribus dilute violaceis. H. L.* New-England *Starwort*, with pale violet-colour'd Flowers growing in an Umbel.

6. ASTER; *Virginianus, serotinus, parvo albente flore. Park.* The late flowering Virginian *Starwort*, with small whitish Flowers.

7. ASTER; *caruleus, serotinus, frutescens, Tradescanti. Raii. Hist.* Tradescant's shrubby late-flowering blue *Starwort*.

8. ASTER; *Tripolii flore. C. B.* Narrow-leav'd *Starwort*, with Flowers like *Tripolium*.

9. ASTER; *Virginianus, pyramidatus, Hyssopi foliis, asperis, calycis squamulis foliaceis. Raul.* The Virginian *Starwort*, with Leaves like *Hyssop*, and large blue Flowers with icaly Cups.

10. ASTER; *annuus, caule villoso purpurascente, Eryngii folio, flore maximo purpureo pulcherrimo, semine violaceo. KIANG-SITA Sinensis. Fes-sieu.* Annual *Starwort* from *China*, with purple hairy Stalks, *Eryngo* leaves, a beautiful large purple Flower, and violet-colour'd Seed.

The first, second, eighth, and ninth Sorts are much preferable to the rest for small Gardens, being not so apt to spread at the Root as are the others, and grow much lower, are less subject to shed their Seeds, and, with a small Support,

may be kept upright in a regular Shape. The second Sort is the first in flower; it grows about two Foot high, and produces large purple Flowers, but seldom in such large Tufts as the first, nor are the Flowers so beautiful; however, as it comes to flower much sooner, it deserves a Place in every good Garden: This Sort is succeeded in flower by the Eighth, which is of shorter Growth, seldom rising above a Foot in Height: The Flowers are much smaller, but are produc'd in very large Clusters, so as to make a very agreeable Shew.

The first Sort succeeds these, and is one of the most beautiful Kinds; it grows seldom more than two Foot high, and is easily kept in Compass; the Flowers are large, produc'd in great Tufts, and are of a fine blue Colour, with a yellow Thrum in the Middle, and is a great Ornament to Gardens in its Season of Flowering. This is the *Amellus* of *Virgil*.

The third, fourth, and fifth Sorts, grow to the Height of four or five Foot, and produce large Quantities of Flowers, and are very proper for large Gardens, where they may have Room, but in small Places they are very apt to overrun whatever is planted near them, and the Seeds are subject to shatter and fill the Garden with young Plants, if the Stalks are not cut down and carried away soon after the Flowers are past; for which Reasons few People care to keep them, but yet in large Wilderesses they are very good to fill up Vacancies. and the Flowers are very proper to adorn Halls and Chimnies, and as they come at a Season when few better Flowers appear, are the more valuable: But in order to keep them within Bounds,

Bounds, you should at least once a Year dig round them, and cut off all the spreading Roots, which would otherwise extend themselves very far, and become unsightly, and with these Roots you may make fresh Plantations. These come at a middle Season to flower.

The sixth, seventh, and ninth Sorts are very late Flowerers, seldom appearing till *October*, and do in a good Season hold till the Middle of *November*, for which Reason they are much esteem'd.

The seventh Sort grows to a great Height, and is very proper to intermix with other large Kinds; but it is not so subject to creep at the Root as they are, and the Flowers are large, growing in handsome Tufts.

The sixth Sort flowers very late, but they are very small, and grow sparsedly on the Branches; for which Reason it is not so valuable as the other. But the ninth Sort is one of the most beautiful; the Flowers are large, and of a deep blue Colour; the whole Plant grows erect, and never creeps at the Root: It begins to flower toward the End of *September*, and continues till the Middle of *November*, and makes a very good Shew during that Season.

All the Sorts of *Starworts* are propagated by parting their Roots early in the Spring, and will grow in almost any Soil or Situation; the larger Sorts increase so fast, that in a short time they will run over a large Spot of Ground, if not prevented: These grow best in the Shade; the lower Kinds seldom creep at the Root, but must be taken up and planted every other Year, which will cause their Flowers to be the fairer. The ninth Sort may be increas'd by

planting Cuttings of it in any of the Spring Months, which will flower the first Year: The Roots of this increasing but slowly, this is the only Method to get a Stock of this Plant. This Plant, if set in Pots and shelter'd in bad Weather, will continue flowering most Part of the Winter, but dies to the Surface in the Spring, as do all the Sorts of *Starworts*.

The Seeds of this beautiful Plant were sent from *China*, by some of the *French* Missionaries, to the Royal Garden at *Paris*; and have been since distributed to several Persons in *Europe* by Dr. *Jessieu*, the present Botany Professor; but this Plant is not very common in *England* as yet. The Seeds of this Plant must be sown on a moderate Hot-bed the Beginning of *March*, and when the Plants are come up, they must be transplanted on a new Hot-bed, observing to shade them until they have taken Root; after this they must be frequently watered, and should have a pretty large Share of Air whenever the Weather is favourable; for if they are kept too close, or have too much Heat, they are very often in danger of rotting near their Roots. When the Plants have obtained a good Share of Strength, they should be transplanted into Pots filled with fresh light Earth, and plunged into a moderate Hot-bed, observing to shade them until they have taken Root; after which they must have a large Share of Air, and should be frequently refresh'd with Water. In *June* these Plants must be inured to bear the open Air by Degrees, to which they must be fully exposed toward the latter End of the Month (provided the Season be favourable) and the End of *July*, or the Beginning of *August*, they will

will begin to shew their specious Flowers, which should be suffered to remain on the Plants, in order to furnish Seeds for the succeeding Year, which will ripen in *September*, and must then be gathered and laid by until the Spring following.

ASTERISCUS; Yellow Starwort.

This Plant having no *English* Name, I have call'd it *Yellow Starwort*, altho' it is very different in its *Characters* from that Plant; the Seeds of this being plain, and for the most part border'd round the Edges, having no Down adhering to them, and the Flowers being furrounded with a *Foliaceous Calyx*.

There are several *Species* of this Plant cultivated in the curious Botanick Gardens, but in *England* we have but three Sorts, which are preserv'd for their Beauty, *viz.*

1. ASTERISCUS; *annuus, foliis ad florem rigidis. Tourne.* The annual *Asteriscus*, with stiff Leaves and Flowers.

2. ASTERISCUS; *annuus, Lusitanicus, odoratus. Boerb.* The *Portugul* sweet-smelling annual *Asteriscus*.

3. ASTERISCUS; *maritimus perennis patulus. Tourne.* The maritime Perennial dwarf *Asteriscus*.

The two first Sorts being Annuals, must be sown in good Ground, and a warm open Situation, early in the Spring, in the Places where they are to remain, for they do not care for transplanting.

These produce their Flowers in *August*, and if the Autumn is dry and warm, will perfect their Seeds in *September*, but in bad Years they often miscarry.

The third Sort is propagated either from Seeds, or by planting

Cuttings in any of the Summer Months; it is an abiding Plant, and continues flowering the greatest Part of the Year, for which it is valued: This is tender, requiring a little Shelter in very hard Weather.

ASTRAGALUS; Wild Liquorice, or Liquorice Vetch.

There are many *Species* of this Plant cultivated in the Botanick Gardens; but as they are seldom propagated in Gardens for Use or Beauty, I shall pass them over in this Place.

ASTRANTIA; Masterwort.

ATRACTYLIS; Distaff Thistle.

ATRIPLEX; Arach or Orach.

This Plant is sometimes cultivated in Gardens as a *Culinary* Herb, being used as Spinage, and is by some prefer'd to it, but there are very few in *England* that are fond of it. This may be sown in the Spring as Spinage, and must be eaten young, for when it is run up to Seed, it is very strong: This Plant, if suffer'd to shatter its Seeds, in a Garden, will become a lasting Inhabitant, the Seeds often remaining several Years in the Ground, and every time the Ground is dug, will send forth many of the Plants.

AVENUES, are Walks or Entrances leading to a Place, and, in Gardening, are Walks planted with Rows of Trees, made in the Front-end of the Garden, leading to the Front of an House, or to a Garden Gate, to a Highway Gate or Wood, to terminate in a Prospect.

As to such *Avenues* that lead to an House, they ought to be as wide as the whole Breadth of the Front, and if they be wider they are better.

And as for such *Avenues* to Woods or Prospects, &c. they ought not to be less than sixty

Foot in Breadth; and because such Walks are a long time before they are shady, it will be convenient to plant another Row on each Side, rather than to lose the Stateliness that the main Walk will afford in Time by being broad, where any thing of a Prospect is to be gained.

And as to the Distance one from another, they should not be planted nearer to one another than thirty-five or forty Feet, especially if the Trees are any thing of a spreading Kind; and the same Distance if they are for a regular Grove.

This Method of planting *Avenues*, is what has been generally practis'd till of late Years, but the old manner of laying out Gardens being, with good reason, disus'd, they have also introduced a more magnificent Method of planting *Avenues*; which is, to plant the Trees in Clumps, or Platoons, making the Opening much wider than before, and to place the Clumps of Trees at about three hundred Feet distance from each other. In each of these Clumps should be planted seven or nine Trees, according to the Fancy of the Owner, or the Person who designs the Plantation. But this is only to be practis'd where the *Avenue* is of a tolerable Length; for in short Walks, it will not appear soightly as even Rows of Trees. In large Parks, this Method of planting the Trees in Clumps has a very good Effect; for as a Person rides thro' the *Avenue*, the Opening between the Trees to the Turf where the Deer are feeding, is much more agreeable, than in passing between strait Rows of Trees. The Trees should be planted about thirty Feet aunder in the Clumps, and a little Ditch thrown up round each

Clump, to prevent the Deer from coming to bark them.

As to the Trees proper for planting *Avenues*, they may be the *English Elm*, the *Lime Tree*, the *Horse Chestnut*, the *Common Chestnut*, the *Beach*, and the *Abele*.

The *English Elm* is approv'd for all Places where it will succeed, and that it will do in most Places, except in very wet or cold shallow Grounds. 1. Because it will bear cutting, heading, lopping in any manner whatsoever, and probably with better Success than any other Tree.

Others approve of the *Dutch Elm*, rough or smooth; the broad-leav'd or *Witch Elm*, because they are of quicker Growth than the *English*, and will grow tolerably well in almost any Soil: It will also remove very well, and seldom miscarries, if but an ordinary Care be taken of it, which the *English Elm* is subject to do. 2. Because it is out with green Leaves in the Spring, with the earliest Plants, and continues its Beauty as long as almost any other Tree. 3. Because it makes an incomparable Hedge, and is preferable to all others for lofty *Espaliers*.

Secondly, The *Lime Tree*; this is approv'd by others, because it will do well in any tolerable Soil, if the Bottom be not wet and cold, and because of the regular Shape it has in growing, the Agreeableness of its Shade, and the beautiful Colour of its Leaves.

Thirdly, The *Horse Chestnut* is recommended to be us'd only in such Places as are very well defended from strong Winds; because wherever it grows freely, if it be not skilfully manag'd now and then by cutting, the Branches are subject to split down: This Tree is valuable

on account of its quick Growth, the Earliness of its coming out, the Nobleness of its Leaves, and the Beauty of its Flowers, being a fine Plant both for Shade and Ornament. This delights in a strong, hearty Soil, but will do well in any tolerable Soil, if good Care be taken in the Planting of it.

Fourthly, The *Common Chestnut* will do well in a proper Soil, and will rise to a considerable Height if planted close together, but if it be planted singly, where the Tree can take its own natural Shape, it is rather inclin'd to spread and grow globous than tall.

Fifthly, The *Beech* is recommended by some, but this seldom succeeds well after transplanting, without extraordinary Care, tho' it arrives to a very large Tree in many Places in *England* where it grows naturally, and is the most tedious and troublesome to raise to any tolerable Size in a Nursery Way.

Sixthly, The *Abele*. This indeed grows more dispers'd and loose in its Head than any of the former, and consequently is worse for Defence; but yet is not to be left out from the Number of Trees for *Avenues*, because it is the quickest in Growth of all the Forest Trees, and will thrive tolerably well in almost any Soil, and particularly in wet Ground where few of the before-mention'd Trees will thrive: And this seldom fails in transplanting.

Seventhly, The *Oak*; but this is seldom used in planting *Avenues*, because it requires so long a time to raise it up to any tolerable Stature in the Nursery Way; nor is it apt to thrive much after it has been transplanted if at any Bigness.

As for the *Alder*, *Ash*, and *Sycam-*

*more*, they are but rarely used for planting *Avenues*.

AURANTIUM; The Orange-Tree.

The Characters are;

The Leaves have two Lobes or Appendages at their Base, which are like Ears, and cut in Form of a Heart; the Fruit is round and depress'd, and of a yellow Colour when ripe; in which it differs from the Citron and Lemon.

There is a very great Variety of these Trees preserv'd in the Gardens of the Curious; to enumerate them all would be too tedious in this Place, I shall therefore only mention the best known Sorts, and proceed to their Culture.

1. AURANTIUM; *acri medullâ, vulgare*. Ferr. Hesp. The common Seville Orange.

2. AURANTIUM; *medullâ dulcè vulgare*. Ferr. Hesp. The sweet Seville Orange.

3. AURANTIUM; *Sinense*. Ferr. Hesp. The China Orange.

4. AURANTIUM; *Crispo folio*. Ferr. Hesp. The curl'd-leav'd Orange.

5. AURANTIUM; *Crispo folio, elegantissime variegato*. Boerb. Ind. The strip'd curl'd-leav'd Orange.

6. AURANTIUM; *Corniculatum*. Ferr. Hesp. The horn'd Orange.

7. AURANTIUM; *folio variegato, vulgare, Anglicum dictum*. Boerb. Ind. The common strip'd Orange.

8. AURANTIUM; *Hermaphroditum, partim Aurantium, partim Citrium*. The Hermaphrodite Orange.

9. AURANTIUM; *angusto Salicis folio dictum*. Boerb. Ind. The willow-leav'd Orange, commonly call'd, The Turkey Orange.

10. AURANTIUM; *angusto Salicis folio elegantissime variegato*. The strip'd Turkey Orange.

11. AURANTIUM; *fructu maximo*, *Indiæ Orientalis*. Boerb. Ind. The Pumpelmoes; or Shaddock.

12. AURANTIUM; *flore duplici*. The double flower'd Orange.

13. AURANTIUM; *fructu minimo*. The Nutmeg; or Dwarf Orange.

14. AURANTIUM; *fructu minimo*, *foliis ex albo variegatis*. The strip'd Nutmeg; or Dwarf Orange.

There is also a great Variety of Oranges with strip'd Leaves, to be found in the curious Collections of these Trees, which differ in the Colour or Manner of the Stripes or Blotches; but these I shall pass over, and proceed first to the Manner of raising them from Seed.

If you purpose to raise Stocks for budding of Oranges, you should procure some Citron-Seeds which were duly ripen'd; for the Stocks of this Kind are preferable to any other, both for Quickness of Growth, as also that they will take Buds of either Orange, Lemon, or Citron: The best Seeds are usually to be had from rotten Fruits, which are commonly easy to be procur'd in the Spring of the Year: Then prepare a good Hot-bed of either Horse-dung or Tanners-bark, the last of which is by much the better, if you can easily procure it: When this Bed is in a moderate Temper for Heat, you must sow your Seeds in Pots of good rich Earth, and plunge them into the Hot-bed, observing to give them Water frequently, and shade the Glasses with Mats in the great Heat of the Day; and raising the Glasses to give proper Air, lest the Seeds should suffer by too great Heat: In three Weeks-time your Seeds will come up; and if the young Plants are not stunted, either for want of proper Heat or Moisture, they will be in a Month's-

time after their Appearance, fit to transplant into single Pots; you must therefore renew your Hot-bed; and having prepar'd a Quantity of small Half-penny Pots, (which are about five Inches over at the Top) fill this half full of good fresh Earth, mix'd with very rotten Cow-dung; and then shake out the young Plants from the large Pots, with all the Earth about them, that you may the better separate the Plants without tearing their Roots; and having put a single Plant into each of the small Pots, fill them up with the same Earth as before directed, plunging the Pots into the new Hot-bed, giving them a good Watering to fix the Earth to their Roots, and observe to repeat the same very often, (for this Plant, when in a Hot-bed, requires much Water) and be sure to screen them from the Sun in the Heat of the Day: In this Method, with due Care, your Plants will grow to be two Feet high by July. When you must begin to harden them by Degrees, in raising your Cakes very high; and when the weather is good, take them quite off, but do not expose them to the open Sun in the Heat of the Day, which would be very injurious to them, especially while young: Toward the End of September you must house them, observing to place them near the Windows of the Green-house, to prevent the Damps from moulding their tender Shoots: During the Winter-Season they may be often refresh'd with Water, but it must be done sparingly, giving them but a little each time; and in March or April, wash their Heads and Stems, to clear them from the Filth that may have settled thereon during their being in the House; and you must also give them



them a gentle Hot-bed in the Spring, which will greatly forward them, but harden them by the Beginning of *June*, that they may be in right Order to bud in *August*, when you should make Choice of Cuttings from Trees that are healthy and fruitful, of whatever Kinds you please, observing that the Shoots are round, the Buds of these being much better and easier to part from the Wood than such as are flat: When you have budded the Stocks, you should remove them into a Green-house to defend them from Wet, turning the Buds from the Sun, but let them have as much free Air as possible, and refresh them often with Water: In a Month's time after budding, you will see which of them has taken; you must then untie them, that the Binding may not pinch their Buds, and let them remain in the Green-house all the Winter, and in the Spring prepare a moderate Hot-bed of Tanners-bark; and after having cut off the Stocks about three Inches above the Buds, plunge their Pots into the Hot-bed, observing to give them Air and Water, as the Heat of the Weather shall require; but be sure to screen them from the violent Heat of the Sun during the Heat of the Day: In this Management, if your Buds shoot kindly, they will grow to the Height of three Feet by *July*; at which time you must begin to harden them before the cold Weather comes on, that they may the better stand in the Green-house the following Winter: And as this will be a sufficient Height for the Stems, you may stop the leading Shoot, in order to force out lateral Branches: In the first Winter after their shooting, you must keep them very warm, for by forcing them in the

Bark-bed, they will be somewhat tenderer, but it is very necessary to raise them to their Height in one Season, that their Stems may be strait: for in such Trees which are two or more Years growing to their heading Height, the Stems are always crooked: In the succeeding Years, their Management will be the same as in full-grown Trees, which will be hereafter treated of; I shall therefore now proceed to treat of the Management of such Trees as are brought over every Year in Chests from *Italy*; which is, indeed, by much the quicker Way of furnishing a Green-house with large Trees, for those which are rais'd from Seeds in *England*, will not grow so large in their Stems under ten or twelve Years as these will have when brought over; and although their Heads are small when we receive them, yet in three Years, with good Management, they will obtain large Heads, and produce Fruit.

In the Choice of these Trees, observe first, the Difference of their Shoots and Leaves, (if they have any upon them) to distinguish their different Sorts; also prefer those that have two good Buds in each Stock, (for many of them have but one, which will always produce an irregular Head); the Straitness of the Stem, Freshness of the Branches, and Plumpness of the Bark, are necessary Observations.

When you have furnish'd yourself with a Parcel of Trees, you must prepare a moderate Hot-bed of Tanners-bark, in Length and Breadth according to the Number of Trees; then put your Trees into a Tub of Water upright, about half-way of the Stems, leaving the Head and upper Part of the Stem out of the Water, the better to

draw and imbibe the Moisture: In this Situation they may remain two or three Days, (according to their Plumpness when you receiv'd them); then take them out, and clean their Roots from all Filth, cutting off all broken or bruis'd Roots, and all the small Fibres, which are quite dry'd by being so long out of the Earth, and scrub the Stems with an hard Hair-brush, cleaning them afterwards with a Cloth; then cut off the Branches about six Inches from the Stem; and having prepar'd a Quantity of good fresh Earth, mix'd with very rotten Neats-dung, plant your Trees therein, observing never to put them into large Pots, for if they are but big enough to contain their Roots, it is sufficient at first Planting, and be sure to put some Pot-sheards and large Stones in the Bottom of each Pot, to keep the Holes at the Bottom of the Pots from being stopp'd with Earth, that the Water may freely pass off; then plunge these Pots into the Bark-bed, watering them well to settle the Earth to their Roots, frequently repeating the same as they may require it; and observe to screen the Glasses of your Hot-bed from the Sun in the Heat of the Day.

If your Trees take to growing kindly, (as there is little Reason to doubt of it, if the Directions given be duly observ'd) they will have made strong Shoots by the Beginning of *June*; at which Time you should stop their Leaders to obtain lateral Branches, to furnish their Heads; and now you must give them Air plentifully, and begin to harden them, that in the Middle of *July* they may be remov'd into the open Air, in some warm Situation, defended from the great Heat of the Sun and Winds,

that they may be harden'd before Winter: About the End of *September* you should house these Plants, setting them at first in the Front of the Green-house near the Glasses, keeping the Windows open at all Times when the Weather will permit; and about the latter End of *October*, when you bring in the *Myrtles*, and other less tender Trees, you must set your *Oranges* in the warmest and best Part of the House, placing lower Plants or Trees in the Front to hide their Stems: During the Winter, let your Waterings be frequent, but give them but little at a Time, for now their Heads are but small, and therefore incapable to discharge too great a Quantity of Moisture, and take great Care to guard them from Frost.

In the Spring, when you begin to take out some of your hardest Sorts of Plants, to thin your House, wash and cleanse the Stems and Leaves of your Orange-Trees, taking out the upper Part of the Earth in the Pots, filling them up again with good fresh, rich Earth, laying thereon a little rotten Neat's-Dung round the Outer-side of the Pots, but do not let it lie near the Stem of the Trees; then place them at wider Distances in the House, that the Air may circulate round their Heads, giving them Air discretionally as the Weather grows warm, but do not remove them into the open Air until the Middle of *May*, that the Weather is settled; for many times, when they are remov'd out too soon, the Mornings often proving Cold, gives them at least a great Check, and sometimes kills the extreme weak Part of the Shoots: Let the Situation for your Orange-Trees, during the Summer Season, be as much defended

defended from the Sun in the Heat of the Day, and strong Winds, as possible, (by tall Trees and Hedges) both of which, if they are expos'd thereto, are very hurtful to them.

As these Trees advance, it will be necessary in the Summer, to stop strong Shoots when they grow irregular, to force out lateral Branches to fill the Head, but do not pinch off the Tops of all the Shoots, (as is the Practice of some) which will fill the Tree with small Shoots, too weak to support Fruit, but endeavour to form a regular Head, and obtain strong Shoots, taking away weak trifling Branches where they are too close.

During the Summer Season your Orange-Trees will require frequent and plentiful Waterings in dry Weather, especially if they are large; therefore you should endeavour to have the Water as near the Trees as possible, to save the Trouble of carrying it, which, in a large Quantity of Trees, takes up much Time: Your Water should be soft and expos'd to the Air, but never add Dung of any Sort thereto, which, altho' by many frequently recommended, yet has always been found destructive to these and all other Trees, if much us'd; it being like hot Liquors to human Bodies, which at first taking seem to add Vigour; yet certainly leave the Body weaker after some Time than before.

Your Orange-trees will require to be shifted and new potted every other Year; therefore you must prepare a Quantity of good Earth, at least a Year before you intend to use it, that it may be well mix'd, and perfectly rotten. The best Season for this Work is about the End of *April*, that they may have taken fresh Root before they are remov'd out of the Green-house,

and when this Work is perform'd, it will be necessary to let them remain in the House a Fortnight longer than usual, to be well-settled.

In the performing this Work, after you have drawn the Trees out of the Pots, you must cut off all the Roots round the Outside of the Ball of Earth, and take away all mouldy Roots (if any such be) then with a sharp Iron Instrument, get as much of the old Earth from between the Roots as possible, being careful not to break or tear the Roots; then set the Root of the Tree into a large Tub of Water, for about a Quarter of an Hour, to soak the under Part of the Ball of Earth; and afterwards scrub the Stems of the Trees with a hard hair Brush, cleaning them and the Heads with Water and a soft Woollen Cloth; your Pots being prepar'd with some Potshards and large Stones in the Bottom, put some of your fresh Earth into the Pot about two Inches thick, and having plac'd your Tree thereon, in the Middle of the Pot, upright, fill it up with the same rich Earth, pressing it down hard with your Hands; then water the Tree all over the Head, with a watering Pot that has a Rose upon the Spout, to let the Water fall light and thick; (as in a Shower of Rain) and in watering these Trees, do it in the same Manner, during the Time they abide in the House after shifting; this will greatly refresh their Heads, and promote their taking fresh Roots.

When you first set these Trees abroad after shifting, you should place them near the Shelter of Hedges, and fasten their Stems to strong Stakes, to prevent their being disturb'd by Winds, which

sometimes will blow fresh-planted Trees out of the Pots, if too much expos'd thereto, and thereby greatly injure their new Roots.

Those Years in which the Trees are not shifted, you must in *April* observe to take out as much of the old Earth from the Tops of the Pots as possible, without injuring the Roots of the Trees, and put in fresh Mould to fill up the Pots again. You must also wash and clean their Stems, and their Leaves, as was before directed; this will greatly strengthen their Bloom, and cause them to shoot vigorously the succeeding Summer.

If old Orange-trees have been ill manag'd, and their Heads become ragged and decay'd, the best Method to restore them, is, to cut off the greatest Part of their Heads early in *March*, and draw them out of the Tubs or Pots, and shake off the Earth from their Roots, cutting away all small Fibres and mouldy Roots; and then soak and clean their Roots, Stems, and Branches, planting them into good Earth, and setting them into a hot Bed of Tanners-bark, as was directed for such Trees as came from abroad, managing them in the same Manner; by this Means they will produce new Heads, and in two Years time become good Trees again. But if these are large Trees, and have grown in Tubs for several Years, your best Way will be, to prepare a Parcel of rough Baskets (such as are us'd for basketting Ever-greens, when sent to a distant Place); let these be somewhat less than the Tubs you design to plant your Trees into, then plant your Trees herein, plunging them into the hot Bed; and about the Beginning of *July*, when your Trees have good Shoots, you may

remove them into the Tubs, with their Baskets about them, filling the empty Space with the same good Earth; this will preserve your Tubs from rotting in the Bark, and the Trees will do equally as well as if planted into the Tubs at first, provided you are careful in setting in the Baskets not to disturb their Roots; and also, let them remain in the Greenhouse a Fortnight or three Weeks after planting before you set them abroad.

In the Management of Orange Trees which are in good Health, the chief Care should be to supply 'em with Water duly, and not (as is sometimes practic'd) starve them in Winter, whereby their Fibres are dried and do become mouldy, to the great Prejudice of the Trees; nor to give 'em Water in too great abundance; but rather let their Waterings be frequent, and given in moderate Quantities. You must also observe, that the Water has free Passage to drain off; for if it be detain'd in the Tubs or Pots, it will rot the tender Fibres of the Trees. During the Winter Season, they must have a large Share of Air when the Weather is favourable; for nothing is more injurious to these Trees, than stifling of them; nor should they be placed too near each other, in the Greenhouse, but set them at such Distance, that their Branches may be clear of each other, and that the Air may circulate freely round their Heads. In Summer they should be placed where the Winds are not violent, and to have the Morning and Evening Sun; for if they are too much expos'd to the Mid-day Sun, they will not thrive. The best Situation for 'em, is, near some large Plantation of Trees, which

which will break the Force of the Winds, and screen 'em from the violent Heat of the Sun. In such a Situation they may remain until the Beginning of *October*, or later, according as the Season proves favourable; for if they are carried into the Green-house early, and the Autumn should prove warm, it will occasion the Trees to make fresh Shoots, which will be weak and tender, and so liable to perish in Winter; and sometimes it will occasion the Flowering in Winter, which greatly weakens the Trees.

The *Shaddock* and *Citron* are much tenderer than either the *Orange* or *Lemon*, so should be set into the Green-house sooner, and have a warmer Situation in Winter, otherwise their Fruit will all drop off.

The best Compost for *Orange* Trees, is, two thirds of fresh Earth from a good Pasture, which should not be too light, nor over stiff, but rather a *Hazel Loam*; this should be taken about ten Inches deep with the *Sward*, which should be mixed with the Earth to rot, and one third Part of *Neats-Dung*; these should be mixed together, at least twelve Months before it is used, observing to turn it over every Month, to mix it well, and to rot the *Sward*; this will also break the Clods, and cause the Mould to be finer. Before you make use of this Earth, you should pass it thro' a rough Screen, to separate the great Stones, and the Roots of the *Sward* therefrom; but by no means sift the Earth too fine, for this is very prejudicial to most Plants, but particularly to *Orange* Trees.

AURICULA MURIS or PILOSELLA; Mouse-Ear.

This is a Sort of *Hawkweed*, with small hairy Leaves, which are

white underneath; the Plant trails upon the Ground, taking Root at the Joints, by which means it will soon spread over a large Compass of Ground.

This is very common in *England*; it grows chiefly on dry barren Places, or upon old Walls.

AURICULA URSI; Bear's-Ear, or Auricula.

The Characters are;

*It hath a perennial Root; the Leaves are smoother and thicker than those of the Primrose; the Cup of the Flower is shorter, so that the Tube appears naked; the Flower is shap'd like a Funnel, the upper Part is expanded and divided into five Segments; this is succeeded by a globular Seed-Vessel, containing many small Seeds.*

To enumerate the Diversities of this Plant, would be almost endless and impossible; for every Year produces vast Quantities of new Flowers, differing in Shape, Size, or Colour of the Flowers; and also in the Leaves of these Plants, there is as great a Variety, so that the skilful Florist, is oftentimes capable of distinguishing the particular Sorts thereby.

But as it seldom happens, that such of these Flowers as are at one Time in great Esteem, continue to be regarded a few Years after (there being still finer or larger Flowers produced from Seeds, which are what the Florists chiefly seek after) so it would be needless to mention any of them: Wherefore I shall proceed to give the Characters of a good *Auricula*.

1. *The Stem of the Flower should be lofty and strong.*

2. *The Footstalk of the Flower should be short, that the Umbel may be regular and close.*

3. *The Pipe or Neck of each Flower should be short, and the Flowers large and regularly spread, being no ways inclinable to cup.*

4. *That the Colours are very bright and well mixed.*

5. *That the Eye of the Flower be large, round, and of a good White or Yellow, and that the Tube or Neck be not too wide.*

All Flowers of this kind, that want any of the above-mention'd Properties, are now rejected by every good Florist; for as the Varieties every Year increase from Seeds, so the bad ones are turn'd out to make Room for their Betters; but in some People the Passion for new Flowers so much prevails, that supposing the old Flower greatly preferable to a new one, if it is of their own raising, the latter must take Place of the old one.

In order to obtain good Flowers from Seeds, you must make choice of the best Flowers you have, which should be expos'd to the open Air, that they may have the Benefit of Showers, without which they seldom produce good Seeds; the Time of their Ripening is in *June*, which you will easily know, by their Seed-vessel turning to a brown Colour and opening; you must therefore be careful lest the Seeds be scatter'd out of the Vessel, for it will not be all fit to gather at the same Time.

The Time for sowing this Seed, is commonly in *August*; but if it be sown any Time before *Christmas*, it will be Time enough.

The best Soil for this Seed, is good fresh, light sandy Mould, mix'd with very rotten Neat's-Dung. with this you should fill your Pots, Boxes, or Baskets, in which you intend to sow your

Seeds; and having level'd the Surface of the Earth very smooth, sow your Seeds thereon, covering it very lightly with rotten willow Mould, then cover the Box, &c. with a Net or Wire, to prevent the Cats, Fowls, &c. from scratching out, or burying your Seeds too deep; let these Boxes, &c. be placed so as to receive half the Day's Sun, during the Winter Season; but in the Beginning of *March*, remove them where they may have only the Morning Sun till ten of the Clock, for your young Plants will now soon begin to appear, which if expos'd to one whole Day's Sun only, will be all destroy'd.

During the Summer Season, in dry Weather, often refresh them with Water, but never give them too great Quantities at once: In the *July* following, your Plants will be large enough to transplant, at which Time you must prepare a Bed, or Boxes, fill'd with the above-mention'd Soil, in which you may plant them about three Inches square, and (if in Beds) you must shade them every Day, till they are thoroughly rooted, as also in very hot dry Weather; but if they are in Baskets or Boxes, they may be removed to a shady Place.

When you have taken all your Plants which are now come up out of your Boxes or Pots, level the Earth gently again, for it often happens, that some of the Seeds will lie in the Ground two Years before they appear, especially, if they were cover'd too deep when sown.

The Spring following, many of these Flowers will shew, when you may select such of them as have good Properties, which should be removed each of them into a Pot of the same prepar'd Earth, and

and preserv'd until the next Season, at which Time you will be capable to form a Judgment of the Goodness of the Flower; but those that produce plain-colour'd, or small Flowers, should be taken out, and planted in Borders in the out Parts of the Garden, to make a Shew, or gather for Nosegays, &c. the others which do not produce their Flowers the same Year, may be taken up, and transplanted into a fresh Bed, to remain till you see how they will prove.

The Manner of propagating these Flowers when obtain'd, is from Off-sets, or Slips, taken from the old Roots in *April*, when the Flowers are in Bloom; these Off-sets must be planted into small Pots, fill'd with the same Sort of Earth, as was before directed for the Seedlings, and during the Summer Season, should be set in a shady Place, and must be often refresh'd with Water, but in the Winter should be shelter'd from the violent Rains; the Spring following, these young Plants will produce Flowers, tho' but weak; soon after they are past flowering, you must put them into larger Pots, and the second Year they will blow in Perfection.

But in order to obtain a fine Bloom of these Flowers, you must observe the following Directions:

First, Preserve your Plants from too much Wet in Winter, which often rots and spoils them, but let them have as much free open Air as possible; nor should they be too much expos'd to the Sun, which is apt to forward their budding for Flower too soon; and the frosty Mornings which often happen in *March*, do thereby destroy their Buds, if they are not protected therefrom.

Secondly, In the Beginning of *February*, if the Weather is mild, you must take off the upper Part of the Earth in your *Auriculas* Pots, as low as you can without disturbing their Roots, and fill up the Pots with fresh rich Earth, which will greatly strengthen them for Bloom; as also prepare your Off-sets for transplanting in *April*, by causing them to push out new Roots.

Thirdly, You must cover your Pots with Mats in frosty Weather, during this Time of their budding for Flower, lest the sharp Mornings blight them, and prevent their blowing.

Fourthly, When your Flower-Stems begin to advance, and the blossom Buds grow turgid; you must protect them from hasty Rains, which would wash off their white mealy *Farina*, and greatly deface the Beauty of their Flowers; but at the same Time, observe to keep them as much uncover'd as possible, otherwise their Stems will be drawn up too weak to support their Flowers, (which is often the Case when their Pots are placed under Walls) and give them gentle Waterings to strengthen them; but let none of the Water fall into the Center of the Plant or among their Leaves.

Fifthly, When your Flowers begin to open, you should remove their Pots upon a Stage (built with Rows of Shelves, one above another, and cover'd on the Top, to preserve them from Wet; this should be open to the Morning Sun, but shelter'd from the Heat of the Sun in the Middle of the Day) in this Position they will appear to much greater Advantage, then when the Pots stand upon the Ground; for their Flowers being  
low,

low, their Beauty is hid from us; whereas when they are advanced upon Shelves, we see them in a full View; in this Situation they may remain, until the Beauty of their Flowers are past; when they must be set abroad to receive the Rains, and have open free Air, in order to obtain Seeds, which will fail if they are kept too long under Shelter. When your Seed is ripe, observe to gather it when it is perfectly dry, and expose it to the Sun in a Window upon Papers, to prevent its growing mouldy, and let it remain in the Pods till the Season for sowing it.

Those Persons who are curious in having their Flowers very strong, do never suffer more than two Heads to remain upon each Root; for where there are more left, the Heads will be weak, and each will produce a small Truss of Flowers. Therefore where there is but one strong Head upon a Root, the Truss of Flowers will be much the stronger.

In Autumn these Plants must be carefully clear'd from rotten or decayed Leaves, which, if suffered to remain upon the Plants, will greatly weaken, and sometimes wholly destroy them. You must also observe that the Wet be not detain'd in the Pots, for where this happens to be lodged any Time, it rarely fails to kill the Plants.

AURICULA URSI MYCONI;  
*vide* Verbascum.

AZEDARACH; The Bead-Tree.  
The Characters are;

*It hath pennated Leaves somewhat like those of the Ash; the Flowers consist of five Leaves, which expand in form of a Rose; in the Center of the Flower is a long simbriated Tube, containing the Style; the Fruit is roundish and fleshy, containing a hard*

*furrow'd Nut, which is divided into five Cells, each containing one oblong broadish Seed.*

We have, at present, but one Specie of this Tree in England; which is,

AZEDARACH. *Dod.* The Bead-Tree.

This Tree is propagated only by Seeds (which may be obtain'd from Italy or Spain, where they annually produce ripe Fruits in the Gardens where they are planted; for it is not an Inhabitant of either of those Countries:.) The Seeds or Berries should be sown in Pots fill'd with good fresh light Earth, and plung'd into a Hot-bed of Tanners-bark, where (if the Seeds are fresh) they will come up in about two Months time: When the Plants are come up, you should water them frequently, and begin to let them have a large Quantity of free Air, by raising the Glasses every Day; and in July you should expose them to the open Air, in a well shelter'd Situation, that they may be harden'd before Winter. In October you should remove the Pots into the Conservatory, where they should be plac'd near the Windows, that they may enjoy free open Air, when the Weather is mild, for they don't care to be over-top'd with other Plants. During the Winter Season you must refresh them gently with Water, but by no means repeat this too often, nor give them too much each time; for their Leaves being dropp'd, they will not be in a Condition to throw off a Superfluity of Moisture.

In March following you may shake out your Plants from the Seed Pots, and divide them, planting each into a separate small Pot, fill'd with light fresh Earth, plunging



ing them into a moderate Hot-bed, which will greatly promote their Rooting, and increase their Growth; but you should not draw them too much, but give them a large Share of Air when the Weather is good, and in *June* you should remove them out into the open Air as before; and during the three or four Winters, while the Plants are young, you must house them, to secure them from the Cold; but when the Plants are grown pretty large and woody, they will endure to be planted in the open Air: The best Season for this is in *April*, at which time you should shake them out of the Pots, being careful not to break the Earth from the Roots, but only pare off with a Knife the Outside of the Ball of Earth; then open your Holes, and put in the Plant, closing the Earth to its Roots, observing, if the Weather is dry, to give it some Water, which should be repeated twice a Week until the Plants have taken Root: But you must observe to plant them on a dry Soil, and in a warm Situation, otherwise they will be liable to miscarry in severe frosty Weather.

I have been inform'd, that there was formerly a large Tree of this Kind, in the Gardens of the Bishop of *London*, at *Fulham*, which produc'd Flowers several Years; but this, with many other valuable Trees, which were grown to a considerable Height in the same Gardens, have been long since demolish'd.

At present I don't know of any of these Trees in *England*, which are arrived to any considerable Stature; but I have transplanted one Tree, which is seven Years old, into the open Ground in the Physick-Garden, which I find resists

the Cold extremely well without any Shelter.

In the Year 1732. I had several of those Plants flowered in the Physick-Garden, which were but four Years old from Seed; but that Plant which grew in the open Ground did not flower altho' it was three times the Size of the others. At *Paris* there are some large Plants of this Kind, which do produce Flowers and Fruit almost every Year.

There is another Kind of this Tree, which is preserved in some curious Gardens in *Holland*; which is called; *Azedarach sempervirens & florens, i. e.* The Bead Tree which is always green and flowering. But this I have not seen in *England*.

The outside Pulp of this Fruit is in some Countries eat, but I don't find it is much commended; but the Nut is by the Monks (and other Religious Persons in *Roman* Catholick Countries) bored thro' with an Awl, and strung as Beads, with which they say their *Pater-Noster*, which has occasion'd its being call'd the *Bead-Tree*.

AZEROLE, or LAZAROLE; *vide* Meispilus.

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**B**ACCHARIS; Plowman's Spikenard; *vide* Conyza.

BALAUSTIA; *vide* Punica.

BALAUSTIUM; The Cup of the Flower of the wild Pomegranate.

BALLOTE; Stinking Black Horehound.

The Characters are;

*It hath Leaves like the Dead-Nettle; the Flowers are produc'd in Bunches at the Joints of the Stalks, from*

from the Pedicle of the Leaves, which have one single Footstalk, and stand but on one Side of the Stalks; the Cup of the Flower is tubulous, and hath five Angles, divided into five Segments at the Top; the Galea (or Crest) of the Flower is hollow, and the Beard is cut into three Parts, the middle Part being broad, and shap'd like a Heart; each Flower is succeeded by four naked Seeds.

We have two Varieties of this Plant growing wild in England; which are,

1. BALLOTE; *Mitth.* 825. *Marubrium, nigrum, sive Balloite.* *J. B.* The stinking Black Horehound.

2. BALLOTE; *flore albo.* *Tourn.* Stinking Black Horehound, with white Flowers.

The first of these Plants is common upon most dry Banks near London, and is seldom suffer'd to have a Place in Gardens; but this being a Plant sometimes used in Physick, I thought proper to mention it in this Place, it may be easily propagated by either Seeds or Roots, but is very apt to increase too fast in a Garden. This is the common *Black Horehound* of the Shops: The second Sort is a Variety of the first, which is found sometimes with the other wild.

BALM; *vide* *Melissa.*

BALSAMINA; The Female Balsamine, or Balsam Apple.

The Characters are;

*It hath an anomalous Flower, which consists of an unequal Number of Leaves, having sometimes two, three, four, six, or more Leaves, with a Calcar or Spur to the Flower: These Flowers are succeeded by turbinated Vessels, resembling Pods, which, when ripe, upon the first Touch burst, and cast forth several roundish Seeds.*

The Species are;

1. BALSAMINA *lutea*; *sive, Noli me tangere.* *C. B.* The Yellow Balsamine; or, Touch me not.

2. BALSAMINA *fœmina*; *flore purpureo.* The Female Balsamine, with Purple Flowers.

3. BALSAMINA *fœmina*; *flore candido.* *H. L.* The white Female Balsamine.

4. BALSAMINA *fœmina*; *flore rubro.* *H. L.* The red Female Balsamine.

5. BALSAMINA *fœmina*; *flore majoro candido.* *Tourn.* The large white-flower'd Balsamine.

6. BALSAMINA *fœmina*; *flore majoro specioso.* *Tourn.* The large specious flower'd Female Balsamine.

7. BALSAMINA *fœmina*; *flore partim candido, partim purpureo.* The purple and white-strip'd Balsamine.

8. BALSAMINA *fœmina*; *flore majoro, elegantissimo variegato.* The large-flower'd strip'd Balsamine.

9. BALSAMINA *fœmina*; *flore majoro pleno, elegantissimè variegato.* The double large-flower'd strip'd Balsamine; or, Immortal Eagle Flower.

The first of these Species is preserv'd in Gardens, for the Diverfion it affords when the Seed Vessels are ripe, by desiring ignorant Persons to gather them, who are surpriz'd to find, upon the first Touch, that the Pods fly to Pieces in their Hands: This Plant is very hardy in respect to Cold; and is Annual, and if suffer'd to cast its Seeds, will come up every Spring without any Care; it delights best in moist shady Places, where, if it is not rooted out, it will multiply fast enough.

The other Sorts are commonly rais'd on Hot-beds in the Spring, and afterwards planted into Pots or Borders, to adorn Court-Yards and

Parterres. The second, third, and fourth Sorts will come up in the common Ground, without any artificial Heat, and make stronger Plants than when rais'd in a Hot-bed, and stand longer in Flower, but the four last mention'd Sorts are much tenderer, and must be rais'd on a Hot-bed, and afterward planted in Pots, and set into a fresh Hot-bed to bring them forward (especially the last Sort) which otherwise will not flower soon enough to produce ripe Seeds. There are two different Kinds of this large double-flower'd *Balsamine*, one is brought from the *West-Indies*, by the Name of the *Cockspur*; this is very apt to produce large strong Plants, but rarely begins to flower till the End of the Summer, and then very often hath but small Quantities of Flowers, and seldom produces ripe Seeds in *England*.

The other Sort is brought from *China*, by the Name of *Immortal Eagle Flower*; this Plant produces large beautiful double Flowers in great Quantities, and is one of the finest annual Plants we have, continuing a long time in Flower, (especially if shelter'd from the Violence of Wind and Rain, both of which are great Enemies to this Plant); this Sort also ripens Seeds very well, but is apt to degenerate in a few Years with us to single Flowers, and plain Colours.

These Plants must be taken great Care of while young, and in the Hot-bed, particularly to give them as much free Air as possible, to prevent their running up too slender, nor must they have much Water, which often rots them at Bottom near the Surface of the Ground.

When you put these Plants into Pots, observe to chuse such as have

clear spotted Stems, which always produce strip'd Flowers, and those with greenish Stems white Flowers, and the red Stems red Flowers: So that if you have Plants enough, you need only take the strip'd ones. And in order to preserve them from degenerating, you should take off all single or plain-colour'd Flowers from your Plants, and not suffer them to seed, by which means you will preserve this beautiful Plant many Years longer than you otherways could.

BALSAMITA; *Costus Hortorum*, or *Cost-Mary*.

The *Characters* are;

*The Flowers are naked, and of a yellow Colour, growing in Umbels on the Top of the Stalks; the Leaves are intire, and are crenated about the Edges.*

We have at present but one *Specie* of this Plant in the *English* Gardens, which is,

BALSAMITA; *major*. *Dod.* The large *Cost-Mary*.

This Plant was formerly in greater Request than it is at present; many People were fond of it in Soups with other Herbs; and its Use in Medicine is, at present, but small: However as it hath been an old Garden-Herb, I thought proper to mention it in this Place.

This Plant increases very fast at the Root, and will grow in almost any Soil or Situation, so that whoever hath a mind to propagate it, need only plant a few Slips in the Spring or Autumn, in any common Border, and they will soon be furnish'd with enough of it,

BAMIA MOSCHATA; *vide* *Ketmia*.

BANANA; *vide* *Musa*.

BARBA CARPA; *vide* *Ulmaria*.

BARBA JOVIS; *Jupiter's Beard*, or *Silver Bush*.

The Characters are ;

*It hath pennated or winged Leaves ; the Flowers are papilionaceous, and are succeeded by short oval Pods, in which is, for the most part, contain'd one roundish Seed.*

The Species are ;

1. BARBA *Jovis* ; *pulchrè lucens*.  
*J. B.* The Silver Bush ; *vulgo*.

2. BARBA *Jovis* ; *Hispanica, incana, flore luteo*. *Tourn.* Spanish Jupiter's Beard.

3. BARBA *Jovis* ; *Caroliniana, arborescens, Pseudoacacia foliis*. *Bastard Indigo Incolis. Ram. Act. Phil. N. 407.* Bastard Indigo, or Carolina Barba Jovis.

4. BARBA *Jovis* ; *Africana, foliis viridibus pinnatis, flore caeruleo*. *Boerb. Ind.* The African Jupiter's Beard, with deep green Leaves and blue Flowers.

The first of these Plants is very common in many Gardens ; the second is, at present, more rare with us ; the third Sort was rais'd from Seeds sent from *America*, by Mr. *Catesby*, and is by the Inhabitants made into a coarse sort of *Indigo* : This grows to be a large Shrub, and will resist the Cold in the open Air very well ; it produces beautiful Spikes of Flowers, and for Diversity merits a Place in Quarters of curious flowering Trees. This Shrub will sometimes produce ripe Seeds, by which means it may be easily propagated, and will also take Root by laying down the Branches in the Spring, which by the next Spring will be fit to transplant out : It delights in a sandy dry Soil, and must have Room to spread its Branches, which extend a considerable Distance from the Stem : It is also subject to split if expos'd to strong Winds.

The fourth Sort may be preserv'd with the first and second in

a common Green-house : They are not very tender, but require much free Air in good Weather and frequent Waterings : They are all propagated by Seeds, which should be sown on a Hot-bed in the Spring, and transplanted into Pots of good light Earth (but not over-dung'd) and hous'd in Winter, with Myrtles, &c. and have a good Effect in adding to the Diversity of the Green-house : These Plants will sometimes take Root from Cuttings ; but as 'tis difficult to obtain Plants this Way, and the Seeds many times ripen very well with us, so I would recommend the raising them that Way, as the most sure and expeditious.

BARBAREA, or Winter-Cress ; *vide* *Silybrium*.

BARDANA ; Burdock ; *vide* *Lappa*.

BASELLA ; or Climbing Night-Shade from *Malabar*.

The Characters are ;

*It hath an annual Root : The Stalks are climbing, and of a purple Colour : The Leaves are round, thick, and succulent, and of a dark green Colour : From the Foot-stalk of the Leaves are produc'd Spikes of Flowers, which are Male and Female, in different Parts of the Spike : The Female Flowers are succeeded by flat Berries, in each of which is contained one hard Seed.*

There is but one *Specie* of this Plant, at present, known in *England*, which is,

BASELLA. *Hort. Mal.* Climbing Night-Shade

This Plant must be sown early in the Spring upon a Hot-bed ; and when come up, must be planted into Pots of good fresh Earth, and set into a fresh Hot-bed, in order to bring it forward ; and when grown too high to be contain'd under

under the Glasse, may be set into the Green-house, or in some well-defended Part of the Garden, that it may ripen its Seeds, There is no great Beauty in the Flower, but for the singular Appearance of the Plant, it may deserve a Place in all curious Collections of Plants.

**BASILICUM**, or Basil; *vide* Ocymum.

**BASONS**, or Fountains, &c. which serve either for the Ornament or Use of Gardens, are made in divers Forms, some round, some oblong or oval, others square, octangular, &c. but their most common Form is circular; and, if the Ground will permit, the larger they are, the better: and when they exceed in Size, they are called Pieces of Water, Canals, Mirrors, Fish-ponds, Pools, and Reservoirs.

In making these, Care ought to be taken to avoid both the Extremes, and not to make them either too big or too little; that a Water-work may not take up the best Part of a small Spot of Ground; nor to make too little a *Bason* in a large Spot. This must depend intirely on the Judgment of the Designer of the Garden.

Some would have the Size of a *Bason* to be proportion'd to the *Fet d' Eau*, that the Water thrown up in the Air, may not, by being blown by the Air, be carried beyond the Edge of the *Bason*, but all fall down without wetting the Walk.

As to the Depth of *Basons*, it is usually from two Feet to two Feet and a half at most: This Depth being sufficient to secure the Bottom of the *Basons* from Frost and to dip Watering-pots.

But if they are to serve for *Reservoirs*, or to keep Fish in, then they may be made four or five

Feet deep, which will both hold Water enough, and be deep enough for the Fish to breed in, and also to bear a Boat.

Deeper than this they need not be; and if they were deeper, they would be dangerous as to the drowning of Persons, who might chance to fall in.

In making *Basons*, great Care ought to be taken in making them at first; for the Water always naturally endeavouring to run away, and by its Weight and Pressure in a *Bason*, making its Way out at the least Cranny, it will grow constantly bigger and bigger, so that if it be not well made at first, it will be very difficult to repair it.

*Basons* are made either with *Clay*, *Cement*, or *Lead*; they are most usually made of *Clay*: In making such, at the marking out the Dimensions, the Diameter ought to be four Feet bigger on each Side; yet the *Bason* will not be the wider, for it will be taken up with the Walls on each Side; and the *Clay* Work, which is to fill the Space between the *Bason*, must also be dug two Feet deeper than the Depth of the Water is design'd to be, because it is to be laid over eighteen Inches thick with *Clay*, and six Inches with *Gravel* and *Paving*.

The *Clay* ought to be well wrought with the Hands and Water, and when it is spread, should be trodden in with the naked Feet, that the Water of the *Bason* may not dilate through it, or the Roots of any Trees that may grow near, may not penetrate into the outward Wall; which may be made of Shards, Rubble, or Flints, with Mortar made of the natural Earth, and is called the *Ground-wall*, because 'tis only made to resist the

Pressure of the Ground about it. The inward Wall ought to be made with good Rubble-stones, that will not scale and come off in Flashes in the Water; or else of Flints and Stones from the Hills, which will make durable Work, but will not look so neat as the pointed Rubble; and there ought to be laid here and there Stones, the Thickness of the Wall, to render it the more substantial.

The Method of making *Basons* of *Cement* is as follows: After you have mark'd out the Dimensions of the *Bason* as before, if you enlarge it one Foot nine Inches, it will be sufficient; and the same Depth deeper at the Bottom will be enough.

This being done, you must begin to back up and raise against the Ground; cut perpendicularly a Wall of Masonry a Foot thick, which must go to the Bottom, and should be built with Shards and Rubble-stones laid in Mortar of Lime and Sand.

When the Wall is finish'd round the Circumference, then the Bottom is to be wrought a Foot thick with the same Materials; and then the solid Work or Lining of *Cement* is to be back'd up against the Walls nine Inches thick, including the Plastering and inward Surface.

This Solid ought to be made of small Flints, laid in Beds of Mortar made of Lime and *Cement*.

When this Solid is eight Inches thick, it ought to be plaster'd over the whole Surface of the Bottom with *Cement* well sifted before it be temper'd with Lime; and with this it should be wrought over smooth with the Trowel.

The Proportion of this *Cement*, should be two Thirds of *Cement*, or powder'd Tile, to one Third of Lime.

The *Cement* has the Property to harden so under Water, that it will be as hard as Stone or Marble, and the Body will be so solid as never to decay.

After the finishing of the *Bason*, the Plastering should be for four or five Days successively anointed over with Oil or Bullock's Blood, to prevent it from cracking or flawing; this being done, the Water should be let into the *Bason* as soon as may be.

Those *Basons* which are made of *Lead*, are to be thus wrought: The Out-lines ought to be enlarg'd one Foot of a Side, and digg'd half a Foot deeper than the *Bason* is to be.

The side Wall must be made a Foot thick, that it may be able to bear up against the Earth lying against it; but the Bottom will not require to be more than half a Foot thick.

These Walls must be built with *Rubble* laid in Mortar all of Plaster, because the Lime will eat the *Lead*; and then the *Lead* must be laid on the Walls and Bottom, and be seam'd with Solder.

But *Basons* of *Lead* are not much in Use, because of their great Charge in making, and the Danger of the *Lead* being stolen.

Great care ought to be taken to keep the upper Edge and Superficies of a *Bason* upon a Level, that the Water may cover all the Walls equally.

As for the waste Pipes of *Basons*, whether at the Bottom or Superficies, they ought not to be made too small, lest they should be choak'd, notwithstanding the Cauls that are drawn before them.

When this waste Water is only to be lost in Sinks and common Sewers, it is carry'd away in Drains

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or Earthen Pipes; but when it serves to play the *Bassons* that lie below it, it must pass through Leaden Pipes.

BAUHINIA; Mountain Ebony, *vulgô*.

This Plant takes its Name from *John* and *Caspar Bauhin*, two famous Botanists, who wrote several of the most celebrated Books in Botany.

The *Characters* are;

*It hath a polypetalous anomalous Flower, consisting of five or more Leaves, which are dispos'd on one side of the Flower; from whose Calyx arises the incurv'd Pointal (accompanied with the Stamina of the same Form) which afterwards becomes a Pod inclosing Kidney shap'd Seeds.*

The *Species* are;

1. BAUHINIA; *aculeata folio rotundo emarginato*. Plum. N. G. The Indian Savin Tree; *vulgô*.

2. BAUHINIA; *non aculeata, folio ampliori & bicorni*. Plum. N. G. Mountain Ebony; *vulgô*.

The first of these Trees grows very plentifully in the low Lands of *Jamaica*, and in several other Parts of the *West-Indies*; it rises to the Height of fifteen or sixteen Feet, and produces fine Spikes of beautiful yellow Flowers at the Ends of the Branches; and the whole Plant, if bruised, doth emit a strong Scent, somewhat like *Savin*, from whence the Inhabitants of the *West-Indies* gave it the Name of *Indian Savin Tree*.

The second Sort grows very plentifully on the Hills in every Part of the Island of *Jamaica*. This rises to the Height of sixteen or eighteen Feet, and produces Clusters of party-coloured Flowers at the Extremity of the Branches, which are succeeded by long flat Pods, in which are contain'd the

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Seeds. The Wood of this Tree being very hard, the Inhabitants of the *West-Indies* have given it the Name of *Mountain Ebony*.

These Plants may be rais'd from Seeds, which are easily obtain'd from the *West-Indies*. The Seeds must be sown on a Hot-bed early in the Spring, and when the Plants are come up, they must be transplanted each into a separate small Pot, filled with fresh light Earth, and plunged into a Hot-bed of Tanners-bark, observing to water and shade 'em until they have taken Root; after which, they must have Air and Water in Proportion to the Warmth of the Season, and the Heat of the Bed in which they are placed. When the Plants have filled the Pots with their Roots, they must be shifted into other Pots of a larger Size; and if they are grown too high to remain under the Frames of the Hot-bed, they must be removed into the Bark-stove, where they must be preserved in the Winter Season, observing to place the first in a warm Situation: but the second Sort being hardier, doth not require so much Heat. These Plants must have a large Share of free Air in Summer, but in Winter they must be kept pretty close; they must also be frequently refresh'd with Water, but it must not be given them in large Quantities, for too much Moisture is apt to rot their Roots. In this Management the Plants will thrive very well, and may in a few Years produce their Flowers.

BAY; *vide* Laurus.

BEANS; *vide* Faba.

KIDNEY or FRENCH BEANS; *vide* Phaseolus.

BEAN-TREFOIL; *vide* Cytissus.

BEAR'S-EAR; *vide* Auricula.

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BEAR'S-EAR SANICLE; *vide* Verbascum.

BEAR'S-FOOT; *vide* Helleborus.

BECABUNGA; or Brook-lime.

This is a Sort of *Veronica* or Water-Speedwel; of which there are two Sorts; one with a long Leaf, and the other round: They are both very common in Ditches and watery Places almost every where in *England*.

BEE or GNAT-FLOWER; *vide* Orchis.

BEECH TREE; *vide* Fagus.

BELL-FLOWER; *vide* Campanula.

BELLADONA; Deadly Night-Shade.

The *Characters* are;

*It hath a Bell-shap'd Flower consisting of one Leaf, which is divided into five acute Segments at the Top. Each of these Flowers is succeeded by a globular, soft Fruit, which is divided into two Cells, in which are lodged the Seeds.*

We have but one *Species* of this Plant common in *England*, which is,

BELLADONA; *majoribus foliis & floribus.* *Tourn.* The common Deadly Night-Shade.

This Plant grows very common in many Parts of *England* about Farmers Yards, and in shady Lanes, but is never kept in Gardens, unless in those of Botanists; nor indeed should it be suffer'd to grow in any Places where Children resort, for it is a strong Poison, and there have been several Instances within a few Years past of its deadly Quality, by several Children being kill'd with eating the Berries, which are of a fine black Colour, and about the Size of a black Cherry, and not unpleasiant to the Taste.

Mr. Ray gives a good Account of

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the various Symptoms it produces; by what happen'd to a *Mendicant Friar*, upon his drinking a Glass of Mallow-wine, in which was this Plant infus'd. In a short Time he became delirious, soon after was seiz'd with a grinning Laughter, after that, several irregular Motions, and at last a real Madness succeeded, and such a Stupidity as those that are sottishly drunk have; which, after all, was cured by a Draught of Vinegar.

There is also an Instance of the direful Effects of this Plant recorded in *Buchanan's History of Scotland*, wherein he gives an Account of the Destruction of the Army of *Sueno*, when he invaded *Scotland*, by mixing a Quantity of the Juice of these Berries, with the Drink which the Scots by their Truce were to supply them with, which so intoxicated the Danes, that the Scots fell upon them in their Sleep, and killed the greatest Part of them, so that there were scarcely Men enough left to carry off their King.

This Plant being of so deadly Quality, should be extirpated wherever it grows wild, before the Berries are ripe, to prevent the dangerous Effects which may happen by their being eat. There are some Persons who give a Reward annually for destroying all the Plants which grow in their Parishes; and Her Grace the Dutchess of *Marlborough*, constantly orders it to be rooted out from her Park at *Woodstock*, where it formerly grew in great Plenty.

BELLIS; the Daizie.

The *Characters* are;

*It hath a perennial Root, the Stalks are naked, and never branch out; the Calyx (or Cup) of the Flower is scaly and simple, divided into many Segments, almost to the Footstalk;*



the Flowers are radiated, and the Heads, after the Petals are fallen off, resemble obtuse Cones.

The Species are ;

1. BELLIS; *Sylvestris*; minor. C. B. The Common small Daizie.
2. BELLIS; *Sylvestris*; minor; flore misto. C. B. The small strip'd Daizie.
3. BELLIS; *hortensis*; flore pleno, magno, vel parvo rubro. C. B. The red Garden Daizie, with double Flowers.
4. BELLIS; *hortensis*; flore pleno, magno, vel parvo albo. C. B. The white double Garden Daizie.
5. BELLIS; *hortensis*; flore pleno, magno, vel parvo, varie ex candido & rubro. C. B. The double strip'd Garden Daizie.
6. BELLIS; *hortensis* prolifera. C. B. The Garden childing Daizie, commonly called, The Hen and Chicken Daizie.
7. BELLIS; *hortensis*; flore pleno; albo, in formam cristæ galli figurato. The white Cockscob Daizie.
8. BELLIS; *hortensis*; flore pleno; rubro, in formam cristæ galli figurato. Boerh. Ind. The red Cockscob Daizie.

The first and second Sorts, are very common in the Meadows, almost in every Part of England: They are used indifferently in Medicine, being the same in all respects, except the Colour of the Flowers: This is also called *Consolida minima*, or the least Consolida.

The different Varieties of the Garden Daizies, are propagated by parting their Roots in Autumn, and should be planted in Borders of strong Earth, which are exposed to the East; for the great Heats in Summer are very subject to destroy these Plants if they are too much exposed thereto. These Plants are

pretty Ornaments to a Garden in the Spring of the Year; and may be planted for Edgings in large rural Walks in Wilderneses, where the Soil is poor, which will prevent their spreading too much, but in Parterre Gardens they should only be planted in single Roots in shady Borders, and every Year transplanted, which will preserve them in their Colours, and keep them within Compass.

BELLIS MAJOR; vide *Leucanthemum*.

BELVEDERE; vide *Chenopodium*.

BENZOIN; the Benjamin-Tree.

The Characters are;

From a Calyx, which consists of four Leaves, are produc'd three small Flowers, which have an oblong Tube; the upper Part, which is expanded, is divided into eight Segments: Between these Segments are several short Stamina or Threads; and in the Middle of the Tube is the Ovarium, which becomes the Fruit.

We have but one Species of this Plant in England, which is,

BENZOIN. Boerh. Ind. *Arbor Benzoinifera*. Breyn. Prod. The Benjamin-Tree; vulgò.

This Tree was brought from Virginia into England some Years since, and was by many People kept in Green-houses as a tender Plant; but it hath been since planted into the open Ground, where it hath thriven mighty well, and is found hardy enough to resist the severest Cold of our Winters: It commonly produces its Flowers early in the Spring before the green Leaves appear, and many times will flower again in the Autumn, if the Season proves mild, but I have not seen any Fruit produc'd in England.

This Tree is propagated by laying down the tender Branches in

the Spring of the Year; which by the succeeding Spring will have made Roots sufficient to be transplanted. The best Season for this Work is just before the green Leaves come out.

From this Tree it was formerly suppos'd that the *Gum Benjamin* was produc'd; but 'tis now generally otherwise believed; for that Gum is brought from the *East-Indies*: nor is it certainly known from what Tree or Plant it is produced: And this Tree being a Native of the *West-Indies*, if any such Gum had been produc'd from the Trees, it would have been more certainly known, and we should have been furnished from thence with the Gum long before this Time.

**BERBERIS**; the Barberry or Pipperidge Bush.

The Characters are;

*It is set with sharp Prickles: The Leaves are oblong, and serrated on the Edges: The Flowers consist of six Leaves, which expand in Form of a Rose, and are of a yellow Colour: The Fruit is long, of an acid Taste, and for the most part of a red Colour, and grows in Clusters hanging down: The Bark of the Tree is whitish.*

The Species are;

1. **BERBERIS**; *Dumetorum*. C. B. The common Barberry.

2. **BERBERIS**; *sine Nucleo*. C. B. Barberry without Stone.

3. **BERBERIS**; *latissimo folio*; *Canadensis*. H. R. P. The broad-leav'd Canada Barberry.

4. **BERBERIS**; *fructu albo*. The white Barberry.

The first of these Sorts is very common in *England*, being often planted for Hedges; but the best Method to have large good Fruit, is to plant them eight or ten Feet

asunder, keeping their Middles thin, and free from dead Wood; but their Fruit being for the most part produced towards the Extremity of their Branches, you should be sparing in shortning them; and when this is done, it should be at *Michaelmas*, when their Leaves begin to decay.

The second Sort, I believe to be only an accidental Variety of the first; for young Plants taken from old Trees, which produce Fruits without Stones, are rarely found to prove right; and it hath been observ'd, that none but old Trees produce their Fruits so, nor are all the Fruits upon the same Tree without Stones. That Sort with white Fruit seems not to differ from the common, except in the Colour of the Fruit.

The *Canada Barberry* hath been of late Years introduc'd amongst us. The Leaves of this Tree are larger than those of the common Sort; but how its Fruit differs from the common I can't at present say, having not seen any produc'd in *England*, although the Tree is equally as hardy as the common Sort.

These are all propagated from Suckers taken from Roots of the old Plants, which generally furnish them in abundance: Or they may be rais'd from Seeds, or by laying down their Branches, which will in one Year take sufficient Root to be transplanted: They delight in a strong loamy Soil, and may be planted either in *October* or *February*.

**BETA**; the Beet.

The Characters are;

*It hath a thick fleshy Root: The Flowers have no visible Leaves, but have many Stamina or Threads, which are collected into a Globe:*

*The*

The Cup of the Flower is divided into five Segments: The Seeds are covered with a hard outer Coat, and grow two or three together in a Bunch.

The Species are;

1. BETA; *alba*; *vel pallescens quæ Cicla officinarum*. C. B. The common white Beet.

2. BETA; *communis*; *five viridis*. C. B. The common green Beet.

3. BETA; *rubra*; *vulgaris*. C. B. The common red Beet.

4. BETA; *rubra*; *radice Rape rotunda*. Boerb. Ind. The Turnip-rooted red Beet.

5. BETA; *rubra, major*. C. B. The great red Beet.

6. BETA; *lutea, major*. C. B. P. The yellow Beet.

7. BETA; *maxima*; *Helvetica, latissimo caule*. Boerb. Ind. The Swiss or Chard Beet.

The two first mentioned are preserved in Gardens for the Use of their Leaves in Pot-herbs, but at present they are not so much esteem'd as they have been, and are but in few Gardens: The other Sorts are propagated for their Roots, which, in Winter, are boil'd as Parsnips, &c. and serv'd up to Table, and are by many greatly esteem'd: The Red Beet is the most commonly cultivated, and is often used to garnish Dishes withal: The Swiss Beet is by some very much esteem'd: The large flat Ribs of the Leaves are stew'd, and afterwards fry'd in Butter, which is accounted by many a delicate Dish.

These Beets are all propagated by sowing their Seeds in February or March, in a deep loose Soil (but not over-dung'd) and must be hoed out after they are come up, so as to leave them ten or twelve Inches asunder, for they spread very much, and if they have not Room, their

Roots will be very small. The Gardeners near London, in order to make the most of their Ground, sow these Beets with Carrots upon the same Ground, and draw off their Carrots in the Summer-time for the Market, before the Beets have grown very large; and when the Carrots are gone, there will be Room for the Beets to grow, so that they have a double Crop; and if their Beets should happen to fail, they plant a Crop of Savoys for the Winter, so that their Ground seldom lies idle.

BETONICA; Betony.

The Characters are;

The Leaves are green, rough and crenated on the Edges: The Flowers are disposed in a Spike: The upper Crest of the Flower is advanc'd and divided into two Segments; the Beard or lower Part of the Flower is divided into three; and the middle Segment is bifid; each Flower is for the most part succeeded by four naked Seeds.

There are several Species of this Plant cultivated in Botanick Gardens; but as their Use and Beauties are not sufficient to recommend them to the Curious, so I shall pass them over with only mentioning the common Sort which is used in Medicine.

BETONICA; *purpurea*. B. C. The Common or Wood Betony.

This Plant is very common in Woods and shady Places in most Parts of England: It may be propagated in shady Borders in a Garden, by either sowing the Seeds in Spring, or by parting the Roots, which may be taken out of the Woods: The Soil should be rather moist than dry, and not over rich.

BETONICA AQUATICA; *vide Scrophularia*.

BETONICA PAULI; *vide* Veronica.

BETULA. The Birch-Tree.

The Characters are;

The Leaves are like those of the Poplar; the Shoots are very slender and weak; the Juli or Catkins are produced at remote Distances from the Fruits on the same Tree; the Fruit becomes a little squamose Cone; the Seeds are wing'd, and the Tree casts its outer Rind every Year.

We have but one Species of this Tree in England, which is,

BETULA. Dod. The Birch-Tree.

This Tree is propagated by Suckers taken from the Roots of old Trees, which may be transplanted either in October or February: It delights in a poor Soil, and will grow in either moist springy Soils, or in stony or gravelly Marshes, or Bogs: When the young Trees have been planted one Year, you should (if design'd for Underwood) cut them down within six Inches of the Surface, which will cause them to shoot out strong and vigorous Branches; but if they are design'd for large Trees, it will be much better to let them stand two Years before you head them down; and when you do it, cut them within three Inches of the Ground, that their Stems may be strait and handsome: But you must observe, when they begin to put out, whether they produce more than one Shoot; which if they do, you must rub off all but the strongest and most convenient Shoot, which must be train'd up for a Stem.

The Timber of this Tree, tho' accounted the worst of all others, yet is not without its various Uses: The Turners often use it to make Chairs, &c. and the Husband-man for making Ox-yoaks; it is also

planted for Hop-poles, Hoops, &c. but in Places within twenty Miles of London, it is kept often cut to make Brooms, and turns to great Account.

BIDENS; Water-Hemp Agrimony.

We have two or three Varieties of this Plant growing wild in England, but as they are neither useful, nor of any Beauty, so I shall pass them over in this Place.

BIFOLIUM; Twyblade.

This Plant grows wild in moist Meadows in divers Parts of England; it rises in May, and flowers in June, and soon after dies away. This Plant is of no Use or Beauty.

BIGNONIA; the Trumpet Flower or Scarlet Jasmine.

The Characters are;

It hath a tubulous Flower, consisting of one Leaf, which opens at the Top like two Lips: These Flowers are succeeded by Pods, which are divided into two Cells, and contain several wing'd Seeds.

The Species are;

1. BIGNONIA; *Americana*; *Fraxini folio*; *flore amplo Phœnicio*. Tourn. The Scarlet Trumpet Flower; *vulgô*.

2. BIGNONIA; *Americana*; *capreolis donata*; *siliquâ breviori*. Tourn. The four-leav'd Dwarf Trumpet Flower; *vulgô*.

3. BIGNONIA; *Americana*; *Arbor*; *flore luteo*; *Fraxini folio*. Plum. The large yellow Trumpet Flower; *vulgô*.

4. BIGNONIA; *Americana*; *Arbor*; *Syringa Caruleæ foliis*, *flore purpureo*. Catesb. The blue Trumpet Flower, or Cattalpa.

The Sort first mentioned is common in several curious Gardens near London, and is planted against Walls expos'd to the South Sun, where

where it thrives and produces large Quantities of Flowers annually, but it requires a great deal of Room, for it is a large Shooter; and the Flowers being always produc'd at the extreme Parts of the same Year's Shoots, if these are stopp'd, the Flowers are taken off; but in the Spring the young Branches may be shortned to three or four Eyes, as in Vines, and the small weak Shoots taken out, leaving the large ones twenty Inches or two Feet asunder: These Branches strike Roots into the Walls, by which they are secur'd, and require very little Assistance in nailing them up.

The third Sort is scarce in *England* at present: This is a Tree of large Growth in the warm Parts of *America*, but being tenderer than the other Sorts, requires to be kept in a Stove in *England*.

The fourth Sort was brought from the *Bahama* Islands by Mr. *Catesby* a few Years since: This did produce Flowers in the Garden of Mr. *Bacon* at *Hoxton*, Anno 1732. It is very hardy, and grows to be a handsome upright Tree: The Leaves are very like those of the *Lilac*, but somewhat larger. These Trees are all of them propagated by laying their Branches, or from Suckers, (which in the two first Sorts are produc'd in great Plenty); and sometimes the Cuttings will take Root, tho' not very often. The best Season for transplanting these Trees, is in the Spring, after the cold Weather is past. They delight in a dry sandy Soil.

BINDWEED; *vide* Convolvulus.

BIRCH-TREE; *vide* Betula.

BISLINGUA; *vide* Ruscus.

BISTORTA; Bistort or Snake-weed.

There are three or four Varieties of this Plant which are found wild in *England*, but as they are seldom planted in Gardens, so I shall pass them over with only mentioning the common Sort which is used in Medicine.

BISTORTA; *major*; *radice minus intortâ*. C. B. The common great Bistort, or Snake-weed.

This Plant flowers in *May*, and if the Season proves moist, will continue to produce new Spikes of Flowers till *August*. It may be propagated by planting the Roots in a moist shady Border, either in Spring or Autumn, and will soon furnish the Ground with Plants; for it greatly increases by its creeping Roots.

BLADDER-NUT; *vide* Staphylodendron.

BLATTARIA; Moth-Mullein.

The Characters are;

The Leaves are plac'd alternately upon the Branches: The Cup of the Flower consists of one Leaf, which is divided into five Segments: The Flower consists of one Leaf, which spreads open, and is divided also into five Segments: They are produc'd in long Spikes, and are succeeded by round Vessels, which are divided into two Cells, and contain many small Seeds in each.

The Species are;

1. BLATTARIA; *lutea*. J. B. The yellow Moth-Mullein.

2. BLATTARIA; *alba*. C. B. The white Moth-Mullein.

3. BLATTARIA; *flore roseo*. Boerb. Ind. The Rose-colour'd Moth-Mullein.

4. BLATTARIA; *purpurea*. C. B. The purple Moth-Mullein.

5. BLATTARIA; *perennis*, *folio Verbasci*: *flore luteo amplo*. Mor. Hist.

*Hist.* The perennial Moth-Mullein, with large yellow Flowers.

There are several other Varieties of this Plant, which are preserv'd in the curious Gardens of the Botanists; but these mention'd are some of the most beautiful, and are worthy preserving in all curious Gardens, except the first, which is a spontaneous Plant in *England*; for which Reason I plac'd it here in the Front, to introduce the rest.

The three first mention'd are biennial Plants, never standing more than two Years, and sometimes but one: They must be sown in the *Spring*; and when they are come up, may be transplanted where they are to remain for good. If any of these Plants shoot up to flower the first Year, the Winter will destroy them, but those that are backward, will endure our severest Winters, provided they are planted on a dry rubbishy Soil, and the next Spring will flower and produce good Seeds.

The fourth and fifth Sorts are Perennials, their Roots abiding several Years in the Ground: These are also rais'd by sowing their Seeds, for their Roots do seldom part well, and the often removing them prevents their flowering strong. All these Sorts delight in a dry, poor, stony, or gravelly Soil, and are often found growing upon old Walls and Buildings.

#### BLIGHTS.

There is nothing so destructive to a Fruit-Garden as *Blight*s; nor is there any thing in the Business of Gardening which requires more of our serious Attention than the endeavouring to prevent or guard against this great Enemy of Gardens.

In order therefore to remedy

this Evil, it will be necessary first to understand the true Causes of *Blight*s: And altho' many curious Persons have attempted to explain the Causes of them, yet very few of them have yet come near the Truth, except the Reverend and Learned Mr. *Hales*, who hath, in his curious Book, intitled, *Vegetable Staticks*, given us some accurate Experiments upon the Growth and Perspiration of Plants; together with the various Effects the Air hath upon Vegetables, that by carefully attending thereto, together with diligent Observations, we need seldom be at a Loss how to account for the Causes of *Blight*s whenever they may happen.

But here I can't help taking Notice of the several Causes of *Blight*s, as they have been laid down by some of our modern Writers on Gardening; together, with their various Methods prescrib'd to prevent their Destruction of Fruits, &c.

Some have suppos'd, that *Blight*s are usually produc'd by an Easterly Wind, which brings vast Quantities of Insects Eggs along with it from some distant Place, which being lodg'd upon the Surfaces of the Leaves and Flowers of Fruit-Trees, cause them to shrivel up and perish. To cure this Distemper, they advise the burning of wet Litter on the Windward Side of the Trees, that the Smoak thereof may be carried to them by the Wind, which they suppose will stifle and destroy these Insects, and thereby cure the Distemper.

Others direct the Use of Tobacco-dust; or to wash the Trees with Water wherein Tobacco-stalks have been infus'd for twelve Hours; which they say will destroy these Insects, and recover the Trees:

And Pepper-dust scatter'd upon the Blossoms of Fruit-Trees, has been recommended as very useful in this Case: And there are some that advise the pulling off the Leaves of the Tree, as the best Remedy, when they are shrivel'd up and wither, and to cut off the smaller Branches when they produce crooked and unnatural Shoots, and to sprinkle the Tree with a Watering-Pot or a Hand-Engine.

These Conjectures concerning *Blights*, how specious soever they may appear at first Sight, yet, when duly consider'd, will be found far short of the true Cause, as will hereafter be shewn.

Some there are who imagine the most destructive *Blights* which attend Fruit-Trees, are produc'd by small Showers of Rain, or white Hoar-Frosts falling upon the Blossoms of Fruit-Trees, which being succeeded by cold North or Easterly Winds, or frosty Mornings, are the Occasion of the frequent *Blights* which happen in the Spring Season. To prevent this Mischiefe, it hath been recommended by a late learned Author, to build new Walls; in which, at every third Course of Bricks, should be laid a Row of plain Tiles, which should project forward, and hang over the Plain of the Wall above an Inch and an half, to carry off the perpendicular Dews and Rains, leaving Room, at Distances, between the Tiles, to carry up the Branches of the Tree. This Method is so positively laid down, as a great Advantage for the more certain obtaining of Fruit, by a Gentleman whose Profession should incline him to Modesty, especially when he was not sure of his Facts, that I can't pass it over without some Animadversions.

1. He says, That these horizontal Shelters will be of Advantage, even in the most difficult Years, to preserve the Fruit, so that a good Quantity of it may be almost depended on from such Branches and Blossoms as were shelter'd by the Tiles, as he himself had often experienc'd.

As to this first Article, I need say no more than what Mr. *Collins* hath already written, *viz.* That this Reverend Gentleman acknowledg'd to him, at least a Year after his Book was printed, that he never had any Walls of that kind; but that, a few Days before this Visit, he had stuck a few Pieces of Tiles and Oyster-shells into a Mud-wall, at particular Places, over some Bunches of Blossoms, with Mortar, which was not dry at that time; which he declar'd was his first Essay: Now how a Gentleman of his Character can answer the advising of Persons to put themselves to such an extravagant Expence as the building of new Walls for Fruit, with an Assurance of Success, when it was only a simple Imagination of his own, without so much as a single Experiment to support it, I am wholly at a Loss to know.

But let us proceed to his second Article, in which he says, That Fruit thus shelter'd, will be larger, better fed, and finer tasted than those on the same Tree, which are more expos'd. This every one, who hath ever made any Observations on the different Taste, Size, Colour, or Goodness of Fruits which grew on different Parts of the same Tree, will, upon the first reading, condemn as false; for let us only observe such Fruits as are sometimes produc'd between the Wood-branches and the Wall, and are by them depriv'd of the Advantage

vantage of a free open Air, so that they cannot imbibe the kindly Dews, or other aerial Particles of Nourishment, nor can they so freely expire or throw off any of those crude watery Particles which were convey'd through the Branches of the Tree to the Fruit, and we shall find that it never arrives to half its Magnitude, and is always tough, watery and insipid, especially in *Peaches*. This is much the same with his horizontal Shelters; for the Rows of Tiles being plac'd in every third Course of Bricks, will effectually keep off all Dews and Rains from the Fruit, Leaves, and Branches; both of which are by every one allow'd to be absolutely necessary and serviceable in the Business of Vegetation.

As to his third Article (*viz.*) that the Fruit will be much earlier ripe, I am very ready to subscribe to it; for let us but observe such Trees or Parts of Trees, as are in a decaying State, and are not capable of affording proper Nourishment to the Fruit, and we shall always find these Fruits will be the first ripe; but how good they will be, either as to Size or Flavour, I shall submit to every one's Judgment that knows but the least of this Matter.

In his fourth Article he says, that Walls built with these Rows of Tiles, will effectually cure that common Mistake of leading Wood-Branched perpendicularly. This I believe to be true, for a Wall built in this Manner, and well planted with Fruit-trees, will, in less than seven Years, have no Wood-Branched left alive to train either horizontally or perpendicular; as I can positively affirm was the Case, with a Wall built after his Directions within my own Observation,

But let us now examine the true Causes of *Blight*s, so far as we have been enabled to judge from repeated Observations and Experiments.

1. *Blight*s then are often caus'd by a continu'd dry Easterly Wind, for several Days together, without the Intervention of Showers, or any Morning Dew, by which the Perspiration in the tender Blossoms is stopp'd, so that in a short Time their Colour is changed, and they wither and decay: And if it so happens that there is a long Continuance of the same Weather, it equally affects the tender Leaves, for their perspiring Matter is hereby thickned, and render'd glutinous, closely adhering to the Surfaces of the Leaves, and becomes a proper Nutriment to those small Insects which are always found preying upon the Leaves and tender Branches of Fruit-trees, whenever this *Blight* happens; but it is not these Insects which are the first Cause of *Blight*s, as hath been imagin'd by some; tho' it must be allowed, that whenever these Insects meet with such a proper Food, they multiply exceedingly, and are instrumental in promoting the Distemper; so that many times when the Season proves favourable to them, and no proper Care hath been taken to prevent their Mischief, it is surprizing to think how whole Walls of Trees have suffered by this Infection.

The best Remedy for this Distemper, that I have yet known succeed, is, gently to wash and sprinkle over the Trees from time to time with common Water (that is, such as hath not had any Thing steep'd in it) and the sooner this is perform'd (whenever we apprehend Danger) the better, and if



the young and tender Shoots seem to be much infected, wash them with a woollen Cloth, so as to clear them, if possible, from all this glutinous Matter, that their Respiration and Perspiration may not be obstructed; and if we place some broad flat Pans or Tubs of Water near the Trees, that the Vapours exhaled from it may be received by the Trees, it will keep their tender Parts in a ductile State, and greatly help them; but whenever this Operation of washing the Trees is perform'd, it should be early in the Day, that the Moisture may be exhal'd before the Cold of the Night comes on, especially if the Nights are frosty; nor should it be done when the Sun shines very hot upon the Wall, which would be subject to scorch up the tender Blossoms.

Another Cause of *Blights* in the Spring, is sharp hoary Frosts, which are often succeeded by hot Sun shine in the Day Time, which is the most sudden and certain Destroyer of Fruits that is known; for the Cold of the Night starves the tender Parts of the Blossoms, and the Sun rising hot upon the Walls before the Moisture is dry'd from the Blossoms, (which being in small Globules, doth collect the Rays of the Sun), a scalding Heat is thereby acquired, which scorches the tender Flowers and other Parts of Plants.

But that *Blights* are frequently no more than an inward Weakness or Distemper in Trees, will evidently appear, if we consider, how often it happens that Trees against the same Wall expos'd to the same Aspect, and equally enjoying the Advantages of Sun and Air, with every other Circumstance which might render them equally healthy,

yet very often are observ'd to differ greatly in their Strength and Vigour; and as oftendo we observe the weak Trees to be continually blighted, when the vigorous ones in the same Situation shall escape very well; which must therefore, in a great measure, be ascribed to their healthy Constitution: This Weakness therefore in Trees, must proceed either for want of a sufficient Supply of Nourishment to maintain it in perfect Vigour, or from some ill Qualities in the Soil where it grows, or perhaps from some bad Quality in the Stock, or inbred Distemper of the Bud or Cyon, which it had imbibed from its Mother Tree, or from Mismanagement in the Pruning, &c. all which are productive of Distempers in Trees, which are with Difficulty cured. Now if it was occasion'd by a Weakness in the Tree, we should endeavour to trace out the true Cause, first, whether it has been occasion'd by ill Management in the Pruning, which is too often the Case, for how common is it to observe *Peach-trees* train'd up to the full Length of their Branches every Year, so as to be carried to the Top of the Wall in a few Years after planting, when at the same Time the Shoots have been so weak, as scarcely to have Strength to produce their Flowers; but this being the utmost of their Vigour, the Blossoms fall off, and many Times the Branches decay, either the greatest Part of their Length, or quite down to the Place where they were produced; and this, whenever it happens to be the Case, is ascribed to a *Blight*.

Others there are who suffer their Trees to grow just as they are naturally dispos'd during the Summer Season, without stopping of Shoots,

Shoots, or disburdening their Trees of luxuriant Branches, by which means, two, three, or four Shoots shall exhaust the greatest Part of the Nourishment of the Trees all the Summer, which Shoots, at the Winter Pruning, are intirely cut out, so that the Strength of the Tree was employed only in nourishing useles Branches, while the Fruit Branches are thereby render'd so weak, as not to be able to preserve themselves: The Remedies to this Evil shall be explain'd in the Article of *Pruning Peach Trees, &c.*

But if the Weakness of the Tree proceeds from an inbred Distemper, it is the better way to remove the Tree at first, and after renewing your Earth, plant a new one in its Place.

Or if your Soil is a hot burning Gravel or Sand, in which your Peach Trees are planted; you'll generally find this will be their Case after their Roots have gotten beyond the Earth of your Borders, for which Reason it is much more advisable to dig them up, and plant *Grapes, Figs, Apricots*, or any other Sort of Fruit which may do well in such a Soil, than to be annually disappointed of your Hopes: For by a Variety of Experiments, it hath been found, that *Apricots* do attract and imbibe Moisture with a much greater Force than *Peaches* and *Nectarines*, and so consequently are more capable to assimilate their nutritive Particles from the Earth, than the other can do, which require to be planted in a generous Soil, which can afford them a Sufficiency of Nourishment without much Difficulty: And it is in such Places we often see *Peaches* do Wonders, especially if assisted by Art; but as for the *Vine*

and *Fig-tree*, they perspire but very slowly, and are very often in an imbibing State (so that a great Part of that fine racy Flavour, with which their Fruits abound when planted in a dry Soil, is probably owing to those refined aerial Principles which are collected when in a State of Respiration); and therefore, as these Trees do not delight in drawing much watry Nourishment from the Earth, so they will much better succeed in such a Soil than in one that is more generous; we should therefore always endeavour to suit the particular Sorts of Fruits to the Nature of our Soil, and not pretend to have all Sorts of Fruit good in the same Soil.

But there is another Sort of *Blight*, against which it is very difficult to guard our Fruit-trees; this is sharp pinching frosty Mornings, which often happen at the Time when the Trees are in flower, or while the Fruit is very young, and occasion the Blossoms or Fruit to drop off, and sometimes the tender Parts of the Shoots and Leaves are greatly injur'd thereby.

The only Method yet found out to prevent this Mischieif is, by carefully covering the Walls, either with Mats, Canvas, &c. which being fastened so as not to be disturb'd with the Wind, and suffered to remain on during the Night, by taking them off every Day, if the Weather permits, is the best and surest Method that hath yet been used in this Case; which altho' it has been slighted and thought of little Service by some, yet the Reason of their being not so serviceable as has been expected, was, because they have not been rightly used, by suffering the Trees to remain too long covered, by which

Means the younger Branches and Leaves have been rendred too weak to endure the open Air when they are expos'd to it, which has often proved of worse Consequence to Trees, than if they had remain'd intirely uncovered.

Whereas when the Covering before mentioned has been performed as it ought to be, it has proved very serviceable to Fruits; and many times, when there has been almost a general Destruction of Fruits in the neighbouring Gardens, there has been a Plenty of them in such Places where they have been covered: And tho' the Trouble may seem to some to be very great, yet if these Coverings are fix'd near the Upper-part of the Wall, and are fastened to Pulleys, so as to be drawn up or let down, it will be soon and easily done, and the Success will sufficiently repay the Trouble.

But there is another Sort of *Blight* that sometimes happens later in the Spring, *viz.* in *April* or *May*, which is often very destructive to Orchards and open Plantations, and against which we know of no Remedy. This is what is call'd a *Fire Blast*, which in a few Hours hath not only destroy'd the Fruit and Leaves, but many times Parts of Trees, and sometimes whole ones have been kill'd by it.

This is supposed to be effected by Volumes of transparent flying Vapours, which among the many Forms they revolve into, may sometimes approach so near to a *Hemisphere*, or *Hemicylinder*, either in their upper or lower Surfaces, as thereby to make the Beams of the Sun converge enough to scorch the Plants or Trees they fall upon, in Proportion to the greater or less Convergency of the Sun's Rays,

The learned *Boerhaave*, in his Theory of *Chymistry*, observes, " That those white Clouds which appear in Summer-time, are, as it were, so many Mirrors, and occasion excessive Heat; these cloudy Mirrors are sometimes Round, sometimes Concave, Polygonous, &c. When the Face of the Heavens is covered with such white Clouds, the Sun shining among them must of Necessity produce a vehement Heat, since many of his Rays, which would otherwise, perhaps, never touch our Earth, are hereby reflected to us; Thus, if the Sun be on one Side, and the Clouds on the opposite one, they will be perfect Burning Glasses: And hence the Phenomena of Thunder.

" I have sometimes, *continues he*, observ'd a kind of hollow Clouds, full of Hail and Snow, during the Continuance of which the Heat was extreme, since by such Condensation they were enabled to reflect much more strongly: After this came a sharp Cold, and then the Clouds discharg'd their Hail in great Quantity, to which succeeded a moderate Warmth. Frozen Concave Clouds therefore, by their great Reflections, produce a vigorous Heat, and the same, when resolv'd, excessive Cold."

Whence (as Mr. *Hales* observes) we see, that Blasts may be occasion'd by the Reflections of the Clouds, as well as by the above-mentioned Refraction of dense transparent Vapours.

Against this Enemy to Fruits, &c. as hath been said, there is no Guard to our Plantations, nor any Remedy to cure it; but as this more frequently happens in close Plan-

Plantations, where the stagnating Vapours from the Earth, and the plentiful Perspirations from the Trees, are pent in for want of a free Air to dissipate and dispel them, which are often observ'd in still Weather to ascend in so plentiful a manner as to be seen by the naked Eye, but especially with reflecting Telescopes, so as to make a clear and distinct Object become dim and tremulous, than in those that are planted at a greater Distance, or are not surrounded with Hills or Woods. This directs us, in the first planting of Orchards, &c. that we should allow a greater Distance between the Trees, and to make choice of clear, healthy Situations, that the Air may freely pass between the Trees to dissipate those Vapours before they are formed into such Volumes, whereby the circumambient Air will be clear and less subject to such Injuries, as also the Fruits which are produced in this clearer Air will be much better tasted than those that are surrounded with a thick rancid Air; for as Fruits are often in a respiring State, so they consequently, by imbibing a Part of these Vapours, are rendered crude and ill-tasted; which is often the Case with a great Part of our Fruits in *England*.

BLOODWORT; *vide* Lappathum.

BONTIA; Barbados Wild Olive; *vulgô*.

The Characters are;

*It hath a personated Flower, consisting of one Leaf, whose upper Lip is erect, the under Lip is divided into three Parts; from out of the Cup arises the Pointal fixed like a Nail in the hinder Part of the Flower, which afterwards becomes an oval Fruit, which is soft and full of Juice, in which is*

*contain'd one oblong Shell, inclosing a Nut of the same Form.*

We have but one Species of this Plant in *England*, which is,

BONTIA; *laureola facie*. Hort. Elth. The Barbados Wild Olive.

This Plant is preserved in several curious Gardens in *England*; it may be rais'd from the Seeds (which are often brought from *Barbados* to *England*) which should be put into Pots fill'd with light sandy Earth, and plunged into a Hot-bed of Tanners-bark, observing to water the Earth every two or three Days, according as you find it dry; in about a Month after, the Plants will begin to appear, and when they are grown two Inches high, they should be transplanted each into a separate small Pot filled with the same light sandy Earth, and plunged into the Hot-bed again, observing to shade and water 'em until they have taken root, after which they must have Air in Proportion to the Warmth of the Season, and should be frequently refresh'd with Water. In Winter these Plants must be preserved in a warm Stove, giving them Water as often as the Earth in the Pots doth appear dry, and observe to wash and clean their Leaves from Insects, which are very apt to infest them. In Summer they must have a large Share of free Air, but should not be intirely expos'd to the open Air, which is too Cold for 'em in this Climate. They may also be propagated by Cuttings, which should be taken off in Summer, and planted into Pots filled with light fresh Earth, and plunged into a moderate Hot-bed, observing to water and shade 'em until they have taken root, after which they must be treated in the manner directed for the seedling Plants.

Plants. These Plants being evergreen, and growing in a pyramidal Form, do make a pretty Variety amongst other Exotick Plants, and will sometimes produce their Flowers and Fruit in this Country.

**BONUS HENRICUS**; *vide* Chenopodium.

**BORDERS**: The Use of these in a Garden is to bound and inclose *Parterres*, to prevent them being injur'd by walking in them: These are commonly render'd very ornamental by means of the Flowers, Shrubs, &c. that are planted in them.

These ought to be laid with a Rising in the Middle, because if they are flat, they are not agreeable to the Eye.

As for their Breadth, five or six Feet are often allow'd for the largest, and four for the lesser.

*Borders* are of four Sorts; and those are the most common that are continu'd about *Parterres* without any Interruption, and are wrought with a sharp Rising in the Middle like an Ass's Back, and planted with low Shrubs and Flowers.

The second Sort of *Borders* are such as are cut into Compartments, at convenient Distances, by small Passages; and being also rais'd in the Middle, as before mentioned, are likewise set off with Shrubs.

The third Sort are such as are laid even and flat, without Flowers, having only a Verge of Grass in the Middle, being edg'd with two small Paths rak'd smooth and sanded: These are sometimes garnish'd with flowering Shrubs and Flowers of large Growth, or with Vases and Flower-pots plac'd regularly along the Middle of the Verge of Grass.

The fourth Sort are quite plain, and are only sanded, as in the *Par-*

*terres* of an *Orangery*, and are filled with Cases rang'd in a regular Order along those *Borders* which are edg'd with Box on the Sides next to the Walks, and on the other, with Verges and Grass-work next the *Parterre*: Sometimes a Yew is planted between each Case, which makes the *Border* appear richer, and the *Parterres* handsomer during the Winter Season.

*Borders* are made either strait, circular, or in Cants, and are turn'd into Knots, Scrolls, Volutes, and other Compartments.

Florists do also make *Borders* either along Walks or detach'd, and in these they raise their finest and choicest Flowers: These are frequently encompass'd with Border-boards painted Green, which makes them look exceeding neat.

But in large *Parterres* this is not to be expected; which if they be stock'd with Flowers, succeeding one another in their several Seasons, it is sufficient, so that nothing appears bare and naked.

It is usual to discontinue the *Borders* at the Ends next to the House, that the Embroidery and Rise of the *Parterre* may not be hidden by the Shrubs and flowering Plants, and that the Design may be better judg'd of.

And sometimes there are branch'd out of it Foliage, Palm-leaves and Shells sporting among the Sands.

**BORAGO**; Borage.

The *Characters* are;

*The Leaves are broad and rough; the Flowers consist of one Leaf, are of a Wheel-shape, and divided into five Segments almost to the Bottom, which end in sharp Points like a Star; the Apices in the Middle of the Flower are sharp-pointed, and adhere together; the Seeds are rough, and appear like a Viper's Head.*

The *Species* are;

1. BORAGO; *floribus caeruleis.* *f.*  
B. The common *Borage*, with blue Flowers.
2. BORAGO; *floribus pallescente, roseo aut suave-rubente.* *Tourn.*  
The common *Borage*, with a pale Rose-colour'd Flower.
3. BORAGO; *floribus albis.* *f.*  
B. The common *Borage*, with a white Flower.

The first Sort is very common in most Parts of *England*, being often found upon *Dunghills*, and in publick *Roads*, where the Seeds have been scattered from *Gardens*, but is hardly a native Plant of our *Island*; however, it is so far naturalized amongst us, that where-ever it is suffered to stand till its Seeds are drop'd upon the *Ground*, there will always be a plentiful *Crop*.

The Seeds of this Plant may be sown in the *Spring*; it will grow in almost any *Soil*, but best in that which is *dry*. This Plant is often used in the *Kitchen*, and for cool *Tankards* in *Summer-time*, and the Flowers are used in medicinal *Cordials*.

The *White* and *Rose-coloured* Flowers are accidental Varieties of the common Sort; but the Seeds of either Sort being sown separately, will produce some Plants of the same kind.

BOSQUETS; are Groves, so call'd from *Bouquet*, in *French*, *i.e.* a *Noëgay*.

These are small Compartments of *Gardens*, which are form'd of *Trees*, *Shrubs*, or tall large growing Plants, planted in *Quarters*, and are either dispos'd regularly in *Rows*, or in a more wild or accidental manner, according to the *Fancy* of the *Owner*: These *Quarters* are commonly surrounded with ever-green *Hedges*, and the *Entrances* form'd

into regular *Portico's* with *Yews*, which are by far the best, and most tonsile *Trees* for this Purpose. In the *Inside* of those *Quarters* may be made some *Walks*, either strait or winding; which, if the *Quarters* are large, should be six or eight Feet broad, and may be laid with *Turf*, and kept well mow'd and roll'd, which will render the walking much easier and pleasanter than if the *Walks* are only the common *Earth*, which in smaller *Quarters* can't be otherwise; for if the *Trees* are close, and the *Walks* narrow, so as to be shaded and over-hung by the *Trees*, the *Grass* will not grow.

These *Quarters* may be also surrounded with *Hedges* of *Lime*, *Elm*, *Hornbeam*, or *Beech*; which should be kept well shear'd, and not suffered to rise too high; that the *Heads* of the *Trees* may be fully seen over them, and the *Stems* only hid from the *Sight*, when in the *Walks* on the *Outside* of the *Quarters*.

In the planting of these *Bosquets*, you should observe to mix the *Trees*, which produce their *Leaves* of different *Shapes*, and various *Shades* of *Green*, and hoary or mealy *Leaves*, so as to afford an agreeable *Prospect*; besides, there is a great Variety of different *Fruits* which these *Trees* produce in *Autumn*, which altho' of little or no *Use*, that we know of, yet have a very good *Effect*, in affording an agreeable Variety for some *Time* after the *Leaves* are gone; as the *Euonymus* or *Spindle-Tree*, the *Opulus* or *Marsh-Elder*, the *Cock-Spur Hawthorn*, with many other *Sorts*, too many to mention in this *Place*: But I would advise never to mix *Ever-greens* with *deciduous Trees*; for besides the ill *Effect* it hath to the

the Sight, (especially in Winter) they seldom thrive well together; so that those Quarters where you intend to have Ever-greens, should be wholly planted therewith; and in the other Parts, mix as many Varieties of different Trees which cast their Leaves, as you can conveniently; and also plant some of the largest growing Flowers, (especially near the Outside of the Quarters) which will add greatly to the Variety, if they have but Air enough to grow.

These *Bosquets* are proper only for spacious Gardens, being expensive in their first making, as also in keeping.

**BOTRYS**; *vide* Chenopodium.

**BOX TREE**; *vide* Buxus.

**BRANCA URSINA**; *vide* Acanthus.

**BRASICA**. The Cabbage.

The Characters are;

The Leaves are large, fleshy, and of a glaucous Colour; the Flowers consist of four Leaves, which are succeeded by long Taper Pods, containing several round acrid Seeds.

The Species are,

1. **BRASICA**; *Capitata*; *alba*. C. B. The common white Cabbage.

2. **BRASICA**; *Capitata*; *rubra*. C. B. The red Cabbage.

3. **BRASICA**; *Capitata*; *alba*; *minor*; *Muscovitica*. H. A. The Russian Cabbage.

4. **BRASICA**; *Capitata*; *alba*; *compressa*. Boerh. Ind. The flat-sided Cabbage.

5. **BRASICA**; *Capitata*; *alba*; *pyramidalis*. The Sugar-loaf Cabbage.

6. **BRASICA**; *Capitata*; *alba*; *præcox*. The early Battersea Cabbage.

7. **BRASICA**; *Sabauda*; *Hyberna*. Lob. Ic. The white Savoy Cabbage.

8. **BRASICA**; *Capitata*; *viridis*; *Sabauda*. Boerh. Ind. The green Savoy Cabbage.

9. **BRASICA**; *subtriata*. C. B. The Boor-Cole.

10. **BRASICA**; *Capitata*; *virescens*; *Italica*; *Crispa*. Munt. Hist. The green Broccoli.

11. **BRASICA**; *Italica*; *Broccoli dicta*. The Italian Broccoli.

12. **BRASICA**; *r. Napiformi*. Tourn. The Turnip-rooted Cabbage.

13. **BRASICA**; *Cauliflora*. C. B. The Colliflower.

There are several other Varieties of Cabbages which are preserv'd in curious Botanick Gardens, which differ in their Manner of Growth, Colour, &c. But those I have mention'd being the principal Sorts which are cultivated for Use, I shall omit mentioning the other less valuable Sorts in this Place, and proceed to their Culture.

The common white, red, flat, and long-sided Cabbages are chiefly cultivated for Winter Use: The Seeds of these Sorts must be sown in the middle of March, in Beds of good fresh Earth, and in April, when the young Plants will have about eight Leaves; they should be prick'd out into shady Borders; about three Inches square; that they may acquire Strength, and to prevent their growing long shank'd.

About the Middle of May, you must transplant them out, where they are to remain for good, (which in the Kitchen-Gardens near London, is commonly between Colliflowers, Artichokes, &c. at about two Feet Distance in the Rows); but if they are planted, for a full Crop in a clear Spot of Ground, the Distance from Row to Row should be three Feet, and

In the Rows two Feet four Inches afunder: If the Season should prove dry when they are transplanted out, you must water them every other Evening until they have taken fresh Root; and afterwards, as the Plants advance in Height, you should draw the Earth about their Stems with a Hoe, which will keep the Earth moist about their Roots, and greatly strengthen the Plants: You must also observe to keep them clear from Weeds, which are apt to draw the Plants up tall (if suffer'd to grow amongst them) and often spoil them.

These *Cabbages* will some of them be fit for Use soon after *Michaelmas*, and will continue until *February*, if they are not destroyed by bad Weather: To prevent which, the Gardeners near *London*, pull up their *Cabbages* in *November*, and trench their Ground up in Ridges, laying their *Cabbages* against their Ridges as close as possible on one Side, burying their Stems in the Ground: In this manner they let them remain till after *Christmas*, when they cut them for the Market; and altho' the outer Part of the *Cabbage* be decay'd, (as is often the Case in very wet or hard Winters) yet, if the *Cabbages* were large and hard when laid, the Inside will remain sound.

The *Russian Cabbage* was formerly in much greater Esteem than at present, it being now only to be found in particular Gentlemens Gardens, who cultivate it for their own Use, and is rarely ever brought to the Market. This must be sown in the Spring of the Year, and managed as those before directed, with this Difference only, that these must be sooner planted out for good, and must have an open clear Spot of Ground, and require much

less Distance every Way, for it is but a very small hard *Cabbage*. These will be fit for Use in *July* or *August*, but will not continue long before they will break and run up to Seed. The best Method to have these *Cabbages* good, is to procure fresh Seeds from abroad every Year; for 'tis apt to degenerate in *England* in a few Years.

The early *Battersea* and *Sugar-loaf Cabbages* are commonly sown for Summer Use, and are what the Gardeners about *London* commonly call *Michaelmas Cabbages*. The Season for sowing of these is about the End of *July*, in an open Spot of Ground; and when the Plants have got six Leaves, you must prick them out into Beds at about three Inches Distance every Way, that the Plants may grow strong and short-shank'd; and in the Beginning of *October* you should plant them out for good: The Distance that these require, is three Feet Row from Row, and two Feet afunder in the Rows. The Gardeners near *London* commonly plant these *Cabbages* upon the same Spot of Ground where their Winter *Spinage* is sown; so that when the *Spinage* is clear'd off in the Spring, the Ground will have a Crop of *Cabbages* upon it; you must therefore clear off the *Spinage* just round each Plant early in the Spring, that with a Hoe you may draw the Earth up to the Stem; and when all your *Spinage* is clear'd off, which is commonly in *April*, you must hoe down all the Weeds, and draw up the Earth again about your *Cabbage*-Plants.

In *May*, if your Plants were of the early Kind, they will turn in their Leaves for *Cabbaging*; at which time, the Gardeners near *London*, in order to obtain them a little



little sooner, tie in their Leaves close with a slender Osier Twig to blanch their Middle; by which means they have them, at least, a Fortnight sooner than they could have in the common Way.

The early *Battersea-Cabbage* being the first, we should chuse, (if for a Gentleman's Use) to plant the fewer of them, and a greater Quantity of the *Sugar-loaf* Kind, which comes after them; for the *Battersea* Kind will not supply you long, they generally cabbaging apace when they begin, and as soon grow hard and burst open: But the *Sugar-loaf* Kind is longer before it comes, and is as slow in its cabbaging, and, being of a hollow Kind, will continue good for a long time: I have known a large Quarter of Ground which was planted with this sort of *Cabbage* for Market Use, which hath afforded a Supply for near three Months together. This, tho' of singular Service to a Gentleman's Garden, is not so much for the Advantage of the Market Gardener, who loves to have his Ground clear'd sooner, that he may have another Crop upon it, of *Celery*, *Endive*, &c. which is more to his Purpose; for they paying large Rents for their Land, are oblig'd to have as many Crops in a Year from it, as possible.

Altho' I before have advis'd the planting out of your *Cabbages* for good in *October*; yet the *Sugar-loaf* Kind may be planted out in *February*, and will succeed as well as if planted earlier, with this Difference only, that they will be later before they cabbage. You should also reserve some Plants of the *Battersea* Kind in some well-shelter'd Spot of Ground, to supply your Plantation, in case of a Defect.

The *Savoy Cabbages* are propagated for Winter Use, as being generally esteem'd the better when pinch'd by the Frost; these must be sown about the Beginning of *April*, and treated after the manner as was directed for the common *white Cabbage*, with this Difference, that these may be planted at a closer Distance than those; two Feet square will be sufficient; these are always much the better when planted in an open Situation, which is clear from Trees and Hedges; for in close Places they are very subject to be eaten almost up by Caterpillars and other Vermin, especially if the Autumn prove dry.

The *Boor-Cole* may be also treated in the same manner, but need not be planted above one Foot square: These are never eaten till the Frost hath render'd them tender; for otherwise they are tough and bitter.

The Seeds of the *Broccoli* (of which there are several Kinds, viz. the *Roman*, *Neapolitan*, and *black Broccoli*, with some others, but the *Roman* is chiefly preferr'd to them all,) should be sown about the Middle or latter End of *May*, in a moist Soil; and when the Plants are grown to have eight Leaves, transplant them into Beds, (as was directed for the common *Cabbage*) and toward the Middle or latter End of *July* they will be fit to plant out for good, which should be into some well-shelter'd Spot of Ground, but not under the Drip of Trees: The Distance these require is two Foot and a half every way. The Soil in which they should be planted ought to be rather light than heavy, such as are the Kitchen-Gardens near *London*: If your Plants succeed well (as there will be little Reason to doubt, unless the Winter prove extreme hard)

hard) they will begin to shew their small Heads, which are somewhat like a *Colliflower*, about the Beginning of *December*, and will continue eatable 'till the Beginning of *March*.

The Manner of preparing them for the Table, is this; When your Heads are grown to their full Bigness, (as may be easily known by their dividing, and beginning to run up) then you should cut them off, with about four Inches of the tender Stem to them; then strip off the outer Skin of the Stem, and after having wash'd them, boil them in a clean Linen-cloth, (as is practis'd for *Colliflowers*) and serve them up with Butter, &c. and if they are of a right Kind, they will be tenderer than any *Colliflowers*, tho' very like unto them in taste. When your first Heads are cut off, in about a Month's time after they will produce a number of Side-shoots, which being cut and stript of their outer Skin, are very tender and as good as the first Heads, but are much smaller. The surest way to have these good, is to be furnish'd with fresh Seeds from *Italy* every Year; for they are very apt to degenerate in a Year or two, if the Seeds are saved in *England*.

The *Roman Broccoli* (if well managed) will have also large Heads, which will appear like Clusters of Buds; these Heads must be cut off with the Stems about six Inches long, which must be stript of the outer Skin (as was directed for the former Sort), and then wash them, and boil them until their Stems are tender, which will be in about ten Minutes: Then take 'em up, and eat them with Butter, &c. as *Asparagus*, to which it is little inferior in Taste. After the first Heads are cut off, the Stems will con-

tinue to furnish Side-shoots for near two Months, which are as well-tasted as the Heads, but are smaller. These Plants do begin to furnish the Table in *February*, and will continue till the Middle of *April*, when natural *Asparagus* will come to succeed them; and this being a scarce Season for Kitchen-Herbs renders 'em more valuable.

In order to save Seeds of this Kind, some of the best Heads should be permitted to run up, and constantly keep 'em clear from Side-shoots; if this be duly observed, the Seeds may be saved very good in *England*; for this is not so apt to degenerate as the white Sort.

The Manner of saving the Seeds of all the Sorts of *Cabbages*, is, about the Middle of *October*, you should make choice of some of your best *Cabbages*, which you should pull up, and carry to some Shed or other cover'd Place, where you should hang them up for three or four Days by their Stalks, that the Water may drain from between their Leaves; then plant them in some Border under a Hedge or Pale, quite down to the Middle of the *Cabbage*, leaving only the upper-part of the *Cabbage* above-ground, observing to raise the Earth up about it, so that it may stand a little above the Level of the Ground; especially if the Ground is wet, they will require to be rais'd pretty much.

If the Winter should prove very hard, you must lay a little Straw or Pease Haulm lightly upon them; taking it off as often as the Weather proves mild, lest by keeping them too close they should rot. In the Spring of the Year these *Cabbages* will shoot out strongly, and divide into a great Number of small Branches; you must therefore sup-  
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port their Stems, to prevent their being broke off by the Wind; and if the Weather should be very hot and dry, you should refresh them with Water once a Week, which will greatly promote their Seeding, especially at the time when they are in Flower.

When the Pods begin to change brown, you will do well to cut off the extreme Part of every Shoot; which will strengthen your Seeds: And it is generally observ'd, that those Seeds which grow near the Top of the Shoots, are very subject to run to Seed before they cabbage; so that by this there will be no Loss, but a great Advantage, especially if you have more Regard to the Quality than to the Quantity of the Seeds; which indeed is not always the Case, when it is intended for Sale; but those who save it for their own Use, should be very careful to have it good.

When your Seeds begin to ripen, you must be particularly careful that the Birds do not destroy it; for they are very fond of these Seeds. In order to prevent their Mischief, some use old Nets, which they throw over their Seeds, to prevent their getting to it: But this will not always do; for unless the Nets are very strong, they will force their way through them, as I have often seen: but the best Method I know, is to get a Quantity of Birdlime, and dawb over a parcel of slender Twigs, which should be fasten'd at each end to stronger Sticks, and placed near the upper Part of the Seed, in different Places, so that the Birds may alight upon them, by which means they will be fastned thereto; where you must let them remain for a considerable Time, if they cannot get off themselves: And although

there should not above two or three Birds be caught, yet it will sufficiently terrify the rest, that they will not come to that Place again for a considerable Time, (as I have experienc'd.)

When your Seeds are fully ripe, you must cut it off; and after drying it, thresh it out and preserve it in Bags for Use.

But in planting of *Cabbages* for Seed, I would advise never to plant more than one Sort in a Place, or near one another. As for Example: Never plant *red* and *white Cabbages* near each other, nor *Savoy* with either *white* or *red Cabbages*: For I am very certain they will, by the Commixture of their *Effluvia*, produce a Mixture of Kinds: And it is wholly owing to this Neglect, that the Gardeners rarely have any good *red Cabbage-seed* in *England*, but are obliged to procure fresh Seeds from abroad, as supposing the Soil or Climate of *England* alters them from *Red* to *White*, and of a mix'd Kind between both; whereas if they would plant *red Cabbages* by themselves for Seed, and not suffer any other to be near them, they might continue the Kind as good in *England*, as in any other Part of the World.

*Colliflowers* have of late Years been so far improv'd in *England*, as to exceed in Goodness and Magnitude what are produced in most Parts of *Europe*, and by the Skill of the Gardener are continued for several Months together; but the most common Season for them is in *May*, *June*, and *July*, I shall therefore begin with Directions for obtaining them in this Season.

Having procured a Parcel of good Seed, of an early Kind, you must sow it on the Tenth of *August*,

upon an old Cucumber-bed or Melon-bed, in this Manner; you must first clear the Bed from Weeds, then you must level the Earth which was remaining upon the Bed, which must be covered over with fresh light Earth laid very even, upon which you must sow the Seeds as equal as possible, sifting a little Earth over the Seeds about a Quarter of an Inch thick; and if the Weather should prove extreme hot and dry, you should shade the Beds with Mats, to prevent the Earth from drying too fast, which would endanger the spoiling of your Seed; and give it gentle Waterings, as you may see occasion; in about a Week's time your Plants will appear above-ground, when you must take off your Coverings by Degrees. But do not expose your Plants too much to the open Sun at first: In about a Month's time after sowing, your Plants will be fit to prick out; you should therefore prepare some old Cucumber or Melon-beds, in the Manner as was directed for sowing the Seeds, into which you should prick your young Plants, at about two Inches square, observing to shade and water them at first planting; but do not water them too much after they are growing, nor suffer them to receive too much Rain, if the Season should prove wet, which would be apt to make them black-shank'd (as the Gardeners term it, which is no less than a Rottensness in their Stems) and is the Destruction of the Plants so affected.

In this Place they should continue 'till about the sixteenth Day of October, when they must be removed into the Place where they are to remain during the Winter-season, which, for this first sow-

ing, is commonly under Bell or Hand-glasses, to have early *Colliflowers*; and these should be of an early Kind: But in order to have a Succession during the Season, we should be provided with another more late Kind, which should be sown four or five Days after the other, and manag'd as was directed for them.

In order to have very early *Colliflowers*, we should make choice of a good rich Spot of Ground, that is well defended from the *North, East, and West* Winds with Hedges, Pales, or Walls: This Ground should be well trench'd, burying therein a good Quantity of rotten Dung; then level your Ground: And if it be naturally a wet Soil, you should raise it up in Beds about two Feet and a half broad, and four Inches above the Level of the Ground. But if your Ground is moderately dry, you need not raise it at all: Then plant your Plants about two Feet four Inches Distance from each other in the Rows, always putting two good Plants at about four Inches Distance, both which may be cover'd with one Glass; and if you design 'em for a full Crop, they may be three Feet Row from Row: But if you intend to make Ridges for Cucumbers or Melons between the Rows of *Colliflower-Plants*, (as is generally practis'd by the Gardeners near *London*) you must then make your Rows eight Feet asunder.

When you have planted your Plants, if the Ground is very dry, you should give them a little Water, and then set your Glasses over them, which may remain close down upon them, until they have taken Root, which will be in about a Week or ten Days time; unless there should be a kindly Shower

Show of Rain; in which case you may set off the Glasses, that the Plants may receive the Benefit of it; and in about ten Days after planting, you should be provided with a Parcel of forked Sticks, or Bricks, with which you should raise your Glasses about three or four Inches to the Southward, that your Plants may have free Air: In this Manner your Glasses should remain over the Plants, Night and Day, unless in frosty Weather, when you should set them down as close as possible; or if the Weather should prove very warm, which many times happens in *November*, and sometimes in *December*; in this Case, you should keep your Glasses off in the Day-time, and put them on only in the Night, lest by keeping the Glasses over them too much, you should draw them into Flower at that Season; which is many times the Case in mild Winters, especially if unskillfully manag'd.

Towards the latter-end of *February*, if the Weather be mild, you should prepare another good Spot of Ground, to remove some of the Plants into, from under the Glasses, which should be well dung'd and trench'd (as before;) then set off your Glasses; and after making choice of one of the most promising Plants under each Glass which should remain for good, take away the other Plant, by raising it up with a Trowel, &c. so as to preserve as much Earth to the Roots as possible; but have a great Regard to the Plant that is to remain, not to disturb or prejudice its Roots: Then plant out your Plants which you have taken out, at the Distance before directed, *viz.* if for a full Crop, three Feet, Row from Row; but if for Ridges of Cucumbers between them, eight Feet;

and two Feet four Inches Distance in the Rows. Then with a small Hoe draw the Earth up to the Stems of the Plants which were left under the Glasses, taking great Care not to let the Earth fall into their Hearts: Then set your Glasses over them again, raising your Props an Inch or two higher, to give them more Air, observing to take them off whenever there may be some gentle Showers, which will greatly refresh the Plants.

And in a little time after, if you find your Plants grow so fast as to fill the Glasses, you should then slightly dig about the Plants, and raise the Ground about them in a Bed broad enough for the Glasses to stand, and about four Inches high, which will give your Plants a great deal of Room, when the Glasses are set over them; and by this Means they may be kept cover'd until *April*, which otherwise they could not, without Prejudice to the Leaves of the Plants: And this is a great Advantage to them; for many times we have Returns of severe Frosts at the latter-end of *March*, which prove very hurtful to these Plants, if expos'd thereto, especially after having been nurs'd up under Glasses.

After you have finish'd your Beds, you may set your Glasses over your Plants again, observing to raise your Props pretty high, especially if the Weather be mild, that they may have free Air to strengthen them; and in mild soft Weather set off your Glasses, as also in gentle Showers of Rain: And now you must begin to harden them by Degrees to endure the open Air; however, it is advisable to let your Glasses remain over them as long as possible, if the Nights should be frosty, which will greatly

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forward your Plants; but be sure do not let your Glasses remain upon them in very hot Sun-shine, especially if their Leaves press against the Sides of the Glasses: For I have often observ'd, in such Cases, that the Moisture which hath risen from the Ground, together with the Perspiration of the Plants, which, by the Glasses remaining over them, hath been detain'd upon the Leaves of the Plant, and when the Sun hath shone hot upon the Sides of the Glasses hath acquir'd such a powerful Heat from the Rays thereof, as to scald all their larger Leaves, to the no small Prejudice of the Plants: Nay, sometimes I have seen large Quantities of Plants so affected herewith, as never to be worth any thing after.

If your Plants have succeeded well, towards the End of *April* some of them will begin to fruit; you must therefore look over them carefully every other Day, and when you see the Flower plainly appear, you must break down some of the inner Leaves over it to guard it from Sun, which would make the Flower yellow and unsightly; and when you find your Flower at its full Bigness, (which you may know by its Outside, parting, as if it would run) you must then draw it out of the Ground, and not cut them off, leaving the Stalk in the Ground, as is by some practis'd: And if they are design'd for present Use, you may cut them out of their Leaves; but if design'd to keep, you should preserve their Leaves about them, and put them into a cool Place. The best Time for pulling of them, is in a Morning, before the Sun hath exhal'd the Moisture; for *Colliflowers* pull'd in the Heat of the Day, lose that Firmness which they naturally have, and become tough.

But to return to our *Second Crop* (the Plants being rais'd and manag'd as was directed for the *Early Crop*, until the Middle or Latter-end of *October*) you must then prepare some Beds, either to be cover'd with Glass-Frames, or arch'd over with Hoops, to be cover'd with Mats, &c.; these Beds should have some Dung laid in the Bottom, about six Inches or a Foot thick, according to the Size of your Plants; for if they are small, the Bed should be thicker of Dung, to bring them forward, and so *vice versa*; this Dung should be beat down close with a Fork, in order to prevent the Worms from finding their Way through it: Then lay some good fresh Earth about four or five Inches thick thereon, in which you should plant your Plants about two Inches and a half square, observing to shade and water them until they have taken fresh Root: But be sure do not keep your Coverings close, for the Warmth of the Dung will occasion a great Damp in the Bed, which, if pent in, will greatly injure the Plants.

When your Plants have taken Root, you must give them as much free open Air as possible, by keeping the Glasses off in the Day-time as much as the Weather will permit; and in the Night, or at such Times as the Glasses require to be kept on, raise them up with Bricks to let in fresh Air, unless in frosty Weather; at which time the Glasses should be cover'd with Mats, Straw, or Pease-haulm, &c. but this is not to be done but in very hard Frosts: You must also observe to guard them against great Rains, which in Winter-time are very hurtful to them; and if the under Leaves grow yellow and decay,

decay, be sure to pick them off, for if the Weather should prove very bad in Winter, so that you should be oblig'd to keep them close cover'd for two or three Days together, as it sometimes happens, these decay'd Leaves will render the inclos'd Air very noxious, and the Plants inspiring pretty much at that time, are often destroy'd in vast Quantities.

In the Beginning of *February*, if the Weather be mild, you must begin to harden your Plants by Degrees, that they may be prepar'd for Transplantation; and the Ground where you intend to plant your *Colliflowers* out for good, (which should be quite open from Trees, &c. and rather moist than dry) having been well dung'd and dug, should be sown with *Radishes* a Week or Fortnight before you intend to plant out your *Colliflowers*: The Reason why I mention the sowing of *Radishes* particularly, is this, (*viz.*) that if there are not some *Radishes* amongst them, and the Month of *May* should prove hot and dry, as it sometimes happens, the Fly will seize your *Colliflowers*, and eat them full of Holes, to their Prejudice, and sometimes their Destruction: whereas, if there are *Radishes* upon the Spot, the Flies will take to them, and never meddle with the *Colliflowers* so long as they last: Indeed the Gardeners near *London* mix *Spinage* with their *Radish*-Seed, and so have a double Crop; which is an Advantage where Ground is dear, or that Persons are streighten'd for Room, otherwise it is very well to have only one Crop amongst the *Colliflowers*, that the Ground may be cleared in time.

Your Ground being ready, and the Season good, about the Middle

of *February*, you may begin to plant out your *Colliflowers*: The Distance which is generally allow'd by the Gardeners near *London* (who plant other Crops between their *Colliflowers* to succeed them, as *Cucumbers* for pickling, and *Winter Cabbages*) is every other Row four Feet and a half apart and the intermediate Rows two Feet and a half, and two Feet two Inches Distance in the Rows; so that in the Middle, or towards the latter End of *May*, (when the *Radishes* and *Spinage* are cleared off) they put in Seeds of *Cucumbers* for pickling, in the Middle of the wide Rows, at three Feet and a half apart; and in the narrow Rows, plant *Cabbages* for Winter Use, at two Feet two Inches Distance, so that these stand each of them exactly in the Middle of the Square between four *Colliflower*-Plants; and these, after the *Colliflowers* are gone off, will have full Room to grow, and the Crops be hereby continu'd in a Succession through the whole Season.

About three Weeks or a Month after your *Colliflowers* are planted out, the *Radishes* between them will be fit to hoe; at which time, when you are hoeing out the *Radishes*, where they are too thick, you should cut off all such as grow immediately about the *Colliflowers*, and would prove hurtful to them, by drawing them up tall and weak, and also at that time draw the Earth up to the Stems of the Plants, being careful not to let any get into their Hearts, (as was before directed); and when your *Radishes* are fit to pull, be sure to clear round the *Colliflowers* first, and keep drawing the Earth up to their Stems as they advance in Height, which will keep their Stems from being  
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harden'd by the Weather, and be of singular Service to your Plants.

There are many People, who are very fond of watering *Colliflower*-Plants in Summer, but the Gardeners near *London* have almost wholly laid aside this Practice, as finding a deal of Trouble and Charge to little Purpose; for if the Ground be so very dry as not to produce tolerable good *Colliflowers* without Water, it seldom happens, that watering of them renders them much better; and when once they have been water'd, if it is not constantly continu'd, it had been much better for them if they never had any; as also, if it be given them in the Middle of the Day, it rather helps to scald them: So that upon the Whole, if Care be taken to keep the Earth drawn up to their Stems, and clear them from every Thing that grows near them, that they may have free open Air, we shall find that they will succeed better without than with Water, where any of these Cautions are not strictly observed.

When your *Colliflowers* begin to Fruit, you must often look over them, to turn down their Leaves, as was before directed, to preserve their Whiteness; and when they are full grown, observe the former Directions in pulling them, &c. But where-ever you meet with an extraordinary good *Colliflower*, whose Curd is hard and white, and perfectly free from any Frothiness about the Edges, you should suffer it to remain for Seed, keeping the Leaves close down upon it until the Flower hath shot out Stems, and then remove the Leaves from them by Degrees, but do not expose them too much to the open Air at first: As the Stems advance, you must take the Leaves quite a-

way; and when they begin to branch out, you should fix three pretty strong Stakes, at equal Angles, about it, surrounding them with Packthread, &c. to support their Branches, which would be otherwise liable to break with the Wind.

When your Pods begin first to be form'd, if the Weather be dry, you should give them a little Water all over, (with a Watering-pot that hath a Rose to it) which will promote the Progress of the Seeds, and preserve 'em from the Mildew, which is often hurtful to these Seeds; and when your Seeds are ripe, you must cut it off, and hang it up to dry, and rub it out, as was directed for *Cabbage*-Seed: And although your Flowers do not produce so much Seed as those which were of a softer or frothy Nature, yet the Goodness of such Seeds will sufficiently recompense for the Quantity; and any Person who was to purchase his Seeds, had better give ten Shillings an Ounce for such Seeds, than two for the Seeds commonly sav'd for Sale; as the Gardeners about *London* have experienc'd, who will never buy any Seeds of this Kind, that they do not know how they were sav'd.

But in order to have a third Crop of *Colliflowers*, you should make a slender Hot-bed in *February*, in which you should sow the Seeds, covering them a quarter of an Inch thick with light Mould, and covering the Bed with Glass Frames; you should now and then gently refresh the Bed with Water, observing to raise the Glasses with Bricks in the Day-time to let in fresh Air; and when the Plants are come up, and have gotten four or five Leaves, you should prepare another



another Hot-bed to prick them into, which may be about two Inches square; and in April harden them by Degrees, to fit them for transplanting, which should be done about the latter End of that Month at the Distances directed for the second Crop, and must be manag'd accordingly: These (if the Soil is moist where they are planted, or the Season cool and moist) will produce good *Colliflowers* about a Month after the second Crop is gone, whereby their Season will be greatly prolong'd.

There is also a fourth Crop of *Colliflowers*, which is rais'd by sowing the Seed about the twelfth of May; and being transplanted, as hath been before directed, will produce good *Colliflowers* in a kindly Season, and good Soil after *Michaelmas*, and continue thro' *October* and *November*, and if the Season permit, often a great Part of *December*.

The Reason why I fix particular Days for the sowing of this Seed, is, because two or three Days often make a great Difference in their Plants; and because these are the Days usually fix'd by the Gardeners near *London*, who have found their Crops to succeed best when sown at those Times, although one Day sooner or later will make no great Odds.

BROOM, the Common; *vide* Cytiso-Genista Scoparia.

BROOM, the Spanish; *vide* Spartium, & Genista.

BRUNELLA; Self-heal.

The Characters are;

The Flowers grow in short compact Spikes, which consist of one Leaf, and are labiated (or lip'd); the Crest (or upper Lip) is intire and hollow'd; the Beard (or lower Lip) is divided into three Segments; the middle Seg-

ment is broad, and hollow, like a Spoon, and is farther produc'd than the two other Segments which are narrow; the Cup of the Flower hath two Lips; the upper being erect and trifid, and the lower is arm'd with two small Spines.

There are several Species of this Plant preserv'd in the curious *Botanick* Gardens: I shall mention the Varieties to be found in the *English* Gardens, and then give a short Account of their Culture.

1. BRUNELLA; major, folio non dissecto. C. B. Common Self-heal, with whole Leaves.

2. BRUNELLA; major, folio non dissecto, flore albo. C. B. Common Self-heal, with white Flowers.

3. BRUNELLA; folio laciniato. C. B. Cut-leav'd Self-heal.

4. BRUNELLA; folio laciniato; flore albo. H. R. P. Cut-leav'd Self-heal, with white Flowers.

5. BRUNELLA; Carulca, magno flore. C. B. Large blue-flower'd Self-heal.

6. BRUNELLA; Hyssopifolia. C. B. Narrow-leav'd Self-heal.

7. BRUNELLA; Alpina; laciniata; flore magno. Boerb. Ind. Large-flower'd cut-leav'd Self-heal from the Alps.

8. BRUNELLA; folio verberna tenuifolia. Boerb. Ind. Self-heal, with Leaves like the narrow cut-leav'd *Vervain*.

9. BRUNELLA; laciniata; flore elegantissime sulphureo. Boerb. Ind. Cut-leav'd Self-heal, with fine Sulphur-colour'd Flowers.

10. BRUNELLA; latifolia; Italica; flore carneo. Barrel. Broad-leav'd Italian Self-heal, with Flesh-colour'd Flowers.

11. BRUNELLA; Nova Anglia; major; foliis longius mucronatis Rand. New-England Self-heal, with long-pointed Leaves.

12. BRUNELLA; *Caroliniana*, magno flore, dilute caruleo, internodiis longissimis. *Rand.* Carolina Self-heal, with large pale blue Flowers, and long Spaces between the Joints of the Stalks.

These Plants may be any of them propagated by sowing their Seeds in the Spring of the Year, on a Bed of common Earth, and when they are come up, may be planted out in Borders in any shady Part of the Garden, where they will thrive, and many of them flower the same Year, but all of them the second, after which they seldom continue, therefore the Seeds of them must be sown yearly for a fresh Supply.

The first Sort is used in Medicine, and is very common in divers Parts of *England*: The second, third, and fourth Sorts are Varieties of the first: The others are of foreign Growth; and altho' there is not a great deal of Beauty in them, yet some of the Varieties are worth cultivating to add to the Diversity of the Garden, especially since they require very little Culture.

BRUNSFELSIA. This Plant takes its Name from Dr. *Brunsfelsius*, a famous Physician.

The Characters are;

The Flower consists of one Leaf shap'd like a Funnel, which is tubulous, and cut into many Parts at Top; from whose Calyx arises the Pointal, which afterward becomes a round, soft, fleshy Fruit, containing roundish Seeds between the Rind and the Flesh.

We have but one Species of this Plant, which is,

BRUNSFELSIA; flore albo, fructu croceo, molli. *Plum. N. G.* *Brunsfelsia*, with a white Flower, and a soft Saffron-coloured Fruit.

This Plant is very common in *Barbados* and *Jamaica*, but in *Europe* it is at present very rare: It may be propagated from Seeds, which should be sown early in the Spring, in Pots filled with light Earth, and plung'd into a Hot-bed of Tanners-bark, observing to water the Earth as often as you find it necessary: When the Plants are come up, they should be transplanted each into a separate small Pot, filled with fresh light Earth, and plunged into the Hot-bed again, observing to water and shade the Plants until they have taken Root, after which they should have Air let into the Hot-bed, in Proportion to the Warmth of the Season and the Bed into which they are placed; and they must be frequently refresh'd with Water. When the Plants have advanced so high as not to be contained in the Frames, they should be removed into the Bark Stove; where, during the Summer Months, they should have a large Share of free Air, but in Winter they must be kept very close. With this Management the Plants will be very strong, and produce their Flowers every Season. These Plants may also be increased by planting their Cuttings (in any of the Summer Months) in Pots filled with fresh light Earth, and plunged into a Hot-bed of Tanners-bark, observing to water and shade 'em until they have taken Root, after which they must be managed as hath been directed for the seedling Plants.

BRUSCUS; *vide* Ruscus.

BRYONIA; *Briony*.

The Characters are;

It hath a climbing Stalk with Spines; the Leaves are like those of the Vine; the Flowers consist of one Leaf, which is expanded at the Top,

## B U

Top, and divided into five Parts; and in the Female Plants are succeeded by round Berries growing on Footstalks; the Flowers of the Male Plants have five Apices in each, but are barren.

There are several Species of this Plant, which are cultivated in the Botanick Gardens; but since there is no great Beauty in them, I shall pass them over, and only mention the common Sort which is used in Medicin.

*BRYONIA*; *aspera*; *five alba*; *baccis rubris*. C. B. The common White *Briony*.

This Plant grows upon dry Banks under Hedges in many Parts of *England*, but may be cultivated in a Garden for Use, by sowing the Berries in the Spring of the Year in a dry poor Soil, where they will in two Years time grow to be large Roots, provided they are not too close to each other. The Roots of this Plant have been formerly cut into a human Shape, and carry'd about the Country, and shewn for *Mandrakes* by a Parcel of idle People, who very easily impos'd on the Credulity of the common People, and got good Livings thereby. The Leaves of this Plant are also often impos'd on the People in the Market for *Mandrake-leaves*, altho' there is no Resemblance between them, nor any Agreement in Quality.

*BRYONIA NIGRA*; *vide* *Tamnus*.

*BUCKSHORN*, or *HARTSHORN*; *vide* *Coronopus*.

*BUGLOSSUM*; *Bugloss*.

The *Characters* are;

The Flowers are small and tubulous, divided at the Top into five obzuse Segments, and are expanded in a round Form; the Seeds are like the Head of a Viper.

## B U

The Species are;

1. *BUGLOSSUM*; *perenne*; *majus*; *fativum*. M. H. The Garden *Bugloss*.

2. *BUGLOSSUM*; *sylvestre*; *minus*. C. B. The lesser wild *Bugloss*.

3. *BUGLOSSUM*; *latifolium*; *semper-virens*. C. B. The broad-leav'd Ever-green *Bugloss*.

4. *BUGLOSSUM Orientale*; *flore luteo*. T. Cor. The Eastern *Bugloss*, with yellow Flowers.

5. *BUGLOSSUM*; *Creticum*; *verrucosum*; *perlatum quibusdam*. H. R. Par. Warty *Bugloss* from *Crete*.

There are several other Varieties of this Plant, which are cultivated in *Botanick* Gardens; but these mention'd, are the chief Sorts which are to be found in the *English* Gardens. They may be cultivated, by sowing their Seeds in the Spring, in Beds of common undung'd Earth, and may be afterwards transplanted, where they are to remain: They all delight in a dry poor Soil.

The first Sort is cultivated for its Flowers, which are used in Medicinal Cordials. The second Sort grows wild upon dry Banks, in most Parts of *England*, and is sometimes used in Medicin. The third Sort is always green, and may have a Place in shady Wilderesses, but is not fit for a fine Garden. The fourth Sort is an abiding Plant, and may deserve a Place in a good Garden, for its long Continuance to flower. The fifth Sort is an Annual, and if suffer'd to sow itself, will come up and abide the Winter very well, and produce its small blue Flowers in the Spring. These two last, for their Variety, may have a Place in the Flower-Garden, and the first Sort in the Physick-Garden, for its Use.

BUGULA; Bugle.

There are several Varieties of this Plant, some of which are cultivated in Botanick Gardens: But as they are Plants of no great Beauty or Use, so I shall pass them over here, and only observe, that two Varieties of this Plant are very common in moist Meadows in *England*; these two are indifferently used in Medicine, and call'd in the Shops *Consolida Media*, or the Middle Confound.

BULBOCASTANUM; Earth-Nuts.

This is an Umbelliferous Plant, which is found wild in many Parts of *England*, and may be propagated by sowing the Seeds, as soon as they are ripe, in a moist Soil.

BULBOCODIUM.

The Characters are;

*The Flowers consist of one Leaf, and are divided into six Segments, being in Shape like the Crocus Flower; the Leaves are very long and narrow; the Root consists of solid Bulbs, one over the other, which are closely join'd.*

We have but one Species of this Plant in the *English* Gardens, which is;

BULBOCODIUM; *Crocifolium*; *flore parvo violaceo*. T. Cor. *Bulbocodium*, with Leaves like the Saffron and small Violet-colour'd Flowers.

This Plant is cultivated after the Manner of the Spring *Crocus's*, viz, by parting its Bulbs, or sowing the Seeds: It is commonly three or four Years before it comes to flower from Seed; but as it increases but slowly by the Root, so we must sow the Seeds, if we intend to have a Stock of this Plant: It flowers in *April*, and the Seeds are ripe in *June*, and should be sown soon after in Pots of common Earth, where they should re-

main two Years undisturb'd, and then may be planted out into a Border at about three Inches square, where they may stand to flower: It is also very probable that some other Colours may be obtain'd by sowing the Seeds, as we find is often the Case with most other Bulbs when rais'd from Seeds.

BUPHTHALMUM; Ox-Eye.

The Characters are;

*The whole Face of the Plant is like Tansy: The Flowers, which are radiated, are for the most part produced simply: The Florets of the Disk are separated with an imbricated little Leaf.*

The Species are;

1. BUPHTHALMUM; *tanacetii minoris folio*. C. B. The common Ox-Eye, with Leaves like Tansy.

2. BUPHTHALMUM; *Orientalis: tanacetii minoris folio; flore luteo amplissimo*. T. Cor. The Eastern Ox-Eye, with large yellow Flowers.

3. BUPHTHALMUM; *Orientalis; tanacetii minoris folio; flore albo amplissimo*. T. Cor. The Eastern Ox-Eye, with large white Flowers.

The first of these Plants is mention'd by Mr. Ray as a Native of *England*; but is rarely found wild with us. The other two were found by Monsieur *Tournefort*, in the *Levant*. These are propagated by sowing their Seeds in *March*, in a Bed of light Earth; and when they are come up, may be transplanted into Borders of the Flower-Garden, or in little Wilderness Knots. These Plants do continue flowering almost all the Summer thro'; for which they deserve a Place in every good Garden. The Flowers are very proper to gather for Flower-pots, to adorn Rooms and Chimnies in the Summer-season.

They

They delight in a dry Soil, and such as is not much dung'd; and may also be increas'd by parting their Roots at *Michaelmas*, or early in the Spring. The first Sort is sometimes used in Medicine.

BUPLEUROIDES. See *Bupleurum*.

The Characters are;

The Leaves grow together by two's and three's in the same Place: The End of the Foot-stalk bears an oblong Ovary, the Apex of which is crown'd with a naked, herbaceous, pentapetalous Flower, the Petals being rolled up, inclosing five Stamina. The Ovary has a Tube cleft in two, the Apices of which are backwards, and rough: When ripe, it passes into two longish Seeds; the Flowers are dispos'd in the Form of an Umbel or Umbrella.

BUPLEUROIDES; *quæ simpla nobilia Canariensium*. *Pluk. Alm.*

There is at present but this one Species of this Plant known; it was formerly growing in many English Gardens, but was intirely lost in the Gardens near London; till in 1727 I brought it over from *Holland* again. It is a Plant of no great Beauty; but as it is an Evergreen, may be kept, to add to the Variety in the Green-house. It is pretty hardy, and will endure our Winters with very little Shelter; and is propagated by sowing of the Seeds in *March*, in a Bed of common Earth, where they will easily come up, and may be afterwards transplanted into Pots, in order to remove them in Winter into Shelter. They require to be often water'd, and love open Air.

BUPLEURUM; *Hare's-Ear*.

The Characters are;

The Leaves grow alternately upon the Branches, and, for the most part,

surround the Stalk, having no Foot-stalk: The Seeds are oblong, smooth, and furrow'd.

There are two or three Varieties of this Plant, which are Annuals: But as they have no great Beauty in them, I shall pass them over, and only mention one Sort, which is commonly preserv'd in Gardens; as,

BUPLEURUM; *arborescens; felio salicis*. *Tourn. Sefeli Æthiopicum; frutex*. *Dod.* The Shrubby Hartwort of *Æthiopia*.

This is a shrubby Plant, commonly growing to the Height of six or seven Feet, and divides into many Branches; the Leaves, which are ever-green, are somewhat like those of the broad-leav'd Willow, but much thicker. This Shrub is hardy, and will endure our severest Winters in the open Air, provided it is planted in a dry Soil. This may be increas'd by sowing the Seeds in Autumn, so soon as they are ripe, in a Pot of common Earth, which should be put under Shelter in very cold Weather, but not kept too dry: In the Spring following the Seeds will come, and when the young Plants have acquir'd a little Strength, may be planted in a Border a little defended from cold Winds, where they may continue for a Year or two, and then be remov'd where they are design'd to remain. The Cuttings of this Tree will also take Root; but this being a less certain Method than the other, and as the Plant produces large Quantities of Seeds, it is hardly worth the Trial.

BURNET; *vide Pimpinella*.

BURSA PASTORIS; *Shepherd's-Pouch*. This is a common Weed in most Parts of *England*, and should be carefully weeded out of Gardens before the Seeds are

scattered, otherwise it will become a very troublesome Weed.

**BUTOMUS**; the Flowering Rush or Water Gladiole.

The Characters are ;

The Leaves are triangular and grassy: The Stalks are naked: The Flowers are dispos'd in an Umbel upon the Top of the Stalk, and each consists of six Leaves; three of them are large, and three small, which are expanded in Form of a Rose.

The Species are;

1. **BUTOMUS**; flore roseo. *Tourn.* The Rose-colour'd Flowering Rush.

2. **BUTOMUS**; flore albo. *Tourn.* The White Flowering Rush.

3. **BUTOMUS**; flore saturate purpureo. *Boerb. Ind.* The deep Purple-colour'd Flowering Rush.

The first of these Varieties is pretty common in standing Waters in many Parts of England; the other two are Varieties of this, tho' less common with us. These Plants may be propagated in boggy Places, or by planting them in Cisterns, which should be kept fill'd with Water, that should have about a Foot Thickness of Earth in the Bottom: These, though common Plants, yet produce very pretty Flowers, and are worth propagating for Variety sake, especially if in any Part of the Garden there should be Conveniency for an artificial Bog, as is many times the Case, and Persons are at a Loss what to plant in such Places, that may appear beautiful, whereas if these and a few more wild Plants, which naturally grow in such Places, were taken into the Garden, they would have a very good Effect in diversifying the several Parts thereof.

**BUXUS**; the Box-Tree.

The Characters are;

The Leaves are pennated, and

ever-green; it hath Male Flowers, which are produc'd at remote Distances from the Fruit on the same Tree: The Fruit is shap'd like a Porridge-pot inverted, and is divided into three Cells, containing two Seeds in each; which, when ripe, are cast forth by the Elasticity of the Vessel.

The Species are;

1. **BUXUS**; arborescens. *C. B.* The Box-Tree.

2. **BUXUS**; arborescens; angustifolia. The narrow-leav'd Box-Tree.

3. **BUXUS**; foliis ex luteo variegatis. *H. R. Par.* Strip'd Box.

4. **BUXUS**; major; foliis per limbum aureis. *H. R. Par.* The Gold-edg'd Box-Tree.

5. **BUXUS**; humilis. *Dod.* The Dwarf-Box.

6. **BUXUS**; humilis; foliis variegatis. The Dwarf-strip'd Box.

7. **BUXUS**; major; foliis per limbum argenteis. The Silver-edg'd Box.

The first and second Sorts grow in great Plenty upon *Box-hill* near *Darling* in *Surrey*, where were formerly large Trees of these Kinds, but of late they have been pretty much destroy'd, yet there are great Numbers of the Trees remaining which are of a considerable Bigness. The Wood of this Tree is very useful for Turners, Ingravers, and Mathematical Instrument-makers; the Wood being so hard, close and ponderous, as to sink in Water, which renders it very valuable for divers Utensils.

All the Varieties of the Tree or large Box, are proper to intermix in Clumps of Ever-greens, &c. where they add to the Variety of such Plantations. These may be propagated by planting the Cuttings in April in a shady Border,

observing to keep them water'd until they have taken Root, and may be afterward transplanted into Nurseries till they are fit for the Purposes intended. The best Season for removing these Trees, is in *April* or *September*, though, indeed, if Care be taken to take them up with a good Ball of Earth, they may be transplanted almost at any Time, except in the Middle of Winter. These Trees are a very great Ornament to cold and barren Soils, where few other Things will grow. They may also be propagated by laying down the Branches, or from Seeds.

The Dwarf-kind of *Box* is used for bordering of Flower-beds, or Borders; for which Purpose it far exceeds any other Plant, it being subject to no Injuries from Cold or Heat, and is of a long Duration, is very easily kept handsome, and by the Firmness of its rooting, keeps the Mould in the Borders from washing into the Gravel-walks, more effectually than any Plant whatever. This is increas'd by parting the Roots, or planting the Slips; but as it makes so great an Increase of itself, and so easily parts, it is hardly worth while to plant the Slips that have no Roots; but it is now become so common, that it may be purchas'd from the Nurseries at a cheap Rate.

The manner of planting this in Edgings, &c. is so well understood by every working Gardener, that it would be needless to mention any thing of that kind here.



## C A

**C**ABBAGE; *vide* *Brafica*.  
**C**ABINET; in a Garden, is a Conveniency which differs from

an Arbour, in this; that an Arbour or Summer-house is of a great Length, and arch'd over Head in the Form of a Gallery; but a *Cabinet* is either square, circular, or in Cants, making a kind of a Salon to be set at the two Ends, or in the Middle of a long Arbour.

## CACALIANTHEMUM.

The *Characters* are;

*It hath a Flosculous Flower, consisting of many Florets, (like those of Groundsel) but these Florets are cut into four Segments, whereas those of Groundsel are divided into five Parts; the Cup of the Flower is also slenderer than that of the Groundsel.*

The *Species* are;

1. CACALIANTHEMUM; *folio neriâ glauco. Hort. Elth.* The Canary Lavender-leav'd Groundsel.

2. CACALIANTHEMUM; *Africanum ficoidis folio.* African Groundsel, with a Ficoides Leaf.

The first of these Plants was brought from the *Canary Islands*, and hath been several Years in the *English* Gardens where it hath risen to the Height of eight or ten Feet, and produced Flowers in several curious Gardens. It hath been, by some unskilful Persons, call'd the *Cabbage Tree*, but for no other Reason than that the Stem of this Plant does in some measure resemble that of a Cabbage, but the Leaves (which always are placed towards the Extremity of the Branches) are long and narrow, from whence some Writers in Botany have called it, *Arbor lavenderula folio, i. e.* a Tree with a Lavender Leaf.

This Plant may be propagated by planting Cuttings during any of the Summer Months, which should be laid in a dry Place for ten Days after they are cut from the Plant, to heal the wounded Part; for if

they are planted immediately, they are very subject to rot. These Cuttings should be planted into small Pots, filled with light sandy Earth, and plunged into a very moderate Hot-bed, to promote their taking Root, observing to shade 'em in the Heat of the Day; as also to refresh 'em with Water as often as you shall see it necessary, being careful not to give them too much, lest you should rot them.

When the Cuttings are rooted, they should be inured to bear the open Air by Degrees, into which they must be removed, placing them in a Situation which is defended from strong Winds, and the violent Heat of the Sun, where they remain until the latter End of *September*, when they must be carried into the Green-house, and placed near the Windows, that they may have free Air, until the Middle of *October*, when they must be removed to the warmest Part of the Green-house, and during the Winter Season they should be watered very sparingly, for much Wet is very apt to rot 'em. These Plants may be exposed in the Summer Season with *Ficoïdes's*, *Sedom's*, &c. in a well sheltered Situation, and should have frequent Waterings during the Time they are abroad, but it must not be given to them in great Quantities. At *Michaelmas* they must be removed into the Green-house, and manag'd as was before directed; observing to shift the Earth in the Pots every Year, and to allow 'em larger Pots as you may find their Roots require it. With this Management they will grow to a considerable Size in a few Years, and in kindly Seasons, will produce their Flowers in *August* or *September*, and do make an

agreeable Variety amongst other Exotick Plants.

The second Sort is now very common in *England*, tho' it has not been near so long an Inhabitant of our Gardens as the former. This was brought from the *Cape of Good Hope* into some curious Gardens in *Holland*, where it hath been increased, and sent into several Parts of *Europe*. This Plant may be easily propagated by planting of Cuttings, in any of the Summer Months: These Cuttings must be taken from the Plants at least a Week before they are planted, that their wounded Part may be healed, otherwise they are subject to rot. They must be planted into small Pots, filled with light sandy Earth; and if they are plunged into a moderate Hot-bed, it will forward their taking root; but if the Bed is too warm, they will not do so well as in the open Air, in a well sheltered Situation, with other hardy succulent Plants; and in Winter they should be placed into a dry Green-house, where they must have free Air when the Weather is mild, for they are pretty hardy, and only require to be preserved from Frost, but they should not have too much Water in the Winter Season, which is apt to rot them. These Plants (if well managed) will grow to the Height of six or eight Feet, and will produce Flowers almost every Year; but the greatest Beauty is in their thick succulent Leaves, which are covered over with a fine glaucous Flue, somewhat like that of the Green-gage Plumb. These Leaves, when broken, do emit a strong Scent, somewhat like Turpentine, which has occasioned some Persons to give it the Name of *Balm of Gilead*, tho' very improperly.



## CALAMINTHA; Calamint.

The Characters are;

It hath a long tubulous Flower, which opens at the Top into two Lips; the upper Lip or Crest is roundish, and divided into two Segments; the lower Lip or Beard is divided into Three: These Flowers are produc'd from the Joints of the Stalks at the Footstalks of the Leaves, in Bunches, upon pretty long Pedicles or Footstalks.

The Species are;

1. CALAMINTHA; *vulgaris*; *vel officinarum Germania*. C. B. The common Calamint.

2. CALAMINTHA; *pulegi odore*; *foliis latioribus*. H. L. Broad-leaf'd Calamint, with a Penyroyal Smell.

3. CALAMINTHA; *magno flore*. C. B. Calamint with large Flowers.

4. CALAMINTHA; *incana*; *ocymi foliis*. C. B. Hoary Calamint, with Leaves like Basil.

The first of these Sorts is found wild in many Parts of England; but may be propagated in Gardens, by sowing the Seeds in Spring, or parting the Roots; it will grow in almost any Soil or Situation. This is the Sort commonly used in Medicine; tho' the second Sort hath of late prevail'd in the Markets. The second and third Sorts may be propagated in the same manner as the first, and are equally as hardy. The fourth Sort is somewhat tenderer, and should be kept in Pots, and shelter'd in Winter: This is increas'd by planting Cuttings in any of the Summer Months.

CALCEOLUS; Ladies Slipper.

The Characters are;

It hath an anomalous Flower consisting of six dissimilar Leaves, four of which are placed in Form of a Cross, the other two possess the Mid-

dle, one of which is bifid, and rests upon the other, which is swelling and shaped like a Shoe: The Empalement becomes a Fruit, open on three Sides, to which adhere the Valves pregnant with very small Seeds like Dust.

The Species are;

1. CALCEOLUS; *Marianus*. Dod. Ladies Slipper.

2. CALCEOLUS; *flore majore*. Tourn. Ladies Slipper, with a larger Flower.

3. CALCEOLUS; *Marianus Canadensis*. Corn. Canady Ladies Slipper.

The first Sort grows wild in the North of England and in Scotland; from whence it may be procured, but the Plants must be carefully taken up with a good Clod of Earth to their Roots, and should be planted into a strong loamy Soil, and in a shady Situation, where, if they are suffered to remain, they will produce their beautiful Flowers annually in May: But if they are often removed, or planted in a light or rich Soil, they rarely produce Flowers, and seldom continue more than one Season.

The second and third Sorts are not Natives of England; but if the Roots can be procured from abroad, they may be treated in the same manner as the first Sort, these being full as hardy, and will produce their Flowers in our Climate.

CALF'S-SNOUT; *vide* Antirrhinum.

CALTHA; Marygold.

The Characters are;

It hath a radiated discous Flower; the Petals of the Flower are for the most part crenated; the Seeds are crooked and rough; those which are outermost are long, and those within are short: The Leaves are long, intricate, and (for the most Part) succulent.

The *Species* are;

1. *CALTHA*; *vulgaris*; *flore eirino*. C. B. The common *Marygold*.

2. *CALTHA*; *vulgaris*; *flore pallido*. C. B. The pale-colour'd *Marygold*.

3. *CALTHA*; *polyanthos*; *major*. C. B. The large double *Marygold*.

4. *CALTHA*; *polyanthos*; *maxima*. C. B. The largest double *Marygold*.

5. *CALTHA*; *minima*. J. B. The smallest *Marygold*.

6. *CALTHA*; *media*; *folio longo*; *prolifera*. Boerb. Ind. The Childing *Marygold*.

7. *CALTHA*; *Africana*; *flore intus albo*, *extus violacco*. Tourn. The African *Marygold*, with Flowers that are white within, and of a Violet Colour on the outside.

8. *CALTHA*; *Africana*; *flore intus albo*, *extus leviter violaceo*; *semine plano*; *cordato*. Boerb. Ind. African *Marygold*, with Flowers white within, and of a soft Violet Colour without, and flat Heart-shap'd Seeds.

9. *CALTHA*; *Africana*; *foliis croci*, *angustis*, *florum petalis externè purpurascensibus*, *internè albis*. Boerb. Ind. African *Marygold*, with narrow Leaves like Saffron, and the Petals of the Flower white within, and purple without.

The six Sorts first mention'd are very hardy Plants, and may be sown in Beds or Borders of common Earth in any Part of the Garden. They are all annual; and if their Seeds are suffer'd to fall to the Ground, they will supply you, without the Trouble of sowing them. But in order to keep the Sorts distinct, we should carefully save the Seeds of each, and sow them in the Spring, especially the Largest, Double, and Childing

Kinds, which are often kept in Gardens for the Beauty of their Flowers; the other are only sow'd for Pot-herbs, The seventh and eighth Sorts are very pretty annual Plants, and should be sowed in a warm Border, and in a light Soil, and may be, while young, transplanted into other Parts of the Garden, where they are to remain: But if they are grown large before you remove them, it is a great Hazard if they grow again. These Plants will continue producing great Quantities of beautiful Flowers most part of the Summer; and if the Season is not too cold and wet, will ripen their Seeds very well; which you must be careful to gather when ripe, for they soon fall to the Ground.

The ninth Sort is an abiding Plant, and never produces any good Seeds in this Country; but may be propagated by Cuttings, which should be planted in Pots of good light Earth, and plung'd into a gentle Hot-bed, refreshing them often with Water, and shading them from the great Heats of the Sun, until they have taken Root; when you must harden them by Degrees, to endure the open Air. This Plant must be hous'd in Winter with the *Ficoïdes*, &c. but must have as much free open Air as possible when the Weather is mild; for if it is kept too close, it is very subject to grow mouldy and rot away, it continues flowering the greatest Part of the Year, for which it is very valuable, and often produces its Flowers in the Middle of Winter, when few other Flowers appear.

*CALTHA PALUSTRIS*; *vide* Populago.

*CAMARA*; American *Viburnum*, *vulgo*.

The Characters are;

It hath an anomalous personated Flower, consisting of one Leaf, whose upper Lip (or Crest) is erect; but the Beard (or under Lip) is divided into three Parts. The Embryo upon which the Flower sits, afterward becomes a soft Fruit or Berry, enclosing a hard, round Seed: To which may be added, that many Embryos are collected into one body.

The Species are;

1. CAMARA; *spinosa, flore variegato*. Plum. Nov. Gen. American *Viburnum*, with a variegated Flower.

2. CAMARA; *trifolia, purpurascens flore*. Plum. Nov. Gen. American *Viburnum*, with three Leaves and a purplish Flower.

3. CAMARA; *salvia foliis, floribus incarnatis*. American *Viburnum*, with Sage Leaves and pale flesh-coloured Flowers.

4. CAMARA; *Melissa folio, flore variabili*. Hort. Elth. American *Viburnum*, with balm Leaves and variable Flowers.

These Plants are Natives of America, where there are several other Species than are here enumerated. They may be rais'd from Seeds, which may be obtained from *Jamaica, Barbados*, or any of the warm Islands in the *West-Indies*, where they are known by the Name of *Wild Sage*. These Seeds should be sown in *February* or *March*, in small Pots filled with light rich Earth, which should be plunged into a Hot-bed of *Tanners-bark*, observing to refresh the Earth often with Water, and in the Heat of the Day, the Glasses should be rais'd to admit the Air to the Pots, otherwise the Bed will be so hot as to endanger the scalding of the Seeds. In about five or six Weeks after the Seeds are sown, the Plants will begin to appear, when you

must be careful to refresh them often with Water, as also to give them Air in Proportion to the Warmth of the Bed in which they are placed; and so soon as the Plants are two Inches high, they should be taken carefully out of the Pots in which they were sown, and transplanted, each into a separate small Pot, filled with fresh light Earth, and plunged again into the Hot-bed; but you must observe to stir up the Bark with a *Dung-Fork*, that it may renew its Heat; and when the Pots are plunged, you must water them pretty well, to settle the Earth to the Plants, which must be repeated often, you must also shade the Glasses, until the Plants have taken new Root; after which Time they should have Air and Water in Proportion to the Heat of the Season, and the Bed in which they are placed.

By the Middle or latter End of *June*, the Plants will have acquired Strength, and the Roots will fill the small Pots into which they were planted; therefore you should shake them out of those, and put them into Pots of a larger Size, which should be again plunged into the Hot-bed to encourage the Plants to take Root; after which Time they should be inured by Degrees to the open Air, into which they should be removed in the Middle of *July*, placing them in a warm Situation, where they may be defended from strong Winds; and toward the End of the Month they will begin to shew their Flowers, which are produced in Clusters at the Extremity of the Branches, and will continue in Beauty for near three Months.

Toward the End of *September*, these Plants must be removed into the Stove observing to place them

where they may enjoy free Air, and have the Benefit of the Sun, as also to refresh them often with Water, but in the Depth of Winter you must not give them too much at one Time; you must also keep them clear from dead Leaves or decayed Branches, which, if suffered to remain, are often injurious to the Plants.

These Plants must remain in the Stove until *June*, for if they are carried abroad too soon, they are often injured by the cold Nights which frequently happen in *May*; but you should let them have as much Air as possible in the Spring, when the Weather is mild, otherwise the Shoots will be weak, and when the Plants are exposed, do generally decay, whereby their Flowers are destroyed. When they are removed out of the Stove, they should be placed in a warm Situation, and must be frequently watered, which will cause them to produce much stronger Flowers, and in greater Plenty than otherwise they would. With this Management the Plants will grow to the Height of five or six Feet, and may be train'd to have regular Heads, and in warm Seasons will often produce ripe Seeds in *England*.

They may also be propagated from Cuttings, which should be taken from the old Plants in *April*, and must be planted into Pots filled with light rich Earth, and plunged into a Hot-bed of Tanners-bark, observing to water and shade them until they have taken root; after which Time, they must be treated in the manner directed for the seedling Plants.

CAMPANULA; Bell-flower.

The Characters are;

The Flower consists of one Leaf, is shap'd like a Bell, and is, before

blown, of a pentagonal Figure; and, when fully open'd, is cut into five Segment at the Top. The Seed-vessel is, for the most part, divided into three Cells, each having a Hole at the Bottom, by which the Seed is emitted.

There is a vast Number of Species of this Plant, which to enumerate in this Place would be tedious: I shall only select some of the most beautiful Kinds, which are best worth propagating in a Flower-garden, and omit the other less-valuable Sorts.

1. CAMPANULA; *pyramidata*; *altissima*. *Tourn.* The tallest pyramidal Bell-flower.

2. CAMPANULA; *persicifolia* *Lobellii*; *flore caruleo*. *Mor. Hist.* The blue Peach-leav'd Bell-flower.

3. CAMPANULA; *persicifolia*; *flore albo*. *Mor. Hist.* The white Peach-leav'd Bell-flower.

4. CAMPANULA; *persicifolia*; *flore pleno*. *Tourn.* The double Peach-leav'd Bell-flower.

5. CAMPANULA; *persicifolia*; *flore albo, pleno*. *Tourn.* The double white Peach-leav'd Bell-flower.

6. CAMPANULA; *hortensis*, *flore & folio oblongo*. *C. B.* Garden Bell-flower, with oblong Leaves and Flowers, commonly call'd, Canterbury Bells.

7. CAMPANULA; *hortensis*, *flore & folio oblongo*; *flore albo*. *C. B.* White Canterbury Bells.

8. CAMPANULA; *hortensis*, *flore & folio oblongo*; *flore variegato*. The strip'd Canterbury Bells.

9. CAMPANULA; *vulgatior*; *foliis urticae*; *vel major & asperior flore duplici caruleo majore*. *Boerb. Ind.* Large Nettle-leav'd Bell-flower, with large double blue Flowers.

10. CAMPANULA; *vulgatior*; *foliis urticae*; *vel major & asperior flore duplici albo*. *H. R. Par.* Large Nettle-

Nettle-leav'd Bell-flower, with double white Flowers.

11. CAMPANULA; *Canariensis*; *Atriplicis folio*; *tuberosâ radice*. *Tourn.* Canary Bell-flower, with Orach Leaves, and a tuberosè Root.

12. CAMPANULA; *minor*; *Americana*; *foliis rigidis*; *flore caruleo patulo*. *H. L.* Dwarf American Bell-flower, with rigid Leaves and blue Flowers.

13. CAMPANULA; *minor*; *Americana*; *foliis rigidis*; *flore albo*. *H. L.* Dwarf American Bell-flower, with rigid Leaves, and white Flowers.

14. CAMPANULA; *radice esculentâ*; *flore caruleo*. *H. L.* Blue Bell-flower, with edible Roots, commonly call'd, Rampions.

15. CAMPANULA; *arvensis*, *procumbens*. *Inst. R. H.* Venus Looking-Glass; *vulgô*.

16. CAMPANULA; *arvensis erecta*. *H. L.* Upright Venus Looking-Glass.

17. CAMPANULA; *arvensis erecta*, *flore albo*. *Inst. R. H.* Upright Venus Looking-Glass, with a white Flower.

18. CAMPANULA; *arvensis*, *procumbens*, *flore albo*. *H. L.* Venus Looking - Glass, with a white Flower.

The first Sort is commonly cultivated to adorn Chimnies, Halls, &c. in the Summer-season; for which Purpose there is no Plant more proper, it producing sometimes eight, ten, or twelve Branches, which will grow four or five Feet high, and produce large Quantities of beautiful Flowers, almost the whole Length of the Stalks, which, if kept from Rain and Sun, will continue in Beauty for a long time; and if the Branches are regularly spread flat to Sticks, makes a very fine Appearance.

This Plant is propagated either by sowing the Seeds in *March*, in a Bed of light undung'd Soil, or by parting the Roots; the latter Method being the most expeditious, is commonly practis'd; for every Dug taken from the Roots in *September* or *March*, will grow, if rightly manag'd: But the Roots which are rais'd from Seeds, will make the strongest Bloom; for which Reason, you should every Year sow of the Seeds, to have a Succession of these Roots for Bloom, notwithstanding they are commonly three or four Years before they flower: We should therefore transplant the young Plants into Nursery-beds the *September* after sowing, which Beds should be made of a light Soil, rather dry than wet: The Distance they should be planted at, is six Inches square: And if in hard frosty Weather you cover the Bed with Mats, it will greatly strengthen the young Roots; in these Beds they may remain until the third Year after sowing; at which time, if you find the Roots are strong, and promise well for flowering, in *September* you should take them up, and plant them into Pots of light Soil; and if you have the Conveniency of a Glass-Frame to shelter them in Winter from great Rains and severe Frosts, they will be vastly the stronger for it: For altho' they require frequent Waterings in Summer-time, yet too much Wet in Winter is apt to rot them; for their Roots are succulent and milky: therefore, if you have no such Conveniency, you must lay the Pots on one Side in very wet Weather, and in a great Frost set them under a warm Wall, Pale, or Hedge, and cover them with Pease-haulm, &c. observing to lay a little old

Dung round the Pots, to guard their Roots from the Frost. If this Care be taken, the Flowers will sufficiently recompence for the Trouble, in their Numbers and Largeness.

The Peach-leav'd *Bell-Flowers* may be rais'd from Seeds, in the same manner; or be increas'd, by parting their Roots in Autumn, which is the most expeditious Method: These are very hardy, and may be planted in open Beds or Borders, where they will flower very strong, especially if their Roots are taken up and parted every other Year; for otherwise, the Number of Heads will render their Stems weak, and the Flowers small.

The *Canterbury Bells* are biennial, seldom lasting longer than the second Year; these therefore are only rais'd, by sowing their Seeds, the best Season for which is in the Beginning of *April*, and in *June* the Plants will be fit to transplant; at which time you should prepare a Bed or two in a shady Situation, where you must plant them at about six Inches Distance every way; and in *September* following you may plant them out into the Borders of the Flower-Garden, where they will flower the *May* following; and when they have ripen'd their Seeds, will die; therefore you must sow every Year, to have a Supply of fresh Roots.

The two Dwarf *American* Kinds are only propagated by Off-sets, their Seeds seldom ripening with us; they are hardy, and will endure in the open Air, provided they are planted in a dry Soil, and a warm Situation: The best Season for parting their Roots, is in *April*; but they must not have too rich a Soil.

These Plants will endure our common Winters in the open Air, but in severe Frosts they are often destroyed, therefore it will be proper to preserve some Plants of each Sort in Pots, which may be placed under a common Hot-bed Frame in Winter, observing to take off the Glasses every Day in mild Weather, that they may enjoy as much free Air as possible; and in hard Frosts the Glasses may be covered with Mats, Straw, or Pease-Haulm, to prevent the Earth in the Pots from being frozen, which will preserve the Plants in Vigour.

The *Canary Campanula* is one of the most beautiful Plants of the Green-house, it producing its Flowers in the Depth of Winter, and continuing them through the Months of *December*, *January*, and *February*. This Plant is propagated by parting its Roots, the Season for which is in *June*, when the Stems are quite decay'd; and in doing of it, great Care should be taken, not to break or bruise their Roots, which would endanger their decaying. The Soil in which these Roots should be planted, must be one third fresh Earth, a third Part Sand, and the rest Lime-Rubbish; this should be well mix'd and screen'd, and, if laid together half a Year before it is used, that it may incorporate, it will be the better.

When you plant the Roots, give them a little Water to settle the Earth about them; but afterwards let your Waterings be very sparingly done, and but seldom repeated until their Stems begin to advance; after which, they must have it a little freely: For want of this Caution, many of these, and other Flower-roots which are kept in Pots, are destroy'd; for it is impossible

possible to suppose that a Root which is intirely at Rest, and destitute of Leaves, should be capable of discharging any Quantity of Moisture; therefore let this Caution be constantly observ'd. The Stems of the Flower will begin to appear in *August*; and if the Roots are strong, will rise to eight or nine Feet in height; and in *November*, or sooner, will begin to shew its beautiful Flame-colour'd Flowers. When these Stems begin to advance, we should remove the Plant into Shelter, to guard it from Morning Frosts, or great Rains; and as the Weather grows colder, it must be remov'd into a good Greenhouse, where it should have as much free Air as possible, in open mild Weather. This Plant will require the same Proportion of Heat as is allotted for the *Ficoïdes*, and will thrive in the same House, better than amongst *Orange-trees*, &c.

The *Nettle-leaf'd Bell-Flowers* are very hardy, and may be increas'd by parting their Roots either in Spring or Autumn, and are proper for large open Borders.

The *Rampion* is propagated in the Kitchen-Garden, for its Root, which was formerly in greater Esteem in *England* than at present, altho' the *French* are still very fond of it: The Seeds of this Plant should be sown in *March*, in a Bed of light dry Earth, as thin as possible; and in *May*, when the Plants are come up, hoe them out, leaving them about four Inches square; and during the Summer keep them clear from Weeds, and the Winter following they will be fit for Use.

The four Sorts of *Venus Looking-glass*, are annual Plants; the Seeds of these should be sown in the

Borders of the Flower-Garden; where they are to remain, for they do not love transplanting. If the Seeds are sown in *April*, the Plants will flower in *June* and *July*; but if they are sown in *May*, they will not flower till *August*, so that by sowing them at different Times, there may be a Succession of them in Flower during all the Summer Months: And if the Seeds are sown toward the End of *August*, upon a light warm Soil, the Plants will abide the Winter, and flower early the Spring following. The Seeds of the first Sort are very common in all the Seed Shops in *London*: The Second is a Variety of the first; but the third and fourth Sorts are less common in *England*.

CAMPHORA; The Camphire-Tree.

The Characters are;

*It hath Leaves like those of the Pear-Tree, but are full of Ribs, which grow alternately upon the Branches: The Flowers consist of one Leaf, which is divided into five or six Segments: The Fruit is shap'd like a Nut; the Shell is tender, and the Kernel bifid.*

CAMPHORA; officinarum. C. B. The Camphire-Tree.

The Authors that have treated of this Tree, suppose there are two Sorts of it, one of which is a Native of the Isle of *Borneo*, and is the Tree from whence the best *Camphire* is taken, which is suppos'd to be a Natural Exudation from the Tree, produced in such Places where the Bark of the Tree has been wounded or cut. The other Sort is a Native of *Japan*, which Dr. *Kempfer* describes to be a Kind of *Bay*, bearing black or purple Berries, and from whence the Inhabitants of the Province of *Satzuma* and the Island of *Gotto* prepare

prepare their *Camphire*, which is procur'd by making a simple Decoction of the Root and Wood of this Tree cut into small Pieces: But this Sort of *Camphire* (he says) is extremely cheap, being in Value eighty or an hundred times less than the true *Bernean Camphire*.

This Tree is at present very rare in *Europe*, and is only increas'd by laying down the Branches, which are commonly two Years before they take Root, so as to be fit to remove: It requires a light Soil, and frequent Waterings in warm Weather, but in Winter you must do it sparingly: It must be kept in a moderate Warmth in Winter, but in Summer may be expos'd to the open Air in a well-shelter'd Place.

CAMPION; *vide* *Lychnis*.

CANDLE-BERRY-TREE; *vide* *Gaic*.

CANDY-TUFT; *vide* *Thlaspi*.

CANNA INDICA; *vide* *Cannacorus*.

CANNABIS; Hemp.

The Characters are;

*It hath digitated (or finger'd) Leaves, which grow opposite to one another: The Flowers have no visible Petals: It is Male and Female, in different Plants.*

CANNABIS; *sativa*. C. B. The Manured Hemp.

This Plant is propagated in the rich Fenny Parts of *Lincolnshire*, in great Quantities, for its Bark, which is so useful for Cordage, Cloth, &c. and the Seeds afford an Oil which is used in Medicine. The Manner of propagating it is so well known, that it would be needless to insert it in this Place.

CANNACORUS: The *Indian Reed*.

The Characters are;

*It hath a knobbed tuberosè Root:*

*The Leaves are long and nervous: The Flower consists of one Leaf, is tubulous, and cut into six Segments; these are succeeded by roundish membranaceous Vessels, which are divided into three Cells, each containing two or three round hard Seeds.*

The Species are;

1. CANNACORUS; *latifolius*; *vulgaris*. *Tourn.* The common broad-leav'd *Indian Reed*, with pale Flowers.

2. CANNACORUS; *latifolius*; *vulgaris*; *foliis variegatis*. The common *Indian Reed*, with strip'd Leaves.

3. CANNACORUS; *flore luteo punctato*. *Tourn.* The yellow-spotted *Indian Reed*.

4. CANNACORUS; *flore coccineo*; *splendente*. *Tourn.* The fine Scarlet-colour'd *Indian Reed*.

5. CANNACORUS; *amplissimo folio*; *flore rurilo*. *Tourn.* The largest-leav'd *Indian Reed*, with reddish-colour'd Flowers.

6. CANNACORUS; *angustifolius*; *flore flavescente*. *Tourn.* Narrow-leav'd *Indian Reed*, with yellow Flowers.

7. CANNACORUS; *amplissimo folio*, *flore flavescente majore*. The largest-leav'd *Indian Reed* with large yellow Flowers, commonly called, *Wild Plantain* in *America*.

These Sorts are all propagated by Seeds, which must be sown on a Hot-bed in *March*, and afterwards should be transplanted into Pots fill'd with good rich Earth, and, during the Summer-season, must be plentifully water'd: These Plants, thus manag'd, will many times produce Flowers the first Season; but 'tis not till the second Year that they blow strong: In order to which, you should house them before the Frost pinches their Leaves, observing to give them but little



little Water in the Winter, and keep them intirely from the Frost: In *May* following, prepare a good rich Bed of Earth, and turn your Plants out of the Pots into this Bed, being careful not to disturb the Earth about their Roots, giving them Water plentifully in dry Weather; and when your Roots have once fasten'd themselves into this Bed, they will grow vigorously, and produce many strong Stems, which will flower much stronger than those kept in Pots, and ripen their Seeds very well.

The Scarlet Blossom, and the large Yellow, are by far the most beautiful Kinds; but a Mixture of the yellow-spotted Sort will look very agreeable; but the common pale-colour'd Sort is hardly worth keeping, unless in Botanick Collections.

These Sorts may be also increas'd by parting their Roots in the Spring, but these Plants seldom flower so well as Seedlings: And since the Seeds are so easy to be obtain'd, 'tis hardly worth practising, unless for the strip'd-leav'd Sort, which can be no other Way increas'd. The Inhabitants of *America* call this Plant *Indian-shot*, and say, the *Indians* make Use of this Seed instead of Shot, to shoot Wild-fowl, &c.

The large yellow Sort is much tenderer than the others, and should be constantly kept in a Bark Stove, where, if the Roots have sufficient room in the Pots, they will produce noble Spikes of Flowers, and perfect their Seeds very well.

There is also another *Species* of this Plant, the Root of which is the *Curcuma* of the Shops; but this I have not as yet seen in the *English* Gardens.

CAPERS; *vide* Capparis.

CAPNOIDES; Podded Fumitory.

The *Characters* are;

*The Leaves and whole Face of this Plant is like Fumitory, but the Style of the Flower becomes a long taper Pod, which contains many round shining Seeds.*

CAPNOIDES. *Tourn.* Podded Fumitory.

This is a pretty annual Plant, which may be sown in an open Border in the Spring of the Year; and when the Plants are come up, they may be remov'd and planted in the Borders of the Flower-Garden, where they will make a pretty Shew for two or three Months together. The Seeds of this Plant, if suffer'd to shed upon the Ground, will furnish you with Plants enough, without giving you the Trouble to sow it any more.

CAPNORCHIS; Indian Bulbous-rooted Fumitory.

The *Characters* are;

*This hath the whole Face of Fumitory: The Root is sometimes tuberose, sometimes scaley, and at other times bulbous; the Flower consists of two Leaves, is of an anomalous Figure, and hangs downward; the Pods are like those of Shepherd's-Pouch.*

CAPNORCHIS; *Americana.* Boerb. *Ind.* American Bulbous-rooted Fumitory.

This Plant is propagated by parting its Roots, or from Seeds: It is not hardy enough to endure our Winters in the open Ground, therefore the Roots must be planted in small Pots, filled with light sandy Earth, and housed in Winter: The Flowers are somewhat like those of *Fumitory*, and tho' none of the most beautiful Plants, yet deserve a Place in a good Garden.

CAPPARIS; The Caper-Bush.

The Characters are;

Its Flower consists of four Leaves; which are expanded in Form of a Rose; the Fruit is fleshy, and shap'd like a Pear, in which are contain'd many roundish Seeds.

There is but one Species of this Plant in England at present, that I know of, which is,

CAPPARIS; *spinosa; fructu minore folio rotundo.* C. B. The small fruited prickly Caper, with round Leaves.

This Shrub chiefly delights in Rubbish, and commonly grows upon old Walls and Buildings, and is, with Difficulty, kept in Gardens, although hous'd in Winter: Whereas there is a Bush of this kind, now growing in a Hole of a decay'd Wall, in the Gardens of Camden-House at Kensington, which hath endured several Winters without any Shelter or Covering, and annually produces many beautiful Flowers, and sometimes, in good Seasons, will produce Seeds, tho' I don't remember ever to have seen them perfectly ripe.

The Seeds of this Plant may be easily obtain'd from *Toulouse* or *Leghorn*, and may be sown upon old Walls and Buildings, where they will insinuate their Roots between the Bricks, and endure for many Years. The Buds of these Flowers, before they open, are pickled for Eating.

BEAN-CAPER; *vide* Fabago.

CAPRIFOLIUM; Honeyfuckle.

The Characters are;

It hath a climbing Stalk, which twists itself about whatsoever Tree stands near it: The Flowers are tubulous and oblong, consisting of one Leaf, which opens toward the Top, and is divided into two Lips; the uppermost of which is again divided into

two, and the lowermost into many Segments; the Tube of the Flower is bent, somewhat resembling a Huntsman's Horn: They are produc'd in Clusters, and are very sweet.

The Species are;

1. CAPRIFOLIUM; *non perfoliatum, floribus albis.* The Wild or English white Honeyfuckle.

2. CAPRIFOLIUM; *non perfoliatum, flore interius albo, rubro externè.* Boerb. Ind. The English red Honeyfuckle.

3. CAPRIFOLIUM; *non perfoliatum, foliis sinuosis.* Tourn. Oak-leav'd Wild Honeyfuckle.

4. CAPRIFOLIUM; *non perfoliatum, foliis sinuosis & variegatis.* The Strip'd Honeyfuckle, with cut Leaves.

5. CAPRIFOLIUM; *non perfoliatum, foliis ex luteo variegatis.* The common Honeyfuckle, with yellow strip'd Leaves.

6. CAPRIFOLIUM; *Italicum, perfoliatum praecox.* Bross. The French or Early white Honeyfuckle.

7. CAPRIFOLIUM; *Italicum.* Dod. The Italian Honeyfuckle.

8. CAPRIFOLIUM; *Germanicum, flore rubello, serotinum.* Bross. Late red Honeyfuckle.

9. CAPRIFOLIUM; *Germanicum, floribus speciosius.* Dutch Honeyfuckle.

10. CAPRIFOLIUM; *perfoliatum, sempervirens, floribus speciosius.* Evergreen Honeyfuckle.

The first, second, and third Sorts of Honeyfuckles are found growing in the Hedges, in many Parts of England: Indeed, the third Sort is seldom found, and I believe is no more than an accidental Variety of the two former. I found one Plant of this Kind in the Woods near *Dulwich*, which I planted in the Physick-Garden, where it now grows, and many of the Branches

still continue to produce indented Leaves; but the extreme Parts of the Tree, and all the vigorous Shoots, produce whole Leaves; so that the Variation from the common Sort is but small. The two strip'd Sorts are also Varieties of the common, one having whole, the other indented Leaves. The Early White, *Italian*, Late Red, and *Dutch* Sorts, are Foreigners; but have been more cultivated in the Nurseries about *London*, than those which are of our own Growth, and are much commoner in the Gardens than those. The Early White is the first Sort that flowers, commonly beginning in *April*; this is succeeded by the *Italian*; then the *Dutch* and Late Red Sorts follow; the latter of which, during the time of flowering, is the most beautiful of all the Kinds; for its Flowers are produced in very close Bunches, and every Shoot of the Tree produces many Bunches, which flowering all together, renders it a very fine Shrub: but this seldom lasts more than a Fortnight in Beauty; whereas the *Dutch* Sort, which produces its Bunches but thinly (its Branches growing more diffused) continues flowering until prevented by frosty Weather. The *Ever-green Honey-suckle* begins to produce its Flowers at the Beginning of *June*, and often continues flowering 'till *Michaelmas*, which, together with its Ever-green Leaves, renders it a very valuable Shrub.

All these Sorts of *Honey-suckles* are propagated by laying down their Branches in the *Spring*; which by *Michaelmas* following (if they have been supply'd with Water) will have taken Root, so as to be fit to remove, which should be into Nursery-beds, for a Year or two,

the better to train them up, either for Headed-Plants, or for Creepers to plant against Trees, Walls, Pales, &c. which in two Years Time, at most, will be fit for any of those Purposes; or they may be propagated by planting Cuttings of the young Shoots, either at *Michaelmas*, or early in the Spring of the Year, in a shady Border, where they may continue 'till the *Michaelmas* following, when they may be transplanted into Nursery-beds, (as was before directed:.) But the Ever-green *Honey-suckle* is difficult to encrease this Way, therefore it would be better to propagate it by Layers.

These Shrubs are very great Ornaments to small Quarters of Flowering Shrubs, when train'd up to regular Heads; and the different Varieties being intermix'd therewith, their long Continuance in Flower, together with the Beauty and Sweetness of their Flowers, renders them as valuable Shrubs for such Purposes as any we have; and they are no less valuable for planting against the Stems of old Trees in Groves or Avenues, where, if they are not too much overshadowed by the Trees, they will thrive and flower exceedingly.

The best Season for cutting these Trees, to keep them in a regular Form, is about *Michaelmas*, soon after they have done flowering, that their Wounds may heal before Winter: And this Work is best perform'd with a Knife, observing to cut behind a Leaf-Bud; for how long soever the Shoot is left beyond, it decays down to the Bud, and thereby becomes unfitly. They are all extreme hardy, except the Ever-green, which is suppos'd to be an *American* Plant; and is sometimes, in very severe

Winters,

Winters, apt to suffer by the Frost, if planted in a Situation too much expos'd.

CAPSICUM ; Guiney Pepper.

The Characters are ;

The Flowers consist of one Leaf, and are expanded like those of Nightshade ; the Fruit is soft, fleshy, and membranous, and divided into two or more Cells, in which are contained many flat Kidney-shap'd Seeds.

The Species are ;

1. CAPSICUM ; *siliquis longis, pro-pendentibus.* Tourn. *Capsicum*, with long hanging Pods.

2. CAPSICUM ; *siliquis recurvis.* Dod. *Capsicum*, with long Pods which turn up at the End.

3. CAPSICUM ; *latifolium, mali Æthiopicæ fructu magno, compresso, striato, Americanum.* Pluk. Broad-leav'd *Capsicum*, with long, compress'd, striated Pods, commonly call'd, *Bonnet Pepper*.

4. CAPSICUM ; *Africanum, fructu pyramidali, pendulo, rugosissimo.* African *Capsicum*, with pyramidal, rough, hanging Pods,

5. CAPSICUM ; *Africanum ; fructu pyramidali, rugosissimo, plerumque erecto.* African *Capsicum*, with pyramidal rough Pods, for the most part growing erect.

6. CAPSICUM ; *fructu non acri, rugoso, longo, pendente, rubro.* Teso-chilli. Hern. *Capsicum*, with long hanging red Pods, which are not hot.

7. CAPSICUM ; *fructu Cordiformi, plerumque nutante, rubro.* *Capsicum*, with Heart-shap'd red Pods, for the most part hanging downwards.

8. CAPSICUM ; *fructu Pyramidato, crasso, plerumque erecto, rubro.* *Capsicum*, with pyramidal thick red Pods, for the most part growing upright.

9. CAPSICUM ; *fructu oblongo,*

*nunc erecto, nunc nutante, rubro.* *Capsicum*, with oblong red Pods, growing sometimes erect, and sometimes hanging.

10. CAPSICUM ; *fructu rotundo, majore, nunc erecto, nunc nutante, rubro.* *Capsicum*, with large round red Pods, growing sometimes erect, and sometimes hanging.

11. CAPSICUM ; *fructu flavo, pyramidato, oblongo, nunc erecto, nunc nutante.* *Capsicum*, with oblong pyramidal yellow Pods, growing sometimes erect, and sometimes hanging.

12. CAPSICUM ; *fructu Cordiformi, nunc erecto, nunc nutante, flavo.* *Capsicum*, with Heart-shap'd yellow Fruit, growing sometimes erect, and sometimes hanging.

13. CAPSICUM ; *fructu Olivario, erecto.* Upright Olive-shap'd *Capsicum*.

14. CAPSICUM ; *fructu parvo, pyramidali, erecto, rubro.* Sloan. *Capsicum*, with small red Pods growing erect, call'd by the Inhabitants of the *West-Indies*, *Barbary-Pepper*.

15. CAPSICUM ; *fructu parvo, rotundo, acerrimo.* Sloan. *Capsicum*, with small round Pods which are very hot, call'd by the Inhabitants of the *West-Indies*, *Bird-Pepper*.

16. CAPSICUM ; *Americanum, fructu rotundo, Cerasorum formâ.* Pluk. American *Capsicum*, with round Cherry-shap'd Fruit.

17. CAPSICUM ; *Americanum, latifolium, fructu oblongo, erecto, candido.* Broad-leav'd American *Capsicum*, with oblong white Pods growing erect.

18. CAPSICUM ; *fructu maximo, oblongo, rugoso, plerumque nutante, rubro.* *Capsicum*, with large, oblong, red, rough Pods, for the most part hanging downwards.

These Sorts of *Capsicums* are sown in many curious Gardens with other annual Plants, in Hotbeds, and require to be treated after the same manner as was directed for the *Amaranthus*, and do, in the *Autumn* Season, make a very pretty Diversity, being intermix'd therewith: They are all tolerably hardy, and may be planted abroad, towards the latter End of *May*, or the Beginning of *June*, either in Pots or open Borders, where they will ripen their Fruits very well, except the 3d, 13th, 14th, 15th, 16th, and 17th Sorts, which are tenderer, and must be brought forward under Glasses, otherwise their Fruit will not come to good: The 13th, 14th, and 15th Sorts will remain for several Years, and form handsome Shrubs, if you take proper Care to preserve them in the Stove in the Winter; during which Season their Fruits will remain and ripen, and appear very beautiful. Indeed, I believe, all the Sorts may be preserv'd over the Winter, were we to take off a Part of their Fruits before they are grown so big as to exhaust the Strength of the Plant, and observe to house them in time: But as they perfect their Fruit so easily in one Summer, it is seldom practis'd but with those Sorts that do not so readily ripen their Seeds.

The Fruit of these Plants, tho' at present of no great Use in *England*, yet affords one of the wholesomest Pickles in the World, if they are gather'd young before their Skins grow tough. The Inhabitants of the *West-Indies* eat great Quantities of this Fruit raw, not only while it is green, but also when it is fully ripe; at which time it is so very acrid as to cause an extraordinary great Pain in the

Mouth and Throat of such Persons as are not accustom'd to eat of it.

The Inhabitants of the *West-Indies* make great Use of the Bird-Pepper, which they dry and beat to a Powder, and mix with other Ingredients, which they keep by them at all times for Sauce, and use it instead of Pepper; of which they send some of these Pepper-pots to *England*, by the Name of *Cayan Butter* or *Pepper-Pot*, and is by some of the *English* People mightily esteem'd,

CARACALLA; *vide* Phaseolus.

CARDAMINDUM; *vide* Acri-viola.

CARDAMINE; Ladies Smock.

The Characters are;

The Flower consists of four Leaves; which are succeeded by narrow Pods, which, when ripe, roll up, and cast forth their Seeds, the Leaves are for the most part wing'd.

The Species are;

1. CARDAMINE; *pratensis, magna flore purpurascente. Tourn.* Common Ladies Smock, with purplish Flowers.

2. CARDAMINE; *pratensis, magna flore albo. Tourn.* Common Ladies Smock, with white Flowers.

3. CARDAMINE; *pratensis, magna flore pleno. Tourn.* The Double Ladies Smock.

The two first Sorts are common in most of the moist Meadows in *England*; they flower the Beginning of *May*, and although there is no great Beauty in those Flowers, yet I thought proper to mention them, in order to introduce the third Sort, which is a very beautiful Plant, continuing a long time in Flower, and is a very proper Plant for cold North Borders, or a wet Soil, where few others will grow; and hereby we may render

the poorest and worst Soil productive of Beauties, did we but carefully attend to the adapting proper Plants for it, and not endeavour to force it to produce Things which require a quite contrary Soil. The first Sort is sometimes used in Medicine.

CARDIACA; Mother-wort.

This Plant is cultivated in some Gardens for medicinal Use; but since it is a Plant of no great Beauty, I shall not trouble the Reader with any other Account of it, but only that it will grow, if sown in the Spring, in almost any Soil or Situation; and if once suffer'd to shed its Seed on the Ground, will become a very troublesome Weed.

CARDINALS FLOWER; *vide* Rapuntium.

CARDOON or Chardon; *vide* Cinara.

CARDUUS; Thistle.

The Characters are;

The Leaves grow alternately on the Branches, and are prickly, and the Heads are for the most part squamose and prickly.

There are several Species of this Plant mention'd in Books of Botany; but since there are few of them that have any Beauty or Use (to us at present known) so I shall mention two or three of the most remarkable Kinds in this Place, and proceed.

1. CARDUUS; *albis maculis notatus, vulgaris*. C. B. The Milky, or Holy Thistle.

2. CARDUUS; *nutans*. F. B. The Musk, or Nodding Thistle.

3. CARDUUS; *eriocephalos*. Dod. The woolly-headed Thistle.

These Sorts of Thistles grow wild in many Parts of England; the first commonly upon the Sea-Coasts, but the second usually upon

Arable Land in many Places; the last is less common than either of the former, being found but in few Places in England. These, and all the other Sorts of Thistles, may be cultivated by sowing their Seeds in the Spring in almost any Soil, and will flower and seed the second Year, and soon after perish, most of them being biennial Plants: The first Sort is sometimes used in Medicine, and is call'd in the Dispensatory, *Carduus Mariae*.

CARDUUS BENEDICTUS; *vide* Cnicus.

CARDUUS FULLONUM; *vide* Dipfacus.

CARNATION; *vide* Caryophyllus.

CARPINUS; the Hornbeam, or Hardbeam-Tree.

The Characters are;

It hath Leaves like the Elm or Beech-Tree: The Katkins (or Male-flowers) are placed at remote Distances from the Fruit on the same Tree; and the outward Shell of the Fruit is winged.

The Species are;

1. CARPINUS. Dod. The common Hornbeam-tree.

2. CARPINUS; *foliis ex lateo variegatis*. The strip'd Hornbeam.

3. CARPINUS; *seu Ostrya, Ulma similis, fructu racemoso, Lupulo similis*. C. B. The Hop Hornbeam.

4. CARPINUS; *Virginiana, florens*. Pluk. The Virginian flowering Hornbeam.

The first of these Trees is often cultivated in the Nurseries to make Hedges for Wildernesses and Orangeries; but of late it hath not been so much used for that Purpose, the decay'd Leaves of the Tree continuing on all the Winter, as do those of the Oak, rendering them very unsightly in a Pleasure-Garden, which, together with the perpetu-

veal Litter their Leaves make, have almost brought them into Disuse for this Work, unless in large Wildernesses, where the Hedges are train'd up to a great Height; for which Purpose there is no Tree more useful, it being a very profitable Plant, and may be kept thick from the Bottom to the Height of eighteen or twenty Feet, and will resist the Violence of strong Winds the best of any of the deciduous Trees, and is of speedy Growth. The Timber of this Tree is very tough and flexible, and is of excellent Use to the Turners, as also for making Mill-cogs, Heads of Beates, &c. and is very good Firewood.

This Tree may be rais'd from the Seeds, which should be sown early in the *Autumn* in a shady Situation, where they will remain in the Ground until Spring, and often till the second Year before they appear; for which Reason it is generally propagated by Layers, which is the most expeditious Method: The Layers should be laid in *Autumn*, and will have taken sufficient Root to be transplanted the *Autumn* following; at which Time they should be transplanted into a Nursery for two or three Years, where, if they are design'd for Hedges, their under Branches should not be taken off, but the Trees train'd flat for that Purpose. These Trees are very proper to make Hedges round the Quarters of Exotick Trees and Shrubs, their Leaves abiding till the Spring before they fall off, will greatly fence off the cold Winds from the Quarters, and what Leaves do fall away in *Autumn* should be suffer'd to remain upon the Surface of the Ground until Spring, which will keep the Frost from penetrating so deep into

the Ground as it would were the Ground intirely bare.

This Tree will grow upon cold, barren, expos'd Hills, and in such Situations that few other Trees will, so that it may be cultivated to great Advantage in such Places.

The *Hop-Hornbeam* sheds its Leaves in Winter, with the Elm, and other deciduous Trees. This Tree, though but lately known in *England*, yet is very common in *Germany*, growing promiscuously with the common Sort. This is much preferable to the common Sort for Hedges in a Pleasure-Garden, upon the Account of its quitting its Leaves, with other Trees, and thereby doth not make so much Litter in the Spring as the other, and will cut full as well.

The *Virginian* flowering *Hornbeam* is still less common than the last, and only to be seen in curious Gardens; it is equally as hardy as the other, and may be increas'd by Layers.

CARROTS; *vide* Daucus.

CARTHAMUS; Bastard Saffron.

The Characters are;

*This Plant agrees with the Thistle, in most of its Characters: but the Seeds of this are always destitute of Down.*

CARTHAMUS; *officinarium*; *flore croceo*. *Tourn.* Bastard Saffron, or Saf-flower.

This Plant is very much cultivated in many Parts of *Germany* for the Dyers Use, and is brought into *England* from thence; it is there sown in the open Fields in the Spring of the Year; and when come up, they hoe it out thin, as we do Turnips, leaving the Plants, about eight or ten Inches distant every Way: These Plants, as they grow, divide into a great many Branches, each producing a Flower

at the Top of the Shoot, which, when fully blown, they cut or pull off, and dry it, which is the Part the Dyers make use of: And this is sometimes mix'd with Saffron; to which (if it be rightly dry'd, and artfully mix'd) it is so like, as not to be distinguished but by good Judges.

This Plant was formerly cultivated in *England*, particularly in *Gloucestershire*, where, they say, it did very well: Tho' I am satisfy'd it must be a very good Season if it ripens Seeds well in *England*; for the Flower-Heads are so close and compact, that if, in the Season of the Seeds Formation, there happens to be wet Weather, this enters the Blossoms of the Florets, and is seldom dry'd away before the tender Seeds are destroy'd; and altho' the Seeds shall many times appear very fair and good to outward Appearance, yet, upon breaking them, they are hollow, and destitute of Kernels. This Seed is sometimes used in Medicine; therefore such People as purchase it for that Purpose, should be careful that they be sound. The Florets of this Plant (which are the Parts the Dyers use) have been sometimes put into Puddings, to colour them; and at the Time when it was cultivated in *England*, the poorer Sort of People in the Country us'd to gather it for that Purpose, until they put such Quantities into their Puddings, that it purged them, which occasion'd their leaving it off.

CARUI; Caraway.

The Characters are;

It hath winged Leaves, which are cut into small Segments, and are placed opposite on the Stalks, having no Foot-stalk. The Petals of the Flowers are bifid, and shap'd like a Heart: The Seeds are long, slender, smooth, and furrow'd.

The Species are;

1. CARUI; *Casalp.* The common Caraway.

2. CARUI; *semine majore. Vaill.* The large-seeded Caraway.

3. CARUI; *foliis tenuissimis; Ast-phodeli radice. Tourn.* The narrowest-leav'd Caraway, with *Ast-phodel* Roots.

4. CARUI; *Alpinum. C. B.* Alpine Caraway.

The first of these Sorts is sometimes found wild in *England*, in rich moist Pastures, especially in *Holland* in *Lincolnshire*. The other Sorts have been sent from Abroad, and are only cultivated in curious Gardens of Plants.

These Sorts may be all cultivated by sowing their Seeds in the Spring of the Year in a moist rich Soil; and when the Plants are come up, they should be hoe'd out to about six Inches square, which will greatly strengthen them, and promote their seeding plentifully: In the Autumn their Seeds will ripen, at which Time the Plant should be cut up, and laid upon Mats to dry; and then it may be beaten out and dry'd, when it may be put up for Use. These Seeds are used in Medicine, as also in the Confectionary, for making Seed-Cakes, &c. The first Sort only is what is used; tho' the Seeds of the second seem to be full as good, and are much larger and fairer than the first. The other Sorts are only kept in Collections of Plants, to increase their Numbers.

CARYOPHYLLATA; Avenz; or Herb-Bennet.

The Characters are;

It hath pennated (or winged) Leaves, somewhat like those of *Agri-mony*: The Cup of the Flower consists of one Leaf, which is cut into ten Segments: The Flower consists of



of five Leaves, which spread open in Form of a Rose: The Seeds are form'd into a globular Figure, each of which hath a Tail to it: The Roots are perennial, and smell sweet.

The Species are;

1. CARYOPHYLLATA; *vulgaris*, C. B. Common Avens.

2. CARYOPHYLLATA; *montana*; *flore luteo magno*. F. B. Mountain Avens, with large yellow Flowers.

3. CARYOPHYLLATA; *montana*; *purpurea*. Ger. Emac. Mountain Avens, with purple Flowers.

4. CARYOPHYLLATA; *montana*; *flore luteo nutante*. C. B. Mountain Avens, with yellow bending Flowers.

5. CALYOPHYLLATA; *Alpina*, *Chamadryos folio*. Hist. Oxon. Mountain Avens, with Germander Leaves.

6. CARYOPHYLLATA; *vulgaris*, *majoris flore*. C. B. Avens with large Flowers.

7. CARYOPHYLLATA; *pentaphylla*. F. B. Cinquefoil-Avens.

8. CARYOPHYLLATA; *Virginiana*, *albo flore minore, radice inodora*. H. L. Virginian Avens, with small white Flowers, whose Roots have no Scent.

The first, third, fourth, fifth, sixth, and seventh Sorts are found growing wild in England, Scotland, and Ireland: But the second Sort was brought from the Alps, and the eighth from Virginia: These Sorts may be all cultivated in a Garden, by transplanting their Roots from the Places of their Growth, into a moist shady Part of the Garden, where they will thrive exceedingly; which is the best Method to procure them, for their Seeds commonly remain two Years in the Ground before they appear. The first Sort (which is

that commonly used in Medicine) is so common in England, that it hardly deserves a Place in a Garden; but the second, third, fourth, and sixth Sorts are worthy a Place in some moist shady Border where few other Things will grow; and serve to add to the Variety, especially since they require no Care or Trouble in their Culture, but only every Michaelmas to divide and transplant their Roots.

CARYOPHYLLUS; Clove-gilliflower or Carnation.

The Characters are;

It hath an intire oblong, cylindrical, smooth Cap, which is indented at the Top: The Petals of the Flower are narrow at Bottom, and broad at the Top, and are for the most part lacinated (or cut) about the Edges: The Seed-vessel is of a cylindrical Figure, containing many flat, rough Seeds.

This Genus may be divided into three Classes, for the better explaining them to Persons unacquainted with Botany; which also will be as necessary for the right Understanding their Culture.

1. CARYOPHYLLUS; *hortensis*. The Clove-gilliflower, or Carnation.

2. CARYOPHYLLUS; *tenuifolius*, *plumarius*, or Pink.

3. CARYOPHYLLUS; *Barbatus*, or Sweet-William.

I shall treat of these three Classes singly, that I may the better explain their several Methods of Culture: And first, I shall begin with the Carnation or Clove-gilliflower. These the Florists distinguish again into four Classes.

The first they call Flakes; these are of two Colours only, and their Stripes are large, going quite thro' the Leaves.

## C A

The second are call'd *Bizarrs*; these have Flowers, strip'd or variegated with three or four different Colours.

The third are call'd *Piquette's*; these Flowers have always a white Ground, and are spotted (or pounced, as they call it) with scarlet, red, purple, or other Colours.

The fourth are call'd *Painted Ladies*; these have their Petals of a red or purple Colour on the upper-side, and are white underneath.

Of each of these Classes there are numerous Varieties; but chiefly of the *Piquette's*, which of late Years have been in greater Esteem than any of the other Kinds. To enumerate the Varieties of the chief Flowers in any one of these Classes, would be needless, since every County produces new Flowers almost every Year; so that those Flowers, which at their first raising were greatly valu'd, are in two or three Years become so common, as to be of little Worth, especially if they are defective in any one Property. Therefore (where Flowers are so liable to Mutability, either from the Fancy of the Owner, or that better Kinds are yearly produced from Seeds, which, with good Florists, always take Place of older or worse Flowers which are turn'd out of the Garden, to make Room for them) it would be but superfluous in this Place to give a List of their Names, which are generally borrow'd either from the Names and Titles of Noblemen, or from the Person's Name, or Place of Abode, who rais'd it; I shall only beg Leave to mention two or three old-describ'd Sorts, by way of Introduction, and then proceed.

## C A

1. CARYOPHYLLUS; *altilis, major*. C. B. The Clove-gilliflower.

2. CARYOPHYLLUS; *maximus, ruber*. C. B. The large Bastard Clove-gilliflower.

3. CARYOPHYLLUS; *maximus, alter, lato porri folio*. H. R. Par. The broad-leav'd Carnation or Gilliflower.

The first of these Sorts is the true *Clove-gilliflower*, which hath been for a long time so much in Use for making a Cordial Syrup, &c. of which there are two or three Varieties commonly brought to the Markets, which differ greatly in their Goodness; some of them having very little Scent, when compar'd with the true Sort: The large Kind hath been much plentier some Years since than at present: This used to burst the Pods, and their Petals hang loping about in such a manner, that the People did not care to buy them in the Market, which was the Reason it hath not been cultivated so much of late. The third Sort is only to be found in such small Gardens as raise great Quantities of these Flowers from Seed to supply the Markets in the Spring of the Year: This being a very hardy Kind, and their Leaves being so broad, and the Plants so vigorous, that the People who are wholly unacquainted with these Flowers, make choice of these as the most promising Plants; whereas they seldom have more than four or five Leaves in a Flower, and those are very small, and ill-colour'd: The first of these, *viz.* the *Clove-gilliflower*, is worthy of a Place in every good Garden; but of late there have been so many new Kinds produc'd from Seeds, which are very fine and large, that most of the old

Old Sorts have been excluded the Gardens of the Florists.

These Flowers are propagated either from Seeds, (by which new Flowers are obtain'd) or from Layers, for the Increase of those Sorts which are worthy maintaining: But I shall first lay down the Method of propagating them from Seed, which is thus:

Having obtain'd some good Seeds, either of your own sowing, or from a Friend that you can confide in; in the Beginning of *April*, prepare some Pots or Boxes (according to the Quantity of Seed you have to sow); these should be filled with fresh light Earth, mix'd with very rotten Neats Dung, which should be well incorporated together; then sow your Seed thereon, (but not too thick) covering it about a Quarter of an Inch with the same light Earth, placing the Pots or Cases so as to receive the Morning Sun only, till eleven of the Clock, observing also to refresh the Earth with Water so often as it may need it: In about a Month's Time your Plants will come up, and, if kept clear from Weeds, and duly water'd, will be fit to be transplanted in the Beginning of *June*; at which Time you should prepare some Beds (of the same Sort of Earth as was directed to sow them in) in an open airy Situation, in which you should plant them at about three Inches square, observing to water and shade them, as the Season may require, being careful also to keep them clear from Weeds: In these Beds they may remain until the Beginning of *August*, by which Time they will have grown so large as almost to meet each other; then prepare some more Beds of the like good Earth, (in Quantity proportionable

to the Flowers you have rais'd) in which you should plant them at six Inches Distance each Way, and not above four Rows in each Bed, for the more convenient laying such of them as may prove worthy preserving; for in these Beds they should remain to flower.

The Allies between these Beds should be two Feet wide, that you may pass between the Beds to weed and clean them. When your Flowers begin to blow, you must look over them, to see if any of them proffer to make good Flowers; which so soon as you discover, you should lay down all the Layers upon them: Those which are well mark'd, and blow whole without breaking their Pods, should be reserv'd to plant in Borders, to furnish you with Seed; and those which burst their Pods, and seem to have good Properties, should be planted in Pots, to try what their Flowers will be, when manag'd according to Art: And it is not till the second Year that you can pronounce what the Value of a Flower will be, which is in Proportion to the Goodness of its Properties: Which, that you may be well acquainted with what the Florists call good Properties, I shall here set them down.

1. The Stem of the Flower should be strong, and able to support the Weight of the Flower without hanging down.

2. The Petals (or Leaves) of the Flower should be long, broad, and stiff, and pretty easy to expand, or (as the Florists term 'em) should be free Flowers.

3. The Middle Pod of the Flower should not advance too high above the other Part of the Flower.

4. The Colours should be bright, and equally mark'd all over the Flower.

5. The Flower should be very full of Leaves, so as to render it, when blown, very thick and high in the Middle, and the Outside perfectly round.

Having made choice of such of your Flowers as promise well for the large Sort, these you should mark separately for Pots, and the round whole blowing Flowers for Borders; you should pull up all single Flowers, or such as are ill-colour'd and not worth preserving, that your good Flowers may have the more Air and Room to grow strong; these being laid, so soon as they have taken Root, (which will be some time in *August*) they should be taken off, and planted out, those that blow large, in Pots, and the other in Borders, (as hath been already directed.) But I shall now proceed to give some Directions for propagating these Flowers by *Layers*, and the necessary Care to be taken, in order to blow them fair and large.

The best Season for laying these Flowers is in *June*, as soon as the Shoots are strong enough for that Purpose, which is perform'd in the following Manner. After having stript off the Leaves from the lower Part of the Shoot intended to lay, make choice of a strong Joint about the middle Part of the Shoot, (not too near the Heart of the Shoot, nor in the hard Part next the old Plant) then with your Penknife make a Slit in the Middle of the Shoot from the Joint upwards half way to the other Joint or more, according to their Distance; then with your Knife cut the Tops of the Leaves, and also cut off the swelling Part of the

Joint where the Slit is made, (which might otherwise prevent their pushing out Roots) and having loosened the Earth round the Plant, and, if need be, rais'd it with fresh Mould, so that it may be level with the Shoot intended to lay, left by forcing down the Shoot you split it off; then with your Finger make a hollow Place in the Earth, just where the Shoot is to come, and with your Thumb and Finger bend the Shoot gently into the Earth, observing to keep the Top as upright as possible, that the Slit may be open; and being provided with forked Sticks for that Purpose, thrust 'em into the Ground, so that the forked Part may take hold of the Layer, in order to keep it down in its proper Place; then gently cover the Shank of the Layer with the same Sort of Earth, giving it a gentle watering, to settle the Earth about it, observing to repeat the same as often as is necessary, in order to promote their rooting. In about five or six Weeks after this the Layers will have taken Root sufficient to be transplanted; against which time you should be provided with proper Earth for them, which may be compos'd after the following manner.

Make choice of some good Up-land Pasture, or a Common that is of a hazel Earth, or light sandy Loam; dig from the Surface of this your Earth about eight Inches deep, taking all the Turf with it, let this be laid in a Heap to rot and mellow, turning it once a Month, that it may sweeten; then mix about a third Part of rotten Neats-dung, or, for want of that, some rotten Dung from a Cucumber or Melon-bed; let this be well mix'd together; and if you can get

it time enough beforehand, let it lie mix'd six or eight Months before it is us'd, turning it several times, the better to incorporate the Part,

Observe, That although I have mention'd this Mixture as the best for these Flowers, yet you must not expect to blow your Flowers every Year equally large, in the same Composition: Therefore, some People who are extremely fond of having their Flowers succeed well, alter their Compositions every Year, in this manner; *viz.* one Year they mix the fresh Earth with Neats-dung, which is cold; the next Year with rotten Horse-dung, which is of a warmer Nature adding thereto some white Sea Sand, to make the Earth lighter.

But, for my Part, I should rather advise the planting two or three Layers of each of your best Kinds in a Bed of fresh Earth not over-dung'd; which Plants should only be suffer'd to shew their Flowers, to prove them right in their Kind; and when you are satisfied in that Particular, cut off the Flower Stems, and don't suffer them to spend the Roots in blowing; by which means you'll greatly strengthen your Layers. And it is from these Beds I would make choice of some of the best Plants for the next Year's blowing, always observing to have a Succession of them yearly; by which means you may blow every Year fine, supposing the Season favourable: For it is not reasonable to suppose that the Layers taken from such Roots as have been exhausted in producing large Flowers, and have been forc'd by Art beyond their natural Strength, should be able to produce Flowers equally as large as their Mother-Root did the Year before, or as such Layers as

are fresh from a poorer Soil, and in greater Health, can do. But this being premis'd, let us proceed to the potting of these Layers, which (as I said before) should be done in *August*.

The common Method used by most Florists, is, to plant their *Layers*, at this Season, two in each Pot, (the Size of which Pots are about nine Inches over in the Clear at the Top;) in these Pots they are to remain for Bloom; and therefore, in the Spring of the Year, they take off as much of the Earth from the Surface of the Pots as they can, without disturbing their Roots, filling the Pots up again with the same good fresh Earth as the Pots were before fill'd with. But there is some Difficulty in sheltering a great Quantity of these Flowers in Winter, when they are planted in such large Pots, which in most Winters they will require, more or less: My Method therefore is, to put them singly into Halfpenny Pots in Autumn, and in the Middle of *October* to set these Pots into a Bed of old Tanners Bark which has lost its Heat, and cover them with a common Frame (such as is used for raising Cucumbers and Melons); and in one of these Frames, which contains three Lights, may be set an hundred and fifty of these Pots: In these Frames you may give them as much free Air as you please, by taking off the Lights every Day when the Weather is mild, and putting them on in bad Weather, and great Rains: And if the Winter should prove severe, it is but only covering the Glasses with Mats, Straw, or Pease-haulm, which will effectually preserve your Plants in the utmost Vigour.

In the Middle of *February*, if the Season is good, you must transplant these Layers into Pots for their Bloom (which should be about seven Inches over at the Top in the Clear); in the doing of which, observe to put some Pot-sherds or Oyster-shells over the Holes in the Bottoms of the Pots to keep the Earth from stopping them, which would detain the Water in the Pots, to the great Prejudice of the Flowers; then fill these Pots about half way with the same good Compost as was before directed, and shake the Plants out of the small Pots with all the Earth about the Roots; then, with your Hands, take off some of the Earth round the Outside of the Ball, and from the Surface, placing one good Plant exactly in the Middle of each Pot, so that it may stand well as to Height, *i. e.* not so low as to bury the Leaves of the Plant with Earth; nor so high that the Shank may be above the Rim of the Pot; then fill the Pot up with the Earth before-mention'd, closing it gently to the Plant with your Hands, giving it a little Water, if the Weather is dry, to settle the Earth about it; then place these Pots in a Situation where they may be defended from the North Wind, observing to give them gentle Waterings, as the Season may require.

In this Place they may remain till about the Middle of *April*, at which time you should prepare a Stage of Boards to set the Pots upon, which should be so order'd, as to have little Cisterns of Water round each Post, to prevent the Insects from getting to your Flowers in their Bloom; which, if they are suffer'd to do, will mar all your Labour, by destroying all your Flowers in a short Time: The

chief and most mischievous Insect in this Case, is the Earwig, which will gnaw off all the lower Parts of the Petals of the Flowers (which are very sweet) and thereby cause the whole Flower to fall to Pieces: But since the making one of these Stages is somewhat expensive, and not very easy to be understood by such as have never seen them, I shall therefore describe a very simple one, which I have used for several Years, which answers the Purpose full as well as the best and most expensive one can do: First, prepare some common flat Pans, about a Foot over, and three Inches deep; place these two and two opposite to each other, at about two Foot Distance; and at every eight Feet in Length-ways, two of these Pans; in each of these whelm a Flower-pot, which should be about six Inches over at the Top, upside-down, and lay a flat Piece of Timber, about two Feet and a half long, and three Inches thick, cross from Pot to Pot, till you have finish'd the whole Length of your Stage; then lay your Planks Length-ways upon these Timbers, which will hold three Rows of Planks for the Size-pots which were order'd for the *Carnations*: And when you have set your Pots upon the Stage, fill the flat Pans with Water, always observing as it decreases in the Pans to replenish it, which will effectually guard your Flowers against Insects.

This Stage should be plac'd in a Situation open to the South-East, but defended from the West Winds, but should not be too near Trees, Walls, nor Buildings. About this Time, *viz.* the Middle of *April*, your Layers will begin to shoot up for Flower; you must therefore be provided with some square Deal Sticks

Sticks about four Feet and a half long, which should be thicker toward the Bottom, and plain'd off taper at the Top: These Sticks should be carefully stuck into the Pots as near as possible to the Plant without injuring it; then with a slender Piece of Bass-mat fasten the Spindle to the Stick to prevent its being broke: This you must often repeat as the Spindle advances in Height; and also observe to pull off all side Spindles as they are produc'd, and never let more than two Spindles remain upon one Root, nor above one, if you intend to blow exceeding large. Toward the Beginning of *June* your Flowers will have attain'd their greatest Height, and their Pods will begin to swell, and some of the earliest begin to open on one Side; you must therefore observe to let it open in two other Places at equal Angles: This must be done so soon as you perceive the Pod break, otherwise your Flower will run out on one Side, and be past recovering, (so as to make a complete Flower) in a short time; and in a few Days after the Flowers begin to open, you must cover them with Glasses which are made for that Purpose, in the following manner:

Upon the Top of the Glass, exactly in the Center, is a Tin Collar or Socket about three fourths of an Inch square, (this is for the Flower-stick to come through); to this Socket are soldered eight Slips of Lead at equal Distances, which are about six Inches and a half long, and spread open at the Bottom about four Inches asunder; into these Slips of Lead are fasten'd Slips of Glass, cut according to the Distances of the Lead, which when they are fix'd in, are border'd round the Bottom with

another Slip of Lead quite round, so that the Glass hath eight Angles with the Socket in the Middle, and spread open at the Bottom about eleven Inches.

When your Flowers are open enough to cover with these Glasses, you must make a Hole through your Flower-stick exactly to the Height of the under Part of the Pod, through which you should put a Piece of small Wire about six Inches long, making a Ring at one End of the Wire to contain the Pod, into which Ring you should fix the Stem of the Flower; then cut off all the Tyings of Bass, and thrust the Stem of the Flower so far from the Stick, as may give convenient Room for the Flower to expand without pressing against the Stick; to which Distance you may fix it, by turning your Wire so as not to draw back thro' the Hole; then make another Hole thro' the Stick, at a convenient Distance above the Flower, thro' which you should put a Piece of Wire, an Inch and a half long, which is to support the Glasses from sliding down upon the Flowers, and be sure to observe that the Glasses are not plac'd so high as to admit the Sun and Rain under them to the Flowers, nor so low as to scorch their Leaves with the Heat. At this time also, or a few Days after, as you shall judge necessary, you should cut some stiff Paper, Cards, or some such Thing, into Collars about four Inches over, and exactly round, cutting a Hole in the Middle of it about Three-Fourths of an Inch Diameter for the Bottom of the Flower to be let through; then place these Collars about them to support the Petals of the Flower from hanging down: This Collar should be plac'd with-

withinside the Calyx of the Flower, and should be supported thereby: Then observe from Day to Day what Progress your Flowers make; and if one Side comes out faster than the other, you should turn the Pot about, and shift the other Side towards the Sun; and also if the Weather proves very hot, you should shade the Glasses in the Heat of the Day with Cabbage-leaves, &c. to prevent their being scorch'd, or forc'd out too soon; and when the middle Pod begins to rise, you should take out the Calyx thereof with a Pair of Nippers made for that Purpose; but this should not be done too soon, lest the middle Part of the Flower should advance too high above the Sides, which will greatly diminish the Beauty of it: And you should also observe whether there are more Leaves in the Flower than can properly be expanded for want of Room; in which Case you should pull out some of the lowermost or most unlikely Leaves to spread, drawing out and expanding the others at the same Time: And when your Flowers are fully blown, if you cut them off, you should put on a fresh Collar of stiff Paper, which should be cut exactly to the Size of the Flower, so that it may support the Petals to their full Width, but not to be seen wider than the Flower in any Part: When this is put on, you must draw out the widest Leaves to form the Outside of the Flower, which altho' they should be in the Middle (as it often happens) yet by removing the other Leaves, they may be drawn down, and so the next longest Leaves upon them again, that the whole Flower may appear equally globular without any hollow Parts. In the doing

of this, some Florists are so curious as to render an indifferent Flower very handsome; and on this depends, in a great measure, the Skill of the Artist to produce large fine Flowers.

During the flowering Season, particular Care should be taken not to let them suffer for want of Water, which should by no means be raw Spring-water; nor do I approve of Compound-waters, such as are enrich'd with various Sorts of Dung; but the best and most natural Water is that of a fine soft River; next to that is Pond-water or Standing-water; but if you have no other but Spring-water, it should be expos'd to the Sun or Air two Days before it is used, otherwise it will give the Flowers the Canker and spoil them. Thus having been full in the Culture of this noble Flower, I shall just mention that of the *Pink*, which differs not in the least from that of the *Carnation* in its manner of propagating, but only requires much less Care, and need not be potted, growing full as well in good Borders, where they make as elegant a Shew, during their Season of Flowering, as any Plant whatever, and afford as agreeable a Scent. The Varieties of these are,

The *Damask Pink*, *White Shock*, *Scarlet*, *Pheasant's-ey'd Pink*, of which there are great Varieties, both with single and double Flowers, *Old Man's Head*, *Painted Lady*, with several others. These may be propagated by Layers as the *Carnations*, and many of them by Cuttings planted in July, or from Seeds, by which Method new Varieties may be obtain'd. The manner of sowing these Seeds being the same with the *Carnations*; I shall refer back to that, to avoid



Repetition, and shall proceed to the *China Pink*, which is a Flower of later Date amongst us than any of the former, which altho' it hath no Scent, yet for the great Diversity of beautiful Colours which are in these Flowers, with their long Continuance in flower, do merit a Place in every good Garden.

1. CARYOPHYLLUS; *Sinensis, supinus, leucocifolii, flore vario. Tourn.* The variable China or Indian Pink.

2. CARYOPHYLLUS; *Sinensis, supinus, leucocifolia, flore pleno. Boerh. Ind.* The double China Pink.

There is a great Variety of different Colours in these Flowers, which vary annually as they are produc'd from Seeds, so that in a large Bed of these Flowers, scarcely two of them are exactly alike, and their Colours in some are exceeding rich and beautiful; we should therefore be careful to save the Seeds from such Flowers only that are beautiful, for they are very subject to degenerate from Seeds.

And the Seeds of the double Sort will produce many double Flowers again; but the Seeds of the single will scarcely ever produce a double Flower.

These Flowers are only propagated by Seeds, which should be sown toward the End of *March*, in a Pot or Box of good light Earth, and set under a Glass to forward its vegetating; giving it Water as often as you shall see necessary, and in about a Month's Time your Plants will come up, and be of some Bigness; you must therefore expose them to the open Air, and in a short Time after prepare some Beds of good fresh Earth, (not too stiff) in which you may prick out these Plants, about three Inches square, observing to water

and shade them, as the Season may require.

In those Beds they may remain until the Middle of *June*, at which Time you may remove and plant them in the Borders of the Pleasure-Garden, being careful to preserve as much Earth to their Roots as possible; and in a Month's time after they will begin to flower, and continue until the Frost prevent them. About the Middle or Latter-end of *August* their Seeds will begin to ripen, at which time you should look over them once a Week, gathering off the Pods that are changed brown, and spread them on Papers to dry, when you may rub out the Seed, and put it up for Use. Tho' these Plants are usually term'd Annuals, and sown every Year; yet their Roots will abide two or three Years, if suffer'd to remain, and will endure the greatest Cold of our Winters, if planted in a dry Soil, and without any Shelter, as I experienc'd in the Year 1728. at which Time I had a large Bed of these Flowers, which was rais'd a Foot above the Level of the Ground; and altho' its Situation was such, that the Sun never shone upon it from *October* to *March*, yet I had not one Root destroyed in the whole Bed, altho' it stood open, and without any Care taken of it.

I shall now come to the *Sweet-Williams*, where I shall first give the Names of a few of them, and proceed to their Culture.

1. CARYOPHYLLUS; *barbatus, hortensis, latifolius. C. B.* The broad-leav'd Sweet-William, with red Flowers.

2. CARYOPHYLLUS; *barbatus, hortensis, latifolius, flore variegato. Boerh. Ind.* The broad-leav'd Sweet-

Sweet-William, with variegated Flowers.

3. CARYOPHYLLUS ; *barbatus*, *flore multiplici*. C. B. The double Sweet-William, with red Flowers, which burst their Pods.

4. CARYOPHYLLUS ; *barbatus*, *flore multiplici roseo*. C. B. The Rose-coloured double Sweet-William.

5. CARYOPHYLLUS ; *barbatus*, *hortensis*, *angustifolius*. C. B. The narrow-leav'd Garden Sweet-William, formerly call'd, Sweet-Johns.

6. CARYOPHYLLUS ; *barbatus*, *hortensis*, *angustifolius*, *flore versicolore in eodem ramulo*. C. B. The Sweet-John, with various colour'd Flowers on the same Branch.

7. CARYOPHYLLUS ; *barbatus*, *hortensis*, *angustifolius*, *flore pleno roseo*. The double Rose-colour'd Sweet-John, or Fairchild's Mule.

The single Kinds of these Flowers are generally propagated by Seeds, which must be sown in March in a Bed of light Earth, and in May they will be fit to transplant out ; at which Time you must prepare some Beds ready for them, and set them at six Inches Distance every way : In these Beds they may remain 'till Michaelmas, at which Time they may be transplanted into the Borders of the Pleasure-Garden or Wilderness : These will flower the next Year in May, and will perfect their Seeds in July or August, which you should save from the best-colour'd Flowers for a Supply.

They may be also propagated by slipping their Roots at Michaelmas : But this is seldom practis'd ; since their Seedling Roots will always blow the strongest, and new Varieties are obtain'd yearly.

The Double Kinds are propagated by Layers, as the Carnations ;

they love a middling Soil, not too light, nor too heavy or stiff ; nor too much dung'd, which very often occasions their rotting : These continue flowering for a long time, and are extremely beautiful, especially the Mule, which produces two full Blooms of Flowers, one in May, and the other in July : This is very subject to canker and rot away, especially if planted in a Soil over-wet, or too dry, or if watered with sharp Spring-Water : These Flowers being planted in Pots, are very proper to adorn Court-Yards, at the time they are in flower.

#### CASSIA.

The Characters are ;

It hath a cylindrical, long, taper, or flat Pod, which is divided into many Cells by transverse Diaphragms, in each of which is contain'd one hard Seed, which is for the most part lodg'd in a clammy black Substance which is purgative : The Flowers consist of five Leaves, which are dispos'd in an orbicular Order.

The Species are ;

1. CASSIA ; *Americana*, *foliis subrotundis*, *acuminatis*. Tourn. The American Cassia, with roundish-pointed Leaves.

2. CASSIA ; *Americana*, *foetida*, *foliis oblongis*, *glabris*. Tourn. The Stinking American Cassia, with oblong smooth Leaves.

3. CASSIA ; *Sylvestris*, *foetida*, *siliquis alatis*. Plum. Nov. Gen. The wild stinking Cassia, with wing'd Pods, call'd in the West-Indies French Guava.

4. CASSIA ; *Marylandica*, *pinnis foliorum obtusis*, *radice perenne*. Cassia from Maryland, with blunt Leaves, and a perennial Root.

5. CASSIA ; *Bahamensis*, *pinnis foliorum mucronatis*, *angustis*, *calyce floris*

*floris non reflexo.* Mart. *Hist. Pl.*  
Dec. 2. Narrow-leav'd *Cassia* of  
the *Bahama Islands*, whose Flower  
Cup is not reflex'd.

6. CASSIA; *Barbadensis*, *pinnis  
foliorum mucronatis*, *calyce floris non  
reflexo.* *Ibid.* Barbados *Cassia*, whose  
Flower Cup is not reflex'd, and has  
pointed Leaves.

7. CASSIA; *Americana*, *fœtida*,  
*foliis obtusis.* *Tourn.* Stinking  
American *Cassia*, with blunt Leaves.

8. CASSIA; *Americana*, *siliquis  
planis.* *Plum. Nov. Gen.* American  
*Cassia*, with smooth Pods.

9. CASSIA; *fistula Alexandrina.*  
C. B. The Purging *Cassia*, or Pud-  
ding-Pipe-Tree.

These *Cassia's* are all propagated  
by Seeds, which must be sown in  
a Hot-bed in *February*, and after-  
wards transplanted into Pots, which  
must be plung'd into another Hot-  
bed, and must be kept forward,  
by removing them from one Hot-  
bed to another (as was directed  
for the *Amaranths*.) Nor should  
these Plants be ever expos'd to the  
open Air, if we intend to see them  
flower; they must therefore be  
kept in a warm Stove in Winter,  
and be carefully manag'd: Many of  
these Plants will flower the second  
Year, and some of them produce  
ripe Seeds with us; nay, some-  
times, many of them will flower  
the first Year, if they were sown  
very early, as the fifth, sixth,  
seventh, and eight Sorts frequently  
do; but then they are more apt to  
decay in Winter, than those which  
do not flower: The fourth Sort  
will endure the severest Cold of  
the Winter in the open Ground,  
and increases plentifully by the  
Root: This produces Flowers in  
the Autumn; but our Summers  
are not warm enough to ripen their  
Seeds. The ninth Sort grows to

be a very large Tree, not only in  
*Alexandria*, but also in the *West-  
Indies*: This is what produces the  
purging *Cassia* of the Shops, and  
may be rais'd by sowing fresh  
Seeds (taken out of the Pulp) in a  
Hot-bed in the Spring of the Year,  
and must be manag'd as the other  
Sorts: This will grow with us to  
be a handsome Shrub, but must be  
kept in a warm Stove, otherwise  
it will not endure through the  
Winter. All these *Cassia's* love a  
light sandy Soil, and in warm Wea-  
ther must be frequently water'd.  
The third Sort will grow to a  
great Height in one Season, if it  
be forwarded in Hot-beds; but is  
with much Difficulty preserv'd the  
Winter through: This has flower'd  
in *England*, but I have not heard  
of its producing any Seeds.

CASSIDA; Skull-cap.

The Characters are;

The Florets are longish, one in  
each Ala of the Leaves: The Upper  
Leaf is galeated (like an Helmet)  
with two Auricles adjoining: The  
Under Leaf, for the most part, is  
divided into two: The Calyx having  
a Cover, contains a Fruit resembling  
the Heel of a Slipper or Shoe; which  
Character, singly, might be sufficient  
to distinguish it.

The Species are;

1. CASSIDA; *folio melissa*, *flore  
purpureo longiore.* *Boerb. Ind.* Skull-  
cap, with Leaves like Baum, and  
long purple Flowers.

2. CASSIDA; *Cretica*, *fruticosa*,  
*folio cataria*, *flore albo.* T. Cor.  
Shrubby Skull-cap from *Crete*, with  
Leaves like Cat-mint, and white  
Flowers.

3. CASSIDA; *Orientalis*, *altissima*,  
*urtica folio.* T. Cor. The tallest  
Eastern Skull-cap, with Leaves like  
Nettle.

4. CASSIDA ; *Orientalis, folio ebamadyos, flore luteo. T. Cor.* Eastern Skull-cap, with German-der Leaves, and yellow Flowers.

There are several other Varieties of this Plant, which are preserv'd in curious Gardens of Plants; but these here mention'd are the most beautiful of them, and best worth preserv'g in curious Gardens, for their Variety.

They may be all propagated by sowing their Seeds in an open Bed of light Earth in *Marah*; and when they come up, may be transplanted either into Pots, for the Convenience of sheltering them in Winter, or into Borders under warm South Walls, where, if the Soil is dry, they will endure our common Winters abroad very well, but in hard Winters they are liable to be destroy'd.

The fourth Sort is the hardiest of them all, is also the most beautiful; it is very easy to increase this Plant from Seeds, or by Cuttings; or from young Plants, which may be obtain'd from the Branches of the old ones which lie near the Ground, and strike out their Roots from the Joints.

The other three Sorts ripen their Seeds tolerably well with us, from which young Plants may be annually obtain'd, and also by parting their Roots; these generally die down to the Surface after Seeding, and fresh Shoots arise from the Roots at the same time, so that the Plants are never destitute of green Shoots.

CASSINE: The *Cassioberry-Bush* and *South-Sea Thea*.

1. CASSINE ; *vera perquam similis arbuscula, Phyllyrea foliis antagonistis, ex provincia Caroliniensi. Pluk. Mant.* The *Cassioberry-Bush*.

2. CASSINE ; *vera Floridanorum,*

*arbuscula baccifera alaterni ferme facie, foliis alternatim sitis, tetrapylene. Pluk. Mant.* The *South-Sea Thea-Tree*; *vulgô*.

The first of these Trees is hardy, and will endure our severest Winters in the open Ground, after they are become woody; therefore it will be proper to shelter the young Plants two or three Winters while they are young; after which time they may be transplanted abroad in some well shelter'd Situation, upon a light Soil, where they will thrive exceedingly, and in a few Years produce Flowers. This Tree seldom grows to be very large, and therefore should be planted among Trees of a middling Growth. The largest of these Trees which I have as yet seen in *England*, is now growing in the Gardens of that curious and learned Botanist *Charles Duboise, Esq;* at *Mitcham* in *Surry*, which is about ten Feet high, and pretty thick in the Stem; this Tree hath stood abroad in an open Situation for several Years, resisting the severest Winters, and hath flower'd many Years; but I don't remember to have heard of its producing any Fruit.

The second Sort is much tenderer than the former, and should not be planted in the full Ground until the Plants have acquir'd a considerable Strength; nor should they be planted in a Situation too much expos'd to the cold Winds, and must have a dry sandy Soil: This Sort differs from the former in the Manner of producing its Leaves, which are plac'd alternately on the Branches, whereas the other produces its Leaves by Pairs opposite to each other. This is an Ever-green, but the *Cassioberry-Bush* sheds its Leaves in Winter.

These

These Trees are both of them propagated by sowing their Seeds, (which are obtain'd from *Carolina*, where they grow in great Plenty near the Sea-coast;) they should be sown in Pots fill'd with light sandy Earth, and plung'd upon a gentle Hot-bed, observing to water it frequently, until you see the Seeds appear, which is sometimes in a Month or five Weeks time, and at other times will remain in the Ground until the second Year; therefore if the Seeds should not come up in two Months time, you should remove the Pots into a shady Situation, where they may remain 'till *October*, being careful to keep them clean from Weeds, and now and then in dry Weather giving them a little Water: Then remove these Pots into Shelter during the Winter-season, and in the *March* following put them upon a fresh Hot-bed, which will forward the Seeds in their Vegetation.

When the Plants are come up, they should by Degrees be expos'd to the open Air, in order to inure them to our Climate; yet don't expose them to the open Sun at first, but rather let them have the Morning Sun only, placing them for some time where they may be shelter'd from cold Winds: They should enjoy a Shelter during the two or three first Winters; after which, the *Cassioberry*-Bush may be planted abroad: But the *South-Sea Thea* should be kept in Pots a Year or two longer, being slower of Growth, and will not have Strength enough to resist the Cold when young.

They may also be propagated by laying the younger Branches into the Ground in the Spring, which, if kept water'd, will take Root by the succeeding Spring, fit

for Transplantation; otherwise they'll be two Years before they take Root. The *Cassioberry*-Bush is by much the easiest Plant of the two to strike root.

CASTANEA; the Chestnut-Tree.

The Characters are;

*It hath Male Flowers (or Katkins) which are placed at remote Distances from the Fruit on the same Tree: The outer Coat of the Fruit is very rough, and has two or three Nuts included in each Husk or Covering.*

The Species are;

1. CASTANEA; *sativa*. C. B. The common or manured Chestnut.

2. CASTANEA; *sativa, foliis elegantior variegatis*. The striped Chestnut.

3. CASTANEA; *pumilis, Virginiana, racemoso fructu parvo, in singulis capsulis cchinato unico*. *Baniff, Pluk. Alm.* The Chinquapin or Dwarf Virginian Chestnut.

The first of these Trees was formerly in greater Plenty amongst us than at present, as may be prov'd by the old Buildings in *London*, which were for the most part of this Timber; and in a Description of *London*, written by *Fitz-Stephens*, in *Henry the II's* Time, he speaks of a very noble Forest which grew on the North Part of it: *Proxime (says he) patet foresta ingens, saltus nemorosi ferarum, laterbra cervorum, damarum, aprorum & taurorum sylvestrium, &c.* And there are some Remains of old decay'd Chestnuts in the old Woods and Chases not far distant from *London*, which plainly proves, that this Tree is not so great a Stranger to our Climate as many People believe it to be, and may be cultivated in *England*, to afford an equal Profit with any of the larger

Timber-trees, since the Wood of this Tree is equal in Value to the best Oak, and, for many Purposes, far exceeding it; as particularly for making Vessels for all Kinds of Liquors, it having a Property (when once thoroughly season'd) of maintaining its Bulk constantly, and is not subject to shrink or swell as other Timber is too apt to do; and I am certainly inform'd, that all the large Casks, Tuns, &c. for their Wines in *Italy*, are made of this Timber; and it is for that, and many more Purposes, in greater Esteem amongst the *Italians* than any other Timber whatever. It is also very valuable for Pipes to convey Water under-ground, as enduring longer than the Elm or any other Wood: In *Italy* it is planted for Coppice-Wood, and is very much cultivated in Stools, to make Stakes for their Vines; which being stuck into the Ground with the Rind on, will endure seven Years, which is longer than any other Stakes will do by near half the Time. The Usefulness of the Timber, together with the Beauty of the Tree, renders it as well worth propagating as any Tree whatever, especially in Avenues or smaller Plantations near a Dwelling-house.

These Trees are propagated by planting the *Nuts* in *February* in Beds of fresh undung'd Earth: The best *Nuts* for sowing, are such as are brought from *Portugal* and *Spain*, and are commonly sold in Winter for Eating: These should be preserv'd until the Season for sowing in Sand, where Mice or other Vermin can't come to them; otherwise they will soon destroy them: Before you set them, it will be proper to put them into Water, to try their Goodness, which

is known by their Ponderosity; those of them that swim upon the Surface of the Water, should be rejected as good for nothing; but such as sink to the Bottom you may be sure are good.

In setting these *Seeds*, or *Nuts*, the best Way is, to make a Rill with a Hoe (as is commonly practis'd in setting Kidney-Beans) about four Inches deep, in which you should place the *Nuts* at about four Inches Distance, with their Eye uppermost then draw the Earth over them with a Rake, and make a second Rill at about six Inches Distance from the former, proceeding as before, allowing six Rows in a Bed, with an Alley between two Feet broad, for Conveniency of clearing the Beds, &c. When you have finish'd your Plantation, you must be careful that it is not destroy'd by Mice, or other Vermin, which is very often the Case, if they are not prevented by Traps or other Means.

In *April* these *Nuts* will appear above-ground; you must therefore observe to keep them clear from Weeds, especially while young: In these Beds they may remain for two Years, when you should remove them into a Nursery, at a wider Distance: The best Season for transplanting these Trees, is either in *October*, or the latter End of *February*: The Distance these should have in the Nursery, is three Feet Row from Row, and one Foot in the Rows: You must be careful, in transplanting these Trees, to take them up without injuring their Roots, nor should they remain long out of the Ground; but if these Trees have a down-right Tap-Root, it should be cut off, especially if it be intended to remove them again: This will occasion

caſion their putting out lateral Roots, and render them leſs ſubject to miſcarry when they are remov'd for good.

The Time generally allow'd them in this Nurſery, is three or four Years, according to their Growth; during which, you ſhould be careful to keep them clear from Weeds, obſerving alſo to prune off lateral Branches, which would retard their upright Growth; and where you find any that are diſpos'd to grow low, either by their upper Bud being hurt, or from any other Accident, you may, the Year after planting (in *March*) cut them down to the lowermoſt Eye next the Surface of the Ground, which will cauſe them to make one ſtrong upright Shoot, and may be afterwards train'd into good ſtrait Trees.

But in doing of this, you muſt be careful not to diſturb their Roots, which, perhaps, might deſtroy them. Theſe Trees require no other Manure than their own Leaves, which ſhould be ſuffer'd to rot upon the Ground; and in the Spring of the Year, the Ground ſhould have a ſlight digging, when this ſhould be bury'd between their Roots, but not too cloſe to the Trees, which might be injurious to their young Fibres.

After having remain'd three or four Years in the Nurſery, they will be fit for tranſplanting, either in Rows for Avenues to a Houſe, or in Quarters for Wilderneſs Plantations; but if you intend them for Timber, it is by much the better Method to ſow them in Furrows, (as is practis'd for Oaks, &c.) and let them remain unremov'd; for theſe Trees are apt to have a downright Tap-Root, which being hurt by tranſplanting, is often a Check to their upright

Growth, and cauſes them to ſhoot out into lateral Branches, as is the Caſe with the *Oak*, *Walnut*, &c.

Therefore where-ever any of theſe Trees are planted for Timber, they ſhould remain unremov'd; but where the Fruit of them is more ſought after, then it is certainly the better Way to tranſplant them; for as tranſplanting is a Check to the luxuriant Growth of Trees, ſo is it a Promoter of their Fructification, as may be evinc'd by obſerving low ſhrubby *Oaks*, *Walnuts*, &c. which generally have a greater Plenty of Fruit than any of the larger and more vigorous Trees; and the Fruit of ſuch Trees are much ſuperior in Taſte, tho' the Seeds of vigorous Trees are vaſtly preferable for Plantations of Timber. But as the weaker Trees are leſs capable to furniſh a Supply of Nouriſhment, and having a greater Quantity of Fruit upon them to which this muſt be diſtributed, together with their Roots lying near the Surface of the Ground, (by which Means the Juices are better prepar'd by *Sun*, *Air*, &c. before it enters their Veſſels) 'tis certain their Juices are better digeſted, and their Fruits better maturated than thoſe can poſſibly be which grow upon ſtrong vigorous Trees, which have long Tap-Roots running ſeveral Feet deep into the Earth, and ſo conſequently take in vaſt Quantities of crude unprepar'd Juice, which is buoy'd up to the extreme Parts of the Tree, and theſe ſeldom having many lateral Branches to digeſt and prepare their Juice by perſpiring or throwing off the crude Part before it enters the Fruits, ſo that theſe are preferable for eating.

And this, I dare ſay, univerſally holds good in all Sorts of Fruit-trees.

trees, and is often the Occasion of the good and bad Qualities of the same Sorts of Fruits growing on the same Soil.

What has been related about grafting this Tree into the *Walnut*, to promote their bearing, or render their Fruit fairer; or inoculating *Cherries* into the *Chestnut*, for later Fruit, is very whimsical and silly, since neither the *Chestnut* nor *Walnut* will receive its own Kind any other Way than by inoculating, or inarching; and it is the latter only which the *Walnut* can be propagated by; nor was it ever known that any two Trees of a different Genus would take upon each other so as to produce a good Tree; therefore we may justly explode all those different Graftings of various Trees upon each other, so much talk'd of by the Antients; at least, we may suppose those Trees are not known by the same Names now that they are mention'd by in their Writings, for I have made many Trials upon them, which although perform'd with great Care, and in different Seasons, yet scarcely one of them succeeded. But to return:

If you design a large Plantation of these Trees for Timber, after having twice or three times plough'd the Ground, and harrow'd it well, the better to destroy the Roots of Weeds, you should make your Furrows about six Feet Distance from each other, in which you should lay the *Nuts* about ten Inches apart, covering them with Earth about three Inches thick; and when they come up, you must carefully clear them from Weeds: When these have remain'd three or four Years, (if the *Nuts* succeeded well) you will have many of these Trees to remove; which should be

done at the Seasons before direct-ed, leaving the Trees about three Feet Distance in the Rows; at which Distance they may remain for two or three Years more, when you should remove every other Tree, to make Room for the remaining, which will reduce the whole Plantation to six Feet square; then cut down every other of these Trees (making Choice of the least promising) within a Foot of the Ground, in order to make Stools for Poles, which in seven Years time will be strong enough to lop for Hoops, Hop-poles, &c. for which Purposes they are preferable to most other Trees; so that every seventh Year here will be a fresh Crop, which will pay the Rent of the Ground, and all other incumbent Charges, and at the same time a full Crop of growing Timber left upon the Ground: But as the large Trees increase in Bulk, so their Distance of twelve Feet square will be too small; therefore when they have grown to a Size for small Boards, you should fell every other Tree, which will reduce them to twenty-four Feet square, which is a proper Distance for them to remain for good: This will give Air to the Under-wood, (which by this time would be too much over-hung by the Closeness of the large Trees) by which Means that will be greatly encourag'd, and the small Timber fell'd will pay sufficient Interest for the Money at first laid out in planting, &c. with the Principal also; so that all the remaining Trees are clear Profit, for the Under-wood still continuing, will pay the Rent of the Ground, and all other Expences; and what a fine Estate here will be for a succeeding Generation, in about four-score



Score Years, I leave every one to judge.

The strip'd-leav'd *Chestnut* is a beautiful Tree in a Garden, to intermix with various Sorts of Trees, in Clumps, or in Wilderness Quarters; where, by the Variety these fine strip'd Trees afford, they greatly add to the Diversity and Pleasure of such Plantations. This may be obtain'd by being budded upon the common *Chestnut*.

The *Chinquapin* or Dwarf *Virginian Chestnut*, is, at present, very rare in *England*; it is very common in the Woods of *America*, where it seldom grows above twelve or fourteen Feet high, and produces great Plenty of *Nuts*, which are for the most part single in each outer Coat. This Tree is very hardy, and will resist the severest of our Winters in the open Ground. The *Nuts* of these Trees, if brought from *America*, should be put up in Sand so soon as they are ripe, and sent to *England* immediately, otherwise they lose their growing Quality, which is the Reason this Tree is at present so scarce with us, for not one Seed in five hundred sent over ever grew, which was owing to the Neglect of not putting them up in this Manner. This Tree will take by inarching upon the common Sort, by which it may not only be propagated, but, I believe, also increas'd in Magnitude.

CASTANEA EQUINA; vide Hippocastanum.

CATANANCE; Candy Lion's Foot.

The Characters are;

The Cup of the Flower is squarose, the Florets which are round the Margin are much longer than those in the Middle of the Flower; the Seeds are wrapt up in a leafy or downy Substance within the Cup or outer Covering.

The Species are;

1. CATANANCE; *quorundam*. *Lugd.* True Lion's-Foot, with Buck's-horn Leaves.

2. CATANANCE; *flore luteo, latiore folio*. *Tourn.* Broad-leav'd Candy Lion's-Foot, with a yellow Flower.

3. CATANANCE; *flore luteo, angustiore folio*. *Tourn.* Narrow-leav'd Candy Lion's-Foot, with a yellow Flower.

The first of these Plants is a Perennial, and may be propagated by Heads taken off from the Mother Plant, either in Spring or Autumn, which are commonly planted in Pots fill'd with light sandy Soil, in order to shelter them in the Winter from severe Frosts; but if they are planted in warm Borders, either under Walls, Pales, or Hedges, and in a moderately dry Soil, they will endure abroad very well. This Plant begins flowering in *May*, and continues till *August* or *September*, (especially if the Summer is not too dry) and is a pretty Ornament to a Garden, and is easily kept within Bounds: It may also be propagated by Seeds, which should be sown in a Border of good light Earth in *March*: And in *May*, when the Plants are come up, they may be either transplanted into Pots or Borders, where they are to remain for flowering; but as these Seeds seldom ripen well in this Country, so the former Method is what is chiefly used in *England*.

The other two Sorts are Annuals, and therefore only propagated by Seeds, which ripen very well in this Country: The Time for sowing them is early in *March*, in Beds or Borders of light Earth, which will come up in a Month's Time, and may then be transplanted into Borders to flower: Their

flower in *June*, and perfect their Seeds in *August* or *September*.

CATAPUTIA Major; vide Ricinus.

CATAPUTIA Minor; vide Tithymalus.

CATARIA; Cat-Mint, or Nepeta.

The Characters are;

The Leaves are like those of the Nettle, or Betony, are for the most part hoary, and of a strong Scent: The Flowers are collected into a thick spike: The Crest of the Flower is broad and bifid: The Lip is divided into three Segments; the middle Segment is broad, and hollow'd like a Spoon, and elegantly crenated on the Edges; each Flower is succeeded by four naked Seeds.

The Species are;

1. CATARIA; major, vulgaris. Tourn. Common large Cat-Mint.

2. CATARIA; quæ nepeta, minor, folio melisse Turcica. H. Cath. Lesser Cat-Mint, with Leaves like Turkey-Balm.

3. CATARIA; angustifolia, major. Tourn. Narrow-leav'd large Cat-Mint.

4. CATARIA; Hispanica, betonica folio angustiori, flore caeruleo. Tourn. Narrow-leav'd Spanish Cat-Mint, with blue Flowers.

5. CATARIA; Hispanica, betonica folio angustiori, flore albo. Tourn. Narrow-leav'd Spanish Cat-Mint, with white Flowers.

6. CATARIA; Lusitanica, erecta, betonica folio, tuberosa radice. Tourn. Upright Portugal Cat-Mint, with a tuberose Root.

7. CATARIA; Lusitanica, erecta, betonica folio, fibrosa radice. Tourn. Upright Portugal Cat-Mint, with fibrose Roots.

8. CATARIA; minor, vulgaris. Tourn. Common small Cat-Mint.

All these Sorts of Cat-Mint are

propagated by sowing their Seeds in *February* or *March*, in Beds or Borders of common Earth, and may be afterward transplanted into Beds at about a Foot square from each other, leaving a Path between every Bed (which should be three Feet broad) to go between to clear them from Weeds, &c.

The first Sort mention'd is us'd in Medicine: This may also be propagated by parting the Roots, either in *Spring* or *Autumn*, and will grow in almost any Soil or Situation: It flowers in *June*, and the Seeds are ripe in *August*. This Plant grows wild upon dry Banks in many Parts of *England*. As to what has been related of its being destroy'd by *Cats*, if planted in a Garden, I could never observe it to be true: for I have planted it many times in Places much frequented by those Animals, but never saw them meddle with it, nor had I ever one Root either broke, or scratch'd up by them, altho' some *Marum*, which I planted several times in the same Spot, was continually destroy'd.

The other Sorts are also very hardy, and may be propagated in the same manner, but require a dry Soil in Winter, otherwise they are subject to rot: These all ripen their Seeds in *England* very well; and although there is no great Beauty in them, yet, for Variety, the two *Portugal* Sorts may have a Place amongst Plants of the lower Class, where, if they are kept in Compass, and ty'd up to Sticks, they will make a tolerable Appearance for a long time.

CATCH-FLY; vide Lychnis.

CATERPILARS.

There are several Kinds of this Insect which are very pernicious to a Garden, but there are two Sorts

Sorts which are the most common and destructive to young Plants, one of them is that which the white *Butterfly* breeds: It is of a yellowish Colour, spotted with Black, and commonly infests the tender Leaves of *Cabbages*, *Colliflowers*, and the *Indian Cress*: This eats off all the tender Parts of the Leaves, leaving only the Fibres intire; so that very often we see, in the Autumn Season, whole Gardens of Winter *Cabbages* and *Savoy*s almost destroy'd by them, especially in those which are crowded with Trees, or are near great Buildings: Nor is there any other Method found out to destroy them, that I know of, but to pick them off the Plants before they are spread from their Nests; by which Means, tho' perhaps many may be overlook'd, yet their Numbers will be greatly diminish'd: But this Work must be often repeated during the warm Weather that the *Butterflies* are abroad, which are continually depositing their Eggs, and in a few Days time will be metamorphos'd to perfect *Caterpillars*: But as these for the most part feed upon the outer Leaves of Plants, so they are more easily taken than the other Sort, which is much larger; the Skin is very tough, and of a dark Colour: This is call'd by the Gardeners a *Grub*, and is exceeding hurtful: The Eggs of this Sort of *Caterpillar* are, for the most part, deposited in the very Heart or Center of the Plant, (especially in *Cabbages*) where after it hath obtain'd its Form, it eats its Way out thro' all the Leaves thereof; and also the Dung being lodg'd between the inclos'd Leaves of the *Cabbages*, gives them an ill Scent.

This Insect also burrows just under the Surface of the Ground,

and makes sad Havock with young Plants, by eating them through their tender Shanks, and drawing them into their Holes. This Mischief is chiefly done in the Night: Whenever you observe this, you should every Morning look over your Plat of Plants; and wherever you see any Plants eat off, stir the Ground round about the Place with your Fingers an Inch deep, and you'll certainly find them out. This is the only Method I know of destroying them.

CAUCALIS; Bastard-parley.

This is one of the umbelliferous Plants, with oblong Seeds, which are a little furrow'd and prickly: The Petals of the Flower are unequal and heart-shap'd.

There are several *Species* of this Plant preserv'd in the Botanick Gardens; but as there is no great Beauty or Use in any of them, so I shall pass them over, with only observing, that if any Person hath a Mind to cultivate them, the best Season to sow their Seeds is in Autumn soon after they are ripe; for if their Seeds are kept till Spring, they seldom produce ripe Seeds again: They are most of them Annuals, and so require to be sown every Year: We have five or six *Species* of them which grow wild in *England*.

CEDAR of BERMUDAS; *vile Juniperus*.

CEDAR of CAROLINA; *vile Juniperus*.

CEDAR of VIRGINIA; *vile Juniperus*.

CEDRUS LIBANI; the Cedar of Libanus.

The *Characters* are;

*It is ever-green: The Leaves are much narrower than those of the Pine-tree are many of them produced out of one Tubercle, somewhat*

bling a Painter's Pencil: It hath Male Flowers (or Karkins) which are produc'd at remote Distances from the Fruit on the same Tree; the Seeds are produc'd in Cones, which are large, squamose and turbinated.

CEDRUS; magna, sive Libani, Conisera. J. B. The Cedar of Libanus bearing Cones.

Many, I doubt not, will be surpriz'd that I should retain the Name of Cedar to this Tree, since Monsieur Tournesort hath plac'd this with the Larch-tree, and the Name Cedar being now appropriated to a Berry-bearing Tree; but I have observ'd a material Difference in the Manner of Flowering and Fructification, between the Larch and this Tree: And since this is generally believ'd to be the Cedar mention'd in Scripture, so consequently, if Preference is given to Antiquity, this hath the greatest Right to the Name: I shall therefore beg Leave to distinguish the other by the Name of Berry-bearing Cedar, in the next Article, and for Distinction-sake, this may be call'd Cone-bearing Cedar.

The Cones of this Tree are brought from the Levant, which, if preserv'd intire, will continue their Seeds for several Years: The Time of their ripening is commonly in the Spring, and so consequently are near one Year old before we receive them, for which they are not the worse, but rather the better, the Cones having discharg'd a great Part of their Resin by lying, and the Seeds are much easier to get out of them than such as are fresh taken from the Tree.

The best Way to get the Seeds out is to split the Cones, by driving a sharp Piece of Iron through the Center length-ways, and to

pull the Seeds out with your Fingers, which you'll find are fasten'd to a thin leafy Substance, as are those of the Firr-Tree.

These Seeds shou'd be sown in Boxes or Pots of light fresh Earth, and treated as was directed for the Firrs (to which I refer the Reader); but only shall observe, that these require more Shade in Summer than the Firrs, and the sooner they are planted into the open Ground, the better.

When these Plants begin to shoot strong, you'll always find the leading Shoot incline to one Side; therefore if you intend to have them strait, you must support them with Stakes, observing to keep the Leader always close ty'd up, until you have gotten them to the Height you design them, otherwise their Branches will extend on every Side, and prevent their growing tall.

These Trees are by many People kept in Pyramids, and shear'd as Yews, &c. in which Form they lose their greatest Beauty; for the Extension of the Branches are very singular in this Tree, the Ends of their Shoots, for the most part, declining, and thereby shewing their upper Surface, which is constantly cloath'd with green Leaves in so regular a manner, as to appear, at some Distance, like a green Carpet, and these waving about with the Wind, make one of the most agreeable Prospects that can be to terminate a Vista, especially if planted on a rising Ground.

It is Matter of Surprize to me, that this Tree hath not been more cultivated in England, than at present we find it; since it would be a great Ornament to barren bleak Mountains, where few other Trees would grow; it being a Native of the

the coldest Parts of *Mount Libanus*, where the Snow continues most Part of the Year. And from the Observations I have made of these now growing in *England*, I find they thrive best on the poorest Soil: For such of them as have been planted in a strong, rich, loamy Earth, have made but a poor Progress, in Comparison to such as have grown upon a stony, meagre Soil. And that these Trees are of quick Growth, is evident from four of them now growing in the *Physick-Garden* at *Chelsea*, which (as I have been credibly inform'd) were planted there in the Year 1683, and at that time were not above three Feet high; two of which Trees are at this time (*viz.* 1729) upwards of nine Feet in Girth at two Feet above Ground; and their Branches do extend more than twenty Feet on every Side their Trunks; which Branches (though produc'd eight or ten Feet above the Surface) do at their Termination hang very near the Ground, and thereby afford a goodly Shade in the hottest Season of the Year.

The Soil in which these Trees are planted, is a lean hungry Sand, mix'd with Gravel, the Surface of which is scarcely two Feet deep before a hard rocky Gravel appears. These Trees stand at four Corners of a Pond, which is brick'd up within two Feet of their Trunks, so that their Roots have no Room to spread on one Side, and so consequently are cramped in their Growth: But whether their standing so near the Water may not have promoted their Growth, I can't say; but sure I am, if their Roots had had full Scope in the Ground, they would have made a greater Progress. I have also observ'd, that Lopping or Cutting of

these Trees is very injurious to them, (more, perhaps, than to any other of the Resinous Trees) in retarding their Growth; for two of the four Trees above-mention'd, being unadvisedly planted near a Green-house, when they began to grow large, had their Branches lopp'd, to let the Rays of the Sun into the House, whereby they have been so much check'd, as at present they are little more than half the Size of the other two.

These Trees have all of them produc'd, for some Years, large Quantities of *Katkins* (or Male Flowers); tho' there is but one of them which hath as yet produc'd Cones; nor is it above four or five Years that this hath ripen'd the Cones, so as to perfect the Seed: But since we find that they are so far naturaliz'd to our Country, as to produce ripe Seeds, we need not fear of being soon supply'd with Seeds enough, without depending on those Cones which are brought from the *Levant*; since there are many Trees of this Kind in *England*, which in a few Years must certainly bear: But I find they are more subject to produce and ripen their Cones in hard Winters, than in mild ones; which is a plain Indication that they will succeed, even in the coldest Parts of *Scotland*, where, as well as in *England*, they might be propagated to great Advantage.

What we find mention'd in Scripture of the *lofty Cedars*, can be no ways applicable to the Stature of this Tree; since, from the Experience we have of those now growing in *England*, as also from the Testimony of several Travellers who have visited those few remaining Trees on *Mount Libanus*, they are not inclin'd to grow very lofty,

lofty, but, on the contrary, extend their Branches very far: To which the Allusion made by the *Pſalmiſt* agrees very well, when he is deſcribing the flouriſhing State of a People, and ſays, *They ſhall ſpread their Branches like the Cedar Tree.*

*Rauwolf*, in his *Travels*, ſays, there was not at that Time (*i. e.* Anno 1574.) upon *Mount Libanus* more than 26 Trees remaining, 24 of which ſtood in a Circle; and the other two, which ſtood at a ſmall Diſtance, had their Branches almoſt conſum'd with Age: Nor could he find any younger Trees coming up to ſucceed them, tho' he look'd about diligently for ſome: Theſe Trees (he ſays) were growing at the Foot of a ſmall Hill, on the Top of the Mountains, and amongſt the Snow. Theſe having very large Branches, do commonly bend the Tree to one Side, but are extended to a great Length, and in ſo delicate and pleaſant Order, as if they were trimm'd and made even with great Diligence; by which they are eaſily diſtinguiſh'd at a great Diſtance from *Fir-Trees*. The Leaves (continues he) are very like to thoſe of the *Larch-Tree*, growing cloſe together in little Bunches, upon ſmall brown Shoots.

*Maundrel*, in his *Travels*, ſays, There were but ſixteen large Trees remaining, ſome of which were of a prodigious Bulk, but that there were many more young Trees of a ſmaller Size; he meaſur'd one of the largeſt, and found it to be twelve Yards ſix Inches in Girt, and yet found, and thirty-ſeven Yards in the Spread of its Boughs. At about five or ſix Yards from the Ground it was divided into five Limbs, each of which was equal to a great Tree. What *Maundrel* hath related, was

confirmed to me by a worthy Gentleman of my Acquaintance, who was there in the Year 1720. with this Difference only, *viz.* in the Dimensions of the Branches of the largeſt Tree, which, he aſſur'd me, he meaſur'd, and found to be twenty-two Yards diameter. Now, whether Mr. *Maundrel* meant thirty-ſeven Yards in Circumference of the ſpreading Branches, or the Diameter of them, cannot be determined by his Expreſſions, yet neither of them well agree with my Friend's Account.

*Monſieur Le Bruyn* reckons about thirty-five or thirty-fix Trees remaining upon *Mount Libanus* when he was there, and would perſuade us it was not eaſy to reckon their Number, (as is reported of our *Stonehenge* on *Salisbury-Plain*.) He alſo ſays, their Cones do ſome of them grow dependant. Which is abundantly confuted by the above-mention'd Travellers, as alſo from our own Experience; for all the Cones grow upon the upper Part of the Branches, and ſtand erect, having a ſtrong woody Central Style, by which it is firmly annex'd to the Branch, ſo as with Difficulty to be taken off; which Central Style remains upon the Branches after the Cone is fallen to Pieces; ſo that they never drop off whole, as the *Pines* do.

The Wood of this famous Tree is accounted Proof againſt all Putrefaction of Animal Bodies: The Saw-duſt of it is thought to be one of the Secrets uſed by thoſe Mountebanks who pretend to have the embalming Myſtery. This Wood is alſo ſaid to yield an Oyl which is famous for preſerving Books and Writings: And the Wood is thought, by my Lord *Bacon*, to continue above a thouſand Years ſound.

found. It is also recorded, that in the Temple of *Apollo, Utica*, there was found Timber of near two thousand Years old. And the Statue of the Goddess in the famous *Ephesian* Temple, was said to be of this Material also, as was most of the Timber-work of that glorious Structure.

This Sort of Timber is very dry, and subject to split; nor does it well endure to be fasten'd with Nails, from which it usually shrinks, therefore Pins of the same Wood are much preferable.

CEDRUS BACCIFERA; Berry-bearing Cedar.

The *Characters* are;

The *Leaves* are squamose, somewhat like those of the Cypress: The *Katkins* (or Male Flowers) are produced at remote Distances from the Fruit on the same Tree: The Fruit, is a Berry, inclosing three hard Seeds in each.

The *Species* are,

1. CEDRUS; *folio Cypressi, major, fructu flavescente*. C. B. The yellow Berry-bearing Cedar.

2. CEDRUS; *folio Cypressi, media, majoribus baccis*. C. B. The Phœnician Cedar.

These Trees are propagated by sowing their Berries (which are brought from the *Streights*) in Boxes of light sandy Earth, which should be expos'd to the Morning Sun only during the Summer Season, but must be remov'd into Shelter in Winter. These Seeds seldom appearing till the second Year, we should be careful not to disturb the Earth in the Boxes; and if in the *March* following, we put the Boxes upon a gentle Hot-bed, it will greatly forward their coming up, by which the Plants will be strengthen'd before the following Winter, and so more

likely to stand, though it will be advisable to shelter them at least the two first Winters while they are young: The Spring following, after their coming up, you should remove them into single Pots, for their better transplanting hereafter. The best Season for this Work is in *April*; at which Time, if you make a gentle Hot-bed in some close Place shelter'd from Winds, and set the Pots with the fresh-planted Trees thereon, covering them with Mats for a Month or six Weeks until they are settled and have taken fresh Roots; this will be a certain Method to make them strike Root, provided they are carefully taken up without breaking their Roots: In this Place they may remain (if it is not too much expos'd to the Sun) till Autumn; at which Time the Pots should be put under a *Cucumber-Frame*, so that in good Weather they may be expos'd to the open free Air; but in frosty, or over-wet Weather, they may be cover'd with the Glasses: If these Precautions are used, in three or four Years Time the Plants will be fit to transplant into the full Ground; you should therefore contrive to plant them in a light sandy Soil, and a Situation that is screen'd from the North East Winds, observing to shake them out of the Pots with all the Earth to their Roots: This should be perform'd in *April* or *May*, always chusing a moist Season; and when you have planted them, lay a little Mulch upon the Surface of the Ground round about their Roots, to prevent the Sun and Wind from entering the Ground so as to dry the Fibres of the Roots, giving them some Water to settle the Earth to their Roots, and repeating the same once a Week if the Weather

Weather should be dry; and it will be proper to add a little fresh Mulch about these Trees in *October*, to keep the Frost from penetrating to their Roots: This may be repeated the three first Winters after planting out, after which Time they will have taken sufficient Root in the Ground, so as to be able to endure our Cold very well; and it is by the Neglect of this at first that many young Trees miscarry in Winter at their first planting Abroad.

These Trees are, at present, very rare, and only to be found in some curious old Collections; their Seeds being seldom brought into *England*, there are few young Plants to be met with, though this Tree will take by Layers; but they will never thrive so well as those rais'd from Seeds, and they are commonly two Years before they strike Root.

The Wood of this Tree is of great Use in the *Levant*, where they grow to be large Timber, and is by many thought to be the *Shittim-wood* mention'd in the Scripture, of which many of the Ornaments to the famous Temple of *Solomon* were made: It is accounted excellent Wood for Carving, as also for many Sorts of Utensils, and is thought to be equal to almost any Sort of Timber for Durableness.

CEIBA; Silk Cotton Tree; *vulgò*.

The Characters are;

It hath a rosaceous Flower, consisting of several Leaves placed in a circular Order, from whose Calyx arises the Pointal, which afterwards becomes a Fruit shap'd like a Bottle, divided into five Parts from the Top to the Bottom, in which are contained several round Seeds wrapped

up in a soft down, and fastened to the five cornered pyramidal Placenta.

The Species are;

1. CEIBA; *viticis foliis, caudice aculeato*. Plum. Nov. Gen. The Silk Cotton with a thorny Stem.

2. CEIBA; *viticis foliis, caudice glabro*. Plum. Nov. Gen. The Silk Cotton Tree, with a smooth Stem.

These two Trees do grow very plentifully both in the *East* and *West Indies*, where they do arrive to a prodigious Magnitude: The Inhabitants of the *West Indies* do hollow the Trunks of these Trees to make their Canoes, for which they are chiefly valued. It is reported, that in the Island of *Cuba*, in *Columbus's* first Voyage, was seen a Canoe made of a hollowed Trunk of one of these Trees, which was ninety-five Palms long, and capable of containing one hundred and fifty Men. And some modern Writers have affirmed, that there are Trees now growing in the *West Indies* so large, as scarcely to be fathomed by sixteen Men, and so high, that an Arrow can scarcely be shot to their Tops.

The Wool of these Trees is of a dark Colour, and too short to spin, so that it is little valued; but sometimes the Inhabitants do stuff Beds and Pillows with it, tho' it is accounted unwholesome to lie upon. The Inhabitants of the *West Indies* do call this Silk Cotton, but the ancient *American* Name for this Plant being *Ceiba*, Father *Flumier* hath continued it under that Name, and constituted a Genus of it.

These Plants are preserved in some curious Gardens in *Europe*, where they do thrive very well, if they are placed in a Bark-Stove, but as they are Trees of a large Growth, so it can hardly be expected



pected to see either Fruit or Flowers from them in *England*, since they grow to a great Magnitude before they produce either in their own Country.

These Plants may be rais'd from Seeds, which are easily obtain'd from the *West Indies*; they must be sown on a Hot-bed early in the Spring, and when the Plants are come up, they must be each transplanted into a small Pot, filled with fresh light Earth, and plunged into a Hot-bed of Tanners-bark, observing to water and shade 'em until they have taken Root, after which, they must have free Air let into the Hot-bed, in Proportion to the Warmth of the Season; for if the Glasses are kept too close, the Plants will draw up too weak. They must also be frequently refresh'd with Water, for they perspire pretty freely, especially in hot Weather. In a Month or five Weeks Time these small Pots will be filled with the Roots of the Plants; therefore you must shake the Plants out of them, and after having pared off the outside Roots, they must be put into Pots a Size larger, and plunged again into the Hot-bed, observing to manage 'em as was before directed. When the Plants are grown too tall to remain in the Hot-bed, they must be removed into the Bark-Stove, where, during the Summer Season, they should have a large Share of fresh Air; but in Winter they must be kept pretty close; and as the Plants do encrease in Magnitude, so they should be shifted into larger Pots, that their Roots may have room to extend. If these Rules be duly observ'd, the Plants will in two or three Years arrive to the Height of ten or twelve Feet, and be proportionably

strong, and being placed among other Plants which require the same Degree of Heat, they add to the Variety.

CELASTRUS, the Staff-tree: Is a Sort of *Alaternus*.

CELERI, or SALARY; *vulgò*.

This is by the Botanists rang'd under the Article of *Apium*, to which I refer the Reader for its Characters.

There are two Sorts of this Plant cultivated in the *English* Gardens, for Kitchen Use, which are,

1. *APIUM*; *dulce*, *Celeri Italorum*. *H. R. Par.* Italian *Celeri*.

2. *APIUM*; *dulce degener*, *radice rapaceâ*. *Jessieu*. *Celeriack*; *vulgò*.

The Seeds of this Plant should be sown at two different Seasons, the better to continue it for Use through the whole Season without running up to Seed. The first Sowing should be in the Beginning of *March*, which ought to be in an open Spot of light Earth, where it may enjoy the Benefit of the Sun: But the second Time of sowing should be the Beginning of *April*, which ought to be in a moist Soil; and if expos'd to the Morning Sun only, it will be so much the better; but it should not be under the Drip of Trees.

In about three Weeks or a Month's Time after sowing, the Seed will come up, when you must carefully clear it from Weeds; and if the Season prove dry, you must frequently water it; and in about five or six Weeks after it is up, the Plants will be fit to transplant; you must therefore prepare some Beds of moist rich Earth, in which you should prick these young Plants, at about three Inches square, that they may grow strong: You must also observe, in drawing these  
Plants

Plants out of the Seed-Beds, to thin them where they grow too thick, leaving the small Plants to get more Strength before they are transplanted, by which Means one and the same Seed-Bed will afford three different Plantings, which will accordingly succeed each other for Use.

You must observe, if the Season proves dry, to keep it diligently water'd after 'tis transplanted, as also to clear the Seed-Beds from Weeds; and after every drawing, keep them duly water'd, to encourage the small Plants left therein.

The Middle of *June* some of the Plants of the first sowing will be fit to transplant for Blanching; which, if possible, should be put into a moist, rich, light Soil, upon which this first planted *Celeri* will often grow to be twenty Inches long in the clean blanch'd Parts, which upon a poor or dry Soil seldom rises to be ten Inches.

The Manner of transplanting it is as follows; After having clear'd the Ground of Weeds, you must dig a Trench by a Line about ten Inches wide, and eight or nine Inches deep, loosening the Earth in the Bottom, and laying it level, and the Earth that comes out of the Trench should be equally laid on each side the Trench, to be ready to draw in again to earth the *Celeri* as it advances in Height: These Trenches should be made at three Feet Distance from each other; then plant your Plants in the Middle of the Trench, at about six Inches Distance, in one strait Row, having cut off the Tops of the long Leaves, as also trim'd their Roots, observing to close the Earth well to their Roots, and to water them plentifully until they have taken fresh Root; after which time

it will be needless, except in dry Soils, or very dry Seasons: As these Plants advance in Height, so you must observe to draw the Earth on each Side close to them, being careful not to bury their Hearts, nor ever to do it but in dry Weather, otherwise the Plants will rot.

When your Plants have advanc'd a considerable Height above the Trenches, and all the Earth which was laid on the Sides thereof, hath been employ'd in earthing them up; you must then make use of a Spade to dig up the Earth between the Trenches, which must also be made use of for the same Purpose, continuing from time to time to earth it up, until it is fit for Use.

The first of your planting out will, perhaps, be fit for Use toward the End of *July*, and so this will be succeeded by the after Plantations, and, if rightly manag'd, will continue till *April* following; but you should observe, after the second or third planting out, to plant the After-crop in a drier Soil, to prevent its being rotted with too much Wet in Winter; and also if the Weather should prove extreme sharp, you will do well to cover your Ridges of *Celeri* with some Pease Husk, or some such light Covering, which will admit the Air to the Plants; for if they are cover'd too close, they will be very subject to rot; by this Means you may preserve your *Celeri* in Season a long time; but you must remember to take off the Covering whenever the Weather will permit, otherwise it will be apt to cause the *Celeri* to pipe and run to Seed: The *Celeri*, when fully blanch'd, will not continue good about three Weeks or a Month before it will rot or pipe; therefore, in order to

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Continue it good, you should have, at least, six or seven different Seasons of planting; so that if it be only intended to supply a Family, there need not be much planted at each Time; but this must be proportion'd according to the Quantity requir'd.

The other Sort of *Celeri*, which is commonly call'd *Celeriack*, is to be manag'd in the same Manner as is directed for the *Italian Celeri*, but should not be planted in Drills, but upon the level Ground, at three Feet Distance Row from Row, and eight Inches asunder in the Rows; for these Plants do not grow in Height as the *Italian* Sort doth, but spread more; the Excellency of this Sort is in the Bigness of the Root, which in a good Soil will grow as large as a midling Turnip, and is very tender and sweet. These Plants therefore do not require much earthing up, but the Weeds must not be suffered to grow amongst them; and if the Season is very dry it will be proper to water 'em. This Sort will not be fit for Use so soon as the *Italian*, but being much hardier, will endure the Winter, and come later in the Spring, by which means you may continue this Plant for Use almost two Months longer than is ordinarily done, and, with some Care, it may be continued good through most Part of the Year.

The best Method to save this Seed, is to make choice of some long good Roots of *Celeri* that have not been too much blanch'd, and plant them out at about a Foot asunder in a moist Soil, early in the Spring; and when they run up to Seed, keep them supported with Stakes, to prevent their being broke down with the Wind: And in *July*, when this Seed begins to be form'd,

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if the Season should prove very dry, it will be proper to give it a little Water, which will greatly help its producing good Seeds. In *August* these Seeds will be ripe; at which Time it should be cut up, in a dry Time, and spread upon Cloths in the Sun to dry; then beat out the Seeds, and preserve it dry in Bags for Use.

CELTIS; the Lote, or Nettle-tree.

The Characters are;

The Leaves are somewhat like those of the Nettle: The Flowers consist of five Leaves, which are expanded in Form of a Rose, containing many short Stamina (or Threads) in the Bosom: The Fruit grows single in the Bosom of its Leaves, which is a roundish Berry.

The Species are;

1. CELTIS; fructu obscure purpurascente. Tourn. The dark purple-fruited Lote or Nettle-tree.

2. CELTIS; fructu nigricante. Tourn. The Nettle-tree, with black Fruit.

3. CELTIS; fructu luteo ampliori. The Nettle-tree, with large yellow Fruit.

The first of these Trees was originally brought from *Virginia*, but is found to thrive very well in our Climate; there being several large Trees of this Kind in the Gardens of curious Planters, but particularly one in the Garden which formerly belong'd to *John Tradescant* at *South-Lambeth* near *Vaux-Hall* in *Surrey*, and another in the *Physick-Garden* at *Chelsea*, both which are large Trees, and the latter produces ripe Fruit annually, from whence several young Trees have been rais'd. The second Sort, tho' a Native of *Europe*, yet is less common in *England* than the former, and only to be seen in some

curious

curious Collections of Trees, particularly in the Gardens of the late Dr. Uvedale at *Enfield*, where there is one large Tree remaining.

The third Sort is probably a Native of *America* also; this Tree hath been many Years growing in *Devonshire*, where are several large ones, which have produced ripe Seeds, from whence the Gardens near *London* were supply'd with young Plants.

These are all of them very hardy, enduring the severest of our Winters in *England* very well, and grow to be large Trees; they may be propagated either from Layers, or by Seeds: The Layers are commonly two Years before they take Root sufficient for transplanting; and if they are not frequently water'd, will rarely take Root. The best Time for transplanting these Trees is in *March*, just before they begin to put out, observing to nuich their Roots, and water them well until they have taken Root. This Tree seems to thrive best upon a moist Soil, tho' it will grow tolerably well upon almost any Soil, when it is well fix'd therein.

The Seeds of this Tree should be sown in the Spring of the Year, soon after they are ripe, which is commonly in *January*, and the Ground kept clear from Weeds, but not stir'd; for the Seeds seldom appear before the second Spring: Therefore the best Method is, to sow them in Boxes, and manage them as was directed for the *Berry-bearing Cedar*; to which I refer the Reader, to avoid Repetition.

These Trees are very useful in forming Clumps, or for planting of Amphitheatres of various Kinds of deciduous Trees; for the Heads of these naturally grow very thick

and regular, and their Leaf is of a deep pleasant Green Colour, making a very good Diversity amongst other Kinds: And altho' it is none of the earliest Trees in putting out in the Spring of the Year, yet it recompenseth for this Defect, by its long Continuance in the Autumn, retaining its Leaves in perfect Vigour, when few other deciduous Trees have any Leaves left upon them.

The Fruit of this Tree is not so tempting with us, as is story'd it was to the Companions of *Ulysses*: But the Wood is reckon'd to be of a very durable Nature, and is commonly us'd to make Pipes, and other Wind Instruments, and its Root is very proper to make Hafts for Knives, and other Tools; and it is reported, that they were held in great Esteem by the *Romans*, for their incomparable Beauty and Use.

CENTAURIUM MAJUS; the greater Centaury.

The Characters are;

*It is one of the Plantæ Capitatæ, (or, of those Plants whose Flowers are collected into a Head, as the Thistle, &c.) and hath a perennial Root: Their Leaves are without Spines, and are saw'd on their Edges: The Cup of the Flower is squamose, but hath no Spines: The Florets are large and specious.*

The Species are;

1. CENTAURIUM; *majus, folio helonii incano.* Tourn. Greater Centaury, with hoary Leaves like those of *Elccampane*.

2. CENTAURIUM; *folio cinara.* Cornut. Greater Centaury, with Artichoke Leaves.

3. CENTAURIUM; *majus, Alpinum, luteum.* C. B. Greater yellow Centaury of the *Alps*.

4. CENTAURIUM ; *majus, folio in laciniis plures diviso*. C. B. Greater Centaury, with cut Leaves.

5. CENTAURIUM ; *majus, alterum, laciniatum, purpurascente flore*. H. R. Par. Another cut-leav'd Centaury, with purplish Flowers.

6. CENTAURIUM ; *majus, orientale, erectum, glastifolio, flore luteo*. T. Cor. Greater Eastern Centaury, with Leaves like Woad, and yellow Flowers.

7. CENTAURIUM ; *majus, Africanum, acaulon, cinara folio*. J. F. s. Greater African Centaury without Stalks, and Leaves like the Artichoke.

There are several other Species of this Plant cultivated in some of the Botanick Gardens Abroad; but these here mention'd are what we have at present in the English Gardens.

They are all of them propagated either by sowing their Seeds, or parting their Roots: The latter of which is most commonly practis'd in England, (their Seeds seldom ripening in our Country.) The best Season for this Work is either in October or February.

When you have a mind to increase any of these Plants, you should open the Ground about their Roots, and clear them of the Earth: Then, where you find any of the Side Heads, which will part with Roots to them, you should carefully force them off; which when you have done, you must lay the Earth up again to the old Plant, settling it close with your Hands; and if the Ground is dry, give it a little Water: And having prepar'd a proper Place for the young Plants, which should be in a dry sandy Soil, and a warm Situation, you may either plant them in Beds, at about a Foot square, or at Distances in the Borders of large

Gardens, by way of Ornament; which altho' the Flowers have no very great Beauty, yet the regular Growth of the Plants, together with their long Continuance in Flower, render them worthy of a Place in all large Gardens.

The Season for sowing the Seeds of any of these Species, is in March, in an open Bed of common light Earth; and in May, when the Plants are come up, they may be transplanted into Nursery-beds until Michaelmas; by which Time they will have gotten Strength enough to transplant into any other Parts of the Garden where you design them to remain.

The third, sixth, and seventh Sorts are the most valuable for a Pleasure-Garden, as being less subject to grow rude and ungovernable; and their Flowers are of a long Duration. The third Sort is the largest of the three, and should be planted in the Middle of large Borders, where they will look very handsome.

The fourth Sort is used in Medicine, and therefore deserves to be cultivated in Physick-Gardens: Nor is it unpleasant in any Garden. The first and second Sorts may be admitted for a Variety in large Gardens, to fill empty Borders, where the Difference of their Leaves and Flowers will appear very well amongst Plants of larger Growth. These Plants begin to produce their Flowers in June, and continue most part of July, but very rarely produce ripe Seeds in this Country.

CENTAURIUM MINUS: Lesser Centaury.

The Characters are;

The Leaves grow by Pairs, opposite to each other: The Flower consists of one Leaf, is Funnel-shap'd,  
and

and divided into five acute Segments; these grow on the Tops of the Stalks in Clusters: The Seed-vessel is of a cylindrical Form, and is divided into two Cells, in which are contain'd many small Seeds.

The Species are;

1. CENTAURIUM; minus. C. B. Common Lesser Centaury.

2. CENTAURIUM; minus, flore albo. H. Eyst. Lesser Centaury with white Flowers.

3. CENTAURIUM; luteum, perforiatum. C. B. Lesser yellow Centaury, with Leaves surrounding the Stalks.

These three Plants grow wild in England: The first is commonly found growing upon dry arable Land, chiefly amongst Corn. The second is a Variety of the first, from which it only differs in the Colour of the Flower: This is sometimes found with the first. The third Sort grows commonly upon chalky Hills in divers Parts of England: But neither of these Kinds care to grow in a Garden. The only Method that can be taken to cultivate these, is to sow the Seeds so soon as they are ripe, in an open well-expos'd Place, and in a poor dry Soil, in which these Plants do best thrive: Nor should the young Plants be remov'd, if they come up, but suffer'd to remain in the same Places for good. The first Sort is us'd in Medicine, and is gather'd in the Fields, and brought to Market for that Purpose.

CENTINODIUM; is Knot-grass.

CEPA; the Onion.

The Characters are;

It hath an orbicular, coated, bulbose Root: The Leaves are hollow or pipy: The Stalk is also hollow, and swells out in the Middle: The Flowers, which consist of six Leaves,

are collected into a spherical Head, or Corymbus: The Style of the Flower becomes a roundish Fruit, which is divided into three Cells, containing roundish Seeds.

The Species are;

1. CEPA; oblonga. C. B. The Strasburgh Onion; vulgò.

2. CEPA; vulgaris, floribus & tunicis purpurascens. C. B. The red Spanish Onion; vulgò.

3. CEPA; vulgaris, floribus & tunicis candidis. C. B. The white Spanish Onion; vulgò.

4. CEPA; Ascalonica; Matthioli. Boerb. Ind. The Scallion or Escalion.

5. CEPA; scetilis, juncifolia, perennis. M. H. Cives.

6. CEPA; scetilis, major, perennis. Welsh Onion; vulgò.

7. CEPA; fuscilis Matthioli. Lugd. Ciboule.

There are several other Sorts of Onions of lesser Note, which are preserv'd in the Gardens of curious Botanists, some of which grow wild in England: But these above-mention'd are the Sorts which are chiefly cultivated for the Kitchen Use. The three Sorts first mention'd are propagated for Winter Use, their Roots being preserv'd dry during that Season. Of these I shall first treat.

These three Sorts of Onions are propagated by Seeds, which should be sown at the latter End of February, or the Beginning of March, in good, rich, sandy Ground, but not too thick; (the common Quantity of Seed allow'd to sow an Acre of Ground being eight Pounds) in about a Month or six Weeks after sowing, the Onions will be up forward enough to hoe; at which Time (chusing dry Weather) you should with a small hoe about two Inches and an half broad, cut up lightly

lightly all the Weeds from amongst the *Onions*; as also cutting out the *Onions* where they grow too close in Bunches, leaving them at this first hoeing two Inches apart: This, if well perform'd, and in a dry Season, will preserve the Spot clear of Weeds, at least a Month, at which Time you must hoe them over a second time, cutting up all the Weeds, as before, and also cutting out the *Onions* to a larger Distance, leaving them this time three Inches asunder. This also, if well perform'd, will preserve the Ground clean a Month longer, when you must hoe them over the third and last time.

You must now carefully cut up all Weeds, and single out the *Onions* to near six Inches square; by which means they will grow much larger than if left too close. This Time of Hoeing, if the Weather proves dry, and it be well perform'd, will keep the Ground clean until the *Onions* are fit to pull up: But if the Weather should prove moist, and any of the Weeds should take Root again, you should, about a Fortnight or three Weeks after, go over the Spot, and draw out all the large Weeds with your Hands; for the *Onions* having now begun to bulb, they should not be disturb'd with a Hoe.

Toward the Middle or latter End of *July*, your *Onions* will have arriv'd to their full Growth, which may be known, by their Blades falling to the Ground and shrinking; you should therefore, before their Necks or Blades are wither'd off, draw them out of the Ground, cropping off the extreme Part of the Blade; and lay them abroad upon a dry Spot of Ground to dry, observing to turn them over every other Day, at least, to prevent their

striking fresh Root into the Ground; which they will suddenly do, especially in moist Weather.

In about a Fortnight's Time your *Onions* will be dry enough to house, which must be perform'd in perfect dry Weather: In doing of this, you must carefully rub off all the Earth, and be sure to mix no faulty ones amongst them, which will in a short time decay, and spoil all those that lie near them; nor should you lay them too thick in the House, which would occasion their sweating, and thereby rot them: These should not be put in a lower Room, or Ground-floor, but in a Loft or Garret; and the closer they are kept from the Air, the better they will keep: You should at least once a Month look over them, to see if any of them are decay'd; which if you find, must be immediately taken away, otherwise they will infect all that lie near them.

The best *Onions* for keeping, are the *Strasburgh* Kind, which is an oval-shap'd Bulb; but this seldom grows so large as the *Spanish*, which is flatter: The white Sort is esteem'd the sweetest, but these Varieties are not lasting, for if you save Seeds of white *Onions* only, you will have a Mixture of the red ones amongst them; nor will the *Strasburgh Onion* keep long to its Kind, but will by degrees grow flatter, as do the large *Portugal Onions*, when planted in our Climate, which, in a Year or two, will be so far degenerated as not to be known they were from that Race.

But, in order to preserve Seeds, you must in the Spring make Choice of some of the firmest, largest, and oval-shap'd *Onions*, (in Quantity proportionable to the Seed you intend to save) and having pre-  
par'd

par'd a Piece of good Ground, (which should be well dug, and laid out in Beds about three Feet wide) in the Beginning of *March* you must plant your *Onions*, in the following manner: Having strain'd a Line about four Inches within the Side of the Bed, you must with a Spade, throw out an Opening about six Inches deep the Length of the Bed, into which you should place the *Onions*, with their Roots downwards, at about six Inches Distance from each other; then with a Rake draw the Earth into the Opening again to cover the Bulbs; then proceed to remove the Line again about ten Inches or a Foot farther back, where you must make an Opening as before, and so again, till the Whole is finish'd, so that you will have four Rows in each Bed, between which you must allow a Space of two Feet for an Alley to go amongst them to clear them from Weeds, &c. In a Month's Time these Bulbs will appear above-ground, many of which will produce three or four Stalks each, you must therefore keep them diligently clear'd from Weeds, and about the Beginning of *June*, when the Heads of the Seed begin to appear upon the Tops of the Stalks, you must provide a Parcel of Stakes about four Feet long, which should be driven into the Ground, in the Rows of *Onions*, at above six Feet apart, to which you should fasten some Pack-thread, or small Cord, which should be run on each Side the Stems of the *Onions* a little below their Heads, to support them from breaking down with the Wind and Rain.

About the Beginning of *August*, the *Onion* Seed will be ripe, which may be known by its changing brown, and the Cells in which

the Seeds are contain'd opening, so that if it be not cut in a short time, the Seeds will fall to the Ground: When you cut off the Heads, they should be spread abroad upon coarse Cloaths in the Sun, observing to take it under Shelter in the Night, as also in wet Weather; and when the Heads are quite dry, you must beat out the Seeds, which are very easily discharg'd from their Cells; then having clear'd it from all the Husk, &c. after having expos'd it one Day to the Sun to dry, you must put it up in Bags to preserve it for Use.

The *Scallion* or *Escallion*, is a Sort of *Onion* which never forms any Bulbs at the Roots, and is chiefly used in the Spring for green *Onions*, before the other Sorts sown in *July* are big enough; but this Sort of *Onion*, how much soever in use formerly, is now so scarce as to be known to few People, and is rarely to be met with except in curious Botanick Gardens: The Gardeners near *London* substitute another Sort for this, which are those *Onions* which decay and sprout in the Winter. These they plant in a Bed early in the Spring, which in a short time will grow to be large enough for Use: When they draw them up, and after pulling off all the old outer Coat of the Root, they tie them up in Bunches, and sell them in the Market for *Scallions*.

The *Escallion* is easily propagated by parting the Roots, either in Spring or Autumn, but the latter Season is preferable, because of their being render'd more fit for Use in the Spring: These Roots should be planted three or four together in a Hole, at about six Inches Distance every Way, in Beds or Borders



ders three Feet wide, which in a short time will multiply exceedingly, and will grow upon almost any Soil, and in any Situation; and their being so hardy as to resist the severest of our Winters, and being green and fit for Use so early in the Spring, renders them worthy of a Place in all good Kitchen-Gardens.

The *Cives* are a very small Sort of *Onion*, which never produces any Bulbs, nor seldom grows above six Inches high in the Blade, which is very small and slender, and grows in Bunches like the former: This was formerly in great Request for *Sallads* in the Spring, as being somewhat milder than those *Onions* which had stood through the Winter: They are propagated by parting their Roots like the former, and are also very hardy, and will be fit for Use early in the Spring.

The *Welsh Onions* are only propagated for Spring Use also: These never make any Bulb, and are therefore only fit to be us'd green for *Sallads*, &c. They are sown about the End of *July*, in Beds of about three Feet and a half wide, leaving Allies of two Feet broad to go between the Beds to clean them, and in a Fortnight's Time they will appear above-ground, and must be carefully clear'd from Weeds; towards the Middle of *October*, their Blades will die away, so that the whole Spot will seem to be naked, which hath led many People to dig up the Ground again, supposing the Crop totally lost; whereas, if they are let stand undisturb'd, they will come up again very strong in *January*, and from that time grow very vigorously, resisting all Weathers, and by *March* will be fit to draw for young *Onions*, and are, in the Markets, more valu'd than

any other Sort at that Season, for they are extremely green and fine, tho' they are much stronger than the common *Onion*, in Taste, approaching nearer to *Garlick*, which hath occasion'd their being less esteem'd for the Table: But as no Winter, however so hard, will hurt them, so it is proper to have a few of them to supply the Table, in case the common Sort should be destroy'd by Frosts.

The Roots of these *Onions*, if planted out at six or eight Inches Distance in *March*, will produce ripe Seeds in Autumn, but 'twill be in small Quantities the first Year; therefore the same Roots should remain unremov'd, which the second and third Year will produce many Stems, and afford a good Supply of Seeds: These Roots will abide many Years good, but should be transplanted and parted every second or third Year, which will cause them to produce strong Seeds.

CERASUS; The Cherry-Tree.

The Characters are;

*It hath large shining Leaves; the Fruit grows on long Pedicles (or Footstalks) and is roundish or heart-shap'd; the Stone is short, tumid, and roundish.*

The Species are;

1. CERASUS; *sativa, fructu rotundo, rubro & acido.* Tourn. The common Red, or Garden Cherry.

2. CERASUS; *sativa, fructu majori.* Tourn. Large Spanish Cherry.

3. CERASUS; *major, fructu magno, cordato, rubro.* The Red Heart Cherry.

4. CERASUS; *major, fructu magno, cordato, albo.* The White Heart Cherry.

5. CERASUS; *major, fructu magno, cordato, sanguineo.* The Bleeding Heart Cherry.

6. CERASUS; *major, fructu cordato, nigro.* The Black Heart Cherry.

7. CERASUS; *Maialis, fructu duro, subdulci.* Tourn. The May Cherry.

8. CERASUS; *major, ac sylvestris, fructu subdulcis, nigro colore insiciente.* C. B. The Black Cherry, or Mazzard.

9. CERASUS; *fructu magno, rubro, turbinato.* Tourn. The Archduke-Cherry.

10. CERASUS; *Sicula, fructu Castanei coloris.* Tourn. The Yellow Spanish Cherry; *vulgò.*

11. CERASUS; *uno pediculo, plura ferens.* F. B. The Flanders Cluster-Cherry.

12. CERASUS; *fructu incarnato.* The Carnation Cherry.

13. CERASUS; *sativa, fructu orbiculato, nigerrimo, micante.* Tourn. The large Black Cherry.

14. CERASUS; *racemosa, sylvestris, fructu non eduli.* C. B. The Bird Cherry.

15. CERASUS; *racemosa, sylvestris, fructu non eduli, rubro.* H. R. Par. The Red Bird, or Cornish Cherry.

16. CERASUS; *hortensis, flore roseo.* C. B. The Largest Double-flower'd Cherry.

17. CERASUS; *hortensis, pleno flore.* C. B. The Double-flower'd Cherry.

18. CERASUS; *sylvestris, fructu rubro.* F. B. Common Wild Cherry.

19. CERASUS; *sylvestris, septentrionalis Anglia, fructu rubro, parvo, serotino.* Raii Hist. The Wild Northern English Cherry, with late ripe Fruit.

20. CERASUS; *sylvestris, amara, wahalab putata.* F. B. The Rock, or Perfum'd Cherry.

21. CERASUS; *hortensis, foliis*

*eleganter variegatis.* The Cherry-Tree with strip'd Leaves.

There are many other Sorts of Cherries cultivated in curious Fruit-Gardens; as, the Amber Cherry, Lukeward Corone, Gascoigne, Morrello, &c.

All the Sorts of Cherries which are usually cultivated in Fruit-Gardens, are propagated by Budding or Grafting the several Kinds, into Stocks of the Black, or Wild Red Cherries, which are strong Shooters, and of a longer Duration than any of the Garden Kinds. The Stones of these two Kinds are sown in Beds of light sandy Earth in Autumn, (or are preserv'd in Sand 'till Spring, and then sow'd): When these Stocks arise, they must be carefully weeded; and if in dry Weather you refresh them with Water, it will greatly promote their Growth. These young Stocks should remain in these Nursery Beds 'till the second Autumn after sowing, at which Time you should prepare an open Spot of good fresh Earth, which should be well work'd: But if the Soil is fresh you'll need no Dung. In this Ground in October you should plant out the young Stocks at three Feet Distance, Row from Row, and about a Foot asunder in the Rows; being careful, in taking them up from their Seed-beds, to loosen their Roots well with a Spade, to prevent their breaking; as also to prune their Roots: And if they are inclinable to root downwards, you should shorten the Tap-root, to cause it to put out lateral Roots: But do not prune their Tops; for this is what by no means they will endure.

The second Year after planting out, if they take to growing well, they will be fit to bud, if they

are intended for Dwarfs: But if they are for Standards, they will not be tall enough until the fourth Year; for they should be budded or grafted near six Feet from the Ground; for otherwise the Graft will not advance much in Height, so that it will be impossible to make a good Tree from such as are grafted low.

The usual Way with the Nursery Gardeners, is to bud their Stocks in Summer: And such of them as miscarry, they graft the succeeding Spring. (The manner of these Operations will be described under their proper Heads). Those Trees where the Buds have taken, must be headed off in the Beginning of *March*, about six Inches above the Bud: And when the Bud hath shot in Summer, if you fear its being blown out by the Winds, you may fasten it up with some Bafs, or such soft-tying, to that Part of the Stock which was left above the Bud. The Autumn following these Trees will be fit to remove. But if your Ground is not ready to receive them, they may remain two Years before they are transplanted: In the doing of which, you must observe, not to head them, as is by many practis'd; for this, very often, is immediate Death to them: But if they survive it, they seldom recover this Amputation in five or six Years.

If these Trees are intended for a Wall, I would advise the planting Dwarfs between the Standards; so that while the Dwarfs are filling the Bottom of the Walls, the Standards will cover the Tops, and will produce a great deal of Fruit: But these, as the Dwarfs arise to fill the Walls, must be cut away, to make room for them: And when

the Dwarf-trees do cover the Walls the Standards should be intirely taken away. But I advise, never to plant *Standard-Cherries* over other Fruits; for there is no other Sort of Fruit that will prosper well under the Drip of *Cherries*.

When these Trees are taken up from the Nursery, their Roots must be shortned, and all the bruised Parts cut off, as also all the small Fibres, which would dry, grow mouldy, and be a great Prejudice to the new Fibres in their coming forth; you must also cut off the dead Part of the Stock which was left above the Bud, close down to the back-part of it, that the Stock may be cover'd. If these Trees are design'd for a Wall, observe to place the Bud directly from the Wall, that the back-part of the Stock that was cut may be hid from Sight. The Soil that *Cherries* thrive best in, is a fresh Hazel Loam: But if the Soil is a dry Gravel, they will not live many Years, and will be perpetually blighted in the Spring.

The Sorts commonly planted against Walls, are the *Early May*, and *May-Duke*, which should have a South-Wall. The *Hearts* and *common Duke* will do upon a West-Wall; and the *Morello* on a North-Wall, which last is chiefly planted for preserving; but if some of the *Morello's* be planted against a South-Wall they will produce larger, and well tasted Fruit. The *Hearts* are all of them ill Bearers; for which Reason they are seldom planted against Walls: But I am apt to believe, if they were grafted upon the *Bird-Cherry*, and manag'd properly, that Defect might be remedy'd; for this Stock (as I am inform'd) will render *Cherries* very fruitful; and having the same Ef-

fect on *Cherries*, as the *Paradise* Stock hath on *Apples*, they may be kept in less Compass, which is an Experiment well worth the Trial.

Your Trees, if planted against a Wall, should be placed sixteen Feet asunder, with a Standard-Tree between each Dwarf: This will be found a reasonable Distance, when we consider that *Cherry-trees* will not extend themselves so far as *Apricocks*, and many other Sorts of Fruit.

In pruning these Sorts of Fruits, you should never shorten their Shoots; for the most part of them produce their Fruit-buds at their extreme Part, which, when shortened, are cut off: Their Branches should be therefore train'd in at full length horizontally, observing in *May*, where there is a Vacancy in the Wall, to stop some strong adjoining Branch which will occasion its putting out two or more Shoots; by which Means, at that Season of the Year, you may always get a Supply of Wood for covering the Wall: And at the same time should all fore-right Shoots be displac'd by the Hand; for if they are suffer'd to grow till Winter, they will not only deprive the Bearing-Branches of their proper Supply of Nourishment, but, when they are cut out, it occasions the Tree to Gum in that Part; (for *Cherries* bear the Knife the worst of any Sort of Fruit-Trees): but be careful not to rub off the Fides or Spurs, which are produc'd upon the two and three Years old Wood; for it is upon these that the greatest Part of the Fruit are produc'd; which Fides will continue fruitful for several Years. And it is for want of duly observing this Caution,

that *Cherry-trees* are often seen so unfruitful, especially the *Morello*, which, the more it is cut, the weaker it shoots; and at last, by frequent pruning, I have known a whole Wall of them destroy'd; which, if they had been suffer'd to grow without any pruning, might probably have liv'd many Years, and produc'd large Quantities of Fruit.

*Cherry-trees* are also planted for Orchards in many Parts of *England*, particularly in *Kent*, where there are large Plantations of these Trees: The usual Distance allow'd for their standing, is forty Feet square, at which Space they are less subject to Blight, than when they are closer planted; and the Ground may be till'd between them almost as well as if it were intirely clear, especially while the Trees are young; and the often stirring the Ground, provided you do not disturb their Roots, will greatly help the Trees; but when they are grown so big as to overshadow the Ground, the Drip of their Leaves will suffer very few Things to thrive under them. These Standard Trees should be planted in a Situation defended as much as possible from the strong Westerly Winds, which are very apt to break their tender Branches; this occasions their Gummying, and is very prejudicial to them.

The Sorts best approv'd for an Orchard, are the *Common Red* or *Kentish Cherry*, the *Duke*, and *Lukeward*, all which are plentiful Bearers. But Orchards of these Trees are now scarcely worth planting, except where Land is very cheap; for the Uncertainty of their Bearing, with the Trouble in Gathering the Fruit, together with the small Price it commonly yields, have occasion'd the destroying many

Orchards of this Fruit in *Kent*, within a few Years past.

This Fruit was brought out of *Pontus*, at the Time of the *Mithridatick* Victory, by *Lucullus*, in the Year of the City 680, and was brought into *Britain* about 120 Years afterwards, which was *An. Dom. 55*, and was soon after spread through most Parts of *Europe*; it being generally esteem'd for its Earliness, as being one of the first of the Tree-Fruit that appears to welcome in the approaching Fruit-season.

This Sort of Fruit hath been by many People grafted upon the *Laurel*, to which it is a Congener: But what Effect it hath either in the Growth of the Tree, or its Fruit, I have not been yet able to understand; tho' this Practice is as old as *Pliny*, who says it gives the Fruit a very pleasant Bitterness.

The two Sorts of *Bird Cherries* are very fine flowering Trees, and are commonly propagated in the Nurseries, to intermix with *Lilac's*, *Laburnum's*, and other flowering Trees of larger Growth, where, by their Variety, they greatly diversify the Prospect. These are also, by some, us'd for Stocks, to bud and graft the more generous Kinds of *Cherries* on; by which means they are render'd more fruitful, and of lesser Growth: These two Sorts are propagated by laying down their tender Branches in Autumn, which in one Year's time will have taken Root, and may be remov'd into a Nursery, for any of the above-mention'd Purposes.

The two Sorts of *Double-flowering Cherries* are also propagated for the Beauty of their Flowers, which, of the very Double Kind, are extremely fine, the Flowers being as

double and large as a *Cinnamon-Rose*; and these being produced in large Bunches on every Part of the Tree, render it one of the most beautiful Trees of the Spring. The other Sort, which is less Double, will often produce some Fruit which the very double Sort doth not; but this Defect is sufficiently recompenc'd, in the Beauty of its Flowers. These are propagated by Budding or Grafting them on the *Black* or *Wild Cherry* Stock, and are proper to intermix with the larger Sort of flowering Trees.

The *Wild Northern Cherry* is of no Use or Beauty, and is only preserved by the Curious, in Collections of the different Sorts of Trees; as is also the *Machaleb* or *Perfum'd Cherry*, which is a free Shooter, and perhaps may serve for Stocks to improve the other Kinds of *Cherries*, as growing well in almost any Soil; but there is neither Use or Beauty in the Flowers or Fruit of it. The *Strip'd-leaf'd Cherry* is proper in a Collection of variegated Trees, as adding to the Variety.

The *Black Cherry* is propagated in the Nurseries for Stocks, to bud or graft the other Kinds of *Cherries* upon, it being the hardiest Tree, and the freest Shooter, of any Kind of *Cherry*. This Sort will grow to be very large Trees, and is in some Counties of *England* planted as a Forest Tree, for Shade; the Fruit of this Tree is much esteem'd (provided it be the small sweet Kind) both for the Table, and to put into Brandy for a Cordial.

CERATIA; *vide* Siliqua Edulis.

CEREFOLIUM; *vide* Chareto-  
lium.

CEREUS. The Torch-Thistle.

These are all *American Plants*, where the Fruit is eaten as Figs: They lie in the Way in great Plenty, and being Thorny, are injurious to those who pass among them naked. The eleventh as to its outward Shew, seems to be no very rare or curious Plant, but it has a very fine Flower, which beginning to open it self about the Evening, falls after Midnight; and hence it is call'd, *Ἠλιοφύλαξ*, i. e. *shunning the Sun*. The tenth Sort bears Figs of a most delicate Taste; it is call'd *Cereus*, because it is, as it were, a Kind of *Taper* or *Torch*, which the Servants carry on Nights before their Masters.

Not that it is call'd so from its Resemblance to a *Torch*, but because when these Plants have been cut down, and dry'd upon the Ground, they dip them into Oil, and burn them as *Torches*, for which Purpose they serve very well.

The Characters are;

*It hath no Leaves; the Stems are thick and succulent; are angular and furrow'd, each Angle being arm'd with sharp Spines, which are produc'd in Clusters: The Flowers consist of many flat Leaves, which expand themselves somewhat like a Marygold: In the Center of the Flower is produc'd a great Number of Stamina (or Threads) which appear very specious: The Fruit, which is fleshy, soft, and like to that of the Indian Fig, is produc'd from the Side of the Plant, without any Footstalk, immediately under the Flower.*

The Species are;

1. CEREUS; *erectus, altissimus, Syriamenensis*. Par. Bat. The large upright Torch-Thistle from *Suriname*.

2. CEREUS; *erectus, quadrangu-*

*lus, costis alarum instar assurgentibus*. Boerb. Ind. The four-corner'd upright Torch-Thistle.

3. CEREUS; *erectus, fructu rubro, non spinoso, lanuginosus, lanugine flavescente*. Par. Bat. The upright Torch-Thistle, with yellow Down and red Fruit without Spines.

4. CEREUS; *erectus, crassissimus, maximè angulosus, spinis albis, plurimus, longissimis, lanugine flavâ*. Boerb. Ind. The largest upright Torch-Thistle, with large Angles and white Spines, having a yellow Down on the Top.

5. CEREUS; *erectus, gracilis, spinosissimus; spinis flavis, polygonus, lanugine albâ pallescente*. Boerb. Ind. The lesser upright Torch-Thistle, with many Angles and yellow Spines, with a white Down on the Top.

6. CEREUS; *erectus, gracilior, spinosissimus, spinis albis, polygonus*. Boerb. Ind. The lesser upright Torch-Thistle, with white Spines.

7. CEREUS; *altissimus, gracilior, fructu extus luteo, intus niveo, seminibus nigris pleno*. Sloan. Cat. *fam.* The lesser upright Torch-Thistle, commonly called, the lesser Dildo Tree in *Jamaica*.

8. CEREUS; *maximus, fructu spinoso, rubro*. Par. Bat. The greatest Torch-Thistle, with red prickly Fruit.

9. CEREUS; *scandens, minor, trigonus, articulatus, fructu suavissimo*. Par. Bat. The lesser triangular creeping, jointed Torch-Thistle, with the sweetest Fruit, commonly call'd in *Barbados*, the True prickly Pear.

10. CEREUS; *cristatus, erectus, foliis triangularibus, profundè canaliculatis*. Pluk. *Phyt.* The crested triangular Torch-Thistle, with deep Furrows.

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11. CEREUS ; *scandens, minor, polygonus, articulatus*. Par. Bat. The lesser creeping, jointed Torch-Thistle, with many Angles.

12. CEREUS ; *minimus, articulatus, polygonus, spinosus*. Boerb. Ind. The least prickly jointed Torch-Thistle, with many Angles.

The first Sort is the hardiest, as also the most common in *England* of any of these Sorts, and may be preserv'd in a good Green-house without any artificial Heat, provided the Frost is kept intirely out, and the Plant kept very dry all the Winter, for Wet is the greatest Enemy to these Plants.

The 2d, 3d, 4th, 5th, 6th, 7th, and 8th Sorts are somewhat tenderer, and will require a little artificial Warmth in very bad Weather, therefore these should be plac'd in a Stove, which is kept up to the temperate Heat, mark'd on Mr. Fowler's *Thermometers* : These must also have very little Water in the Winter-season.

The 9th Sort is by the Inhabitants of *Barbados*, train'd up against their Houses, for the Sake of its Fruit, which is about the Bigness of a *Bergamot-Pear* and of a most delicious Flavour. This, with the 10th, 11th and 12th Sorts, are very tender, and require a very warm Stove to preserve them : These should be plac'd against the Walls of the Stove, into which they will insinuate their Roots, and extend themselves to a great Length, and with a little Help, in fastening them to the Wall here and there, may be led up about the Ceiling of the House, where they will appear very handsome. And the 11th Sort, when arriv'd to a sufficient Strength, will produce many exceeding large, beautiful, sweet-scented Flowers ; but

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they are (like all the Flowers of these Kinds) of a very short Duration, scarcely continuing full blown twelve Hours ; nor do the same Flowers ever open again, when once clos'd : These Flowers open in the Afternoon, and before the next Morning shut up again.

I don't remember to have heard of any of the other Sorts (except the first) which have produc'd Flowers in *Europe* ; tho' it is to be hop'd, that when they are arriv'd to a sufficient Strength, they will flower as well as those two ; but, at present, the Plants of the other Sorts are but young, having been in *England* but a few Years. The first Sort seldom produces its Flowers until arriv'd to a considerable Age, unless by some Accident, which many times occasions their flowering sooner than they are commonly inclin'd to. Of this Kind, there was a very large Plant in the *Royal Garden* at *Paris*, which was upward of thirty Feet high, and had produc'd Flowers for several Years : but by the Severity of the late Winter (*Anno* 1728.) was destroy'd. There was also another in the *Physick Garden* at *Leyden*, which, in the Year 1727, when I was there, was above twenty Feet high, and had a great Number of Flowers upon it ; but I don't know of any in *England* that are above twelve or fourteen Feet high, tho' there have been many flower'd within a few Years past.

These are all propagated by Cuttings, so that if you intend to increase the Number of them, you must cut off their Stems, at what Length you please : These should be laid by in a dry Place to heal, at least a Week or ten Days before they are planted ; but if they lie a Fortnight or three Weeks it is  
much

much the better, and they will be in less Danger of miscarrying.

These Cuttings should be planted in small Pots, fill'd with light sandy Earth, with a Mixture of Lime-rubbish, laying some Stones in the Bottom of the Pots to drain off the Moisture; then place the Pots into a gentle Hot-bed of Tanners-bark, to facilitate their rooting, giving them once a Week a gentle Watering.

The best Season for this Work is in *June* or *July*, that they may have time to root before Winter: Toward the Middle of *August* you must begin to give them Air by degrees, to harden them against Winter, but they should not be wholly expos'd to the open Air or Sun: At the End of *September* they must be remov'd into the Stove where they are to abide the Winter: during which Season, you must be very careful not to let them have much Water, and always observè to place the young Plants, for the first Winter, in a little warmer Situation than the older Plants, as being somewhat tenderer.

These Plants should always have a dry Situation in Winter; for as they imbibe the greatest Part of their Nourishment from the circumambient Air, so if this be too replete with moist Particles, it will occasion their rotting. These Plants should none of them be expos'd abroad, not even in the Midst of Summer, for great Rains, which often happen at that Season, are very injurious to them: The first eight Sorts should be therefore plac'd so as to enjoy a free Air in the Summer, but at the same time screen'd from Rains and great Dews; it will therefore be much the better Method to let them in

an open Glass-stove, where the Windows may be set open in good Weather, and shut in cold or wet, The other four Sorts must not be expos'd too much to the open Air, even in the hottest Season, especially if you design to have them flower; and in Winter they should be kept very warm, and have no Water given them.

When you have once cut off the Tops of any of these Plants, in order to increase them, the old Stems will put forth fresh Shoots from their Angles near the Top, which when grown to be eight or nine Inches long, may also be taken off to make fresh Plants, and by this means the old Plants will continually afford a Supply, so that you never need cut off above one Plant of a Sort, which you should preserve for a Breeder.

These Plants being succulent, they will bear to be a long time out of the Ground, therefore whoever hath a mind to get any of them from the *West-Indies*, need give no other Instructions to their Friends, but to cut them off, and let them lie two or three Days to dry; then put them up in a Box with dry Hay or Straw, to keep them from wounding each other with their Spines; and if they are two or three Months on their Passage, they will keep very well, provided no Wet get to them.

CERINTHE; Honey-wort.

The Characters are;

*It hath glaucous deep-green Leaves, which are for the most part beset with Prickles: The Flowers are cylindrical, consisting of one Leaf, in Shape like those of Comfrey, and are pendulous; each Flower is succeeded by two oblong naked Seeds.*



The *Species* are;

1. CERINTHE; *quorumdam, major, versicolore flore.* *J. B.* The larger Honey-wort, with party-colour'd Flowers.

2. CERINTHE; *quorumdam, major, spinoso folio, flavo flore.* *J. B.* The larger Honey-wort, with prickly Leaves and yellow Flowers.

3. CERINTHE; *quorumdam, major, flore, ex rubro purpurascente.* *J. B.* The large Honey-wort, with reddish purple Flowers.

4. CERINTHE; *quorumdam, minor, flavo flore.* *J. B.* The lesser Honey-wort, with yellow Flowers.

5. CERINTHE; *folio non maculato, viridi.* *C. B.* Honey-wort, with deep-green Leaves, without Spots.

6. CERINTHE; *flore versicolore, ex albo & rubro.* *Boerb. Ind.* Honey-wort, with red and white party-colour'd Flowers.

7. CERINTHE; *flore versicolore ex albo & purpureo.* *Boerb. Ind.* Honey-wort, with purple and white party-colour'd Flowers.

The several Varieties of this Plant are propagated by Seeds, which should be sown soon after they are ripe, for if they are kept till Spring, the growing Quality of them is often lost; the Plants are hardy, and if the Seeds are sown in a warm Situation, they will endure the Winter's Cold very well without covering: These autumnal Plants also are much surer to produce ripe Seeds than those which were sown in the Spring, which are generally late in the Season before they flower, and consequently, if the Autumn should not prove very warm, their Seeds would not be perfected.

These Plants are pretty Varieties for large Borders in Gardens, where, if they are suffer'd to drop their

Seeds, the Plants will arise without any farther Care; so that when a Person is once furnish'd with the several Varieties, he need be at no more Trouble than to allow each of them a respective Place, where it may remain, and sow itself: And with this Culture there is a greater Certainty of preserving the Sorts than in any other Management; nor will they perhaps be intirely lost in this Way, if it should happen, that the Season should prevent its maturing the Seed, (as it sometimes proves); for when great Quantities of the Seeds have scatter'd upon the Ground, some of them will be buried so deep, in stirring the Earth, as not to grow the first Year; which upon being turn'd up to the Air, the succeeding Year, will come up as well as new Seeds.

CETERACH; *vide Asplenium.*

CHÆROPHYLLUM.

The *Characters* are;

*It is an Umbelliferous Plant, whose Leaves are divided into many Segments; the Petals of the Flower are bifid, and heart-shap'd, and each Flower is succeeded by two long Seeds, which are not furrow'd.*

The *Species* are;

1. CHÆROPHYLLUM; *fativum.* *C. B.* Garden or manur'd Chervil.

2. CHÆROPHYLLUM; *sylvestre, perenne, Cicuta folio.* *Tourn.* Wild Perennial Chervil, or Cow-weed.

The first of these *Species* is cultivated in the Kitchen-Garden for *Sallads*, &c. The Seeds of this Plant should be sown in Autumn, soon after it is ripe, or very early in the Spring, otherwise it very often miscarries; and as the Plant is annual, if it have a cool shady Spot of Ground allotted for it, and be suffer'd to sow itself, it will thrive better than when cultivated by Art.

The

The second Sort grows wild upon most dry Banks and Hedgesides near London.

CHAMÆCERASSUS. Upright Honey-suckle; *vulgô*.

The Characters are;

It is a Shrub growing upright to the Height of eight or nine Feet; whose Flowers consist of one Leaf, which open towards the Top like two Lips, somewhat after the manner of the Honey-suckle. Those Flowers are succeeded by Berries somewhat like small Cherries; two of which are, for the most part, produc'd upon one Pedicle.

The Species are;

1. CHAMÆCERASSUS; *dumetorum*, fructu gemino, rubro. C. B. The upright Red-berried, or Fly-honey-suckle; *vulgô*.

2. CHAMÆCERASSUS; *Alpina*, fructu gemino, rubro, duobus punctis notato. C. B. The greater upright Red-berried Honey-suckle.

3. CHAMÆCERASSUS; *montana*, fructu singulari, caeruleo. C. B. The upright Blue-berried Honey-suckle.

These Shrubs are very proper Ornaments for Wilderness Quarters, to intermix with others which are nearly of the same Growth, where, by the Diversity of their Leaves, and their regular Growth, they appear very well.

They are propagated by laying their tender Branches, which in one Year will have good Roots, and may be safely transplanted either into Nurseries, or where they are intended to remain. The best Season for this Work is in the Spring, before they begin to shoot: They may also be increas'd by planting Cuttings in the Spring, in an East Border, where they may be defended from the great Heat of the Mid-day Sun, and carefully

water'd in dry Weather: But these will scarcely have Roots fit to bear transplanting in less than two Years; and the Blue-berried kind is pretty difficult to take Root from Cuttings; therefore that should always be propagated by Layers, if possible; which in laying should be slit at the Joint, as is done in laying Carnations, which will greatly facilitate their striking out Roots.

There are some other Species of this Shrub in the curious Botanick Gardens abroad, particularly in that admirable Collection of Trees and Shrubs in the Garden of the learned Doctor Boerhaave, near Leyden in Holland, where, amongst a great Variety of other uncommon Trees (perhaps more than in any one Garden in Europe, and which have been all collected together at the sole Expence of the worthy Possessor) which that curious Gentleman was pleas'd to shew me, I observ'd two or three Sorts of this Tree which I had never before seen.

The first and second Sorts are of quicker Growth than the third, and will, in a few Years, rise to the Height of six or seven Feet; whereas the third seldom rises above four or five Feet high with us.

CHAMÆCISTUS; *vide Helianthemum*.

CHAMÆCLEMA; or rather *Hedera Terrestris*, or Ground-Ivy.

The Characters are;

The Shoots trail upon the Ground, and emit Roots from almost every Joint, which fasten themselves into the Earth: The Leaves are roundish, thick, rough, and are crenated on the Edges: The Helmet of the Flower is roundish, bifid and reflex'd: The Beard (or lower Lip) is trifid, or cut into three Segments; the middle Segment is broad, and bifid; and the Flowers

Flowers are produc'd at the Joints of the Shoots.

The Species are;

1. CHAMÆCLEMA, *vulgare*. Boerb. Ind. Common Ground-Ivy, or Gill-go-by-Ground.

2. CHAMÆCLEMA; *minus*. Boerb. Ind. Lesser Ground-Ivy.

3. CHAMÆCLEMA; *vulgare, foliis profundè incisís*. Common Ground-Ivy, with deep-cut Leaves.

4. CHAMÆCLEMA; *minus, foliis ex albo variegatis*. The lesser Ground-Ivy, with variegated Leaves.

The two first Sorts grow wild in most Parts of England, upon the Sides of Banks and Footways, and are promiscuously gather'd by the Herb-women, and brought to the Market for medicinal Uses. The third Sort is a Variety of the first, which for three or four Years held its Difference in the Physick-Garden. The fourth Sort is a Variety of the second, which constantly continues, if it be not planted in too rich a Soil: This is a pretty Variety amongst other variegated Plants, and increases fast enough by its trailing Branches.

CHAMÆCYPARISUS; *vide* Santolina.

CHAMÆDAPHNE; *vide* Ruscus.

CHAMÆDRYS; Germander.

The Characters are;

It hath small thick Leaves, which are laciniated somewhat like those of the Oak: The Flowers (which are produced at the Wings of the Leaves) are labiated. The Stamina or Threads supply the Place of the Crest, or Upper-Lip: The Beard or Lower-Lip of the Flower is divided into five Parts; the middle Segment (which is largest) is hollow like a Spoon, and sometimes divided into two Parts: The Cup of the Flower is fistulous.

The Species are;

1. CHAMÆDRYS; *major, repens*. C. B. The Greater Creeping Germander.

2. CHAMÆDRYS; *minor, repens*. C. B. The smaller Creeping Germander.

3. CHAMÆDRYS; *laciniatis foliis*. Lob. Germander with cut Leaves.

4. CHAMÆDRYS; *Hispanica, tenuifolia, multiflora*. H. R. Par. Narrow-leav'd Spanish Germander, with many Flowers.

5. CHAMÆDRYS; *Alpina, frutescens, folio splendente*. Tourn. Shrubby Germander of the Alps, with shining Leaves.

6. CHAMÆDRYS; *fruticosa, Cretica, purpureo flore*. Tourn. Shrubby Germander of Crete, with a purple Flower.

7. CHAMÆDRYS; *multifida, spinosa, odorata*. Vir. Lusit. Prickly Sweet-smelling Germander, with Leaves divided into many Parts.

There are several other Varieties of this Plant, which are preserv'd in the Curious Gardens of Plants Abroad; but these mention'd are the principal Sorts to be found in the English Gardens. These may be propagated by sowing their Seeds in the Spring in a Bed of fresh Earth in an open Situation; and when the Plants are come up, they may be transplanted either into small Pots, or in Borders where they are intended to remain.

The fourth, fifth, sixth, and seventh Sorts should have the Shelter of a Wall, Hedge, or Pale to protect them from the North and East Winds, which are sometimes destructive to them, if too much expos'd thereto. These Sorts may also be increas'd, by planting their Cuttings in a shady Border, in May or June; which, if sup-  
ply'd

ply'd with Water in dry Weather, will take Root very well in about three Months time, when they may be remov'd with Safety where they are design'd to remain.

The third Sort is a biennial Plant, rarely abiding after it hath perfect-ed its Seeds: This should be sown in a Border which is screen'd from the cold Winds; and when the Plants are come up, they may be transplanted to a greater Distance in the same well-shelter'd Border; and the Spring following, the Plants will flower, and soon after will perfect their Seeds: which, if permitted to scatter upon the Ground, will arise of themselves, without any more Trouble, and need only to be transplanted where the Plants are intended to remain.

The first and second Sorts are very hardy, and propagate themselves very fast by their Creeping Roots, which if suffer'd to spread, as they are naturally inclin'd, will in a short Time cover a large Spot of Ground: Therefore they should be planted at a good Distance, and remov'd every Spring or Autumn, to prevent their over-running the Ground.

The second Sort is prescrib'd in the last *College Dispensatory*: But the first is our common Sort in *England*, which is what the Markets are supply'd withal; the second being to be found only in curious Gardens of Plants.

CHAMÆLEA; *vide* Thymelea.

CHAMÆLÆA; Widow-Wail.

The *Characters* are;

*It hath a Flower consisting of one Leaf, which is deeply divided into three Parts: The Cup of the Flower is also of one Leaf, divided into three Segments: The Fruit consists of three hard Berries closely join'd together,*

*in each of which is contain'd one oblong Seed; To which may be added, It hath the Appearance of a Shrub, and the Leaves are small and oblong.*

There is but one *Species* of this Plant in the *English* Gardens, which is,

CHAMÆLÆA; *triccocos*. C. B.  
The Widow-Wail.

This is a Shrub of low Growth, seldom arising above two or three Feet in Height with us, and is somewhat tender; therefore should (if planted abroad) have a warm Position, and a dry Soil: It is usually preserv'd in Green-houses in the Winter; but I find it will endure the Cold of our common Winters in the open Ground, if defended from the cold Winds.

This Plant is propagated by sowing the Seeds, soon after they are ripe, in a Pot or Tub of Earth, which should be shelter'd from Frosts in Winter, and the Earth suffer'd to remain undisturb'd till the second Year, when the Seeds will arise; which to promote, if you place the Pot into a gentle Hot-bed, it will greatly forward the Growth of the Plants. When the Plants are come up about six or eight Inches high, they may be transplanted singly into small Pots, and screen'd from the Sun until they have taken fresh Root: After which Time they should be expos'd to the open Air; but for the two first Winters, while young, should be shelter'd under a common Hot-bed Frame: But afterwards they may be turn'd out of the Pots into the full Ground, under a Wall, &c. (as was before directed) where they will abide very well. This Plant hath no great Beauty; nor do I know any Use made of it in *England*; and is only

only preserv'd in curious Collections of Plants, for Variety-sake.

CHAMÆMELUM; Camomile.

The Characters are;

It hath a fibrose Root: The Cup of the Flower is squamose, which expands and appears like many Leaves: The Flowers are for the most part radiated: The Petals of the Flower are white, and the Disk yellow: The Leaves are cut into five Segments.

The Species are;

1. CHAMÆMELUM; *odoratissimum*, *repens flore simplici*. *J. B.* Sweet-scented creeping Camomile.

2. CHAMÆMELUM; *repens, odoratissimum, perenne, flore multiplici*. *J. B.* Sweet-scented creeping Camomile, with double Flowers.

3. CHAMÆMELUM; *vulgare, amarum*. *J. B.* Common Bitter Camomile.

4. CHAMÆMELUM; *fœtidum*. *C. B.* Stinking Camomile, or May-weed.

5. CHAMÆMELUM; *majus, folio tenuissimo, caule rubente*. *H. R. Par.* Larger Camomile, with narrow cut Leaves and reddish Stalks.

6. CHAMÆMELUM; *leucanthemum, Hispanicum, magno flore*. *C. B.* Spanish Camomile, with large Flowers.

7. CHAMÆMELUM; *Chium, vernum, folio crassiori, flore magno*. *T. Cor.* Spring Thick-leav'd Camomile of *Chio*, with large Flowers.

8. CHAMÆMELUM; *Oriente, incanum, folio millefolii*. *T. Cor.* Eastern Camomile, with hoary yarrow Leaves.

9. CHAMÆMELUM; *Lusitanicum, latifolium, sive Coronopi folio*. *Breyn.* Broad-leav'd Portugal Camomile.

10. CHAMÆMELUM; *Æthiopicum, lanuginosum, flore albo*. *Breyn.* Ethiopian woolly Camomile, with a white Flower.

11. CHAMÆMELUM; *Æthiopicum, lanuginosum, flore luteo*. *Boerb. Ind.* Ethiopian woolly Camomile, with a yellow Flower.

12. CHAMÆMELUM; *Oriente, foliis pinnatis*. *T. Cor.* Eastern Camomile, with pennated Leaves.

There are several other Varieties of this Plant which are kept in curious Botanick Gardens, but these here mention'd are the principal Sorts we have at present in the *English* Gardens.

The first Sort is the common Camomile of the Shops, and is the only Kind which is propagated for Use in the *English* Gardens: This was formerly in great Request for making of green Walks; but as it is very subject to rot in Winter, especially when grown pretty thick, whereby the Walks planted therewith will have many bare Patches, and are thereby render'd very unightly, it hath occasion'd the Disuse of it for those Purposes of late Years; but it is still cultivated in Physick Gardens for medicinal Use, though it grows wild in great Plenty on most of the large Commons or Heaths near *London*.

The second Sort is preserv'd in Gardens for the Variety of its very double Flowers, but is not so good for medicinal Uses as the common, tho' at present it is more generally us'd.

There is also another Variety of this Plant, which is sometimes found wild amongst the common, that hath naked Flowers, being intirely destitute of Petals, or Flower-leaves.

These three Sorts are easily propagated in a Garden, by parting their Roots, and planting them about eight or ten Inches distant every Way, for they are great Spreaders, especially when planted

in a good Soil. The best Season for this Work is in *March*: They all thrive best in a poor Soil.

The third, fourth, and fifth Sorts are common Plants, in most Parts of *England*, and are rarely preserv'd in Gardens, unless it be in publick Botanick Gardens, to increase the Number of Varieties.

The other Sorts, tho' Strangers in our Climate, yet will do very well if sown in the Spring of the Year in an open Bed of fresh Earth, (except the tenth and eleventh Sorts, which are somewhat tender, and should be first rais'd in a moderate Hot-bed, and may afterwards be transplanted abroad, where they will flower, and ripen their Seeds very well): They are most of them Annuals, therefore should either be sown every Spring, or their Seeds suffer'd to sow themselves, whereby the Labour may be sav'd of preserving their Seeds; and the Plants which arise from their Seeds in Autumn, if they stand the Winter, will flower early the succeeding Summer, and perfect their Seeds better than if sown in the Spring.

These Varieties are very proper for all curious Collections of Plants, but are seldom preserv'd in Gardens for Use or Pleasure.

CHAMÆMESPILUS; *vide* Mespilus.

CHAMÆMORUS; Cloud-Berries, or Knot-Berries.

The Characters are;

*It hath a pentapetalous Flower: The Fruit is compos'd of many Acini, in Form of the Mulberry.*

There is but one Species of this Plant known in *England*, which is,

CHAMÆMORUS. *Clus. Hist.* Cloud-Berries; *vulgô.*

This Plant is found upon the Tops of the highest Hills in the

North-part of *England*, but can't be cultivated in a Garden by any Art.

CHAMÆNERION.

The Characters are;

*The Calyx of the Flower consists of four Leaves, which are long, slender, and are expanded: The Flowers are roseaceous, and consist of four Leaves, which are succeeded by long square Cods, which, when ripe, open into four Cells; in each of which are contain'd many downy Seeds.*

The Species are;

CHAMÆNERION; *villosum, magno flore, purpureo. Tourn.* Great hairy coddled Lofe-strife, or Willow-Herb, called also Codlings and Cream.

2. CHAMÆNERION; *latifolium, vulgare. Tourn.* Broad-leav'd Willow-Herb.

3. CHAMÆNERION; *latifolium, vulgare, flore albo. Tourn.* Broad-leav'd Willow-Herb, with white Flowers.

The first Sort is found very common by the Sides of Ditches in most Parts of *England*; but notwithstanding its Commonness, may be admitted into a large Garden, especially if there happens to be a moist Place where few other Things will thrive, here this Plant will produce fair Flowers for two Months successively.

The other two Sorts afford fine Spikes of beautiful Flowers, and deserve a Place in some remote Corner of the Garden, for the Use of their Flowers to furnish Basons for Halls, Parlours, &c. but must not be planted amongst other Flowers, for their Roots spread very far under the Surface of the Ground, and would thereby soon over-run and destroy whatever Flowers grew near them; nor should they be permitted to ripen

ripen their Seeds, which will spread all over the Garden, and become very bad Weeds; the Stalks therefore should be cut down before the Seeds are spread abroad by the Wind.

These Sorts multiply fast enough by Off-sets, which may be planted either in Spring or Autumn, in any shady Part of the Garden, where they will thrive in almost any Soil, but best in that which is moist.

There are several other Varieties of this Plant, many of which are found wild in *England*, which are unworthy of a good Garden, therefore I shall omit mentioning them in this Place.

CHAMÆPITYS; Ground-Pine.

The Characters are;

The Leaves are narrow and trifid; the Flower is labiated; the Place of the Galea or Crest of the Flower is supplied with little Teeth; the Beard (or lower Lip) is divided into three Parts, the middle Segment being again split into two Parts; the Flowers rarely grow in Whorles, (as do most of this Tribe of Plants,) but one or two Flowers are produc'd at the Wings of the Leaves.

The Species are;

1. CHAMÆPITYS; *lutea, vulgaris, five folio trifido*. C. B. Common yellow Ground-Pine.

2. CHAMÆPITYS; *moschata, foliis serratis, an prima Dioscoridis*. C. B. Musk Ground-Pine, with serrated Leaves.

There are several other Varieties of these Plants mention'd in Foreign Catalogues, but these two Sorts are all that I have seen growing in *England*.

The first Sort is found growing wild upon chalky Lands in many Parts of *England*: This may be cultivated in a Garden, if the Seeds

are sown soon after they are ripe, for if it be kept till Spring, it seldom rises well; and if it doth come up, the Seeds are seldom perfected by Spring-Plants. This Sort is used in Medicine.

The second Sort is preserv'd in curious Gardens of Plants, but is seldom to be found in Pleasure-Gardens, it being a Plant of no great Beauty: This is also an Annual, and may be cultivated in the same manner with the former; they both thrive best in a dry undung'd Soil.

CHAMÆRIPHES; *vide Palma*.

CHAMÆRUBUS; *vide Rubus*.

CHAMÆSYCE; *vide Tythymalus*.

CHARDOON; *vide Cinara*.

CHELIDONIUM Minus; Pilewort, or lesser Celandine.

The Characters are;

It hath a grumose or granulose Root; the Leaves are roundish; the Flower-stalks trail upon the Ground; the Cup of the Flower consists of three Leaves; the Flowers are rosaceous, consisting of five or more Leaves; the Ovary becomes a globular Fruit, after the manner of the Ranunculus.

The Species are;

1. CHELIDONIUM; *minus*. Doa. The lesser Celandine or Pilewort.

2. CHELIDONIUM; *minus, flore pleno*. Camer. The lesser Celandine, with double Flowers.

The first Sort grows wild by the Sides of Ditches and in moist Meadows in almost every Part of *England*, so that 'tis rarely kept in a Garden.

The second Sort is a Variety of the first, which hath been found in the Meadows, and transplanted into several curious Gardens, where it continues to produce very double Flowers, and is, for Variety, worthy of a moist shady Border in

the best Gardens: They both propagate themselves by Roots very fast, so that there needs no more Care with them than the first transplanting some Roots of the Sort you would preserve, into some shady moist Spot of Ground, letting them remain undisturb'd, and in a short time they will furnish a sufficient Supply of Roots.

CHELIDONIUM Majus; the greater Celandine.

The Characters are;

*The Cup of the Flower consists of two Leaves, which soon fall away: The Flower hath four Leaves, which are expanded in Form of a Cross: The Ovary in the Base of the Flower, is surrounded by many Stamina (or Threads): The Flowers soon fall away, and are succeeded by many bivalve Pods, which contain many small round Seeds: And the whole Plant is full of a yellow hot Juice.*

The Species are;

1. CHELIDONIUM; *majus, vulgare.* C. B. Common Great Celandine.

2. CHELIDONIUM; *majus, foliis quernis, flore laciniato.* Mor. Hist. Greater Celandine, with Leaves like the Oak, and lacinated Flowers.

3. CHELIDONIUM; *majus, foliis & flore minutissimè laciniatis.* H. R. Par. Greater Celandine, with fine cut Leaves and Flowers.

4. CHELIDONIUM; *maximum, Canadense, acaulon.* Corn. Large Canada Celandine without Stalks.

The first Sort grows wild upon dry Banks and Walls in most Parts of England, and is brought to the Markets by the Herb-women, who gather it for Medicinal Use.

The second Sort hath been found wild in some particular Places in England, particularly at *Wimbleton* in *Surrey*: This Sort constantly re-

tains its Difference when cultivated in a Garden, and sown yearly; the Seeds of this never producing any Plants of the common Sort amongst them.

The third Sort is only to be found in curious Botanick Gardens, where it is preserv'd for its Variety.

The fourth Sort was brought from *America*; and altho' styled *Canada* in its Title, yet is found in divers Parts of the Continent, as in *Virginia, Carolina, New England,* &c. from whence I have received Plants of this Kind, which I find will endure our severest Winters in the open Ground, if planted near a Wall, Pale, &c. to defend it from the cold Winds. This flowers in *April*, and perfects its Seeds in *June*; from which new Plants may be obtain'd, if sown soon after it is ripe: But the easiest Method to propagate this Plant, is by parting the Roots in *March*, which increase very fast in a dry Soil.

The other Varieties may all be propagated by sowing their Seeds soon after they are ripe, in any Corner of the Garden; where, it suffer'd to cast their Seeds, they will always furnish a plentiful Stock of young Plants, without any farther Trouble.

CHELONE.

The Characters are;

*It hath a short, green, squamose Calyx: The Flower consists of one Leaf, which is divided into two Lips: The Galea (or Crest) is somewhat like the Head of a Tortoise: The Beard (or lower Lip) is extended beyond the Crest, and is bifid: The Flower is succeeded by a Fruit which is in Shape like that of the Fox-glove, and is divided into two Cells, in which are contain'd many flat Seeds*



Seeds that are furbelow'd on the Edges.

There is but one *Species* of this Plant at present known in the *English* Gardens, which is,

CHELONE; *Acadiensis*, flore albo. *Tourn.* White flowering *Chelone* of *Acadia*.

Though, by the Title of this Plant, it is suppos'd a Native of *Acadia* only, yet hath it been brought from divers Parts of *America*; and 'tis very probable may be found in most Parts of *North America*, as *Virginia*, *Maryland*, *New England*, &c. From the two last mentioned Places, several Plants have been sent to *England* by some curious Persons of those Countries.

This Plant is very hardy, enduring our severest Cold in the open Ground: It is propagated by parting the Roots in the Spring, which increase very fast under the Surface of the Earth; therefore it should not be planted amongst other curious Plants or Flowers, lest, by its spreading Roots, it should overbear and destroy them. It dies to the Surface every Winter, and arises again the succeeding Spring, producing its Flowers in *August*, and ripens its Seeds in *October*; which altho' it seems to be perfectly good almost every Year, yet I could never procure one single Plant from all the Seeds I have yet sown, either of my own sowing, or such as have been brought from Abroad.

CHENOPODIO MORUS; Mulberry Blight.

The Characters are;

The whole Plant hath the Appearance of a Blight; but the Fruit is succulent, and in Shape like a Mulberry or Strawberry.

The Species are;

1. CHENOPODIO MORUS; *major*. *Boerb. Ind.* Great Mulberry Blight, commonly call'd, Strawberry Spinage.

2. CHENOPODIO MORUS; *minor*. *Boer. Ind.* Lesser Mulberry Blight, commonly call'd, Berry-bearing Orach.

These two Plants are pretty Varieties in a Garden, being very proper to plant in Pots, to intermix with other Annual Plants to adorn Court-yards, during the Summer and Autumn Seasons; where (if the Plants are regularly train'd up to Sticks while young) their Fruit, with which every Part of the Plant will be fill'd, doth make a very good Appearance.

These Plants are propagated by sowing their Seeds in the Spring in a gentle Hot-bed; and when the Plants are strong enough to be transplanted, they may be planted in Pots of rich Earth, and expos'd to the open Air, giving them frequent Waterings, as the Season may require; and as they advance in Height, they should be kept ty'd up close to Sticks trimming off all the Side-branches; which, if permitted to remain on, would prevent the Plant from advancing in Height.

The Fruit of these Plants, if suffered to fall to the Ground, will come up again in the Autumn; which Plants, if potted, and shelter'd from severe Frosts, in a common Hot-bed Frame, will grow much larger than those sown in the Spring, and flower and produce their Fruit much earlier in the Season: So that, by having Plants of both Seasons, they may be continued in Beauty through the greatest Part of the Summer and Autumn.

CHENOPODIUM; Goose-foot,  
or Wild Orach.

The Characters are;

The Seeds are single and globose in some Species, but in others they are compress'd: The Cup of the Flower is quinquefid (or divided into five Parts). The Leaves grow alternately upon the Stalks between the Seeds.

The Species are;

1. CHENOPODIUM; *foetidum*. Tourn. Stinking Orach.

2. CHENOPODIUM; *Lini folio, villosa*. Tourn. Flax-leav'd Orach, commonly call'd, Summer-Cypress, or Belvedere.

3. CHENOPODIUM; *Ambrosioides, folio sinuato*. Tourn. Cut-leav'd Orach, commonly call'd, Oak of Jerusalem.

4. CHENOPODIUM; *Ambrosioides, Mexicanum*. Tourn. Mexican Orach, commonly call'd, Oak of Capadocia.

5. CHENOPODIUM; *Ambrosioides, Mexicanum, fruticosum*. Boerb. Ind. Shrubby Mexican Orach.

The first of these Sorts is very common upon Dunghills, and in Gardens, in most Parts of England: It is seldom cultivated except in some Physick Gardens; for the Markets in London are supplied with it by the Herb-women, who gather it wild.

The second Sort is sometimes cultivated in Gardens; 'tis a beautiful Plant, which naturally is dispos'd to grow very close and thick, and in as regular a Pyramid as if cut by Art. The Leaves are of a pleasant Green: And were it not for that, it hath so much of the Appearance of a Cypress Tree, that at some Distance it might be taken for the same, by good Judges. The Seeds should be sown in Autumn: And in the Spring, when

the Plants are come up, they may be planted into Pots of good Earth, and kept supplied with Water, in dry Weather: These Pots may be intermix'd with other Plants, to adorn Court yards, &c. where they will appear very handsome, until their Seeds begin to swell and grow heavy, which weigh down and displace the Branches: At which Time the Pots should be remov'd to some abject Part of the Garden, to maturate their Seeds; which, if permitted to fall upon the Ground, will come up the next Spring: So that you need be at no more Trouble in propagating these Plants, but only to transplant them where you intend they should grow.

The third Sort was formerly used in Medicine: But altho' it still continues in the Catalogue of Simples annex'd to the *London Dispensatory*, yet is very seldom us'd at present. This Plant may be propagated by sowing the Seeds in an open Border of good Earth in the Spring, where it will perfect its Seed in Autumn; which, if permitted to shed upon the Ground, will arise as the former.

The fourth and fifth Sorts were brought from *America*, where the Seeds are call'd *Worm-Seed*; I suppose, from some Quality contain'd in it, which destroys Worms in the Body.

The fourth Sort is propagated by sowing the Seeds in the Spring (as the before-mention'd Sorts); and will perfect its Seed in Autumn; after which, the Plant decays to the Ground: But if the Root be preserv'd in Shelter under a Hot-bed Frame, it will put forth again in the succeeding Spring.

The fifth Sort grows to be a small Shrub, arising sometimes to the

the Height of five or six Feet, and becomes Woody. This may be propagated by planting Cuttings in a shady Border during any of the Summer Months; which should be shaded until they have taken Root, and that will be in a Month's Time, or less: Then they should be planted into Pots, that they may be shelter'd in the Winter under a Frame, where they will abide the Cold very well, being somewhat hardy, tho' they will not stand in the open Air. There is no great Beauty in these two Plants; but they are preserv'd in Gardens, because of the strong Smell of their Leaves.

CHERRY-LAUREL; *vide* Lau-ro-Cerasus.

CHERRY TREE; *vide* Cerasus.

CHERVIL; *vide* Chærefolium.

CHESNUT; *vide* Castanea.

CHONDRILLA; Gum-Succory.

The Characters are;

It hath a cylindrical Cup to the Flower, which is cut almost to the Bottom, (in several Species:) The Seeds are oblong and narrow; in other respects it is like the Lettuce.

The Species are;

1. CHONDRILLA; *cerulea, altera, cichorei sylvestris folio*. C. B. Blue-flower'd Gum-Succory.

2. CHONDRILLA; *cerulea, latiniata, latifolia*. C. B. Blue-flower'd Gum-Succory, with broad cut Leaves.

3. CHONDRILLA; *juncea, viscosa, arvensis, qua prima Dioscoridis*. C. B. Clammy Gum-Succory, with Shoots like the Rush.

4. CHONDRILLA; *hieracii folio, annua*. Tourn. The Annual Gum-Succory, with Hawkweed Leaves.

There are several other Varieties of this Plant, which are preserv'd in curious Botanick Gardens, for

the sake of Variety: But as there is very little Beauty in them, so they are hardly worth their standing in a Pleasure-Garden.

But whoever hath a Mind to propagate their several Species, may sow their Seeds in an open Bed of common Earth in the Spring, where they will readily come up and thrive exceedingly, and their Seeds being permitted to scatter upon the Ground, will come up and soon overspread a Garden.

The three first Sorts are abiding Plants, and increase very much by their spreading Roots, which, if not confin'd, will in a short Time become very troublesome Weeds in a Garden; as also if their Seeds are suffer'd to ripen, they will be blown all over the Garden, and be full as bad as Sow-thistles.

CHRISTMAS-FLOWER; or Black Hellebore; *vide* Helleborus.

CHRISTOPHORIANA; Herb-Christopher.

The Characters are;

The Flower consists of five Leaves, which are plac'd orbicularly, and expand in Form of a Rose; in the Center of which arises the Ovary, which becomes a soft Fruit or Berry, of an oval Shape, and is fill'd with Seeds in a double Row, which for the most part adhere together.

The Species are;

1. CHRISTOPHORIANA; *vulgaris, nostras, racemosa & ramosa*. Mor. Hist. Common Herb-Christopher, or Bane-berries.

2. CHRISTOPHORIANA; *Americana, racemosa, baccis rubris*. Mor. Hist. American Herb-Christopher, with Red Berries.

3. CHRISTOPHORIANA; *Americana, racemosa, baccis rubris, longo pediculo insidentibus, Sarrac.* American Herb-Christopher, with Red Berries growing on long Footstalks.

The first of these Sorts is found in divers Places in *Yorkshire, Cumberland, Northumberland*, and other Northern Counties of *England*, but is rarely met with in the Southern Parts, unless where it is preserved in Gardens: This Plant may be propagated by sowing the Seeds, or parting the Roots: It must have a shady moist Situation, where it will thrive very well.

The second and third Sorts are only preserv'd in curious Gardens of Plants, and are rarely met with in the *English* Gardens; they are very hardy, and will endure our Cold very well if planted in the open Ground.

These are propagated in the same manner as the former.

**CHRYSANTHEMOIDES OSTEOSPERMON;** Hard-seeded *Chrysanthemum*.

The Characters are;

The Leaves grow alternately upon the Branches: The Cup of the Flower is, for the most part, single and scaly: The Flowers are radiated like a small Sun-Flower: The Ovary becomes a hard Seed.

The Species are;

1. **CHRYSANTHEMOIDES; Osteospermon;** *Africanum, odoratum; spinosum & viscosum.* *H. A.* African sweet-scented, hard-seeded *Chrysanthemum*, with prickly Branches and viscid Leaves.

2. **CHRYSANTHEMOIDES; Osteospermon;** *Africanum, arboreum; foliis populi alba.* *Boerb. Ind.* African hard-seeded Tree-*Chrysanthemum*, with Leaves like the White Poplar.

3. *An.* **CHRYSANTHEMOIDES; quod Chrysanthemum ex insulis Caribæis, leucis incanis & sericeis foliis; argenteis, crassis.** *Pluk. Boerb. Ind.* Hard-seeded *Chrysanthemum* from the *Caribee* Islands, with thick whitish Leaves.

4. *An.* **CHRYSANTHEMOIDES; quod Chrysanthemum, Bermudense, leucis foliis, virentibus, crassis.** *Pluk.* Hard-seeded *Chrysanthemum* from *Bermudas*, with thick green Leaves.

5. *An.* **CHRYSANTHEMOIDES; quod Chrysanthemum Americanum, foliis virentibus, crassis & dentatis.** American hard-seeded *Chrysanthemum*, with thick deep green Leaves indented on the Edges.

These Plants are all of them propagated by planting their Cuttings in a Bed of rich Earth in any of the Summer Months, observing to screen them from the Heat of the Sun until they have taken Root, which will be in about six Weeks or two Months after planting; at which Time they should be transplanted into Pots fill'd with light sandy Earth, and set in a shady Place until their Roots are fix'd to the new Earth; then they may be expos'd to the open Air till *October*, at which Time they should be hous'd, with *Oranges, Myrtles, &c.* giving them as much free Air in mild Weather as is possible, by opening the Windows of the Green-house, and observing to refresh them pretty often, for they all require in mild Weather much Water.

The three first mention'd Sorts are very hardy, and will endure to stand in a cold Green-house, with *Myrtles* and *Amomum Plinii's*; where if they are only protected from freezing, it will be sufficient: But the two last mentioned having very succulent Branches, must have a warmer Position; for upon the least Frost touching their Branches, they are very apt to rot and decay.

These Plants continue flowering the most Part of the Winter Season, which renders them valuable, because

because at that Time we have few other Plants which produce Flowers; and although these Flowers are not very beautiful, yet at that Season every Thing which appears like a Flower is acceptable, as putting us in Hopes of a succeeding Spring, when almost every Thing without Doors is depriv'd of its former Verdure and Beauty.

**CHRYSANTHEMUM;** Corn Marygold.

The Characters are;

*It hath, for the most part, an annual Root: The Cup of the Flower is hemispherical and scaly: The Flowers are radiated; the Rays being for the most part of a yellow Colour, and the Seeds are furrow'd.*

The Species are;

1. **CHRYSANTHEMUM;** *flore partim candido, partim luteo.* C. B. White Corn-Marygold, or *Chrysanthemum.*

2. **CHRYSANTHEMUM;** *folio maritima, flore albo, pleno.* H. C. The double White *Chrysanthemum,* or Corn-Marygold.

3. **CHRYSANTHEMUM;** *Creticum, luteum.* H. Eyst. The Yellow *Chrysanthemum,* or Corn-Marygold.

4. **CHRYSANTHEMUM;** *folio maritima, flore luteo, pleno.* Boerb. Ind. The double Yellow *Chrysanthemum,* or Corn-Marygold.

5. **CHRYSANTHEMUM;** *Creticum, petalis florum fistulosis.* Tourn. The Quill-leav'd *Chrysanthemum,* or Corn-Marygold.

There are several other Varieties of this Plant; but as they are of less Note than these mention'd, and only preserv'd in curious Botanick Gardens for their Variety, so I shall omit mentioning them in this Place.

These Plants are all propagated by sowing their Seeds in the Spring

upon a gentle Hot-bed, in order to have them early, otherwise they will come up as well if sown in the open Ground: When the Plants are come up, they should be transplanted into Nursery-beds, at about ten Inches asunder every way, where they may remain until they shew their Flowers; at which Time you may transplant all those which have double Flowers, either into Pots or Borders, to adorn the Pleasure-Garden or Court-Yard. The single ones may be pull'd up first, and cast away as good for nothing, which will make Room for the better taking up the double ones, with a large Ball of Earth to their Roots, otherwise they will not bear removing when so far advanc'd. If these Plants are set in the full Ground, they will grow very large, therefore they should be planted only in very large Borders, and not too near other Flowers, lest by their over-bearing them they should be destroy'd: But they are much handsomer when confin'd in Pots, provided they are constantly water'd; for by this Means their Roots are kept within Compass, and the Plants seldom grow so large, but produce a greater Quantity of Flowers.

In saving the Seeds of these Plants, you should always make choice of the very double Flowers, which will certainly produce a much greater Quantity of double Flowers the next Year, than would the Seeds of single or half double Flowers; tho' if the Seeds are taken from the very best Flowers, they will degenerate, and bring some single Flowers amongst them: Therefore, to avoid this Disappointment, the better Method is, when you have gotten some fine double Kinds of these Plants of both Colours,

hours, to take off some Cuttings of each Kind towards the latter End of August or the Beginning of September, and plant them pretty close, in Pots fill'd with common fresh Earth, setting them in a shady Place, and observing to water them frequently: These Cuttings will, in a Month's time, strike out Roots, and begin to grow; you must therefore remove the Pots into an open Situation, observing, as before, to refresh them with Water, (which must now be done gently, that the young Plants may not grow too vigorous before Winter): In this Place they may remain until the latter End of October, when you should place the Pots into a common Hot-bed Frame, that they may be screen'd from severe Frosts, which would destroy them; but observe to take the Glasses off every Day, when the Weather will permit, otherwise the Plants will draw up and be very tender, so that upon the least Impression of Cold they will suffer very much; as also by being shut up close, they would be subject to rot by the damp Air which surrounds them.

In the Spring these Plants may be transplanted out either into separate Pots or Borders, as before directed, where they will flower early, and hereby you will be sure to have the Sorts right, according to the Plants which the Cuttings were taken from.

**CHRYSOSPLENIUM;** Golden Saxifrage.

The Characters are;

*It hath a perennial fibrose Root: The Calyx or Flower-cup) is divided into four Parts: The Flower hath no visible Petals, but hath eight Stamina or Threads, which surround the Ovary: The Pointal becomes a*

*membraneous Vessel, which is forked and bivalve, inclosing many small Seeds.*

The Species are;

1. **CHRYSOSPLENIUM;** *foliis amplioribus, auriculatis.* Tourn. Golden Saxifrage, with large-ear'd Leaves.

2. **CHRYSOSPLENIUM;** *foliis pediculis oblongis insidentibus.* Raii Syn. Golden Saxifrage, with Leaves standing on long Footstalks.

These two Plants are found growing wild in many Parts of England, upon marshy Soils and Bogs, as also in moist shady Woods, and are seldom propagated in Gardens; where, if any Person have Curiosity to cultivate them, they must be planted in very moist shady Places, otherwise they will not thrive.

**CICER;** Chiches, or Chick-Pease.

The Characters are;

*It hath a Pea-shap'd (or papilionaceous) Flower, which is succeeded by short swelling Pods, somewhat like the inflated Bladder of a Fish: The Seeds are shap'd somewhat like a Ram's-Head.*

The Species are;

1. **CICER;** *sativum, flore candido.* C. B. P. Garden Chiches, with a white Flower.

2. **CICER;** *sativum, semine rufo.* C. B. Manur'd Chiches, with reddish Seeds.

3. **CICER;** *sativum, semine nigro.* C. B. Manured Chiches, with black Seeds.

4. **CICER;** *sativum, flore ex rubro purpurascente, semine rubro.* C. B. Manured Chiches, with purple-red Flowers and red Seeds.

There are some other Varieties of this Plant preserv'd in curious Botanick Gardens abroad: But these here enumerated are the common Sorts, which are cultivated in the Kitchen-

Kitchen-Gardens in *France, Italy, Spain, &c.* and, I believe, are all Seminal Varieties, which alter and change the Colour of their Flowers and Seeds, as do the common Garden-Beans.

This Plant is seldom cultivated in *England*, except in particular Gardens: Nor do I think it worth planting for Use, where Peas will do well, which are so much preferable for Goodness, and much greater Bearers, producing above double the Quantity upon the same Ground: But in warmer Countries, where our delicate Sorts of Peas seldom thrive well, these may supply their Place; and, perhaps, in those Countries they are much more fruitful than with us.

The Seeds of these *Chiches* should be sown in *March*, in an open Situation, and upon a warm dry Soil, in Rows about two Feet asunder, and as thick as Peas are usually sown in the Rows. When the Plants are come up, the Ground must be hoe'd, and the Plants earth'd, as is practis'd for common Peas, to which this Plant agrees very well in its Culture. In *June* and *July* it will flower, and its Seeds will be ripe in *August* and *September*.

The People in *France* and *Italy* preserve them for boiling in the Winter-season, as we do our White and Grey Peas, to which these are somewhat akin.

CICHORIUM; Succory.

The Characters are;

*It is one of the milky Plants with a plain radiated Flower: The Flowers are produced from the Sides of the Branches, at the setting off of the Branches upon short Foot-stalks: The Cup of the Flower is like a contracted Seed-vessel: The Seeds are angular, umbilicated, and in Shape somewhat like a Wedge.*

The Species are;

1. CICHORIUM; *latifolium, sive Endivia vulgaris. Tourn.* Common broad-leav'd Endive.

2. CICHORIUM; *angustifolium, sive Endivia vulgaris. Tourn.* Common narrow-leav'd Endive.

3. CICHORIUM; *crispum. Tourn.* Curled Endive.

4. CICHORIUM; *crispum, angustifolium. Boerb. Ind.* Narrow-leav'd curl'd Endive.

5. CICHORIUM; *sylvestre, sive officinarum. C. B.* Wild Succory.

The first and second Sorts of *Endive* are now almost wholly disused in the Kitchen-Gardens, as being vastly inferior to the curl'd Kinds, which are by much the larger and handsomer Heads.

The Seasons for sowing their Seeds are in *May, June, and July*, at four or five different times; for that which is first sown, is very subject to run to Seed, especially if the Autumn prove warm and dry: But however, it is necessary to have a little sown in the Decrease of the Moon in *May*, for the first Crop; and again in *June* the middle and latter End; and for the last Crop, about the middle of *July*. These Seeds should be sown in an open Situation, and a good rich Soil, but not too thick. When the Plants are come up, and grown to be about two Inches high, they must be transplanted into another open good Spot of Ground, at about a Foot asunder every way, observing to trim off the Tops of the largest Leaves with your Knife before you plant them; as also to water them constantly every other Evening, until they have taken fresh Root: After which Time they will need no other Care, but to keep them clean from Weeds, until they have so spread

spread as almost to meet and cover the Ground.

Then you should provide a Parcel of small Olier Twigs (or Bass-Mat) to tie up some of the largest to blanch; which should be done in a dry Afternoon, when there is neither Dew nor Rain to moisten the Leaves in the middle of the Plants, which would occasion their rotting soon after their being ty'd up. The Manner of doing it is as follows, *viz.* You must first gather up all the inner Leaves of the Plant, in a regular Order, into one Hand, and then take up those on the Outside that are sound, pulling off, and throwing away all the rotten and decay'd Leaves; observing to place the outside Leaves all round the middle ones, as near as possible to the natural Order of their Growth, so as not to cross each other: Then having got the whole Plant close up in your Hand, tie it up with the Twig, &c. at about two Inches below the Top, very close; and about a Week after go over the Plants again, and give them another Tie about the middle of the Plant, to prevent the Heart Leaves from bursting out on one Side; which they are subject to do, as the Plants grow, if not prevented this way.

In doing of this you need only tie up the largest Plants first, and so go over the Piece once a Week, as the Plants increase their Growth; by which means you will continue the Crop longer than if they were all ty'd up at one time: For when they are quite blanch'd, which will be in three Weeks or a Month after tying, they will not hold sound and good above ten Days or a Fortnight, especially if the Season proves wet: Therefore it is that I would advise to sow at four

different Seasons, that you may have a Supply as long as the Weather will permit. But in order to this, you must transplant all the Plants of the last Sowing under warm Walls, Pales, or Hedges, to screen the Plants from Frost: And if the Winter should prove very sharp, you should cover them with some Peas-haulm, or such other light Covering, which should be constantly taken off in mild Weather. These Borders should also be as dry as possible; for these Plants are very subject to rot, if planted in a moist Soil in Winter.

Altho' I before directed the tying up of the Plants to blanch them, yet this is only to be understood for the two first Sowings; for after *Michaelmas*, when the Nights begin to be frosty, those Plants which are so far above-ground will be liable to be much prejudiced thereby; therefore the best Method is, to take up your Plants of the latter Sowings in a very dry Day, and with a large flat-pointed Dibble plant them into the Sides of Trenches of Earth, which are laid sloping, sidewise, towards the Sun, with the Tops of the Plants only out of the Ground, so that the hasty Rains may run off, and the Plants be kept dry, and secured from Frosts.

The Plants thus planted, will be blanched fit for Use in about three Weeks Time; after which they will not keep good long: You should therefore keep planting some fresh ones into Trenches every Fortnight at least, that you may have a Supply: And those which were last transplanted out of the Seed-beds, should be preserv'd till *February* or *March*, before they are planted to blanch; so that from this you may be supply'd until *April*,  
or



or later, according to the Season: For at this last planting into the Trenches they will keep longer than in Winter; the Days growing longer, and the Sun advancing with more Strength, dries up the Moisture much sooner than in Winter, which prevents the rotting of these Plants.

When your *Endive* is blanch'd enough for Use, you must dig it up with a Spade, and after having clear'd it from all the outside green and decay'd Leaves, you should wash it well in two or three different Waters, to clear it the better from Slugs and other Vermin, which commonly shelter themselves amongst the Leaves thereof; and then you may serve it up to the Table with other Sallading.

But in order to have a Supply of good Seeds for the next Season, you must look over those Borders where the last Crop was transplanted, before you put them into the Trenches to blanch; and make choice of some of the largest, foundest, and most curled Plants, in Number according to the Quantity of Seeds required: For a small Family, a dozen good Plants will produce enough Seeds; and for a large, two Dozen, or thirty Plants.

These should be taken up and transplanted under a Hedge or Pale at about eighteen Inches distant, in one Row about six Inches from the Hedge, &c. This Work should be done in the Beginning of *March*, if the Season is mild, otherwise it may be deferr'd a Fortnight longer. When the Flower-stems begin to advance, they should be supported with a Packthread, which should be fasten'd to Nails driven into the Pale, or to the Stakes of the Hedge, and run along before the Stems, to draw them upright

close to the Hedge or Pale; otherwise they will be liable to break with the strong Winds. Observe also to keep them clear from Weeds, and about the Beginning of *July* your Seeds will begin to ripen; Therefore, as soon as you find the Seeds are quite ripe, you must cut off the Stalks, and expose them to the Sun upon a coarse Cloth to dry; and then beat out the Seeds, which must be dried, and put up in Bags or Papers, and preserv'd for Use in some dry Place. But I would here caution you, not to wait for all the Seeds upon the same Plant; for if so, all the first ripe and best of the Seeds will scatter and be lost before the other are near ripe; so great a Difference is there in the Seeds of the same Plant being ripe.

The *wild Succory*, (of which there are some Varieties in the Colour of the Flowers) is seldom propagated in Gardens: it growing wild in unfrequented Lanes and Dungs-hills in divers Parts of *England*, where the Herb-women gather it, and supply the Markets for Medicinal Use.

CICUTA; Hemlock.

The Characters are;

*The Leaves are cut into many minute Segments: The Petals of the Flower are bifid, Heart-shap'd, and unequal: The Flower is succeeded by two short channelled Seeds.*

The Species are;

1. CICUTA; *major*. C. B. Common or Greater Hemlock.
2. CICUTA; *minor*, *petroselinis similis*. C. B. Lesser Hemlock, or Fool's Parsley.

There are some other Varieties of this Plant preserv'd in curious Botanick Gardens; but the two Sorts here mention'd, are what we find wild in *England*.

The first Sort grows to a considerable Height, and is chiefly found upon the Sides of dry Banks in many Parts of *England*: The Leaves of this Plant are of a shining green Colour, and the Stalks are full of purple Spots; by which it is easily distinguish'd from any Plants that resemble it. This Sort is sometimes used in Medicine; tho' by many People it is thought to have a noxious Quality: But the *Hemlock* of the Antients, which was such deadly Poison, is generally suppos'd to be very different from this.

The second Sort is of a smaller Growth, and so like *Parsley*, that some unskilful Persons have gather'd it, and us'd it as such; by which several Persons have suffer'd in their Health, and some have been destroy'd thereby.

These Plants are never propagated in Gardens for Use, but are gather'd by the Herb-women in the Fields.

CICUTARIA; Bastard Hemlock.

The Characters are;

The Root is large and thick: The Stalks are thick, hollow, and jointed: The Leaves are like the greater Hemlock, but are thicker: The Seeds are long, thick, gibbous, and shaped somewhat like a Half-moon, and very much channelled.

The Species are;

1. CICUTARIA; *latifolia, foetida*. C. B. Broad-leav'd stinking Bastard Hemlock.

2. CICUTARIA; *foetidissima, foliis atrovirentibus*. *Jessieu*. The most stinking Bastard Hemlock, with dark green Leaves.

These two Plants are seldom cultivated, unless in Botanick Gardens: They are of a very strong rank Smell, and are thought to

contain a poisonous Quality. Whoever hath a mind to cultivate them, should sow their Seeds in a moist Soil in the Spring of the Year; and when the Plants are come up, they should be planted out at about two Feet Distance, for they spread their Roots and Branches very far on either Side: The second Year after sowing they will produce ripe Seeds, but the Roots will abide many Years after.

CINARA; *vide* Artichoke.

CINARA; *spinosa, cujus pediculi esitantur*. C. B. P. 383. Chardon or Cardoon; *vulgò*.

This Plant is propagated by Seeds, which should be sown on an open Bed of light, rich Earth, the Beginning of *March*; and when the Plants appear above ground, they should be carefully weeded, and in dry Weather often refresh'd with Water. By the Beginning of *May* the Plants will be fit to transplant, when you should prepare some Beds of light, rich Earth, into which they should be transplanted, placing them in Rows one Foot asunder, and eight Inches distance Plant from Plant in the Rows; observing to water them constantly until they have taken Root, after which Time they will require little more than to be kept clear from Weeds. About the Middle or latter End of *June*, the Plants will have acquir'd Strength enough to plant out for good; at which Time you must carefully dig a Spot of light, rich Ground, into which you should transplant the Plants, placing them in Rows at four Feet distance every way, observing to water them until they have taken Root, after which you must keep them very clear from Weeds. In *August* these Plants will be fit to tie up, which must

be performed in the following manner, *viz.* You should first prepare a Parcel of Haybands, then in a dry Day you must gather up the Leaves regularly as they were produced, and having taken them up as close as possible, without bruising them, you must fasten the Hayband round them near the Top, so as to keep them up, then with a Spade you must bank up the Earth round the Plants, leaving about ten Inches or a Foot of their Tops uncovered, being careful that the Earth does not get into the Center of the Plants, which would indanger their rotting. As the Plants advance in Height, so they must be earth'd up from Time to Time, in the same manner as is practis'd for *Celery*; by which means most of the Earth between the Plants will be rais'd about them; for if they thrive kindly, they will grow to the Height of three Foot and a half or four Foot; and will, when taken up for Use, be near three Foot in Length when trim'd from their outer Leaves. And it is in this their Excellency consists, for it is only the tender blanch'd Part, which is valuable.

Those Plants which were first transplanted out, will be fit for Use the Beginning of *September*; but those which were later transplanted, will not be fit for Use till *October*, and some of them will continue until the End of *November*, or the Middle of *December*, provided the Season be favourable; but in very wet Seasons, or in severe Frosts, they often rot and decay.

In order to save Seeds of this Plant, you should preserve some of the strongest and most vigorous Plants, observing in severe Frosts to cover them lightly with Straw or Pease-haulm, which should be

constantly taken off in mild Weather, otherwise it will endanger the rotting of the Plants. In the Spring the Earth should be taken from the Plants gradually, that the Stems may advance; and in *June* their Heads will be form'd much like a small *Artichoke*, but full of sharp Thorns, in these Heads the Seeds are contain'd, and will be ripe in *August*.

CINERARIA; *vide* Jacobæa.

CIRCEA; Enchanter's Night-shade.

The Characters are;

*It hath a perennial creeping Root: The Leaves, which are whole, and shaped somewhat like those of Night-shade, are placed alternately upon the Branches: The Flower consists of two Leaves, which rest upon a two-leaved Empalement: The Flowers are succeeded by a Pear-shaped Fruit, which is burry on the Outside, and divided into two Cells; in each of which are contained, for the most part, two oblong Seeds.*

The Species are;

1. CIRCEA; *Lutetiana*. *Lob.* Icon. Enchanter's Night-shade.

2. CIRCEA; *minima*. *Col.* The smallest Enchanter's Night-shade.

The first of these Plants is very common in moist shady Places; and under Hedges, in most Parts of *England*; but the second hath not been found wild with us, tho' it grows in Plenty in the Woods near the *Hague*, where I gather'd it, and brought it into *England*, where it continues to retain its Difference from the common Sort, notwithstanding some People have supposed it to be the same. They are both great Runners in a Garden, for which Reason they should be planted (by those who would keep them for Variety) in some adjacent shady Part of the Garden,

den, where few other Things will grow.

**CIRSIUM** ; Soft or Gentle Thistle.

The *Characters* are ;

*It hath Leaves and Flowers very like those of the Thistle, but the Spines upon the Leaves are softer, and the Cup of the Flower is destitute of Spines.*

The *Species* are ;

1. **CIRSIUM** ; *Anglicum*. Ger. The English Soft or Gentle Thistle.

2. **CIRSIUM** ; *Britannicum, Clusii, repens*. *J. B.* The great English Soft Gentle, or Melancholy Thistle.

3. **CIRSIUM** ; *maximum, Asphodeli radice*. *C. B.* The greatest Asphodel-rooted Gentle Thistle.

4. **CIRSIUM** ; *maculis argenteis notatum*. *Tourn.* The White-spotted Gentle Thistle.

There are several other *Species* of this Plant, which are preserved in curious Gardens of Plants ; but as there is little Use or Beauty in them, so I shall pass them over in this Place.

The two first *Species* here named, grow wild in *England* ; the other two are Strangers, and only preserved for Variety in some few Gardens : They may all be propagated by sowing their Seeds in the Spring, in almost any Soil, but they require an open Situation ; and when the Plants come up, they should be separated to about two Feet Distance, for they spread very far, especially the two first, which are terrible Creepers under-ground, and therefore should not be placed near other Plants, lest they overbear and destroy them. The three first Sorts are also increased by parting their Roots ; but the last is an Annual, and must either be

sown every Spring, or the Seeds suffered to shed upon the Ground, which will come up without any Trouble.

**CISTUS** ; Rock Rose.

The *Characters* are ;

*It hath the Appearance of a Tree: The Leaves are produced by Pairs opposite upon the Branches: The Cup of the Flower consists of three or five Leaves: The Flower consists of many Leaves, which are expanded in Form of a Rose, having abundance of Stamina or Threads in the Middle: From the Center of the Cup arises the Ovary, which is rough and hemispherical, and becomes a roundish or pointed Vessel, consisting of many Cells, in which are contained many small Seeds.*

The *Species* are ;

1. **CISTUS** ; *mas, folio oblongo incano*. *C. B.* The Male Cistus or Rock Rose, with oblong hoary Leaves.

2. **CISTUS** ; *mas, major, folio rotundiori*. *J. B.* The greatest Male Cistus, or Rock Rose, with roundish Leaves.

3. **CISTUS** ; *mas, folio brevior*. *C. B.* Short-leav'd Male Cistus, or Rock Rose.

4. **CISTUS** ; *mas, foliis undulatis, & crispis*. *Tourn.* Male Cistus, or Rock Rose, with wav'd and curl'd Leaves.

5. **CISTUS** ; *mas, Lusitanicus, folio amplissimo, incano*. *Tourn.* Portugal male Cistus, or Rock Rose, with large hoary Leaves.

6. **CISTUS** ; *Ladanifera, Monspelienisium*. *C. B.* The Gum-bearing Cistus, or Rock Rose of *Montpelier*.

7. **CISTUS** ; *Ladanifera, Hispanica, salicis folio, flore candido*. *Tourn.* Spanish Gum-bearing Cistus, or Rock Rose, with Willow Leaves and white Flowers.

8. **CISTUS** ;

8. CISTUS; *Ladanifera, Hispanica, salicis folio, flore albo, maculâ punicante insignito.* Tourn. Spanish Gum-bearing *Cistus*, or Rock Rose, with Willow Leaves, and white Flowers spotted with Purple.

9. CISTUS; *Ledon, latifolium, Creticum.* *f. B.* Sweet broad-leav'd *Cistus*, or Rock Rose from Crete.

10. CISTUS; *Ledon, foliis populi nigra, major.* *C. B.* Large Sweet *Cistus*, or Rock Rose, with black Poplar Leaves.

11. CISTUS; *Ledon, foliis populi nigra minor.* *C. B.* Small Sweet *Cistus*, or Rock Rose, with black Poplar Leaves.

12. CISTUS; *Ladanifera, Cretica, flore, purpur o.* Tour. Cor. Sweet Gum-bearing *Cistus*, or Rock Rose from Crete, with purple Flowers.

The various Kinds of these Plants are very great Ornaments to a Garden; their Flowers are produc'd in great Plenty all over the Shrubs, which tho' but of a short Duration, yet are succeeded by fresh ones almost every Day for above two Months successively. These Flowers are many of them about the Bigness of a middling Rose, but single, and of different Colours; the Plants continue green throughout the Year.

The six first mentioned and the ninth Sort will endure the Cold of our common Winters in the open Ground, provided they are planted in a dry Soil, and in a Situation where they may be shelter'd from the cold Winds, and will rise to the Height of five or six Feet, and may be easily train'd to form handsome Heads. These being intermix'd with flowering Shrubs of the same Growth, in small Wilderness Quarters, &c. add greatly to the Variety, and their Flowers con-

tinuing to shew themselves thro' the greatest Part of the Summer, renders them worthy of a Place in the best Gardens. The other Sorts are commonly preserv'd in Pots, and hous'd in Winter, tho', I believe, most of them might be brought to stand abroad in Places that are well defended from the Cold.

These Sorts may all be propagated, by sowing their Seeds upon a gentle Hot-bed, or on a warm Border in the common Ground in March; and when the Plants are come up about three Inches high, they should be transplanted either into small Pots, or a Border of good light Earth, at about ten Inches Distance every Way: If they are planted into Pots, they should be remov'd under a common Hot-bed Frame in Winter, to defend them from the Frost, which may be hurtful to them while young, if they are not protected from it; but they should have as much open free Air as possible in mild Weather, and will require to be often refresh'd with Water.

In the Spring following, these Plants may be turned out of the Pots, with all the Earth preserv'd to their Roots, and planted in the Places where they are to remain, (for they are bad Plants to remove when grown old) observing to give them now and then a little Water, until they have taken fresh Roots; after which Time they will require no farther Care than to train them upright in the manner you would have them grow: But those Plants which were at first planted into a Border in the open Ground, should be arch'd over, and covered with Mats in frosty Weather, during the first Winter, but may be transplant- ed abroad the succeeding Spring:

In removing of these Plants, you should be careful to preserve as much Earth about their Roots as you can; and if the Season should prove hot and dry, you must water and shade them, until they have taken fresh Root; after which they will require no other Culture than was before directed.

These Plants may also be propagated, by planting Cuttings of them upon a gentle warm Bed in *May* or *June*, keeping them shaded with Mats, and frequently refreshed with Water until they have taken Root, which will be in about two Months Time; when you may transplant them into Pots filled with good fresh light Earth, which should be set in a shady Place until they have taken Root, and then may be exposed to the open Sun until *October*, when you should remove them into Shelter the first Winter; but the succeeding Spring you may plant them abroad, as was before directed for the Seedling Plants.

The eighth Sort is by much the most beautiful of all these *Cistus's*: The Flowers, which are as big as a handsome Rose, are of a fine White, with a deep purple Spot on the Bottom of each Leaf. This Plant also abounds with a sweet glutinous Liquor, which exudes thro' the Pores of the Leaves in so plentiful a manner, in hot Weather, that the Surfaces of the Leaves are covered therewith. From this Plant (*Clusius* thinks) might be gathered great Quantities of the *Ladanum*, which is used in Medicine, in the Woods in *Spain*, where he saw vast Quantities of this Shrub growing.

But it is from the twelfth Sort, which Monsieur *Tournefort* says, the *Greeks*, in the *Archipelago*, ga-

ther this sweet Gum: In the doing of which (*Bellonius* says) they make use of an Instrument like a Rake, without Teeth, which they call *Ergastiri*: To this are tied many Thongs of raw and untanned Leather, which they rub gently upon the Bushes, that produce the *Ladanum*, that so that liquid Moisture may stick upon the Thongs. After which they scrape it off with Knives: This is done in the hottest Time of the Day; for which Reason, the Labour of gathering this *Ladanum* is excessive, and almost intolerable, since they are obliged to remain on the Mountains for whole Days together, in the very Heat of Summer, or the Dog-Days: Nor is there any Person almost that will undertake this Labour, except the *Greek Monks*.

Monsieur *Tournefort* also relates the same in his *Travels*, where he says, That the Shrubs which produce the *Ladanum* grow upon dry sandy Hillocks, and that he observed several Country-Fellows in their Shirts and Drawers, that were brushing the Shrubs with their Whips, the Straps whereof, by being drawn over the Leaves of the Plant, licked up a sort of odoriferous Balsam sticking upon the Leaves, which he supposes to be Part of the nutritious Juice of the Plant which exudes thro' the Pores of the Leaves, where it remains like a fattish Dew, in shining Drops as clear as Turpentine.

When the Whips are sufficiently laden with this Grease, they take a Knife and scrape it clean off the Straps, and make it up into a Mass of Cakes of different Sizes: This is what comes to us under the Name of *Ladanum* or *Labdanum*. A Man that is diligent will gather  
three

three Pounds two Ounces *per* Day, or more, which they sell for a Crown on the Spot. This Work is rather unpleasant than laborious, because it must be done in the hottest Time of the Day, and in the greatest Calm. And yet the purest *Ladanum* is not free from Filth; because the Winds of the preceding Days have blown Dust upon these Shrubs, which, by the gley Substance upon the Surfaces of the Leaves, is thereby detained and mixed therewith. But to add Weight to this Drug, they knead it up with a very fine blackish Sand, which is found in those Parts; as if Nature herself was minded to teach them how to adulterate this Commodity. It is no easy Thing to discover this Cheat, when the Sand has been well blended with the *Ladanum*: In order to which you must chew it for some Time, to find whether it crackles between the Teeth; and if it doth, you must first dissolve it, and then strain it, in order to purify away what has been added to it.

CITREUM; the Citron-Tree.

The *Characters* are;

*It hath broad stiff Leaves like those of the Laurel, but without any Appendix (as hath the Orange): The Flowers consist of many Leaves, which expand in Form of a Rose: The Cup of the Flower is slender and fleshy, and is divided into five Segments at the Top: The Pistil of the Flower becomes an oblong, thick, fleshy Fruit, which is divided into many Cells, is very full of Juice, and contains several hard Seeds.*

The *Species* are;

1. CITREUM; *vulgare*. *Tourn.* The Common or Ordinary Citron.

2. CITREUM; *dulci medullâ*. *Tourn.* The Sweet Citron.

3. CITREUM; *magno fructu*. *Tourn.* The large Citron.

4. CITRIOIDES; *vulgò Citratum, Florentinum, fructu magno, plerumque turbinato, lavi ac suavi medullâ, cortice odoratissimo, foliis longioribus*. *Citro. Hort. Piss.* Florentine Citron, with large sweet Fruit, of a sweet-smelling Rind, and long Leaves.

5. CITRIOIDES; *seu Citratum, Florentinum, fructu mucronato & recurvo, cortice verrucoso, odoratissimo*. *Hort. Piss.* Florentine Citron, with a pointed Fruit, which is recurved, and a warted sweet-smelling Rind.

6. CITRIOIDES; *seu Citratum, Florentinum, fructu minori, fere rotundo, acriori medullâ, cortice odoratissimo*. *Hort. Piss.* Florentine Citron, with a small roundish Fruit, with a sharp Taste, and sweet-smelling Rind.

7. CITRIOIDES; *seu Citratum, Florentinum, odoratissimum, fructu prolifero*. *Hort. Piss.* Sweet-smelling Florentine Citron, with Fruit coming out of each other.

There are several other Varieties of this Fruit, with which the English Gardens have been supply'd from *Genoa*, where is the great Nursery for the several Parts of Europe for these Sorts of Trees: And the Gardeners who cultivate them there, are as fond of introducing a new Variety to their Collection, as the Nursery-men in England are of a new Pear, Apple, Peach, &c. So that the Varieties being annually increased, as are any of our Fruits from Seeds, there is like to be no End of the Variety of these, nor of the Orange and Lemon-Trees.

The most valuable Kind of these Fruits is the fifth, which is in so great Esteem, that the single Fruits

are sold at *Florence* for Two Shillings each, and are sent as Presents to the Courts of Princes. This Fruit is not to be had in Perfection in any other Parts of *Italy*, but in the Plain between *Pisa* and *Leghorn*: And although Trees of this Kind have been transplanted from that Spot to divers other Parts of *Italy*, yet they are found to lose much of that excellent Taste with which they abound in those Plains.

The several Sorts of *Citrons* are cultivated much in the same manner as the *Orange*; to which I shall refer the Reader, to avoid Repetition: but shall only remark, that these are somewhat tenderer than the *Orange*, and should therefore have a warmer Situation in Winter; otherwise, they are very subject to cast their Fruit. They should also continue a little longer in the House in the Spring, and be carry'd in again sooner in the Autumn; as also to have a warmer and better-defended Situation in the Summer, though not too much expos'd to the Sun in the Heat of the Day.

And as their Leaves are larger and their Shoots stronger than those of the *Orange*, so do they require a greater Plenty of Water in the Summer; and in Winter they should have but little Water at each time, which much be the oftener repeated. The Soil ought to be much the same as for the *Orange-Tree*, but not quite so strong.

The Common *Citron* is by much the best Stock to bud any of the *Orange* or *Lemon* Kinds upon; it being the straightest and freest growing Tree. The Rind is smoother, and the Wood less knotty, than either the *Orange* or *Lemon*, and will take either Sort full as well as its own Kind; which is what

none of the other Sorts will do. And these Stocks, if rightly managed, will be very strong the second Year after sowing, and capable to receive any Buds, and will have Strength to force them out vigorously; whereas it often happens, when these Buds are inoculated into weak Stocks, they frequently die, or remain till the second Year before they put out: And those that do shoot the next Spring after budding, are oftentimes so weak as hardly to be fit to remain, as being incapable to make a straight handsome Stem, which is the great Beauty of these Trees.

CITRUL; *vide* Pepo.

CLARY; *vide* *Horminum*, or *Scalaria*.

CLEMATITIS.

The Characters are;

*It hath a perennial fibrose Root: The Leaves grow opposite upon the Stalks: The Flowers, which consist for the most part of four Leaves, are plac'd in Form of a Cross, are naked, having no Calyx: In the Center of the Flower are many hairy Stamina (or Threads) which surround the Pointal: The Pointal afterwards becomes a Fruit, in which the Seeds are gathered, as it were, into a little Head, ending in a kind of Plume.*

The Species are;

1. CLEMATITIS; *sive* *Flammula surrecta*; *alba*. C. B. Upright white Climber.

2. CLEMATITIS; *carulea, erecta*. C. B. Upright blue Climber.

3. CLEMATITIS; *Hispanica, surrecta, altera, & humilior, flore albicante*. H. R. Par. Low Spanish Climber, with a whitish Flower.

4. CLEMATITIS; *sylvestris, latifolia*. C. B. Great wild Climber, or Travellers Joy.



5. CLEMATITIS ; *sylvestris, latifolia, foliis non incis.* Tourn. Great wild Climber, or Travellers Joy, with undivided Leaves.

6. CLEMATITIS ; *peregrina, foliis pyri incis.* C. B. Spanish Climber, or Travellers Joy, with cut Leaves.

7. CLEMATITIS ; *Canadensis, trifolia, dentata, flore albo.* H. R. Par. Three-leav'd Canada Climber, with a white Flower.

8. CLEMATITIS ; *carulea, vel purpurea, repens.* C. B. Purple creeping Climber, or Single Virgins Bower ; *vulgô.*

9. CLEMATITIS ; *carulea, flore pleno.* C. B. Blue Climber, with a double Flower, or Double Virgins Bower ; *vulgô.*

10. CLEMATITIS ; *repens, rubra.* Boerh. Ind. Red creeping Climber.

11. CLEMATITIS ; *Orientalis, folio Apii, flore ex viridi flavescente, posterioris reflexo.* T. Cor. Eastern Climber, with a Smallage Leaf, and a reflex'd Flower of a greenish Yellow.

12. CLEMATITIS ; *purpurea, repens, petalis florum Coriaceis.* Banist. Cat. Purple creeping Climber, with stiff Petals.

The 1st, 2d, and 3d Sorts die to the Surface of the Ground every Winter ; but their Roots are of long Continuance, arising again in the Spring. The 2d and 3d usually grow with us about three or four Feet high, and produce great Quantities of Flowers ; but the 1st Sort is of humbler Growth, seldom rising above eighteen Inches high, but in other respects is very like the 3d.

These Plants are propagated either by Seeds or parting of their Roots : But the former being a tedious Method, (the Plants seldom

rising until the second Year after sowing, and are often two Years more before they flower) the latter is generally practis'd. The best Season for parting these Roots, is either in *October* or *February* ; either just before their Branches decay, or before they rise again in the Spring.

They will grow almost in any Soil or Situation : But if the Soil is very dry, they should always be new planted in the Autumn, otherwise their Flowers will not be so strong : But if the Soil be wet, it is better to defer it until the Spring. The Roots may be cut through their Crowns with a sharp Knife, observing to preserve to every Offset some good Buds or Eyes ; and then it matters not how small you divide them, for their Roots increase very fast. But if you part them very small, you should let them remain two Years before they are again remov'd ; that the second Year their Flowers may be strong, and the Roots multiply'd in Eyes, which in one Year's Time cannot be obtain'd.

These Plants are extreme hardy, enduring the Cold of our severest Winters in the open Air ; and are very proper Ornaments for large Gardens, either to be planted in large Borders, or intermix'd with other hardy Flower-Roots in Quarters of flowering Shrubs ; where, by being plac'd promiscuously in little open Places, they fill up those little Vacancies, and are agreeable enough. They begin to flower about the Beginning of *June*, and often continue to produce fresh Flowers until *October* ; which renders them valuable, especially since they require very little Care in their Culture ; for their Roots may be suffer'd to remain several Years

undisturb'd, if we do not want to part them, which will not in the least prejudice them.

The 4th and 5th Sorts are found wild in most Parts of *England*, especially the 4th, which grows upon the Sides of Banks, under Hedges, and extends its trailing Branches over the Trees and Shrubs that are near it: This Plant in the Autumn is generally cover'd with Seeds, which are collected into little Heads, each of which having, as it were, a rough Plume fasten'd to it, hath occasion'd the Country People to give it the Name of *Old Man's Beard*. The 5th Sort being no more than an accidental Variety of the 4th, is often found intermix'd therewith.

The 6th Sort is an *Ever-green*; and altho' it be a Native of a warm Country, yet I find is hardy enough to endure the Cold of our Climate in the open Air: This Plant commonly produces vast Quantities of large greenish yellow Flowers in the Depth of Winter, (provided it is not retarded by very severe Weather); for which Reason, together with the Beauty of its verdant green Leaves at that Season, it deserves a Place in every good Garden.

The 7th Sort is very like the 4th, which is our common Sort, from which it only differs in having but three Lobes to each Leaf, whereas ours have five or more.

The 8th and 10th Sorts, which are the most common in *Spain* and *Italy*, are at present very rare in *England*, being only to be found in curious Botanick Gardens: But the 9th Sort, which is a Variety of the 8th, is propagated in many Nurseries near *London*, (but particularly in that of Mr. *Christopher Gray*, near *Fulham*; where, amongst

many other curious Exotick Trees and Shrubs, I saw this in very great Plenty): This Sort produces very double Flowers in great Quantities all over the Plant, which continue at least two Months, and render it valuable.

The 11th and 12th Sorts are also uncommon in *England* at present: The 11th was brought from the *Levant* by *Monf. Tournesort*, chief Botanist to the late King of *France*. The 12th was brought from *America*, where it is found in divers Parts in great Plenty, but particularly in *Virginia* and *North Carolina*; from whence I have receiv'd Seeds of this Plant, which have grown with me in the Phytick Garden.

The nine last mentioned Sorts are all of them trailing Plants, some of them growing to a very great Length, particularly the 4th, 5th, and 7th Sorts, which should be planted in large Wilderness Quarters, near the Stems of great Trees, to which they should be trained up, where, by their wild Appearance, they will be agreeable enough.

The other Sorts are proper enough to intermix with flowering Shrubs of a middling Growth, where, being fasten'd to strong Stakes, they will rise about six or seven Feet high, and produce great Quantities of Flowers. These may also be planted to cover Seats in Wilderness Quarters, that are design'd for Shade; to which purpose these Plants are very well adapted, requiring little more Care than to train their Branches regularly at first after which they will maintain themselves very well.

These Plants are propagated by laying down their tender Branches (as is practis'd for Vines) in the Spring, which in one Year's Time will take Root, and may then be

remov'd to the Places where they are design'd to remain; which should be done in the Spring, observing to lay a little Mulch upon the Surface of the Ground round their Roots, and to water them gently in dry Weather: In two Years after planting they will make very strong Shoots, which should be train'd up to Stakes, that they may not trail upon the Ground, which would spoil their flowering, and render them very unightly. From this Time they will require no farther Care, than to cut out every other Year the decay'd Branches; and in the Spring, to shorten such Branches as may have grown too long and rambling for the Places where they are planted.

These also may be rais'd from Seeds, which should be sown either so soon as ripe, or very early in the Spring, in a Bed of fresh light Earth, or in Pots or Boxes fill'd with some Earth, because the Seeds of most of these Plants remain in the Ground until the second Spring before they appear, especially if they were not sown in Autumn. When the Plants come up, they must be carefully clean'd from Weeds; and in very dry Weather frequently water'd; and in the succeeding Spring they should be transplanted out into Nursery-beds, where they may remain two Years longer; by which Time they will have arriv'd at Strength to flower, and may then be remov'd to the several Places where they are to remain.

CLINOPODIUM; Field-Basil.

The Characters are;

It is a Plant with a labiated Flower, consisting of one Leaf, whose upper Lip is upright, roundish, and generally split in two, but the Beard, or under Lip, is divided into three

Segments: These Flowers are dispos'd in Whorles round the Stalks, and are succeeded by oblong Seeds.

The Species are;

1. CLINOPODIUM; *origano simile, elatius, majore flore.* C. B. The Taller Field-Basil, with a large Flower resembling Bastard-Marjoram.

2. CLINOPODIUM; *origano simile, flore albo.* C. B. Field-Basil, with a white Flower, resembling Bastard-Marjoram.

3. CLINOPODIUM; *arvense, scymifacie.* C. B. Wild Field-Basil, resembling Basil.

4. CLINOPODIUM; *Alpinum, roseum, satureia foliis.* Boc. Muss. Alpine Field-Basil, with Leaves like Savory.

5. CLINOPODIUM; *Virginianum, angustifolium, floribus amplis, luteis, purpurco-maculatis, cujus caulis, sub quovis verticillo, decem vel duodecim foliolis rubentibus est circumcinctus.* Banister. Pluk. Phyt. Tab. 24. Narrow-leav'd Virginian Field-Basil, with large yellow Flowers spotted with Purple.

The first Sort grows wild upon dry chalky Hills in divers Parts of England. The second is a Variety of the first, from which it only differs in the Colour of the Flower. These Sorts do abide many Years, and may be propagated in a Garden, by either sowing their Seeds or parting of their Roots; the latter of which is the most expeditious Method, as also the surest Way to preserve the white-flowering Kind in its Colour, because it may return back to the purple Kind from which it at first degenerated. These Plants should have a light Soil, and an open Situation, in which they will thrive exceedingly.

The third Sort is also found upon very stony or gravelly Hills in several Parts of *England*; but this being an annual Plant is only propagated by Seeds, which should be sown soon after they are ripe, otherwise they will hardly grow: This must have a very poor stony Soil, in which it chiefly delights.

The fourth Sort is also an annual Plant, which was brought from the *Alps*: This should be sown in the Spring of the Year, in almost any Soil, it being a very good-natur'd Plant, and will thrive in any Part of the Garden.

The fifth Sort grows wild in *Virginia* and *Carolina*; from whence the Seeds have been sent over, which grow very well with us, and are hardy enough to resist our Cold in the open Air, if planted in a dry Soil.

CLYMENUM; Chickling-Vetch.

The Characters are;

*The Stalks, Flowers, and Fruits of this Plant are like those of Lathyrus, but the Leaves consist of many Conjugations plac'd on a Mid-rib, which ends in a Tendril.*

The Species are;

1. CLYMENUM; *Hispanicum, flore vario, siliquâ planâ.* Tourn. Spanish Chickling-Vetch, with a variable Flower and a plain Pod.

2. CLYMENUM; *Hispanicum, flore vario siliquâ articulatâ.* Tourn. Spanish Chickling-Vetch, with a variable Flower and a jointed Pod.

3. CLYMENUM; *Bithynicum, siliquâ singulari, flore minore.* Jussieu. Bithynian Chickling-Vetch, with a single Pod and smaller Flower.

4. CLYMENUM; *Parijense, flore caruleo.* Tourn. Common Chickling-Vetch, with a blue Flower.

5. CLYMENUM; *Gracum, flore maximo, singulari.* T. Cor. Greek

Chickling-Vetch, with a large single Flower.

The first, second, third, and fifth Sorts are Annuals, and must be sown every Year, (as is practis'd for the *Sweet-Pea*): If they are sown in *August*. in a warm Border they will stand through the Winter, and flower early in the succeeding Spring, by which Method you may be sure to obtain good Seeds; whereas those which are sown in the Spring, are many times destroy'd by the Rains in Autumn before their Seeds are perfected. These Plants delight in a dry Soil and an open Situation, for if they are over-hung by Trees, &c. they seldom come to any Perfection.

Those of these Plants which were sown in Autumn, will begin to flower in *May*, and continue to produce new Flowers till *July*; about which time the Seeds of their early Flowers will be perfected. Their Flowers are in Shape like those of the *Pea*, but being of variable Colours, do make a pretty Variety in a Garden; and if the Plants are supported with Sticks, they may be kept in a small Compass. The fourth Sort hath a perennial Root, which multiplies very fast, soon over-running a Spot of Ground, and should therefore be kept in a Pot where the Roots will be confin'd, and thereby the Plant caus'd to produce a greater Quantity of Flowers than it would naturally do if its Roots had full Liberty,

CNICUS.

The Characters are;

*It hath flosculous Flowers; consisting of many Florets, which are multifid and stand upon the Embryo: These Florets are enclos'd in a scaly Cup surrounded with Leaves.*

The Species are;

1. CNICUS ; *sylvestris, hirsutior,*  
*five Carduus Benedictus.* C. B. The  
Blessed Thistle ; *vulgô.*

2. CNICUS ; *atractylis lutea dictus.*  
H. L. The yellow Distaff-Thistle ;  
*vulgô.*

3. CNICUS ; *perennis, caruleus,*  
*Tingitanus.* H. L. Tangier peren-  
nial blue Distaff-Thistle.

4. CNICUS ; *Creticus, atractylidis*  
*folio & facie, flore leucophao.* T.  
Cor. Candy Distaff-Thistle, with  
whitish Flowers.

5. CNICUS ; *Hispanicus, arboref-*  
*cens, foetidissimus.* Tourn. Stinking  
Spanish Tree Distaff-Thistle.

The Blessed Thistle is cultivated  
in Gardens for the Herb, which is  
dry'd and preserv'd for medicinal  
Uses ; but of late Years it hath  
been in less Use than formerly,  
for which Reason there is but little  
of it now propagated.

This being an annual Plant, is  
only rais'd by Seeds, which should  
be sown in Autumn, or very early  
in the Spring : When the Plants  
are come up, they should be either  
transplanted, or hoe'd out to about  
nine or ten Inches Distance from  
each other, that the Plants may  
have room to spread, observing  
also to keep them clear from  
Weeds ; and when the Plants are  
in full Flower, they should be cut  
off and laid to dry in a shady Place ;  
and after they are thoroughly dry,  
they may be tied up into Bundles,  
and hung up in a dry Room upon  
Strings in Rows, so that the Air  
may pass freely between them,  
which will prevent their growing  
mouldy or rotting, which they  
are very subject to, if laid too close,  
or kept in a moist Place.

The other Varieties are only pre-  
serv'd in curious Botanick Gardens ;  
they may be propagated by sowing

their Seeds in the Spring in a  
warm dry Soil, and the Plants re-  
duc'd to about two Feet Distance :  
They will flower in July ; and if  
the Autumn is favourable, their  
Seeds will be perfected in Septem-  
ber. The third Sort is a perennial  
Plant, the Roots of which may be  
parted in the Spring, by which  
Method it may be increas'd.

COAST-MARY ; *vide* Balfamita.

COCCIGRIA ; *vide* Cotinus Co-  
riaria.

COCHLEARIA ; Spoon-wort, or  
Scurvy-grafs.

The Characters are ;

The Flower consists of four Leaves,  
which are dispos'd in Form of a Cross :  
From the Flower-Cup arises the  
Pointal, which becomes an almost  
globular Fruit, divided into two  
Cells by an intermediate Partition,  
to which the Valves adhere on both  
Sides, and are furnished with many  
round Seeds.

The Species are ;

1. COCHLEARIA ; *folio subrotundo.*  
C. B. Scurvy-grafs, with a round-  
ish Leaf, or Common Scurvy-  
grafs.

2. COCHLEARIA ; *folio sinuato.*  
C. B. Scurvy-grafs, with a sinua-  
ted Leaf, or Sea Scurvy-grafs ;  
*vulgô.*

3. COCHLEARIA ; *minima, ex*  
*montibus Wallia.* Sher. Boerb. Ind.  
The least Scurvy-grafs, from the  
Welsh Mountains.

4. COCHLEARIA ; *folio cubitali.*  
Tourn. Horse-Radish ; *vulgô.*

The first of these Species is pro-  
pagated in Gardens for Medicinal  
Uses : This is done by sowing the  
Seeds in July, soon after they are  
ripe, in a moist shady Spot of  
Ground ; and when the Plants are  
come up, they should be thin'd so  
as to be left at about four Inches  
Distance each Way. The Plants  
that

that are taken out may be transplanted into other shady Borders, if you have Occasion for them; otherwise they may be hoe'd out, (as is practis'd for *Onions*, *Carrots*, &c.) and at the same time all the Weeds may be hoe'd down, so as to clear the Plants intirely from Weeds, that they may have Room to grow strong. In the Spring these Plants will be fit for Use; and those that are suffer'd to remain will run up to Seed in *May*, and perfect their Seeds in *July*. If this Plant is sown in the Spring, the Seeds seldom grow well; therefore the best Time is soon after they are ripe: The Plants rarely live after producing Seeds; so that it should be sown every Year, to have it for Use.

The *Sea Scurvy-grass* is also us'd in Medicine; but this grows in the Salt Marshes in *Kent* and *Essex*, where the Salt Water overflows it almost every Tide; and can rarely be made to grow in a Garden, or at least to last longer there than one Year: But it being so easily gather'd in the Places before-mention'd, the Markets are supply'd from thence by the Herb-women, who make it their Business to gather this Herb.

The little *Welsh Scurvy-grass* is a biennial Plant, and may be preserv'd in a Garden, if planted in a strong Soil, and a shady Situation, where, if the Seeds are permitted to shed upon the Ground, the Plants will come up without any farther Care. This is preserv'd in curious Gardens of Plants, but is not of any Use.

The *Horse-Radish* is propagated by Cuttings or Buds from the Sides of the old Roots. The best Season for this Work is in *October* or *February*; the former for dry Lands,

and the latter for moist. The Manner of doing it is as follows; Provide your self with a good Quantity of Off-sets, which should have a Bud upon their Crowns; but it matters not how short they are; therefore the upper Part of the Roots which are taken up for Use, should be cut off about two Inches long with the Bud to it, which is esteem'd the best for Planting. Then make a Trench ten Inches deep, in which you should place the Off-sets at about four or five Inches Distance each way with the Bud upwards, covering them up with the Mould that was taken out of the Trench: Then proceed to a second Trench in like manner, and continue the same until the whole Spot of Ground is planted. After this, level the Surface of the Ground even, observing to keep it clear from Weeds, until the Plants are so far advanced as to be strong enough to over-bear and keep down the Weeds. With this Management, the Roots of the *Horse-Radish* will be long and strait, and free from small lateral Roots; and the second Year after planting will be fit for Use. 'Tis true, they may be taken up the first Year; but then the Roots will be but slender; therefore it is the better way to let them remain until the second Year. The Ground in which this is planted ought to be very rich, otherwise the Roots will make but a small Progress.

COCOS; *vide* *Palma Nucifera*.

CODLIN-Tree; *vide* *Malus*, or Apple-Tree.

COFFEE-Tree; *vide* *Jasminum*.

COLCHICUM.

The *Characters* are;

*It hath a Flower consisting of one Leaf, which is shap'd like a Lily, rising from the Root in Forms of a small*

*small Tube, and is widened gradually into six Segments: The Pointal rises from the Bottom of the Flower, ending in small Threads, and turns to an oblong triangular Fruit, divided into three Cells, which are full of roundish Seeds: It hath also a solid bulbous Root, which is cover'd with a membranous Skin.*

The Species are;

1. COLCHICUM; *commune*. C. B. Common Meadow-Saffron.

2. COLCHICUM; *Anglicum, album*. Park. English white Meadow-Saffron.

3. COLCHICUM; *pleno flore*. C. B. The double-flower'd Meadow-Saffron.

4. COLCHICUM; *floribus Fritillaria instar tessellatis, foliis planis*. M. H. Meadow-Saffron with Flowers chequer'd like those of the *Fritillaria*, and smooth Leaves.

5. COLCHICUM; *Chionense, floribus Fritillaria instar tessellatis, foliis undulatis*. M. H. Meadow-Saffron with chequer'd Flowers and wav'd Leaves, commonly call'd, Colchicum Chio.

6. COLCHICUM; *latifolium; variegatum*. C. B. Broad-leaf'd strip'd Meadow-Saffron.

7. COLCHICUM; *vernum, Hispanicum*. C. B. Spring-flowering Meadow-Saffron.

8. COLCHICUM; *Candidum multiflorum*. C. B. Many-flower'd white Meadow-Saffron.

The first of these Species is found in moist Meadows in several Parts of England. The second is a Variety of the first, from which it only differs in the Colour of the Flower. The third Sort also originally came from the first; but is preserv'd in Gardens, for the Doubleness of its Flowers. The fourth Sort is a Stranger to our Island, and is suppos'd to have been

brought from the *Levant*, with the fifth Sort, which differs from the fourth in having the green Leaves very much waved on the Edges. The Root of one of these two Species is thought to be the *Hermodactyl* of the Shops. The seventh Sort hath fine, broad, variegated, green Leaves, for which it is greatly esteem'd. The eighth Sort is valuable for producing its Flowers early in the Spring; as is the ninth, for producing a great Number of Flowers.

These are all very pretty Varieties for a Flower-Garden, most of them producing their Flowers in Autumn, when few other Plants are in Beauty. The Flowers come up and are blown some Time before the green Leaves appear, and are therefore by some call'd, *Naked Ladies*. The green Leaves come up in Winter, and in Spring are extended to a great Length: In May the green Leaves begin to decay; soon after which Time, is the proper Season to transplant their Roots; for if they are suffer'd to remain in the Ground 'till *August*, they will send forth fresh Fibres: After which Time it will be too late to remove them. The Roots may be kept above-ground until the Middle of *August*; at which Time if they are not planted, they will produce their Flowers as they lie out of the Ground: But this will greatly weaken their Roots. The Manner of Planting their Roots being the same as *Tulips*, &c. I shall forbear mentioning it here, referring the Reader to that Article: And also for Sowing the Seeds, by which Means new Varieties may be obtain'd. I shall refer to the Article of *Xiphion*, where there will be proper Directions for this Work.

COLEWORTS; *vide* Brassica.

COLOCYNTHIS; Coloquintida  
or Bitter Gourd.

The Characters are;

It is in all respects like the Gourd, excepting the Leaves of this Plant being deeply jagged, and the Fruit being excessively bitter and not eatable.

The Species are;

1. COLOCYNTHIS; *fructu rotundo, major.* C. B. The greater Coloquintida, with a round Fruit.

2. COLOCYNTHIS; *fructu Aurantio simili.* Tourn. Coloquintida, with a Fruit resembling an Orange.

There are several other Varieties of this Plant, which are very common in divers Parts of the East and West Indies; but as few of them come to any Maturity with us, so I shall pass them over, with only observing, that whoever hath a mind to cultivate any of these Plants, must sow them upon a Hot-bed, and manage them as is directed for raising Early Cucumbers; to which I shall refer the Reader.

COLUMBINE; *vide* Aquilegia.

COLUTEA; Bladder-Sena.

The Characters are;

It hath a papilionaceous (or Butterfly) Flower, which is succeeded by Pods, somewhat resembling the inflated Bladders of Fishes, in which are contain'd several Kidney-shap'd Seeds.

The Species are;

1. COLUTEA; *vesicaria.* C. B. Bladder-Sena.

2. COLUTEA; *vesicaria, vesiculis rubentibus.* J. B. Bladder-Sena, with reddish colour'd Pods.

3. COLUTEA; *Orientalis, flore sanguinei coloris, luteâ maculâ notato.* T. Cor. Eastern Bladder-Sena, with Blood-colour'd Flowers spotted with Yellow.

4. COLUTEA; *Æthiopica, flore phœnicio, folio barba Jovis.* Breyn. Cent. Ethiopian Bladder-Sena, with Scarlet Flowers, and Leaves like the Silver Bush.

5. COLUTEA; *Africana, annua; foliis parvis, mucronatis, vesiculis compressis.* Hort. Amst. African annual Bladder-Sena, with small pointed Leaves and compress'd Pods.

The two first Sorts are promiscuously sold by the Gardeners near London, amongst other flowering Shrubs, and are seldom distinguish'd but by Botanists.

These are propagated by sowing their Seeds any Time in the Spring, in a Bed of common Earth; and when the Plants are come up, they must be kept clear from Weeds; and the Michaelmas following, they should be transplanted either into Nursery-Rows, or in the Places where they are design'd to remain; for if they are let grow in the Seed-bed too long, they are very subject to have downright Tap-roots, which renders them unfit for Transplantation: Nor should these Trees be suffer'd to remain too long in the Nursery before they are transplanted, for the same Reason.

These Shrubs grow to the Height of eight or ten Feet, and are very proper to intermix with Trees of a middling Growth in Wilderness-quarters, or in Clumps of Flowering-trees, where the Oddness of their Flowers and Pods will make a pretty Variety.

The third Sort was brought from the Levant by Mons. Tournesort to the King's Garden at Paris; from whence several curious Gardens have been supply'd with this beautiful Plant: This is also rais'd by sowing the Seeds in the Spring, either in a moderate Hot-bed, or



in a warm Border; and when the Plants are come up about four Inches high, they should be transplanted into Pots fill'd with light fresh Earth, and during the first Winter should be shelter'd under a common Hot-bed Frame; and the Spring following they may be taken out of the Pots and planted into a warm Border, where they will thrive and flower the second Year from Seed.

The fourth Sort is tenderer than any of the former, and should be sown on a Hot-bed, and afterwards transplanted into Pots, and manag'd as was directed for the third Sort, and in the Spring put into warm Borders under a good Wall, where it will flower and seed the second Year, and if the Winters prove mild, will remain for two or three Years, producing great Quantities of beautiful Scarlet Flowers; but if the Winter proves hard, or the Soil is moist wherein it is planted, it seldom stands through a Winter abroad. This Plant is by most People preserv'd in Green-houses with *Oranges*, *Myrtles*, &c. But in this Management they are subject to grow very weak, for Want of more free open Air than can be given with Safety to the other Trees, therefore the best Method is, to preserve them, during the Winter, in an open Frame, where the Glasses may be kept off in mild Weather, and put on in frosty cold Nights, by which hardy Management the Plants will produce a greater Quantity of Flowers than when they are drawn in a House.

The fifth Sort is an annual Plant, seldom rising above two Feet high with us, and is but of very little Beauty: This is preserv'd in curious Gardens of Plants. The Ma-

nagement of it being much the same as the *Balsamina*, I shall refer the Reader thereto for Instructions.

COLUTEA SCORPIOIDES; *vide* Emerus.

COLLIFLOWER; *vide* Brasica.

COMA AUREA; Goldylocks.

The Characters are;

*It hath a fibrose perennial Root; the Leaves, which are in great Numbers, are produc'd alternately on every Side the Branches: The Cup of the Flower is not specious: The Flowers are yellow, and produc'd either singly, or in an Umbel upon the Tops of the Branches; to which may be added, it hath the Appearance of a Shrub.*

The Species are;

1. COMA AUREA; *Germanica*. *Park. Theat.* German Goldylocks.

2. COMA AUREA; *Africana*, *fruticans*, *foliis linariae angustis*, *major*. *Hort. Amst.* African shrubby Goldylocks, with narrow Toad-Flax Leaves.

3. COMA AUREA; *Africana*, *fruticans*, *foliis Crithmi marini*. *Hort. Amst.* African shrubby Goldylocks with Samphire Leaves.

4. COMA AUREA; *Africana*, *fruticans*, *foliis glaucis & in extremitate trifidis*. *Hort. Amst.* African shrubby Goldylocks, with Sea-green Leaves, which are divided into three Parts at their Extremities.

5. COMA AUREA; *Africana*, *fruticans*, *foliis glaucis, longis, tenuibus, multifidis, apice pinnularum trifido*. *Boerb. Ind. alt.* Shrubby African Goldylocks, with long narrow Sea-green Leaves, which are divided into many Parts, each of which are trifid at their Points.

The first of these Plants is very hardy, and will endure to be planted in the open Ground: This is

propagated by parting the Roots in the Spring, or by planting Cuttings in any of the Summer Months, which if water'd and shaded will take Root in six Weeks-time, when they may be transplanted into the Borders where they are to remain for good: This Plant produces very pretty Umbels of Gold-colour'd Flowers upon the Tops of the Branches, which continue in Beauty for a long Time, which renders it worthy of a Place in every good Garden. The other four Sorts are tenderer, and must be preserv'd either in a Green-house or under a Hot-bed Frame in Winter.

These are propagated by planting their Cuttings in any of the Summer-Months in a Bed of light Earth; which if kept shaded and water'd, will take Root in two Months time; when they must be planted into Pots fill'd with fresh light Earth, and may be expos'd to the open Air until October; at which Time they should be remov'd to Shelter, lest the Morning Frosts should injure them: But they require to have a great Share of free open Air in mild Weather, for if they are shut up too close they are very subject to Mouldiness, and their younger Branches are very apt to decay: They must also have frequent, but moderate Waterings in Winter; and in the Spring, should be remov'd into the open Air as soon as possible, observing to do it by degrees, that they may not receive a great Check thereby. With this Management these Plants will some of them grow to be eight or nine Feet high, and become very woody, and will produce great Quantities of Flowers through most Part of the Year, which renders them worthy of a Place in a good Green-house.

## COMMELINA.

The Characters are;

The Leaves are produc'd alternately, and surround the Stalks at their Base, being in Shape somewhat like the Ephemeron: The Stalks trail upon the Ground, and grow very branchy: At setting on of the Branches, between the Wing of the Leaf and the Stalk, is produc'd a Flower which consists of two Leaves, which are plac'd in the Form of two Wings, much after the manner of the Butterfly Flowers: From the upper Part of the Flower are produc'd three short Stamina (or Threads); upon which are fasten'd yellow Apices, which resemble the Head of a Mushroom: In the under Part of the Flower are produc'd three other Male Stamina, which are thicker and longer than the other: The Ovary is produc'd in the Center of the Flower, which is extended into a long intort'd Tube, and becomes an oblong Fruit, divided into two Cells, in each of which is contain'd one oblong Seed.

The Species are;

1. COMMELINA; *graminea, latifolia, flore caruleo.* Plum. Nov. Gen. Broad Grass-leav'd Herb Commeline, with blue Flowers.

2. COMMELINA; *erecta, ampliore, sub caruleo flore.* Hort. Elth. p. 91. Upright broad-leav'd Commeline, with blueish Flowers.

These Plants seldom continue with us longer than one Year; but the Seeds, which are annually ripen'd, falling to the Ground, will grow again, so that we need be at no farther Trouble than to allot them a Place in a warm Border, and not suffering them to be destroy'd, where they will maintain themselves without any Culture. The Stalks of the first Sort strikeing Roots at the Joints as it lies upon

upon the Ground, the Plant may be increas'd fast enough in Summer by cutting these off, and transplanting them out into a fresh Spot of Ground, where they will greatly increase. The Seeds of these Plants should be sown as soon as they are ripe, for if they are kept till Spring, they seldom come up well, nor will the Plants rais'd in the Spring be forward enough to produce ripe Seeds.

COMPARTIMENTS, are Beds, Plats, Borders, and Walks, laid out according to the Form of the Ground and Ingenuity of the Artist, and depend more on a good Fancy than any Rules: Or, are Diversities, or Knots of Flower-Gardens, or Parterres, of which there is great Variety, and may be diversify'd infinitely, according to the Fancy of the Designer.

Plain COMPARTIMENTS, are Pieces of Ground divided into equal Squares and Flower-Beds, mark'd out by the Line, of equal Length and Breadth.

Some Persons allow to these Squares Borders of two Feet in Breadth, and not more if the Plat of Ground be small; but if they be reasonably large, three Feet; and they edge the Borders with *Box*, or upright hardy *Thyme*, or some other Aromatick *Herbs* or *Flowers*, for the Sake of the greater Neatness.

And in order to preserve the Paths and Allies of *Compartiments* firm, even and durable, they lay them with a Coat of Sand or Gravel two or three Inches thick, keeping them hoed and weeded as often as there shall be Occasion.

#### COMPOSTS.

*Composts* are various, and ought to be different according to the

different Nature or Quality of the Soils which they are design'd to meliorate, and according as the Land is either *light, sandy, or loose, or heavy, clayey and cloddy*. A light, loose Land requires a *Compost* of a heavy Nature, as the Scouring of deep Ditches, Ponds, &c.

So, on the other hand, a Land that is *heavy, clayey, or cloddy*, requires a *Compost* of a more uprightly and fiery Nature, that will inlinate itself into the lumpish Clods; which, if they were not thus manag'd, would very much obstruct the Work of Vegetation.

As a good *Compost* for *cold clayey* Land, some advite to take one Load of Sea sand, (if it can be conveniently had), or if not, other Sand, or sandy Ground, or sharp Sand, and two Loads of good rotted Dung, and three Loads of natural Mould, two Loads of the top Spit Turf from off the Meadows, or any other Kind of rich Turf Land, and half a Load of Coal-Ashes, or the Sweepings of Streets, a small Sprinkling of Pigeons, Sheep, or other hot Dungs. These are to be laid down in different Heaps in a Circle, having a large Space in the Centre, so that they may all be thrown up together in one Heap, which is to be done by as many Persons at each Heap, as there are different Loads in each, *viz.* one to that of one Load, two to that of two Loads, and three to that of three Loads, and so on; these must cart and spread at the same time every Parcel with Care, and not all together in Lumps.

The fittest Time for the doing of this, is when the Weather is dry, and also in the Month of *May*. This Mixture should be turn'd once  
a Month

a Month till *Michaelmas*, and then it may be screen'd, and separated into several Sorts, to be ready, as occasion shall require, in the Nursery.

For the first Sort, it will be best to set the Skreen more Upright; and what comes thro' may be mix'd with one fourth Part of Melon Earth very fine.

The second Sort may be screen'd with the Skreen standing more sloping; by which means, what comes through will be coarser than the first.

The Remainder, which will be the roughest and most cloddy Earth, is recommended as an extraordinary Manure to be dug in order to improve any barren or poor Land; and if it be kept in a Heap for one Year, and screen'd the next Year, 'twill then be as good as either of the former. The finest of these will be best kept in a House, or under some Covering, that it may be dry; tho' it would be better to be turn'd out sometimes to get Rain.

A *Compost* for a *loose sandy* Ground may be made, by taking two Loads of Dung, three Loads of natural Soil, three Loads of strong Loamy Earth, three Loads of Pond Earth, or of the Scouring of Ditches, which are to be order'd, mix'd and screen'd as before; and so to make three different Sorts of Screenings.

Others recommend other *Composts* differing according to the different Soils.

1. For a *stiff Soil* inclining to *Clay*, to take five Loads of the same Soil well broken and open'd, and to add to that five Loads more of Heath Turfs burnt; that these having been well mix'd and laid together during the Winter in a

Heap or Ridge, and being well sifted or screen'd, are recommended as a good *Compost* that will extremely forward Trees.

2. To mix four Loads of sharp Sand, and two Loads of Ashes of burnt Furzes, Gorz, Fern, Weeds, or Wood, with four Loads of *stiff Soil* well broken and open'd: That these having been well mix'd together and laid up in a Ridge in *September*, should lie till the *February* following, and then may be screen'd and sifted for Use. Sir *William Bruce* is said to have us'd this *Compost* in his Garden with good Success.

3. For a *stiff Soil*, take four Loads of the stiff Soil, two Loads of rotten Wood, such as may be found under a Wood Pile, or the same Quantity of rotted Leaves, if the former can't be had, two Loads of burnt Grass-Turf, and four Loads of Sand: This is recommended to be done in *October* likewise; because being then made, and sifted in the following Spring, 'twill be better than if they were made in the Spring; for that the Heat of the Summer would exhale the volatile Spirits, and if they were not laid in some shady Place under Trees, the Weeds would exhaust good part of the Nourishment that is in them. These being mix'd well, and laid in a Ridge till *February*, and then sifted, are recommended as a good *Compost*.

4. Take two Loads of stiff Soil, two Loads of Rape-seed after the Oil has been press'd out, four Loads of Sand, and two Loads of burnt Heath or Grass Turf, and prepare them as the others, and sift them: And this *Compost* is recommended as one that will forward any Plant.

5. Take four Loads of stiff Soil, two Loads of Malt Grains after Brewing, and four Loads of Sand; these being prepar'd as before, are recommended as a *Compost* that will hasten the Growth of Plants.

6. Take of Sheeps-Dung and Wood-Ashes equal Quantities; of Loam or Mother-Earth double the Quantity: Prepare them as before directed, and they will prove a good *Compost*.

7. Take four Loads of stiff Earth, four Loads of Sand, four Loads of Horse-Dung well consum'd, and two Loads of Turf-Ashes: Prepare this Mixture as before directed.

The other *Compositions* which are proper for particular Plants, or choice Flowers, being exhibited in the several Articles where these Plants are treated of, I shall not repeat them in this Place, but refer the Reader thereto.

CONSOLIDA Major; *vide* Symphytum.

CONSOLIDA Media; *vide* Bugula.

CONSOLIDA Minima; *vide* Bellis.

CONSOLIDA Regalis; *vide* Delphinium.

CONVOLVULUS; Bindweed.

The *Characters* are;

*It hath, for the most part, trailing Stalks: The Leaves grow alternately upon the Branches: The Flower consists of one intire Leaf, shap'd like a Bell, whose Mouth or Brim is, for the most part, widely spread and expanded: The Ovary becomes a roundish membranous Fruit, which is, for the most part, wrapp'd up within the Flower-cup; and is, generally, divided into three Cells, each containing one angular Seed.*

The *Species* are;

1. CONVULVULUS; *vulgaris, major, albus.* Mor. Hist. The common great white Bindweed, *vulgarly call'd, Bear-bind.*

2. CONVULVULUS; *minor, arvensis, flore roseo.* C. B. Lesser field Bindweed, with a Rose-colour'd Flower, *vulgarly call'd, Gravel Bind.*

3. CONVULVULUS; *maritimus, nostras, rotundifolius.* Mor. Hist. Common Sea Bindweed with round Leaves, or Soldanelia Officin.

4. CONVULVULUS; *marinus Catharticus, folio rotundo, flore purpureo.* Plum. American purging Sea Bindweed, with a round Leaf, and a purple Flower.

5. CONVULVULUS; *purpureus, folio subrotundo.* C. B. Indian Convolvulus, with roundish Leaves, and purple Flowers.

6. CONVULVULUS; *Indicus, flore albo.* H. R. Par. Indian Bindweed, with white Flowers.

7. CONVULVULUS; *Indicus, flore albo-purpurascente, semine albo.* H. R. Monf. Indian Bindweed, with whitish-purple Flowers, and white Seeds.

8. CONVULVULUS; *Indicus, flore amplo. roseo.* Indian Bindweed, with large Rose-colour'd Flowers.

9. CONVULVULUS; *caruleus, hederaceus, seu trifolius.* Park. Ivy-leav'd Indian Bindweed, with fair blue Flowers.

10. CONVULVULUS; *Canariensis, sempervirens, folio molli incano, flore ex albo purpurascente.* H. A. Perennial Canary Birdweed, with soft hoary Leaves, and whitish-purple Flowers.

11. CONVULVULUS; *major, heptaphyllos, flore sulphureo, odorato speciosissimo.* Sloan. Cat. Jam. Great American Bindweed, with specious yellow sweet-scented Flowers, com-

*vulgarly call'd*, Spanish Arber-Vine, or Spanish Woodbind.

12. CONVULVULUS; *Americanus*, *folio hederae, flore coccineae minore*. American Bindweed, with Ivy Leaves, and small scarlet Flowers. This is the *Quamoclit*, *Americana*, *folio hederae, flore Coccineae*, of *Comarum's* rare Plants.

13. CONVULVULUS; *Lusitanicus*, *flore cyaneo*. *Brass.* Portugal Bindweed, with fine blue Flowers, *vulgarly call'd*, *Convolvulus Minor*.

14. CONVULVULUS; *Lusitanicus*, *flore & semine albo*. *Boerb. Ind. Afr.* Portugal Bindweed, with white Flowers and Seed, *vulgarly call'd*, *Convolvulus minor flore albo*.

15. CONVULVULUS; *major, rectus, Creticus, argenteus*. *Mor. Hist.* Great upright Bindweed from Crete, with Silver-colour'd Leaves.

16. CONVULVULUS; *linariae folio, assurgens*. *Tourn.* Upright Bindweed, with Teard-flax Leaves.

The first of these Species is a very troublesome Weed in Gardens, especially under Hedges, or amongst the Roots of Trees, where, by its creeping Roots, it increases very fast; and the Plant twisting itself about whatever Plants, &c. are near it, will spread as far above-ground, over-bearing whatever Plant it comes near. The only Remedy that I know of to destroy this Plant, is by often hoeing of it down; which in one Year's Time (if carefully perform'd, and often repeated) will intirely destroy it: For the whole Plant abounds with a milky Juice; and whenever the Top is cut off, it is very subject to emit to great a Quantity of its Juice, as to destroy the whole Branch to the Ground; which (as the Gardeners express it) is *bleeding to Death*.

The second Sort, of which there are great Varieties of different-colour'd Flowers, is still a worse Weed than the former; for the Roots of this Kind do insinuate themselves into the Gravel many Feet deep, and greatly increase under-ground, rising and spreading its Branches over every thing near it. This I know no other Method to destroy, than Hoeing often, or pulling it up by Hand; which will, in Time, weaken and subdue it: But this can't be done under three or four Years, if attended with all possible Care, (especially in a dry, sandy, or gravelly Soil): But in a wet Soil it is soon destroy'd; for the Roots are very subject to rot with too much Moisture in Winter.

The third Sort is found in Plenty upon the gravelly or sandy Shores where the salt Water overflows in many Parts of *England*. This is a strong Purger, and as such is often us'd in Medicine. This Plant, if sown in a Garden, will seldom last above a Year or two.

The fourth Sort is found in great Plenty upon the Sea-shores of *America*, and is by the Inhabitants us'd as a Purge. The Seeds of this Plant were brought from the *Bahama Islands* by Mr. *Catesby*, and have been rais'd in several Gardens in *England*; but it is very tender, and not to be kept through a Winter without a Stove.

The fifth, sixth, seventh, eighth, and ninth Sorts are annual, and are propagated in Gardens for the Beauty of their Flowers: These are commonly sown on a Hot-bed in *March*, and afterwards transplanted into Borders in the open Air, where being supported by tall Stakes, they will twist round them, and arise to a great Height, producing

ducing great Quantities of fine large Bell-shap'd Flowers, and will continue flowering until the Frost prevent them.

These may all be rais'd in the open Ground, except the ninth, which if it is not brought forward in the Spring by a Hot-bed, seldom produces ripe Seeds; the rest are very hardy, and may be sown to cover Seats, Arbours, Palifado's, &c. which they will do in a short Time, and continue very handsome until the Frost destroys them: The several Varieties, when intermix'd, make a beautiful Appearance, but the ninth Sort is by far the most beautiful of them all.

The tenth Sort is an abiding Plant, and requires a Green-house in Winter: This will grow to a considerable Height, and must be supported by strong Stakes: It flowers almost every Year with us, but seldom produces good Seeds in *England*. This may be propagated by laying down the tender Branches in the Spring, which by Autumn will have sufficient Roots to be taken off. These must be planted in Pots fill'd with fresh light Earth, and shelter'd from Frosts in Winter, but must have as much free Air as possible in mild Weather, and require frequent Waterings.

The eleventh Sort is very common in the hotter Parts of *America*, where it is known by the Name of *Spanish Arbor Vine*: It is by the Inhabitants planted to cover Arbors and Seats, for which Purpose it is very proper; for in those Countries one of these Plants will grow to the Length of sixty or a hundred Feet, and produce great Quantities of Side-branches, by which Means, in a very short Time, it will cover a large Seat: This Plant produces in *America* great

Quantities of large fragrant yellow Flowers, which are each of them succeeded by three large angular Seeds. It is a very tender Plant with us, and can't be preserv'd but in warm Stoves through the Winter, nor hath it as yet produc'd any Flowers in *England* that I know of: It rises easily from the Seeds, if they are sown in a Hot-bed, and will grow to a great Length in one Summer; and altho' I have sometimes preserv'd it for two Years, and the Plant has spread to a great Length, yet I could never perceive any Attempt to flower.

The twelfth Sort is an annual Plant, and must be rais'd and manag'd, as was directed for the fifth, sixth, &c. This produces small Scarlet Flowers with a long Tube; which occasion'd *Monf. Tournefort* to range it amongst the *Quamoclitis*. This Plant is in great Plenty in *Carolina*.

The thirteenth and fourteenth Sorts are also Annual; but these do not climb as the others: The Seeds of these Plants may be sown in open Borders in *March*, where they will come up very well, and may be afterwards transplanted to a greater Distance, to adorn the Borders of a Pleasure-Garden. These Plants trail upon the Ground, if they are not supported, and do produce their beautiful Flowers thro' most of the Summer Months.

The fifteenth Sort is an abiding Plant, which with us doth grow upright to be three or four Feet high; the Branches are set very thick, with long narrow Silver-colour'd Leaves, and the Flowers grow upon the Tops of the Branches in an Umbel. These Flowers are sometimes succeeded by angular Seeds like the other Kinds: It may be propagated by planting Cuttings:

in any of the Summer Months, observing to water and shade them until they have taken Root; when they must be planted in Pots fill'd with fresh sandy Soil, and must be shelter'd in Winter from the Frosts, but require open free Air at all Times when the Weather is mild.

The sixteenth Sort is a perennial Plant, which increases greatly by its creeping Roots: This grows erect about eight or ten Inches high, and produces Flowers somewhat like those of our lesser wild Kind, but seldom produces good Seeds with us; but the Plant may be abundantly multiplied by parting the Roots: It is very hardy, and loves a light Soil.

CONYZA; Flea-bane.

The Characters are;

It hath undivided Leaves, which, for the most part, are glutinous, and have a strong Scent: The Cup of the Flower is, for the most part, feathery, and of a cylindrical Form: The Flower is compos'd of many Florets, which are succeeded by Seeds which have a downy Substance adhering to them.

The Species are;

1. CONYZA; major, vulgaris. C. B. Common Great Flea-bane.
2. CONYZA; minor, flore globoso. C. B. Lesser Flea-bane, with globular Flowers.
3. CONYZA; Americana, Lamii folis. Journ. American Flea-bane, with Leaves of the Dead Nettle.
4. CONYZA; mas, Theophrasti, major Dioscoridis. C. B. The Greater Flea-bane of Dioscoridis.
5. CONYZA; Cretica, fruticosa, foliis molli, candidissimo & tomentoso. Flor. Shrubby Flea-bane from Crete, with soft downy white Leaves.

There are several other Species

of these Plants, which are preserv'd in the curious Botanick Gardens; but as they are Plants of little Use or Beauty, I shall omit mentioning of them here.

The first of these Species is found wild upon dry chalky Hills in divers Parts of England, and is seldom cultivated in Gardens: It is a biennial Plant, being sown in the Spring: It flowers the second Year, and after producing Seeds it decays.

The second Sort grows on boggy Places, or where the Water has stood all the Winter, in many Parts of England: It may be propagated in a Garden by sowing the Seeds soon after they are ripe. This Plant is an Annual, and never continues above one Year. This is the Species which is sometimes us'd in Medicine.

The third Sort is very common in Barbados, and many other Parts of America; it very often comes up in great Plenty in the Earth that is brought from thence. This is an annual Plant, and must be sown in a Hot-bed, and managed as hath been directed for the Balsamina, to which I refer the Reader.

The fourth Sort is said to grow in great Plenty about Montpellier: This is somewhat like the first Sort, and may be propagated by sowing the Seeds soon after they are ripe, which will flower the succeeding Summer, and after perfecting its Seeds decays.

The fifth Sort is an abiding Plant, which with us seldom rises above eighteen Inches high, but hath woody Branches; the Leaves are very white and soft, which renders them very agreeable when intermix'd with different colour'd Plants in large Borders; but the Flowers



Flowers have no great Beauty in them. This Plant is very hardy, and will endure our severest Cold in the open Borders, and may be propagated by planting Cuttings in any of the Summer Months.

CONSERVATORY; *vide* Green-house.

CONVAL-LILY; *vide* Liliū Convallium.

CORALLODENDRON: The Coral-Tree.

The Characters are;

It hath the Appearance of a Tree: The Leaves, for the most part, consist of three Lobes: The Flowers are papilionaceous: The Standard (or Vexillum) is long, and shap'd like a Sword: The Wings on each Side, and the Keel (or Carina) are very short: The Flowers are succeeded by knobbed bivalve Pods, which contain several Kidney-shap'd Seeds.

The Species are;

1. CORALLODENDRON; *triphylon, Americanum, spinosum, flore ruberrimo.* Tourn. The three-leav'd American Coral-tree, with deep red Flowers, commonly call'd in America, the Bean-tree.

2. CORALLODENDRON; *Americanum, non spinosum, foliis magis acuminatis flore longiore:* An, Coral arbor non spinosa, flore longiore & magis clauso. Sloan. Cat. Fam. American Coral-tree without Spines, having sharp-pointed Leaves and long Flowers.

3. CORALLODENDRON; *Carolinianum, floribus spicatis coccineis, radice crassissima.* Thick-rooted Carolina Coral-tree, with Scarlet Flowers growing in Spikes.

4. CORALLODENDRON; *triphylum, non spinosum, flore ruberrimo.* Three-leav'd smooth Coral-tree with red Flowers.

5. CORALLODENDRON; *triphylum, spinosum, foliis rotundioribus.*

Three-leav'd prickly Coral-tree with round Leaves.

The first and second Species do grow with us to be eight or ten Feet high, with strong woody Stems, and produce very beautiful Scarlet Flowers, but never produce any Seeds in the European Gardens, as I can hear of. They may be rais'd by sowing their Seeds, (which are brought from America) in a Hot-bed in the Spring of the Year, which will very easily come up: The young Plants should, when they are five or six Inches high, be carefully transplanted into Pots of light fresh Earth, and plung'd into a Hot-bed, observing to shade them from the Heat of the Sun, until they have taken fresh Root; after which they should have Air given them, by raising up the Glasses in the Day-time when the Weather is warm; and in July and August, they should have a greater Share of Air, in order to harden them before Winter; and in September, they should be remov'd into the Stove, and during the Winter Season should have but little Water given them, for they commonly cast their Leaves in Winter, and push them out fresh the succeeding Spring.

These Plants may also be propagated by planting Cuttings in any of the Summer Months, which should be put into Pots fill'd with fresh light Earth, and plung'd into a moderate Hot-bed of Tanner's Bark, observing to shade the Glasses in the Heat of the Day, and to give them gentle Refreshings with Water, as the Earth in the Pots is found to dry. In two Months time these Cuttings will have sufficient Roots to transplant; at which time they must be put each into a single Pot, and plung'd again into the Hot-

bed, and manag'd as was directed for the Seedling Plants.

In four or five Years time these Plants will produce Flowers, if they are preserv'd in a moderate Warmth all the Winter; for if they are kept too warm, they are subject to grow all the Winter, and the Shoots will be thereby drawn too weak to produce Flowers; and if they are kept too cold, they are liable to lose their tender Buds which should produce the Flowers: Therefore if they are kept up to the temperate Point mark'd on Mr. Fowler's Thermometer during the Winter Season, they will succeed very well.

The third Sort was rais'd from Seeds which were sent from *Carolina* by Mr. *Catesby*, Anno 1724. This Plant seldom rises above three Feet high with us, and hath large knobbed Roots; the Flowers are produc'd in Spikes upon the Branches, in the Summer Season when the Plant is almost destitute of Leaves, but never produces ripe Seeds with us.

This Plant is somewhat hardier than the other two Species, and may be kept in a lesser Degree of Heat in Winter, and be expos'd to the open Air during the Months of *June*, *July*, and *August*. I have not been able yet to propagate this Plant by Cuttings, but there is no Doubt of its succeeding as well as the other two Sorts.

The fourth and fifth Sorts must be treated in the same manner as the first and second, to which these have a near Resemblance. The fourth Sort was brought from *America*; but the fifth I rais'd from Seeds which came from *St. Helena*.

CORCHORUS; Jews Mallow.

The Characters are;

The Leaves are produced alternately at the Joints of the Stalks. The Cup of the Flower consists of five Leaves: The Flower hath five Leaves, which expand in Form of a Rose: The Pointal of the Flower becomes a cylindrical Fruit, which is divided into five Cells which are fill'd with angular Seeds.

The Species are;

1. CORCHORUS; *five Melochia*. *J. B.* Common Jews Mallow.
2. CORCHORUS; *Americana, Carpini foliis, sextuplici capsulâ, pralongâ.* *Pluk.* American Jews Mallow, with Leaves like the Hornbeam, with long Pods.
3. CORCHORUS; *Americana pralongis foliis, capsulâ striatâ, subrotundâ, brevi.* *Pluk.* American Jews Mallow, with long Leaves and short roundish furrow'd Pods.
4. CORCHORUS; *Orientalis, brevioribus foliis, flore flavo, fructu Caryophilloide longiori.* *Pluk.* Eastern Jews Mallow, with short Leaves and long Pods shap'd like a Clove.

The first Species, *Rauwolf* says, is sown in great Plenty about *Aleppo* as a Pot-herb; the *Jews* boiling the Leaves of this Plant to eat with their Meat: This he supposes to be the *Olus Judaicum* of *Avicenna*, and the *Corchorum* of *Pliny*.

The Varieties of this Plant are preserv'd in curious Botanick Gardens to add to their Number of Plants, but it being of no great Beauty or Use with us, is seldom propagated in other Gardens.

They are all of them Annual, and must be sown on a Hot-bed early in the Spring, and afterward treated as the Female *Balsamine*; to which I shall refer the Reader for their Culture. They delight in a rich Soil, and must have frequent Waterings in dry Weather.

Their

Their Flowers are produced in *June* and *July*, and their Seeds ripen in *September*.

**CORIANDRUM**; Coriander.

The Characters are;

It hath a fibrose annual Root: The lower Leaves are broad, but the upper Leaves are deeply cut into five Segments: The Petals of the Flower are unequal, and shap'd like a Heart: The Fruit is compos'd of two hemispherical (and sometimes spherical) Seeds.

The Species are;

1. **CORIANDRUM**; *majus*. C. B. Greater Coriander.

2. **CORIANDRUM**; *minus, testiculatum*. C. B. Smaller testiculated Coriander.

3. **CORIANDRUM**; *sylvestre, foetidissimum*. C. B. Wild stinking Coriander.

The first of these Species is the most common Kind, which is cultivated in the *European* Gardens and Fields for the Seeds, which are us'd in Medicine. The second Sort is less common than the first, and is seldom found but in Botanic Gardens in these Parts of *Europe*. The third Sort, as mention'd in *Caspar Bauhin's Pinax*, and cited by the learned *Boerhaave*, in his Catalogue of the *Leyden* Garden, is so like the first, that I could find no Difference between them when compar'd together, though I receiv'd the Seeds of this Kind from the *Leyden* Garden.

These Plants are propagated by sowing their Seeds early in the Spring, in an open Situation in a Bed of good fresh Earth; and when the Plants are come up, they should be hoed out to about four Inches Distance every Way clearing them from Weeds; by which Management these Plants will grow strong, and produce a greater Quantity of

good Seeds; the Seeds of the first Sort were formerly much sowed, and the Herb cut while young for Winter Sallads.

**CORIARIA**; Myrtle-leav'd Sumack, *vulgô*.

The Characters are;

It hath a Flower compos'd of ten Stamina (or Threads) each having two Apices, and arise from the Bottom of the Calyx which is divided into five Parts to the Base, when the Flower is pass'd the Pointal (which is contained in another Cup, divid'd also into five Parts to the Base) becomes jointly with the Cups, a Fruit containing five Kidney-shap'd Seeds.

We have but one Species of this Plant, which is,

**CORIARIA**; *vulgaris* *Moss. Acad. Scien. Ann. 1711*. Myrtle-leav'd Sumach; *vulgô*.

This is a low Shrub, seldom rising above three or four Feet high; the Flowers appear in *April*, which are produced from the Joints, all the whole Length of the Shoots; these consist of several Stamina or Threads, which are of a red Colour; but there is no great Beauty in the Plant.

It may be propagated plentifully from the Suckers, which are produced from the creeping Roots in great abundance: These should be taken off in *March*, and planted into a Nursery, to form good Roots; where they may continue one or two Years, and then must be removed to the Places where they are to remain.

This Plant delights in loamy Soil, which is not too stiff, and should be placed where it may have Shelter from the North and East Winds, where it will endure the Cold of our ordinary Winters very well, and will flower better than if it is preserved in Pots, and shelter'd

in the Winter, as is by some practis'd.

This Plant is used by the Tanners for dressing their Leather, in the South Parts of France, where it grows wild in great Plenty.

CORINDUM; Heart-Pease.

The Characters are;

It hath a trailing Stalk, emitting Claspers whereby it fastens it self to whatever Plant it stands near: The Calyx (or Flower-cup) consists of three Leaves: The Flowers consist of eight Leaves, and are of an anomalous Figure: The Ovary becomes a Fruit which is like a Bladder, and divided into three Cells in which are contain'd round Seeds in Form of Pease, of a black Colour, having the Figure of a Heart of a white Colour upon each.

The Species are;

1. CORINDUM; folio ampliori, fructu majore. Tourn. Heart-Pea, with large Leaves and Fruit.

2. CORINDUM; folio & fructu minore. Tourn. Heart-Pea, with small Leaves and Fruit, call'd by the Inhabitants of the West Indies, Wild Parsley.

3. CORINDUM; folio amplissimo, fructu minore. Heart-Pea, with very large Leaves, and small Fruit.

These Plants are very common in Jamaica, Barbados, and most of the other warm Islands in the West Indies, where their Seeds are scatter'd and become Weeds all over the Country.

They may be cultivated in England, by sowing their Seeds on a Hot-bed in March; and when the Plants come up, they must be transplanted into a fresh Hot-bed, where they may remain until the Middle of May; at which Time they may be transplant'd into Pots or Borders, and expos'd to the open Air. These Plants will require

Sticks to support them; otherwise their Branches will trail upon the Ground, and be apt to rot, (especially in a wet Season). There is no great Beauty in this Plant; it is chiefly preserved as a Rarity in the Gardens of the Curious. It produces its Flowers in June, and the Seeds are perfected in August.

CORK-TREE; vide Suber.

CORN-FLAG; vide Gladiolus.

CORN - MARYGOLD; vide Chrysanthemum.

CORN-SALLAD; vide Valerianella.

CORNUS; The Cornelian Cherry.

The Characters are;

The Calyx (or Flower-Cup) consists of four small rigid Leaves, which are expanded in Form of a Cross; from the Centre of which are produced many small yellowish Flowers, each consisting of four Leaves, which are disposed almost in Form of an Umbrella. These Flowers are succeeded by Fruit, which is oblong, or of a cylindrical Form, somewhat like an Olive, containing a hard Stone, which is divided into two Cells, each containing a single Seed.

The Species are;

1. CORNUS; hortensis, mas. C. B. The Cornelian-Cherry, or Male Cornel-tree.

2. CORNUS; foemina. C. B. The Dogberry, or Gatten-tree.

3. CORNUS; foemina, foliis variegatis. H. L. The strip'd Dogberry-tree.

4. CORNUS; foemina, Laurifolia, fructu nigro caruleo, ossiculo compresso, Virginiana. Pluk. Alm. The Virginian Dogberry-tree.

5. CORNUS; mas, odorata, folio trifido, margine plano, Sassafras dicta. Pluk. Alm. The Sassafras-tree.

The first of these Trees is very common in the English Gardens, being

being propagated for its Fruit; which is by many People preserv'd, to make Tarts: It is also used in Medicine as an Astringent and Cooler. There is also an Official Preparation of this Fruit, call'd *Rob de Cornis*.

The second Sort is very common in the Hedges in divers Parts of *England*, and is seldom preserv'd in Gardens. The Fruit of this Plant is often brought into the Markets, and sold for *Buckthorn-Berries*; from which it may be easily distinguished, if the Berries are opened, to observe how many Stones there are in each, which in this Fruit is but one, but in the *Buckthorn* four.

The third is also a Variety of the second, and is preserv'd, for its variegated Leaves, in several curious Gardens.

The fourth Sort is at present pretty rare in *England*: It is brought from *Virginia* and *Carolina*, where it grows in great Plenty.

The fifth Sort is also a Native of *America*, and is rarely found in the *European* Gardens. The Root of this Tree is much used in *England*, to make a Tea, which is greatly commended by some against violent Defluxions.

The first, second, and third *Species* are propagated by laying down their tender Branches, which in one Year's Time will take sufficient Root to be transplanted; at which Time they may be either planted in a Nursery, or in the Places where they are to remain. During the two first Years, Care should be taken to train their Stems upright; otherwise they are very subject to shoot crooked, and appear unsightly: But when they are grown up to a regular Size, they should not be pruned, especially if you would have Plenty of Fruit.

These Trees commonly rise with us to be eight or ten Feet high, or more, and are proper to intermix with Trees of the same Growth in smaller Quarters of Trees and Shrubs, where they will add to the Variety; and if they are not too much crowded with other Trees, will produce large Quantities of Fruit.

The fourth Sort may be also propagated by *Layers*; but must have a good Soil, and a Situation which is well defended from the North and East Winds, and loves to grow in the Shelter of other Trees. This may be also rais'd from Seeds, which shou'd be sown soon after they are ripe, and shelter'd from severe Frosts under a Frame: The second Spring after sowing, the Plants will come up, which must also be screen'd from severe Frosts while young, but afterwards they will endure our hardest Winters abroad.

The best Season for transplanting these Trees, is toward the latter End of *March*, or the Beginning of *April*, just before they begin to shoot; observing to shade and water them (if the Weather should prove hot and dry) for about a Fortnight after removing; as also to cover the Surface of the Ground with a little Mulch, to preserve the Earth from drying too fast: And if the Summer should prove very dry, it would be convenient to give them a little Water once a Week; and after they are well rooted in the Ground, they will want little farther Care.

The *Sassafras* is one of the most difficult Trees to grow with us, that I know; it will rarely live, if kept in Pots and preserv'd in a Green-house; nor will it endure our open Air abroad: The best Culture

Culture that I can prescribe, is to remove it carefully in *April* into a good strong Soil, and in a Situation that is well defended by other Trees, both from the cold Winds and open Sun: but it must not stand under the Dropping of other Trees. In the Winter it will be proper to lay a little Mulch upon the Surface of the Ground round its Stem, to prevent the Frost from penetrating too deep into the Ground: but then its Heads should by no means be cover'd; which, tho' practis'd by some, yet I am sure doth more harm than good: In the Summer Season they must be kept clear from Weeds, &c. In this Management, I have seen the most promising Trees of this Kind.

These Trees are generally brought over from *Virginia* or *Carolina* to curious Persons; in both which Places they abound very much, and do propagate themselves by their creeping Roots; as also their Berries, which fall to the Ground, and come up in great Plenty: But with us they are not so easily increas'd; it being with great Difficulty procur'd by Layers, which are commonly two Years before they are furnish'd with Roots enough to transplant and is also with as much Difficulty remov'd. And the Berries which are brought from *America* seldom succeed with us: They are always two Years before they come up, and then make but a very small Advance for two or three Years after, and it is very rare that many of them are preserv'd so as to succeed.

The best Method of sowing the Seeds, is to put them into a Bed of fresh good Earth soon after the Seeds are ripe, in a Situation where they may have the Morning Sun

until Eleven o'Clock; and in hard frosty Weather cover the Surface of the Ground with Litter: in such a Bed you may expect (if the Seeds were fresh) the Plants to come up the second Spring, which should also be cover'd with light Litter or Pease-haulm the first Winter, until they have Strength to resist the severe Cold of our Climate; after which Time, they must be treated as was before directed.

**CORONA IMPERIALIS;**  
Crown Imperial.

The Characters are;

The Flowers consist of six Leaves, are Bell-shap'd, and hang downwards: These are rang'd, as it were, into a Crown; above which appears a great Bush of Leaves: The Pointal of the Flower becomes an oblong Fruit, which is wing'd, and divided into three Cells, which are fill'd with flat Seeds: To which may be added, it hath a coated Root, which is furnish'd with Fibres at the Bottom.

The Species are;

1. CORONA IMPERIALIS. *Dod.*  
The common Crown Imperial.

2. CORONA IMPERIALIS; *major.*  
*Tourn.* The greater Crown Imperial.

3. CORONA IMPERIALIS;  *flore pleno.*  
*Tourn.* Crown Imperial, with a double Flower.

4. CORONA IMPERIALIS;  *duplici coronâ.*  
*Tourn.* Crown Imperial, with a double Crown.

5. CORONA IMPERIALIS;  *triplici coronâ.*  
*H. L.* Crown Imperial, with a triple Crown.

6. CORONA IMPERIALIS;  *multiflora, latoque caule.*  
*Tourn.* Crown Imperial, with many Flowers, and flat Stalks.

7. CORONA IMPERIALIS;  *folio vario.*  
*Tourn.* Strip'd-leav'd Crown Imperial.

8. CORONA IMPERIALIS ; *folio vario ex viridi & argenteo.* Boerb. Ind. Silver strip'd-leav'd Crown Imperial.

9. CORONA IMPERIALIS ; *flore pulchrè luteo.* Tourn. Crown Imperial, with a beautiful yellow Flower.

10. CORONA IMPERIALIS ; *flore luteo, pleno.* Boerb. Ind. Crown Imperial, with a double yellow Flower.

11. CORONA IMPERIALIS ; *flore luteo, striato.* Tourn. Crown Imperial, with a yellow-strip'd Flower.

12. CORONA IMPERIALIS ; *ramosa.* Tourn. Branch'd Crown Imperial.

There are some other Varieties of this Flower, which are preserv'd in the Gardens of curious Florists: but as they are only Variations which are accidental, from Seeds of the same Plant, so their Numbers may be increas'd, like many other bulbous Plants, by such who are curious in sowing and sowing Seeds of the different Varieties.

The manner of propagating this Plant from Seeds, being the same with the *Tulip*, I shall refer the Reader to that Article for the particular Directions, and shall proceed to the Method of cultivating their Roots already obtain'd, so as to have fair large Flowers.

The best Season for transplanting their Roots is in *July* or *August*, before they push forth fresh Fibres; after which Time, it is not so safe to remove them: or they may be taken up in *June*, when their green Leaves are quite decay'd; and may be kept out of the Ground until *August*, at which Time they should be planted in Beds or Borders of good fresh Earth, burying a little rotten Dung in the Bottom, so

that the Fibres may strike into it: but be sure not to let it be near the Bulb, for it is apt to rot whenever this happens.

If they are planted in open Beds or Borders of a Pleasure-Garden, they should be plac'd exactly in the Middle, for they will rise to be three Feet high or more in a good Soil, and so would be improper to stand on the Side of a Border where should be planted Flowers of lower Growth.

In planting of these Roots, after the Border is mark'd out, and the Distances fix'd between each Root, (which should be eight or ten Feet or more, according to the Size of the Garden, and the Number of Roots to be planted) you should open a Hole with a small Spade about six Inches deep, into which you should place your Root, observing to set the Crown uppermost; and then with your Hand fill in the Earth round the Root, breaking the Clods, and removing all large Stones from about it, and afterwards level the Ground with your Spade, and rake the Border over after all the Roots are planted. Your Roots being thus planted will require no farther Care, as being very hardy; the Frost never injures them, but if the Ground is too wet in Winter, they will be apt to rot; therefore in such Cases, the Borders should be rais'd a Foot or more above the Level of the Ground. In *February* their Buds will appear above-ground, and if the Weather be mild, they will advance in Height very fast, and in *March* they will produce their Flowers; but as their Stems grow tall, and the Spring season being commonly windy, it will be very proper to support them with Sticks, to prevent their being broke down: Nor should the

the Flowers of this Plant be gather'd when blown, for it greatly weakens their Roots; so that they do not afford an Increase of Bulbs, and many times are two or three Years before they flower again.

These Roots should be transplanted every third Year, by which Time they will have furnish'd some Off-sets of considerable Strength, which must be taken from the old Roots; and such of them as are large enough to produce Flowers, may be planted in Borders with the old Roots, but the small ones should be planted in a Nursery-bed, where they may remain till they have Strength enough to flower; but if you remove the blowing Roots oftener, they will not flower so strong, nor will their Increase be near so great.

This Plant deserves a Place in the most curious Flower-Gardens, for the Earliness of its Flowering; it being the first Plant of large Growth that we have flowers, and so consequently garnishes the Crowns of Borders, at a Season when there are no other Flowers in the same Line appearing, and so begins that Order of Flowering, which should be succeeded by other Flowers of the like Growth, thro' the greatest Part of the Season. Their Seeds are ripe about the Beginning of *June*, and should be sown in *July*. For the Manner of performing it, see *Tulipa*.

CORONA SOLIS; the Sun-Flower.

The Characters are;

*It hath a squamous Cup: The Flowers are radiated like the great Starwort: The Embryo's of the Seeds are distinguish'd by little imbricated Leaves in the Disk: The Top of the Ovary is crown'd with two small Leaves: The Seeds are push'd out*

*from the Bottom of the Flower, leaving a Vacuity which appears very like a Honeycomb.*

The Species are;

1. CORONA SOLIS. *Tab.* The Common great annual Sun-Flower.

2. CORONA SOLIS; *maxima, semine albo, cinereo & striato. Tourn.* Great annual Sun-Flower, with Ash-colour'd strip'd Seeds.

3. CORONA SOLIS; *maxima, flore pallide sulphureo, fere albo, semine nigro. Boerb. Ind.* Great annual Sun-Flower, with pale Brimstone-colour'd Flowers, and black Seeds.

4. CORONA SOLIS; *maxima, flore pleno, aureo, semine nigro. Boerb. Ind.* Great annual Sun-Flower, with double yellow Flowers, and black Seeds.

5. CORONA SOLIS; *maxima, flore pleno, aureo, semine albo. Boerb. Ind.* Great annual Sun-Flower, with double yellow Flowers, and white Seeds.

6. CORONA SOLIS; *maxima, flore pleno sulphureo, semine nigro. Boerb. Ind.* Great annual Sun-Flower, with double Brimstone-colour'd Flowers, and black Seeds.

7. CORONA SOLIS; *maxima, flore pleno, sulphureo, semine albo. Boerb. Ind.* Great annual Sun-Flower, with double Brimstone-colour'd Flowers, and white Seeds.

8. CORONA SOLIS; *perennis & vulgaris. Vaill.* Common Perennial or Everlasting Sun-Flower; *vulgô.*

9. CORONA SOLIS; *foliis amplioribus, laciniatis. Tourn.* Perennial Sun-flower, with large divided Leaves.

10. CORONA SOLIS; *foliis angustioribus, laciniatis. Tourn.* Perennial Sun-flower, with narrow divided Leaves.

11. CORONA SOLIS; *foliis asperis, tribus vel quaternis ad genicula sitis. Mor.*



*Mor. Hist.* Rough-leav'd Perennial Sun-Flower, having three or four Leaves plac'd at each Joint of the Stalk.

12. CORONA SOLIS ; *Trachelii folio, radice repente. Toura.* Creeping-rooted Perennial Sun-Flower, with a Throat-wort Leaf.

13. CORONA SOLIS ; *altissima, Vosacan dicta. Vaill.* The tallest Perennial Sun-Flower, call'd Voſacan.

14. CORONA SOLIS ; *altissima, Virga aurea foliis. Tourn.* Tallest Perennial Sun-Flower, with Golden-Rod Leaves.

15. CORONA SOLIS ; *falicis folio, alato caule. Tourn.* Willow-leav'd Perennial Sun-Flower, with winged Stalks.

16. CORONA SOLIS ; *falicis folio latiore, caule alato, serotino.* Broader Willow-leav'd Perennial late flowering Sun-Flower, with winged Stalks.

17. CORONA SOLIS ; *arborea, folio latissimo platani. Boerb. Ind.* Tree-like Perennial Sun-Flower, with a broad Plane-Tree Leaf.

18. CORONA SOLIS ; *parvo flore, tuberosa radice. Tourn.* Tuberosé-rooted Perennial Sun-Flower, with a small Flower, commonly call'd, Jerusalem Artichoke.

All these *Species* of Sun-Flowers are Natives of *America*, from whence we are often supply'd with new Kinds, it being a large Genus of Plants: And it is very remarkable, that there is not a single *Species* of this Genus that is *European*; so that before *America* was discover'd, we were wholly unacquainted with these Plants. But altho' they are not originally of our own Growth; yet are they become so familiar with our Climate, as to thrive and increase full as well as if they were at Home; (some of the

very late flowering Kinds excepted, which require a longer Summer than we generally enjoy, to bring them to Perfection): and many of them are now so plentiful in *England*, that Persons unacquainted with the History of these Plants, would imagine them at least to have been Inhabitants of this Island many hundred Years; particularly the *Jerusalem Artichoke*, which tho' it doth not produce Seeds in our Climate, yet doth so multiply by its knobbed Roots, as when once well fix'd in a Garden, is not easily to be rooted out again.

The first seven Sorts being Annuals, must be sown every Spring in a Bed of good light Earth; and when the Plants are come up about three Inches high, must be transplanted into Nursery-beds, at about eight or ten Inches Distance every way, where they may continue until they are a Foot high, when they must be carefully taken up with a Ball of Earth, and transplanted into the Middle of large Borders, or intermix'd in Bosquets of large growing Plants, observing to water them until they are well rooted; after which Time they will require no farther Care but to clear them from Weeds.

In *July* the Flowers upon the Tops of the Stems will appear; amongst which, the best and most double Flowers of each Kind should be preserv'd for Seeds; for those which flower later upon the Side-branches are neither so fair, nor do they perfect their Seeds so well as those which are first in Flower: When the Flowers are quite faded, and the Seeds are form'd, you should carefully guard the Heads from the Sparrows, which will otherwise devour most of the good Seeds; and about the Beginning of

*October,*

*October*, when the Seeds are ripe, you should cut off the Heads with a small Part of the Stems, and hang them up in a dry airy Place for about a Month; by which Time the Seeds will be perfectly dry and hard, when you may easily rub them out, and put them up in Bags, or Papers, preserving them from Vermin until the Season for sowing them.

The other perennial Sorts rarely produce Seeds in *England*, but most of them do increase very fast at their Roots, especially the common and creeping-rooted Kinds. The eighth Sort, which is the most common in the *English* Gardens, is the largest and most valuable Flower, and is a very proper Furniture for large Borders in great Gardens, as also for Bosquets of large growing Plants, or to intermix in small Quarters with Shrubs, or in Walks under Trees where few other Plants will thrive: It is also a great Ornament to Gardens within the City; where it doth grow in Defiance of the Smoak better than most other Plants; and for its long Continuance in Flower, deserves a Place in most Gardens, for the sake of its Flowers for Basons, &c. to adorn Halls and Chimnies in a Season when we are at a Loss for other Flowers. It begins flowering in *June*, and continues until *October*.

The 9th, 10th, 11th, 12th, 13th, 14th, 15th, and 16th Sorts may also have a Place in some abject Part of the Garden, for the Variety of their Flowers; which though not so fair as those of the common Sort, yet will add to the Diversity; and as many of them are late Flowerers, so we may continue the Succession of Flowers longer in the Season.

These Sorts are all of them very hardy, and will grow in almost any Soil or Situation: They are propagated by parting their Roots into small Heads, which in one Year's Time will spread and increase greatly. The best Season for this Work is in the Middle of *October*, soon after their Flowers are past; or very early in the Spring, that they may be well rooted before the Droughts come on, otherwise their Flowers will be few in Number, and not near so fair, and by this means their Roots will be weak; but if they are planted in *October* you will save the Trouble of watering them; their Roots being surely fix'd before the dry Weather, they will need no other Trouble than to clear them from Weeds.

The *Jerusalem Artichoke* is propagated in many Gardens for the Roots, which are by some People as much esteem'd as *Potatoes*, but they are more watery and flashy, and are very subject to trouble the Belly by their windy Quality, which hath brought them almost into Disuse.

These are propagated by planting the smaller Roots, or the larger ones cut into Pieces, (observing to preserve a Bud to each separate Piece) either in the Spring or Autumn, allowing them a good Distance; for their Roots will greatly multiply: the Autumn following, when their Stems decay, the Roots may be taken up for Use. These should be planted in some remote Corner of the Garden, for they are very unsightly while growing, and their Roots are apt to over-run whatever grows near them, nor can they be easily destroy'd when they are once well fix'd in a Garden.

The 17th Sort is somewhat tenderer than any of the former, and therefore requires a better Situation, and a dry Soil. This Sort seldom produces its Flowers fair with us, it being a very late Flowerer, and if the Autumn proves bad, doth not produce any Flowers: This will grow to be six, seven, or eight Feet high, and very strong, but there is no great Beauty in its Flowers, and so is rarely preserv'd, except in Botanick Gardens.

This Sort is propagated by parting the Roots in the Spring, or from Seeds sown on a Hot-bed at that Season, when they can be obtain'd good, which is but rarely produc'd in England: It is commonly preserv'd in Pots, and shelter'd in the Winter, but I find it hardy enough to resist our ordinary Cold, if planted in a light dry Soil, and an open Position.

**CORONILLA**; Jointed-podded Colutea.

The Characters are;

It hath Leaves like those of the Scorpion-Sena: The Flowers are papilionaceous: The Pods are full of Joints, having one oblong swelling Seed in each Division.

The Species are;

1. **CORONILLA**; *argentea, Cretica*. Tourn. Silver-leav'd, jointed-podded Colutea of Candia.

2. **CORONILLA**; *maritima, glaucosolio*. Tourn. Maritime jointed-podded Colutea, with a Sea-green Leaf.

3. **CORONILLA**; *herbacea, flore vario*. Tourn. Herbaceous jointed-podded Colutea, with a variable Flower.

4. **CORONILLA**; *Cretica, herbacea, flore parvo purpurascete*. Tourn. Candia herbaceous, jointed-podded Colutea, with a small purplish Flower.

5. **CORONILLA**; *Zeylanica, argentea tota*. Boerb. Ind. Silver jointed-podded Colutea of Ceylon.

6. **CORONILLA**; *minima*. Tourn. The least jointed-podded Colutea.

The first and second Species grow with us to be small Shrubs about three or four Feet high, and are so nearly alike in all respects, so far as I have been able to examine them, that I could readily pronounce them the same, were it not that they have been by so many eminent Botanists distinguish'd for two absolutely different Plants; which if there are two such, I have as yet seen but one of them: I have indeed receiv'd Seeds of the two Sorts from different Persons Abroad; but when they came up, they prov'd the same, and this more than once; which causes me to suspect they are not different; for at different Seasons of the Year the same Plant appears different as to the Colour of the Leaves; which might at first lead a Person into the Mistake: and this has been follow'd by all that have since wrote thereof.

This Plant is propagated by sowing the Seeds in the Spring, either upon a gentle Hot-bed, or on a warm Border of light fresh Earth; and when the Plants are come up about two Inches high, they should be transplanted either into Pots, or in a Bed of good rich Earth, at about four or five Inches Distance every way, where they may remain until they have obtain'd Strength enough to plant out for good, which should be either into Pots fill'd with good fresh Earth, or in a warm situated Border; in which, if the Winter is not too severe, they will abide very well, and in the Spring following will produce large Quantities.

tities of yellow Flowers, of a strong sweet Smell, which will be succeeded by long slender-jointed Pods in great Plenty, in which are contain'd the Seeds.

The third Sort dies down every Winter, but rises again the succeeding Spring, and produces large trailing Branches, which are furnish'd with great Numbers of variable-colour'd Flowers, which grow in Bunches; these are sometimes succeeded by small-jointed Pods, containing many oblong Seeds: but the Root creeps very far underground, by which the Plant increases greatly; which when permitted to remain unremov'd for two or three Years, will spread and overbear whatever Plants grow near it; for which Reason the Roots should be confin'd; and it should be planted at a Distance from any other Plants: It will grow in almost any Soil and Situation, but thrives best in a warm sunny Exposure, in which the Flowers will also be much fairer, and in greater Quantities.

The fourth Sort must be sown in the Spring on an open Bed or Border of good light Earth, in the Places where it is to remain; for it doth not very well bear removing. This is a Plant of little Beauty, and is only preserv'd in curious Gardens of Plants.

The fifth Sort is very tender, being a Native of *Ceylon*: This must be sown on a Hot-bed early in the Spring; and when the Plants are come up, they must be transplanted into small Pots fill'd with light sandy Earth, and plung'd into a fresh Hot-bed of Tanners Bark; observing to give them frequent gentle Waterings: and as the Weather is hot or cold, so they must have more or less Air in Proportion thereto, by raising up the

Glasses in the middle of the Day, but in the Nights the Glasses should be cover'd with Mats.

And when the Plants have grown so as to fill the Pots with their Roots, they must be carefully shaken out of them, preserving the Earth to their Roots; and after having pared off the Outside of the Ball of Earth, put them into Pots a Size bigger than those were which they came out of, filling up the Pot with the same light fresh sandy Earth as before; then plunge the Pots again into the Hot-bed, and manage them as before. In the Winter they must be plac'd in a warm Bark-Stove amongst Plants of the tenderest Class, observing to refresh them frequently with Water which has stood in the same Stove at least eight or ten Hours before, that the Cold may be taken off; but never give them too much at a time: In this Management I have had this Plant succeed very well for two or three Years; but I have not as yet seen it flower in *England*, tho' there are Plants of this Kind in three or four Gardens, which are two or three Years old.

The sixth Sort is a very small Plant, and hath very little Beauty in it; this is preserv'd by the curious in Botany, but is seldom found in Gardens of Pleasure, where few Plants are admitted that are not either beautiful or rare; it is propagated by sowing of the Seeds in the Spring, on a Bed of fresh light Earth in a warm Position: And when the Plants are come up, they must be either transplanted into Pots fill'd with the same fresh Earth, or into warm Borders under a South or West Wall; for they are subject to be destroy'd by severe Frosts: and therefore those which  
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are planted in Pots should be shelter'd during the Winter-season under a common Hot-bed Frame, taking off the Glasses in mild Weather, that they may enjoy as much of the free open Air as possible; and in the Spring, after the Cold is past, they may be shaken out of the Pots, and planted in a warm Border, where they will flower and produce ripe Seeds the succeeding Summer.

CORONOPUS; Buck's - horn Plantain.

The Characters are;

It agrees in Flower and Fruit with the Plantain, from which it differs in its Leaves, which are deeply cut in on the Edges; whereas the Leaves of Plantain are either intire, or but slightly indented.

The Species are;

1. CORONOPUS; *hortensis*. C. B. Garden Buck's-horn Plantain, or Hart's-horn; *vulgò*.

2. CORONOPUS; *Massiliensis, hirsutior, latifolius*. Tourn. Broad-leav'd hairy Buck's-horn Plantain of *Marseilles*.

3. CORONOPUS; *Neapolitanus, tenuifolius*. C. B. Narrow-leav'd Buck's-horn Plantain of *Naples*.

4. CORONOPUS; *maritimus, roseus*. Bocc. *Rar. Pl.* Rose-like Sea Buck's-horn Plantain.

The first of these Species, tho' intitled a Garden Plant, yet is found wild in most Parts of England, and is the very same Plant which grows upon most Commons and barren Heaths, where, from the Poorness of the Soil, it appears to be very different from the Garden Kind, as being little more than a fourth Part so large. But this Plant, when transplanted or sown in a Garden by the other, grows to be full as large. Nor can I see any Difference between these, and

that which grows upon the Sea-Coasts; tho' *Casper Bauhin*, and many Botanists after him, make them distinct Species: But when they are all cultivated together in the same Soil, I am satisfy'd that no one Person can distinguish them, therefore I make no doubt of calling them all the same Plant.

This Species was formerly cultivated in Gardens as a Salad Herb; but at present is little regarded, and almost wholly disused: It may be easily cultivated by sowing the Seeds in the Spring upon any Soil, or in any Situation, it being extremely hardy; and when it comes up, it may be thinned out and suffered to remain for Use at about three or four Inches Distance, where the Leaves may be often cut for the Purposes above mentioned, the Roots still putting forth fresh Leaves; and if it is not suffered to seed, the Roots will remain two or three Years: but it seldom continues long after perfecting its Seeds. If the Seeds are suffered to fall upon the Ground, there will be a constant Supply of Plants, without any farther Care than clearing them from Weeds as they grow. The other Varieties are maintained in Botanick Gardens, but are seldom cultivated for Pleasure or Profit.

CORTUSA; Bear's-Ear Sanicle.

The Characters are;

It hath a perennial Root: The Leaves are roundish, rough, and crenated on the Edges, like those of Ground-Ivy: The Cup of the Flower is small, and divided into five Parts: The Flowers are shaped like a Funnel, are cut at the Top into many Segments, and are disposed in an Umbel: The Fruit is roundish, terminating into a Point, and is closely fixed in the Cup, in which  
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are contained many small angular Seeds.

There is but one Species of this Plant at present in England, which is,

CORTUSA; *Matthioli. Clus.* The Bear's-Ear Sanicle, or *Cortusa* of *Matthiolum*.

This Plant is nearly ally'd to the *Auricula Urſi*; but the Flowers are not quite ſo large and fair: yet, for its Curioſity, may deſerve a Place in every good Garden, eſpecially as it requires no great Management to preſerve it; for it being a Native of the *Alps*, will grow in the coldeſt Part of the Garden, under North Walls, &c. but muſt not be planted under the Dropping of Trees, nor in a too wet or ſtiff Soil. It is propagated by parting the Roots, in the manner of *Auricula's*; the beſt Seaſon for which is about *Auguſt* or *Septem-ber*. Theſe Plants loſe their Leaves in Winter, but put out new ones early in the Spring; and in *April* they produce their Flowers, which are ſometimes ſucceeded by Seed-Pods; but it is very rare that they perfect their Seeds with us.

CORYLUS: The Hazel or Nut-tree.

The Characters are;

*It haſh Male Flowers (or Katkins) growing at remote Diſtances from the Fruit on the ſame Tree: The Nuts grow (for the moſt part) in Cluſters, and are cloſely joined together at the Bottom, each being covered with an outward Huſk or Cup, which opens at the Top; and when the Fruit is ripe, it falls out: The Leaves are roundiſh and incise.*

The Species are;

1. CORYLUS; *ſylveſtris.* C. B. The wild Hazel-Nut.
2. CORYLUS; *ſativa, fruſtu albo,*

*minore, ſive vulgaris.* C. B. The ſmall manured Hazel-Nut.

3. CORYLUS; *ſativa, fruſtu rotundo maximo.* C. B. The large Cob-Nut.

4. CORYLUS; *ſativa, fruſtu oblongo rubente.* C. B. The Red Filbert.

5. CORYLUS; *ſativa, fruſtu oblongo rubente, pellicula albâ teſto.* C. B. The White Filbert.

6. CORYLUS; *Hiſpanica, fruſtu majore, anguloſo.* *Pluk. Alm.* The Spaniſh Nut.

The firſt of theſe Trees is common in many Woods in England, from whence the Fruit is gather'd in Plenty, and brought to the London Markets by the Country People. This Tree is ſeldom planted in Gardens, (except by Perſons curious in Collections of Trees and Shrubs): It delights to grow on a moiſt ſtrong Soil, and may be plentifully increas'd by Suckers from the old Plants, or by laying down their Branches, which in one Year's Time will take ſufficient Root for tranſplanting; and theſe will be much handſomer, and better rooted Plants than Suckers, and will greatly out-grow them, eſpecially while young.

The ſecond and third Sorts are planted in Hedge-rows, in moiſt ſhady Places in Gardens: But the Fruit is much better, and in greater Quantities, when they have an open, free Air, and are not ſuffer'd either to grow too thick, or be over-hung or crowded with other Trees.

The fourth and fifth Sorts, *viz.* the Red and White Filberts, are moſtly eſteem'd for their Fruit, being much ſweeter, and their Shells much tenderer.

The ſixth Sort is annually brought from Spain in great Plenty and ſold in

in *London* all the Winter-season; from which Nuts there have been many Trees rais'd in the *English* Gardens; but I have not yet seen whether they prove the same with the Nuts sown.

All these Sorts may be propagated by sowing their Nuts in *February*; which, in order to preserve them good, should be kept in Sand in a moist Cellar, where the Vermin can't come at them to destroy them: Nor should the external Air be excluded from them, which would occasion their growing mouldy.

The Manner of sowing the Seeds being well known to every one, I need not here mention it, especially since it is not the surest Way to obtain the Sorts desired; for they seldom prove so good as the Nuts which were sown, or at least not one in four of them will: And the Method of propagating them by *Layers* being not only the surest, but also most expeditious, is what I would recommend to every one, who would cultivate these Trees for the sake of their Fruits.

COTINUS CORIARIA. Venice Sumach.

The *Characters* are;

*It hath round Leaves, with long Foot-stalks: The Flowers are small, consisting of five Leaves, which expand in Form of a Rose; are dispos'd in capillary Branches of very slender and stiff Filaments or Hairs, which are widely diffus'd after the manner of Plumes, and spring out of the top Branches.*

There is but one *Species* of this Plant at present known, and that is,

COTINUS; *Coriaria*. *Dod.* Venice Sumach, commonly call'd, *Coccygia*.

This Shrub grows with us about

seven or eight Feet high: The Branches grow very irregular and diffus'd; but when it flowers, (which it seldom doth until it is pretty strong) it maketh a beautiful Figure, the Flowers growing, as it were, on large Plumes of Hair, which almost cover the whole Shrub: It is very proper to plant amongst other Shrubs of the same Growth, where it will make an agreeable Variety.

This Plant is propagated by laying down the tender Branches, which should have a little Slit made at one of the Joints that are laid in the Earth, (as is practis'd in laying *Carnations*) which will greatly facilitate their Rooting. When they are sufficiently rooted, (which is commonly in one Year's Time) they may be transplanted, where they are to remain; for it seems not to bear removing well, especially when grown old; the Roots trailing far under-ground, which, when cut or broken, do not soon recover it; and it seldom produces many Fibres near the Stem.

The Wood of this Shrub is greatly us'd in the southern Parts of *France*, where it grows in great Plenty, to dye their Woollen Cloths of a yellow Colour, or *Feuille Morte*; and the Tanners use the Leaves to prepare their Skins.

COTONEA MALUS; *vide* *Cydonia*.

COTONEASTER; *vide* *Mespilus*.

COTULA FOETIDA; *vide* *Chamæmelum Foetidum*.

COTYLEDON; *Nave'-wort*.

The *Characters* are;

*It hath a Leaf, Stalk, and the whole Appearance of Houseleek; from which it differs in having an oblong tubulous Flower consisting of one Leaf, which is divided at the Top*

into five Parts: The Fruit is like that of the Houfeleek.

The Species are;

1. COTYLEDON; *major*. C. B. The greater Navel-wort.

2. COTYLEDON; *Africana, frutescens, foliis orbiculatis, limbo purpureo cinctis*. Tourn. Shrubby African Navel-wort, with round Leaves edg'd with a purple Rim.

3. COTYLEDON; *Africana, frutescens, folio longo & angusto, flore flavescente*. Com. Rar. Shrubby African Navel-wort, with a long narrow Leaf, and a yellowish Flower.

4. COTYLEDON; *Africana, frutescens, flore umbellato, coccineo*. Com. Rar. Shrubby African Navel-wort, with scarlet Flowers growing in an Umbel.

5. COTYLEDON; *Afra; folio crasso, lato, laciniato, flosculo aureo*. Boerb. Ind. African Navel-wort, with a broad thick divided Leaf, and small yellow Flowers.

6. COTYLEDON; *Afra; arborefcens, major, foliis glaucis, oblongioribus, flore luteo*. Boerb. Ind. Greater Tree-like African Navel-wort, with oblong Sea-green Leaves, and a yellow Flower.

7. COTYLEDON; *major, arborefcens, Afra; foliis minoribus, crassimis, viridioribus, minutissime punctatis*. Boerb. Ind. Greater African Tree-like Navel-wort, with small thick Leaves.

8. COTYLEDON; *major, arborefcens, Afra; foliis minoribus, oblongis, atro-viridibus*. Boerb. Ind. Greater African Tree-like Navel-wort, with small oblong dark green Leaves.

The first Sort (which is that us'd in Medicine) grows upon old Walls and Buildings in divers Parts of England, but is not readily to be cultivated in a Garden; it requires a dry rubbisy Soil, and to have a shady Position.

The African Kinds are all of them propagated by planting Cuttings in any of the Summer Months, which should be laid in a dry Place for a Week or more after they are taken from the Plant, before they are planted; for these abound with Juice through every Part of the Plant, which will certainly rot the Cuttings, if they are not suffer'd to lie out of the Ground, that the wounded Part may heal over, and the great Redundancy of Sap evaporate. The Soil in which these Plants thrive best, is one third fresh light Earth from a Pasture, one third Sand, and the other third Part Lime Rubbish, and rotten Tan, in equal Quantities: These should be well mix'd, and laid in a Heap six or eight Months before it is us'd, turning it over five or six times, that the Parts may the better incorporate; and before it is us'd, it will be proper to pass it through a Screen, to separate the large Stones and Clods, &c. therefrom.

Having prepar'd the Earth, and your Cuttings being in a fit Order for planting, you must fill as many half-penny Pots with Earth as you have Cuttings to plant; then put one Cutting in the middle of each Pot about two Inches deep or more, according to their Strength; then give them a little Water to settle the Earth close about them, and set the Pots in a warm shady Place for about a Week, to prepare the Cuttings for putting forth Roots; after which they should be plung'd into a moderate Hot-bed of Tanners Bark, which will greatly facilitate their rooting; but observe to give them Air, by raising the Glasses at all times when the Weather will permit, as also to shade the Glasses in the Heat of the Day.



In about a Month's Time after planting, these Cuttings will be rooted, when you must begin to expose them to the open Air by degrees, first drawing the Pots out of the Tan, and setting them on the Top; then raise the Glasses very high in the Day-time; and in about a Week after remove the Pots into a Green-house, and there harden them for another Week; after which they may be expos'd to the open Air in a well defended Place, observing not to set them into a Place too much expos'd to the Sun, until they have been enur'd to the open Air for some Time.

In this Place the Plants may remain until the Beginning of *October*; at which Time you should remove them into the Conservatory, placing them as near the Windows as possible at first, letting them have as much free open Air as the Season will permit, by keeping the Windows open whenever the Weather is good: And now you must begin to abate your Waterings, giving it to them sparingly, especially the fifth Sort, which is so very succulent, that upon its having a little too much Water in Winter, it will certainly rot; but you should not suffer its Leaves to shrink for want of Moisture, which is another Extreme some People run into for want of a little Observation; and when they are suffer'd to shrink for want of Water, they seldom fail to rot when they have Water given them, for their Parts being constricted for want of sufficient Moisture to keep their Vessels distended, they are render'd incapable of discharging this Moisture whenever they receive it again.

These Plants are all of them pretty hardy, except the fifth Sort,

which must be preserv'd in a warm airy Part of a good Stove in the Winter. The best Method to treat the other Sorts is, to place them in an open, airy, dry Glass-Frame among *Ficoïdes's* and *African House-leeks*, where they may enjoy as much of the Sun-shine as possible, and have a free, dry, open Air; for if these are plac'd in a common Green-house amongst shrubby Plants, which perspire freely, it will fill the House with a damp Air which these succulent Plants are apt to imbibe, and thereby becoming too replete with Moisture, do often cast their Leaves, and many times their Branches also decay, and the whole Plant perishes.

The fifth Sort, as was before-mention'd, must be preserv'd in a warm Stove, with *Aloes*, *Cereus's*, &c. which may be kept up to the temperate Heat as mark'd on Mr. *Fowler's Thermometers*: This must have very little Water in Winter, and be planted in a very dry, sandy Soil.

The fourth Sort produces the most beautiful Flowers of any of them, and deserves a Place in every good Collection of Plants; as do the second, third, fifth and sixth, for the regular Beauty of their Stems, and large, fair, thick succulent Leaves; and the second, third, and sixth Sorts produce very fair, handsome Bunches of Flowers, but they seldom produce Seeds in *England*.

COWSLIP; *vide* *Primula Veris*.

CRAB-TREE; *vide* *Malus*,

CRAMBE; *Sea-Cabbage*.

The Characters are;

*It hath fleshy Leaves like those of the Cabbage: The Flowers are white, consisting of four Leaves: The Pointal afterwards turns to a roundish Fruit, which terminates in a Pair,*

*having*

having but one Cell, in which is contain'd one oblong Seed.

The Species are;

1. CRAMBE; *maritima*, *Brassica folio*. *Tourn.* Sea-Colewort or Cabbage.

2. CRAMBE; *Orientalis*, *dentis leonis folio*, *erucaginis facie*. *T. Cor.* Eastern Sea-Colewort, with a Dandelion Leaf, and the Face of Wild Rocket.

The first of these Species is found wild upon the Sea Shores in divers Parts of England, but particularly in *Suffex* in great Plenty, where the Inhabitants gather it in the Spring to eat, preferring it to any of the Cabbage Kind: But this must be gather'd young, soon after the Heads are thrust out of the Ground, otherwise it will be very tough and rank.

This Plant may be propagated in a Garden, by sowing the Seeds soon after it is ripe, in a sandy or gravelly Soil, where it will thrive exceedingly, and increase greatly by its creeping Roots, which will soon overspread a large Spot of Ground, if encourag'd: This may be cut for Use in *April* and *May*, while it is young; but if the Heads are suffer'd to remain, they will produce fine regular Heads of white Flowers, which appear very handsome, and will perfect its Seeds, by which it may be propagated.

The second Sort is only preserv'd in curious Gardens of Plants for Variety, but is not of any Use or Beauty.

CRANE'S-BILL; *vile* *Geranium*.

CRASSULA; *vile* *Anacampferos*.

CRATÆGUS; the Wild Service.

The Characters are;

The Leaves are single: The Flower

consists of five Leaves, which expand in Form of a Rose: the Fruit is small; and shap'd like a Pear, in which are contain'd many hard Seeds.

The Species are;

1. CRATÆGUS; *folio laciniato*. *Tourn.* The Common or Wild Service.

2. CRATÆGUS; *folio subrotundo, serrato, subtus incano*. *Tourn.* The White Beam Tree, or *Aria Theophrasti*.

3. CRATÆGUS; *sylvestris, Anglica, foliis Viburni*. The Red Chese-Apple, or English Wild Service.

4. CRATÆGUS; *Virginiana, foliis Arbuti*. *Tourn.* The Virginian Wild Service, with Leaves like the Strawberry Tree.

The first of these Trees is very common in divers Parts of England, growing in Woods, &c. The Leaves of this Tree are very like those of the Hawthorn, but are larger, and have fewer Segments; the Fruit grows in Bunches, and are about the Bigness of Black Cherries, which are sometimes sold in the Markets in Autumn, and are by some People eaten as *Medlars*, &c. but have somewhat of an austere Taste.

This Tree, where it grows wild, will arise to a great Height and Magnitude, but is with Difficulty transplanted into a Garden. The surest Way to procure kindly Trees, is to sow their Fruits soon after they are ripe, which must be manag'd in the Manner directed for the Hawthorn: The second Spring after sowing, the Seeds will come up, when you must carefully keep them clear from Weeds, and in dry Weather gently water them. In this Place the Plants may remain until the second Autumn after they come up; when you must prepare a Spot of fresh Ground, and

and transplant them out in Rows, at about two Feet Distance Row from Row, and six Inches asunder in the Rows, observing in transplanting them, to cut off the down-right Tap-Root, which these Trees are subject to have; and when you have planted them, close the Earth about their Roots, to prevent the Frost from turning them out of the Ground. In this Nursery they may remain three or four Years, observing to keep them clear from Weeds, as also to dig the Ground between the Rows at least once a Year, being careful not to cut or disturb their Roots; this will greatly promote their Growth: then you may transplant them where they are design'd to remain, which may be to form Clumps or Wilderneses of Trees where, by their Variety, it will add a Pleasure to the Prospect: These will grow to a considerable Bulk, if they delight in the Soil, as may be seen by several very large Trees now growing on *Hampstead* Heath, therefore they should be intermix'd amongst such as are of a large Growth.

The second Sort is also very common in *England*, and will grow very regular to a considerable Bulk. This is easily propagated in a Garden, either from Layers, Suckers, or by sowing the Seeds, as directed for the first Sort. This Tree deserves a Place in large Wilderneses Quarters, or in regular Clumps of Trees, where, by the Diversity of its white hoary Leaves, it affords an agreeable Variety. This also bears its Fruit in Bunches in the Manner of the former, but is not quite so large, or well-tasted.

The third Sort grows wild in some of the Northern Counties of *England*, but is at present very rare near *London*. This may be

propagated in the same Manner as was directed for the two former, and may have a Place, for Variety sake, in Plantations of Trees.

The *Virginian* Wild Service is somewhat tender while young, during which Time it will require a little Shelter, but may afterwards be transplanted into the full Ground, where, if it is not too much expos'd, it will thrive very well, and endure our severest Colds. This may be propagated by Seeds as the former, or from Layers and Suckers, and may also be budded or inarch'd into any of the former Sorts.

CRESSES, GARDEN; *vide* Nasturtium.

CRESSES, WATER; *vide* Sisybrium.

CRESSES, INDIAN; *vide* Acri-viola.

CRITHMUM; Samphire.

The Characters are;

The Leaves are thick, succulent, narrow, branchy and trifid: The Flowers grow in an Umbel, each consisting of five Leaves, which expand in Form of a Rose: The Em-palement of the Flower becomes a Fruit consisting of two plain and gently streak'd Seeds.

We have but one Species of this Plant common in *England*, which is,

CRITHMUM; *five feniculum maritimum, minus*. Smaller Samphire, or Sea-Fennel.

This Plant grows in great Plenty upon the Rocks near the Sea-shore, where it is wash'd by the Salt Water, but will not grow to any Strength in a Garden, tho' it may be preserv'd several Years, and propagated by parting its creeping Roots in the Spring. This should be planted in Pots fill'd with gravelly coarse Soil, and in Summer

plentifully water'd: In this Management it will grow tolerably well, and produce Flowers, but rarely perfects its Seeds in a Garden, nor is the Herb near so good for Use as that gathered from the Rocks. This Plant is greatly esteem'd for Pickling, and is sometimes us'd in Medicine.

CRISTA GALLI; *vide* Pedicularis.

CRISTA PAVONIS; *vide* Poinciana.

CROCUS. Saffron.

The Characters are;

It hath a Flower consisting of one Leaf, which is shap'd like a Lily, fistulous underneath, the Tube subdividing into six Segments, and resting on the Footstalk; the Pointal rises out of the Bottom of the Flower, and is divided into three headed and crested Capillaments; but the Empalement afterwards turns to an oblong triangular Fruit, divided into three Cells, and is full of roundish Seeds: To these Marks must be added, it hath a tuberose Root, and long narrow grassy Leaves, with a longitudinal white Furrow thro' the Middle of each.

In giving a List of their several Names, I shall divide them into two Classes; in the first of which I shall place all the Spring flowering Crocus's nearly in the Order of their flowering; and in the second, shall insert those which flower in Autumn, amongst which will come the true Saffron.

1. CROCUS; *vernus, striatus, vulgaris*. Park. Par. The ordinary strip'd Crocus, commonly call'd the Scots Crocus.

2. CROCUS, *vernus, luteus, versicolor, primus*. Park. Par. The best Cloth of Gold Crocus.

3. CROCUS; *vernus, latifolius, flavus*. C. B. The Dutch yellow Crocus.

4. CROCUS; *vernus, minor, albicans*. C. B. Small whitish Spring Crocus.

5. CROCUS; *vernus, flore albo, purpuro-violacea basi*. C. B. Spring Crocus, with a white Flower and a purple Violet Bottom.

6. CROCUS; *vernus, latifolius, flavo-vario flore, duplici*. Clus. Hist. The double Cloth of Gold Crocus.

7. CROCUS; *vernus, latifolius, flavus, flore minore, & pallidior*. C. B. Spring Crocus, with smaller pale yellow Flower.

8. CROCUS; *vernus, latifolius, flavo-variis*. C. B. Spring Crocus, with yellow variable Flowers.

9. CROCUS; *vernus, angustifolius, magno flore, candido*. C. B. Narrow-leav'd Spring Crocus, with large white Flower.

10. CROCUS; *vernus, albus, striatus*. Park. Par. The white strip'd Crocus.

11. CROCUS; *vernus, albus, polyanthos, versicolor*. Park. Par. The party-colour'd Crocus, with many Flowers.

12. CROCUS; *vernus, latifolius, flore penitus albo, ad infima tubuli parum carulescente*. Boerb. Ind. White feather'd Crocus; vulgô.

13. CROCUS; *vernus, latifolius, flore purpureo, magno*. C. B. Broad-leav'd Spring Crocus, with a large purple Flower.

14. CROCUS; *vernus, latifolius, purpureus, variegatus*. C. B. Broad-leav'd Spring Crocus, with a purple strip'd Flower.

15. CROCUS; *vernus, latifolius, flore caruleo, lineis violaceis variegato*. C. B. Broad-leav'd Spring Crocus, with a blue Flower strip'd with Violet.

16. CROCUS; *vernus, latifolius, albus, vel cinereus*. C. B. Broad-leav'd Spring Crocus, with a white or ash-colour'd Flower.

17. CROCUS; *vernus, latifolius, purpuro-violaceus*. C. B. The lesser purple Violet-colour'd *Crocus*, with broad Leaves.

18. CROCUS; *vernus, latifolius, parvus, flore extus pallido, cum lituris purpureis, intus carulescente, pallido*. Boerb. Ind. Broad-leav'd Spring *Crocus*, with a small Flower of a pale Colour on the Outside, with purple Stripes, and the Inside of a pale blue Colour.

19. CROCUS; *vernus, angustifolius, parvo flore*. C. B. Narrow-leav'd Spring *Crocus*, with a small purple Flower.

20. CROCUS; *vernus, capillari folio*. Clus. App. Spring *Crocus*, with a capillaceous Leaf.

There are several other Varieties of the Spring *Crocus* to be found in the curious Gardens of Florists, which are femal Productions; for there may be as great Variety of these Flowers rais'd from Seeds, as there is of *Hyacinths, Iris's, &c.* were we curious in sowing and sowing the Seeds of all the different Kinds. The manner of sowing these Seeds being exactly the same with the *Xyphium*, I shall refer the Reader to that Article for farther Instructions, but shall observe here, that the Seeds should be sown soon after they are ripe.

All these several Varieties of *Crocus's* are very hardy, and do increase exceedingly by their Roots, especially if they are suffer'd to remain two or three Years unmov'd; they will grow in almost any Soil or Situation, and are very great Ornaments to a Garden early in the Spring of the Year before many other Flowers appear. They are commonly planted near the Edges of Borders on the Sides of Walks: In doing of which you should be careful to plant such Sorts

in the same Line as do flower at the same Time, and are of an equal Growth, otherwise the Lines will seem imperfect. These Roots losing their Fibres with their Leaves, may then be taken up and kept dry until the Beginning of *September*, observing to keep them from Vermin, for the Mice are very fond of them. When you plant these Roots, (after having drawn a Line upon the Border) make Holes with a Dibble about two Inches deep or more, according to the Lightness of the Soil, and two Inches Distance from each other, in which you must place the Roots with the Bud uppermost; then with a Rake fill up the Holes in such a manner as that the upper Part of the Root may be cover'd an Inch or more, being careful not to leave any of the Holes open, for this will intice the Mice to them, who when once they have found them out, will destroy all your Roots, if they are not prevented.

In *January*, if the Weather is mild, the *Crocus* will appear above Ground; and in *February* their Flowers will appear before the green Leaves are grown to any Length, so that the Flower seems at first to be naked; but soon after the Flowers decay, the green Leaves grow to be six or eight Inches long, which should not be cut off until they decay, notwithstanding they appear a little un-fightly; for by cutting off the Leaves, the Roots will be so weaken'd as not to arrive at half their usual Size, nor will their Flowers the succeeding Year be half so large: Their Seeds are commonly ripe about the latter End of *April* or the Beginning of *May*, when the green Leaves begin to decay.

The second Class, or autumnal *Crocus's*.

1. CROCUS; *sativus*. C. B. The true Saffron.

2. CROCUS; *Alpinus, autumnalis*. C. B. Autumnal *Crocus* of the Alps.

3. CROCUS; *juncifolius, autumnalis, flore magno, purpurascente*. Boerh. Ind.

The Autumnal *Crocus's* are not so great Increasers as are those of the Spring, nor do they produce Seeds in our Climate, so that they are less common in the Gardens, except the true *Saffron*, which is propagated for Use in great Plenty in many Parts of *England*. These may be taken up every third Year, as was directed for the Spring *Crocus's*, but should not be kept out of the Ground longer than the Beginning of *August*, for they commonly produce their Flowers in *September* or the Beginning of *October*, so that if they remain too long out of the Ground, they will not produce their Flowers so strong, nor in such Plenty as when they are planted early.

The Method of cultivating *Saffron* being somewhat curious, I thought it not improper to insert in this Place an Abstract of it, as it was presented to the Royal Society by Dr. *James Douglas*.

As *Saffron* grows at present most plentifully in *Cambridgeshire*, and has grown formerly in several other Counties of *England*, the Method of Culture does not, I believe, vary much in any of them, and therefore I judge it sufficient to set down here the Observations which I employ'd proper Persons, in different Seasons, to make in the Years 1723, 1724, 1725, and 1728, up and down all that large Tract of Ground that lies between

*Saffron-walden* and *Cambridge*, in a Circle about ten Miles diameter.

In that Country *Saffron* has been cultivated, and therefore it may reasonably be expected that the Inhabitants thereof are more thoroughly acquainted with it than they are any where else.

I shall begin with the Choice and Preparation of the Ground: The greatest Part of the Tract already mentioned, is an open level Country, with few Inclosures; and the Custom there is, as in most other Places, to crop two Years, and let the Land be fallow the third. *Saffron* is always planted upon fallow Ground, and all other Things being alike, they prefer that which has born Barley the Year before.

The *Saffron* Grounds are seldom above three Acres, or less than one; and in chusing, the principal Thing they have Regard to, is, that they be well expos'd, the Soil not poor, nor a very stiff Clay, but a temperate dry Mould, such as commonly lies upon Chalk, and is of a hazel Colour; tho', if every thing else answers, the Colour of the Mould is pretty much neglected.

The Ground being made Choice of, about *Lady-day* or the Beginning of *April*, it must be carefully plough'd, the Furrows being drawn much closer together, and deeper, if the Soil will allow it, than is done for any kind of Corn, and accordingly the Charge is greater.

About five Weeks after, during any time in the Month of *May*, they lay between twenty and thirty Loads of Dung upon each Acre, and having spread it with great Care, they plough it in as before: The shortest rotten Dung is the best; and the Farmers, who have the Conveniency of making it, spare

spare no Pains to make it good, being sure of a proportionable Price for it. About *Midsummer* they plough a third time, and between every sixteen Feet and a half, or Pole in Breadth, they leave a broad Furrow or Trench, which serves both as a Boundary to the several Parcels, when there are several Proprietors to one Enclosure, and to throw the Weeds in at the proper Season.

To this Head likewise belongs the Fencing of the Grounds, because most commonly, tho' not always, that is done before they plant. The Fences consist of what they call dead Hedges or Hurdles, to keep out not only Cattle of all Sorts, but especially Hares, which would otherwise feed on the *Saffron* Leaves during the Winter.

About the Weather we need only observe, that the hottest Summers are certainly the best, and therewith if there be gentle Showers from time to time, they can hardly miss of a plentiful rich Crop, if the extreme Cold, Snow or Rain of the foregoing Winter have not prejudic'd the Heads.

The next general Part of the Culture of *Saffron* is, planting or setting the Roots: The only Instrument us'd for which, is a narrow Spade, commonly term'd a *Spit-shovel*.

The Time of planting is commonly in the Month of *July*, a little sooner or later, according as the Weather answers. The Method is this: One Man with his *Spit-shovel* raises between three and four Inches of Earth, and throws it before him about six or more Inches; two Persons, generally Women, following with Heads, place them in the farthest Edge of the Trench he makes, at three

Inches Distance from each other, or thereabouts: As soon as the Digger or Spitter has gone once the Breadth of the Ridge, he begins again at the other Side, and digging, as before, covers the Roots last set, and makes the same Room for the Setters to place a new Row at the same Distance from the first that they are from one another: Thus they go on till a whole Ridge, containing commonly one Rod, is planted; and the only Nicety in digging is, to leave some Part of the first *Stratum* of Earth untouch'd to lie under the Roots; and in setting, to place the Roots directly upon their Bottom.

What sort of Roots is to be preferr'd, shall be shewn under the fourth Head; but it must be observ'd in this Place, that formerly, when Roots were very dear, they did not plant them so thick as they do now; and that they have always some Regard to the Size of the Roots, placing the largest at a greater Distance than the small ones.

The Quantity of Roots planted in an Acre is generally about sixteen Quarters, or one hundred twenty-eight Bushels, which, according to the Distances left between them, as before assign'd, and supposing all to be an Inch in Diameter one with another, ought to amount to 192,040 in Number.

From the Time that the Roots are planted till about the Beginning of *September*, or sometimes later, there is no more Labour about them; but as they then begin to spire, and are ready to shew themselves above-ground, which is known by digging a few out of the Earth, the Ground must be carefully pard with a sharp Hoc,

and the Weeds, &c. rak'd into the Furrows, otherwise they would hinder the Growth of the Plants.

In some time after appear the *Saffron-flowers*; and this leads us to the third Branch of our present Method. The Flowers are gather'd as well before as after they are full blown; and the most proper Time for this is early in the Morning. The Owners of the *Saffron* get together a sufficient Number of Hands, who place themselves in different Parts of the Field, pull off the whole Flowers, and throw them Handful by Handful into a Basket, and so continue till all the Flowers are gather'd, which happens commonly about ten or eleven o'Clock.

Having then carry'd home all they have got, they immediately spread them upon a large Table, and fall to picking out the *Filamenta Styli* or Chives, and together with them a pretty long Portion of the *Stylus* it self or String to which they are join'd; the rest of the Flower they throw away as useles: The next Morning they return into Field again, whether it be wet or dry Weather, and so on daily, even on Sundays, till the whole Crop be gather'd.

The Chives being all pick'd out of the Flowers, the next Labour about them is to dry them on the Kiln. The Kiln is built upon a thick Plank (that it may be mov'd from Place to Place) supported by four short Legs: The Outside consists of eight Pieces of Wood about three Inches thick, in Form of a quadrangular Frame, about twelve Inches square at the Bottom on the Inside, and twenty-two Inches at Top; which is likewise equal to the perpendicular Height of it. On the Fore-side is left a Hole

about eight Inches square, and four Inches above the Plank, thro' which the Fire is put in. Over all the rest, Laths are laid pretty thick, close to one another, and nail'd to the Frame already mentioned, and then are plaister'd over on both Sides, as are also the Planks at Bottom very thick, to serve for a Hearth. Over the Mouth or widest Part goes a Hair-cloth, fix'd to the Sides of the Kiln, and likewise to two Rollers or moveable Pieces of Wood, which are turn'd by Wedges or Screws, in order to stretch the Cloth. Instead of the Hair-cloth, many People now use a Net-work, or Iron-wire, with which it is observ'd that the *Saffron* dries sooner, and with a less Quantity of Fuel: But the Difficulty in preserving the *Saffron* from burning, makes the Hair-cloth be preferr'd by the nicest Judges in Drying.

The Kiln is plac'd in a light Part of the House; and they begin by laying five or six Sheets of white Paper on the Hair-cloth, upon which they spread the wet *Saffron* between two and three Inches thick; this they cover with other Sheets of Paper, and over these lay a coarse Blanket five or six times doubled, or, instead thereof, a Canvas-pillow fill'd with Straw; and after the Fire has been lighted for some Time, the Whole is cover'd with a Board, having a large Weight upon it.

At first they give it a pretty strong Heat, to make the Chives sweat (as their Expression is); and in this, if they do not use a great deal of Care, they are in Danger of scorching, and so of spoiling all that is on the Kiln.

When it has been thus d'ied about an Hour, they take off the Board,



Board, Blanket, and upper Papers, and take the *Saffron* off from that which lies next it, raising at the same time the Edges of the Cake, with a Knife: Then laying on the Paper again, they slide in another Board between the Hair-cloth and under Papers, and turn both Papers and *Saffron* up-side-down; afterwards covering them (as above.)

This same Heat is continu'd for an Hour longer; then they look on the Cake again, free it from the Papers, and turn it: then they cover it, and lay on the Weight, as before. If nothing happens amiss during these first two Hours, they reckon the Danger to be over; for they have nothing more to do but to keep a gentle Fire, and to turn their Cakes every half Hour, till thoroughly dry: for the doing of which as it ought, there are requir'd full twenty-four Hours.

In Drying the larger plump Chives they use nothing more, but towards the latter End of the Crop, when these come to be smaller, they sprinkle the Cake with a little Small-beer, to make it sweat as it ought; and they begin now to think, that using two Linen-cloths next the Cake, instead of the two innermost Papers, may be of some Advantage in drying: But this Practice is follow'd as yet but by few.

Their Fire may be made of any Kind of Fuel: but that which smoaks the least is best, and Charcoal, for that Reason, is preferr'd to any other.

What Quantity of *Saffron* a first Crop will produce, is very uncertain: sometimes five or six Pounds of wet Chives are got from one Rood; sometimes not above one or two; and sometimes not enough to make it worth while to gather

and dry it. But this is always to be observ'd, that about five Pounds of wet *Saffron* go to make one Pound of dry, for the first three Weeks of the Crop, and six Pounds during the last Week: And now the Heads are planted very thick, two Pounds of dried *Saffron* may, at a Medium, be allow'd to an Acre for a first Crop, and twenty-four Pounds for the two remaining; the third being considerably larger than the second.

In order to obtain these, there is only a Repetition to be made every Year of the Labour of Hoeing, Gathering, Picking, and Drying, in the same manner as before set down, without the Addition of any thing new; except that they let Cattle into the Fields, after the Leaves are decay'd, to feed upon the Weeds; or perhaps mow them for the same Use.

About the *Midsummer* after the third Crop is gather'd, the Roots must be all taken up and transplanted: The Management requisite for which, is the fourth Thing to be treated of. To take up the *Saffron* Heads, or *break up the Ground* (as their Term is) they sometimes plow it, sometimes use a forked kind of Hoe, call'd a Pattoek, and then the Ground is harrow'd once or twice over; during all which Time of Ploughing or Digging, and Harrowing, fifteen or more People will find work enough to follow and gather the Heads as they are turn'd up.

They are next to be carried to the House in Sacks, and there to be clean'd and rais'd: This Labour consists in cleaning the Roots thoroughly from Earth, and from the Remains of old Roots, old Involucra and Excrefcencies; and thus they become fit to be planted

in new Ground immediately, or to be kept for some Time without Danger of spoiling.

The Quantity of Roots taken up, in Proportion to those which were planted, is uncertain; but at a Medium, it may be said, that allowing for all the Accidents which happen'd to them in the Ground, and in Breaking-up, from each Acre may be had twenty-four Quarters of clean Roots, all fit to be planted.

The Owners are sure to chuse for their own Use the largest, plumpest, and fattest Roots: but

least of all do they approve the longest pointed ones, which they call *Spickets*, or *Spickards*; for very small round or flat Roots are sometimes observ'd to flower.

This is the whole Culture of *Saffron* in the Country above-mention'd; and we have only now to consider the Charges and Profits which may be suppos'd, one Year with another, to attend that Branch of Agriculture: And of these I have drawn up the following Computation for one Acre of Ground, according to the Price of Labour in this Country.

	l.	s.	d.
Rent for three Years	3	00	00
Ploughing three times	0	18	00
Dunging	3	00	00
Hedging	1	16	00
Spitting and setting the Heads	1	12	00
Weeding or Paring the Ground	1	04	00
Gathering and Picking the Flowers	6	10	00
Drying the Flowers	1	06	00
Instruments of Labour for three Years with the Kiln, about	0	10	00
Ploughing the Ground once, and Harrowing twice	0	12	00
Gathering the <i>Saffron</i> Heads	1	00	00
Raising the Heads	1	12	00
<i>Total Charge</i>	23	12	00

This Calculation is made upon Supposition, that an Acre of Ground yields twenty-six Pounds of neat *Saffron* in three Years, which I stated only as a mean Quantity between the greatest and the least, and therefore the Price of *Saffron* must be judg'd accordingly; which I think cannot be done better than by fixing it at thirty Shillings *per* Pound, since in very plentiful Years it is sold at twenty, and is sometimes worth between three and four Pounds. At this Rate, twenty-six Pounds of *Saffron* are worth thirty-nine Pounds; and the neat Profits of an Acre of Ground pro-

ducing *Saffron*, will in three Years amount to fifteen Pounds thirteen Shillings, or to about five Pounds four Shillings yearly.

This, I say, may be reckon'd the neat Profit of an Acre of *Saffron*, supposing that all the Labourers were to be hir'd for ready Money; but as the Planter and Family do a considerable Part of the Work themselves, some of this Expence is sav'd; that is, by planting *Saffron*, he may not only reasonably expect clear about five Pounds yearly *per* Acre, but also to maintain himself and Family for some Part of each Year: and it is upon this Supposition

tion only, that the Result of other Computations can be said to have any tolerable Degree of Exactness, but the Calculations themselves are undoubtedly very unaccurate.

I have said nothing here concerning the Charge in Buying, or Profits in Selling the *Saffron-heads*, because in many large Tracts of Ground these must at length balance one another, while the Quantity of Ground planted yearly continues the same, which has been pretty much the Case for several Years past.

### CROTOLARIA.

The Characters are;

It hath single Leaves, in which it differs from Rest-Harrow, and the Pods are turgid, in which it differs from Spanish Broom.

The Species are;

1. CROTOLARIA; *Asiatica, folio singulari, verrucoso, floribus caeruleis.* H. L. Asiatick *Crotolaria*, with a single warted Leaf and blue Flowers.

2. CROTOLARIA; *Asiatica, folio singulari, cordiformi, floribus luteis.* H. L. Asiatick *Crotolaria*, with a Heart-shap'd Leaf, and yellow Flower.

3. CROTOLARIA; *Africana, stryacinis folio, flore caeruleo.* Tourn. African *Crotolaria*, with a Leaf of the Storax-Tree and a blue Flower.

4. CROTOLARIA; *sagittalis glabra, longioribus foliis, Americana.* Pluk. *Phyt.* American *Crotolaria*, with long, smooth Spear-wort Leaves.

The first, second, and fourth Roots are annual: The Seeds of these must be sown on a Hot-bed early in the Spring; and when the Plants are come up, they must be transplanted into a fresh Hot-bed, and treated in the same manner as is directed for *Amaranths*; (to which Article I refer the Reader

to avoid Repetition:) If these are brought forward early in the Year, they will produce their Flowers in *July*, and perfect their Seeds in *September*; but if they are late, and the Autumn should prove bad, they will not live to ripen Seeds.

The third Sort will abide three or four Years, if preserv'd in a warm Stove, and will produce Flowers and Seeds annually, by which it may be propagated. All these Varieties are very ornamental to curious Gardens of Plants.

CROWN IMPERIAL; *vide* Corona Imperialis.

### CRUCIATA; Cross-wort.

The Characters are;

It hath soft Leaves like the Ladies Bed-straw, from which it differs in the Number of Leaves which is produc'd at every Joint, which in this is only four, dispos'd in Form of a Cross.

The Species are;

1. CRUCIATA; *hirsuta.* C. B. Rough or hairy Cross-wort.

2. CRUCIATA; *glabra.* C. B. Smooth Cross-wort.

3. CRUCIATA; *Alpina, latifolia, levis.* Tourn. Broad smooth-leav'd Cross-wort of the Alps.

4. CRUCIATA; *Orientalis, latifolia, erecta, glabra.* T. Cor. Upright and Oriental Cross-wort, with broad smooth Leaves.

The first of these Plants is sometimes us'd in Medicine: This is found wild in divers Parts of *England*, growing on dry sandy Banks.

The other Sorts are preserv'd in Botanick Gardens for the Sake of Variety, but there is no great Beauty in them. They may all of them be propagated easily by Persons curious that way, for they spread and increase by their creeping Roots, or their trailing Branches striking

striking Root as they lie upon the Ground. They love a light sandy Soil.

CRUPINA BELGARUM; *vide* Serratula.

CUCUBALUS; Berry-bearing Chick-weed.

The Characters are;

The Flower consists of five Leaves which are bifid, and dispos'd in a circular Order: The Pointal becomes a soft oval-shap'd Berry, which is included in the Flower-Cup, as in a Bladder, and containing many Kidney-shap'd Seeds.

There is but one Species of this Plant, which is,

CUCUBALUS; *Plinii. Lugd.* Berry-bearing Chick-weed.

This Plant is of no great Use or Beauty, and is seldom preserv'd in Gardens, except for Variety-sake: It grows wild in many Parts of Germany, and hath also been found in the North Part of England. It is easily propagated by sowing the Seeds, or planting the Roots, which will in a short Time overspread a large Spot of Ground, if suffer'd to remain; and it delights in a moist shady Place.

CUCUMIS; the Cucumber.

The Characters are;

It hath a Flower consisting of one single Leaf, which is Bell-shap'd, and expanded towards the Top, and cut into many Segments, of which some are Male or Barren, having no Embryo, but only a large Style in the Middle, which is charg'd with the Farina: others are Female or Fruitful, being fasten'd to an Embryo, which is afterwards chang'd into a fleshy Fruit for the most part oblong, and turbinated, which is divided into three or four Cells inclosing many oblong Seeds.

The Species are;

1. CUCUMIS; *sativus, vulgaris, maturo fructu, subluteo.* C. B. The common Cucumber.

2. CUCUMIS; *sativus, vulgaris, fructu albo.* C. B. The white Cucumber.

3. CUCUMIS; *oblongus.* *Dod.* The long Turkey Cucumber.

The first of these Kinds is the most common in the English Gardens, of which there are two or three Varieties, differing in the Length or Roughness of the outer Skin of the Fruit: but these being only accidental Sportings of Nature, I shall pass 'em over without making any Distinction of them.

The second Sort, which is by far the better Fruit, (as being less Watery, and containing fewer Seeds) is the most common Kind cultivated in Holland; for I do not remember to have seen one of our green Sort in any of the Markets in that Country.

The third Sort is propagated in some curious Gardens, for the uncommon Length of its Fruit, and also its having less Water, and fewer Seeds: but it is not so fruitful as the common Kind, nor will it come so early.

The common Sort is cultivated in three different Seasons: The first of which is on Hot-Beds under Garden Frames, for early Fruit: The second is under Bell or Hand-Glasses, for the Middle Crop: And the third is in the common Ground, for a late Crop, or to pickle.

I shall begin with giving Directions for raising Cucumbers early, which is what most Gentlemens Gardeners have an Emulation to exceed each other in; and some have been at the Pains and Expence to have ripe Fruit in every Month of the Year: Which is rather a Curiosity,

fity, than any real Advantage; for *Cucumbers* that are produc'd before *April* cannot be so wholesome as those that are later; for before the Sun hath Strength enough to warm the Beds through the Glasses in the Day-time, all the Force must proceed from the Fermentation of the Dung, which must consequently occasion a very considerable Steam, as also a great Quantity of Air will be thereby generated, which being pent up in the Hot-bed, soon becomes rancid, and the Steam of the Bed being by the Cold of the Night condensed into large Drops of Water, which being absorb'd or inspir'd by the Plants, must certainly make the Fruit crude and unhealthy, especially when the Nights are very long. This, together with the great Expence and Trouble of procuring them earlier, having almost got the better of Peoples Ambition, hath render'd it less practis'd than it hath been some Years since. I shall begin with giving plain Directions how to procure Plenty of good handsome Fruit in *April*.

Towards the latter end of *January* you must provide a Quantity of new Horse-Dung with the Litter mix'd together, (in proportion to the Number of Plants you intend to raise, which, if for a private Family, two Loads will be full enough) this should be thrown into a Heap, mixing a few Sea-coal Ashes therewith; in about four or five Days after, the Dung will begin to heat, at which Time you may draw a little part of the Heap on the Outside flat, laying thereon a little good Earth about two Inches thick; this you should cover with a Bell-glass, laying a little dry Litter thereon; and in a Day or two after, when you per-

ceive the Earth to be warm, you must put your Seeds therein, covering them about a quarter of an Inch with the same Earth; then put the Glass on again; and also at Night or in bad Weather observe to cover the Glass with dry Litter or Mats, &c. and in three or four Days Time (if the Dung be in a good Temper of Heat) the Plants will appear above Ground; which when you first observe you must immediately, with the adjoining Heap of Dung, make a Bed for one single Light, being careful not to take the Dung away too close to the Bell-Glass, but observing to lay a little Dung round about it, as also to keep it cover'd, that the young Plants may not receive a Check thereby. This Hot-bed will require to be three Feet thick in Dung at least, which, in the making, should be carefully mix'd and beat pretty close with the Fork, to prevent the Heat from being too sudden and violent; Then lay some fine fresh Earth upon the Dung about three Inches thick, levelling it very even, and put on the Frame, covering it over in the Night, or in bad Weather with a Mat, &c. as before, in order to excite a Heat in the Bed; and as soon as you perceive the Bed to be in a good kindly Temper of Heat, you should prick your young Plants thereon at about two Inches distance each Way, observing to put them into the Earth almost up to their Seed-leaves.

If the Bed is of a good Temper for Heat, your Plants will take Root in less than twenty-four Hours; after which Time you must be careful to let in a little Air at such Times when the Weather will permit, as also to turn the Glasses upside downwards

every Day to dry, for the Steam of the Bed condensing on the Glasses, will fall down upon the Plants, and be very injurious to them; and therefore whenever the Weather is so bad as not to permit the Glasses to lie turn'd long, you should at least turn 'em once or twice a Day, and wipe off the Moisture with a woollen Cloth, but you must also be very careful how you let in too much cold Air, which is equally destructive to the tender Plants; therefore, to avoid this, it is a very good Method to fasten before the upper Side of the Frame, where the Air is suffered to enter the Bed, a Piece of coarse Cloth, or a Mat, so that the Air which enters may pass through that, which will render it less injurious to your Plants.

You must also be very cautious in giving Water to the Plants while young; and whenever this is done, it should be sparingly, and the Water should be plac'd either into a Heap of Dung, or in some other Place, for some time before it is used, so as to be nearly of a Temperature for Warmth with the inclos'd Air of the Hot-bed; and as the Plants advance in Height, you should have a little dry sifted Earth always ready, to earth up their Shanks, which will greatly strengthen them: You must also be very careful to keep up the Heat of the Bed; which if you should find decline, you must lay a little fresh Litter round about the Sides of the Bed, and also keep the Glasses well cover'd in the Nights, or in bad Weather; but if, on the other hand, your Bed should prove too hot, you should thrust a large Stake into the Side of the Dung in two or three Places, almost to the Middle of the Bed, which will

make large Holes, through which the greatest Part of the Steam will pass off without ascending to the Top of the Bed; and when you find it has answered your Purpose by slackening the Heat of your Bed, you must stop them up again with Dung.

These Directions, if carefully attended to, will be sufficient for raising the Plants in the first Bed: You must therefore, when you perceive the third or rough Leave begin to appear, prepare another Heap of fresh Dung, which should be mix'd with Ashes, as was before directed: This should be in Quantity according to the Number of Holes you intend to make: The common Allowance for ridging out the earliest Plants, is one Load to each Light or Hole, so that the Bed will be near three Feet thick in Dung; but for such as are not ridg'd out till *March*, two Loads of Dung will be sufficient for three Holes; for I could never observe any Advantage in making these Beds so thick with Dung as some People do; their Crops are seldom better, if so good, as those which are of a moderate Substance, nor are they forwarder, and the Fruit is rarely so fair, nor do the Vines continue so long in Health.

In making these Beds, you must carefully mix the Dung, shaking it well with the Fork, so as not to leave any Clods of Dung unseparated, as also to beat it down pretty close, to prevent the Steam from rising too hastily; you must also be careful to lay it very even, and to beat or press down the Dung equally in every Part of the Bed, otherwise it will settle in Holes, which will be very hurtful: When you finish laying the Dung, you must make a Hole exactly in  
the

the Middle of each Light about a Foot deep, and eight or nine Inches over; these Holes must be fill'd with light fresh Earth, which should be screen'd to take out all large Stones, Clods, &c. laying it up in a Hill, and in the Middle of each, thrust in a Stick about eighteen Inches long, which should stand as a Mark to find the exact Place where the Hole is; then earth the Bed all over about three Inches thick, levelling it smooth, and afterwards set the Frame upon it, covering it with the Glasses.

In two or three Days time your Bed will be in fit Order to receive your Plants; of which you may easily judge by pulling out one of the Sticks which was put in the Middle of the Holes, and feeling the lower Part of it, which will satisfy you what Condition your Bed is in: Then you must stir up the Earth in the Middle of the Hole with your Hand, breaking all Clods, and removing all large Stones, making the Earth hollow in Form of a Basin: Into each of these Holes you must plant four Plants; in doing of which, observe to make the Holes for the Plants a little slanting towards the Middle of the Basin, especially if your Plants are long-shank'd: This is intended to place the Roots of the Plants as far as possible from the Dung, to which if they approach too near, their Roots are subject to be burn'd off: Then settle the Earth gently to each Plant, and if the Earth is dry, it will be proper to give them a little Water (which should be warm'd to the Temper of the Bed, as was before directed;) and if the Sun should appear in the Middle of the Day, they should be shaded therefrom with Mats, until the Plants have taken Root,

which will be in two or three Days; after which, you must let them enjoy as much of the Sun as possible, observing to turn the Lights in the Day-time to dry, as also to give a little Air whenever the Weather will permit.

You must also observe to keep the Glasses cover'd every Night, and in bad Weather; but be very careful not to keep them cover'd too close, especially while the Bed has a great Steam in it, which will cause a Damp to settle upon the Plants, which, for want of Air to keep the Fluid in Motion, will stagnate and rot them.

When your Plants are grown to be four or five Inches high, you must, with some slender forked Sticks, incline them toward the Earth, each one a separate Way; but this must be done gently at first, lest by forcing them too much, you should strain or break the tender Vessels of the Plants, which would be very hurtful to them: In this Manner you should from Time to Time observe to peg down the Runners as they are produc'd, laying each in exact Order, so as not to interfere or cross each other, nor should you ever after remove them from their Places, or handle them too roughly, whereby the Leaves may be broken or displac'd, which is also equally injurious to them; but whenever you have occasion to weed the Bed between the Plants, do it with great Care, holding the Leaves aside with one Hand, while with the other you pull out the Weeds.

In about a Month after they are ridg'd out, you may expect to see the Beginnings of Fruit, which very often are preceded by Male Flowers, which many People are so ignorant as to pull off, calling

them false Blossoms; but this I am fully convinc'd, by many Experiments, is wrong; for these Flowers are of absolute Service to promote the Welfare of the Fruit; which when these Male Flowers are intirely taken off, does very often fall away and come to nothing: Nor should the Vines be prun'd, as is too often the Practice of unskilful People, especially when they are too luxuriant, which often happens when the Seeds were fresh, or of the last Year's sowing, and the Plants in good Heart: If this should happen to be the Case, it would be very proper to pull up one of the Plants, before it hath run so far as to intangle with the others; for it often happens, that two or three Plants are better than four or five, when they are vigorous; for when the Frame is too much crowded with Vine, the Fruit is seldom good, nor in such Plenty, as when there is a more moderate Quantity of Shoots, for the Air being hereby excluded from the Fruit, they often spot and decay, or fall off very young.

You must also be very careful to cover the Glasses every Night, when your Fruit begins to appear, as also to lay a little fresh Litter or Mowings of Grass round the Sides of the Bed, to add a fresh Heat thereto; for if the Heat of the Bed be spent, and the Nights prove cold, the Fruit will fall away and come to nothing; and when the Sun is extream hot, in the middle of the Day, you must cover the Glasses with Mats to shade the Vines; for altho' they delight in Heat, yet the direct Rays of the Sun, when it has great Force, are very injurious, by either scorching those Leaves which are near the Glasses, or by causing too great a

Perspiration, whereby the extreme Part of the Shoots, and the large Leaves are left destitute of Nourishment, and the Fruit will be at a Stand, and often turn yellow before it arrives at half its Growth.

At this Time, when your Vines are spread, so as to cover the Hot-bed, it will be of great Service, when you water them, to sprinkle them all over gently, so as not to hurt the Leaves; but observe to do this not at a Time when the Sun is very hot, for hereby I have known a whole Bed of *Cucumbers* spoil'd; for the Water remaining upon the Surface of the Leaves in Drops, doth collect the Rays of the Sun as it were to a Focus, and so scorches the Leaves, that in one Day's time they have, from a bright Green, become of the Colour of brown Paper.

These Directions, with diligent Observation, will be sufficient for the Management of this Crop of *Cucumbers*; and Vines thus treated will continue to supply you with Fruit till *Midsummer*, by which Time the second Crop will come to bear: The Sowing and Managing of which is what I shall next proceed to.

About the Beginning of *March*, or a little later, according to the Earliness of the Season, you must put in your Seeds, either under a Bell-glass, or in the Upper-side of your early Hot-bed; and when the Plants are come up, they should be prick'd upon another moderate Hot-bed, which should be cover'd with Bell or Hand-glasses, plac'd as close as possible to each other: The Plants should also be prick'd at about two Inches distance from each other, observing to water and shade them until they have taken Root, which will be in a very short  
Time:



Time : You must also cover the Glasses with Mats every Night, or in very bad Weather; but in the Day-time, when the Weather is hot, you must raise the Glasses with a Stone on the opposite Side from the Wind, to give Air to the Plants, which will greatly strengthen them : You must also water them as you shall find they require it; but this must be done sparingly while the Plants are young.

The beginning of *April*, the Plants will be strong enough to ridge out, you must therefore be provided with a Heap of new Dung, in proportion to the Quantity of Holes you intend to plant, allowing one Load to six Holes: When your Dung is fit for Use, you must dig a Trench about two Feet four Inches wide, (and in Length just as you please, or the Place will allow); and if the Soil be dry, it should be ten Inches deep, but if wet, very little in the Ground, levelling the Earth in the Bottom; then put in your Dung, observing to stir and mix every Part of it, as was directed for the first Hot-beds, laying it close and even.

When this is done, you must make Holes about eight Inches over, and six Inches deep, just in the Middle of the Ridge, and three Feet and an half Distance from each; and if there be more than one Ridge, the Distance of those ought to be eight Feet and an half from each other; then fill the Holes with good light Earth, putting a Stick into the Middle of each for a Mark, and afterwards cover the Ridge over with Earth about four Inches thick, laying the Earth the same Thickness round the Sides : When the Earth is levell'd smooth, you must set the Glasses

on upon the Holes, leaving them close down about twenty-four Hours, in which Time the Earth in the Holes will be warm'd sufficiently to receive the Plants; then with your Hand stir up the Earth in the Holes, making it hollow in Form of a Basin; into each of which you should plant four Plants, observing to water and shade them until they have taken Root: After which Time you must be careful to give them a little Air, by raising the Glasses on the opposite Side to the Wind, in Proportion to the Heat of the Weather, as also to water them as you shall see they require it; but you must only raise the Glasses in the middle of the Day, until the Plants do fill the Glasses; at which Time you should raise the Glasses with a forked Stick, on the South-side, in Height proportionable to the Growth of the Plants, that they may not be scorch'd by the Sun: This also will harden and prepare the Plants to endure the open Air, but you should not expose them too soon thereto, for it often happens that there are Morning Frosts in *May*, which are many times destructive to these Plants, when expos'd thereto; it is therefore the surest Method to preserve them under the Glasses as long as they can be kept in without Prejudice to the Plants : And if the Glasses are rais'd with two Bricks on the Backside, and the forked Stick on the other Side, they may be kept in a great while without Danger.

Towards the latter end of *May*, when the Weather appears settled and warm, you should turn your Plants down gently out of the Glass, but do not perform this in a very dry hot sunny Day, but rather when there is a cloudy Sky,

and an appearance of Rain: You must, in doing of this, raise the Glasses either upon Bricks or forked Sticks, whereby they may stand secure, at about two or three Inches high from the Ground, that the Plants may lie under them without bruising, nor should you take the Glasses quite away until the latter end of *June*, or the beginning of *July*, for these will preserve the Moisture much longer to their Roots than if they were quite expos'd to the open Air: About three Weeks after you have turn'd the Plants out of the Glasses, they will have made a considerable Progress, especially if the Weather has been favourable; at which Time you should dig up the Spaces of Ground between the Ridges, laying it very even; then lay out the Runners of the Vines in exact Order, and be careful in this Work not to disturb the Vines too much, nor to bruise or break the Leaves: This digging of the Ground will loosen it, and thereby render it easy for the Roots of the Plants to strike into it, as also render the Surface of the Earth more agreeable to the Vines that run upon it: After this there will be no farther Care needful, but only to keep them clear from Weeds, and to water them as often as they shall require, which they will soon shew, by the hanging of their greater Leaves. The Ridges thus manag'd will continue to produce large Quantities of Fruit from *June* until the latter end of *August*, after which Time, the Coldness of the Season renders them unwholesome, especially if the *Autumn* proves wet.

From these Ridges People commonly preserve their *Cucumbers* for Seed, by making Choice of two or three of the fairest Fruit upon each

Hole, never leaving above one upon a Plant, and that situated near the Root of it; for if you leave more, they will weaken the Plants so much, that your other Fruit will be small and fewer in Number. These should remain upon the Vines until the end of *August*, that the Seeds may be perfectly ripe; and when you gather them from the Vines, it will be proper to set the Fruit in a Row, upright against an Hedge or Wall, where they may remain until the outer Cover begins to decay; at which Time you should cut them open and scrape out the Seeds, together with the Pulp, into a Tub, which should be afterwards cover'd with a Board, to prevent Filth from getting amongst the Pulp. In this Tub it should be suffer'd to remain eight or ten Days, observing to stir it well with a long Stick to the Bottom every Day, in order to rot the Pulp, that it may be easily separated from the Seeds; then pour some Water into the Tub, stirring it well about, which will raise the Scum to the Top, but the Seeds will settle to the Bottom, so that by two or three Times pouring in Water, and afterwards straining it off from the Seeds, they will be perfectly clear'd from the Pulp; then you should spread the Seeds upon a Mat, which should be expos'd to the open Air three or four Days, until they are perfectly dry, when they may be put up in Bags, and hung up in a dry Place, where Vermin cannot come to them, where they will keep good for several Years, but are generally preferr'd when three or four Years old, as being apt to produce less vigorous, but more fruitful Plants.

I shall, in the next Place, proceed to give Directions for managing  
*Cucumbers*.

*Cucumbers* for the last Crop, or what are generally call'd *Picklers*.

The Season for sowing these is towards the latter end of *May*, when the Weather is settled: The Ground where these are commonly sown, is in wide Rows, between *Colliflowers*, which are allow'd four Feet and an half Space when the *Colliflowers* were planted. In these Rows you should dig up square Holes, at about three Feet and an half Distance from each other, breaking the Earth well with a Spade, and afterwards smoothing and hollowing it in the Form of a Basin with your Hand; then put eight or nine Seeds into the middle of each Hole, covering them over with Earth about half an Inch thick; and if it should be very dry Weather, it will be proper to water the Holes gently in a Day or two after the Seeds are sown, in order to facilitate their Germination.

In five or six Days, if the Weather be good, your Plants will begin to thrust their Heads above Ground; at which time you should be very careful to keep off the Sparrows, who are very fond of the young tender Heads of these Plants, and if they are not prevented, will destroy your whole Crop: But as it is not above a Week that the Plants are in this Danger, so it will be no great Trouble to look after them during that Time; for when the Plants are come up, and have expanded their Seed-leaves, the Sparrows will not meddle with them.

You must also be careful to water them gently, as you shall find the Drought of the Season doth require; and when you perceive the third or rough Leaf of the Plants begin to appear, you must pull out all the weakest Plants, leaving only

five of the most promising and best situated in each Hole, stirring the Earth round about them with a small Hoe to destroy the Weeds, and raise the Earth about the Shanks of the Plants, putting a little Earth between them, pressing it gently down with your Hand, that the Plants may be thereby separated from each other to a greater Distance; then give them a little Water (if the Weather be dry) to settle the Earth about them, which you must afterwards repeat as often as you shall find it necessary, still being careful to keep the Ground clear from Weeds.

When your *Colliflowers* are quite drawn off the Ground from between the *Cucumbers*, you must hoe and clean the Ground, drawing the Earth up round each Hole in form of a Basin, the better to contain the Water when it is given them; and also lay out the Plants in exact Order as they are to run and extend, so that they may not interfere with each other: And if all the five Plants, before left, are in good Condition, you should pull out one of the worst of them, and throw it away; for four good Plants will be full enough to remain for good; then lay a little Earth between the Plants left, pressing it down gently with your Hand, the better to spread them each way, giving them a little Water to settle the Earth about them, repeating it as often as the Season shall require, and observing to keep the Ground clean from Weeds: The Plants thus manag'd, will begin to produce Fruit toward the latter end of *July*, when you may either gather them young for Pickling, or suffer them to grow for large Fruit.

The Quantity of Holes necessary for a Family is about fifty or sixty, for if you have fewer, they will not produce enough to pay for Pickling, without keeping them too long in the House, for you can't expect to gather more than two hundred at each Time from fifty Holes; but this may be done twice a Week during the whole Season, which commonly lasts five Weeks; so that from fifty Holes, you may reasonably expect to gather about two thousand in the Season, which, if they are taken small, will not be too many for a private Family, especially considering, that if you have fewer Holes, the Quantity each Week produc'd will scarcely be worth the Trouble of Pickling.

But lest I should be censur'd by those who delight in having very early *Cucumbers*, for omitting what they call an essential Part of Gardening, I shall beg Leave here to subjoin a short Account of a Method which I have us'd with very good Success, to obtain *Cucumbers* very early; which is, I sowed the Seeds in the Beginning of *January*, and after having rais'd my Plants in the Manner before directed, until they put forth their rough Leaves, I prepar'd some looie wrought Baskets, about eight Inches Diameter, and five Inches deep, with two small Handles to each; then I made a fresh Hot-bed of good Strength, which would hold a Frame of two Lights; on this I plac'd the Baskets, which were almost full of good light Earth, as near to each other as possible, by which means this small Bed would contain eighteen or twenty Baskets; then I fill'd up the Spaces between the Baskets with the same light Earth as was put

into the Baskets, putting the Frame and Glasses over the Bed, which in two Days was in a proper Temperature of Heat to receive the Plants; then I put five into each Basket, observing to water and shade them until they had taken Root; afterwards managing them as was before directed for the first Crop of *Cucumbers*, observing when the Bed began to lose its Heat, to lay a little fresh Dung round the Sides, which added a new Heat to the Bed. In this Frame I suffer'd them to remain until the Plants were laid down, and had run to the Sides of the Baskets; then I prepar'd the Ridge, which I made of a good Substance in Dung, and after it had lain two or three Days to heat, I remov'd the Plants in the Baskets, placing one into the Hole in the middle of each Light: These Plants, in a short Time after, produc'd Fruit, which, by the good Temper of Heat in the Bed, grew so fast, that in three Weeks after removing the Baskets I cut *Cucumbers*. There are several Advantages in this Management; first, you can keep the Baskets in a small Room for a considerable Time, whereby your Frames may be employ'd in other Uses: And secondly, a less Quantity of Dung is requir'd in this way: Thirdly, when the Plants are in Baskets, if you find your Bed too hot, it is but raising up the Baskets, and they are secure from any Danger; and when the violent Heat is over, they may be settled down again: And lastly, by having your Plants so forward for Fruit when they are put into the Ridges, the Heat of the Bed continues to set and bring off the first Crop of Fruit; for want of which kindly Heat, the first Setting or Crop of Fruit which appears upon  
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the Vines, either drops off, or is a long Time growing to Maturity; therefore from these and many other Advantages attending this Method, I may with Safety pronounce it, the best yet known to procure Cucumbers in any of the Winter or Spring Months.

CUCUMIS AGRESTIS; *vide* Elaterium.

CUCURBITA; The Gourd.

The Characters are;

*It hath a Flower, consisting of one Leaf, which is of the expanded Bell-shape; for the most part so deeply cut, that it seems to consist of five distinct Leaves: This, like the Cucumber, has Male and Female Flowers on the same Plant: The Fruit of some Species is long, of others, round or Bottle-shap'd, and is commonly divided into six Cells, in which are contain'd many flat oblong Seeds, which have sometimes a Border round them.*

The Species are;

1. CUCURBITA; *longa, folio molli, flore albo.* F. B. The long Gourd, with a soft Leaf, and a white Flower.

2. CUCURBITA; *falcata figurâ, folio molli, flore albo.* C. B. The Sickel-shap'd Gourd, with a soft Leaf, and a white Flower.

3. CUCURBITA; *latior, folio molli, flore albo.* F. B. Flat Gourd, with a soft Leaf, and a white Flower, commonly call'd Squashes.

4. CUCURBITA; *lagenaria, flore albo, folio molli.* C. B. Bottle-shap'd Gourd, with a soft Leaf, and a white Flower.

There are several other Varieties of this Plant, which are annually brought from *America*, where are numberless Varieties of these, and of *Pumkins* and *Calabashes*.

They may be all propagated by sowing their Seeds in *March*, on a

Hot-bed; and when the Plants come up, they should be transplanted on another moderate Bed, where they should have a great deal of Air to strengthen them; and when they have got four or five Leaves, they should be transplanted into Holes made upon an old Dunghill, or some such Place, allowing them a great deal of room to run; for some of the Sorts will spread to a great Distance: I have measur'd a single Plant, which had run upwards of forty Feet from the Hole, and had produc'd a great Number of Side-Branches; so that if the Plant had been encourag'd, and all the Side-Branches permitted to remain, I dare say it would have fairly overspread ten Rods of Ground; which, to some People, may seem like a Romance; yet I can affirm it to be Fact. But what is this to the Account printed in the *Transactions of the Royal Society*, which was communicated to them by *Paul Dudley, Esq;* from *New-England*, wherein mention is made of a single Plant of this Kind, which, without any Culture, spread over almost two Pastures, and from which Plant were gather'd Two Hundred and Sixty Fruits, each, one with another, as big as an Half-Peck!

These Fruits are by some People gather'd while young, and boil'd; afterwards stripping off the outer Cover and buttering them, they eat them with Meat, and are, by some People, mightily esteem'd, especially the first Sort, which is counted by far the sweetest: Of this Kind I have seen a single Fruit upwards of six Feet long, which has ripen'd perfectly well. But this is not common with us; tho' I have heard of their being longer in other Countries: This Sort requires

quires to be sown early in the Spring, and brought forward under Bell or Hand-Glasses, otherwise they seldom arrive to half their Maturity.

These Plants requiring so much room to spread, and their Fruit being very little valu'd in *England*, hath occasion'd their not being cultivated amongst us; we having so many Plants, Roots, or Fruits, which are greatly preferable to those for Kitchen Uses: but in some Parts of *America*, where Provisions are not in so great Plenty, or so great Variety, these Fruits may be very acceptable.

CUCURBITIFERA ARBOR; the Calabash-Tree.

The Characters are;

*It hath an anomalous Flower, consisting of one Leaf, which is shap'd like a Bottle, and cut into several Segments: From the Cup of the Flower arises the Pistillum, which becomes a large fleshy Fruit, with a hard Shell, in which are contain'd many Heart-shap'd Seeds.*

There is but one Species of this Tree at present in *England*, which is,

CUCURBITIFERA ARBOR; *Americana*. H. L. The Calabash-Tree.

This Tree grows to a considerable Height in the warmer Parts of *America*, where it produces a very large Fruit; the outer Coat of which becomes very hard, and, as it were, of a woody Substance, and is of great Use to the Inhabitants for Bowls, Cups, and many other Purposes in Life: but whether the Inside or Pulp of the Fruit is of any Use to them, I can't say.

This Tree being a Native of the warmer Countries, must, with us, be kept in a Stove, with *Guava's*, &c. which Stove should be kept

to the temperate Heat, as mark'd on Mr. *Fowler's Thermometers*, with which Heat I find they succeed better than in a greater. This Tree requires frequent Waterings, and a light sandy Soil, and in Summer must have a great Quantity of free Air; for if it be kept too close in that Season, the Leaves are apt to be infested by a great Number of Insects; which greatly deface the Tree, and retard its Growth. To remedy this, whenever you see them first begin to attack the Leaves, you must carefully wash them off with a Woollen Rag; and then expose the Plant (if in Summer-time) to the open Air, or set it in some cooler Place in Winter. This Plant may be propagated by planting Cuttings in any of the Summer Months, which should be put into Pots fill'd with good fresh Earth, and plung'd into a moderate Bed of Tanners Bark, observing to water and shade them in the Heat of the Day until they have taken Root. The Seeds of this Tree, if brought over fresh in the Fruit, will grow, if sown on a Hot bed, and manag'd as was directed for the *Anana's*; to which I shall refer the Reader, to avoid Repetition.

CUMINOIDES; wild Cummin.

The Characters are;

*It hath Leaves consisting of many Lobes like those of Burnet: The small Flowers, which consist of many Petals, are collected into a round Head: The Petals (or Flower-Leaves) are fringed; each of these Flowers are succeeded by a single Seed.*

There is but one Species of this Plant, which is,

CUMINOIDES; *vulgare*. *Tourn.* Common wild Cummin.

This Plant is preserved in curious Botanick Gardens, for the sake of

of Variety: But it being of no great Beauty or Use, is very seldom cultivated in other Gardens. The Seeds of this Plant should be sown soon after ripe; for if kept until Spring, they seldom succeed so well. It loves a light dry Soil: and if the Seeds are permitted to scatter upon the Ground, they will come up again, and require no farther Culture.

CUMINUM; Cummin.

The Characters are;

The Root is Annual: The Leaves are like those of Fennel: The Seeds are small, long, narrow, and crooked; two of which succeed each Flower, as in the other umbelliferous Plants.

There is but one Species of this Plant at present known in England, which is,

CUMINUM. Mor. Umb. Cummin.

This Plant is propagated for Sale in the Island of Malta, where it is call'd *Cumino nigro*, i. e. *hot Cummin*. But *Anise*, which they also propagate in no less Quantity, they call *Cumino dolce*, i. e. *sweet Cummin*. So that many of the old Botanists were mistaken, when they made two Species of *Cummin*, viz. *acre*, and *dulce*.

The Seeds of this Plant are us'd in Medicine, which are brought from the above-mention'd Place; for the Plant is too tender to be cultivated to any Advantage in England: I have sown the Seeds several times in the *Physick-Garden*, which have come up very well and grown to be four or five Inches high; but have constantly decay'd, without producing any good Seeds. If any Person is inclin'd to cultivate a little of this Plant for Curiosity, the best Method is, to sow the

Seeds early upon a very moderate Hot-bed; and when the Plants are come up pretty strong, they may be transplanted into a light Soil, at about four or five Inches Distance, where they may probably produce good Seeds.

CURRENT-TREE; *vide* Ribes.

CYANUS; Bottle-Flower.

The Characters are;

It hath a squamose hairy Calix: The Disk of the Flower is almost plain; but the Outer Florets round the Borders are large, tubulous, and deeply cut-in: These Outer Florets are always barren; but the Inner Florets have a single naked Seed succeeding each.

The Species are;

1. CYANUS; *montanus, latifolius, vel verbasculum cyanoides*. C. B. The greater broad-leav'd Blue-bottle, commonly call'd, Globe-Flower.

2. CYANUS; *angustiore folio & longiore, Belgicus*. H. R. Par. The greater narrow-leav'd Blue-bottle, or Globe-Flower.

3. CYANUS; *floridus, odoratus, Turcicus, sive Orientalis, major, flore purpureo*. Park. The purple sweet Sultan; *vulgô*.

4. CYANUS; *floridus, odoratus, Turcicus, sive Orientalis, major, flore albo*. H. R. Par. The white sweet Sultan; *vulgô*.

5. CYANUS; *floridus, odoratus, Turcicus, sive Orientalis, major, flore incarnato*. H. L. Sweet Sultan, with a pale Flower.

6. CYANUS; *floridus, odoratus, Turcicus, sive Orientalis, major, flore luteo*. H. L. The yellow sweet Sultan.

7. CYANUS; *peregrinus, Amberboi, sive Emberboi dictus, Ambrosi*. Foreign sweet Sultan, called Amberboi or Emberboi.

8. CYANUS; *Orientalis, alter seu Constantinopolitanus, flore fistuloso, candidante.* H. R. Par. White quill'd-leav'd sweet Sultan.

9. CYANUS; *Orientalis, flore luteo fistuloso.* A. R. Par. Yellow quill'd-leav'd sweet Sultan.

10. CYANUS; *segetum, flore caeruleo.* C. B. Corn Blue-bottle.

11. CYANUS; *segetum, flore albo.* C. B. Corn-bottle, with a white Flower.

12. CYANUS; *segetum, flore variegato.* Corn-bottle, with a variable Flower.

The first and second *Species* are abiding Plants, which increase greatly by their creeping Roots. The first is very common in most of the old Country Gardens, but is seldom preserved in curious Flower-Gardens, because it is so apt to overspread whatever Plants grow near it: however, it may have a Place in large Borders under Trees, or in Wildernesses, where it will thrive very well: And altho' it is a Flower of little Beauty; yet, for its Variety and long Continuance to flower, it deserves to be propagated in very large Gardens. The second is at present less common in *England*, being rarely to be found but in Botanick Gardens: These are multiply'd by taking Off-shets from the old Roots (which they furnish in great Plenty) either in Spring or Autumn, and will grow in any Soil or Situation.

The third, fourth, fifth, sixth, seventh, eighth, and ninth Sorts are commonly sown on a Hot-bed, and treated as the *Balsamine*, or *Marvel of Peru*; but these will flower full as well if they are sown on a Border of good light Earth, in a warm Position, (except the sixth and ninth Sorts, which should have a Ho.-bed); and when the

Plants come up, they may be prick'd out upon another Bed of good Earth six Inches apart each Way, where they may remain until they are strong enough to be transplanted where they are to flower; which may be either in Pots or in Borders amongst other Annuals: in doing of which, you must be careful not to shake the Earth from their Roots; and when they are planted, they should be water'd and shaded until they have taken new Root. In *July* these Plants will begin to flower, and continue until the Frost prevents them. But you should observe to let the earliest Flowers remain for Seeds; for if the Autumn should prove cold and wet, the late Flowers will not produce good Seeds, especially the yellow Sort, which seldom perfects Seeds unless they are brought to flower very early.

These Plants are annual, and rarely continue after perfecting their Seeds; yet in order to have them flower early in the Season, you may sow their Seeds the latter End of *July* or the Beginning of *August*, that the Plants may have Strength before the cold Weather comes on, which being planted into warm Borders will endure the Cold very well, (provided they are not so forward as to run up to flower) and will flower early the next Summer; by which Method you may always be sure to obtain good Seeds.

The Corn-bottles are also Annuals, which for the Diversity of their Flowers were propagated in Gardens, but of late Years they are almost excluded; however, the variable Flowers are worthy of a Place in every good Garden. These should be sown in Autumn, and may be transplanted into large Borders,



ders, where they will endure the Cold, and flower early the succeeding Summer, and will grow in almost any Soil or Situation.

CYCLAMEN; Sowbread.

The Characters are ;

It hath a thick, round, fleshy Root: The Flowers arise singly upon Pedicles from the Root, which consist of one Leaf, divided into five or six Segments, which are reflex'd almost to the Bottom, where they are divided: The Pointal of the Flower becomes a round membranaceous Fruit, which contains many roundish Seeds, which being committed to the Earth, becomes a Root.

The Species are ;

1. CYCLAMEN; *Hederæ folio*. C. B. *flore purpureo*. Common autumnal Sowbread, with purple Flowers.

2. CYCLAMEN; *Hederæ folio, flore albo*. Autumnal Sowbread, with a white Flower.

3. CYCLAMEN; *orbiculato folio, infernè purpurascente*. C. B. Round-leav'd Sowbread, with Leaves of a purplish Colour underneath.

4. CYCLAMEN; *vernum, minus, orbiculato folio, infernè rubente, flore minore, ruberrimo*. Mor. Hist. Lesser Spring Sowbread, with roundish Leaves of a reddish Colour underneath, with small deep red Flowers.

5. CYCLAMEN; *hyeme & vere florens, folio anguloso, amplo flore albo, basi purpureâ Persicum dictum*. H. R. Par. The Persian, Winter, and Spring flowering Sowbread, with large white Flowers, and a purple Bottom.

6. CYCLAMEN; *hyeme & vere florens, folio anguloso, amplo flore carneo, basi purpurea*. H. R. Par. The Persian, Winter, and Spring flowering Sowbread, with a large

Flesh-colour'd Flower, and a purple Bottom.

7. CYCLAMEN; *vernum album*. C. B. White Spring flowering Sowbread.

There are several other Varieties in the curious Gardens abroad, but these here mentioned are what we have at present in England.

The first and second Roots are very common in the English Gardens, and are very hardy. These are propagated by sowing their Seeds soon after they are ripe, in Tubs of fresh sandy Earth, in the manner directed for *Xiphium*, to which, I shall refer, to avoid Repetition. In four or five Years time they will begin to flower, but their Roots being then small, will produce very few Flowers; and as their Roots yearly increase in Bulk, so will the Number of Flowers increase in proportion. I have seen a single Root of this Plant above fourteen Inches Diameter, which hath produc'd upwards of an hundred Flowers in one Season.

The best Season for transplanting these Roots is in *June* or *July*, soon after the Seeds are perfected; but they should not be kept long out of the Ground, for the Roots are dispos'd to shoot out fresh Fibres with the first moist Weather after the Seeds are fall'n, and in about six Weeks to produce their Flowers, which appear upon single Footstalks before the Leaves are produc'd: after the Flowers are blown, the green Leaves appear, which continue all the Winter; and being of a strong Green; varied with White, it makes an handsome Appearance during that Season: The Pedicle of the Flower afterwards twists like a Screw, inclosing the Embryo of the Fruit, by which means it is cover'd by

the green Leaves, whereby it is protected from the Frost, &c. and about the Beginning of *June* the Seeds will be perfected.

The third Sort was formerly more common in *England* than at present. This must be treated in the same manner with the two former, and flowers in the same Season.

The fourth and seventh Sorts are tenderer than the former, and must either be planted in Pots, and shelter'd under a Frame in Winter, or be plac'd in a warm dry Border. These produce their Flowers very early in the Spring, if the Frost doth not prevent them. The Seeds of these are ripe about the same time with the former, and must be sown and manag'd in the same manner; but the Boxes of Seeds or young Plants of these Kinds should be shelter'd in Winter.

The fifth and sixth Sorts are still more impatient of Cold and Wet than any of the former. These must constantly be preserv'd in Pots fill'd with sandy light Earth, and hous'd in Winter, but should be plac'd near the Glasses, where they may enjoy as much free open Air as possible, when the Weather will permit; for if they are crowded under other Plants, and are kept too close, they are very subject to mould and rot; nor should they have much Water in Winter, which is also very injurious to them: But whenever they want Water, it should be given them sparingly. In Summer these Plants may be expos'd to the open Air, when their green Leaves will decay; at which time you should remove them to a Place where they may have the Morning Sun until eleven o'Clock; but during the Time that the

Roots are destitute of Leaves, they should have very little Water given them, because at that Season they are not capable of discharging the Moisture. This is also the proper Season to transplant the Roots, or to fresh earth them; and as the Autumn comes on, that the Heat decreases, they may be remov'd into Places more expos'd to the Sun, where they may remain until *October* before they need be hous'd.

Toward *Christmas*, if the Roots are in good Health, they will begin to flower, and continue producing fresh Flowers until *April*; from which, if you intend to have any Seeds, you must let the Pots be plac'd so as to receive a great Share of fresh Air, for if their Flowers are drawn up in the House, they seldom produce any Seeds. These Seeds are ripe about *July*, when they should be immediately sown in Pots or Cases of good light undung'd Earth, which should be shelter'd in Winter under a Frame, and expos'd in Summer in the same manner as is directed for the older Roots, observing to remove them into Pots at a wider Distance when they are two Years old: and so from time to time, as their Roots increase in Bulk, you must give them more Room; and in about four or five Years time they will begin to flower, when you should let each Root have a separate Pot, which at first may be small, but when the Roots are grown large, they must be put into bigger Pots.

CYDONIA; the Quince-Tree.

The Characters are;

The Tree is of low Stature; the Branches are diffus'd and crooked: The Flower and Fruit is like that of the Pear-tree; but however cultivated,

ated, the Fruit is sour and astringent, and is cover'd with a kind of Down.

The Species are;

1. CYDONIA; *fructu oblongo latiori*. Tourn. The Pear Quince; *vulgô*.

2. CYDONIA; *fructu breviorè & rotundiorè*. Tourn. The Apple Quince; *vulgô*.

3. CYDONIA; *latifolia, Lusitanica*. Tourn. The broad-leav'd Portugal Quince.

These three Sorts are cultivated in most Nurseries near London, but the Portugal kind is most valu'd for the Goodness of its Fruit.

They are all easily propagated, either by Layers, Suckers, or Cuttings, which must be planted in a moist Soil. Those rais'd from Suckers are seldom so well rooted as those which are obtain'd from Cuttings or Layers, and are subject to produce Suckers again in greater Plenty, which is not so proper for Fruit-bearing Trees. The Cuttings should be planted early in the Spring, and in dry Weather must be often water'd to encourage their Rooting: The second Year after they should be remov'd into a Nursery at three Feet Distance Row from Row, and one Foot asunder in the Rows, where they must be manag'd as was directed for Apples: In two or three Years time these Trees will be fit to transplant, where they are to remain for good; which should be either by the Side of a Ditch, River, or in some other moist Place, where they will produce a greater Plenty and much larger Fruit than in a dry Soil; tho' those in the dry Soil will be better tasted, and earlier ripe. These Trees require very little pruning; the chief Thing to be observ'd, is,

to keep their Stems clear from Suckers, and cut off such Branches as cross each other; so likewise all upright luxuriant Shoots from the Middle of the Tree should be taken intirely out, that the Head may not be too much crowded with Wood, which is of ill Consequence to all Sorts of Fruit Trees.

These are also in great Esteem for Stocks to graft and bud Pears on, which for Summer and Autumn Fruits are a great Improvement to them, especially those design'd for Walls and Espaliers: For the Trees upon these Stocks do not shoot so vigorously as those upon free Stocks, and so may be kept in less Compass, and are sooner disposed to bear Fruits: But Winter Fruits do not succeed so well upon these Stocks, their Fruit being very subject to crack, and are commonly stony. The best Stocks are those which are rais'd from Cuttings.

CYNOGLOSSUM; Hounds-Tongue.

The Characters are;

The Cup of the Flower consists of one Leaf, which is deeply cut into five Parts: The Flower consists of one Leaf, is Funnel-shap'd, and cut into five Segments: The Pointal, which arises from the Bottom of the Flower, changes into a Fruit compos'd of four rough, and for the most part burry Cells, each containing a flat Seed affix'd to a pyramidal and quadrilateral Placenta.

The Species are;

1. CYNOGLOSSUM; *majus, vulgare*. C. B. Common great Hounds-Tongue.

2. CYNOGLOSSUM; *majus, vulgare, flore albo*. C. B. Common Hounds-Tongue, with a white Flower.

3. CYNOGLOSSUM; *montanum, maximum. Tourn.* The largest Mountain Hounds-Tongue.

4. CYNOGLOSSUM; *sempervirens. C. B.* Ever-green Hounds-Tongue.

5. CYNOGLOSSUM; *Creticum, argenteo angusto folio. C. B.* Candia Hounds-Tongue, with narrow silver-colour'd Leaves.

6. CYNOGLOSSUM; *folio molli incano, flore caruleo, striis rubris variegato. Mor. Hist.* Soft-leav'd hoary Hounds-Tongue, with small blue Flowers strip'd with Red.

7. CYNOGLOSSUM; *hirsutum, vineale, minus, flosculis minimis caruleis. Mor. Hist.* The lesser hairy Hounds-Tongue, with small blue Flowers.

There are several other Varieties of this Plant which are cultivated in Botanick Gardens; but as they are Plants of little Beauty, and the first Sort only is that which is commonly us'd in Medicine, and this growing in great Plenty wild upon Dunghills, and in shady Lanes in divers Parts of *England*, they are therefore seldom preserv'd in Gardens. They may be easily cultivated by any Person that is curious that way, by sowing the Seeds early in the Spring, or in Autumn soon after they are ripe, in almost any Soil or Situation, (except the *Candia* Sort, which must have a warm Position and a dry Soil) where they will flower and seed in plenty; and if the Seeds are permitted to scatter, will abundantly supply the Place with young Plants. As the Roots are often used, so the proper Season to take them up is soon after the Leaves decay, before they shoot again; which is what should be observ'd of all Roots either for Meat or Medicine, for then it is that they have the most Virtue.

CYPRESSUS: the Cypress-tree.

The Characters are;

The Leaves are squamose and flat: The Male Flowers, which are squamose, grow at remote Distances from the Fruit on the same Tree: The Fruit is of a spherical Form, and is compos'd of many woody Tubercles, in which are contain'd hard angular Seeds.

The Species are;

1. CYPRESSUS; *metâ in fastigium convolutâ, quæ Fœmina Plinii. Tourn.* The Common Cypress-tree.

2. CYPRESSUS; *ramos extra se spargens, quæ Mas, Plinii. Tourn.* The Male spreading Cypress; *vulgô.*

3. CYPRESSUS; *Virginiana, foliis Acacia deciduis. H. L.* The Virginian Cypress-Tree, with Leaves like the *Acacia*, which fall off in Winter.

The first of these Trees is very common in most of the old Gardens in *England*, but at present is not so much in Request as formerly; tho' it is not without its Advantages: nor should it be intirely rejected, as many Persons are of Opinion; for it greatly adds to the Beauty of Wildernesses or Clumps of Ever-greens, it being one of the most picturesque Trees in Nature. It was formerly planted in Borders of Pleasure-Gardens, and kept shorn into a pyramidal or conick Form; and some People believing them subject to be kill'd if they cut them, ty'd them up with Cords into a pyramidal Figure; which Form they are naturally dispos'd to grow in: But this winding them about, prevented the Air from entering the inward Parts of the Branches; so that the Leaves decay'd and became unsightly, and greatly retarded their Growth. And

to those which are shear'd, if the Operation is not perform'd in the Spring, or early in the Summer, are very subject to be injured by sharp Winds and cutting Frosts in Winter. Wherefore, upon the Whole, I think it much better to suffer them to grow wild as they are naturally dispos'd, planting them only amongst other Ever-green Trees, where, by the Darkneis of their Green Leaves, together with their waving Heads, they will greatly add to the Variety.

The second Sort is by far the largest growing Tree, and is the most common Timber in the *Levant*; this, if planted upon a warm sandy or gravelly Soil, will prosper wonderfully: and tho' it is not quite so tonlike a Plant as the first Sort, yet greatly recompences for that Defect, by its vigorous Growth, and Strength in resisting all Weathers. This Tree is very proper to intermix with Ever-greens of a second Size next to Pines and Firs, to form Clumps, in which Class it will keep pace with the Trees of the same Line, and be very handsome. Besides, the Wood of this Tree is very valuable, when grown to a Size fit for Planks; which I am convinc'd it will do, in as short a Space as Oaks; therefore, why should not this be cultivated for that Purpose, since there are many Places in *England* where the Soil is of a sandy or gravelly Nature, and seldom produces any thing worth cultivating? Now, in such Places these Trees would thrive wonderfully, and greatly add to the Pleasure of the Owner, while growing, and afterwards render as much Profit to his Successors, as perhaps the best Plantation of Oaks; especially should the Timber prove as good here, as in

the Islands of the *Archipelago*, which I see no Reason to doubt of: for we find it was so gainful a Commodity to the Island of *Candia*, that the Plantations were called *Dos Filia*; the Felling of one of them, being reckon'd a Daughter's Portion.

The Timber of this Tree is said to resist the Worm, Moth, and all Putrefaction, and is said to last many hundred Years. The Doors of *St. Peter's Church* at *Rome* were framed of this Material, which lasted from the Great *Constantine* to Pope *Eugenius IVth's* Time, which was eleven hundred Years, and were then found and intire, when the Pope would needs change them for Gates of Brass. The Coffins were made of this Material, in which *Thucydides* tells us the *Athenians* us'd to bury their Heroes; and the Mummy-Chests brought with those condited Bodies out of *Egypt*, are many of them of this Material.

This Tree is by many learned Authors recommended for the Improvement of the Air, and a Specifick for the Lungs, as sending forth great Quantities of Aromatick and Balsamick Emissions; wherefore many of the ancient Physicians of the Eastern Countries us'd to send their Patients, who were troubled with weak Lungs, to the Island of *Candia*, which at that Time abounded with these Trees, where, from the Effects of the Air alone, very few fail'd of a perfect Cure.

The third Sort is a Native of *America*, where it grows in watry Places, and arises to a prodigious Height, and is of a wonderful Bulk: I have been inform'd, that there are Trees of this Kind in *America* which are upwards of

Seventy Feet high, and several Fathoms in Circumference; which Trees grow constantly in the Water: therefore they may probably be of singular Advantage to plant in such swampy or wet Soils, where few other Trees will grow, especially of this Kind. That they are very hardy, in respect to Cold, is evident, from some few Trees of this Kind which were formerly planted in *England*, particularly one in the Gardens of *John Tradescant* at *South-Lambeth* near *Vaux-hall*, which is upwards of thirty Feet high, and of a considerable Bulk; which, tho' in a common Yard at present, where no Care is taken of it, but, on the contrary, many Hooks are driven into the Trunk, to fasten Cords thereto for Drying of Cloaths, yet the Tree is in great Health and Vigour, but hath not produced any Fruit as yet; which may be occasion'd by the want of Moisture: for we often see many Aquatick Plants will grow upon a drier Soil; but yet are seldom so productive of either Flowers or Fruits, as those which remain growing in the Water.

These Trees are all propagated from Seeds, which should be sown early in the Spring on a Bed of warm, dry, sandy Earth, which must be level'd very smooth; then sow the Seeds thereon pretty thick, sitting the same light Earth over them half an Inch thick. If the Weather should prove very warm and dry, it will be proper to water the Bed, which must be done very carefully, observing not to wash the Seeds out of the Ground. In about a Month's Time (if your Seeds are good) the young Plants will appear above-ground, which must be constantly kept clean from Weeds, and in very dry Weather

should be often refresh'd with Water: but this should be done with great Caution, lest you beat these tender-rooted Plants out of the Ground.

In this Bed the young Plants may remain two Years, by which Time they will have Strength enough to be transplanted into a Nursery: The best Season for removing them is in the Beginning of *April*, when the drying Easterly Winds of *March* are over; and, if possible, chuse a cloudy Day, when it is inclinable to Rain: And in taking them out of the Seed-bed, preserve the Roots as intire as possible, and, if you can, a Ball of Earth to each Plant. The Soil in which these Trees should be planted, (as I before said) should be, for the two first Sorts, a warm Sand or Gravel; which when you have prepar'd, by careful digging and cleansing from all noxious Weeds, you must lay it level: Then draw the Lines where the Trees are to be planted at three Feet asunder, and plant the Trees at eighteen Inches Distance in the Rows, observing to close the Earth well to their Roots, as also to lay a little Mulch upon the Surface of the Ground about their Stems; and water them well, to settle the Earth to their Roots; which should be repeated twice a Week, until the Plants have taken fresh Root.

These Plants may remain in the Nursery three or four Years, according to the Progress they make, or your Ground is ready where they are to be planted: But if you intend to let them remain longer, you should take up every other Tree in the Rows, and transplant out; for otherwise their Roots will be matted together, so that it will render it difficult to transplant them,

them, as also endanger the future Growth of the Trees. When they are planted out for good, (if they are design'd for Timber) they should be planted about eighteen or twenty Feet Distance every way, and be very careful in removing them, not to shake the Earth from their Roots; to prevent which, you should open the Ground about each Tree, cutting off all long Roots: then working under the Ball of Earth, cut the downright Roots off; and after having pared off all the Earth from the upper Part of the Ball, as also reduc'd the Bulk of it, so that its Weight may not be too great for the Fibres to support, they may be carried upon a Hand-Barrow by two Persons to the Place where they are to be planted: but if they are to be carry'd to a very distant Place, they should either be put into Baskets, or their Roots, closely matted up. When they are planted, you must settle the Earth close to their Roots, (as before) laying a little Mulch upon the Surface of the Ground about their Stems, to prevent the Sun and Wind from entring the Earth to dry their Fibres; and water them well, to settle the Ground to their Roots; which must also be repeated (if the Weather be dry) until they have taken Root: after which Time, they will require little more Care than to keep them clear from Weeds.

The first, which is the most common Sort in *England*, seldom produces good Seeds in this Country; it is therefore the best way to have the Cones brought over intire from the South Parts of *France* or *Italy*, where they ripen perfectly well, and take the Seeds out just before you sow them; for they will keep much better in the

Cones, than if they are taken out: The Method to get the Seeds out, is to expose the Cones to a gentle Heat, which will cause them to open, and hastily emit their Seeds.

The second Sort produces very good Seeds in *England*; so that we may hope to be supply'd with Seeds in Plenty, in a few Years, from Trees of our own Growth: And as this is the more valuable Tree, so it will be no small Advantage to our Plantations of Timber to introduce it amongst them, especially those of Ever-green Trees.

The *Virginian* Kind may also be propagated in as great Plenty; for the Cones of this may be easily procur'd from *Carolina* or *Virginia*, in both which Places they grow in great abundance; and the Seeds will rise as easily as any of the other Sorts, and are equally as hardy: These have been formerly kept in Pots, and hous'd in Winter; with which Management they have not succeeded so well, as they have done in *England*, since People have planted them into the full Ground; and where they have had a moist Soil, I have observ'd them to thrive best: which is since confirm'd by Mr. *Catesby*, in his *Natural History of Carolina*, where he says, that this Tree grows in Places where the Water commonly covers the Surface of the Ground three or four Feet; so that it may be a very great Improvement to our boggy Soils. This Tree casting its Leaves in Winter, does not so well suit with Plantations of Ever-greens at that Season; tho' in Summer, when there is the greatest Pleasure in walking among Plantations of Trees, it hath so much the Appearance of an Ever-green, as to pass for such, and therefore may be of Ser-

vice to compleat Plantations, or Vista's of *Cypress-Trees*, where it may so happen, that a low marshy Spot of Ground may intervene.

**CYSTICAPNOS**; African Bladder Fumitory.

The *Characters* are;

It hath an annual fibrose Root; the Leaves, Branches and Flowers, have the Appearance of Climbing Fumitory; the Fruit is an oval Bladder, pierc'd through by an Axis, to which are fasten'd round Seeds on every Side, inclos'd again with one common Vesicle, which is expanded about the Axis.

There is but one Species of this Plant at present known, which is,

**CYSTICAPNOS**; *Africana, scandens. Boerb. Ind.* African Climbing Bladder Fumitory.

This Plant is annual; the Seeds of which may be sown on a warm Border, where it is to remain, for it doth not care to be remov'd: It flowers in *July*, and the Seeds are perfected in *August* or *September*. It is a Plant of no great Beauty, but is preserv'd in curious Botanic Gardens for the Sake of Variety.

**CYTISO-GENISTA**; Common (or Green) Broom.

The *Characters* are;

It hath *Papilionaceous* (or *Butterfly*) Flowers; which are succeeded by compress'd Pods, in which are contain'd many *Kidney-shap'd* Seeds: The Branches of the Tree are flexible, and have sometimes single, and other times three Leaves join'd together.

There is but one Species of this Plant, which is,

**CYTISO-GENISTA**; *scoparia, vulgaris, flore luteo. Tourne.* Common Broom.

This Shrub is rarely preserv'd in Gardens, but grows wild upon barren dry Heaths in divers Parts of *England*, though, for Variety sake, it may have a Place amongst flowering Shrubs of a middle Growth in smaller Wilderness Quarters, where it will appear very well. This may be propagated by sowing the Seeds in the Spring, or in Autumn soon after ripe; and when the Plants are one Year old, they should be transplanted into a Nursery, in order to prevent their making downright Roots, which this Plant is very subject to; and when they have remain'd two Years in the Nursery, they will be fit to transplant into the Places where they are design'd to stand for good. The best Season for transplanting these Shrubs is in the Beginning of *April*, when the drying Winds are over, and, if possible, chuse a moist cloudy Day for this Work: After they are planted, the Earth should be clos'd to their Roots, and a little Mulch laid thereon; then give them a good Watering, to settle the Earth to their Roots, and if the Season should prove dry, it should be repeated twice a Week until they have taken fresh Roots, after which they will require very little Care.

This Plant is sometimes us'd in Medicine.

**CYTISUS**; Base Tree-Trefoil.

The *Characters* are;

It hath *Papilionaceous* (or *Pea-bloom*) Flowers, which are succeeded by compress'd Pods, in which are contain'd several *Kidney-shap'd* Seeds; to which may be added, the Leaves are for the most part roundish, and somewhat like those of the *Nettle-Tree*.



The *Species* are ;

1. CYTISUS; *Alpinus, latifolius, flore racemoso, pendulo.* Tourn. The broad-leav'd Laburnum or Bean-Trefoil.

2. CYTISUS; *Alpinus, angustifolius, flore racemoso, pendulo, longiori.* Tourn. The narrow-leav'd Laburnum or Bean-Trefoil, with long pendulous Flowers.

3. CYTISUS; *Alpinus, flore racemoso, pendulo, breviori.* Tourn. Broad-leav'd Laburnum or Bean-Trefoil, with very short pendulous Flowers.

4. CYTISUS; *glaber, nigricans.* C. B. The Black Base Tree-Trefoil.

5. CYTISUS; *glabris foliis, subrotundis; pediculis brevissimis.* C. B. P. Round smooth-leav'd Base Tree-Trefoil, with short Pedicles, commonly called, *Cytisus secundus Clusii.*

6. CYTISUS; *hirsutus.* J. B. Hairy Base-Tree-Trefoil.

7. CYTISUS; *Canariensis, semper-virens & incanus.* Hort. Amst. Hoary Ever-green Canary Tree-Trefoil.

The first, second, and third Sorts grow to be large Trees, and are therefore proper for large Quarters of Flowering Trees, especially the first, which will grow to be eighteen or twenty Feet high: Their Season of Flowering is in *May*, at which time they afford a very agreeable Prospect, especially that Sort with long pendulous Flowers, which is by far the most beautiful Kind.

These are all propagated by sowing their Seeds (which they afford in Plenty) in *March* on a Bed of good fresh light Earth, sitting a little Mould over them about half an Inch thick, and in about a Month's time the Plants will come

up; you must therefore keep them clear from Weeds, and if the Season should prove dry, you must often refresh them with Water, which will greatly promote their Growth: In this Bed they may remain until *March* following, when you may transplant them into a Nursery, in Rows three Feet Distance, and one Foot asunder in the Rows, being careful not to break the Roots, which are very tender, as also to water and mulch their Roots, to prevent the Sun and Wind from drying their Fibres: This Nursery must also be kept very clear from Weeds, and every Spring the Ground between the Rows should be dug, to loosen the Earth and destroy the Weeds. In this Nursery they may remain two or three Years, according to the Progress they make, or the Ground where they are to be planted is ready; but, however, if they stand longer than three Years, every other Tree should be remov'd, or else they should at first be planted at a much greater Distance, for otherwise their Roots will intermix, and render it difficult to remove them safely. The Season for transplanting these Trees, is either in *October* or *February*, observing to mulch and water them as before.

The fourth Sort is at present very rare in *England*, being only to be seen in some curious Botanic Gardens. This makes a Shrub of three or four Feet high, and may be propagated as the former.

The fifth seldom rises with us to be above five or six Feet high, and may be kept to a regular Head: This should therefore be planted in smaller Quarters, with Shrubs of the same Growth. It flowers in *June*, at which time it

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makes an agreeable Figure, for the Flowers are produc'd in large Clusters very close together, so that the whole Shrub is cover'd with them. This may be propagated in the same manner as the former; as may also the sixth Sort.

The fifth Sort is tender, and requires a Green-house in Winter, where it should be plac'd to have as much open free Air as possible when the Weather is good, but must be screen'd from Frosts and cold nipping Winds: In the Summer it may be expos'd abroad, with *Oranges, Myrtles, &c.* It should have a fresh light Soil, and frequent Waterings in that Season. This Plant may be either propagated by Seeds, (which should be sown on a Hot-bed in the Spring; and when the Plants come up they may be planted into small Pots, and manag'd as directed for the *African Tree-Milkwort*) or by Layers, which should be laid down in the Spring; and if kept duly water'd, will take Root against the succeeding Spring, when they may be taken off and transplanted into Pots, which should be fill'd with the same light Soil as was before directed, setting the Pots into a shady Place, until the Plants have taken fresh Root; after which Time they may be expos'd with the old Plants, and manag'd as directed for them.



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**D**AFFODIL; *vide* Narcissus.

DAISIES; *vide* Bellis.

DANDELION; *vide* Dens Leonis.

D A

DATE-TREE; *vide* Palma.

DAUCUS; The Carrot.

The Characters are;

*It hath for the most part a fleshy Root: The Leaves are divided into narrow Segments: The Petals of the Flower are unequal, and shap'd like a Heart: The Umbel, when ripe, is hollow'd and contracted, appearing somewhat like a Bird's Nest: The Seeds are hairy, and in Shape of Lice.*

The Species are;

1. DAUCUS; *vulgaris*. *Clus.* Common wild Carrot.

2. DAUCUS; *sylvestris, humilior, latiore folio*. Dwarf wild Carrot, with broader Leaves.

3. DAUCUS; *sativus, radice atrov rubente*. *Tourn.* Dark Red-rooted Garden-Carrot.

4. DAUCUS; *sativus, radice aurantii coloris*. *Tourn.* The Orange-colour'd Carrot.

5. DAUCUS; *sativus, radice albâ*. *Tourn.* The White Carrot.

The first of these Species grows wild upon arable Land in most Parts of England, and is seldom cultivated except in Botanick Gardens. This is the particular Sort which should be us'd in Medicine, and for which the Druggists commonly sell the Seeds of the Garden Carrot.

The second Sort was found by Mr. Rand, near Dover, and is specifically different from the common Sort, as hath been prov'd by sowing them together in a Garden for several Years.

The third and fourth Sorts are commonly cultivated in Gardens for the Kitchen; as is the fifth Sort, tho' not so common in England as the two former: Nor would they be worth the Gardeners while to propagate them; for their pale Colour would render them

them less acceptable in the Markets, where the deepest-colour'd *Carrots* are always most esteem'd, though for the Table, the White is generally preferr'd as the sweetest.

They are propagated at two or three different Seasons, or sometimes oftener, where People are fond of young *Carrots* through all the Summer Months. The first Season for sowing the Seeds, is soon after *Christmas*, if the Weather is open, which should be in warm Borders, under Walls, Pales, or Hedges, but they should not be sown immediately close thereto; but a Border of *Lettuce*, or other young Sallad-herbs, of about six or eight Inches wide, should be next the Wall, &c. for the *Carrots* would run up to Seed without making any tolerable Roots.

These delight in a warm sandy Soil which is light, and should be dug pretty deep, that the Roots may the better run down, for if they meet with any Obstruction, they are very apt to grow forked, and shoot out lateral Roots, especially where the Ground is too much dung'd the same Year that the Seeds are sown, which will also occasion their being Worm-eaten; it is therefore the better Method to dung the Ground intended for *Carrots* the Year before they are sown, that it may be consumed and mix'd with the Earth.

These Seeds have a great Quantity of small forked Hairs upon their Borders, by which they closely adhere, so that they are difficult to sow even, so as not to come up in Patches; you should therefore rub it well through both Hands, whereby the Seed will be separated before it is sown: then you should chuse a calm Day to sow it, for if the Wind blows, it will be

impossible to sow it equal; for the Seeds being very light, will be blown into Heaps: When the Seed is sown, you should tread the Ground pretty close with your Feet that it may be buried, and then rake the Ground level.

When the Plants are come up, you should hoe the Ground with a small Hoe about three Inches wide, cutting down all young Weeds, and separating the Plants to four Inches Distance each Way, that they may get Strength; and in about three Weeks after, when the Weeds begin to grow again, you should hoe the Ground over a second Time, in which you should be careful not to leave two *Carrots* close to each other, as also to separate them to a greater Distance, cutting down all Weeds, and slightly stirring the Surface of the Ground in every Place, the better to prevent young Weeds from springing, as also to facilitate the Growth of the young *Carrots*.

In about three Weeks or a Month after, you must hoe them a third Time, when you must clear the Weeds as before; and now you should cut out the *Carrots* to the Distance they are to remain, which must be proportion'd to the Size you intend to have them grow: If they are to be drawn while young, five or six Inches asunder will be sufficient; but if they are to grow large before they are pull'd up, they should be left eight or ten Inches distant every Way: You must also keep them clear from Weeds, which, if suffer'd to grow amongst the *Carrots*, will greatly prejudice them.

The second Season for sowing these Seeds is in *February*, on warm Banks, situated near the Shelter of a Wall, Pale or Hedge; but those

which are intended for the open large Quarters, should not be sown before the Beginning of *March*, nor should you sow any later than the End of the same Month, for those which are sown in *April* or *May*, will run up to Seed before their Roots have any Bulk, especially if the Weather should prove hot and dry.

In *July* you may sow again, to stand the Winter, by which Method you will have early *Carrots* in *March*, before the Spring-sowing will be fit to draw; but these are seldom so well tasted, and are often very tough and sticky. Many People mix several other Sorts of Seeds, as *Leek*, *Onion*, *Parfnip*, *Radish*, &c. amongst their *Carrots*; and others plant *Beans*, &c. but, in my Opinion, neither of these Methods is good, for if there is a full Crop of any one of these Plants, there can be no Room for any thing else amongst them, so that what is got by the one is lost by another; and besides, it is not only more slightly, but better for the Plants of each Kind to be sown separate, and also by this Means your Ground will be clear when the Crop is gone, to sow or plant any Thing else; but when three or four Kinds are mix'd together, the Ground is seldom at Liberty before the succeeding Spring: Besides, where *Beans*, or any other tall growing Plants are mix'd or planted amongst the *Carrots*, it is apt to make them grow more in Top than Root, so that they will not be half so large as if sown singly, without any other Plants amongst them.

But in order to preserve your *Carrots* for Use all the Winter and Spring, you should, about the Beginning of *November*, when the

green Leaves are decay'd, dig them up, and lay them in Sand in a dry Place, where the Frost can't come to them, taking them out from Time to Time as you have occasion for them, reserving some of the longest and straightest Roots for Seed, if you intend to save any; which Roots should be planted in the middle of *February*, in a light Soil, about a Foot aunder each Way, observing to keep the Ground clear from Weeds; and about the middle of *August*, when you find the Seeds are ripe, you must cut it off, and carry it to a dry Place, where it should be expos'd to the Sun and Air for several Days to dry; then you may beat out the Seeds, and put it up in Bags, keeping it in a dry Place until you use it. This Seed is seldom esteem'd very good after the first or second Year at most, but new Seed is always preferr'd, nor will it grow when it is more than two Years old.

DAUCUS CRETICUS; *vide* Myrrhis.

DAY-LILY; *vide* Liliastrum.

DELPHINIUM; Larkspur.

The Characters are;

*It hath an anomalous Flower, consisting of many dissimilar Petals (or Flower-Leaves) the uppermost of which is contracted, and ends in a Tail or Spur, and receives another bifid Petal, which, in like manner, ends in a Tail: In the Middle arises the Pointal, which becomes a Fruit, consisting of many Pods or Sheaths collected into a Head, which open likewise, and are fill'd with Seeds, which are for the most part angular.*

The Species are;

1. DELPHINIUM; *perenne, montanum, villosum, Aconiti folio.* Tourn. Perennial Mountain, hairy Larkspur, with a Monk's-hood Leaf.

2. DEL-

2. DELPHINIUM; *latifolium, parvo flore*. Tourn. Broad-leav'd Larkspur, with a small Flower.

3. DELPHINIUM; *Platani folio, Staphisagria dictum*. Tourn. Larkspur with a Plane-Tree Leaf, commonly called Staffeacre, or Lousewort.

4. DELPHINIUM; *segetum, flore caeruleo*. Tourn. Corn Larkspur with a blue Flower.

5. DELPHINIUM; *vulgare, flore multiplici*. Tourn. Common Larkspur with a double Flower.

6. DELPHINIUM; *hortense, flore majore, & multiplici, caeruleo*. Tourn. Garden Larkspur with a large double blue Flower.

7. DELPHINIUM; *hortense, flore majore, & multiplici, incarnato*. Tourn. Garden Larkspur with a large double Flesh-colour'd Flower.

8. DELPHINIUM; *hortense, flore majore, & multiplici, violaceo*. Tourn. Garden Larkspur with a large double Violet-colour'd Flower.

9. DELPHINIUM; *hortense, flore majore, & multiplici, rubro*. Tourn. Garden Larkspur with a large double red Flower.

10. DELPHINIUM; *hortense, flore majore, & multiplici, purpureo, ex albo variegato*. Tourn. Garden Larkspur with a large double Flower of a purple Colour, variegated with White.

11. DELPHINIUM; *hortense, flore roseo, punctato*. Tourn. Garden Larkspur with a spotted Rose-colour'd Flower.

There are several other Varieties of this Plant, which differ either in the Colour or Size of their Flowers: But as most of them are accidental, and arise from Seeds of the same Plant, so I shall pass over them, without enumerating all their minute Differences.

The first Species here mention'd,

is a Native of the *Alps*, and is remarkably different from the other Kinds of *Larkspur*, in being an abiding Plant: This is propagated by sowing the Seeds in an open light Soil in *March*; and when the Plants are come up, they may be transplanted into shady Borders, at a Foot distance from each other, where they may stand until the second Year; by which Time they will have Strength to produce Flowers, and may then be transplanted into Borders in the Pleasure-Garden, amongst other Flowering Plants, where they will make a handsome Appearance when in Flower.

The second Sort is not near so beautiful as the first, but is preserv'd in curious Gardens of Plants, for its Variety. The Flowers of this Kind are very small; and it is commonly so late in the Season before they are produc'd, that they seldom perfect their Seeds with us, unless the Plants come up in *Autumn*, and abide the *Winter*. The Seeds of this Plant I receiv'd from my Honour'd Friend Mr. *Henry Hopkey*, who gather'd it on *Gibraltar Hills*, where it grows wild.

The third Sort is the *Staffeacre*, the Seeds of which are used in Medicine: This is a large handsome Plant, and produces fair large Flowers: The Seeds of this should be sown in a light sandy Soil, and a warm Situation, soon after it is ripe; for if it be kept until *Spring*, it very often miscarries. The second Year after sowing, it flowers, and soon after perfects its Seed, and dies. This Plant is at present very uncommon in *England*, and only to be found in some curious Gardens of Plants.

The other Sorts are commonly cultivated in Gardens, for the  
Beauty

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Beauty of their Flowers; where when the several Varieties are intermix'd in a Bed, they make a goodly Shew: The Seeds of these should be sown in *Autumn*, soon after they are ripe; for those sown in the *Spring* do not grow near so large, nor will their Flowers be so double. When the Plants come up, they should be either transplanted out, or some of them pull'd up; so that the remaining Plants may be left eight or ten Inches Distance each Way; whereby they will have room to grow, and spread their Branches, which they generally produce in great Plenty, and their Flowers will be produc'd in larger Bunches. They will require no farther Care, but to keep them clear from Weeds. In *June* these Plants will flower, and their Seeds will ripen about the Beginning of *August*. But in order to have your Flowers more beautiful, you should mark such only for Seeds as produc'd very double and finely-variegated Flowers, pulling up or cutting off all single or plain-colour'd Flowers.

### DENS CANIS; Dog's Tooth.

The Characters are;

*It hath a fleshy Root shap'd like a Dog's Tooth: The Leaves are broad, and spread upon the Ground, and, in Appearance, like those of the Round-leav'd Sowbread: The Flower is naked, and produc'd single upon each Stalk, each consisting of six Leaves, and shap'd like a Lily, and hang downward: The Petals of this Flower are reflex'd: The Pointal of the Flower becomes a roundish Fruit, in which are contain'd many oblong Seeds.*

The Species are;

1. DENS CANIS; *latiore rotundioreque folio, flore candido.* C. B. The broad round-leav'd Dog's-Tooth, with a white Flower.

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2. DENS CANIS; *latiore rotundioreque folio, flore ex purpurâ rubente, majore.* C. B. Broad round-leav'd Dog's-Tooth, with a large Purplish red Flower.

3. DENS CANIS; *angustiore longioreque folio.* C. B. *flore albo.* Long narrow-leav'd Dog's-Tooth, with a white Flower.

4. DENS CANIS; *angustiore longioreque folio, flore suavè rubente.* H. R. *Par.* Long narrow-Leav'd Dog's-Tooth, with a fine red Flower.

There are some other Varieties of this Plant in the curious Gardens abroad, but these here mention'd, are all that I have yet seen in *England*: The two first mention'd are the most common with us; the other two being very rare at present, and only to be found in a few curious Gardens.

These Plants are propagated by sowing their Seeds, as also by Offsets from the old Roots: The Season for sowing these Seeds, and the Method of raising and managing the young Plants, being the same as directed for the *Narcissus*, I shall refer the Reader thereto to avoid Repetition.

The Off-sets, which these Roots produce but sparingly, should be taken off at the Time when the old Roots are transplanted, which should be when the green Leaves decay, which is commonly towards the latter end of *May*; but the Roots should not be kept long above Ground, for then they are apt to shrivel and dry up, which if this happens they seldom recover again. These Plants delight in a good fresh Soil, neither too light nor too heavy, but such as is of a middling Nature, and not over-dung'd; and they should have an East or a West Aspect, for if they are planted in a hot Situation they

they seldom thrive well. They produce their Flowers early in *March*, for which they are valu'd, as also for the Beauty of their green Leaves. If Seeds of the different Sorts are sown, there may be some new Varieties obtain'd, which is well worth the Trial, where we have so few Species of an early beautiful Flower as of this.

DENS LEONIS; Dandelion.

The Characters are;

It agrees in all respects with the Hawk-weed, but only in its having a single naked Stalk with one Flower upon the Top, whereas the Hawk-weeds have branching Stalks: To which may be added, the Flowers are for the most part fistulous or pip'd.

There are several Species of this Plant, which are preserv'd in curious Botanick Gardens; but as they are Plants of no great Use, and withal are very troublesome in a good Garden, if suffer'd to seed, so they are never propagated. We have three or four Varieties which grow wild in *England*, but the most common broad-leav'd Kind is what is used in Medicine. There are also some People very fond of it blanch'd in the Spring like *Endive*; but who ever has a Mind to have it for either Use, may be abundantly supply'd in the Fields.

DENTARIA; Tooth-wort.

The Characters are;

It hath a fleshy Root, which is scaly, and cut in as it were with Teeth: The Flower consists of four Leaves, which are plac'd in Form of a Cross: This is succeeded by a long Pod, which is divided into two Cells by an intermediate Partition, and when ripe, is twisted up like a Skrew, and discharges the Seeds with Violence.

There are several Species of this Plant in the Gardens abroad, but I

have not seen above one Sort in *England*, which is,

DENTARIA; *heptaphyllos*. C. B. Seven-leav'd Tooth-wort.

This Plant may be propagated in the same manner as the *Hesperis*, or *Dames July Flower*; to which I refer the Reader for Directions.

DIAPENSIA; *vide* Sanicula.

DICTAMNUS ALBUS; *vide* Fraxinella.

DICTAMNUS; Dittany.

The Characters are;

The Flower-cup consists of two Leaves; after that, another athwart the former; and again, a third in like manner, until a scaly Head be thence form'd: Out of the Center of all these Scales grows a Flower, whose Crest is erect, roundish and bifid: The Beard is divided into three Parts: These little Flowers come forth from leafy Scales, after the manner of the Verticillate Plants, in a long loose Spike.

The Species are;

1. DICTAMNUS; *Creticus*. C. B. Dittany of Crete.

2. DICTAMNUS; *montis Sipyli, originis foliis*. Flor. Bat. Dittany from Mount Sipylyus, with wild Marjoram Leaves.

The first of these Plants hath been renown'd for many Ages, upon the Account of its sovereign Qualities in Medicine. This is generally brought over dry from the *Levant*, and is still us'd in some of the grand Preparations.

This Plant, although a Native of a warmer Country than ours, yet is tolerably hardy, and will endure the Cold of our common Winters, if planted in the open Air, provided it is planted in a dry sandy Soil: It may be propagated by planting Cuttings in any of the Summer Months; which must be shaded and water'd until they have taken

Root;

Root ; afterwards they may be either planted in Pots, or in a warm Border under a South Wall, where it will remain for several Years, unless destroy'd by violent hard Frosts ; for which Reason 'tis advisable always to keep a Pot or two of this Plant under a Frame, as a Reserve, in case those abroad should be destroy'd. This Plant produces its Flowers in *June* and *July*, but the Seeds are seldom perfected in this Climate : And altho' there is no great Beauty in the Flowers of this Plant, yet for the Variety of its round hoary sweet-smelling Leaves, it deserves a Place in very good Gardens.

The second Sort was found upon Mount *Sipylus*, by Sir *George Wheeler* in his Travels, and by him sent to *Oxford*. This is a very neat Plant, affording long Spikes of Flowers, which continue a long Time in Beauty, and deserves a Place with the former in every good Garden. This is propagated and manag'd as the other in every respect.

DIGITALIS ; Fox-Glove.

The Characters are ;

The Leaves are produc'd alternately on the Branches : The Cup of the Flower consists of one Leaf, which is divided into six ample long Segments ; the Flower consists of one Leaf, is tubulose and compress'd, and a little reflex'd at the Brim : These Flowers are dispos'd in a long Spike, and always grow upon one Side of the Stalk : The Ovary of the Flower becomes a roundish Fruit, which ends in a Point, and opens in the Middle ; has two Cells, in which are contain'd many small Seeds.

The Species are ;

1. DIGITALIS ; *purpurea*. *f. B.*  
The purple Fox-Glove.

2. DIGITALIS ; *vulgaris*, *flore car-*

*neo*. *Hort. Ed.* Common Flesh colour'd Fox-Glove.

3. DIGITALIS ; *flore magno, candido*. *f. B.* Fox-Glove, with a large white Flower.

4. DIGITALIS ; *latifolia, flore ferrugineo*. *Mor. Hist.* Broad-leav'd Fox-Glove, with an Iron-colour'd Flower.

5. DIGITALIS ; *angustifolia, flore ferrugineo*. *C. B.* Narrow-leav'd Fox-Glove, with an Iron-colour'd Flower.

6. DIGITALIS ; *lutea, magno flore*. *C. B.* Fox-Glove, with a large yellow Flower.

7. DIGITALIS ; *major, lutea, vel pallida, parvo flore*. *C. B.* Greater Fox-Glove, with a small pale-yellow Flower.

8. DIGITALIS ; *Orientalis, folio Tragopogi, flore albido*. *T. Cor.* Eastern Fox-Glove, with a Goat-beard Leaf and a whitish Flower.

9. DIGITALIS ; *Canariensis, acanthoides, frutescens, flore aureo*. *Hort. Amst.* Shrubby Canary Fox-Glove, with a Gold-colour Flower.

The first of these Plants is very common in shady Woods, and upon uncultivated Heaths in divers Parts of *England* : The two next are also Varieties of the first, from which they only differ in the Colour of the Flowers.

The fourth, fifth and sixth Sorts are preserv'd in Gardens, for the Beauty of their Flowers ; but the seventh and eighth Sorts are only cultivated in Botanick Gardens for the Sake of Variety, as being Plants of no great Beauty.

These Plants may all be propagated by sowing their Seeds in *March*, in a fresh Soil that is not too stiff ; and when the Plants come up, they should be transplanted into Beds six Inches asunder, where they may remain until the

Michael-



*Michaelmas* following, observing to keep them clear from Weeds; then you may transplant them into the middle of large Borders, intermixing the Variety of Colours, at regular Distances, amongst Flowers of the same Growth. In *May* following these will produce their Flowers, which will continue near a Month in Beauty, if the Season is not too hot and dry, and in *August* the Seeds will ripen; which if permitted to fall to the Ground, will come up in great Plenty, and abundantly stock the Garden with Plants.

Some of these Sorts seldom remain above two Years, when after having perfected their Seeds, they die, unless Care be taken to cut off the Flowers when they are in Beauty, before they begin to decay, which often causes the Roots to break out again, whereby they may be kept for several Years (especially the Iron-colour'd Sorts) and may be increas'd by parting their Roots.

These Plants thrive best in a poor undung'd fresh Soil, nor can they be maintain'd many Years in a rich Soil, and their Flowers will be, when planted therein, much smaller, and of shorter Duration; and altho' they are some of them common in *England*, yet they make a very good Appearance in large Gardens.

The ninth Sort is of a nicer Nature, and requires to be shelter'd in a Greenhouse in Winter; which indeed it is worthy of, for it is one of the handsomest Flowers, when in Beauty, of most of the Greenhouse Plants: This is multiply'd by sowing the Seeds in the Spring upon a moderate Hot-bed; and when the Plants are strong enough to be remov'd, they should be

planted in Pots fill'd with fresh light sandy Earth, and the Pots plung'd into a very moderate Hot-bed, in order to facilitate the Rooting of the Plants, observing to water and shade them until they have taken fresh Root; after which they must be enur'd to the open Air by degrees, and in Summer may be expos'd in a shelter'd Place, amongst other Exotick Plants: In Winter the Pots should be plac'd in a Green-house, so that the Plants may enjoy as much free Air as possible, but must be preserv'd from Frost, and do require frequent Refreshings with Water.

This Plant produces its Flowers in *June*, and the Seeds ripen in *August*.

DILL; *vile* Anethum.

DIPSACUS; The Teasel.

The Characters are;

*The whole Flower hath no proper Calix, but Leaves representing the Perianthium, encompassing the Bottom of the Head: The little Flowers, which are produc'd singly from between the Scales, are collected into a Head, somewhat like a Bee-hive; these are succeeded by longish four-corner'd Seeds.*

The Species are;

1. DIPSACUS; *sylvestris, aut Virga Pastoris, major.* C. B. The greater Wild Teasel.

2. DIPSACUS; *sylvestris, capitulo minore, vel Virga Pastoris, minor.* C. B. Small Wild Teasel, or Shepherd's Rod.

3. DIPSACUS; *folio laciniato.* C. B. Cut-leav'd Teasel.

4. DIPSACUS; *fativus.* C. B. Manned Teasel.

The first of these Plants is very common upon dry Banks, in most Parts of *England*, and is seldom cultivated in Gardens, unless for the sake of Variety.

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The second is also found wild in many Parts of *England*, though less common than the first.

The third is a Variety, which differs from the first, in having the Leaves deeply cut or jagged.

But it is the fourth Sort only which is cultivated for Use, which is call'd *Carduus Fullorum*, or *Fulloonum*, being of singular Use in raising the Nap upon Woollen Cloth; for which Purpose there are great Quantities of this Plant cultivated in the West Country.

This Plant is propagated by sowing the Seed in *March*, upon a Soil that has been well digg'd: About one Peck of this Seed will sow an Acre; for the Plants should have room to grow, otherwise the Heads will not be so large, nor in so great Quantity. When the Plants are come up, you must hoe them in the same Manner as is practis'd for *Turnips*, cutting down all the Weeds, and singling out the Plants to about six or eight Inches Distance; and as the Plants advance, and the Weeds begin to grow again, you must hoe them a second Time, cutting out the Plants to a wider Distance; for they should be at last left at least a Foot asunder: And you should be particularly careful to clear them from Weeds, especially the first Summer; for when the Plants have spread so as to cover the Surface of the Ground, the Weeds will not so readily grow between them. The second Year after Sowing, the Plants will shoot up to Heads, which will be fit to cut about the Beginning of *August*, at which Time they should be cut, and ty'd up in Bunches, setting them in the Sun, if the Weather be fair; but if not, they must be set in Rooms to dry them. The common Produce is about an hundred

and sixty Bundles or Staves upon an Acre, which they sell for about one Shilling a Stave. Some People sow *Caraway* and other Seeds amongst their *Teasels*: But this is not a good Method, for the one spoils the other; nor can you so easily clear them from Weeds, as when alone.

DITTANY; *vide* Dictamnus.

DOCK; *vide* Lapathum.

DOG'S TOOTH; *vide* Dens Canis.

DOG-WOOD; *vide* Cornus.

DORIA.

The Characters are;

*It hath a perennial fibrose Root: The Leaves are almost whole, and oblong: The Cup of the Flower is cylindrical, and in Form of a Tube: The Flowers grow upon the Summits of the Branches, and are dispos'd either in Form of an Umbel, or in a loose Panicle, which are radiated like the Ragwort.*

The Species are;

1. DORIA; *Narbornensium*. Hort. Eyst. The Narbone Doria.

2. DORIA; *quæ Jacobaa, foliis integris & mucronatis*. Mor. Hist. Doria with whole sharp-pointed Leaves.

3. DORIA; *quæ Jacobaa, Orientalis, limonii folio*. T. Cor. Eastern Doria, with a Sea-Lavender Leaf.

4. DORIA; *Americana, lato rigido folio*. Boerb. Ind. American Doria, with a broad stiff Leaf.

5. DORIA; *Africana, arborescens, crassis & succulentis foliis, atriplicem referentibus*. Boerb. Ind. African Tree Doria, with thick succulent Leaves, somewhat like those of *Atriplex*.

6. DORIA; *quæ Jacobaa, Africana, hederæ terrestris folio, repens*. Hort. Amst. African Creeping Doria, with a Ground-Ivy Leaf.

7. Do-

7. DORIA; *qua Jacobaea, Africana, frutescens, coronopi folio.* Hort. Amst. African Shrubby Doria, with a Hart's-horn Leaf.

8. DORIA; *qua Jacobaea, Africana, frutescens crassis & succulentis foliis.* Hort. Amst. African Shrubby Doria, with thick succulent Leaves.

The four first Sorts are very hardy, and will endure in the open Air; these may be propagated by parting of their Roots either in *Spring* or *Autumn*, and will grow in almost any Soil or Situation, but are too large and rambling for a small Flower-Garden, and are seldom preserved except in Botanick Gardens for Variety.

The other four Sorts are beautiful Flowering Plants, and well worth propagating in every good Garden: These are increas'd by planting Cuttings of any of the Kinds during the *Summer* Months, in a Bed of light, rich Earth, observing to water and shade them until they have taken Root: Then you must carefully transplant them into Pots fill'd with the like rich light Earth, setting them in the Shade until they have taken Root; after which, they may be expos'd with *Geranium's*, &c. until *October*, when they must be remov'd into the Green-house, where they should be plac'd as near the Glasses as possible, that they may have free Air whenever the Weather will permit; and must have frequent Refreshings with Water. These Plants produce their Flowers towards the latter end of Summer, and continue most part of the Autumn in Beauty, but seldom produce good Seeds with us.

DORONICUM; Leopard's-Bane.

The Characters are;

It hath an intricate knotted Root: The Leaves are produc'd alternately on the Branches: The Stalks are a

little branch'd: The Flowers (which grow on the Tops of the Stalks) are radiated like the greater Starwort: The Half-Florets in the Disk of the Flower are trifid: The Cup of the Flower is expanded, and cut into many Parts almost to the Bottom, and is not scaly, but each single Segment is in the Form of a Dish.

The Species are;

1. DORONICUM; *radice, Scorpii.* C. B. Scorpion-Rooted Leopard's-Bane.

2. DORONICUM; *plantaginis folio.* C. B. Plantain-leav'd Leopard's-Bane.

3. DORONICUM; *plantaginis folio, alterum.* C. B. Another Plantain-leav'd Leopard's-Bane.

4. DORONICUM; *plantaginis folio, hirsutum.* Vaill. Rough Plantain-leav'd Leopard's-Bane.

The first of these Plants is sometimes us'd in Medicine with us, as is the third Sort in *Germany*: These are all Plants of no great Beauty; but as they will thrive in almost any Soil or Situation, so they may be allow'd a Place in a shady Border, for Variety-sake. They all increase abundantly by their spreading Roots, which may be parted either in *Spring* or *Autumn*; as also by Seeds, which should be sown soon after they are ripe. They produce their Flowers for several Months in the *Summer*, as in *May, June, July* and *August*, and their Seeds ripen soon after.

DORYCNIUM; Shrub Trefoil.

The Characters are;

It hath papilionaceous Flowers, which are succeeded by short Pods, in each of which is contain'd one single Seed: To which may be added, the Leaves are single, and divided to the Bottom into five Segments.

We have but one Species of this Plant in *England*, which is,

DORYCNium; *Monspesulanum, fruticosum*. J. B. Shrub Trefoil of Montpellier.

This Shrub rises with us to the Height of five or six Feet, and produces Clusters of small Flowers at the Extremity of the slender Branches, which are succeeded by short Pods of Seeds. There is very little Beauty in this Plant, but it is preserv'd in Botanick Gardens for Variety. It may be propagated by sowing the Seeds in the Spring, either on a moderate Hot-bed, or on a warm Border under a Wall, where they will rise very well, and may be afterwards transplanted into Pots, to be shelter'd in Winter; or if planted in a warm Border and a dry Soil, will endure our common Winters very well in the open Air.

DRACO HERBA; Tarragon; *vulgò*.

The Characters are;

*The Leaves, which are like those of Hyssop, are produc'd alternately on the Branches; the Lower being divided, and the Upper ones are whole: The Flowers are small, discous and dispos'd into a long Spike.*

There is but one Species of this Plant, which is,

DRACO-HERBA. *DoL.* Herb-Dragon, or Tarragon.

This Plant was formerly in great esteem for Sallads and Soops, but at present it is not so much us'd: It propagates itself fast enough by its creeping Roots, which in a short Time will spread very far; or it may be increas'd by planting Cuttings or Slips in the Spring of the Year; which, if kept supply'd with Water, will take root in a short Time. This Plant will grow in almost any Soil or Situation, but best in that which is light and moist.

DRACO ARBOR; *vide Palma*.  
DRACUNCULOIDES; *vide Hæmanthus*.

DRACUNCULUS; Dragon.

The Characters are;

*The Leaves are like those of Arum, but are divided into many Parts: The Stalk is spotted, but in other respects it agrees with the Arum.*

The Species are;

1. DRACUNCULUS; *pollyphyllus*.  
C. B. Many-leav'd Dragon.

2. DRACUNCULUS; *polyphyllus; foliis ex luteo variegatis*. *Fi. R. Par.*  
The yellow strip'd-leav'd Dragon.

3. DRACUNCULUS; *polyphyllus; foliis ex albo variegatis*. The white strip'd-leav'd Dragon.

The first of these Sorts is cultivated in Gardens for medicinal Uses; the other two are Varieties of the first, which are preserv'd in curious Gardens of Plants. These, tho' they are Plants of no great Beauty, yet for the surprizing Oddness of their Flowers, together with their spotted Stalks, do deserve a Place in some remote Corner of the Garden.

They are propagated by their knobby Roots, which, if suffer'd to remain two or three Years undisturb'd, will afford many Off-sets. The best Season for transplanting these Roots is in *Autumn*, soon after the green Leaves decay; for if they are remov'd after they have taken fresh Root, and began to shoot, they seldom produce Flowers the succeeding Summer; or if they do, they are very Weak: These will thrive almost in any Soil and Situation, but best in an open Exposure and a light Soil.

DRACUNCULUS PRATENSIS; *vide Ptarmica*.

DRAGON; *vide Dracunculus*.

DROSION; *vide Ros Solis*.

DULCOMARA; *vide Solanum*.

DUNGS

DUNGS are design'd to repair the Decays of exhausted or worn-out Lands, and to cure the Defects of Land, which are as various in their Qualities as the *Dungs* are that are us'd to meliorate and restore them: Some Lands abound too much in Coldness, Moisture and Heaviness; others again are too light and dry: And so to answer this, some *Dungs* are hot and light, as that of Sheep, Horses, Pigeons, &c. Others again are fat and cooling, as that of Oxen, Cows, Hogs, &c.

And as the Remedies that are to be us'd must be contrary to the Distempers they are to cure, so the *Dung* of Oxen, Cows and Hogs, must be given to clean dry, light Earths, to make them fatter and closer; and hot and dry *Dungs* to meliorate cold, moist and heavy Lands.

There are two peculiar Properties in *Dungs*, the one is to produce a certain sensible Heat, capable of producing some considerable Effect; which Properties are seldom found but in the *Dungs* of Horses and Mules, while it is newly made and a little moist: The other Property of *Dung* is, to fatten the Earth, and render it more fruitful.

The *Dung* of Horses and Mules is of admirable Use in Gardens in the Winter-time, because it then animates and enlivens all Things, and supplies the Office which is perform'd by the Heat of the Sun in the Summer-time, affording us all the Novelties of the Spring; as *Asparagus*, *Cucumbers*, *Radishes*, *Melons*, *Sallads*, &c. *Horse-Dung* is the best Improvement for cold, *jeune* Lands that we can procure in any Quantity; but yet, *Horse-Dung* being us'd alone, or when

'tis too new, is frequently prejudicial to some Lands; and if it be spread thin over Lands in the Summer-time, it is of very little Service, because the Sun drawing out all the Virtue and Goodness of it, renders it little better than Thatch or dry Straw: and tho' too much of it can scarcely be us'd in a Kitchen-Garden for *Cabbages*, *Colliflowers*, and all other Plants that grow there, and require abundance of Nourishment, yet it may be a Fault to lay too much of it on Corn-Lands, because it produces abundance of Weeds.

*Horse-Dung* being of a very hot Nature, is best for cold Lands and *Cow-Dung* for hot Lands: and being mix'd together, may make a very good Manure for most Sorts of Soils, and for some they may be mix'd with Mud.

*Sheep's-Dung* and *Deer's-Dung* differ not much in their Quality, and are esteem'd by some the best of *Dungs* for cold Clays: Some recommend them to be beat into Powder, and spread very thin over Autumn or Spring Crops, about four or five Loads to an Acre, after the same Manner as Ashes, Malt-dust, &c. are strew'd.

In *Flanders*, and other Places, they house their Sheep at Night in Places spread with clean Sand, laid about five or six Inches thick; which being laid on fresh every Night, is clear'd out once a Week, and the *Dung* and *Urine* of the Sheep is a very rich Manure, and bears a considerable Price, and is an excellent Manure for stubborn Lands; and Mr. *Quinteny* is of Opinion, that 'tis the greatest Promoter of Fruitfulness in all Sorts of Ground.

Others recommend *Hog's-Dung* as the fattest and most beneficial of

all Sorts of *Dungs*, and say, that one Load of it will go as far as two Loads of other *Dung*, and that it is the best of all *Dungs* for Fruit-trees, especially for Pear and Apple-Trees in a light Soil, and a very rich *Dung* for Grass.

The *Dung* of Pigeons, Hens and Geese are great Improvers of Meadow or Corn-Land; the first of these being the best superficial Improvement that can be laid on Meadow or Corn-Land: But before it is us'd, it ought to have lain abroad out of the Dove-house some time, that the Air may have a little sweeten'd it, and mollify'd the fiery Heat that is in those *Dungs*.

Especially it is good for cold, wet, clayey Lands; but it ought to be dry'd before it be strew'd, because 'tis naturally apt to clod in Wet, and it should be mix'd with Earth to keep it from clinging together, that it may be strew'd thin, being naturally very hot and strong.

Some recommend the *Dung* of Pigeons, and also of other Fowls, as the best Manure for Asparagus, Strawberries, or any Sorts of Flowers.

The *Dung* of Poultry being hot and full of Salts, tends much to facilitate Vegetation, and are abundantly quicker in their Operation than the *Dung* of Animals which feed on Herbs.

Sir Hugh Plat says, One Load of Grain will enrich Ground more than ten Loads of common *Dung*; which, if it be true, it is rational to suppose, that if simple Grain by only Infusion in the Mixture of Composts, has a very good Effect, it will be more powerful when it has pass'd thro' the Bodies of Animals.

*Human Dung* is a great Impro-

ver of all cold four Lands, and especially if it be mix'd with other *Earths* or *Dungs* to give it a Fermentation.

But there is not any Sort of Manure equal to the Cleansing of *London* Streets for all stubborn clayey Soils, the Parts of which will be better separated, and in a much less Time with this Manure than any other Compost whatever, and where it can be obtain'd, is extremely well worth procuring either for Corn, Grass, or Garden-Land.

**DWARF-TREES.** These were formerly in much greater Request than they are at present, for tho' they may have many Advantages to recommend them, yet the Disadvantages attending them do greatly overbalance; and since the introducing of *Espaliers* into the *English* Gardens, *Dwarf-Trees* have been destroy'd in most good Gardens, for the following Reasons.

1st, The Figure of a *Dwarf-Tree* is very often so much studied, that in order to render the Shape beautiful, little Care is taken to procure Fruit, which is the principal Design in planting these Trees.

2dly, The Branches being spread horizontally near the Surface of the Ground, renders it very difficult to dig, or clean the Ground between them.

3dly, Their taking up too much Room in a Garden, (especially when they are grown to a considerable Size) for nothing can be sown or planted between them.

4thly, These Trees spreading their Branches near the Ground, do continually shade the Surface of the Earth, so that neither the Sun nor Air can pass freely round their Roots and Stems, to dissipate noxious Vapours, whereby the circum-

abient

ambient Air will be continually replete with crude rancid Vapours, which being drawn in by the Fruit and Leaves, will render its Juices crude and unwholsome as well as ill-tasted.

These Evils being intirely remedied by training the Trees to an Espalier, hath justly gain'd them the Preference; however, if any one has a Mind to have *Dwarf-Trees*, notwithstanding what has been said, I shall lay down a few Rules for their Management.

If you design to have *Dwarf Pear-Trees*, you should bud or graft them on Quince-Stocks; for free Stocks are apt to make them shoot so vigorously, as not to be kept within Bounds: These Grafts or Buds should be put in about four or six Inches above the Surface of the Ground, that the Heads of the Trees may not be advanc'd too high; and when the Bud or Graft has shot out four Eyes, you should stop the Shoot, to force out lateral Branches.

Two Years after Budding, these Trees will be fit to transplant where they are to remain; for tho' many People chuse to plant Trees of a greater Age, yet they seldom succeed so well as young ones. The Distance these Trees should be planted is twenty Foot in the Rows, and thirty Foot Row from Row, for less will not do, if the Trees thrive well: The Ground between them may be cultivated for Kitchen-Garden Herbs, while the Trees are young, but you should not sow or plant too near their Roots.

In order to train your Trees regularly, you should drive Stakes into the Ground round the Tree, to which the Branches should be nail'd down with Lint in an hori-

zontal Position; for if they are suffer'd to take a perpendicular Figure while young, they can't be afterwards reduc'd, without great Violence, to any tolerable Shape. The necessary Directions to be afterwards follow'd are, not to suffer any Branches to cross each other: and always in shortning any, be sure to leave the uppermost Eye outwards, whereby the Hollowness in the Middle of the Tree will be better preserv'd, and be careful to rub off all perpendicular Shoots in the Middle of the Trees, so soon as they are produc'd. The other necessary Rules you'll find under the Article of Pruning.

The Sorts of Pears which do best in *Dwarfs*, are all Summer and Autumn Fruits; for Winter Pears are not worth planting in *Dwarfs*, for they seldom bear well, nor are ever well-tasted, and commonly are very stony.

Apples are also planted in *Dwarfs*, most of which are now budded or grafted on Paradise Stocks; but as these are for the most part of a short Duration, so they are not profitable, and are fit only for small Gardens, as a Matter of Curiosity, producing Fruit sooner and in greater Plenty, than when they are upon Crab or Apple Stocks.

The Distance these Trees should be planted, if on Paradise Stocks, should be six Feet asunder in the Rows, and twelve Feet Row from Row; but if on Crab Stocks, sixteen Feet asunder in the Rows, and twenty-four Feet Row from Row. The Management of this being the same with Pears, I need not repeat it.

Some Persons also plant Apricocks and Plumbs for *Dwarfs*, but these seldom succeed well, as being of a tender Constitution; and

those which will produce Fruit on *Dwarfs*, are much more likely to do so when train'd on an *Espalier*, where they can be much better manag'd, and therefore I judge it much the better Method, as being more certain, and the Trees will make a better Figure.



**E**ARTH is the principal Matter whereof our Globe consists; the Character of which, according to Dr. *Boerhaave*, is, That it is a *Fossil Body*, neither dissoluble by Fire, Water, nor Air; that it is insipid, and transparent; more fusible than Stone; still friable, and containing usually a Share of Fatness.

There is no such thing as a strictly simple *Earth*; Mr. *Boyle* says, That it does not appear, that Nature any more than Art affords an elementary *Earth*; at least, some which appear of the simplest Sorts are found, upon Examination, to have Qualities not ascrib'd to pure *Earth*.

Of such *Earths*, some are simple, and immutable, as Chalk, Pumice, and rotten Stone; others compound and fatty; of which kind are all Boles, red, white and brown; *Fullers Earth*; and divers Kinds of Medicinal *Earths*, as the *Cretica*, *Hungarica*, *Lemnian Earth*, and others.

Which *Earths* are all resolvable into Oil, a little acid Salt, &c. and a Calx, which is the Baus, or the *Earth* properly so call'd.

Sand is by Naturalists generally rank'd as a Species of *Earth*, tho' not very properly. In that Sands,

strictly speaking, are a Sort of Crystals, or little transparent Pebbles, and are calcinable, and by the Addition of a fix'd Alcaline Salt, fusible and convertible into Glass.

The fat *Earth* is render'd fertile by the Means of Sand, and becomes fit to feed and nourish Vegetables, &c. for pure *Earth* is liable to coalesce into a hard coherent Mass, as in Clay; and *Earth* thus imbodyed, and as it were glu'd together, would be very unfit for the Nourishment of Plants.

But if hard Sand, *i. e.* Crystals, which are indissoluble in Water, and still retain the same Figure, be intermix'd with such *Earth*, they will keep the Pores of the *Earth* open, and the *Earth* it self loose and incompact, and by that means give Room for the Juices to move, ascend, &c. and for Plants to be nourish'd thereby.

Thus a Vegetable being planted either in the Sand alone, or in the fat Glebe and *Earth* alone, receives no Growth or Increment, but is either starv'd or suffocated; but mix the two, and the Mass becomes fertile.

In effect, by means of Sand the *Earth* is render'd, in some measure, Organical, Pores and Interstices being hereby maintain'd or preserv'd, something analagous to Vessels is effected; by which the Juices of the *Earth* may be convey'd, prepar'd, digested, circulated, and at length excern'd and thrown off in the Roots of Plants.

The *Earth* is made up of two Parts: The first the containing Part, *i. e.* the Body, Bed or Couch; the second Part contained, and those are the nitrous or sulphureous Particles or prolifick Salts. The first is a lifeless inanimate Mass, and is only the Receptacle of the other:



For the *Earth* consider'd simply, and abstracted from the before mention'd nitrous and prolifick Salts, is a lifeless, dead and inanimate Mass; but by the Co-operation of Water, Sun and Air, is put into Motion, and promotes the Work of Vegetation: But if it were strip'd of those prolifick Salts and spirituous Particles, would produce no manner of Plant, Herb, &c. that should be planted or sown in it.

All these Sorts of *Earths* have a little Tendency to Vegetation, and have their Salts proper for it, but in a different Proportion; as a Peck of Clay may probably have double the Quantity of Salts in it that a Peck of Loam has; and a Peck of Loam may have twice the Quantity of Salts that a Peck of Sand has.

*Loam.* Some call the superficial *Earth* that we meet with in *England* by this Name, without having Regard to what Proportions of Sand and Clay it contains: Others again call that *Earth* Loam that inclines more to Clay than Sand: Some by Loam mean that Sort of *Earth* that equally partakes of Sand and Clay, being a Medium between Sand and Clay, which they call *Mother-Earth*.

This *Mother-Earth*, they say, may be in Colour either black or yellow, and of which of these Colours soever it be, Plants of all Sorts will grow in it.

Sand and Clay likewise produce certain Plants which are natural to each of them, and consequently will thrive better in them than in any other Soil.

But Sand is apt to precipitate those Plants that are set in it, earlier than Clay, and will cause them to germinate near a Month

sooner than those that grow in Clay, and that for this Reason, that the Salts which are in the Sand are liable to be put in Motion by the least Approach of the Warmth of the Sun; but as Sand is quick in the Operation, so the Salts are soon exhald and spent.

*Clay.* The Parts of Clay are more closely compacted together, and do not so easily give out those Salts that are contain'd in it; nor can the Fibres of every tender Plant make their Way through it in quest of their proper Nutri-ment.

But if the Parts of the Clay be open'd, by digging and breaking it into small Particles, and those Parts be kept open by a Mixture of some sharp Sand, or some other Body of the like Quality, the Effects of its Vigour will plainly appear.

A light, sandy, or loose *Earth* requires a proper Ligature, and should have a Compost of a heavier Nature; and those that are heavy, clayey, and cloddy, should have a Compost of a more fiery, sprightly Nature, that will intinuate itself into the heavy, lumpy, ingested Clods, which would otherwise very much obstruct the Business of Vegetation.

#### EARWIGS.

These are very troublesome Vermin in a Garden, especially where Carnations are preserved; for they are so fond of these Flowers, that if care is not taken to prevent them, they will intirely destroy them, by eating off the sweet Part at the Bottom of the Leaves. To prevent which, most People have Stands erected, which have a Basin of Earth or Lead round each Supporter, which is constantly kept fill'd with Water. See the Article *Carnation*.

## E C

Others hang the hollow Claws of Crabs and Lobsters upon Sticks in divers Parts of the Garden into which these Vermin get; and by often searching them, you will destroy them without much Trouble; which will be of great Service to your Wall Fruit, for these are great Destroyers thereof.

EBULUS; *five* Sambucus Humilis.

ECHYNOMELOCACTUS; *vide* Melocactus.

ECHINOPHORA; Prickly-headed Parsnip.

The Characters are;

*The Cup of the Flower consists of one Leaf, which is divided into five Parts, and expands in Form of a Star, in which is included the Footstalk of the Umbel: The Fruit consists of one prickly Vessel, in which is contain'd one long Seed.*

We have but one Species of this Plant, which is,

ECHINOPHORA; *pastinaca folio*. C. B. *Echinophora*, with a Parsnip-Leaf.

There is no great Use or Beauty in this Plant; but it is preserv'd in curious Botanick Gardens, for Variety-sake. It may be propagated by sowing the Seeds soon after they are ripe, or very early in the Spring; and when the Plants are come up, they should be singled out, so as to remain about eight or ten Inches asunder. The second Year after sowing they will produce ripe Seeds.

ECHINOPUS; Globe-Thistle; *vulgò*.

The Characters are;

*It hath the whole Appearance of a Thistle: The Leaves are produc'd alternately: The Florets consist of one Leaf, which is divided into five Segments, and is hollow; and each single Floret has a scaly Cup: The*

## E C

*Flowers are collected into a spherical Head, which has one common Cup or Covering.*

The Species are;

1. ECHINOPUS; *major*. *J. B.* Greater Globe-Thistle.

2. ECHINOPUS; *major, humilior, floribus albidis*. *Flor. Bat.* Greater Dwarf Globe-Thistle, with whitish Flowers.

3. ECHINOPUS; *minor, annuus, capite magno*. *Tourn.* Lesser annual Globe-Thistle, with a large Head.

The first of these Plants hath been an old Inhabitant of the English Gardens, where it hath had a Place more for Variety, than any particular Beauty.

The second Sort is a Variety which hath been obtain'd from Seeds of the former. These Plants may be propagated by sowing their Seeds in the Spring of the Year in a light Soil: and when the Plants are strong enough to remove, they may be transplanted into the Middle of large Borders, or in any abject Part of the Garden; for they are too large to stand amongst nicer Plants, which would be greatly injured by their large Leaves. The second Year after sowing, they will produce Flowers; and if the Autumn is not too cold or wet, will perfect Seeds: but the Roots of these will abide three or four Years, and produce Flowers and Seeds annually.

The third Sort is an annual Plant, and requires to be sown early, as also to have an open warm Situation; otherwise it will not produce good Seeds in this Country. This Plant is of small Growth, and so may the better be preserv'd in a warm Border amongst other curious Plants.

ECHIUM;

ECHIUM; Vipers Buglofs.

The Characters are;

The Cup of the Flower is large, and divided into five long slender Segments: The Flower consists of one Leaf, is shap'd like a Funnel, and somewhat inflected, having its upper Part stretch'd out to a greater Length than the lower: The upper Part or Galea of the Flower is divided into two, and the lower Part or Beard into three Parts: In the Middle of the Flower are produc'd five Stamina (or Threads) which are reflex'd: Each Flower is succeeded by four Seeds, which are in Form of a Viper's Head.

The Species are;

1. ECHIUM. C. B. Common Vipers Buglofs.

2. ECHIUM; *majus, & asperius, flore albo.* C. B. Great rough Vipers Buglofs, with a white Flower.

3. ECHIUM; *majus, & asperius, flore dilute purpureo.* Bot. Monsp. Great rough Vipers Buglofs, with a Flower of a pale purple Colour.

4. ECHIUM; *amplissimo folio, Lusitanicum.* Tourn. Portugal Vipers Buglofs, with a large Leaf.

5. ECHIUM; *Creticum, latifolium, rubrum.* C. B. Broad-leav'd Candia Vipers Buglofs, with a red Flower.

6. ECHIUM; *Creticum, angustifolium, rubrum.* C. B. Narrow-leav'd Candia Vipers Buglofs, with a red Flower.

7. ECHIUM; *foliis angustis & villosis.* Tourn. Vipers Buglofs, with narrow hairy Leaves.

There are several other Varieties of this Plant, which are preserv'd in curious Botanick Gardens; but these here mention'd are the chief Sorts which I have observ'd in England. The first Sort is found wild upon dry chalky Hills and

gravelly Soils in divers Parts of England, and is sometimes used in Medicine: But there are none of the Varieties which are cultivated for their Beauty; tho' I think the first, fifth, and sixth Sorts do deserve a Place in some dry abject Part of the Garden, where little else will grow, for the sake of Variety, and the long Continuance of their Flowers. They are most of them biennial Plants, the Seeds being sown in the Spring, will the second Summer after produce Flowers and Seeds, after which they seldom continue: They all delight in a rubbishy gravelly Soil, and will grow upon the Tops of old Walls or Buildings, where, when once they have establish'd themselves, they will drop their Seeds, and thereby maintain a Succession of Plants without any Care; and on these Places they appear very beautiful.

EDERA QUINQUEFOLIA; *vide Vitis.*

EDGINGS. The best and most durable Plant for Edgings in a Garden is Box, which, if well planted, and rightly manag'd, will continue in Beauty for several Years: The best Season for planting this, is either in the Autumn, or very early in the Spring; for if you plant it late, and the Season should prove hot and dry, it will be very subject to miscarry, unless great Care is taken to supply it with Water. The best Sort for this Purpose is the Dwarf Dutch-Box.

These Edgings are only planted upon the Sides of Borders next Walks, and not (as the Fashion some Years ago) to plant the Edgings of Flower-beds, or the Edges of Fruit-borders in the Middle of Gardens, unless they have a Gravel Walk between them, which renders

ders it proper to preserve the Walks clean, by keeping the Earth of the Borders from washing down in hard Rains.

It was also the Practice formerly, to plant *Edgings* of divers Sorts of Aromatick Herbs, as Thyme, Savory, Hyssop, Lavender, &c. But these being subject to grow woody, so that they can't be kept in due Compass, and in hard Winters being often kill'd in Patches, whereby the *Edgings* are render'd incomplete, they are now seldom us'd for this Purpose.

Some People also make *Edgings* of Daisies, Thrift, Catch-fly, and other flowering Plants; but these also will require to be transplanted every Year, in order to have them handsome, for they soon grow out of Form, and are subject also to decay in Patches, so that there is not any Plant which so compleatly answers the Design as Dwarf-Box, which must therefore be prefer'd to all others.

ELATERIUM; the Wild Cucumber.

The Characters are,

The Branches are somewhat like those of the Cucumber, but have no Tendrils: The Fruit is prickly, and when ripe, bursts with great Elasticity, and abounds with foetid Juice.

We have but one Species of this Plant, which is,

ELATERIUM; *officinarum*. Boerh. Ind. This is the *Cucumis sylvestris*, *Ajminus dictus*, of Caspar Bauhin.

This Plant is cultivated in some Gardens for Medicinal Use, but is chiefly preserv'd in curious Gardens for its Variety, as also for Diversion; for when the Fruit is ripe, if you offer to gather it, it bursts and casts its Juice and Seeds with great Elasticity, for which it is call'd by some, *Noli me Tangere*,

or, *Touch me not*: Which Appellation may be given to many other Plants on this Account.

It may be propagated by sowing the Seeds in the Spring of the Year in an open warm Border; and when the Plants are come up, they may be transplanted into open Beds or Borders, about six or eight Feet Distance from each other, for the Vines will spread very far, especially if the Ground is good in which they are planted: These produce their Fruit in Autumn, which if you suffer to fall off, and emit their Seeds, will afford a plentiful Supply of Plants without any farther Care.

ELATINE; *vide* Linaria.

ELICHRYSUM, or HELIOCHRYSON; Eternal Flower.

The Characters are;

The Disk of the Flower contains many hermaphrodite Florets; in the Center of each of these arises the Ovary, which is crown'd with Hairs, and is supported by a naked Placenta: These are all contain'd in a scaly Cup, which consists of dry Membranes, and is, for the most part, of a splendid Colour.

The Species are;

1. ELICHRYSUM; *seu stœchas citrina, angustifolia*. C. B. Goldyllocks, or Cassidony.

2. ELICHRYSUM; *montanum, flore rotundiori, candido*. Tourn. Catsfoot, or Mountain Cassidony, with a white round Flower.

3. ELICHRYSUM; *montanum, flore rotundiori, variegato*. Tourn. Catsfoot, or Mountain Cassidony, with a round variegated Flower.

4. ELICHRYSUM; *Americanum, latifolium*. Tourn. Broad-leav'd American Eternal-Flower.

5. ELICHRYSUM; *sylvestre, latifolium, flore parva, singulari*. Tourn. Broad-

Broad-leav'd wild Eternal-Flower, with a small single Flower.

6. ELICHRYSUM; *sylvestre, latifolium, flore magno, singulari*. Tourn. Broad-leav'd wild Eternal-Flower, with a single large Flower.

7. ELICHRYSUM; *sylvestre, latifolium, capitulis conglobatis*. C. B. Broad-leav'd wild Eternal-Flower, with many Heads closely united.

8. ELICHRYSUM; *flore suave-rubente*. Hort. Cath. Eternal-Flower, with a soft red colour'd Flower.

9. ELICHRYSUM; *Africanum, foetidissimum, amplissimo folio, calice argenteo*. Tourn. Stinking African Eternal-Flower, with a broad Leaf and a silver colour'd Cup.

10. ELICHRYSUM; *Africanum, foetidissimum, amplissimo folio, calice aureo*. Tourn. Stinking African Eternal Flower, with a broad Leaf and a gold colour'd Cup.

11. ELICHRYSUM; *Orientale*. C. B. Eastern Eternal-Flower.

12. ELICHRYSUM; *arborescens, Africanum, salvia folio, odorato*. Boerb. Ind. African-tree Eternal-Flower, with a sweet smelling Sage Leaf.

13. ELICHRYSUM; *Africanum, folio oblongo, subtus incano, supra viridi, flore luteo*. Boerb. Ind. African Eternal-Flower, with a longish Leaf, hoary underneath, but green on the upper Part, and a yellow Flower.

14. ELICHRYSUM; *Africanum, frutescens, foliis Crithmi Marini*. Hort. Amst. Shrubby African Eternal-Flower, with Leaves like the Samphire.

15. ELICHRYSUM; *Africanum, frutescens, foliis stachados citrina, flore aureo*. Boerb. Ind. Shrubby African Eternal-Flower, with Leaves like the golden Cassidony.

16. ELICHRYSUM; *Africanum, lanuginosum, latifolium, calice floris argenteo, & amplissimo*. Olden.

Woolly African broad-leav'd Eternal-Flower, with an ample silver colour'd Cup.

17. ELICHRYSUM; *Africanum, tomentosum, frutescens, calice argenteo*. Com. Pl. Rar. African shrubby Eternal-Flower, with woolly Leaves and a silver colour'd Flower Cup.

18. ELICHRYSUM; *Africanum, frutescens, angustis & longioribus foliis, incanis*. Hort. Amst. Shrubby African Eternal-Flower, with long narrow hoary Leaves.

The first of these Sorts hath no great Beauty, but it being a medicinal Plant, is preserv'd in Physick Gardens. This seldom produces good Seeds in *England*, but is very easily propagated by planting Slips or Cuttings in a shady Border, any time from *April* to *August*; which, if carefully supply'd with Water, will push out Roots in a Month's time, and may then be remov'd to the Place where it is to remain for good.

This delights in a dry warm Soil, that is not too rich; for if the Soil be wet, or over-dung'd, it will cause this Plant to make stronger Shoots in Summer, but then it will be liable to be destroy'd with a little cold Weather in Winter. This Plant may be train'd up to a regular Head, if proper Care be taken of it while young, and will grow to the Height of three or four Feet.

The second and third Sorts are Inhabitants of the Northern Mountains in *Yorkshire*, *Cumberland*, &c. These Plants grow very close to the Ground, and increase very fast from the Off-sets which are produc'd in great Plenty on every Side the Plants, which emit Roots from their Joints as they trail upon the Ground, so that in a short time they

they will overspread the Ground where they are planted.

These Plants produce small Bunches of soft dry Flowers, which if gather'd when they are in Beauty, and preserv'd in a dry Place, will continue fresh and fair for some Years, for which Reason they deserve a Place in every good Garden, to increase the Varieties of these Flowers, which will afford Pleasure at a Season when the Ground is so lock'd up, that none of the flowery Tribe abroad appears above Ground. These Plants will grow in a shady dry place in any remote Part of a Garden, and are by some planted for Edgings to North Borders.

The fourth Sort is a great Rambler in a Garden, and should therefore be either confin'd to Pots, or planted in some object Part of the Garden, in a Place by it self, for if it stand near any other Plants or Flowers, it will be apt to over-run and destroy them; for the Roots creep far under Ground, and will arise at a great Distance from the old Plant: But however as the Flowers as very beautiful amongst others of the perpetual Kind, they should not be wanting in a good Garden. This though still'd an *American* Plant, yet is thought to be a Native of some of the warm *European* Countries. It delights in a dry warm Soil, and increases plentifully by the Off-sets.

The fifth and sixth Sorts are Plants of no great Beauty: They are preserv'd in Botanick Gardens for Variety sake, but are seldom cultivated in Gardens for Pleasure. They may be propagated either by sowing their Seeds in the Spring on a moderate Hot-bed, or by planting Cuttings or Slips in any of the Summer Months: But these

Plants producing Seeds in plenty, it is the common Method to increase or maintain them by Seeds. These must be planted in Pots fill'd with light sandy Earth, and must be shelter'd in Winter, giving them as much free open Air as possible in mild Weather, and often refreshing them with Water: With this Management they may be train'd up to the Height of three or four Feet, and will grow shrubby; but if suffer'd to remain abroad, they will not survive the Winter.

The seventh Sort is an Annual, and is a Plant of very little Beauty, and is only preserv'd for Variety, and will require no farther Care than to suffer the Seeds to fall upon the Ground, which will arise, and afford an abundant Supply of Plants.

The eighth Sort is an abiding Plant, which deserves a Place in the most curious Gardens for the Beauty of its Flowers. This is propagated by planting Cuttings in any of the Summer Months, which should be put into Pots fill'd with a light sandy Soil, and plung'd into a moderate Hot-bed, to facilitate their Rooting; after which they may be expos'd to the open Air, and some of them may be planted into a warm dry Border, where they will endure the Cold of our ordinary Winters without any Shelter; but 'tis advisable always to preserve some in Pots under Cover in Winter, lest those abroad should be destroy'd, as it sometimes happens in very severe Frosts.

This Plant producing Flowers which are of a fine soft red Colour, are a very great Ornament in Winter, when intermix'd with the several Varieties of Eternal Flowers, in Glasses or Basons fill'd with dry Sand,

Sand, which being preserv'd from Wet, will afford a great deal of Pleasure, when other Flowers are not to be procur'd.

The ninth and tenth Sorts are Biennial Plants. These seldom continue after they have flower'd and produc'd Seeds. They may be sown in the Spring upon a warm and dry Border; and when the Plants are come up pretty strong, they may be transplanted out either into Pots or in warm Borders, allowing them at least eight or ten Inches Room; for when they grow strong, they shoot out many Branches from their Sides, and produce Bunches of dry Flowers like the other Plants of this kind, which being preserv'd, do add to the Variety.

But these Plants while fresh, do emit a violent strong Smell upon the least Touch, for which they have been by many People reject-ed. They will endure our ordinary Winters in the open Air, if planted in a dry Soil; but in severe Cold, are apt to be demolish'd.

The eleventh Sort is one of the most beautiful of all this Tribe, producing large Bunches of bright Yellow colour'd Flowers. This is preserv'd in *Portugal* and *Spain* for adorning their Places of Worship in the Winter-season, as also for the Ladies to adorn their Heads; for which Purposes it is preferable to any of the flowery Tribe.

This Plant seldom produces Seeds in *England*, but is propagated by planting Cuttings in the Summer-season, which must be set in Pots of light Earth, and plung'd into a moderate Hot-bed, to facilitate their striking Root; then you must put each Plant into a separate Pot fill'd with the like fresh Earth, and during the Summer-season you may

expose them with *Oranges*, *Myrtles*, &c. but in Winter they must be put either under a Hot-bed Frame, or into an airy Green-house, placing them near the Windows, that they may enjoy the free Air, whenever the Weather will permit the Glasses to be open'd; for if they are crowded amongst other Plants, they are apt to draw, and their under Branches and Leaves, will rot and decay: It must also have frequent, but gentle Waterings. This produces its Flowers in *May*, which when fully grown, should be cut, and preserv'd in clean white Papers, and kept from the Air, which greatly diminishes their Beauty: And this cutting off the Flowers will cause them to push out many Side-shoots, whereby the Plant may be increas'd.

The twelfth Sort grows to be a very large Tree, where it hath the Advantage of a warm Climate, that it may be planted in the full Ground: And here in *England* there are several Trees of pretty large Growth: We have some in the Physick Garden, which are upward of twelve Feet high, and have considerable Stems, and fine regular Heads, to which they may be easily train'd, provided Care be taken in their Direction while young.

This is propagated by planting Cuttings, as was directed for the former Sort, and requires to have a fresh light Soil, and frequent Waterings: In Winter it must be hous'd with Bays and other hardy Kinds of Ever-greens, where it may have free open Air in mild Weather. I have sometimes known Plants of this kind endure abroad in moderate Winters, but in severe Cold they never escape.

The 14th, 15th, 16th, 17th, and 18th Sorts are all propagated by Cuttings, as was before directed. These may be train'd up to Shrubs with regular Stems, and will grow to the Height of six or seven Feet: They are pretty hardy, and require only to be secur'd from our severe Frosts, and must have free open Air and frequent Waterings in mild Weather. These are all pretty Varieties in Collections of Exotick Plants, and altho' some of the Flowers have no great Beauty in them, yet they are worth preserving, for the sake of Variety.

ELM; *vide* Ulmus.

EMERUS; Scorpion Sena; *vulgô*.

The Characters are;

*It hath Leaves like those of the Colutea: The Flowers are papilionaceous: The Pods are slender, and contain two or three Cylindrical-shap'd Seeds in each.*

The Species are;

1. EMERUS; *Casalp.* Scorpion Sena; *vulgô*.

2. EMERUS; *minor. Tourn.* The lesser Scorpion Sena.

The first of these Shrubs is very common in all the Nurseries near London, but the second is at present in very few Gardens; these are both of them extreme fine flowering Shrubs, and are great Ornaments to smaller Wilderness Quarters of Shrubs, when intermix'd with Plants of equal Growth. The first will rise to the Height of seven or eight Feet, and may be reduced to a regular Figure, if proper Care be taken while they are young. The second seldom rises above two or three Feet high, but may be train'd into a handsome Figure. These Shrubs continue Flowering through the greatest Part of the Summer; therefore the best Season to prune them, in order to reduce

them into Shape, is about the Middle of *September*, soon after they have done flowering; for if you cut them in *Summer*, it will prevent their flowering in *Autumn*, unless it be done in *May*, which will destroy the first Crop of Flowers, and prevent their producing Seeds.

These Shrubs are easily propagated by sowing their Seeds (which they commonly produce in great Plenty) in *March*, upon a Bed of light sandy Earth, observing to keep the Bed clear from Weeds; and in very dry Weather you must often refresh the Bed with Water, which should be given carefully, lest the Seeds should be wash'd out of the Ground by hasty watering. When the Plants are come up, you must continue the same Care; and the *Michaelmas* following (if your Plants have thriven well) you may draw out the largest, which may be transplanted into a Nursery, at three Feet distance Row from Row, and one Foot asunder in the Rows; this will give room to those Plants which are left to grow in the Seed-bed, in which Place they may remain another Year, when they will also be fit to transplant into a Nursery, where they should be train'd up in the manner you design them to grow, either in round Heads, or in rude Plants: In two or three Years more they will be fit to plant out, where they are to remain for good; in doing of which, you should be careful in taking them up, not to break or wound the Roots: Nor should they remain too long in the Nursery before they are transplanted; for they are subject to shoot down-right Roots, which, when cut off, oft-times proves the Death of the Tree. In all other respects it must be treated like



like other Flowering Shrubs, amongst which, this is commonly fold at the Nurseries. It delights in a dry Soil, and may also be propagated by laying down the tender Branches, which will take Root in about a Year's time, and may then be transplanted into a Nursery, and managed in the same manner as the Seedlings.

EMPETRUM; Black-berry'd Heath.

The Characters are;

It hath Leaves like those of the Heath: The Flowers are Male and Female, which grow in different Parts of the same Plant: The Male Flowers have no Petals: The Female Flowers are succeeded by Black-berries, in each of which are contain'd three or four hard Seeds.

We have but one Species of this Plant in England, which is,

EMPETRUM; *montanum, fructu nigro.* Tourn. Black-berry'd Heath, Crow-berries, or Crake-berries.

This little Shrub grows wild upon the Mountains of *Staffordshire, Derbyshire* and *Yorkshire*, and is seldom propagated in Gardens, unless for Variety-sake: but it may be cultivated in shady Places where the Soil is stiff in Gardens, and will thrive very well; and may be propagated by sowing the Seeds, soon after they are ripe, in a moist shady Place, which should be kept clear from Weeds, and suffer'd to remain undisturb'd until the second Year, at which Time the Plants will come up, and the Year following may be transplanted where they are to remain, and will require no farther Care than to clear them from Weeds.

ENULA CAMPANA; *vide* Helianthemum.

EPHEMERON; Virginian Spider-wort; *vulgô.*

The Characters are;

The Cup of the Flower consists of three Leaves: The Flower also hath three Petals, which expand in Form of a Rose, and have three Stamina (or Threads) which surround the Ovary: The Fruit is oblong, and divided into three Cells, which are fill'd with Seeds like a Grain of Wheat.

The Species are;

1. EPHEMERUM; *Virginianum, flore caruleo majori.* Tourn. Virginian Spider-wort, with a large blue Flower.

2. EPHEMERUM; *Virginianum, flore purpureo majori.* Tourn. Virginian Spider-wort, with a large purple Flower.

3. EPHEMERUM; *Virginianum, flore azureo majori.* Tourn. Virginian Spider-wort, with a large azure Flower, commonly call'd the Savoy Spider-wort.

4. EPHEMERUM; *Virginianum, flore caruleo minore.* Tourn. Virginian Spider-wort, with a small blue Flower, commonly called John Tradescant's Spider-wort.

5. EPHEMERUM; *Virginianum, flore albo.* Tourn. Virginian Spider-wort, with a white Flower.

6. EPHEMERUM; *Virginianum, flore purpureo minore.* Tourn. Virginian Spider-wort, with a small purple Flower.

The several Varieties of this Plant are easily propagated, by parting their Roots either in Spring or Autumn; and should be planted in a moist Soil, where they will thrive and increase exceedingly, and are extreme hardy, enduring our severest Cold in the open Air.

These are very proper for large Borders, where they may have room to grow: But if they are planted in small Borders, they should be parted into small Heads every

every Year, otherwise they will grow too large for such Places. They may be planted in shady Borders, where their Flowers will continue longer than if expos'd too much to the great Heat of the Sun. This Flower seldom survives the Day, but is succeeded by new ones daily, for several Months; so that it may deserve a Place for the long Continuance of its Flowering.

EPIMEDIUM; Barren-wort.

The Characters are;

The Stalks are divided into three Branches, each single Branch sustaining three Leaves, which are shap'd somewhat like Ivy: The Calix consists of four Leaves: The Flower consists of four Petals, which are hollow, and expand in Form of a Cross: The Pointal of the Flower becomes a Pod with one Cell, having two Valves, in which are contain'd round flat Seeds.

We have but one Species of this Plant at present in England, which is,

EPIMEDIUM. C. B. Barren-wort.

This is a Plant of no great Beauty, yet, for Diversity, may have a Place in a Garden: It is easily propagated, by parting the Roots (which increase very fast under Ground) either in the Spring or Autumn, and should be planted in a moist Soil, and a shady Situation. This Plant produces its Flowers in May, but seldom ripens Seeds with us: this may be owing to its spreading Roots, which exhaust the Nourishment from the Flowers and Fruit and might, perhaps, be procur'd, by confining the Roots to a Pot. The Roots thereof, if planted in a good Border, should be every Year reduc'd, so as to keep it within Bounds; otherwise it will overspread the

whole Spot, and destroy whatever Plants grow near it.

EQUISETUM; Horse-Tail.

There are several Species of this Plant, which are found in England, on the Sides of Ditches, or in shady Woods: But as they are Plants which are never cultivated in Gardens, so I shall pass them over in this Place.

ERANTHEMUM; vide Adonis.

ERICA; Heath.

The Characters are;

It is a Shrub of low Stature: The Leaves are small, and abide green all the Year: The Flower consists of one Leaf, is naked, and for the most part shap'd like a Pitcher: The Ovary (which is produc'd in the Bottom of the Flower) becomes a roundish Fruit, which is divided into four Cells, in which are contain'd many small Seeds.

The Species are;

1. ERICA; vulgaris, glabra. C. B. Common smooth Heath.

2. ERICA; vulgaris, hirsuta. C. B. Common rough-leav'd Heath.

3. ERICA; tenuifolia. Ger. Fine narrow-leav'd Heath.

4. ERICA; vulgaris, flore albo. C. B. Common Heath with a white Flower.

5. ERICA; Brabantica, folio Coridis, hirsuta, quaterno. J. B. Low-Dutch Heath.

6. ERICA; foliis Corios, multiflora. J. B. Fir-leav'd Heath with many Flowers.

7. ERICA; Cantabrica, flore maximo, foliis Myrti, subtus incanis. Tourn. Hoary Myrtle-leav'd Heath, with a large Flower.

These Plants grow wild upon barren uncultivated Places, in divers Parts of England: But notwithstanding their Commonness, yet they deserve a Place in small Quarters of humble Flowering Shrubs, where,

where, by the Beauty and long Continuance of their Flowers, together with the Diversity of their Leaves, they afford a very agreeable Prospect.

These are seldom propagated in Gardens, and so not to be had from the Nurseries; but may be taken up, with a Ball of Earth to their Roots, from the natural Places of their Growth, either in Spring or Autumn, and may be transplanted into the Garden. The Soil where they are planted should not be dung'd; nor should you bestow any other Culture on them, than clearing them from Weeds; for the less the Ground is dug, the better these will thrive; and they commonly shoot their Roots near the Surface, which, in digging, are subject to be hurt, whereby the Plant is often destroy'd: These may also be propagated by Seeds; but this being a tedious Method, the other is much preferable to it.

ERICA BACCIFERA; *vide* Empetrum.

ERIGERON; *vide* Senico.

ERUCA; Rocket.

The Characters are;

The Flower consists of four Leaves, which expand in Form of a Cross: The Pointal becomes a Pod, which is divided into two Cells, by an intermediate Partition, to which the Valves adhere on both Sides: these Cells are full of roundish Seeds: To which may be added, The whole Plant hath a peculiar fætid Smell.

The Species are;

1. ERUCA; *sylvestris, major, lutea, caule aspero*. C. B. Greater wild Rocket, with a rough Stalk, and yellow Flower.

2. ERUCA; *tenuifolia, perennis, flore luteo*. F. B. Narrow-leav'd perennial Rocket, with a yellow Flower.

3. ERUCA; *Bellidis folio*. Mor. Hist. Daizy-leav'd Rocket.

4. ERUCA; *tanacetifolia*. H. R. Par. Tanfy-leav'd Rocket.

5. ERUCA; *major, sativa, annua, flore albo, striato*. C. B. Great Garden Rocket, with a white strip'd Flower.

6. ERUCA; *sativa, foliis magis dissectis*. Hort. Edin. Garden Rocket, with deeply-cut Leaves.

The four first Sorts are Varieties which are preserv'd in curious Botanick Gardens, but are Plants of no great Beauty or Use: The first is very common upon dry Banks and old Walls in divers Parts of England.

The fifth Sort was formerly very much cultivated in Gardens as a Sallad-Herb, but at present is very little us'd.

The sixth is a Variety of the fifth, from which it differs in having the Leaves deeply cut or jagged.

These may be all propagated by sowing their Seeds in the Spring, on a Bed of light Earth, where they will soon come up; and being Plants of quick Growth, will be large enough for Use in a short Time; for if they are suffer'd to grow large, they become too strong to be eaten in Sallads. Some of the Plants may be left for Seeds, which they will produce in great Plenty the same Summer.

ERUCAGO; Corn-Rocket.

The Characters are;

The Flower consists of four Leaves, which expand in Form of a Cross: The Pointal becomes a four-corner'd Fruit, resembling a crested Club, which is for the most part divided into four Cells, in which are contain'd roundish Seeds which have a Beak.

We have but one Species of this Plant, which is,

ERUCAGO; *segetum*. Tourn. Corn-Rocket.

This Plant grows wild in the warm Parts of France and Spain, and is preserv'd, for the sake of Variety, in curious Botanick Gardens. It may be propagated in like manner as the Rocket; but being a Plant of no Beauty or Use, is hardly worth cultivating.

ERVUM; Jointed-podded bitter Vetch.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement arises the Pointal, which becomes a jointed Pod, undulated on both Sides, and in a manner knotted, which is full of roundish Seeds: To which may be added, The Leaves grow by Pairs on a Mid-rib.

The Species are;

1. ERVUM; *verum*. Camer. The true *Ervum* of *Camerarius*. This is also call'd *Orobus*, *siliquis articulatis*. And the Seeds of this are sometimes used in Medicine.

2. ERVUM; *semine minore*. Tourn. Small-seeded *Ervum*.

3. ERVUM; *semine obtuso triangulo*. Tourn. *Ervum* with an obtuse triangular Seed.

4. ERVUM; *Oriente*, *Alopecuroides*, *perenne*, *fructu longissimo*. T. Cor. Oriental perennial *Ervum*, with a very long Fruit.

These Plants are very common in the Fields in warmer Countries, but are preserv'd in curious Botanick Gardens, for Variety. They may be propagated in the same manner as Peaſe, but require a warm Soil, and an open Situation, otherwise they will not ripen their Seeds with us. In the hotter Countries they use them for Food, but with us they are of little Use.

ERYNGIUM; Sea-Holly, or Eryngo.

The Characters are;

The Leaves are produc'd alternately on the Branches: The Flowers consist of five Leaves, which are plac'd orbicularly, and are reflex'd back to the Centre of the Flower: The Empalement afterwards becomes a Fruit, compos'd of two Seeds, which are sometimes foliated, and sometimes plain: To which may be added, The Flowers are collected into a squamose Head, which is prickly.

The Species are;

1. ERYNGIUM; *maritimum*. C. B. Sea-Holly, or Eryngo.

2. ERYNGIUM; *vulgare*. C. B. Common Eryngo.

3. ERYNGIUM; *latifolium*, *planum*. C. B. Broad-leav'd plain Eryngo.

4. ERYNGIUM; *latifolium*, *planum*, *caule ex viridi pallascente*, *flore albo*. C. B. Broad-leav'd plain Eryngo, with a greenish-white Stalk, and a white Flower.

5. ERYNGIUM; *montanum*, *Aemthystinum*. C. B. Purple Violet colour'd Mountain Eryngo.

6. ERYNGIUM; *Alpinum*, *Aemthystinum*, *capitulo majore*, *palleſcente*. Tourn. Alpine Eryngo, with a large pale-colour'd Head.

7. ERYNGIUM; *Oriente*, *foliis trifidis*. T. Cor. Oriental Eryngo, with trifid Leaves.

The first of these Species grows in great Plenty on the Sandy and Gravelly Shores in divers Parts of England, the Roots of which are Candy'd; and sent to London for Medicinal Use, and is the true Eryngo.

The fifth and sixth Sorts are beautiful Plants in Gardens; tho' at present they are very uncommon in England, but do deserve a Place in most curious Flower-Gardens.

The other Species are preserv'd in very fine Gardens of Plants, for the

the sake of Variety, but have no great Beauty in them.

These Plants may all be propagated by parting of their Roots, or sowing their Seeds: The first being the most expeditious Method, is chiefly us'd; this must be done in *February*, or the Beginning of *March*, before the Roots have shot out their Leaves. The Soil in which these delight most, is Gravel or Sand; but if it be very dry, they will require to be often water'd in Summer, especially the first Sort. The second Year after Planting they will produce Flowers, but it is very rare that they do it the first; therefore it is the best Way to let the Roots remain unremov'd for three or four Years, by which Method your Flowers will be stronger, and in greater Plenty. These Plants commonly produce good Seeds, if the Season is not over-wet, which is sometimes apt to rot their Heads before the Seeds are ripe.

If you would propagate these Plants by Seed, it should be sown soon after it is ripe; for if it be kept until Spring before it is sown, the Plants seldom arise until the succeeding Year. When they are come up, they should be carefully weeded; and in very dry Weather they should be refresh'd with Water two or three times a Week, which will greatly promote their Growth: In this Place they should continue until the succeeding Spring, at which Time they should be transplanted out to the Places where they are to remain; for they do not care to be often remov'd: The third Year after sowing they commonly produce their Flowers, and continue for many Years so to do, provided they are not disturb'd.

The first and second Sorts creep

very far under-ground, by which they greatly increase: but their Roots are of little Use, for they seldom grow to any considerable Size in a Garden.

ERYSIMUM; Hedge-Mustard.

The Characters are;

The Flower consists of four Leaves, which expand in Form of a Cross: The Pointal becomes a long slender bivalve Pod, which is divided into two Cells, by an intermediate Partition, in which are contain'd many round Seeds.

The Species are;

1. ERYSIMUM; *vulgare*. C. B. Common Hedge-Mustard.

2. ERYSIMUM; *latifolium, majus, glabrum*. C. B. Great broad-leav'd smooth Hedge-Mustard.

3. ERYSIMUM; *polyceratium, vel cornicularum*. C. B. Hedge-Mustard, with many crooked Pods.

4. ERYSIMUM; *angustifolium, majus*. C. B. Great narrow-leav'd Hedge-Mustard.

5. ERYSIMUM; *Sophia, dictum. Raii Syn. Ed. 3.* Flix-weed.

There are several other Varieties of this Plant, which are preserv'd in Botanick Gardens; but as they are Plants of little Use or Beauty, so they are seldom propagated in any other Garden.

The first, second, and fifth Sorts are very common upon dry Banks, in divers Parts of *England*; but the third and fourth Sorts are Natives of a warmer Country.

These may all be propagated by sowing their Seeds soon after they are ripe, which will come up in a short Time, and will stand Abroad and endure the Winter's Cold very well; and early in the Spring they will shoot up to Flower, and produce ripe Seeds in *June* or *July*; but if they are sown in the Spring, the Seeds seldom come up so well:

nor do the Plants arrive at half the Strength of those sown in Autumn; for when the Heat comes on, they soon run up to Flower, and thereby produce not half the Quantity of Seeds.

The first and fifth Sorts are us'd in Medicine; but particularly the fifth, the Seed of which is by many People said to be an extraordinary Medicine for the Stone and Gravel.

#### ESPALIERS,

Are either Rows of Trees planted about a whole Garden or Plantation, or in Hedges, so as to inclose Quarters or separate Parts of a Garden, which are train'd up flat in a close Hedge, for the Defence of tender Plants, against the Violence and Injury of Wind and Weather. See *Hedges*.

The most-commonly receiv'd Notion of *Espaliers*, are Hedges of Fruit-Trees, which are train'd up regularly to a Lattice of Wood-work, form'd either of *Ash* Poles, or square long Timbers cut out of *Fir*, &c. and it is of this Sort of *Espalier* that I shall treat in this Place.

*Espaliers* of Fruit Trees are commonly planted to surround the Quarters of a Kitchen-Garden, for which Purpose they are of admirable Use and Beauty; for by laying out the Walks of this Garden regularly, which are bounded on each Side by these Hedges, when they are handsomely manag'd, they have a wonderful Effect in sheltering the Kitchen-Plants in the Quarters, and also screening them from the Sight of Persons in the Walks: so that a Kitchen-Garden well laid out in this manner, and regularly manag'd, will be equal to the finest Parterre for Beauty.

The Trees chiefly planted for *Espaliers*, are *Apples*, *Pears*, and

some *Plumbs*; but the two former are mostly used: Some plant *Espaliers* of *Apples* grafted upon *Paradise-Stocks*; but these being of a short Duration, are not so proper for this Purpose; therefore I should rather advise the having them upon *Crab-Stocks*, or (if in smaller Gardens, where the Trees cannot be allow'd to grow so high) upon *Codlin Stocks*, which will cause them to bear sooner, and prevent their growing too luxurious.

In chusing the Trees for an *Espalier*, endeavour, as near as possible, to plant the several Sorts which are nearly of the same Growth in one Line, that the *Espalier* may be the more regular, and of an equal Height, which greatly adds to their Beauty; for if you plant Trees which shoot very unequally in the same Line, it will be impossible to make the *Espalier* regular: Besides, the Distance the Trees which are to be planted, must be directed hereby; for some Trees, *viz.* those of a large Growth, should be planted eighteen or twenty Feet asunder, whereas those of smaller Growth need not be above fourteen or sixteen Feet Distance from each other.

The Width of the Walks between these *Espaliers* should (in a large Garden) be fourteen or sixteen Feet at least; and if they are design'd to be carry'd up pretty high, the Distance should be greater, that each Side may receive the Advantage of the Sun and Air; which is absolutely necessary, if you would have the Fruit well-tasted. And if your Ground is so situated, that you are at full liberty which way to make the *Espaliers*, I should advise the placing the Lines from the *East*, a little inclining to the *South*, and toward the *West*, a little inclining to the *North*, that the Sun may shine between

between the Rows in the Morning and Evening when it is low ; for in the Middle of the Day, when the Sun is advanced far above the Horizon, it will shine over the Tops of the *Espaliers*, and reach the Surface of the Earth about their Roots ; which is a Matter of more Consequence than many People are aware of.

The Sorts of Apples proper for *Espaliers*, are the *Golden Pippen*, *Non-parcil*, *Rennette Grise*, *Aromatick Pippen*, *Holland Pippen*, *French Pippen*, *Wheeler's Ruffet*, *Pile's Ruffet*, with several others. The Season for Planting, and the Method of Pruning and Training these Trees, you'll see under the Articles of *Apples*, and *Pruning*.

The Sorts of Pears proper for an *Espalier*, are Summer and Autumn Fruits ; for Winter Pears seldom succeed well in an *Espalier*. These Trees, if design'd for a strong moist Soil, should be upon Quince Stocks ; but if for a dry Soil, upon Free Stocks. Their Distance of Planting must also be regulated by the Growth of the Trees, which are more unequal in Pears than Apples, and should therefore be more carefully examin'd before they are planted. As for those Pears upon Free-Stocks, the Distance should never be less than eighteen or twenty Feet, for moderate growing Trees ; but for vigorous Shooters, twenty-five Feet is little enough, especially if the Soil be strong, in which Case they should be planted thirty Feet asunder. The particular Sorts of Pears I would recommend for an *Espalier*, are the *Fargonelle*, *Blanquette*, *Poir sans Peau*, *Summer Boncretien*, *Hamden's Bergamot*, *Poir du Prince*, *Poir sans Pappin*, *Beurre du Roy*, *St. Michael*, *Le Marquis*, *Monsieur John*, *Cressane*,

with many others of less Note. As to the Method of Planting, see the Article *Pear* ; and for Pruning and Managing, see *Pruning*.

I shall now give Directions for Making the *Espalier*, to which the Trees are to be train'd : But this I would not have done until the third Year after the Trees are planted ; for while they are young, it will be sufficient to drive a few short Stakes into the Ground on each Side of the Trees, to which the Branches should be fasten'd in an horizontal Position, as they are produc'd ; which Stakes may be plac'd nearer, or at a farther Distance, according as the Shoots produc'd may require, and will be sufficient for the three first Years ; for should you frame the *Espalier* the first Year the Trees are planted, the Poles would rot before the *Espalier* is cover'd. The cheapest Method to make these *Espaliers* is with *Ash* Poles, of which you should have two Sorts ; one of the largest Size, which contains thirteen Poles in a Bundle, and the other Size those of half a hundred : The first or largest Size Poles should be cut about seven Feet and a half long ; these are intended for Upright Stakes, and must be sharpen'd at the largest End, that they may with more Ease be driven into the Ground, and if these Ends are burnt in the Fire a little, it will preserve 'em from rotting ; these should be plac'd at a Foot Distance from each other in a direct Line, and of an equal Height, about six Feet above Ground ; then you should nail a Row of strait slender Poles along upon the Tops of the upright Stakes, which will keep them exactly even, and continue to cross the Stakes with the smaller Poles, and the Tops which were cut off from the larger ones,

at about nine Inches Distance, Row from Row, from the Top to the Bottom of the Stakes. These Rows of Poles should be fasten'd with Wire, and the largest End of the Poles should be nail'd to the upright Stakes, which will secure the *Espalier* almost as long as the Poles will endure; whereas if your Fastening is not strong, the Poles will be continually displac'd with every strong Wind.

When your *Espalier* is thus fram'd, you must fasten the Branches of the Trees thereto, either with small Olier Twigs, or some such Binding, observing to train them in an horizontal Position, and at equal Distances; being careful not to cross any of the Branches, nor to lay them in too thick: The Distance I would allow for the Branches of Pears and Apples, should be proportion'd according to the Size of their Fruit; such of them whose Fruit is large, as the *Summer Boncretien*, *Monsieur John*, and *Buerre du Roy Pears*, and the *Remette Grise*, *Holland Pippen*, *French Pippen*, and other large Apples, should have their Branches six or eight Inches Distance at least; and to those of lesser Growth, four or five Inches will be sufficient: But for farther Directions, I shall refer to the Articles of the several Fruits, as also that of *Pruning*, where the Particulars will be sufficiently explain'd.

But besides this Sort of *Espalier* made with *Ash* Poles, there is another Sort that is by many People preferr'd, which is fram'd with square Timbers cut to any Size, according to the Strength thereof, or the Expence the Owner is willing to go to; these, tho' they appear more sightly, when well fix'd and painted, yet are not of longer

Duration than one of the former, provided it is well made, and the Poles are strong which are set upright, and these are easily repair'd by the Gardener: Nor do they answer the Purpose better, tho' they are vastly more expensive; for the greatest Beauty consists in the disposing the Branches of the Tree, which, especially in Summer, when the Leaves are on, will intirely hide from the Sight the Frame of the *Espalier*: Therefore all Expence in erecting these is needless, farther than making Provision to secure the Branches of the Trees in a regular Order.

Fruit-Trees thus planted, and well manag'd, are much preferable to those train'd up in any other Figure, upon several Accounts; as 1<sup>st</sup>, These take up very little room in a Garden, so as to be hurtful to the Plants which grow in the Quarters; and 2<sup>dly</sup>, the Fruit upon these are better tasted than those which grow upon Dwarfs, the Sun and Air having freer access to every Part of the Tree, whereby the Dampness arising from the Ground is sooner dissipated; which is of singular Advantage to Fruit-Trees, (as hath already been shewn).

EVERGREEN-THORN; *vide* *Pyracantha*, or *Mespilus*.

EVERLASTING PEA; *vide* *Lathyrus*.

EUONYMUS; The Spindle-Tree, or Prickwood.

The Characters are;

*It has four reddish Lines running along the Branches, which make them appear in some measure quadrangular: The Flowers, for the most part, consist of four Leaves, which are succeeded by quadrangular Fruit, containing four red Seeds in each.*



The *Species* are ;

1. EUONYMUS ; *vulgaris, granis rubentibus*. C. B. The Common Spindle-Tree.

2. EUONYMUS ; *latifolius*. C. B. Broad-leav'd Spindle-Tree.

3. EUONYMUS ; *Africanus, Lycii crassioribus foliis, sempervirens, capsulâ triloculari, asperatâ, rubente*. Boerb. Ind. Ever-green African Spindle-Tree, commonly call'd African Barberry.

4. EUONYMO ; *adfnis; Æthiopica, sempervirens, fructu globofo, scabro, foliis salicis, rigidis, ferratis*. H. L. Ever-green Ethiopian Spindle-Tree, with a globular Fruit, and stiff serrated Willow-Leaves.

The first of these *Species* is very common in Hedges in divers Parts of *England*, where it seldom rises to any considerable Stature: But if planted amongst other Trees in Wilderness Quarters, may be train'd up so as to become a large handsome Tree; and in Autumn-season when the Fruit is ripe, doth make a very handsome Shew. The Wood of this Tree is us'd by the Instrument-makers, for Tothing of Organs and Virginal-Keys, Tooth-pickers, Spindles, and to make Scures, &c. The broad-leav'd Sort, tho' very common in most Parts of *Europe*, yet is rarely to be found in *England*, except in curious Collections of Trees and Shrubs: These two Plants are very hardy, in respect to Cold, and may be propagated either by sowing the Seeds, or laying down the Branches: But the first being a tedious Method, is seldom practis'd; for the Seeds remain in the Ground until the second Year before the Plants come up, and afterwards make but little Progress during the three or four first Years, whereas those rais'd by Layers will make handsome

Trees in three or four Years Time.

The other two Sorts being Natives of a warm Country, will not endure the Cold of our Climate in the open Air, and must therefore be preserv'd in a good Green-house in Winter. These may be propagated by planting Cuttings any Time in *May*, which should be set into Pots fill'd with fresh light Earth, and plung'd into a moderate Hot-bed, and carefully water'd and shaded until they have taken Root; after which, they may be transplanted each into a separate Pot, and expos'd to the open Air till *September*, when they should be remov'd into the Green-house, where during the Winter-season, they must have as much free open Air as the Weather will admit of, as also frequent, but gentle Waterings: In other respects they may be manag'd as *Orange Trees*, observing to shift the Plants into fresh Earth every Year.

The third Sort grows to be a Shrub of five or six Feet in Height, and will produce great Quantities of Fruit, which ripen in Winter, and make a very good Appearance in the Green-house at that Season. This is the tenderest Plant of them all.

The fourth Sort arises with us to the Height of ten or twelve Feet, and may be train'd up to a regular Head; and when grown to be large, will annually produce Flowers and Fruit; which altho' they have no great Beauty, yet the Tree, for Variety, deserves a Place in every good Collection of Plants. This is pretty hardy, and only requires to be shelter'd from extream Frosts in Winter, and therefore should be early expos'd to the open Air in Spring, and suffer'd to remain abroad late in Autumn.

**EUPATORIUM**; Hemp-Agrimony.

The *Characters* are;

It hath a perennial fibrose Root: The Leaves are plac'd opposite upon the Stalks: The Cup of the Flower is long, taper and scaly: The Flowers are collected into an Umbel upon the Tops of the Stalks, which consist of many long bifid Threads.

The *Species* are;

1. **EUPATORIUM**; *Cannabinum*, C. B. Common Hemp-Agrimony.

2. **EUPATORIUM**; *urtica foliis, Canadense, flore albo*. H. L. Canada Hemp-Agrimony, with Nettle-Leaves, and a white Flower.

3. **EUPATORIUM**; *Nova Anglia, urtica foliis, floribus purpurascensibus, maculato caule*. H. L. New England Hemp-Agrimony, with Nettle-Leaves, purplish Flowers, and spotted Stalks.

4. **EUPATORIUM**; *folio oblongo, rugoso, caule purpurascens*. Tourn. Canada Hemp-Agrimony, with a long rough Leaf, and purplish Stalk.

5. **EUPATORIUM**; *Nova Anglia, Betonica foliis villosis, flore albo*. Par. Bat. New-England Hemp-Agrimony, with Betony Leaves, and a white Flower.

6. **EUPATORIUM**; *Americanum, scandens, hastato magis acuminato folio*. Vaill. Climbing American Hemp-Agrimony, with a Spear-like sharp-pointed Leaf.

7. **EUPATORIUM**; *Americanum, foliis rotundioribus absque pediculis*. Vaill. American Hemp-Agrimony, with round Leaves without Foot-Stalks.

The first of these Plants is found wild by Ditches and River Sides, in most Parts of England, and is the only Species of this Genus which is a Native in Europe; but America abounds with a vast Num-

ber of Species, many of which are annually brought over, and preserv'd in curious Botanick Gardens, tho' the first Sort is only at present used in Medicine.

These Plants are all hardy enough to endure the Cold of our Winters in the open Air, provided they are planted in a dry Soil, and may be propagated by parting their Roots in March, or October; but if you do this in the Spring, you must observe to water and shade the Plants until they have taken Root, if the Weather should prove dry, and those that are transplanted in Autumn should be protected from severe Frosts in Winter, which would be apt to destroy them before they have got fast Rooting in the Ground.

These Plants may also be propagated by sowing their Seeds, which should be done early in the Spring, upon a Bed of light Earth, observing to water them in dry Weather: But they seldom come up until the second Year; and it is not till the third Year that they produce Flowers; therefore, if the Plants are not too thick in the Seed-bed, they may be permitted to remain there till after their Flowers are past; and in October remove them to the Places where they are design'd to grow. These Plants have little Beauty in them, and therefore are seldom preserv'd, unless in Botanick Gardens for Variety.

#### **EUPHORBIIUM.**

The *Characters* are;

It hath Flowers and Fruit like the Spurge, and is also full of a hot, sharp, milky Juice: The Plants are angular, and shap'd somewhat like the Cereus or Torch-Thistle; it is commonly beset with Spines, and, for the most part, hath no Leaves.

The

The Species are ;

1. EUPHORBIIUM ; *verum, antiquorum. Raii Hist.* The true Euphorbium of the Antients.
2. EUPHORBIIUM ; *tetragonum, & pentagonum, spinosum, Canarium. Boerb. Ind.* Canary Euphorbium, with four or five Angles, and beset with Spines.
3. EUPHORBIIUM ; *trigonum, & tetragonum, spinosum, ramis compressis. D'Isnard.* Prickly Euphorbium, with three or four angles and flat branches.
4. EUPHORBIIUM ; *Cerei effigie, caulibus crassioribus, spinis validioribus armatum. Breyh. Prod.* Thick-stalk'd Cereus-like, Euphorbium, arm'd with strong Spines.
5. EUPHORBIIUM ; *Cerei effigie, caulibus gracilioribus. Boerb. Ind.* Slender-stalk'd Cereus-shap'd, Euphorbium.
6. EUPHORBIIUM ; *Afrum, caule squamoso, tumeroso. Boerb. Ind.* African Euphorbium, with scaly Stalks and a tuberose Root.
7. EUPHORBIIUM ; *Afrum, caule squamoso, tuberoso, minus. Boerb. Ind.* Lesser African Euphorbium, with scaly Stalks, and a tuberose Root.
8. EUPHORBIIUM ; *Afrum, caule crasso, squamoso, ramis in capitis Medusæ speciem cincto. Boerb. Ind.* African Euphorbium, with thick scaly Stalks, and branching at the Top like Medusa's Head, commonly call'd the Snake Euphorbium.
9. EUPHORBIIUM ; *Afrum, facie fructus pini. Boerb. Ind.* African Euphorbium, with the Face of the Pine Fruit, commonly call'd Little Medusa's Head.
10. EUPHORBIIUM ; *angulosum, foliis nerii latioribus. Boerb. Ind.* Angular Euphorbium, with broad Oleander Leaves.
11. EUPHORBIIUM ; *heptagonum, spinis longissimis, in apice frugiferis. Boerb. Ind.* Euphorbium with seven

Angles, and long Spines bearing Fruit upon the Tops.

12. EUPHORBIIUM ; *quod Ante-Euphorbium. Dod.* The Anti-Euphorbium ; *vulgò.*

All these Plants being Natives of warm Countries, must with great Care be preserved in Stoves, during the Winter ; and being replete with a milky Juice, they require very little Moisture : Nor should they be planted in a rich Soil, which is very hurtful to them. They are all (so far as we are acquainted with their Places of Growth) Inhabitants of Rocky hard barren Soils ; therefore the most proper Earth for them, is one half Sea-sand, one quarter light fresh Earth, and a quarter-part Lime-Rubbish : This should be mix'd up well together two or three Months before it is used, observing to turn it over three or four times, that the several Parts may be the better united ; and afterwards, it will be proper to skreen it, in order to take out the large Stones.

These Plants are propagated by planting Cuttings : The best Season for this is in *June* or *July* : The Cuttings should be taken off from the old Plants a Week or a Fort-night before they are planted ; during which Time, they should lie in a dry shady Place, that the Part which adher'd to the old Plant may be dry'd and harden'd, otherwise the Cuttings will rot : Then plant them into small Half-penny Pots fill'd with the abovemention'd Earth, giving them a little Water to settle the Earth to them, and let the Pots be set for a Day or two in a Place where they may have only the Morning Sun ; after this, plunge them into a moderate Hot-bed of Tanners Bark, observing, in the great Heat of the Day, to

shade the Glasses with Mats, as also, once a Week, to give 'em a gentle Refreshing with Water: but you must be very careful, not to give them too much, which will immediately rot them, especially before they have taken Root.

In about five or six Weeks Time, the Cuttings will have shot out some Roots, which you may easily perceive, by carefully observing the Tops of the Cuttings, which will then begin to advance in Height, and appear of a lighter green Colour than at the Bottoms of 'em; at which Time you must begin to give them Air by degrees, raising the Glasses with Bricks in the middle of the Day, and so increasing the Quantity of Air daily, until at last you remove them quite out of the Bark-bed, which should be done towards the latter end of *August*, when you should place them into the Stove, observing not to expose 'em too much to the Air; also being very careful not to let 'em have too much Moisture, which is very destructive to these Plants.

During the Winter-season they must be plac'd in a warm Part of the Stove, which should always be kept to the Temperate Heat, as mark'd on Mr. *Fowler's Botanical Thermometers*, which I find does better agree with all the Sorts of this Plant, than a greater Degree of Heat. The first, third, and eleventh Sorts are the tenderest, and should therefore be plac'd nearer to the Fire-place in the Stove than the other Sorts, especially the eleventh, which should be plac'd to receive as much Light as possible, and must not have one Drop of Water from *October* to *March*; for it is very subject to rot, upon receiving the least Moisture at that Season; but the other Sorts will

require a little Water once in a Fortnight or three Weeks Time, especially if they stand in a Stove where the Heat is regularly kept up; this will preserve the Plants from shrinking, which they are sometimes subject to, when kept too dry.

These Plants should not be expos'd to the open Air in Summer, but always allowed to continue in the Stove, observing to place them as near the Windows as conveniently you can, that they may enjoy as much free Air as possible: When the Weather will permit, the Glasses should be open'd; but they should never be expos'd in the Night, or to hard Rains.

*July* is the best Season for shifting these Plants, when you should be provided with a Quantity of the before-mention'd Earth; and after having shaken them out of the Pots they before grew in, you should with your Hands take off as much of the Earth round the Roots of the Plants as possible, without breaking them; then having put a few Stones in the Bottom of the Pots to drain off the Moisture, you should fill the Pots about half full of the new Earth, and set the Plants in the Middle of the Pots, filling up the Vacancies with the Earth, and pressing it down gently with your Hands, to settle the Earth close to the Roots of the Plants; afterwards give them a little Water, and then remove them into the Stove again; observing, if the Weather should be very hot and dry, to screen the Glasses of the Stove in the Middle of the Day, until the Plants are well rooted again.

N. B. You must never put those Plants into large Pots, for as they are most of them Inhabitants of  
Rocky

Rocky Places, so they should be pretty much confin'd in their Roots; for if the Pots are too big, the Plants, if they don't rot, will make but small Progress therein.

The first of these Sorts is by many learned Authors suppos'd to be the true *Euphorbium* of the Ancients; though I believe, what we now use, is taken from more Species of Plants than one. And I am credibly inform'd by a very curious Gentleman who liv'd many Years in the *Canaries*, That the greatest Part of the *Euphorbium* us'd in *England*, came from thence, and is produc'd from the second Sort. And by carefully looking over some of this Drug in a Shop, I found several Spines amongst it, which exactly agreed with those of that Plant.

The twelfth Sort is by some suppos'd to be an Antidote to the *Euphorbium*; but with how much Justice I can't say: However, as it has been by most Authors ranged amongst those Plants, I thought proper to continue it there; tho' indeed it has little Affinity with them in its outward Appearance, nor is its Juice milky or hot: But as it hath not as yet produc'd any Flowers in *Europe*, so we can't tell how to dispose it under a particular Genus, which may be more fit for it than this to which it is at present fix'd.

This Plant requires a less Degree of Heat in Winter, and to be oftener water'd than any of the other Kinds, and is much easier increas'd, where-by it is more common than the others, and is less esteem'd, as being very difficult to reduce to any regular Figure.

The eleventh Sort is one of the most beautiful, and by far the most rare of any of the Species, and is only to be found at present in two

or three very curious Gardens in *England*. This is very difficult to preserve, as also to increase; for the Cuttings, if they are not well dry'd before they are planted, will certainly rot.

The first is also a very beautiful Plant, and is pretty rare: But as it is easily propagated, so it will soon become more common in *England*; as will also the third Sort, which is at present less common than many of the others.

But the second is a Plant of a wonderful Structure; the Branches coming out from every Side of the main Stem, and turning upwards, do very much resemble the Branch'd Candlesticks in Churches: This is pretty common in *England*, and has been an old Inhabitant of the *English* Gardens.



F A

**F** A B A; The Bean.

The Characters are;

*It hath a papilionaceous Flower, which is succeeded by a long Pod, which is fill'd with large flat Kidney-shap'd Seeds: The Stalks are firm, and hollow; the Leaves grow by Pairs, and are fasten'd to a Mid-Rib.*

The Species are;

1. FABA; *major, recentiorum.*  
*Iob. Icon.* The common Garden-Bean.

2. FABA; *minor, seu Equina.*  
*C. B.* The Horse-Bean.

There are several Varieties of these two Sorts of Beans, which differ either in Colour or Size; but as these are only feminal Variations, so I think it needless to mention them

them here, since every one who has cultivated them, knows that they every Year vary in their Colour and Size. The particular Direction for their Culture, you'll see under the Article of *Bean*.

FABA ÆGYPTIA; *vile Arum Ægyptiacum.*

FABA CRASSA; *vile Anacamperos.*

FABAGO, Bean-Caper.

The Characters are;

The Leaves are produc'd by Pairs upon the same Foot-stalk, which Foot-stalks grow opposite at the Joints of the Stalks: The Cup of the Flower consists of five Leaves: The Flowers also consist of five Leaves, which expand in Form of a Rose, and have many Stamina or Threads that surround the Style in the Centre of the Cup; which Style becomes a cylindrical Fruit, and is, for the most part, five-corner'd, divided into five Cells by intermediate Partitions, each of which contains many flat Seeds.

The Species are;

1. FABAGO; *Belgarum; five Petalus Parisiensium.* Lugd. Bean-Caper; *vulgo.*

2. FABAGO; *Africana, arborescens, flore sulphureo, fructu rotundo.* Com. Rav. African Tree Bean-Caper, with a Sulphur-colour'd Flower, and a round Fruit.

3. FABAGO; *Africana, frutescens, folio latiori, fructu tetragono.* African shrubby Bean-Caper, with broader Leaves, and a four-corner'd Fruit.

The first of these Plants is pretty hardy, and will endure the Cold of our Winters in the open Air, provided it be planted in a dry Soil and a warm Situation: This is propagated by sowing the Seeds in the Spring, either on a warm Border or a moderate Hot-bed; and when the Plants are come up,

they may be planted into Pots fill'd with light sandy Earth, or in warm Borders under Walls or Hedges of the like Soil, for they do not care for a rich dung'd Soil, nor a strong or moist Earth. The Distance these Plants should be planted at, must not be less than two Feet each Way, for they grow to be very large, and form a strong Head: The Branches die away every Winter to the Head, and shoot again the succeeding Spring, and will produce great Plenty of Flowers and Fruits annually, and their Roots will abide many Years, but are very apt to die if remov'd after they are grown large.

This Plant is of no use at present in England, but for the Variety of its Flowers deserves a Place in good Gardens.

The other two Sorts, being Natives of a warm County, will not endure the Cold of our Climate abroad, but must be preserved in a Green-house: They may be propagated by sowing their Seeds upon a Hot-bed in the Spring: and when the Plants come up, they should be planted into Pots fill'd with fresh sandy Earth, and may be expos'd during the Summer with other Green-house Plants; but in Winter should be plac'd in an airy Part of the House, and must not be crowded with other Plants, which will cause them to mould and shed their Leaves, and many times destroy the whole Plant: They should also have frequent Refreshings with Water, but should not have too much at a time, for that very often destroys these Plants.

They may also be increas'd by planting Cuttings in any of the Summer Months into Pots of light Earth, which should be plung'd into a moderate Hot-bed, to facilitate

tate their Rooting, observing to shade them from the Violence of the Sun, as also to give them Water frequently: When they are rooted, which will be in about two Months after planting, they may be transplanted into separate Pots fill'd with the same light Earth, and should be expos'd to the open Air by degrees, and afterwards may be treated as was before directed for those rais'd from Seeds.

These Plants are generally preserv'd in all curious Collections of Plants for Variety, but are of no Use with us at present.

FAGOPYRUM; Buck-Wheat.

The Characters are;

The Flowers are specious, growing in a Spike, or branch'd from the Wings of the Leaves: The Cup of the Flower is divided into five Parts, and resemble the Petals of a Flower: The Seeds are black, and three-corner'd.

The Species are;

1. FAGOPYRUM; *vulgare, erectum*. Tourn. Common upright Buck-Wheat.

2. FAGOPYRUM; *vulgare, scandens*. Tourn. Common creeping Buck-Wheat.

The first of these Plants is cultivated in many Parts of England, and is a great Improvement to dry barren Lands. The best Season for sowing the Seed is in May: One Bushel will sow an Acre. The Ground should be plough'd and dress'd in the same manner as for Barley; and if the Soil is not very lean, it will yield a very great Increase, as fifty or sixty Bushels upon an Acre, and is excellent Food for Hogs, Poultry, &c. The Flour of it is very white, and makes a very good Sort of Pancake, if mix'd with a little Wheat-flour. The Straw is good Fodder for Cattle; and the Grain given to Horses

amongst their Oats, will make them thrive; but it must be broken in a Mill, otherwise it is apt to pass through the Cattle whole.

It is commonly late in the Season before it is ripe, but it is in no great Danger of the Seeds falling, nor of suffering by Wet after it is mown: It must lie several Days to dry, that the Stalks (which are hard) may wither before it is hous'd.

Buck-Wheat is sometimes sown very thick, and suffer'd to grow until it is near flowering, and is then plough'd in, which makes a very good Lay for Wheat or Rye: But some People esteem it the better Way to feed it with Cattle, especially Milch-Cows, which they say, will cause them to give a great deal of Milk, and make both the Butter and Cheese very good. This will also afford Food for Cattle in the driest time, when all other Grass is burnt up.

The second Sort is found wild in divers Parts of England, but is seldom cultivated for Use.

FAGUS; the Beech-tree.

The Characters are;

It hath Leaves somewhat resembling those of the Horn-beam: The Male Flowers grow together in a round Bunch, and are produc'd at remote Distances from the Fruit on the same Tree. The Fruit consists of two triangular Nuts, which are inclos'd in a rough hairy Rind, divided into four Parts.

The Species are;

1. FAGUS. Dod. The Beech-tree.

2. FAGUS; *foliis ex luteo variegatis*. The Yellow-strip'd Beech-tree.

3. FAGUS; *foliis ex albo variegatis*. The White-strip'd Beech-tree.

There

There is but one *Species* of this Tree at present known, (except the two Varieties with strip'd Leaves, which are accidental) tho' the Planters would distinguish two or three Sorts; one of which they call the *Mountain-Beech*, and, as they say, affords a much whiter Timber than the other which they call the *Wild Beech*: But as these have never been distinguish'd by the Botanists, nor can I perceive any real Difference amongst all the Trees of this Kind I have yet seen, so I rather think the Difference in the Colour of the Wood is occasion'd by the Places of their Growth; which is often observ'd to be the Case with most other Sorts of Timber.

This Tree is propagated by sowing the Mast; the Season for which is any time from *October* to *February*, or by observing to secure the Seeds from Vermin when early sow'd; which, if carefully done, the sooner they are sown the better, after they are fully ripe: A small Spot of Ground will be sufficient for raising a great Number of these Trees from Seed, but you must be very careful to keep them clear from Weeds; and if the Plants come up very thick, you should not fail to draw out the strongest of them the Autumn following, that those left may have Room to grow: So that if you husband a Seed-bed carefully, it will afford a three Years Draught of young Plants; which should be planted in a Nursery, and, if design'd for Timber-trees, at three Feet Distance Row from Row, and eighteen Inches asunder in the Rows.

But if they are design'd for Hedges, (to which the Tree is very well adapted) the Distance need not be so great, two Feet Row from

Row, and one Foot in the Rows will be sufficient. In this Nursery they may remain two or three Years, observing to clear them from Weeds, as also to dig up the Ground between the Roots, at least once a Year, that their tender Roots may the better extend themselves each Way; but be careful not to cut or bruise their Roots, which is injurious to all young Trees, and never dig the Ground in Summer, when the Earth is hot and dry, which, by letting in the Rays of the Sun to the Roots, is often the Destruction of young Trees.

This Tree will grow to a considerable Stature, though the Soil be stony and barren, as also upon the Declivities of Hills, and chalky Mountains, where it will resist the Winds better than most other Trees; but then the Nurseries for the young Plants ought to be upon the same Soil; for if they are rais'd in a good Soil and a warm Exposure, and afterwards transplanted into a bleak, barren Situation, they seldom thrive, which holds true in most other Trees, therefore I would advise the Nursery to be made upon the same Soil where the Plantation is intended: But of this I shall say more under the Article of *Nursery*.

The Tree is very proper to form large Hedges to surround Plantations or large Wilderness Quarters, and may be kept in a regular Figure, if shear'd twice a Year, especially if they shoot strong; in which Case, if they are neglected but a Season or two, it will be difficult to reduce them again. The Shade of this Tree is very injurious to most Sorts of Plants which grow near it, but is generally believed to be very salubrious to human Bodies.



The Timber is of great Use to Turners for making Trenchers, Dishes, Trays, Buckets; and likewise to the Joyner for Stools, Bedsteads, Coffers, &c. The Mast is very good to fat Swine and Deer; it also affords a sweet Oil, and hath in some Families supported Men with Bread.

The two Sorts with variegated Leaves, may be propagated by budding or grafting them upon the common *Beech*, observing not to plant them in a good Earth, which will cause the Buds or Cyons to shoot vigorously, whereby the Leaves will become plain, which often happens to most variegated Plants.

FEATHERFEW or FEAVER-FEW; *vide* *Matricaria*.

FENCES. In hotter Climates than *England*, where they have not Occasion for Walls to ripen their Fruit, their Gardens lie open, where they can have Water Fences and Prospects; or else they bound their Gardens with Groves, in which are Fountains, Walks, &c. which are much more pleasing to the Sight than a dead Wall: but in colder Countries and in *England* we are oblig'd to have Walls to shelter and ripen our Fruit, altho' they take away much from the pleasant Prospect of the Garden.

Since therefore we are under a Necessity to have Walls to secure our Gardens from the Injury of Winds, as well as for the Convenience of Partitions or Inclosures, and also to ripen our Fruit, Brick-Walls are accounted the warmest and best for Fruit: And these Walls being built Pannel-wise, with Pillars at equal Distances, will save a great deal of Charge; in that the Walls may be built thinner, than if they were built plain without

these Pannels; for then it would be necessary to build them thicker every-where: and besides, these Pannels make the Walls look the handsomer.

Stone-Walls are to be prefer'd to those of Brick, especially those of square-hewn Stones. Those that are made of rough Stones, though they are very dry and warm, yet, by reason of their Unevenness, are inconvenient to nail up Trees to, except Pieces of Timber be laid in them, here and there, for that Purpose.

But in large Gardens it is better to have the Prospect open to the Pleasure-Garden, which should be either surrounded with Water, or a Fosse, so that from the Garden the adjacent Country may be view'd.

A Kitchen-Garden, if rightly contriv'd, will contain Walling enough to afford a Supply of such Fruits as require the Assistance of Walls for any Family; and this Garden being situated on one Side of the House, may be surrounded with Walls, which will skreen the Kitchen-herbs from the Sight of Persons in the Pleasure-Garden; and being lock'd up intire, the Fruit will be much better preserv'd than it can be in the publick Garden: And the having too great a Quantity of Walling, is often the Occasion that so many scandalous Trees are frequently to be seen in large Gardens, where there is not due Care observ'd in their Management.

And besides, the Borders of Pleasure-Gardens are generally too narrow for the Roots of Fruit-Trees, as will be shewn in its proper Place.

The Height of Garden-Walls should be twelve Feet, which is a

moderate Proportion; and if the Soil be good, it may in time be well furnish'd with bearing Wood in every Part, especially that Part planted with Pears, notwithstanding the Branches being train'd horizontally from the Bottom of the Walls.

I would recommend the White Thorn, the Holly, the Black Thorn and Crab, for outward Fences to a good Ground; but I do not approve of the intermixing them.

The White Thorn is the best Quick to plant; because it is the most common, and is esteem'd the handsomest.

The Black Thorn and Crab make very good Fences, and are to be rais'd as the White Thorn. But if the Kernels of Apples or Crabs be sown, it is best to sow the Pom-mace with them, and they will come up the sooner, *i. e.* the first Year.

If Crab Stocks be planted together like Quick, they make excellent Hedges, and so will some Sorts of Plumbs.

The Black Thorn is not account- ed so good for *Fences* as the White Thorn, because it is apt to run more into the Ground, and is not certain as to the growing: But then, on the other hand, the Bushes are by much the better, and are also more lasting than the White Thorn, or any other, for dead Hedges, or to mend Gaps: nor are they subject to be cropt by Cattle, as the others are. The richer the Mould is, the better they will prosper; but yet they will grow on the same Sort of Soil that the White Thorn does.

The Holly will make an excel- lent *Fence*, and is preferable to all the rest: but it is difficult to be made to grow at the first, and is

a slow Grower; but when once it does grow, it makes Amends by its Height, Strength, and Thick- nefs.

It is raised either of Sets or Berries, as the White Thorn is, and will lie as long in the Ground before it comes up. It delights most in strong Grounds, but will grow upon the driest Gravel, a- mongst Rocks or Stones.

The Berries lie till the second Spring before they come up, there- fore they should be prepar'd before they are sown. (For this, see the Article *Holly*.) It will be best to sow 'em in the Place where you design they should grow; and they should be well weeded both before they come up, and afterwards.

*French Furs* will also do well upon dry sandy Banks, where few other Plants will grow; but they must be kept very clean at the Bottom, and cut thin, and never suffer'd to grow too high: nor should they be cut in dry Weather, nor late in Autumn, nor early in the Spring; the doing either of which, is subject to make it die in Patches, which is irrecoverable: nor will it ever break out again from old Wood, if cut close in, after it has been suffer'd long to grow out.

*Fences* may likewise be made of Elder: If the Soil be any thing good, you may stick Sticks of Elder, or Truncheons ten or twelve Feet long, slopewise in your Bank, so as to make Chequer-work, and they will make a *Fence* for a Gar- den the quickest of any thing, and be a good Shelter.

Elder planted on a Bank, the Side of which is wash'd with a River or Stream, will make an ex- traordinary *Fence*, and will preserve the Bank from being undermin'd by

by the Water; because it is continually sending Suckers from the lower Roots, which is of great Advantage where the Stream washes away the Bank.

For Middle Fences in a Garden, the Yew is the more tonfile, governable, and durable Plant.

For surrounding Wilderness Quarters, Elm, Lime, Hornbeam, and Beech are very proper.

FENNEL; *vide* Fœniculum.

FENNEL-FLOWER; *vide* Nigella.

FERRUM EQUINUM; Horse-shoe Vetch.

The Characters are;

*It hath a papilionaceous Flower, which is succeeded by a flat Pod, distinguish'd into Joints resembling a Half-Moon, or an Horse-shoe, containing Seeds of the same Form,*

The Species are;

1. FERRUM EQUINUM; *siliquâ singulari*. C. B. Horse-shoe Vetch, with a single Pods.

2. FERRUM EQUINUM; *siliquâ multiplici*. C. B. Horse-shoe Vetch, with many Pods.

3. FERRUM EQUINUM; *Germanicum, siliquis in summitate*. C. B. Common Horse-shoe Vetch.

There are some other Varieties of this Plant, which are preserv'd in curious Botanick Gardens; but it is rare that any of them are propagated, except for Variety-sake, they having no great Beauty. The two first Species are brought from Abroad; but the third Sort grows wild upon Chalky Hills in divers Parts of England.

They may be propagated by sowing their Seeds in March upon a dry Soil, in the Places where they are to remain; for they do not well bear transplanting. The Distance they should be allow'd, ought to be at least a Foot from

each other; for they spread upon the Ground, and will cover that Space: These produce their Flowers in June, and perfect their Seeds in August and September.

FERULA; Fennel-Giant.

The Characters are;

*It hath a large succulent Milky Root: The Stalks are spongy and fill'd with Pith: The Flowers consist of many Leaves, which expand in Form of a Rose, and grow in an Umbel: Each Flower is succeeded by two large Oval-shap'd flat Seeds, which are very thin, and, for the most part, turn black when they are ripe: To which may be added, The Leaves are like those of Fennel.*

The Species are;

1. FERULA; *major, seu foemina*. Plinii M. Umb. Pliny's Female Fennel-Giant.

2. FERULA; *galbanifera*. Lob. Obs. Broad-leav'd Fennel-Giant.

3. FERULA; *Tingitana, folio latissimo, lucido*. H. Edin. Broad-leav'd shining Fennel-Giant from Tangier.

4. FERULA; *Tingitana, folio angusto, lucido*. H. L. Narrow-leav'd Fennel-Giant from Tangier.

5. FERULA; *tenuiore folio*. Narrow-leav'd Fennel-Giant.

6. FERULA; *Africana, galbanifera, folio & facie ligustici*. Par. Bat. African Fennel-Giant, with the Face and Leaf of Lovage.

7. FERULA; *Africana, galbanifera, folio Myrrhidis*. H. Amst. African Fennel-Giant, with a Sefeli Leaf.

There are several other Varieties of this Plant, which are preserv'd in curious Botanick Gardens; but as they are of no great Use or Beauty, I shall pass them over in this Place.

The first of these Plants is pretty common in the English Gardens:

This,

This, if planted in a good Soil, will grow to the Height of ten or twelve Feet and more, and divides into many Branches, so that it should have a great deal of Room: for if it be planted too near to other Plants, it will over-bear and destroy them. It dies to the Surface every Autumn, and rises again the succeeding Spring. The Flowers are produc'd in the Month of *June*, and the Seeds are ripe in *September*.

Mr. *Ray* says, That the People of *Sicily* use the Pith of this Plant for Tinder to light their Fires. And if this was practis'd by the Antients, we may easily guess why the Poets feign'd, that *Prometheus* stole Fire from Heaven, and carry'd it to the Earth in an hollow *Ferula*.

The second, sixth, and seventh Sorts are suppos'd by some Authors to afford *Galbanum*, which, they say, is an Exudation from some of their Plants: but this at present is not determin'd; for, if any of the three, the seventh is thought to be the Sort.

These Plants are all very hardy; except the sixth and seventh Sorts, which being Natives of a warm Country, do require to be hous'd in Winter. They are all propagated by sowing their Seeds, which should be done soon after they are ripe: but if they are kept until Spring, they must be sown very early, and in a shady Situation; otherwise the Seeds are subject to miscarry. They delight in a light, moist Soil, and must be planted at least two Feet and an half asunder; for they spread very far. The Roots will abide many Years, if suffer'd to remain undisturb'd: but if they are transplanted when old, they seldom thrive well afterwards.

These being Plants only for Curiosity, one of each Sort is sufficient for a Garden; since they are of no great Beauty, and require much Room.

The sixth and seventh Sorts should be sown soon after the Seeds are ripe, in a Pot of good Earth, which should be plac'd under a Hot-bed Frame during the Winter-season, to preserve it from the Frosts: And when the Plants are come up in the Spring, they should be transplanted each into a separate Pot, and may be expos'd in Summer, but in Winter should be defended from Frosts. They must be shifted into larger Pots, as they increase in Bulk. The best Season for removing them is in *September*, before they are hous'd. They require frequent Waterings, and to have as much Air as possible in mild Weather.

FICOIDES; Fig-Marygold.

The Characters are;

*The whole Plant is succulent, and has the Appearance of Houseleek: The Leaves grow opposite by Pairs: The Cup of the Flower is fleshy, and divided into five Parts almost to the Bottom: The Flower consists of many Leaves, which are divided into small Parts, and do expand in form of a Marygold: The Flower is succeeded by a succulent Fruit, which is divided into five or more Cells, which are full of small Seeds.*

The Species are;

1. FICOIDES; seu *ficus aizoides, Africana, major, procumbens, triangulari folio, ensiformi.* H. L. Boerh. Ind. Great, trailing African *Ficoides*, with a triangular Sword-shap'd Leaf.

2. FICOIDES; seu *ficus aizoides, Africana, major, procumbens, triangulari folio, fructu maximo, eduli.* *Ficus Hottentottorum, vulgò,* H. L. Great

Great trailing African *Ficoïdes*, with a triangular Sword-shap'd Leaf, and a large eatable Fruit, commonly call'd, the Hottentot Fig.

3. FICOÏDES; *Afra*; *caule lignoso, erecta, folio triangulari, ensiformi, scabro, flore luteo, magno.* Boerb. Ind. Upright African *Ficoïdes*, with a woody Stalk, and a triangular, rough, Sword-shap'd Leaf, and a large yellow Flower.

4. FICOÏDES; *Afra, arborecens, erecta, folio triangulari, longissimo, confertim nato, purpurascete, flore luteo magno.* Boerb. Ind. Upright Tree-like African *Ficoïdes*, with a long triangular Leaf, and a large yellow Flower, commonly call'd, Pink-leav'd *Ficoïdes*.

5. FICOÏDES; *Afra*; *folio triangulari, ensiformi, glauco, crasso, ad margines, laterales paucis inermibus spinis aculeato, flore in longo pedunculo aureo.* Boerb. Ind. African *Ficoïdes*, with a thick triangular Sword-shap'd Leaf, arm'd with Spines on the Edges, and a yellow Flower, growing upon a long Foot-stalk, commonly call'd, the Dog's-Chap *Ficoïdes*.

6. FICOÏDES; *Afra*; *folio triangulari, ensiformi, crasso, brevi, ad margines laterales multis majoribusque spinis aculeato, flore aureo, ex calice longissimo.* Boerb. Ind. African *Ficoïdes*, with a triangular Sword-shap'd Leaf, having many large Spines upon their Edges, and a yellow Flower with a long Calyx, commonly called, the prickly Dog's-Chap *Ficoïdes*.

7. FICOÏDES; *Afra*; *folio triangulari, securis formâ, flore aureo, stellato.* Boerb. Ind. African *Ficoïdes*, with a triangular Hatchet-shap'd Leaf, and a yellow starry Flower, commonly call'd, the Stag's-Horn *Ficoïdes*. This Sort expands its Flowers only in the Evening;

8. FICOÏDES; *Afra*; *folio triangulari, longo, marginis inferioris supremo aculeato, flore violacco.* Boerb. Ind. African *Ficoïdes*, with a long triangular Leaf, having Spines at the Extremity on the under Part of the Leaves, and a Violet-colour'd Flower, commonly call'd, the Daizy-flower'd *Ficoïdes*.

9. FICOÏDES; *Africana, frutescens, perfoliata, folio triangulari, glauco, punctato, cortice lignoso, candido, tenui.* T. Ac. Reg. Shrubby African *Ficoïdes*, with perfoliated, triangular, glaucous Leaves, and a slender, white, lignous Bark, commonly call'd, the lesser Horn'd *Ficoïdes*.

10. FICOÏDES; *Afra*; *folio triangulari, glauco, perfoliato, brevissimo, apice spinoso.* Boerb. Ind. *flore purpureo.* African *Ficoïdes*, with a triangular, short, prefoliate, glaucous Leaf, having Spines upon the Top, and a Purple Flower, commonly call'd, the large Horn'd *Ficoïdes*.

11. FICOÏDES; *Africana, aculeis longissimis & foliatis nascentibus ex alis foliorum.* Tourne. Ac. Reg. African *Ficoïdes*, with long Spines growing from the Wings of the Leaves.

12. FICOÏDES; *Afra*; *folio triangulari, ensiformi, brevissimo, flore dilute purpurascete, filamentoso.* Boerb. Ind. African *Ficoïdes*, with a short triangular Sword-shap'd Leaf, and a purplish-colour'd Flower.

13. FICOÏDES; *seu ficus aizoides, Africana, folio triangulari, crasso, glauco, brevi, ad tres margines aculeato.* Boerb. Ind. *flore purpurascete.* African *Ficoïdes*, with a short, thick, glaucous, triangular Leaf, with three Spines on the Edges, and a purplish Flower.

14. FICOÏDES; *Afra*; *folio triangulari, glauco, brevissimo, crassissimo,*

*fissimo, margine non spinoso. Boerb. Ind. flore purpurascente.* African *Ficoïdes*, with a very short, thick, triangular, glaucous Leaf, without Spines on the Edge, and a purplish-colour'd Flower.

15. FICOIDES; *Afra; folio triangulari, glauco, brevissimo, crassissimo, margine spinoso, caule & flore purpureo.* African *Ficoïdes*, with a very short, thick, glaucous Leaf, with Spines upon the Edge, and purple Stalks and Flowers.

16. FICOIDES; *Afra; fruticans, folio triangulari, scabro, tenui, flore violaceo. Boerb. Ind.* African shrubby *Ficoïdes*, with a triangular rough, narrow Leaf, and a Violet-colour'd Flower.

17. FICOIDES; *Afra; folio triangulari, viridi, longo, aspero, flore violaceo. Boerb. Ind.* African *Ficoïdes*, with a long, green, rough, triangular Leaf, and a violet-colour'd Flower.

18. FICOIDES; *Afra; folio triangulari, crasso, succulentissimo. Boerb. Ind. flore aureo.* African *Ficoïdes*, with a thick, succulent, triangular Leaf, and a yellow Flower.

19. FICOIDES; *Afra; folio triangulari, longo, succulento, caulibus rubris. Boerb. Ind. flore luteo.* African *Ficoïdes*, with a long, succulent, triangular Leaf, red Stalks, and a yellow Flower.

20. FICOIDES; *seu ficus aizoides, Africana, erecta, arborescens, lignosa, sive raciato, primo purpureo, dein argenteo, interdiu clauso, noctu aperto. Boerb. Ind.* African upright Tree-like *Ficoïdes*, with a radiated Flower, first of a Purple, and afterwards a Silver Colour, opening in the Night, but clos'd in the Day.

21. FICOIDES; *Afra, arborescens, folio tereti, flore candido, noctu aperto, interdiu clauso. Boerb. Ind.*

African Tree-like *Ficoïdes*, with a taper Leaf and white Flower, opening in the Night, but shut in the Day.

22. FICOIDES; *Afra arborescens, folio tereti, glauco, apice purpureo, crasso. Boerb. Ind. flore violaceo.* African Tree-like *Ficoïdes*, with a thick, taper, glaucous Leaf, tipt with Purple, and a Violet-colour'd Flower.

23. FICOIDES; *Afra; folio tereti, procumbens, flore coccineo. H. L.* African trailing *Ficoïdes*, with a taper Leaf, and a Scarlet Flower.

24. FICOIDES; *seu ficus aizoides, Africana, folio longo, tenui, flore aurantio. Boerb. Ind.* African *Ficoïdes*, with a long, narrow Leaf, and an Orange-colour'd Flower.

25. FICOIDES; *Afra; fruticosa, caule lanuginoso, folio tereti, parvo, brevi, guttato, flore violaceo. Boerb. Ind.* African shrubby *Ficoïdes*, with a woolly Stalk, a small taper spotted Leaf, and Violet-colour'd Flower.

26. FICOIDES; *Afra; fruticosa, caule lanugine argenteâ ornato, folio tereti, parvo, longo, guttulis argenteis quasi scabro, flore violacco. Boerb. Ind.* African shrubby *Ficoïdes*, with a white woolly Stalk, a long taper Silver-spotted rough Leaf, and a Violet-colour'd Flower.

27. FICOIDES; *seu ficus aizoides, Africana, folio variegato, aspero, ad apicem stellâ spinosâ ornato, flore violaceo. Boerb. Ind.* African *Ficoïdes*, with a rough party-colour'd Leaf, tipt with a Star of Spines, and a Violet-colour'd Flower.

28. FICOIDES; *Afra; lignoso folio, tereti, aspero ad apicem, stellâ spinosâ, flore violaceo.* African woody *Ficoïdes*, with a taper rough Leaf, tipt with a Star of Spines, and a Violet-colour'd Flower.

29. FICOIDES; *sen fecus aizoides, Africana, erecta, tereti folio, floribus albis, umbellatis.* Par. Bat. Upright African *Ficoides*, with a taper Leaf and white Flowers, growing in an Umbel.

30. FICOIDES; *folio tereti, canle viridi, ramofissimo, flore parvo, candido.* An. *Ficoides, Neapolitana, flore candido.* H. L. African *Ficoides*, with a taper Leaf, a green branching Stalk, and a small white Flower.

31. FICOIDES; *Africana, folio tereti, longo tenui, guttulis argenteis, flore parvo purpurafcente, radice crassissima.* African *Ficoides*, with a long, taper Leaf spotted with white, a small purplish Flower, and a thick knobbed Root.

32. FICOIDES; *Africana, humilis, folio tereti, crasso, succulento, flore sulphureo, pedunculo brevi.* Dwarf African *Ficoides*, with a thick, taper, succulent Leaf, and a Sulphur-colour'd Flower, with a short Foot-stalk, commonly call'd, the Quilled-leav'd *Ficoides*.

33. FICOIDES; *Africana, procumbens, folio tereti, longo, flore violaceo.* African trailing *Ficoides*, with a long taper Leaf, and Violet-colour'd Flower.

34. FICOIDES; *Afra; acaulos, foliis latissimis, crassis, lucidis, conjugatis, flore aureo, amplissimo.* Tourn. Ac. Reg. African *Ficoides*, without Stalks, and with broad thick shining Leaves growing by Pairs, and a large yellow Flower.

35. FICOIDES; *Afra; acaulos, foliis latissimis, crassissimis, lucidis, conjugatis, flore aureo, amplo, sine pedunculo.* Boerb. Ind. African *Ficoides*, without Stalks, and broad thick shining Leaves growing by Pairs, and a large yellow Flower without Foot-stalks.

36. FICOIDES; *Afra; foliis la-*

*tissimis, crassis, lucidis, cruciatim positis.* Boerb. Ind. African *Ficoides*, with broad thick Leaves, growing cross-wise.

37. FICOIDES; *Africana, procumbens, foliis latis, crassis, cruciatim positis, flore albo, medio, purpurafcente.* African trailing *Ficoides*, with broad thick Leaves growing cross-wise, and a white Flower, with a purplish Middle.

38. FICOIDES; *Africana, procumbens, foliis latis, conjugatis, flore candido.* African trailing *Ficoides*, with broad Leaves growing by Pairs, and a white Flower.

39. FICOIDES; *Africana, folio plantaginis, undulato, micis argenteis asperso.* Tourn. Ac. Reg. African *Ficoides*, with a wav'd Plantain Leaf cover'd with Silver Drops, commonly call'd, the Diamond *Ficoides*.

There are some other Sorts of this Plant in the Botanick Gardens Abroad, but these here mention'd are what we have at present in the English Gardens.

These are all abiding Plants, (except the last mention'd) and may be propagated by planting Cuttings of any of the Kinds, either in June or July; observing to let them lie two or three Days, or more, in a dry Place after they are cut off from the Plants, before they are planted, according as they are more or less succulent: The Sorts that are woody, need only to be planted upon an old Hot-bed, shading and watering them according to the Heat and Drought of the Season; but the succulent Kinds should be planted in Pots fill'd with light sandy fresh Earth, and should be plung'd into a moderate Hot-bed, to facilitate their taking Root; and these should have but little Moisture, especially before

before they are rooted, for much Wet will certainly destroy them.

When the Plants have taken Root, which will be in about a Month's Time, you should expose them to the open Air gradually: Those which were planted in Pots, may be drawn out of the Hot-bed at first, and remov'd into a Glass Stove, where they may be inur'd by degrees to bear the Weather: But those planted upon the old Hot-bed may remain unremov'd until *August*, when they should be carefully taken up, and planted into Pots fill'd with light fresh sandy Earth, and set in a Situation where they may enjoy the Morning Sun only, until they have taken fresh Root, when they may be expos'd to the open Air until the latter End of *September*, or the Beginning of *October*; at which time they must be remov'd into the Conservatory, which should be a light airy Glass-case, so built and contriv'd as to admit of a large Portion of free Air whenever the Weather is mild; but in hard frosty Weather, the Cold may be excluded. The Structure of this will be defin'd under the Article *Stove*, to which I shall refer the Reader.

During the Winter Season you must carefully observe to open the Glasses every Day when the Weather is mild; for if you keep them closely shut up, the Plants will grow sickly, and drop their Leaves. You must also observe to pick off all decay'd Leaves as often as they appear, which, if suffer'd to remain upon the Plants, would communicate a Distemper to them, and be very apt to rot them. You should also give them frequent Waterings in mild Weather, especially such of them as are woody; but do not give them too much at

once; for when the Earth, in Pots which are plac'd in the House, is too much saturat'd with Moisture, it will not dry again during the Winter Season, for want of the Benefit of the Sun and Air, which are the two great Instruments in dissipating Humidity; and this is often the intire Destruction of the Plant: whilst on the other hand, some People, out of too great Care to these Plants, let them suffer for want of Water and free Air in Winter, under a Notion of their being so very tender, as to be impatient of the least Cold or Moisture: whereas, in fact, they are very hardy, and are seldom destroy'd with less Cold than hard Frost; for I have had some Sorts endure the open Air in a warm Border for two or three Winters which prov'd mild; and such of these Plants as had thus endured the Cold, produc'd a much greater Quantity of Flowers, than those which had been preserv'd in a Stove with great Care: and it hath been chiefly owing to our managing them tenderly in Winter, that we annually lost so many of them; for since I have treated them in a different Manner, I have rarely lost a single Plant.

The last mention'd Sort is an Annual, and requires to be sown every Year. This Sort is a very beautiful Plant, being all over set very thick with transparent Crystal-like Drops, as if cover'd with small Icicles; from whence it is by some call'd the *Frosty Ficoides*. The Seeds of this Plant should be sown very early in the Spring upon a good Hot-bed; and when the Plants are come up, they must be planted into small Pots fill'd with fresh light sandy Earth, and plung'd into another Hot-bed; and as that



Hot-bed declines its Heat, they should be remov'd into a third Hot-bed, which will bring them forward towards Flowering; and in *July* these Plants may be expos'd to the open Air by degrees, by which Time their Flowers will appear, and be hereby render'd strong, and capable to produce good Seeds: but you should always confine in small Pots such Plants as you design for Seed, never suffering them to root through the Hole in the Bottom of the Pot into the Ground, which would occasion their growing to be much larger and stronger Plants: but then their Strength would be diverted from the Seed-Vessels to nourish and produce strong Shoots: so that it seldom happens that the strongest Plants produce good Seeds. But if you would have some of these Plants of a large Growth, you should shake them out of the Pots into an old Hot-bed of Tanners Bark, where their Roots and Branches will extend to a considerable Length. I have had one of these Plants in such a Bed, which has spread above a Yard square; and the Leaves and Branches were of a prodigious Size.

The Flowers of this Plant are of no great Beauty; but the Oddness of the whole Plant renders it worthy of a Place in every curious Garden.

The 1st, 2d, and 21st Sorts I have never yet seen flower, although there are many large Plants of each Kind in divers Gardens in *England*. I had one Plant of the 21st Sort which had been plant-ed into an open Border against a Wall, that was set very thick with Buds in almost every part of the Plant, late in the Autumn 1726; but a sudden, sharp Frost

happening, destroy'd the whole Plant.

The 3d, 4th, 16th, 17th, 22d, 23d, 24th, and 25th Sorts do branch out and grow shrubby, and produce large Quantities of very beautiful Flowers, which being expanded in the Heat of the Day, afford a very agreeable Prospect, and are well worth cultivating in every Collection of Plants, for their Beauty; as are all the Dwarf succulent Sorts, for their Oddness; and some of them produce beautiful Flowers, tho' not in such Plenty as the former.

These are, some or other of their Sorts, continually in Flower: but their chief Season of Flowering is from *April* to *September*; and many of them produce good Seeds: but as their Cuttings seldom fail to take Root, so they are rarely propagated by Seeds in *England*.

FICUS; The Fig-tree.

The Characters are;

*The Flowers, which are always inclos'd in the Middle of the Fruit, consist of one Leaf, and are Male and Female in the same Fruit: The Male Flowers are situated toward the Crown of the Fruit; and the Female, which grow near the Stalk, are succeeded by small hard Seeds: The intire Fruit is for the most part turbinated, and globular, or of an Oval Shape, is fleshy, and of a sweet Taste.*

The Species are;

1. FICUS; *sativa, fructu violaceo, longo, intus rubente.* Tourn. The long blue Fig.

2. FICUS; *sativa, fructu oblongo, albo, mellifluo.* Tourn. The long white Fig.

3. FICUS; *sativa, fructu precoci, albido, fugaci.* Tourn. The early white Fig, by some falsely call'd the Martéilles Fig.

4. Ficus; *sativa, fructu globofo, albo, mellifluo.* Tourn. The great round white Fig.

5. Ficus; *sativa, fructu parvo, fusco, intus rubente.* Tourn. The small brown Fig.

6. Ficus; *sativa, fructu longo, majori, nigro, intus purpurascete.* Tourn. The great long black Fig.

7. Ficus; *sativa, fructu globofo, fusco, intus rubente.* The Brunswick Fig.

8. Ficus; *sativa, fructu pracoci, fubrotundo, albido, striato, intus roseo.* Tourn. Roundish white-strip'd Fig.

9. Ficus; *sativa, fructu viridi, longo pediculo insidente.* Tourn. The green Fig.

10. Ficus; *sativa, fructu parvo, ferotino, albido, intus roseo, mellifluo, cute lacera.* Tourn. The Marseilles Fig.

11. Ficus; *sativa, fructu flavescete, intus suave rubente.* Tourn. The yellow Fig.

12. Ficus; *sativa, fructu majori, violaceo, oblongo, cute lacera.* Tourn. Great long Violet Fig.

13. Ficus; *sativa, fructu magno, rotundo, depresso, spadiceo, circa umbilicum dehiscete, intus suave rubente.* Garil. The rose Fig.

14. Ficus; *sativa, fructu magno, rotundo, albo, mellifluo, foliis magis dissectis.* The great white Turkey Fig, with deeply-cut Leaves.

15. Ficus; *sativa, fructu longo, majori, nigro, intus albo, ferotino.* Tourn. The great black Fig, with a white Pulp.

16. Ficus; *sylvestris, Cretica, folio non diviso, leviter crenato.* T. Cor. The Candia wild Fig, with undivided Leaves, *falsely called the Sycamore-tree.*

17. Ficus; *Americana, latiori folio, venoso, ex Curacao.* Pluk. Alm. The Broad-leav'd American Fig,

18. Ficus; *Malabarensis, folio cuspidato, fructu rotundo, parvo, gemino.* D. Syen. Pluk. Alm. The Malabar Fig, or Indian God-tree.

The first fifteen Sorts are cultivated in curious Gardens for their Fruits, which are esteem'd, by all delicate Palates, amongst the richest Sorts of Fruits; tho' few vulgar Tastes care for 'em, whereby they are often planted in Places expos'd, where few other Fruits would escape being stoin. In *England* we have but few Sorts of this Fruit, compar'd with the vast Varieties with which the Southern Parts of *France* and *Italy* abound: Tho' it is to be hop'd that in a few Years we shall be supply'd with most of their curious Sorts; especially since we see yearly, that great Numbers of People come to relish them. But one great Discouragement to the Propagation of these Trees, was the Unskilfulness of the *English* Gardeners in their Culture and Management. I shall therefore begin with an Account of the Planting, Increasing, and Pruning of these Trees; which I shall treat as clear as possibly I can, and only mention the Methods used, with which I have had great Success.

The common Method of propagating these Trees is from Suckers which come up from the Roots of old Trees. But this is what I would never advise; for these Plants, when grown large, are much more subject to produce Suckers again, than those rais'd by Layers, which are by far the best rooted and most promising Plants: Therefore I would always make choice of the latter Method, especially since they are very easy to be propagated that Way: for if you lay down the Branches in *February*, they will be fit to remove by

by the succeeding *February*, which is the best time to transplant them; because those planted in Autumn are very apt to be destroy'd, especially if the Winter should prove hard, or the Soil be moist into which they are planted.

The best Soil for *Figs* in *England*, is such as hath a gravelly, chalky, or stony Bottom, with a light dry Surface: for although a strong Soil will produce vigorous Branches, and large Leaves; yet the Fruit will not be in such Plenty, nor so well tasted, as those which grow on a poor and dry Soil.

*Fig-trees* should always be planted in a free open Situation, not under the Drip of Trees, nor shaded by Buildings, &c. But there are very few Sorts that will ripen well with us in *England*, most of them requiring a good South, South-East, or South-West Wall: for although they will grow very well against a North or East-aspected Wall; yet the Fruit will be very poor, (if any are produc'd) ill-tasted, and late ripe.

Those Trees which are planted for Standards in the open Air will require very little Culture or Management: The chief Thing to be observ'd, is, to cut out all dead or decaying Branches, as also all such as cross each other, that the Middle of the Tree may not be too much crowded with Branches. The best Season for this Work is in *October*, when the Leaves begin to decay; at which time you should also divest the Branches of all the latter Crop of *Figs*, which, by being suffer'd to remain upon the Tree, will, with the first Frost, rot and decay, and thereby infect the tender Branches: For by several Experiments made by the Re-

verend and Learned Mr. *Hales* and my self, we found that all those Branches which were divested of the *Figs* at that Season, remain'd perfectly sound, and produc'd Fruit in Plenty the succeeding Year; whereas the other Branches of the same Tree whereon the Fruit were left, were almost totally destroy'd in the Winter. The Reason for my making choice of this Season, is, because at that time they are not so subject to bleed; and the Wounds then made, if cut close and smooth, will heal over in a short time: but it must be done early in the Autumn, before the frosty Weather comes on, which would be very apt to enter the Places where such Wounds were made, and prove very hurtful to the Tree.

But I shall next treat of the Management necessary for *Wall Fig-trees*, which is, perhaps, as little understood, as any Part of Gardening, not only in *England*, but also in *France*, *Holland*, and most other Countries. In *France*, great Numbers of these Trees are planted in Tubs or Cases, and are every Winter preserv'd in Green-houses, with Oranges, Myrtles, &c. This indeed may be a very good Method to obtain early *Figs*, provided they are rightly manag'd; which, I think, can hardly be done, if intermix'd with other Kinds of Trees, whereby their Branches are apt to mould and suffer, for want of a sufficient Quantity of free Air, which these Trees should always have in open mild Weather. Besides, the Fruit will be apt to come out very early in the Season, especially if the House is kept warm, whereby they will be liable to many Accidents in the Spring of the Year. So that, upon the whole,

I would never advise this Practice in *England*, unless in such Places where they have an open airy Glass-Cafe, in which there are no other Sorts of Plants.

Therefore the surest Method is, to plant them against warm Walls, and upon a dry warm Soil. The Distance these Trees should be planted ought never to be less than twenty Feet, supposing the Wall to be fourteen or more Feet in Height; for when they are planted too near, the Branches are train'd upright, and thereby cover the Walls in a few Years with old Wood, so that there are no younger Branches to produce Fruit but what are situated at the extreme Parts of the Tree, or stand forward from the Wall, which is a very great Fault, as shall be hereafter demonstrated. In the Middle, between the *Fig-trees*, may be planted a Vine, which may be preserv'd to bear Fruit until the *Fig-trees* do cover the Wall; at which time they should be intirely taken away; for they should by no means be suffer'd to intermix their Shoots amongst the *Figs*, which would prevent the Ingress of the Air, which is absolutely necessary to give the Fruit a fine racy Flavour.

In the Summer, when the *Fig-trees* begin to shoot, you should train the Branches horizontally to the Walls, (as is directed for other Fruit-trees) for if they are suffer'd to grow all the Summer without Management, their Shoots will be too stubborn to be drawn regularly to the Wall: Nor should you suffer any foreright Shoots to be produc'd upon your young Trees; but, on the contrary, as fast as they appear, you should rub off their Buds. At *Michaelmas*, (as I said before) is the best Season for prun-

ing and nailing these Trees, not only for the Reasons before assign'd, but also because their Shoots being nail'd close to the Wall before the severe Frosts come on, will be less liable to be injur'd thereby.

The main Things to be observ'd in the pruning of older Trees, are, 1st, Always to take care to have a Supply of young Branches in every Part of the Tree, for it is those only which produce Fruit; 2dly, Never to shorten any of the Shoots at the Autumn Pruning, which would intirely deprive you of Fruit, since it is chiefly upon the Wood of the last two Years that it is produc'd: 3dly, Always observe to nail your young Fruit-branches close to the Wall, whereby they will not be destroy'd by Frost, and the Fruit will be forwarded at least a Fortnight or three Weeks in the Spring, which is of great Consequence to us in *England*: 4thly, Never lay in your old Branches too thick, which is a very common Fault amongst Gardeners; for as the Shoots are vigorous, and the Leaves of these Trees very large, so their Distance ought never to be less than ten or twelve Inches: So that as young Branches increase, the old ones should be intirely cut out; which may be done in the Autumn with as much Safety as to any other Tree: 5thly, In order to produce young Branches, you may stop the leading Bud of young vigorous Shoots in *April*, or the Beginning of *May*, which will occasion the Side-buds to break out into lateral Branches, whereby the Wall may be kept constantly furnish'd with young Wood; but I would by no means advise the doing of this too often, nor should it be done later in the Year: for multiplying Branches too much, is  
of

of as bad Consequence as having too few, for it will occasion their being weak and unfruitful; and if it is done in *June* or *July*, it will only occasion the Buds to produce *Figs* in great Plenty, which will never come to good so late in the Year, and will greatly weaken the tender Fruit-Branches, and prevent their bearing the next Spring.

If the Winter should prove extreme sharp, it will be necessary to cover your choicest Sorts of *Fig-Trees*, either with Straw, Reeds, Pease-Haulm, or some other such like Covering, which will preserve the tender Fruit-branches from being injur'd; for want of which Care, in the Winter *Anno 1728*, the *Fig-Trees* suffer'd very much in most Parts of *England*. By this Method your Fruit will be greatly forwarded, but you should be very careful not to remove your Covering too early in the Spring, nor to do it all at once, but open them first in the Day-time, and cover them again at Night, and so by degrees inure them to the open Air. In some Places where this Method has been carefully observ'd, I have seen ripe *Figs* almost a Month sooner than where they were not cover'd, and the Fruit in much greater Plenty.

These Trees do very well against the warm Side of an House, or other large Building, where they have a great Compass of Walling; and the higher these Trees are train'd from the Ground, the better the Fruit is tasted, especially if it be against a Chimney, where it may enjoy some Share of Warmth thro' the Bricks: And *Figs*, tho' the most delicate of Fruits, being very little esteem'd by vulgar Palates, are less liable to be stoln by Servants or common People, than

some of the more common Sorts of Fruits.

I am aware, that what I have here advanc'd, in relation to the pruning and dressing of *Fig-Trees*, will be condemn'd by great Numbers of People, who will not give themselves Time to consider and examine the Reasons upon which I have founded this Practice, nor to make one single Experiment to try the Truth of it, as being vastly different from the general Practice of most Gardeners, who always imagine, that *Fig-Trees* should never have much pruning, or at least, that they should always be suffer'd to grow from the Wall to some Distance: That by this Management, I have often seen great Quantities of Fruit, I cannot deny, but then this has been only in mild Winters, for it is very certain, that in sharp Frosts few of these outside Shoots escape being greatly injur'd; whereas it rarely happens, that those Shoots which are closely nail'd to the Wall at *Michaelmas* do suffer the least Damage, and the Fruits are always produc'd a Fortnight sooner upon these Branches than they are upon those which grow from the Wall.

The Season also for Pruning, which I have laid down, being vastly different from the common Practice and Opinion of most Gardeners, will also be objected against; but this I am sure, if any one will but make Trial of it, I doubt not but his Experience will confirm what I have here advanc'd; for as one great Injury to this Tree, proceeds from the too great Effusion of Sap from the wounded Parts, so by this Autumn pruning this is prevented; for at that Season, all the Parts of *European Trees* which cast their Leaves, are less replete  
with

with Moisture than at any other Time of the Year; for by the long Continuance of the Summer's Heat, the Juices of Plants having been exhausted in the Nourishment and Augmentation of *Wood, Leaves, Fruits, &c.* and also great Quantities being evaporated by Perspiration, the Root not being able to send up a Supply equivalent to this great Consumption, the Branches must contain a much less Quantity of Sap than in the Spring, when it has had several Months Supply from the Root, which tho' but small in Proportion to what is sent up when the Heat is greater, yet there being little or no waste, either by Perspiration or Augmentation, there must be a greater Quantity contain'd in the Branches; which also is easily to be observ'd, by breaking or cutting off a vigorous Branch of a *Fig-Tree* at both Seasons, (the Sap being milky, may be readily discern'd) when that cut in Autumn shall be found to stop its Bleeding in one Day's Time or less; whereas, that cut in the Spring will often flow a Week or more, and the Wound will be proportionably longer before it heals.

Tho' the List of *Figs*, which I have here added, may be greater in Number of Sorts than many People at present know, yet it is very small when compar'd with the great Variety of Sorts which are known in the more Southern Countries of *Europe*; from whence I am in Hopes, in a short Time, I shall be supply'd with many more Kinds than are here mention'd; nor do I think there is any Sort of Fruit deserves more our Care to cultivate and improve than this, and yet it rarely happens that we meet with more than four or five Sorts in most of our curious Fruit-

Gardens, when at the same Time, perhaps, the Walls are fill'd with great Collections of *Pears* or *Plumbs*, few of which either deserve the Place or Care taken in their pruning &c. or at least would thrive as well if planted in *Espaliers* or *Standards*.

I have not, as yet, seen any *Figs* planted in an *Espalier*, and so can't say how they would succeed; but since some of the Sorts do, in divers Parts of *England*, bear very well in *Standards*, I don't see why they should not be try'd; however, if we should be at the Expence of covering them in hard Winters, there is no doubt but they would succeed very well.

The sixteenth Sort is by many People suppos'd to be the true *Sycamore-Tree* mention'd in Scripture, which is a sort of *Fig*, which produces its Fruit out of the old Wood of the Tree, and is very small; but as this Tree has not produc'd any Fruit with us, so I cannot determine whether it be the right Kind or not.

The seventeenth and eighteenth Sorts here mention'd are very tender Plants, being Inhabitants of warm Countries: I receiv'd Seeds of both these Sorts from *Jamaica*, from which I rais'd many Plants, some of which are grown to a considerable Size: and the seventeenth Sort has push'd out many small *Figs* from the Joints, but they dropt off in a short Time without coming to Maturity.

The eighteenth Sort is call'd the *Indian God Tree*, it being a Tree under which the religious *Indians* perform their Worship.

These are both very handsome Plants, and deserve a Place in all curious Collections of Exotick Trees: They may be propagated by Layers, as the common *Fig*, but should be planted

planted in Pots of fresh Earth, and preserv'd in Stoves: In the Summer they may be expos'd during the Months of *July* and *August*, but must be remov'd into Shelter early in *September*. During the Winter-season they will require frequent Waterings; provided the Stove is kept to a good Degree of Heat, otherwise they must be water'd very sparingly. The Temper of Heat which these Plants do best agree with in the Winter, is about the Temperate Point, as mark'd on Mr. *Fowler's Botanical Thermometers*; for in a much greater Degree of Heat they will grow too freely in Winter; and in a less, they will be apt to drop their Leaves, and lose their leading Bud, whereby the Beauty of the Tree will be greatly impair'd. But if you are desirous to have these Trees grow to a large Size, and in a short Time, you should plunge their Pots into Tanner's Bark, which will cause them to make a considerable Progress. I have had Plants of the seventeenth Sort, which, by this Management, have been eight Feet high in two Years from the Time of sowing the Seeds, and the Leaves have been prodigiously large and fair.

FICUS INDICA; *vide* Opuntia.

FILAGO; *vide* Gnaphalium.

FILBERT; *vide* Corylus.

FILIPENDULA; Dropwort.

The Characters are;

*It hath a fibrose Root, with oblong Bulbs or Tubers fasten'd to the Bottom of the Fibres: The Leaves are finely cut into narrow Segments: The Flowers, which consist of six or seven Petals, are disposed into a loose Panicle: The Fruit is almost round, containing many Seeds, which are gather'd into a Heap resembling a Tub.*

The Species are;

1. FILIPENDULA; *vulgaris*. An, *Molon Plinii*. C. B. Common Dropwort.

2. FILIPENDULA; *vulgaris*. An, *Molon Plinii, folio variegato*. H. R. Par. Common Dropwort, with a variegated Leaf.

3. FILIPENDULA; *omni parte major, folio angustiori*. Boerb. Ind. Larger Dropwort, with a narrower Leaf.

The first of these Species is used in Medicine, but is seldom cultivated in Gardens: It grows wild in most Parts of *England* upon open Heaths and Commons, as also upon Chalky Hills.

The second Sort is a Variety of the first, with strip'd Leaves, and is preserv'd in some curious Gardens by such as delight in variegated Plants.

The third Sort I brought from *Holland, Anno 1727*. This differs from the common Sort, in being larger in every Part; but the Leaves are narrower, and finer cut.

These Plants may be easily propagated by taking up their Roots in Autumn, when the Leaves begin to decay, and parting them into small Heads; which, if planted in an open Situation, will thrive and increase exceedingly. They may also be propagated by sowing their Seeds in Autumn, which will come up the succeeding Spring, and the second Season will flower: But this is not the surest Way to preserve the Kinds; for they may be apt to vary from the Sorts sown.

FILIX; Fern.

There are great Varieties of this Plant in the different Parts of the World, but particularly in *America*, as may be seen in the *Natural History of Jamaica*, publish'd by the Worthy Sir *Hans Sloane, Bart.* and

in *Plumier's History of American Ferns*. But as they are Plants which are seldom propagated in Gardens, I shall pass them over in this Place.

FIR-TREE; *vide* Abies.

FLAMMULA JOVIS; *vide* Cle-matitidis.

FLOS AFRICANUS; *vide* Ta-getes.

FLOS PASSIONIS; *vide* Gra-nadilla.

FLOS SOLIS; *vide* Corona Solis.

FLOS TRINITATIS; *vide* Viola.  
FLOWER.

A *Flower* is a natural Production which precedes the Fruit, containing the Grain or Seed. Tho' a *Flower* is a Thing so well known, yet the Definition of this Part of a Plant is as various almost as the Authors who define it. *Fungius* defines it to be the more tender Part of a Plant, remarkable for its Colour or Form, or both, cohering with the Fruit; yet this Author himself confesses that this Definition is too narrow; for some of those Bodies which he allows to be Flowers, are remote from the Fruit.

Mr. *Ray* says it coheres, for the most part, with the Rudiments of the Fruit. Thus the Words for the most part, are hardly to be admitted into Definitions.

*Tournefort* defines it to be a Part of a Plant, very often remarkable for its peculiar Colours, for the most part adhering to the young Fruit, to which it seems to afford the first Nourishment, in order to explicate its most tender Parts. Which Definition is still more deficient than the preceding, by this uncertain Mode of Expression.

But, in my Opinion, Mr. *John Martyn* has been happier in his De-

finition of a *Flower*, than those above mention'd: He defines a *Flower* to be the Organs of Generation of both Sexes adhering to a common Placenta, together with their common Coverings; or of either Sex separately, with its proper Coverings, if it have any.

The Parts of a *Flower* are,

1. The *Ovary*, which is the Rudiment of the Fruit, and so is properly the Female Organ of Generation.

2. The *Stile*, which is a Body accompanying the *Ovary*, either arising from the Top of it, or standing as an *Axis* in the Middle, with the Embryons of the Seeds round it.

3. The *Summits* or *Apices*, which are those Bodies that contain the prolific Powder, analogous to the Male Sperm in Animals; and generally hang upon slender Threads, which are call'd the Chives.

4. The *Petals* are those tender, fine-colour'd Leaves which are generally the most conspicuous Parts of a *Flower*.

5. The *Empalement* or *Calix* is those tender Leaves which cover the other Parts of a *Flower*.

FOENICULUM; Fennel.

The Characters are;

It is an Umbelliferous Plant, whose Leaves are divided into Capillaceous fags: The Petals of the Flower are intire, and plac'd orbicularly, expanding in Form of a Rose: Each Flower is succeeded by two oblong, thick, gibbose Seeds, which are channel'd on one Side, and plain on the other.

The Species are;

1. FOENICULUM; vulgare, Germanicum. C. B. Common Fennel.

2. FOENICULUM; foliis atrovirentibus. H. Edin. Common Fennel, with Dark-green Leaves.

3. FOENI-



3. FOENICULUM; *dulce*. C. B. Sweet Fennel.

4. FOENICULUM; *fylvestre*. C. B. Wild Fennel.

5. FOENICULUM; *dulce*, *Azoricum*. Pluk. *Almag. Bot. Finochia*; *vulgò*.

The first Sort is so common in *England*, that it will be needless to say any thing concerning it.

The second Sort is a Variety of the first, which is very common amongst it in most Gardens in *England*.

The third Sort is the *Sweet Fennel*, whose Seeds are us'd in Medicine: This is by many People suppos'd to be only a Variety of the common Sort, or at least that the common Sort is a Degeneracy from it; but this is a great Mistake, for the *Sweet Fennel* is an annual Plant, and never survives a Winter with us, whereas the common Sort will abide many Years.

The first and second Sorts are promiscuously brought to the Markets for Kitchen Uses. These are propagated by sowing their Seeds soon after they are ripe; and when the Plants are come up, they should be either transplanted, or hoed out to the Distance of sixteen or eighteen Inches, Plant from Plant, for they will spread and increase in Bulk greatly: Their Roots will abide many Years, but you must be careful not to suffer their Seeds to shed upon the Ground, for the Plants will come up and over-run every thing that grows near them, and they are with much Difficulty extirpated.

The *Sweet Fennel* is an Annual, and must be sown upon a warm Soil, and in an open Situation in *February* or the Beginning of *March*; and when these Plants are come up, they should be hoed out to

ten Inches or a Foot Distance from each other, and kept clear from Weeds: In *August* this Plant will perfect its Seeds, and soon after the Roots will decay. The Seeds of this Plant which are sav'd in *England*, are not near so good as those which are brought from Abroad, which are generally imported at a very reasonable Price, so that it is not worth cultivating with us.

The *Finochia* is a Plant which of late Years has been introduc'd into the *English* Gardens, where it is cultivated as a Salad-herb, and is by some People very much esteem'd, tho' the Generality of *English* Palates do not at present relish it; but since it is likely to become of more general Use, I shall give a short Account of its Culture.

First, you must provide your self with a Parcel of good Seeds from *Italy*, for those sav'd in *England* are very apt to degenerate: In *February* you may sow some for the first Crop, which should be in a warm Situation, and upon a light dry Soil. The manner of doing this is as follows: After having well dug and levell'd the Ground smooth, you should make a shallow Rill by a Line, into which you must scatter your Seeds pretty thin; for if your Plants are six Inches asunder in the Rows, it will be full near enough; but however, you must expect some of your Seeds to fail; and therefore you should scatter them about two Inches Distance; then cover the Seeds about half an Inch thick with Earth, laying it smooth: These Rills should be made sixteen Inches asunder, or more, that there may be room to clear the Ground, as also to earth up the Plants when they are full grown. When the  
Plants

Plants come up, which will be in about three Weeks or a Month after sowing, you must, with a small Hoe, cut up all the Weeds between them, and cut out the Plants to about four Inches Distance; and as they advance, and the Weeds spring again, so they should, from Time to Time, be hoed: And at the last Time of thinning them, they should be left nine or ten Inches asunder at least. If your Kind be good, the Stems of the Plants will increase to a considerable Bulk, just above the Surface of the Ground, which Part should be earth'd up in the Manner of *Celery* to blanch, about a Fort-night before it is us'd, and this will cause it to be very tender and crisp.

Your second Crop should be sown about three Weeks after the first, and so continue sowing every three Weeks or a Month 'till *July*; after which Time it will be too late for the Plants to come to any Perfection. But you should observe to sow in *April* and *May*, on a moister Soil than that which you sow'd the first on. As also what you sow in the latter Part of *June*, or the Beginning of *July*, should be sown on a drier Soil, and in a warmer Situation; because this Crop will not be fit for Use 'till late in the Autumn, and therefore will be subject to Injuries from too much wet or cold Weather, if on a moist Soil. But as the Ground is very often extreme dry in *June* and *July*, and so the Seeds are more apt to miscarry, or not to come up, you should therefore observe to water and shade the Beds where this Seed is sown at that Season until the Plants come up.

A small Bed of this Plant will be sufficient at each sowing for a

middling Family; and for a large Family, a Bed of about twenty Feet long and four Feet broad will be full enough at a Time.

FOENUM BURGUNDIACUM; *vide*, *Medica Sativa*.

FOENUM GRÆCUM; Fenugreek.

The Characters are;

*It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, which afterwards becomes a Pod somewhat plain, shap'd like a Horn, and full of Seeds, for the most part Rhomboid or Kidney-shap'd.*

The Species are;

1. FOENUM GRÆCUM; *sativum*. C. B. Common Fenugreek.
2. FOENUM GRÆCUM; *sylvestre*. C. B. Wild Fenugreek.
3. FOENUM GRÆCUM; *sylvestre, alterum polyceration*. C. B. Another wild Fenugreek, with many Pods.

There are several other Varieties of this Plant, which are preserv'd in curious Botanick Gardens; but as they are Plants of little Use or Beauty, so I shall omit mentioning them here.

The first Sort here mention'd, is that of which the Seeds are us'd in Medicine.

The other two Sorts are Varieties which are preserv'd in some Gardens. They may be propagated by sowing their Seeds in *February* or *March* upon a light Soil, and in an open Exposure. The Plants, when they come up, should be singled out to about four or five Inches Distance each way: And the Ground should be constantly kept clear from Weeds, which, if suffer'd to grow, would soon overspread and destroy the Plants: But you must observe, these Plants will not bear transplanting, therefore they should be sown in the Places where they are to remain.

In *June* they will flower, and their Seeds will be perfected in *August*.

This Plant is cultivated in the open Fields, in the South Parts of *France* and *Italy*, from whence the Seed is brought to *England* for Use; for it is too uncertain a Crop to cultivate here, being very apt to miscarry in cold wet Summers.

FOUNTAINS are Sources or Springs of living Water arising out of the Ground. As to the Original of them, see under the Article *Springs*.

Of Artificial *Fountains* there is a great Variety; the Mechanism of which not being to my Purpose, I will not dwell upon it: Tho' I may assert, that they are not only great Ornaments to a fine Garden, but also of great Use. But they ought not to be plac'd too near the House, by reason of the Vapours that arise from the Water, which may be apt to strike a Damp to the Walls, and spoil the Paintings, &c. and the Summer Vapours may cause a Malignity in the Air, and so be prejudicial to the Health of the Family; and likewise the Noise may be incommodious in the Night.

*Fountains* in a Garden should be so distributed, that they may be seen almost all at one Time, and that the Water-spouts may range all in a Line one with another; which is the Beauty of them; for this occasions an agreeable Confusion to the Eye, making them appear to be more in Number than really they are. See *Fet d' Eau, Springs, Vapours, Water, &c.*

FRAGARIA; Strawberry.

The Characters are;

It hath a perennial fibrose Root: The Leaves are vein'd, growing upon each Foot-Stalk: The Stalks trail upon the Ground: The Cup of the

Flower consists of one Leaf, which is divided into ten equal Parts, and expands in Form of a Star: The Flower consists for the most part of five Leaves, which expand in Form of a Rose, and have many Stamina in the Middle, round the Base of the Ovary: The Fruit is globose or oval, and consists of a fleshy, eatable Pulp, full of Protuberances.

The Species are;

1. FRAGARIA; *vulgaris*. C. B. Common or Wood-Strawberry.

2. FRAGARIA; *fructu albo*. C. B. Common Strawberry, with white Fruit.

3. FRAGARIA; *fructu parvi pruni magnitudine*. C. B. The Haut-boy Strawberry; *vulgò*.

4. FRAGARIA; *Virginiana, fructu coccineo*. M. H. Virginian Strawberry, with Scarlet Fruit.

5. FRAGARIA; *Chiliensis, fructu maximo, foliis carnosis, hirsutis; vulgò frutilla*. *Frez. Voy.* Large Chili Strawberry.

The first and second Sorts of Strawberry are found wild in the Woods, in divers Parts of *England*, from whence the Plants are taken and transplanted into Gardens, by which the Fruit is improv'd. The best Season for this Work is in *September*, that the Plants may be rooted in their new Quarters before the Frost begins, which is very apt to loosen the Earth so much about their Roots, that when the Frost goes off, the Plants are apt to be turn'd out of the Ground. They may also be transplanted in *February*; but then if the Spring should prove dry, they will require a great Expence of Water to preserve them alive.

The Soil which is most proper for these Plants, is a fresh hazly Loam, not over rich, which would cause the Plants to spread and flou-

rish,

rish, but they would not be so fruitful as upon a moderate Soil. The Ground should be well dug, and clear'd from the Roots of all noxious Weeds; and after it is level'd even, you must mark it out into Beds about three Feet and a half wide, leaving a Path between each Bed two Feet broad, for the Conveniency of walking between them to water and clean them, as also to gather the Fruit. In these Beds may be planted four Rows of Plants, whereby they will be about a Foot asunder, Row from Row; and in the Rows they should be planted at least eight Inches distant Plant from Plant; for if they are planted nearer, they will, in one Year's Time be so thick, that they will not have room to thrive. *Note*, The Distance here assign'd, being for the Wood-Strawberry which is of the least Growth, the other large growing Kinds must have a greater Share of Room, according to their different Degrees of Growth; as for Example, the *Scarlet Strawberry* should be planted a Foot square Plant from Plant, and the *Hautboy* sixteen or eighteen Inches Distance each Way, and the *Chili Strawberry* twenty Inches or two Feet.

In the Spring of the Year, when the *Strawberries* begin to flower, if the Season be dry, you must observe to water them plentifully, otherwise the Flowers will fall away without producing any Fruit. You must also carefully clean your Beds of *Strawberries* from Weeds, from Time to Time, as they shall require; for if they are once suffer'd to over-bear the Plants, they will decay in large Patches, and also greatly weaken all those that may continue alive. About *Michaelmas* you should clear off all

the Weeds from the Beds, as also cut off all the Strings or Runners from the Roots, pulling out all weak Plants where they are too close; then dig up the Walks between the Beds, burying the Weeds that came off in the Bottom, and throw a little fine Earth over the Beds between the Plants, being very careful not to lay it so thick as to bury the Plants: This will greatly strengthen them, and cause their Fruit to be larger and in greater Quantities than they would be if left undress'd.

These few Rules will be sufficient, if duly observ'd, for cultivating these Plants. I would only farther observe, that these Beds will not continue bearing well more than three Years, therefore in order to have a constant Supply, you should plant a fresh Plat of Ground a Year before you destroy the old Beds, otherwise (your young Plantation producing little or no Fruit the first Year) you will be destitute a whole Season.

The *Wood Strawberry* is by many People prefer'd for the Firmness of its Fruit and Delicacy of Flavour: Others greatly admire the *Scarlet* Sort for its Goodness, and the *Hautboy* is esteem'd for the Largeness of its Fruit. The *Chili Strawberry* was brought first into *Europe* by Monsieur *Frezier*, Engineer to the late *French King*, and given to Monsieur *de Jussieu*, Professor of Botany to the Royal Garden at *Paris*, who hath spread it into divers Parts of *Europe*. This Plant, Monsieur *Frezier* says, is cultivated in the Fields near *Chili* in great Plenty, and that it differs from the *European* Kinds, in having larger, thicker, and more hairy Leaves: The Fruit is generally as large as a *Walnut*, and sometimes

as big as an *Hen-Egg*, of a whitish red Colour, and somewhat less delicious in Taste than our *Wood Strawberries*. This has produc'd Fruit several Years in the Royal Garden at *Paris*, where Monsieur *Jessieu* assur'd me, it was commonly as large as a small *Apple*. I brought some of the Plants from *Holland*, Anno 1727, which thrive and increase exceedingly, but they have produc'd little Fruit. I observe they thrive best where they have only the Morning Sun, and do require frequent Waterings in dry Weather.

FRANGULA ; Berry-bearing Alder.

The Characters are ;

*It hath roundish Leaves somewhat like those of the Alder-Tree, but smaller: The Flower consists of five Leaves, which expand in Form of a Rose: The Flowers are succeeded by small round Berries, in each of which are contain'd two small flat Seeds.*

We have but one Species of this Plant, which is,

FRANGULA ; *five Alnus, nigra, bacijera. Park. Theat.* Black Berry-bearing Alder.

This Tree is very common in moist Woods in divers Parts of *England*, and is rarely cultivated in Gardens, except for Variety : It seldom grows above fourteen or sixteen Feet in Height, and is not very regular in its Growth, so that as it is a Plant of no great Beauty, it less deserves a Place in curious Gardens. It may be propagated by Layers, or from Suckers, which arise from the Foot of old Plants, and must be planted in a moist Soil and a shady Situation, where it will thrive exceedingly.

The Fruit of this Tree is often brought into the Markets of *London*, and sold for *Buckthorn-Berries* ;

of which Cheat, all such as make *Syrup of Buckthorn* should be particularly careful : They may be easily distinguish'd by breaking the Berries, and observing how many Seeds are contain'd in each, the Berries of this Tree having but two, and those of *Buckthorn*, generally four Seeds in each Berry.

FRAXINELLA ; Bastard, or White Dittany.

The Characters are ;

*It hath a perennial Root : The Leaves are pennated like those of the Ash : The Flower consists of many Leaves, and are of an anomalous Figure, four of these Petals growing on the Upperside, and one or more on the Underside of the Flower ; in the Center of which are produc'd nine or ten crooked Stamina or Threads ; each Flower is succeeded by many Pods, which are turn'd back like a Ram's-horn, and open in two Parts, emitting several large, hard, black, shining Seeds.*

The Species are ;

1. FRAXINELLA ; *Clus.* White Bastard Dittany ; or *Fraxinella*, with white Flowers.

2. FRAXINELLA ; *purpurea, major, multiflora. H. R. Par.* Great Purple *Fraxinella*, with many Flowers.

There are some other Varieties of this Plant, which are preserv'd in some curious Gardens Abroad ; but these two are the only Sorts I have ever yet observ'd in *England*.

They are propagated either by sowing their Seeds, or parting the Roots : The latter Method being the most expeditious, is generally us'd ; though if we would supply our selves with a Quantity of these Plants, we must procure them from Seeds, for the Roots do not multiply very fast, nor should they be disturb'd by parting them oftener than every third Year ; for if you

part them frequently, or into small Heads, the Flowers will be few in Number, and very weak.

The best Season to transplant these Roots, is toward the latter End of *September*, or Beginning of *October*, that they may be rooted before the hard Frosts begin, by which means they will be enabled to resist the Cold, and produce much fairer Flowers than those which are transplanted in the Spring. The Soil in which these Plants thrive best, is a fresh, rich, gentle Loam, not too stiff, or wet, in both of which they are apt to rot in Winter.

If you would propagate them by Seeds, you must sow them on a Bed of good fresh Earth in an open Exposure, soon after the Seeds are ripe; for if they are kept till Spring before they are sown, they either miscarry, or lie in the Ground till the next Spring before they come up; but you must carefully observe to weed the Bed, for if you suffer the Weeds to root deep in the Ground, they will endanger the drawing of the Seeds out of the Earth when the former are pull'd up: If the Spring should prove dry when your Plants first appear, you should gently water the Bed, and shade it with Mats in the Heat of the Day, until the Plants have got Strength, observing, as before, to keep them clear from Weeds: In this Bed they may remain until *Michaelmas* following; at which Time you should prepare one or more Beds (according to the Number of your Plants) of the like fresh Earth, into which you must plant your Plants at about five or six Inches Distance each Way, being careful in taking them out of the Seed-bed, not to break or wound their Roots, as also to close the

Earth fast to their Roots when planted with your Hands, to prevent their being turn'd out of the Ground by Frost. In these Beds they may remain one Year, by which Time (if they have thriven well) they will be strong enough to produce Flowers the succeeding Year; so that now it will be Time to transplant them into the Borders of the Flower-Garden where they are design'd to remain.

These Plants continuing a long Time in Beauty, are very great Ornaments to a Garden; and their being very hardy, requiring but a little Culture, renders them worthy of a Place in every good Garden.

FRAXINUS; The Ash-Tree.

The Characters are;

*It hath pennated Leaves, which mostly end in an odd Lobe: The Male Flowers (which grow at a remote Distance from the Fruit) have no Petals, but consist of many Stamina: The Ovary becomes a Seed-Vessel, containing one Seed at the Bottom, which is shap'd like a Bird's Tongue.*

The Species are;

1. FRAXINUS; *vulgaris*. Park. *Theat.* The Common Ash-Tree.

2. FRAXINUS; *vulgaris, folio ex luteo variegatis*. The Strip'd Ash.

3. FRAXINUS; *folio rotundiore*. C. B. The Manna Ash.

4. FRAXINUS; *florifera, botryoides*. M. H. R. *Blas.* The Flowering Ash.

5. FRAXINUS; *ex Nova Angliâ, pinnis foliorum in mucronem productioribus*. Rand. New-England Ash, with sharp pointed Leaves.

6. FRAXINUS; *Caroliniana, latiori fructu*. Rand. Carolina Ash, with broad Keys.

The first Sort is a common Timber Tree in every Part of *England*.

The second is a Variety of the first, from which it only differs, in having

having its Leaves beautifully strip'd with yellow.

The third Sort is suppos'd to be the Tree from whence the true *Calabrian* Manna is taken.

The fourth Sort was rais'd from Seeds by Dr. *Uvedale* at *Enfield*, which were brought from *Italy* by the late curious Botanist Dr. *William Sherrard*, who suppos'd this was different from Dr. *Morison's* Tree. But by the Specimens now in Possession of that worthy Encourager of Botanical Studies, Sir *Hans Sloane*, Bart. it appears to be the very same; notwithstanding Mr. *Ray* supposes Dr. *Morison's* Tree to be of *American* Growth.

The fifth and sixth Sorts were both rais'd from Seeds which came from *America*, but are both of 'em very hardy. All these Kinds may be propagated by Budding them into the common *Ash*, upon which they will all take very well, and become hardier than upon their own Stock.

The common *Ash* is propagated by sowing the Keys in *October* or *November* on a Bed of fresh Earth, which should be well dug, and cleans'd from Roots and noxious Weeds: A small Bed will be sufficient to raise a great Quantity of these Trees. The Seeds should be sown pretty thick, and cover'd about half an Inch thick with Earth.

These Seeds many Times continue until the second Spring before they come up; you should therefore let the Bed remain undisturb'd and keep it clean from Weeds. When your Plants come up, you must also keep them very clear from Weeds; and if the Season should prove very dry, if you give them now-and-then a little Water, it will greatly promote their

Growth; in this Bed they should remain no longer than the Autumn following, provided they have grown well; at which Time you should prepare a Nursery, which should be well dug and clear'd, as before; then with your Spade loosen the Roots of the Plants before you draw them up, otherwise you will endanger the breaking of them. When you have drawn them out of the Ground, shorten the down-right Tap-Root; but do not cut off any of the lateral Fibres: Then having prepar'd your Ground, plant them in Rows, three Feet Distance Row from Row, and a Foot a-funder in the Rows, closing the Earth to their Roots with your Feet. In this Nursery they may remain three or four Years, observing to keep them clear from Weeds, as also to trim up the Side-Branched every Winter, and dig the Ground between the Rows, after which Time you may remove them where they are to remain for good.

This Tree will grow upon almost any Soil; but the better the Soil is, the more the Tree will increase in Bulk. Notwithstanding which, it should not by any means be planted too near to other Trees or Plants; for it will exhaust all the Goodness of the Soil from them; and the Shade of this Tree is malignant to most other Plants. The Distance they should be planted is eight Feet square; and after they have been planted one Year, you may cut down every other Tree, chusing such of 'em as are crooked, within six or eight Inches of the Ground; this will cause 'em to make many strong, vigorous Shoots, which in four or five Years Time will be fit for Arbor Poles, or to make Hoops: And the other remaining

maining strait Trees may be suffer'd to grow for other Timber, the Number of which Trees may be lessen'd as they increase in Bulk, leaving still the most promising ones to grow for larger Timber.

If a Wood of these Trees is rightly manag'd, it will turn greatly to the Advantage of its Owner, for by the Under-wood, which will be fit to cut every five or six Years for the Uses above mention'd, there will be a continual Income more than sufficient to pay the Rent of the Ground, and all other Charges, and still there will be a Stock preserv'd for Timber which, in a few Years, will be worth forty or fifty Shillings per Tree.

This Timber is of excellent Use to the Wheelwright and Cartwright for Ploughs, Axle-Trees, Wheel-Rings, Harrows, Bulls, Oars, Blocks for Pullies, and many other Purposes.

The best Season for Felling of these Trees, is from November to February; for if it be done either too early in Autumn, or too late in the Spring, the Timber will be subject to be infested with Worms and other Insects; but for Lopping of Pollards, the Spring is preferable for all soft Woods.

FRITILLARIA; Fritillary, or Chequer'd Tulip.

The Characters are;

The Flower consists of six Leaves, and is of the Bell-shap'd Lily Flowers, pendulous, naked, and for the most part chequer'd: The Style of the Flower becomes an oblong Fruit, which is divided into three Cells, and fill'd with flat Seeds, lying in a double Row: The Root consists of two fleshy Knobs, which are for the most part semi-globular, betwixt which arises the Flower-stalk.

The Species are;

1. FRITILLARIA; *serotina, floribus ex flavo virentibus*. C. B. The late flowering Fritillary, with greenish-yellow Flowers, commonly call'd, the Leather Coat, or Common Fritillary.

2. FRITILLARIA; *alba; praecox*. C. B. The early White Fritillary.

3. FRITILLARIA; *alba, variegata*. C. B. The white chequer'd Fritillary.

4. FRITILLARIA; *serotina, floribus ex flavo virentibus, major*. Boerh. Ind. The great late flowering Fritillary, with a greenish yellow Flower; or the Common Fritillary, by some call'd Snakes-head Iris.

5. FRITILLARIA; *flavo flore*. Clus. The Yellow Fritillary.

6. FRITILLARIA; *praecox, purpurea variegata*. C. B. Early Purple variegated Fritillary.

7. FRITILLARIA; *folio splendente, flore majore, ex viridi, & purpurâ, variegato splendente*. Boerh. Ind. Shining-leav'd Fritillary, with a large Green and Purple-shining variegated Flower, commonly call'd the Monster.

8. FRITILLARIA; *umbellifera*. C. B. Many flower'd Fritillary.

9. FRITILLARIA; *lutea, maxima, Italica*. Park. Par. Greatest Yellow Italian Fritillary.

10. FRITILLARIA; *serotina, floribus ex flavo virentibus, flore pleno*. H. R. Par. Late Fritillary, with double greenish yellow Flowers.

11. FRITILLARIA; *nigra*. Lob. Adv. Black Fritillary.

12. FRITILLARIA; *flore ex rubro purpureo, & viridi variegato*. Boerh. Ind. Fritillary with a reddish Purple Flower strip'd with Green.

13. FRITILLARIA; *flore ex pallide viridi & viete, purpureo variegato*. Boerh. Ind. Fritillary with a Pale Green Flower, variegated with a deep Purple.



14. FRITILLARIA; *Isabella dicta*, floribus ex pallidè rubicundo virentibus. H. L. *Isabella Fritillary*, with a pale red greenish Flower.

15. FRITILLARIA; *maxima, flore obsoleta & purpura*. Tourn. The greatest *Fritillary*, of a worn out Purple Colour, commonly call'd the Persian Lily.

16. FRITILLARIA; *minima*. Swert. Flor. The least *Fritillary*, or small Persian Lilly.

17. FRITILLARIA; *lutea, folio Polygonati, fructu brevior*. Boerb. Ind. Yellow *Fritillary*, with a Leaf like Solomon's Seal, and a short Fruit.

There are several other Varieties of this Flower which are propagated in curious Flower-Gardens Abroad, (especially in *Holland*) which differ in the Colour or Size of their Flowers, but as these are only Varieties which were obtain'd from Seeds, so it would be needless to mention them in this Place, since there will be new Varieties obtain'd every Year where People are curious in sowing their Seeds.

These Plants are propagated either by Seeds, or Off-sets from the old Roots: By the first of which Methods new Flowers will be obtain'd, as also a larger Stock of Roots in three Years than can be obtain'd in twenty or thirty Years in the latter Method: I shall therefore first treat of their Propagation by Seeds.

Having provided your self with some good Seeds, sav'd from the fairest Flowers, you must procure some shallow Pans or Boxes, which must have some Holes in their Bottoms to let out the Moisture: These you should fill with light fresh Earth, laying a few Potshards over the Holes to prevent the Earth from stopping them; then having laid the Earth very level in

the Boxes, &c. you must sow the Seeds thereon pretty thick, covering it with fine sifted Earth a quarter of an Inch thick. The Time for sowing the Seed is about the Beginning of *August*, for if it be kept much longer out of the Ground it will not grow; then place the Boxes or Pans where they may have the Morning Sun until 11 o' Clock, observing, if the Season proves dry, to water them gently, as also to pull up all Weeds so soon as they appear; for if they are suffer'd to remain until they have taken deep Root into the Earth, they would draw the Seeds out of the Ground whenever they are pull'd up. Toward the latter End of *September* you should remove the Boxes, &c. into a warmer Situation, placing them under a Hedge or Wall expos'd to the South; in which Place they may remain until the Middle of *March*, by which Time the Plants will be come up an Inch high: You must therefore remove the Boxes as the Weather increases hot, into a more shady Situation; for while the Plants are young, they are liable to suffer by being too much expos'd to the Sun: And in this shady Situation they may remain during the Heat of the Summer, observing to keep them clear from Weeds, and to refresh them now and then with a little Moisture, but be careful not to give them much Water after their Leaves are decay'd, which would rot the Roots. About the Beginning of *August*, if the Roots are very thick in the Boxes, you should prepare a Bed of good light fresh Earth, which must be levell'd very even, upon which you should spread the Earth in the Boxes in which the small Roots are contain'd, equally covering it

about one Fourth of an Inch thick with the same fresh Earth: This Bed should be situated in a warm Position, but not too close to Hedges, Walls, or Pales, which would cause their Leaves to be long and slender, and make the Roots weaker than if plac'd in a more open Exposure.

In this Bed they may remain until they flower, which is generally the third Year from sowing; at which Time you should put down a Mark to the Roots of all such as produce fair Flowers; and at the Time of taking them out of the Ground (which ought to be soon after their green Leaves are decay'd) may be selected into a Bed amongst your old Roots of this Flower, which for their Beauty are preserv'd in the best Gardens; but the other less valuable Flowers, may be planted in the Borders of the Parterre Garden for their Variety, where, being intermix'd with other Flowers of different Seasons, they will make a good Appearance.

The fine Sorts of this Flower should remain undisturb'd three Years, by which Time they will have produc'd many Off-sets, and should be therefore taken up when their Leaves are decay'd, and planted into a fresh Bed, taking such of their Off-sets as are large enough to produce Flowers to plant in the Flower-Garden, but the smaller Roots may be planted into a Nursery-bed until they have obtain'd Strength enough to flower; but you must never suffer these Roots to lie out of the Ground when you remove them, but plant them again immediately, for otherwise they will perish.

During these three Years which I have advis'd the Roots to remain in the Beds, the Surface of the Earth should be stirr'd every Au-

tumn with a Trowel, observing not to go so deep as to bruise the Root, and at the same Time lay a thin Cover of very rotten Dung or Tanner's Bark upon the Surface of the Beds; which being wash'd into the Ground, will cause the Flowers to be larger, as also the Roots to make a greater Increase: You must also observe to keep them constantly clear from Weeds, and those Roots which you would preserve with Care, should not be suffer'd to seed.

FRITILLARIA CRASSA; *vide* Asclepias.

FRUCTUS; *vide* Fruit.

FRUIT is the Production of a Tree or Plant, for the Propagation or Multiplication of its Kind: In which Sense *Fruit* includes all Kinds of *Seeds*, with their Furniture, &c. *Botanists* use it to signify, properly, that Part of a Plant wherein the Seed is contain'd, which the *Latins* call *Fructus*, and the *Greeks* καρπός.

FRUMENTUM INDICUM; *vide* Mays.

FRUTEX; *Africanus*. *Ambram Spirans*. *Volk*. The Amber-Tree; *vulgô*.

This Shrub has by no Botanick Writers been reduc'd to any proper Class; so I have taken the Liberty of continuing it under its former loose Name, having never yet seen the Fruit: Tho', by the Flower, I imagine it will be a Congener to the *Gallium* or *Ladies Bedstraw*; but I shall not, at present, say any Thing of its Characters.

This is preserv'd in most curious Gardens which have Collections of tender Plants. It is easily propagated by planting Cuttings, during any of the Summer Months, in a Border of light Earth, which will take Root in six Weeks  
Time,

Time, provided they are watered and shaded as the Season may require; then they should be taken up, with a Ball of Earth to their Roots, and planted into Pots fill'd with light, sandy Earth, and may be expos'd to the open Air until *October*, at which Time they should be remov'd into the Conservatory, where they should be plac'd as free as possible from being over-hung with other Plants: And during the Winter-season they must be refresh'd with Water, but should not have too much given 'em each Time: You may let 'em have as much Air as the Weather will permit; for if they are kept too close, they will be subject to grow mouldy, and generally decay soon after.

These Shrubs may be train'd up either to form round Heads, or into Pyramids, it being a very manageable Plant; but should not be often cut; for, by so doing, 'twill occasion the Branches to grow very close, whereby the Air will be excluded from the Middle-part of the Plant, which will cause the Leaves to decay, and the Branches to appear very unsightly; but if you suffer it to grow as it is naturally dispos'd, (only observing to tie up the Stem, to make it strait) the Plant will thrive much better.

The Beauty of this Shrub, is in its small Evergreen Leaves, which grow as close as Heath; and being bruise'd between the Fingers, do emit a very fragrant Odour.

FRUTEX; *Virginianus, trifolius, Ulmi Samarris*. *Banist. Pluk. Alm.* American Shrub Trefoil, with Fruit like the Elm.

The Seeds of this Shrub were sent from *Carolina* by Mr. *Catesby*, Anno 1724, from which several Plants have been rais'd in the Gar-

dens near *London*; but since it hath not as yet been reduced to any Class of Plants, I shall continue the old Name to it.

This Shrub is hardy enough to resist the severest Cold of our Climate in the open Air, provided it be planted on a dry Soil. It may be propagated by laying down the Side-Branches into the Ground in the *Spring*, observing to slit them at a Joint, as it is practis'd in laying *Carnations*. When they are pegg'd down, the Earth should be lay'd two or three Inches thick over the Part that is slit; and in dry Weather they should be water'd, which, if duly attended to, will greatly facilitate their Rooting; so that in one Year they will be rooted sufficient to be transplanted out; but if they are not slit, nor the Ground about them water'd in dry Weather, it will be two Years before they will be fit to transplant.

If the Plant likes the Soil into which it is planted, it will make considerable strong Shoots, and the Leaves will be large and fair. There is one of these Shrubs in the *Physick-Garden at Chelsea*, which I rais'd from Seeds Anno 1724, and has been transplanted five Years in the open Air: This Plant is now, Anno 1733, upwards of eight Feet high, and has produced great Quantities of Flowers, which are of a greenish white Colour, and are produced in Bunches at the Extremity of the Branches, which with the Straitness of its Growth, and the Beauty and uncommon Shape of the Leaves, render it worthy of a Place in every good Collection of Trees and Shrubs.

FRUTEX; *scandens, petroselinifolius, Virginianus, clavicularis donatus*. *Pluk. Mant.* The Pepper-tree; *vulgô.*

This Plant was brought from *Virginia*, where it is found in great

Plenty, and was rais'd from Seeds in the Gardens of *Samuel Reynardson*, at *Hillindon* near *Uxbridge* many Years since, from whence it hath been distributed into many Gardens near *London*. There is no great Beauty in it, but for its Oddness it may have a Place in a Collection of Shrubs. It is extreme hardy, enduring our severest Cold in the open Air, but should be planted on a dry Soil, and will require a Stake to support it; for its Branches are very flexible, and will trail upon the Ground, if they are not supported. The Flowers it produces are very small, and of a greenish-yellow Colour, growing in Clusters somewhat like those of the Creeper, and the Branches do emit Claspers as that doth, to which it appears to me to be nearly related.

This Plant may be propagated by laying down the tender Branches, which in one Year will be rooted enough to transplant; or by Suckers from the Roots, which when the Plants are arriv'd to a convenient Age, they will send forth in great Plenty.

FRUTEX PAVONINUS; *vide* Poinciana.

FUMARIA; Fumatory.

The Characters are;

It hath divided Leaves resembling those of the Umbelliferous Plants: The Flowers, which are collected into a Spike, are of an anomalous Figure, somewhat resembling a papilionaceous Flower, consisting of two Petals or Leaves, which open like two Lips, the upper Lip ending in a Spur: The Foot-stalk is join'd to the Middle Part of the Flower: The Fruit is either of a long or a round Figure, which is like a Pod, in which are contain'd many roundish Seeds.

The Species are;

1. FUMARIA; *Officinarum* & *Di-*

*oscoridis*, *flore purpureo*. C. B. The Common Fumatory, with a Purple Flower.

2. FUMARIA; *minor*, *tenuifolia*. C. B. Lesser narrow-leav'd Fumatory.

3. FUMARIA; *sempervirens* & *florens*, *flore albo*. Flor. Bat. Evergreen Fumatory, with a white Flower.

4. FUMARIA; *lutea*. C. B. Yellow Fumatory.

5. FUMARIA; *bulbosa*, *radice cavá*, *major*. C. B. Great bulbous-rooted Fumatory, or hollow Root.

6. FUMARIA; *bulbosa*, *radice cavá*, *major*, *flore albo*. C. B. Great bulbous-rooted Fumatory, with a white Flower.

7. FUMARIA; *bulbosa*, *viridi flore*. Tourn. Bulbous-rooted Fumatory, with a green Flower.

8. FUMARIA; *bulbosa*, *radice non cavá*, *major*. C. B. Great bulbous-rooted Fumatory, with a Root not hollow.

The first of these Plants is sometimes us'd in Medicine, but is seldom cultivated in Gardens, it being very common in arable Land in most Parts of *England*.

The second Sort is not a Native of *England*, but is preserv'd in some curious Botanic Gardens for the Sake of Variety. These are both annual Plants.

The third Sort is a Perennial Plant, which if planted in a dry Soil and a warm Situation, will continue flowering almost the whole Year round, which renders it worthy of a Place in every good Garden.

The fourth Sort is also an abiding Plant, which requires the same Situation and Culture as the former. These two Plants will grow in Joints, or hollow Places in old Walls, which will render them less subject

subject to decay than if they were planted in a rich Soil. They may be propagated by sowing their Seeds soon after they are ripe; for if the Seeds are kept till the Spring, they very often miscarry.

The fifth, sixth, seventh, and eighth Sorts are propagated by Off-sets, as other bulbous-rooted Flowers: These produce their Flowers in the Beginning of April, and are very pretty Ornaments to Borders in a small Flower-Garden. They are extreme hardy, but do not increase very fast, seldom producing Seeds with us, and their Bulbs do not multiply very much, especially if they are often transplanted. They love a light sandy Soil, and should be suffer'd to remain three Years undisturb'd, in which Time they will produce many Off-sets. The best Season for transplanting them is in May, when the green Leaves begin to die off; for if they are taken up when their Leaves are fresh, it will greatly weaken their Roots.

FURZ; *vide* Genista.



## G A

**G**ALE; The Sweet Willow, or Dutch Myrtle.

The Characters are;

The Leaves are plac'd alternately on the Branches: It hath Male Flowers, which are produc'd at the Wings of the Leaves; are naked, and grow in a longish Spike: The Fruit, which is produc'd in separate Parts of the same Tree, is of a conical Figure, and squamose, containing one Seed in each Scale.

The Species are;

1. GALE; *frutex odoratus, septentrionalium, Eleagnus, Cordo, Chamaeleagnus, Dodonai.* J. B. Sweet Gale, Sweet Willow, or Dutch Myrtle.

2. GALE; *qua Myrto Brabantica similis, Caroliniensis, baccata, fructu racemoso, sesseli monopyreno.* Pluk. Phyt. Candle-Berry Tree; *vulgô.*

3. GALE; *qua Myrto Brabantica similis, Caroliniensis, humilior, foliis latioribus, & magis ferratis.* Catesb. Hist. Nat. Carol. The Dwarf broad-leav'd Candle-Berry Tree, with deeply serrated Leaves.

The first of these Plants is very common in several Parts of England, growing upon Bogs which have an open Situation: This is with Difficulty preserv'd in Gardens: It must have a very moist Soil, and should have an open Situation. The best Season for transplanting these Shrubs, is in the Beginning of March, just before their green Leaves appear: In removing them, you should be careful to preserve as much Earth about their Roots as possible; as also to water them plentifully, if the Season should prove dry. They are propagated by Suckers, which are produc'd in great Plenty from their Roots, when they are planted on a proper Soil, but seldom do make any considerable Increase in Gardens; however, any one that has a mind to plant these Shrubs in a Garden, or other Plantation, may be sufficiently supply'd from the Bogs, where they grow spontaneously.

The 2d and 3d Sorts are both Natives of America, and have been rais'd from Seeds, which came from thence, but are both hardy enough to resist the Cold of our Climate in the open Air. These

are

are also propagated by Suckers as the former, which, if they are planted in a moist Soil, and suffer'd to remain undisturb'd, they will produce in great Plenty: They may also be increas'd by laying down their tender Branches, which should be slit, as is practis'd in laying of Carnations, and will take Root in one Year, and then may be transplanted where they are to remain. The Seeds of these Plants, when brought from Abroad, should be sown in Pots fill'd with fresh loamy Earth, and then plung'd into a moderate Hot-bed, which will greatly forward their coming up: And as the Season advances, the Pots should by Degrees be removed out of the Hot-bed into the open Air, that they may be harden'd before Winter; and in October you should place the Pots into a common Hot-bed Frame, that may be cover'd in hard frosty Weather, which often injures them while they are young, but afterwards they are not liable to any Misfortune from the Seasons: The best time to remove these is in the Spring, just before they begin to shoot, but you should cover the Surface of the Ground round their Roots after they are planted, to prevent the Sun and Wind from entering the Ground to dry their Fibres.

These Shrubs are all of a low Stature with us, seldom rising above five Feet high, and should therefore be planted amongst Shrubs of the same Growth, for they will by no means grow under the Shade of other Trees. They are very proper Plants for small Wilderneis Quarters in a swampy Piece of Ground, where few other Plants, will thrive well.

The first Sort casts its Leaves in Winter, but the two other Sorts

are ever-green: The Leaves of all these Plants, when bruis'd, do emit a very pleasant Odour, not much unlike that of the Myrtle, from whence the People have been induc'd to give them that Epithet. The Inhabitants of *America* do prepare a Wax from the Fruit of those two Plants, with which they make very good Candles, which burn very well, and have a very agreeable Scent.

The two last mention'd Sorts do produce Flowers in several Gardens near *London*; and the first of them did produce Fruit *Anno 1729.* in the curious Garden of Mr. *Peter Collinson* at *Peckham*; but the last Sort hath not as yet produc'd Fruit in *England*, that I have heard.

GALEGA, Goat's-Rue.

The Characters are;

*It hath a Perennial Root: The Leaves grow by Pairs, fasten'd to a Mid-rib, terminating in an odd Lobe: The Flower is of the papilionaceous Kind, consisting of a Standard, the Wings, and the Keel: The Pointal becomes a long taper Pod, which is fill'd with oblong Kidney-shap'd Seeds.*

The Species are;

1. GALEGA; *vulgaris, floribus, caeruleis.* C. B. Common Goat's-Rue, with blue Flowers.

2. GALEGA; *vulgaris, floribus penitus candicantibus.* C. B. Common Goat's-Rue, with white Flowers.

3. GALEGA; *vulgaris floribus ex caeruleo purpureis.* C. B. Common Goat's-Rue, with blueish purple Flowers.

4. GALEGA; *Africana, floribus majoribus, & siliquis crassioribus.* Tourn. African Goat's-Rue, with large Flowers and thick Pods.

There are several other Varieties of this Plant which are preserv'd in curious Botanick Gardens Abroad, but

but these here mention'd are the chief Sorts we have at present in *England*.

The first of these Plants is propagated in Gardens for medicinal Use; and the second and third Sorts are only Varieties of the first, from which they only differ in the Colour of their Flowers, and are for Variety preserv'd in some curious Gardens; but the fourth Sort is a distinct Species, having much larger Leaves, Flowers, and Pods.

These Plants may be propagated either from Seeds, or by parting of their Roots. The best Season for sowing the Seeds is in the Beginning of *March*, in a light Soil, and an open Situation; and when the Plants are come up, you should either hoe between them to destroy the Weeds, (as is practis'd for Onions, Carrots, &c.) or else pull out the Weeds with your Hands, cutting down, or pulling up the Plants where they are too close to each other, that those left may have room to get Strength; and so from time to time, as the Weeds come up, you must be very careful to destroy them, as also to cut up or draw out the Plants where they are too thick, for they should not be left closer than eight or nine Inches Distance from each other. The second Year these Plants will flower, and produce ripe Seeds; but if you intend to continue your Plants for Use, you should cut off the Herb when it is in flower, and not permit it to stand until it seeds, which very often causes the Plants to decay. These Roots may also be parted into small Heads in Autumn for Increase; but the seedling Plants are much preferable to these Off-sets, so that the best Way is to propagate this Plant by Seeds.

GALEOPSIS; Stinking Dead-Nettle.

The Characters are;

*It hath a labiated Flower of one single Leaf, whose upper Lip is hollow like a Spoon, but the under one is divided into three Segments, the middle Part being large: The Cup of the Flower is Funnel-shap'd, and divided into five Parts, and each Flower is succeeded by four naked Seeds.*

There are several Species of this Plant which are preserv'd in curious Botanick Gardens, some of which are Natives of *England*; but as they are Plants of no great Beauty or Use, so I shall only mention some few Sorts which deserve a Place in curious Gardens, and pass over the other less valuable Sorts without naming them.

1. GALEOPSIS; *Hispanica, frutescens, teucrii folio*. *Tourn.* Spanish, shrubby, stinking dead Nettle, with a Tree Germander-leaf.

2. GALEOPSIS; *quod lamium, fruticans, teucrii folio lucido, calice & flore magno, candido, tantilla purpura variè notato*. *H. C.* Shrubby, stinking dead Nettle, with a shining Tree Germander-leaf, and a large white Flower variegated with small purple Spots.

These two Plants arise to the Height of three Feet or more, do grow shrubby, and may be train'd to regular Heads, whereby they will appear very agreeable, being always green, and continue flowering most Part of the Summer, and altho' the Flowers are not very beautiful, yet for their long Continuance in Flower, together with the Variety of their Leaves, they deserve a Place in every good Garden.

These Plants may be propagated by Seeds or Cuttings, as also from Suckers,

## G A

Suckers, which arise about their Stems : If you would propagate them by Seeds, you must prepare a Spot of good fresh light Earth, which should be well digg'd and loosen'd, and made very fine and level ; into which in *March* you should sow the Seeds, covering them with the same light Earth about half an Inch thick : When the Plants are come up, which will be towards the Middle or latter End of *April*, you should carefully weed them, and in very dry Weather you should give them a little Water : In *August* you should take up some of the Plants carefully, and plant them into Pots fill'd with fresh light Earth, that they may be shelter'd during the Winter Season under a common Hot-bed Frame, for these Plants are somewhat tender while young, but when they are grown woody, will resist the severest Cold in the open Air, provided they are planted in a dry Soil : In the Spring after the cold Weather is past, you may shake the Plants out of the Pots, preserving the Earth to their Roots, and plant them in the Places where they are to remain, and in the succeeding Summer they will produce Flowers and Seeds.

If you would propagate them by Cuttings, you should cut off such only as are young and thriving in *May*, and plant them in a shady Border, watering them as the Season requires; and in *August* you should take up such of them as have taken Root, planting them into Pots, and managing them as was directed for the Seedling Plants.

GALLIUM ; Ladies Bed-straw, or Cheese-Runnet.

The Characters are ;

It is a Plant of the stellate Kind ;

## G A

the Leaves which are neither rough nor knappy, are produc'd at the Joints of the Stalks, five or six in Number in a radiant Form : The Flower consists of one Leaf, which is expanded toward the upward Part, and divided into several Segments ; each of these Flowers are succeeded by two dry Seeds.

The Species are ;

1. GALLIUM ; *luteum*. C. B. Yellow Ladies Bed-straw.

2. GALLIUM ; *rubrum*. C. B. Red Ladies Bed-straw.

3. GALLIUM ; *nigro-purpureum, tenuifolium*. Col. Narrow-leav'd Mountain Ladies Bed-straw, with dark purple Flowers.

4. GALLIUM ; *saxatile, glaucifolio*. Bocc. Rar. Ladies Bed-straw of the Rocks, with a glaucous Leaf.

5. GALLIUM ; *saxatile, glabrofolio*. Bocc. Rar. Ladies Bed-straw of the Rocks, with a smooth Leaf.

The first of these Plants (which is the Sort commonly us'd in Medicine) is very common in moist Meadows, and in Pasture-grounds in most Parts of *England* ; The other Varieties are preserv'd in curious Botanick Gardens, but as they are Plants of very little Beauty, and are subject to spread very far, and over-run whatever Plants grow near them, so they are seldom cultivated in other Gardens.

These Sorts may, any of them, be propagated by parting their Roots, which spread and increase very fast, either in the Spring, or Autumn, and will grow in almost any Soil or Situation, especially the first Sort : The other Sorts do require a drier Soil, but will all grow in any Situation.

GARDENS are distinguish'd into Flower-Gardens, Fruit-Gardens, and Kitchen-



*Kitchen-Gardens*: The first for Pleasure and Ornament, and therefore to be plac'd in the most conspicuous Parts, *i. e.* next to, or just against the Back-front of the House: The two latter for Service, and therefore made in bye Places.

In the Choice of a Place to plant a *Garden* in, the Situation and Exposure of the Ground are the most essential Points to be regarded; because the Success of all depends upon a good Choice: for if a Failure be made in that Point, all the Care and Expence will in a manner be lost; but if a good Choice be made, the Trees, &c. that shall be planted on it will in a short Time thrive, and become both tall and beautiful.

In a *Garden*, the principal Things to be consider'd, are the *Situation, Form, Soil, and Aspect* or *Exposure*.

If the Ground be irregular, it may be made uniform so as to afford a Prospect no ways inferior to the most regular. The most irregular Figure may be reduc'd into Order by strait Lines. There is Beauty in a Triangle, as well as a Square; and the most irregular Spots of Ground may be brought to those two Figures by Borders and Walks.

An Irregularity is easily hid in a large *Garden*, by long Walks and tall Hedges interrupting a distant View: And the little Corners and triangular Spaces may be agreeably fill'd up with Borders of Flowers, Dwarf-Trees, Flowering Shrubs, or Ever-greens. Nor should we be solicitous to throw the whole *Garden* into one single View; since Irregularities and Unevennesses oftentimes afford many uncommon pretty Devices, &c.

1. *Situation*: This ought to be

such a one as is wholesome, in a Place that is neither too high, nor too low; for if a *Garden* be too high, it will be expos'd to the Winds, which are very prejudicial to Trees: if it be too low, the Dampness of low and marshy Places will be very injurious to Health: besides, the Vermin and venomous Creatures, that breed in Ponds and marshy Places, add much to the Insalubrity of them: Therefore, Situations in mountainous Places, or in the Bottoms of Vallies, should not be chosen; but those which are on the Side of an Hill are the more happy.

A Situation on a rising Ground is most esteem'd; and indeed, if it be not too steep, has the most Advantages, if the Slope be easy and imperceptible, and a good deal of Level may be had.

If the Declivity be easy and insensible, and abounds in Springs of Water, the Situation is very happy, and the most agreeable that can be; for being shelter'd from the Fury of the Winds, and the violent Heat of the Sun, there a temperate Air will be enjoy'd; and the Water that descends from the Top of the Hills, either from Springs or Rain, will supply Fountains, Canals, and Cascades, for Ornaments of Gardens; and besides this, when it has perform'd its Office, will water the adjacent Vallies, and render them fertile and wholesome, if it be not suffer'd to stagnate there.

Indeed, if the Declivity of the Hill be too steep, and the Water in too great a Quantity, then a *Garden* on the Side of it may often suffer, by having the Trees torn up by the Torrents and Floods, and the Earth above tumbled down on that below, the Walls thrown down, and the Walks spoil'd.

If the Situation be on a Plain or Flat, it has several Advantages; Floods and Rains make no Spoil: The Air is even more pure than upon the Side of an Hill: There is a continu'd Prospect of Champains, intersected by Rivers, Ponds, and Brooks, fine Meadows, and Hills cover'd with Buildings or Woods. The level Surface is less tiresome to walk on, and less chargeable than that on the Side of an Hill, Terrass-Walks and Steps not being necessary.

2dly, The second thing to be consider'd is chusing a Plat for a *Garden*, in a good Earth or Soil.

It is scarce possible to make a fine *Garden* in a bad Soil: And tho' there are Ways to meliorate Ground, they are very expensive: And sometimes, when the Expence has been bestow'd, of laying good Earth three Feet deep over the whole Surface, when the Roots of the Tree have reach'd the Natural Bottom, a whole *Garden* has been ruin'd.

A good Soil is that which of its own Nature is rich and fruitful: And if the Exposure be southerly, and healthful, and possess'd of all the Advantages before mention'd; yet still, if it has not a good Body of Earth, and that which is fertile in it self, it is to be fear'd, that whatever is planted in it, will, in a while, droop and die away.

To judge of the Quality of the Soil, observe whether there be any Heath, Thistles, or other Weeds growing spontaneously therein, which are certain Signs that the Ground is poor. Likewise, if there be large Trees growing thereabouts, observe whether they grow crooked, ill-shap'd and grubby, of a faded Green, and full of Moss, or infested with Vermin; if so, the

Place is to be rejected: but, on the contrary, if it be cover'd with good Grass fit for Pasture, then you may be encourag'd to try the Depth of the Soil.

To know this, dig Holes in several Places six Feet wide, and four Feet deep: if you find three Feet of good Earth, it will do well, but less than two will not be sufficient.

The Quality of good Ground, is neither to be stony, nor too hard to work; neither too dry nor too moist; nor too sandy and light; nor too strong, as rank and clayey, which is the worst of all for Gardens.

3dly, The third Requisite is Water. If this be wanting to a Garden, it is one of the greatest Inconveniencies that can attend it, and will bring a certain Mortality upon whatever is planted. By watering, the great Droughts in Summer are allay'd, which would otherwise burn up all the Plants; besides the Usefulness of it in fine Gardens, for making *fets d'Eau*, *Canals*, *Cascades*, &c. which are the greatest Ornaments of a Garden.

4thly, The fourth thing requir'd in a good Situation, is the View and Prospect of a fine Country; and tho' this is not so absolutely necessary as the preceding, yet it is one of the most agreeable.

If a Garden was planted in a low Place that was bury'd, and that had no kind of Prospect, it would be both disagreeable and unwholsome; the Trees themselves being too much shaded and obscur'd, would not look near so beautiful: Whereas a fine View, and the Prospect of a noble Country, are as agreeable Entertainments as a Garden can afford.

In short, a Garden necessarily requires the Sun, a good Soil, the Care

Care of the Gardener, and Water; and the last, above all, is indispensably necessary: Without any of these, there's no good to be expected; and it would be egregious Folly to plant a Garden where any of these are wanting.

*Of the Designing or Manner of Laying-out a Fine or Pleasure-Garden.*

The Area of a grand Garden may take up thirty or forty Acres, or more.

And as for the Disposition and Distribution of this Garden, the following Directions may be observ'd.

1st, There ought always to be a Descent from the House to the Garden not fewer than three Steps. This Elevation of the Building will make it more dry and wholesome: Also, from the Head of these Steps there will be a Prospect or View of a great Part of the Garden.

In a fine Garden, the first Thing that should present it self to the Sight, should be an open level Piece of Grass, full as broad as the Length of the Front of the Building, which may be surrounded by a Gravel-Walk, for the Conveniency of walking in wet Weather.

These Pieces of Grass should not be divided in the Middle with a Gravel-Walk (as is too frequently seen) for it is much more agreeable to view an entire Carpet of Grass from the House, than to have it intersected by Walks. On the opposite Side of the Gravel-Walks may be Borders four Feet wide for Flowers, which will sufficiently answer the Purpose of *Parterres*; and if from the Back of these Borders there are Ever-greens planted theatrically, it will bound the Prospect very agreeably; and where there

are any Objects worthy the Sight, or distant Prospects to be obtain'd, there should be Vista's left.

Groves make the Chief of a Garden, being great Ornaments to all the rest of its Parts; so that there cannot be too many of them planted, if the Places design'd for them don't take up those of the Kitchen and Fruit-Garden, which are very necessary for a House, and should always be plac'd near the Stabling.

Groves being plac'd near the House, are so much the more agreeable, in that you have no Need to go far to find Shade; and besides this, they communicate a Coolness to the Apartments, which is very agreeable in hot Weather.

It would also be very proper to plant some Groves of *Ever-greens*, that may afford the Pleasure of seeing a Wood always verdant in Winter, when the other Trees and Plants are depriv'd of their Ornaments; and also to plant some Squares of them to be a Diversity from the other Woods.

The principal Walk must be in the Front of the House, and should extend from the Grass-plat next the House, to the End of the Garden: If they be very wide, the Sides should be turfed next the Borders, and at the Ends they may be terminated by a *Faussee*, to continue the View.

If any Part of the Ground be naturally low and marshy, and you would not be at the Expence of filling it, you may in such Places make Bowling-greens, Water-works and Groves, raising the Allies only to the Levels of those that are near them, and that lead thither.

When the great Lines and chief Walks are laid out, and the *Parterres* and Works about the Sides and Head of them are dispos'd so

as is most suitable to the Ground, then the rest of the Garden is to be furnish'd with many different Designs, as Tall Groves, Close Walks, Quincunces, Galleries and Halls of Verdure, Green Arbours, Labyrinths, Bowling-greens and Amphitheatres, adorn'd with Fountains, Canals, Figures, &c. Which Sort of Works distinguish a Garden well, and do also greatly contribute to the rendering of it magnificent.

It ought always to be observ'd in placing and distributing the several Parts of a Garden, to oppose them the one to the other: As for Example, a Wood to a Parterre or Bowling-green, and not to place all the Wood on one Side, and all the Parterres on the other: Nor is a Bowling-green to be set against a Basin, for this would be one Gap against another, which is always to be avoided, by setting the full against the void, and the rais'd Works against the flat, in order to cause a Variety.

This Diversity should always be kept, not only in the general Design of a Garden, but also in each distinct Piece; as if two Groves are upon the Side of a Parterre, although their outward Forms and Dimensions should be equal; yet for that Reason the same Design must not be repeated in both, but they should be made so as to be different within, because it would be very disagreeable to find the same Design on both Sides: For that when one has been seen, there is nothing to invite the Curiosity to see the other; so that such a Garden so repeated would be no more than half a Design, the greatest Beauty of Gardens consisting in Variety.

Also the several Parts of each Piece ought to be diversify'd: If

a Basin be round, the Walk ought to be octangular: And the like is to be observ'd as to Grass-Plats and Bowling-greens, which are in the Midst of Groves.

The same Works ought never to be repeated on both Sides, except in open Places, where the Eye, by comparing them together, may judge of their Conformity, as in Parterres, Bowling-greens, Groves, open'd in Compartments and Quincunces: But in such Groves as are form'd of Pallisades and tall Trees, the Designs and out Parts ought always to be varied; but tho' they are to be different, yet however they ought always to have such Relation and Agreement one to the other in their Lines and Ranges, as to make the Openings, Glades and Vista's regular and agreeable.

In the Business of Designs, a mean and pitiful Manner ought to be studiously avoided, and the Aim should always be at that which is great and noble; not to make Cabinets and Mazes small, and Basins like Bowl-Dishes, and Allies so narrow, that two Persons can scarce walk in them. It is much better to have but two or three Things pretty large, than four times the Number of small ones, which are but Trifles.

Before the Design of a Garden be put in Execution, it ought to be consider'd what it will be in twenty or thirty Years time, when the Pallisades are grown up, and the Trees are spread; for it often happens, that a Design, which looks handsome when it is first planted, and in good Proportion, becomes so small and ridiculous in Process of Time, that there is a Necessity either to alter it, or destroy it entirely, and so plant it anew.

The Corners and Angles of every Part of a Garden ought to be slop'd, or cut hollow: This will make the Cross-paths more agreeable to the Eye, and more convenient for walking, than to find Points and Corners advancing, which look very ill upon the Ground, and are very inconvenient.

The several Sorts of Gardens may be distinguish'd under three Heads:

1. Gardens on a perfect Level.
2. Gardens on an easy Ascent. And
3. Gardens whose Ground and Level are separated and interrupted by Falls and Terrasses, Banks, Slopes, Flights of Steps, &c.

Gardens on a perfect Level are the best, as well for the Convenience of walking, as that their long Allies and Glades have no Risings nor Fallings, and are not so chargeable to maintain as the other.

Gardens on a gentle Ascent are not quite so agreeable and convenient, altho' the Shelving be so little as not to be perceiv'd; for it fatigues and tires a Person to walk either up Hill or down Hill, without finding scarcely a resting Place: These sloping Grounds are also liable to be spoil'd by Torrents.

There is a peculiar Excellency in Gardens that have Terrasses; because from the Height of one Terrass, all the lower Parts of the Garden may be discover'd; and from others, the Compartiments are seen, which form so many several Gardens one under another, and present us with very agreeable Views, and different Scenes of Things, if the Terrasses are not too frequent, and there be good Lengths of Level between them.

These Gardens also lie advantageously for Water, which may be repeated from one another; but they are a great Charge to keep

them up, as well as that they cost a great deal the making.

The general Distribution of a Garden, and of its Parts, ought to be accommodated to these different Situations; for an excellent Design which would be proper for a Garden that is flat and upon a Level, would not serve for a Ground cut asunder by divers Terrasses, which break off both the Level and the Continuity.

There are, besides these, many other Rules relating to the Proportions, Conformity and Place of the different Parts and Ornaments of Gardens; of which more may be seen under other Articles.

GENISTA JUNCEA; Spanish Broom.

The Characters are;

*It hath very pliant Branches: The Leaves are plac'd alternately, or in Whorles: The Flowers are of the Pea-bloom kind, which are succeeded by smooth Pods, containing several Kidney-shap'd Seeds in each.*

The Species are;

1. GENISTA JUNCEA; *f. B.* The yellow Spanish Broom.
2. GENISTA; *hortensis, major, Lusitanica. Vir. Lusit.* The greater Portugal Broom.

The first of these Plants is very common in the Nurseries near London, and is generally sold by the Gardeners amongst other flowering Shrubs for Wilderness-Quarters; where, by its long Continuance in Flower, together with its Sweetness, it affords an equal Pleasure with most other flowering Shrubs.

This Plant is easily propagated by sowing the Seeds (which are annually produc'd in great Quantities upon the old Plants) in the Spring of the Year, upon a warm dry Soil, and in an open Exposure, observing not to cover the Seeds

too thick with Earth, (a quarter of an Inch will be sufficient) nor should you water the Ground until the Plants come up, which will be in about six Weeks after sowing, for too much Moisture rots the Seeds. During the Summer-time you must diligently clear the young Plants from Weeds, which, if suffer'd to remain, would in a short Time over-run and destroy the Plants. In this Place the Plants should remain until the *March* following; at which Time you should prepare a fresh Spot of Ground, in proportion to the Quantity of Plants you have to transplant: The Ground being well dug and level'd, you should mark out the Rows strait by a Line at three Feet Distance from each other: Then take up your Plants, being careful not to break their Roots, which would be very injurious to them, and set them a Foot asunder in the Rows, closing the Earth to them with your Feet; and if the Weather should be very dry, you may give them a little Water, laying on a little Mulch first upon the Surface of the Ground near their Stems: This watering may be repeated once a Week, if the Season should prove dry, until they have taken fresh Root, which will be by the Beginning of *May*, after which Time they will be in no Danger of miscarrying: You must observe also to keep the Ground clear from Weeds; and in *February* or *March*, you should dig up the Ground between the Rows to loosen the Earth, that the Roots of the Plants may the easier insinuate themselves and spread on each Side, otherwise they will be subject to have downright Tap-roots, which will render them very difficult to transplant. In this Nursery the Plants may re-

main two Years, by which Time they will be full large enough to be remov'd to the Places where they are design'd to remain for Flowering: Nor should they be suffer'd to continue above three Years at most in the Nursery, for after that Time it will be very dangerous to remove them, they being some of the worst to transplant, when grown large, that I know amongst all the Variety of Flowering Trees. The best Time for transplanting them is, as I said before, towards the latter End of *March*, observing to do it in a perfect mild Season, and when the Wind is South, or Westerly; for if the Wind blows from the North or East at this Season, it either brings frosty Nights or cold drying Winds, both of which are equally hurtful to these Plants when first remov'd. You should observe to lay some Mulch round their Stems, to prevent the Sun and Wind from penetrating the Earth and drying their Fibres; as also to water them in dry Weather, as was before directed, until they have taken Root, after which Time they will be in no Danger.

This, although a Native of *Spain*, and the warm Parts of *Europe*, yet is become so hardy as to resist the Cold of our Climate in the open Air, and will grow to the Height of twelve or fourteen Feet, and produce annually large Quantities of sweet yellow Flowers, and perfect its Seeds; which if suffer'd to fall to the Ground, will remain, and come up the succeeding Spring, whereby you may be easily furnish'd with young Plants without much Trouble, provided the Ground be not dug, and the Seeds bury'd too deep to grow.

The *Portugal Sort* is at present very rare in *England*, and only to be found in some curious Collections of Plants: This is not so hardy as the former, and requires to be shelter'd during the Winter, tho' I am apt to believe it will stand abroad when grown woody, if planted in a light dry Soil and a warm Situation. This Plant flowers with us, but hath not as yet produc'd any Fruit in *England* that I have heard.

GENISTA SPINOSA; the Furz, Whins, or Gorse.

The Characters are;

The whole Plant is very thorny: The Flowers (which are of the Pea-bloom kind) are dispos'd in short thick Spikes, which are succeeded by short compress'd Pods, in each of which is contain'd three or four Kidney-shap'd Seeds.

The Species are;

1. GENISTA SPINOSA; *vulgaris*. Ger. *Emac*. The Common Furz, Whins, or Gorse.

2. GENISTA SPINOSA; *minor*. Park. *Theat*. The lesser Furz.

3. GENISTA; *minor*, *Asphalathoides*, vel *Genista Spinosa*, *Anglica*. C. B. P. Needle-Furz or Petty-Whin.

These three Plants do all of them grow wild on the Heaths and Upland Commons in divers Parts of *England*, and are seldom planted in Gardens; but if they are rightly dispos'd in Clumps or Wilderness Quarters, and train'd up to regular Heads, they will make a very agreeable Diversity amongst other flowering Shrubs; and for their long Continuance in Flower, do merit a Place in every such Plantation,

The first of these Plants is sometimes us'd to make Hedges, for which Purpose it will do very well for a few Years, provided it be

kept close at first, and the Ground underneath always kept clear from Weeds: And it should always be observ'd, never to cut these Hedges in very dry Weather, nor too early in the Spring, or too late in Autumn; for if it should prove cold frosty Weather, or drying easterly Winds happen soon after it be cut, they will render the Hedge very unightly for a long Time, and often destroy many of the Plants, whereby the Form and Beauty of the Hedge will be entirely lost; and if you cut it too close into the old Wood, it rarely ever breaks out again; so that if the Hedge should have grown beyond the Bounds you intended it, the better Way will be, to cut it quite down to the Ground, and let it rise again from the Roots. See more of this under the Article of *Hedges*.

The second Sort never rises so high as the first, and is therefore proper to intermix with Shrubs of shorter Growth; but will do for all the Purposes of the first, and is equally as common in most Parts of *England*.

The third Sort seldom rises above three Feet high; nor will it support it self while young, and therefore should be fasten'd to a Stake, training the Stem upright, and formed into a regular Head; and after two or three Years being thus manag'd, it will support itself, and make a very handsome Appearance. This Plant produces its Flowers in *April*, and continues them through *May*, during which Season it affords a very agreeable Prospect. The Seeds ripen in *August*; and if suffer'd to scatter, they will come up the succeeding Spring.

These Plants may be all propagated by sowing their Seeds in *March*; which, if intended for a

Hedge, should be sown in the Place where they are to remain; but if for Standards to plant in Wildernesses, they should be sown thin upon a Bed of light Earth, in an open Situation; and when the Plants come up, you should carefully clear them from Weeds; and where they are too close to each other, they should be pull'd out, leaving 'em at least six Inches distant from each other: In these Beds they should remain until the Spring following, at which Time they should be remov'd either into the Places where they are to continue, or else into a Nursery, as was directed for the *Spanish Broom*, observing the same Method and Season for this Work as was there directed, to which this Plant exactly agrees in Culture, and is equally as difficult to transplant when grown old; therefore, to avoid Repetition, I shall refer the Reader to that Article for farther Instructions.

GENISTELLA TINCTORIA; Greenwood, or Diers-weed, or Wood-waxen.

The *Species* are;

1. GENISTELLA TINCTORIA; *Germanica*. C. B. P. Our Common Diers-weed.

2. GENISTELLA TINCTORIA; *Austriaca, maxima*. Boerh. Greatest Diers-weed of *Austria*.

The first of these Plants grows wild in many Parts of *England*, but the second Sort was sent from *Austria* to the Learned Doctor *Boerhaave* at *Leyden*, who has since dispersed it to several other Parts of *Europe*.

These Plants may be propagated by Seeds, which should be sown in the Spring, upon an open Bed of fresh Earth, observing to cover the Seeds about half an Inch thick with fine light Mould; in a Month

or six Weeks after sowing, the Plants will begin to appear; when you must carefully weed them, and if the Season proves dry, they should be water'd two or three Times a Week, which will greatly promote their Growth: You must also keep them constantly clear from Weeds, which if permitted to grow, would soon over-top the Plants and spoil them.

In this Bed the Plants may remain till the *March* following, when you should carefully take 'em up, and having prepared a Spot of fresh Ground, you should transplant them therein, at about a Foot asunder every way in Rows, observing, if possible, to do this in moist Weather, for if the Season proves dry, they must be carefully mulch'd and water'd, otherwise many of the Plants will miscarry. In this Nursery they may remain another Year, (observing constantly to keep 'em clean from Weeds) by which Time they will be fit to transplant to the Places where they are to remain, which must also be done in the Spring of the Year, being careful to take the Plants up with as much Earth as possible to their Roots, nor should they be kept long out of the Ground, for if the Fibres of their Roots are dried, the Plants are very subject to miscarry.

These Plants, tho' little regarded, may be rendred very useful in Gardens, particularly in planting Clumps of Flowering Trees; for example, If a Person was desirous to have a Clump of Spanish Broom, these two Sorts of Plants might be planted round the Outside: The *Austrian* Sort, which makes the largest Shrub, should be planted next the Spanish Broom, and the common Sort on the Outside, where-  
by



by the Clump will be continued from the Surface to the Height of twelve or fourteen Feet, and these Shrubs producing yellow Flowers, very like those of the Broom, and in as great plenty, and also flowering at the same Time, it will make a most beautiful Appearance at a small Distance.

These Plants produce plenty of Seeds annually, which are ripe in *August*, when they may be gathered and spread upon a Cloth in the Sun, which will cause their Pods to open and emit the Seeds.

GENTIANA; *Gentian*, or *Fell-wort*.

The Characters are;

The Leaves grow by Pairs opposite to each other: The Cup of the Flower consists of one membranous Leaf: The Flower consists of one Leaf, and is shap'd like a Cup, being cut into four, five or more Segments; it is succeeded by a membranous Oval-shap'd Fruit, ending in a sharp Point, opening lengthwise into two Parts, and containing many flat, roundish Seeds, which are border'd with a leafy Rim.

The Species are;

1. GENTIANA; *major, lutea*. C. B. P. The Great *Gentian*, with yellow Flowers.

2. GENTIANA; *asclepiadis, folio*. C. B. P. *Gentian* with a Swallow-wort Leaf.

3. GENTIANA; *Alpina, flore magno, f.* B. Large flower'd *Gentian* of the Alps, commonly call'd *Gentianella*.

4. GENTIANA; *cruciata*. C. B. P. *Cross-wort Gentian*.

5. GENTIANA; *angustifolia, autumnalis, major*. C. B. P. Great Autumnal *Gentian*, or *Calathian Violet*.

There are several other Sorts of *Gentian*, some of which are Na-

tives of *England*, and others are Inhabitants of the Alps and other cold mountainous Parts of *Europe*: But as they are Plants which are rarely tam'd, so as to thrive well in Gardens, especially near *London*, I shall pass them over in this Place, and proceed to the Culture of those here inserted, all of which are worthy of a Place in every good Garden.

The first Sort, which is the true *Gentian*, whose Root is us'd in Medicine, is an Inhabitant of the Mountains near *Geneva*, and the Pastures of the Alps and *Pyrenees*: This Plant is propagated by Seeds, which should be sown soon after they are ripe; for if it be kept long out of the Ground, it rarely grows. The best Method is, to sow the Seeds in a large Pot fill'd with light undung'd Earth, covering them about a quarter of an Inch thick with the same light Earth; then place the Pots in the Shade, where they may remain until *November*, at which Time you may remove them into a Place where they may have the Morning Sun; in this Situation they may remain till *March* following, by which Time the young Plants will appear above-ground: You must then remove the Pots again into a shady Place, where they should remain all the Summer-season, observing to clear them from Weeds, as also to water them in dry Weather, which will greatly promote their Growth. The Spring following they will be fit to transplant; at which Time you should prepare a shady moist Border, that should be well dug and loosen'd; then shake the Earth out of the Pots, by which means you will the more readily take them out without injuring their Roots. The Distance they

they should be allow'd, if design'd to remain for good, must be fourteen Inches square; but if they are intended to be remov'd again, four or six Inches will be sufficient. In planting them, you must observe to make deep Holes, so that the Roots, which generally grow long, may be plac'd full as deep as they are in length, that no Part may appear above-ground; nor should they be bent at the Bottom, which would check their downright Growth, and greatly injure them. The best Season to transplant them is in the Beginning of *March*, just as they begin to shoot. In about five or six Years Time, if the Plants thrive well, and are not disturb'd, they will begin to flower, and will produce good Seeds, so that it will not be difficult to have them in great Plenty. But as it is hardly worth cultivating for Medicinal Use, it being generally imported hither at a very moderate Price; so the Beauty thereof is not such as would recommend the having it in great Quantities; tho' a few of 'em will do very well to make a Variety.

The second and fourth Sorts are at present very uncommon in *England*, and only to be found in some curious Gardens; these are both of them very pretty Ornaments to a Garden: They are propagated by parting their Roots either in Spring or Autumn, and require a pretty strong Soil, and a shady Situation.

The third Sort was formerly more common in the Gardens near *London* than it is at present, but in some old Country Gardens it is still frequently to be met with. This is a very beautiful Plant and well worth propagating; it is increas'd by parting the Roots early in the Spring; for if it be left undone

'till *March*, the Flower-buds will begin to appear; after which Time, if you remove them, it will greatly weaken their flowering. This Plant requires a strong, moist, cool Soil, and should be planted where they may have only the Morning Sun; for if they are too much expos'd to Heat, they are subject to decay: Nor do they care to be often transplanted, which will also make them poor and weak: And I am apt to believe that this has occasion'd their present Scarcity near *London*, where People are too apt to part and divide Plants often, in order to increase 'em and thereby frequently destroy their whole Stock.

The fifth Sort grows wild in divers Parts of the *North*, as in *Yorkshire*, *Cumberland*, and *Northumberland*, and is equal to any of the above-mention'd Kinds for Beauty, but is rarely to be found near *London*. The Roots of this Plant may be brought from the Places of its natural Growth, and planted in a cool, moist, undung'd Soil, where it will grow, provided it be not under the Drip of Trees, which this Plant by no means cares for; nor should it be often remov'd, but suffer'd to remain (as was said above) by which means it will thrive and produce beautiful Flowers.

GENTIANELLA; *vide* Gentiana.

GERANIUM; Crane's-bill.

The Characters are;

The Leaves are for the most part conjugate: The Cup of the Flower consists of one Leaf, which is divided into five Parts, and expanded in Form of a Star: The Flowers of the European Kinds consist of five Leaves, and those of the African Sorts (for the most part) of four, somewhat resembling

resembling a crested or lipp'd Flower, with ten Stamina surrounding the Ovary: The Fruit is of a pentagonal Figure, with a Beak, containing at the Base five Seed-vessels, in each of which is contain'd one tail'd Seed, which, when ripe, is cast forth by the twisting of the Beak.

The Species are;

1. GERANIUM; *batrachioides*, *Grazia Dei Germanorum*. C. B. P. Crane's-bill, with a Crow-foot Leaf, and large blue Flowers.
2. GERANIUM; *batrachioides*, *Grazia Dei Germanorum*, *flore albo*. Boerb. Ind. Crow-foot-leav'd Crane's-bill, with a white Flower.
3. GERANIUM; *batrachioides*, *Grazia Dei Germanorum*, *flore variegato*. C. B. P. Crow-foot-leav'd Crane's-bill, with a strip'd Flower.
4. GERANIUM; *batrachioides*, *longinus radicum*, *odoratum*. J. B. Long-rooted sweet-smelling Crane's-bill, with a Crow-foot Leaf.
5. GERANIUM; *sanguinem*, *maximo flore*. H. Ox. Bloody Crane's-bill, with a large Flower.
6. GERANIUM; *sanguinem*, *cauliculis erectis*, *folio obscure virenti*, *floribus minoribus*. H. L. Bloody Crane's-bill, with upright Stalks, dark-green Leaves, and small Flowers.
7. GERANIUM; *hamatodes*, *foliis majoribus*, *pallidioribus*, *altius incis.* Raii. Syn. Bloody Crane's-bill, with larger, paler, and more deeply divided Leaves.
8. GERANIUM; *hamatodes*, *Lancastrense*, *flore eleganter striato*. Raii Hist. Bloody Crane's-bill, with a variegated Flower.
9. GERANIUM; *5. nodosum* Platreau. Clus. Hist. Knotty Crane's-bill.
10. GERANIUM; *phaum sive fuscum*, *petalis reflexis*, *folio non maculoso*. H. L. Brown Crane's-bill,

with reflex'd Petals, and Leaves not spotted.

21. GERANIUM; *phaum sive fuscum*, *petalis rectis seu planis*, *folio maculato*. H. L. Brown Crane's-bill, with plain Petals, and spotted Leaves.
12. GERANIUM; *Romanum*, *versicolor sive striatum*. Park. Par. Roman Crane's-bill, with strip'd Flowers.
13. GERANIUM; *Alpinum*, *Coriandri folio*, *longinus radicum*, *flore purpureo*, *maxiore*. Michel. Long-rooted Crane's-bill of the Alps, with a Coriander Leaf, and a large purple Flower.
14. GERANIUM; *batrachioides*, *montanum*, *nostras*. Ger. Mountain Crane's bill, with a Crow-foot Leaf.
15. GERANIUM; *Oriente*, *columbinum*, *flore maximo*, *Asphodeli radice*. T. Cor. Oriental Dove's-foot Crane's-bill, with an Asphodel Root, and a large Flower.
16. GERANIUM; *cutae folio*, *Moschatum*. C. B. P. Musked Crane's-bill or Muscovy.
17. GERANIUM; *latifolium*, *annuum*, *caeruleo flore*, *acu longissima*. H. Ox. Broad-leav'd annual Crane's-bill, with a blue Flower, and a very long Beak.
18. GERANIUM; *myrrhinum*, *tennifolium*, *flore amplo*, *purpureo*. Barr. Obs. Fine cut-leav'd Crane's-bill, with an ample purple Flower.
19. GERANIUM; *Africanum*, *arborescens*, *ibisci folio rotundo*, *carlinae odore*. H. L. African Tree Crane's-bill, with a round Marsh-mallow Leaf, and a Smell of the *Carlinae Thistle*.
20. GERANIUM; *Africanum*, *arborescens*, *ibisci folio anguloso*, *floribus amplis*, *purpureis*. Phil. Transf. 388. African Tree Crane's-bill, with an angular Marsh-mallow Leaf and large purple Flowers.

21. GERANIUM; *Africanum, arborescens, alchimilla hirsuto folio, floribus rubicundis. Com. Pral.* African Tree Crane's-bill, with a hairy Ladies-Mantle Leaf and red Flowers.

22. GERANIUM; *Africanum, arborescens, malva folio, plano, lucido, flore elegantissime kermesino. Di van Lemr. Boerb. Ind.* African Tree Crane's-bill, with a plain, shining, mallow Leaf, and an elegant scarlet Flower.

23. GERANIUM; *Africanum, frutescens, malva folio, odorato, laciniato. H. L.* African shrubby Crane's-bill, with a jagged, sweet smelling Mallow Leaf.

24. GERANIUM; *Africanum, frutescens, malva folio, laciniato, Odorato instar melissa, flore purpurascente, Boerb. Ind.* African shrubby Crane's-bill, with a jagged Mallow Leaf smelling like Balm, and a purplish colour'd Flower.

25. GERANIUM; *Africanum, arborescens, malva folio, mucronato, petalis florum inferioribus vix conspicuis. Phil. Transf.* African Tree Crane's-bill, with a pointed Mallow Leaf, and the under Petals of the Flower scarce discernable.

26. GERANIUM; *Africanum, frutescens, folio crasso & glauco, Acetose sapore. Com. Pral.* African shrubby Crane's-bill, with a thick glaucous Leaf, and an acid Taste like Sorrel.

27. GERANIUM; *Africanum, frutescens, chelidonii folio, petalis florum angustis, albidis, carnosio caudice. Phil. Transf.* *Geranium Africanum, folio alcea, flore albo. Boerb. Ind. alt.* African shrubby Crane's-bill, with a Celandine Leaf, the Petals of the Flower white and narrow, and a fleshy Stalk.

28. GERANIUM; *Africanum, noctu olens, tuberosum & nodosum, aquil-*

*legia foliis. H. L.* African Crane's-bill, smelling sweet in the Night, with knotty tuberose Stalks and Leaves like Columbine.

29. GERANIUM; *Africanum, folio alcea, flore coccineo, fulgidissimo. Boerb. Ind. alt. Geranium, Surianense, chelidonii folio, flore coccineo, petalis inaequalibus. Hort. Piss.* African Crane's-bill, with a vervain Mallow Leaf, and a deep Scarlet Flower.

30. GERANIUM; *Africanum, arborescens, alchimilla folio hirsuto, elegantissime variegato, floribus rubicundis. Boerb. Ind. alt.* African Tree Crane's-bill, with a hairy Ladies-mantle Leaf elegantly strip'd, and red Flowers, commonly call'd the Strip'd Geranium.

31. GERANIUM; *Africanum, foliis inferioribus asari, superioribus staphidisagria, maculatis, splendentibus, & acetosa sapore. Com. Pral.* African Crane's-bill, with the under Leaves like Asarabacca, and the upper Leaves like Stavacre, shining, spotted, and tasting like Sorrel.

32. GERANIUM; *Africanum, alchimilla hirsuto folio, floribus albidis. H. L.* African Crane's-bill, with a hairy Ladies-mantle Leaf and whitish Flowers.

33. GERANIUM; *Africanum, folio malva, crasso, molli, odoratissimo, flosculo pentapetalo, albo. Boerb. Ind. alt.* African Crane's-bill, with a thick, soft, sweet-smelling Mallow Leaf, and a small white Flower consisting of five Leaves.

34. GERANIUM; *Americanum, noctu olens, radice tuberosa, triste. Corn. H Ox.* American tuberose-rooted Crane's-bill, smelling sweet in the Night.

35. GERANIUM; *Africanum, tuberosum, anemones folio, incarnato flore. Par. Bat.* Tuberose-rooted African Crane's-bill, with an Anemomy

mony Leaf, and a pale flesh-colour'd Flower.

36. GERANIUM; *Æthiopicum, noctu olens, radice tuberosa, foliis myrrhidis, angustioribus.* Breyn. Cent. Night sweet-smelling Ethiopian Crane's-bill, with a tuberosé Root and narrow Cicely Leaves.

37. GERANIUM; *Africanum, noctu olens, folio vitis hirsuto, tuberosum.* H. A. Night sweet-smelling African Crane's-bill, with a hairy Vine Leaf, and a tuberosé Root.

38. GERANIUM; *Africanum, folio coriandri, floribus incarnatis, minus.* H. L. African Crane's-bill, with a Coriander Leaf, and a lesser flesh-colour'd Flower.

39. GERANIUM; *Africanum, uvæ crispæ folio, floribus exiguis, rubellis.* H. L. African Crane's-bill, with a Gooseberry Leaf, and small reddish Flowers.

40. GERANIUM; *Africanum, betonica folio, procumbens, floribus parvis, eleganter variegatis.* Pluk. Alm. African trailing Crane's-bill, with a Betony Leaf, and small, beautiful strip'd Flowers.

The fifteen first-mentioned Sorts are abiding Plants; the Leaves of some of them do decay in Winter, but their Roots remaining, shoot again early in the Spring: Some of these Sorts are common in several Parts of England, yet they deserve a Place in every good Garden; where, if they are rightly dispos'd, they will have a good Effect, by adding to the Variety; and as they are very hardy Plants, and require but little Care in the Culture, growing in almost any Soil or Situation, so they are very proper for large Gardens to be planted in wide Borders, or by the Sides of Wildernesses and other shady Walks, where few other Plants will thrive, and

these continuing in Flower most part of the Summer, do greatly add to the Beauty of such Places.

These are all increased by parting their Roots, the best Season for which is in *October*, that they may take Root before the hard Frosts begin; or else in *February*, that they may get Strength before the great Heat and Drought comes on, which would occasion their Flowers to be small, and but few in Number. These Roots may remain two or three Years unremoved, according as you find them increase and spread; for some Sorts will not spread so far in three Years, as others will do in one; so that if the spreading Kinds are suffer'd to grow undisturb'd for two or three Years, they will spread the whole Width of the Border where they are planted, so that if they are not transplanted often, their Roots should be cut round every Year to keep them within Compass.

These Sorts may also be propagated by Seeds, which they afford every Year in great Plenty; but as they are increased very fast in the former Way, so it is hardly worth while to sow their Seeds.

The 16th, 17th and 18th Sorts are annual Plants, and should either be sown every Year, or their Seeds permitted to scatter themselves, the latter of which is the surest Method, for the Plants will come up in Autumn soon after the Seeds fall, and will abide the Winter, and flower early the succeeding Spring, whereby you will be always sure to have their Seeds perfected, which does not constantly happen to those sown in the Spring. The 16th Sort is preserved in many Gardens, for the sweet Scent its Leaves afford when rubb'd between the Fingers, which occasion'd its  
being

being called *Musk*, or *Muscovy*. There is but little Beauty in the Flowers of this Plant; however it may be admitted to have a Place in some odd Corner, or shady Border in a Garden for Variety, it being very hardy, and will thrive in almost any Soil or Situation.

The 17th and 18th Sorts do produce very handsome Flowers, and as they are Plants which take up but little Room, and require very little Trouble to cultivate them, so it is worth while to allow them a Place for Variety, in some Corner of the Garden, these being both as hardy as the former Sort.

The 19th, 20th, 21st, 22d, 23d, 24th, 26th, 27th, 28th, 29th, 30th and 31st Sorts, are Natives of a warmer Climate than ours, and require to be shelter'd in Winter: These being all shrubby Plants, may be propagated by planting their Cuttings, any Time in Summer, in a Bed of light, fresh Earth, observing to water and shade them until they have taken Root, which will be in about a Months Time after planting, being careful to take off the Mats or other Covering every Night, that the Cuttings may have the Benefit of the Dews; as also whenever there may happen to be any Showers in the Day-time, never to cover them but when the Sun shines very hot upon the Bed.

In this Place they may remain two Months from their first planting, by which Time they will be rooted sufficient for planting; you must therefore prepare some Pots, which should be seven Inches over the Top, these should be filled with fresh, light Earth, and having taken the Plants up, with as much Earth as possible to their Roots, you should plant them into these Pots, each Plant into a separate one, re-

moving them into a shady Situation until they have taken fresh Root, observing to water them frequently as they may have occasion; and when they are rooted, you should remove them to a more expos'd Situation to harden them, in which Place they should remain until the Middle of *October*, when the Mornings begin to be frosty, at which Time they ought to be removed into the Green-house, where they should be placed as near the Windows as possible, observing to let the Windows be open, that they may have as much free Air as possible, until the Weather begins to be very cold.

These Plants, during the Winter Season, will require to be often refresh'd with Water; but they should never have too much given them at once; they should also be frequently pick'd to take off all dead or decay'd Leaves, which if suffer'd to remain upon them, will not only render the Plants unsightly, but also infect the Air of the Green-house, especially when the Windows are kept shut close, and thereby become injurious to all the Plants placed therein.

You must also observe to set these where they may be clear from the Heads of other Plants, for they will by no means bear to be stifled, which would cause them to cast their Leaves; nor do they require to be kept very warm in Winter, for if they are but screen'd from the Frost, it will be sufficient, and all artificial Warmths are prejudicial to these Plants.

The 29th Sort is very subject to cast its Leaves in Autumn, and thereby appears to unskilful Persons as dead; but if it be suffered to remain in the Pot undisturbed, and very little Water given to it during

during this Season, it will come out again in Winter as fresh and lively as before; but much Moisture during this State of Inactivity, very often destroys this Plant. This for the Richness of the Colour of its Flowers, vastly exceeds all the other Sorts, tho' the 22d Sort is a very beautiful Flower, and continuing most Part of the Summer and Autumn in flower, renders it very valuable; as is the 30th Sort, for the Beauty of its variegated Leaves.

The 32d and 33d Sorts are of humbler Growth than the former, tho' they are Natives of the same Country, and do therefore require the same Defence in Winter: These may be also propagated by Heads cut off from the old Plants, and treated as was directed for the Cuttings of the shrubby Kinds. The 32d Sort is very subject to ramble, and affords supply enough of Cuttings; but the 33d Sort increases much slower: This Plant is of an uncommon strong sweet Scent; the Leaves, when touch'd, smelling somewhat like *Anis-feed*: but the Flowers of neither of these two Sorts are very beautiful; however, they should have a Place in all Collections of Plants for Variety Sake.

These Plants may also be propagated by sowing of their Seeds in the Spring of the Year upon a moderate Hot-bed, and when they are come up two Inches high, they should be planted into another Bed, with a little warm Dung under it to promote their Rooting: In this Bed they may be planted about six Inches square; and when they are rooted, you should harden them by Degrees, so that as the Weather becomes warmer they may the better endure the open Air: In *July* you should transplant them into Pots, as was directed before for the Cut-

tings, and manage them in the same manner. During the Summer-season, these Plants should be set abroad with Myrtles, Oleanders, and other Green-house Plants, where, being artfully intermix'd therewith, they greatly add to the Variety, and continue flowering most Part of the Year.

The 34th, 35th, 36th and 37th Sorts have all knobby Roots, and increase but slowly thereby: Therefore in order to have a Stock of these Plants, you should carefully gather their Seeds, (which they seldom fail to produce every Year) and sow them, as was directed for the other *African* Sorts, upon a moderate Hot-bed, managing them also accordingly, with this Difference only, *viz.* that they should have less Water; and the Pots in which they are planted should be smaller, especially at first, for as they are Plants which make but small Roots, so the putting them into large Pots is very prejudicial to them. These are all esteem'd for the Beauty of their Flowers, and their agreeable Sweetness in the Evening after the Sun has left them; for before that you cannot perceive any Scent in them, tho' afterwards it becomes so strong as to perfume the Air to some Distance from the Place where they stand. This, I suppose, may be accounted for from the Warmth of the Sun rarefying those Effluvia, so as to be too minute to strike our Organs of Smelling with any Force while the Heat is continu'd, but when the Cool of the Evening approaches, these Effluvia are of larger Bulk, and become perceptible to us in Proportion thereto.

During the Summer-season, these Plants may be expos'd, amongst other Exoticks, in the open Air,  
being

being very careful not to give them too much Water, especially towards Autumn, when their green Leaves begin to decay, at which Time they should have it very sparingly; and if the Season should prove very wet, you should move the Pots on one Side, or remove them under Shelter to protect them from it: And about the Beginning of *October* you should remove them into the Green-House, placing them as near as possible to the Windows, that they may have a good Quantity of free Air, when the Windows are open'd; for if they are defended from the Frost and much Wet, it will be sufficient, they not being extream tender, nor will they ever require any artificial Warmths in Winter, but, on the contrary, as much Air as possible in mild Weather.

These Plants require a very light, sandy Soil; but should not have too much Dung. The Mixture of Earth in which I find them grow best, is as follows: 1st, Take a Quantity of fresh Earth from a Pasture-Ground that is inclining to a Sand, (and if you have Time for the Turf to rot before you have Occasion for it, add that to the Earth); then mix about a third or fourth Part as much Sea-Sand, in Proportion to the Lightness of your Soil; add to this about a fourth Part as much rotten Tanners Bark; mix all well together, and let it lie in a Heap two or three Months before you have occasion for it, observing to turn it over two or three times, that the Mixtures may be the better united; and if before it be us'd, you pass it through a rough Screen to take out all large Stones, Roots, &c. it will be the better; but by no means sift the Earth fine, as is the Practice of many People, for I am

sure it is doing a great deal of Damage, (as was shewn under the Article *Abies*): When these Plants are potted, you should carefully lay some Stones or Shreds in the Bottom of the Pots, that the Water may the better pass off; nor should you plant them in Pots too large; which is equally injurious to them, as was before-mentioned.

The 38th and 39th Sorts are Plants of shorter Duration than those above-mentioned, rarely continuing above two Years; so that in order to preserve these, you should save the Seeds every Year, which should be sown upon a moderate Hot-bed in the Spring, and manag'd as was directed for the last mention'd Sorts. These do often produce Flowers and Seeds the same Summer; but the second Year, provided they are defended from the Frost in Winter, they will flower early, and perfect their Seeds before Autumn.

The 40th Sort is annual: This must be sown on a moderate Hot-bed, and the Plants brought forward in the Spring; but when they begin to flower, must be set in the open Air, otherwise the Flowers will fall away without producing any Seeds. This, tho' a Plant of no great Beauty, yet is worthy of a Place in every Collection of curious Plants.

There are a great Number of *Geraniums* which I have not here mention'd, many of which are Natives of *England*, and others were brought from divers other Parts of *Europe*; but as these for the most part are annual Plants of no Beauty or Use, so I thought it needless to trouble myself or the Reader therewith.

GERMANDER; *vide* Chamædrys.

GEUM;



GEUM; Hairy Kidney-wort or Sanicle.

The Characters are;

The Cup of the Flower is quinquefid: The Flower consists of five Leaves, which expand in Form of a Rose, having eight or ten Stamina or Threads surrounding the Ovary: The Fruit is roundish, and is split into two Horns at the Top; this becomes a bicapsular Seed-Vessel, containing many small Seeds.

The Species are;

1. GEUM; *palustre, minus foliis oblongis crenatis.* Tourn. Hairy Kidney-Wort, or Water-Sanicle.

2. GEUM; *angustifolium, autumnale, flore luteo guttato.* Tourn. Narrow-leav'd autumnal Sanicle, with a yellow spotted Flower.

3. GEUM; *rotundifolium, majus.* Tourn. Great round-leav'd spotted Sanicle.

4. GEUM; *folio subrotundo majori, pistillo floris rubro.* Tourn. London Pride, or None so Pretty.

The first of these Plants is found wild upon the Mountains of Wales and Westmorland, but will grow, if transplanted into a cool moist Place in a Garden.

The second is found in some Parts of Cheshire: This also delights in a strong, moist Soil, and a shady Situation; nor should these Plants be often transplanted, for they delight best in a poor Soil, and want very little Culture, therefore the best Method is to furnish yourself with Roots from their natural Places of Growth, for their Seeds seldom succeed if sown: These should be taken up with as much Earth about their Roots as possible; then plant them in some cold, shady Part of the Garden, (but not under the Drip of Trees) where, when they are once well fix'd, they will continue without

any farther Care for several Years, and will annually produce large Quantities of beautiful Flowers: And with these Plants may such Parts of a Garden, where few other Things will thrive, be supply'd to great Advantage; so that did we but consider well what Plants delight in moist and strong Soils, and a shady Situation; and what require a dry light Soil, and a Sunny Exposure, we need never be at a Loss for Plants to embellish a Garden, be the Soil or Situation what it will; and 'tis for want of rightly considering how to adapt the proper Plants to each Soil and Situation, that we often see Natives of a low Valley planted upon a dry barren Soil, and those of dry sandy Hills upon a strong rich Soil; in both which Cases, they starve and come to nothing.

The third Sort is seldom planted in Gardens, except where the Owners are curious in Collections of Plants, but yet deserves a Place amongst the former in a cool shady Border, where it will thrive very well.

The fourth Sort is the most common in the Gardens, and was formerly in greater Request than at present, it having been in great Use for bordering of Flower-beds; but as it increases very fast, so it is apt to spread too far, and sometimes decays in Patches, which renders it very unsightly: Besides, it must be transplanted at least once a Year, otherwise it cannot be kept in any tolerable Order; however, a few Plants of this kind may be preserv'd as proper Furniture for shady Borders; but it will grow upon a drier Soil than any of the former Sorts.

GILLIFLOWER, or JULY-FLOWER; *vide Caryophyllus.*

GILLI-

GILLIFLOWER, or STOCK-GILLIFLOWER; *vide* Leucoium.

GILLIFLOWER, the Queen's or Dame's-Violet; *vide* Hesperis.

GINGER; *vide* Zinziber.

GLADIOLUS; Corn-Flag.

The Characters are;

It hath a fleshy, double, tuberoſe Root; the Leaves are like thoſe of the Flower-de-Luce; the Flower conſiſts of one Leaf, and is ſhap'd like a Lily, ſpreading open at the Top into two Lips, the upper one being imbricated, and the under one divided into five Segments; the Ovary becomes an oblong Fruit, divided into three Cells, which are fill'd with roundiſh Seeds wrapt up in a Cover.

The Species are;

1. GLADIOLUS; *utrinque floribus*. C. B. P. Corn-flag, with Flowers on both Sides the Stalks.

2. GLADIOLUS; *carnei coloris*. Swert. Flor. Fresh-colour'd Corn-flag.

3. GLADIOLUS; *floribus uno verſu diſpoſitis, major, floris colore purpureo-rubente*. C. B. P. Great Corn-flag, with reddiſh Purple Flowers rang'd on one Side the Stalk.

4. GLADIOLUS; *major, Byzantinus*. C. B. P. Great Corn-flag of Conſtantinople.

5. GLADIOLUS; *utrinque floribus, floribus albis*. H. R. Monſp. Corn-flag, with white Flowers rang'd on each Side the Stalk.

6. GLADIOLUS; *maximus, Indicus*. C. B. P. The largeſt Indian Corn-flag.

There are ſome other Varieties of this Plant which are preſerv'd in ſome curious Botanick Gardens, but theſe here mention'd are what I have obſerv'd in the *English* Gardens.

Theſe are all propagated by their tuberoſe Roots, which the firſt, ſecond and fifth Sorts produce in

great Plenty, ſo that in a few Years; if they are ſuffer'd to remain unremov'd, they will ſpread very far, and are hardly to be intirely rooted out when they have once gotten Poſſeſſion of the Ground. Theſe Roots are in Shape very like thoſe of the large yellow Spring *Crocus*, but are ſomewhat bigger, yellower within, and have a rougher outer Coat or Covering. The ſmall Off-ſets of theſe Roots will produce Flowers the ſecond Year, therefore when the old Roots are tranſplanted, the Off-ſets ſhould be taken off from them, and planted into a Nurſery-bed for one Year, by which Time they will be fit to tranſplant into the Borders of the Pleaſure-Garden. Theſe Roots may be taken up in *July*, when their Leaves decay, and may be kept out of the Ground until *October*; at which Time they ſhould be planted into the Borders of the Pleaſure-Garden, intermixing them amongſt other bulbous-rooted Plants: But if you plant them in large Borders in Wilderneſs-work, (where they will thrive and flower very well) they need not be tranſplanted oftener than every other, or once in three Years; whereas in Borders of a Pleaſure-Garden, if they were ſuffer'd to remain ſo long, they would over-run the Ground, and be very troubleſome.

The third and fourth Sorts are the moſt valuable, producing taller Stalks and fairer Flowers, nor are theſe ſo apt to increaſe, which renders them fitter for the Borders of a Flower-Garden; ſo that ſince theſe have been introduc'd and become common, the other Sorts have been rejected, unleſs in ſome old Gardens, or for large Wilderneſs-Quarters, where they will grow better than the two laſt mention'd.

Theſe

These Plants may also be propagated by Seeds, which should be sown in Pots or Tubs of light fresh Earth, soon after they are ripe: These Tubs should be plac'd where they may enjoy the Morning-Sun until eleven o'Clock, in which Position they should remain until *October*; at which Time they must be remov'd, where they may have the full Sun during the Winter-Season, and the *March* following the young Plants will begin to appear; when the Boxes or Pots should have a little fine Earth sifted over the Surface of the Ground, and be removed again, where they may have only the Morning-Sun, observing, during the Time of their Growth, to refresh them with Water in dry Weather, as also to keep them clear from Weeds.

The *Michaelmas* following, if the Plants are very thick in the Pots or Boxes, you should prepare a Bed or two of light fresh Earth, in Proportion to the Quantity of your young Plants, and after levelling the Surface very even, you should spread the Earth of the Pots in which the Roots are contain'd as equal as possible upon the Beds, (for the Roots at this Time will be too small to be easily taken up) covering the Bed about half an Inch thick with light sifted Earth; and the Spring following, when the Plants begin to come up, you must stir the Ground upon the Surface to loosen it, and carefully clear the Beds from Weeds: In these Beds they may remain (observing in the Autumn to sift some fresh Earth over the Surface) until the fourth Year, by which Time they will begin to shew their Flowers; therefore you may now observe to mark out all the best Kinds as they blow, which may the succeeding Year be trans-

planted into the Pleasure-Garden; but the poorer Kinds should be thrown out as not worth preserving, for the good Sorts will soon multiply and furnish you with a sufficient Stock from Off-sets.

The *Indian Corn-flag* is tender, and must be preserv'd in a warm Green-house, or a moderate Stove during the Winter-season. These Roots should be planted in Pots fill'd with a light sandy Soil. The best Time to transplant them is any Time from *May*; at which Time their green Leaves decay till *September*, that they begin to shoot again; and in *October* the Pots should be removed into the Green-house; and during their Season of Growth, which is chiefly in Winter, they must be frequently water'd, but you must not give it them in large Quantities, but during the Summer-season, if they are suffer'd to remain in the Pots, they should have little Moisture, but only be remov'd to a shady Place; for much Wee at the Time their Roots are inactive is apt to rot them.

This Plant but rarely flowers with us, but when it doth, it makes a beautiful Appearance in the Green-house, especially coming in *January*, when few other Flowers appear, which renders it worthy of a Place in every curious Garden.

GLASTENBURY-THORN; *vide* Mespilus,

GLAUCIUM; The Horn'd Poppy.

The *Characters* are;

The *Cup of the Flowers* consists of two Leaves; the Flower hath five Leaves, which are plac'd orbicularly, and expand in form of a Rose or a Poppy, but soon fall away; the Ovary arises from the Bottom of the little Placenta, and is divided into

two Parts at the Extremity; this becomes a long taper Pod, which is bivalve, having an intermediate Partition, to which are fasten'd many roundish Seeds.

The Species are;

1. GLAUCIUM; *flore luteo*. Tourn. Yellow Horn'd Poppy.
2. GLAUCIUM; *flore violaceo*. Tourn. Blue-flower'd horned Poppy.
3. GLAUCIUM; *hirsutum*, *flore Phœnicio*. Tourn. Hairy horned Poppy, with a deep Scarlet Flower.
4. GLAUCIUM; *globum*, *flore Phœnicio*. Tourn. Smooth horned Poppy, with a deep Scarlet Flower.

There are some other Varieties of this Plant which occur in Botanic Authors; but these here mentioned, are all the Sorts I have yet seen in the *English* Gardens. The first Sort is found upon the Sea Coasts in some Parts of *England*; but if sown in a Garden, will grow very well; this is a perennial Plant, the Roots abiding, if in a poor, dry Soil, two or three Years; but when planted in a moist, or very rich Soil, it seldom continues longer than one Year, especially if it flowers the first Summer.

The second Sort Mr. Ray found growing amongst Corn, betwixt *Swafham* and *Burwell* in *Cambridgeshire*.

The third and fourth Sorts were brought from Abroad; these Three are annual Plants, and either should be sown every Spring, or their Seeds suffered to scatter themselves, for the Plants will arise in Autumn from the Seeds which fall, and if the Winter does not prove too sharp, they will abide without any Care, and flower earlier the succeeding Spring: These Plants, tho' there is not much Beauty in them, yet may be permitted to have a Place in large Gardens for Variety, especially as

they require very little Culture. They delight most in a warm, light Soil, but will grow in almost any Soil, if it be not over-dunged.

GLYCYRRHIZA; Liquorice.

The Characters are;

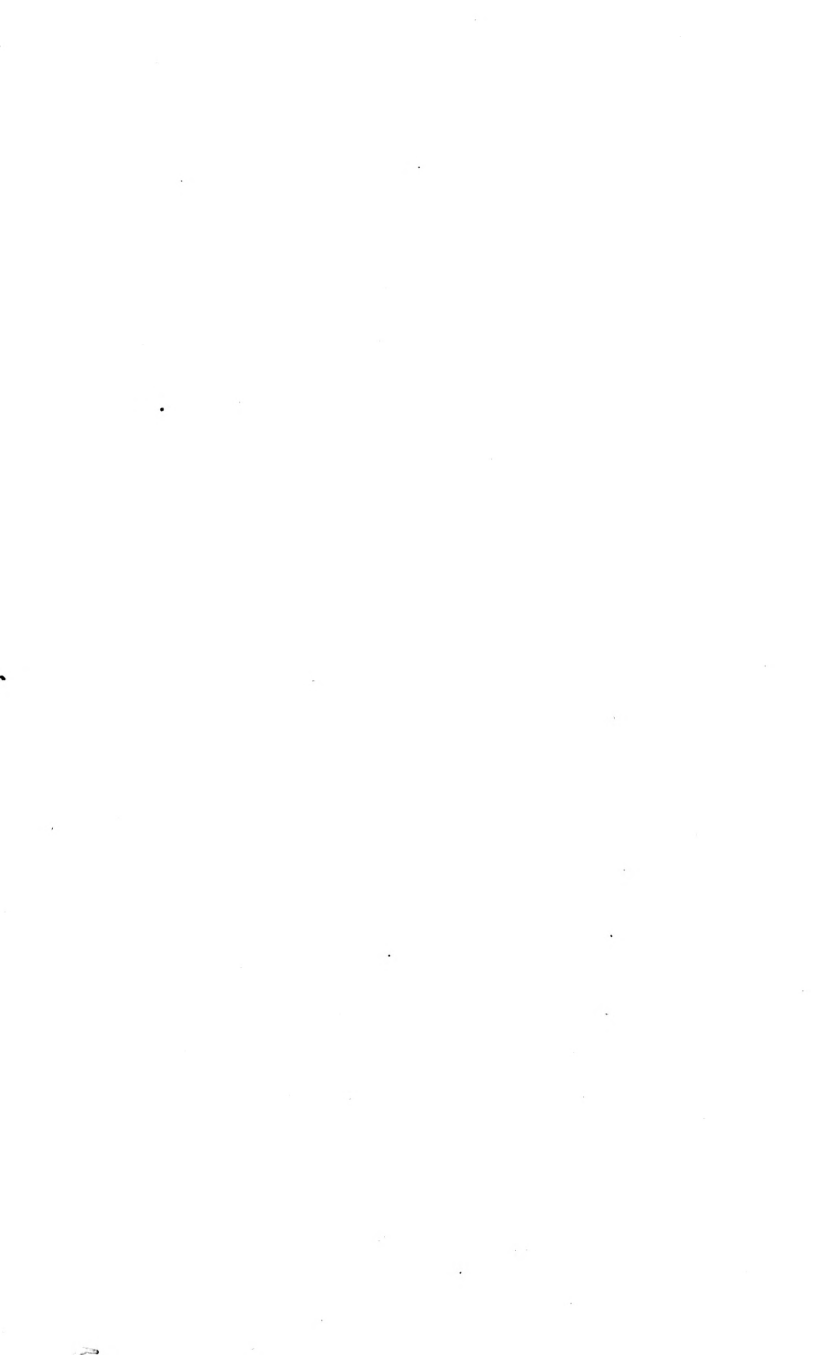
It hath a papilionaceous Flower; the Pointal which arises from the Empalement becomes a short Pod, containing several Kidney-shap'd Seeds; the Leaves are placed by Pairs join'd to the Mid-rib, and are terminated by an odd Lobe.

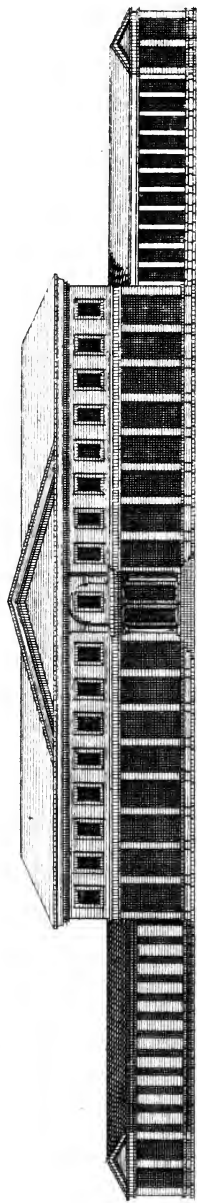
The Species are;

1. GLYCYRRHIZA; *sliquosa*, *vel Germanica*. C. B. P. Common Liquorice.
2. GLYCYRRHIZA; *capite echinato*. C. B. P. Rough-podded Liquorice.

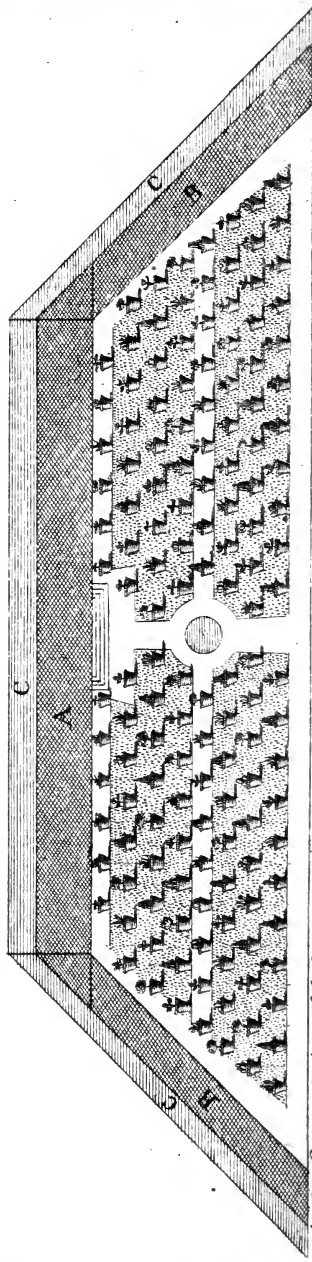
The first of these Plants is what the People cultivate for Use; the other being only preserved in Botanic Gardens, amongst some other Varieties, which Plant I shall pass over with only naming, and proceed to give an Account of the Culture of the first Sort, which is the only one used.

This Plant delights in a rich, light, sandy Soil, which should be three Foot deep at least; for the greatest Advantage consists in the Length of the Roots: The greatest Quantity of Liquorice which is propagated in *England*, is about *Pontefract* in *Yorkshire*, and *Godliman* in *Surrey*; though of late Years there hath been a great deal cultivated in the Gardens near *London*: The Ground in which you intend to plant Liquorice, should be well dug and dunged the Year before you plant it, that the Dung may be perfectly rotted and mix'd with the Earth, otherwise it will be apt to stop the Roots from running down; and before you plant it, the Ground should be dug three Spades deep,





*The Upright of the Greenhouse and Stoves.*



*A The Ground-plot of a Greenhouse. B The Ground-plot of a Stove. C The Sheets behind a Greenhouse.*

deep, and laid very light: When your Ground is thus well prepared, you should furnish yourself with fresh Plants taken from the Sides or Heads of the old Roots, observing that they have a good Bud or Eye, otherwise they are subject to miscarry. These Plants should be about 10 Inches long, and perfectly sound.

The best Season for planting them, is toward the End of *February*, or the Beginning of *March*, which must be done in the following Manner, *viz.* First strain a Line cross the Ground in which you should plant them, with a long Dibble made on purpose, so that the whole Plant may be set strait into the Ground, with the Head about an Inch under the Surface in a strait Line, about a Foot asunder, or more, in Rows, and two Feet distance Row from Row; and after having finished the whole Spot of Ground, you may sow a thin Crop of Onions, which being Plants that don't root deep into the Ground, nor spread much above Ground, will do the Liquorice no Damage the first Year; for the Liquorice will not shoot very high the first Season, and the Hoeing of the Onions will also keep the Ground clear from Weeds; but in doing of this, you must be careful not to cut off the Top-shoots of the Liquorice Plants, as they appear above Ground, which would greatly injure them; and also observe to cut up all the Onions which grow near the Heads of the Liquorice; and after your Onions are pulled up, you should carefully hoe and clean the Ground from Weeds; and in *October*, when the Shoots of the Liquorice are decay'd, you should spread a little very rotten Dung upon the Surface of the Ground, which will

prevent the Weeds from growing during the Winter, and the Rain will wash the Virtue of the Dung into the Ground, which will greatly improve the Plants.

In the Beginning of *March* following, you should slightly dig the Ground between the Rows of Liquorice, burying the remaining Part of the Dung; but in doing of this, you should be very careful not to cut the Roots; this stirring of the Ground will not only preserve it clear from Weeds a long Time, but also greatly strengthen the Plants.

The Distance which I have allow'd for planting these Plants, will, I doubt not, by some, be thought too great; but in answer to that, I would only observe, that as the Largeness of the Roots are the chief Advantage to the Planter, so the only Method to obtain this, is by giving them Room; and besides, this will give a greater Liberty to stir and dress the Ground, which is of great Service to Liquorice; and if the Plantation design'd, were to be of an extraordinary Bigness, I would advise the Rows to be made at least three Feet distant, whereby it will be easy to stir the Ground with a Breast-plough, which will greatly lessen the Expence of Labour.

These Plants should remain three Years from the Time of planting, when they will be fit to take up for Use, which should not be done until the Stems are perfectly decay'd; for when it is taken up too soon, it is subject to shrink greatly, and lose of its Weight.

The Ground near *London* being rich, increases the Bulk of the Root very fast; but when it is taken up, it appears of a very dark Colour, and not near so slightly as that which

grows upon a sandy Soil in an open Country.

GNAPHALIUM; Cud-weed.

The Characters are;

*It hath downy Leaves; the Cup of the Flower is scaly, neither shining nor specious; the Flowers are divided or cut in form of a Star.*

The Species are;

1. GNAPHALIUM; *Anglicum. Ger.* Long-leav'd, upright Cud-weed.

2. GNAPHALIUM; *minus, seu herba impia. Park.* Common Cud-weed.

3. GNAPHALIUM; *maritimum. C. B. P.* Sea Cud-weed, or Cotton Weed.

The two first Sorts are found wild in diverse Parts of *England*, upon moist, stony Heaths, especially in such Places where the Water flood during the Winter. The second Sort is placed in the Catalogue of Simples annex'd to the College Dispensatory, but is not often used in Medicine: These Plants are seldom propagated in Gardens, except for the Sake of Variety; for they have no great Beauty, nor are of much Use: There are also many more of this Kind, some of which grow wild in *England*; but as they are never cultivated, I shall pass them over without naming, and proceed to the third Sort, which is often preserved in curious Gardens, for the Variety of its fine Silver-colour'd Leaves. This Plant is found upon the Sea Coasts of *Cornwall*, and some other Parts of *England*; but yet will rarely abide the Cold of our Winters near *London*, if planted in the open Air; but if it be preserved in a common Frame from the Severity of Frost, it will thrive very well: This is propagated by planting its Cuttings in any of the Summer Months, observing to water and shade them from the Violence of

the Sun in the Middle of the Day, and in about two Months they will be rooted enough to transplant, at which Time you should provide a Parcel of small Pots, which should be filled with light, sandy Earth, planting your young Plants therein, shading them again until they have taken new Roots, after which they may be expos'd until the End of *October*, when you should remove the Pots into Shelter for the Winter-Season. But altho' I have advis'd the planting these Plants into Pots, yet if you have a Stock of them, you may plant some of them Abroad under a warm Wall, where they will stand very well in mild Winters; but in very sharp Frosts they are generally destroy'd.

GOOSEBERRY; *vide* Grossularia.

GORZ; *vide* Genista Spinosa.

GOSSYPIUM; *vide* Xylon.

GRAFTING: In order to *Grafting*, you should be provided with these Tools following.

1. A neat, small Hand-saw, to cut off the Heads of large Stocks.

2. A good strong Knife with a thick Back, to make Clefs in the Stocks.

3. A sharp Penknife to cut the *Grafts*.

4. A *Grafting* Chissel and a small Mallet.

5. Bass Strings, or woollen Yarn to tie the *Grafts* with, and such other Instruments and Materials as you shall find necessary, according to the Manner of *Grafting* you are to perform.

6. A Quantity of Clay which should be prepared a Month before it is used, and kept turn'd and mix'd like Mortar every other Day, which is to be made after the following Manner;



Get a Quantity of strong, fat Loam, (in proportion to the Quantity of Trees intended to be grafted) then take some new Stone-horse Dung and break it in amongst the Loam, and if you cut a little Straw or Hay very small, and mix amongst it, the Loam will hold together the better; these must be well stirred together, putting Water to them after the Manner of making Mortar: It should be hollow'd like a Dish, and fill'd with Water, and kept every other Day stir'd; but it ought to be remember'd, that it should not be expos'd to the Frost or drying Winds, and that the oftner it is stirred and wrought, the better.

There are several Ways of *Grafting*, the principal of which are Five.

1. *Grafting in the Rind*, called also *Shoulder Grafting*, which is only proper for large Trees; this is call'd *Crown Grafting*, because the *Grafts* are set in form of a Circle or Crown, and is generally perform'd about the latter End of *March*, or the Beginning of *April*.

2. *Cleft Grafting*, which is also call'd *Stock* or *slit-grafting*: This is proper for Trees or Stocks of a lesser Size, from an Inch to two Inches or more Diameter; this *Grafting* is to be perform'd in the Months of *February* and *March*, and supplies the Failure of the Escutcheon-way, which is practis'd in *June*, *July* and *August*.

3. *Whip Grafting*, which is also call'd *Tongue Grafting*: This is proper for small Stocks of an Inch, half an Inch, or less, Diameter; this is the most effectual Way of any, and that which is most in Use.

4. *Grafting by Approach*, or *Ablactation*; this is to be performed

when the Stock you would *graft* on, and the Tree from which you take your *Graft*, stand so near together, that they may be join'd: This is to be perform'd in the Month of *April*, and is also called *Marching*, and is chiefly used for *Jasmine*, *Oranges*, and other tender Exotick Trees.

The Manner of performing these several Sorts of *Grafting* being so generally known, and they having been so often describ'd in the various Books of *Husbandry* and *Gardening*, it will be needless to repeat any Thing more on that Head in this Place: I shall only take Notice in general of the several Sorts of Trees which will grow when grafted upon each other.

All such Trees as are of the same Tribe, *i. e.* which agree in their Flower and Fruit, will Take upon each other: For Instance, all the *Nut-bearing* Trees may be safely grafted on each other, as may all the *Plum-bearing* Trees, under which Head I reckon not only the several Sorts of *Plums*, but also the *Almond*, *Peach*, *Nectarine*, *Apricock*, &c. which agree exactly in their general Characters, by which they are distinguish'd from all other Trees: But as these are very subject to emit large Quantities of Gum from such Parts of the Trees as are deeply cut or wounded, which in the tender Trees of this Kind, is more common and hurtful, so it is found to be the surest Method to *bud* or *inoculate* these Sorts of Fruits. Vide *Inoculation*.

Then all such Trees as bear Cones will do well upon each other, tho' they may differ in one being evergreen, and the other shedding its Leaves in Winter, as is observable in the *Cedar of Libanus*, and the *Larch-Tree*, which are found to

ſucceed upon each other very well: But theſe muſt be grafted by Approach, for they abound with a great Quantity of Reſin, which is apt to evaporate from the *Graft*, if ſeparated from the Tree before it be join'd with the Stock, whereby they are often deſtroj'd. All the Mait-bearing Trees will alſo Take upon each other; and thoſe which have a tender ſoft Wood will do well if grafted in the common Way; but thoſe that are of a more firm Contexture, and are ſlow Growers, ſhould be grafted by Approach.

By ſtrictly obſerving this Rule, we ſhall ſeldom miſcarry, provided the Operation be rightly perform'd, and at a proper Season, unleſs the Weather ſhould prove very bad, as it ſometimes happens, whereby whole Quarters of Fruit-Trees miſcarry; and it is by this Method that many Kinds of Exotick Trees are not only propagated, but alſo render'd hardy enough to endure the Cold of our Climate in the open Air; for being grafted upon Stocks of the ſame Sort which are hardy, the *Grafts* are render'd more capable to endure the Cold; as hath been experienc'd in moſt of our valuable Fruits now in *England*, which were formerly tranſplanted hither from more Southerly Climates, and were at firſt too impatient of our Cold to ſucceed well Abroad, but have been, by budding or grafting upon more hardy Trees, render'd capable of reſiſting our ſeverest Cold.

And theſe different *Graftings* ſeem to have been greatly in Uſe among the Antients; tho' they were certainly miſtaken in the ſeveral Sorts of Fruits which they mention to have ſucceeded upon each other, as the *Fig* upon the *Mulberry*, the *Plum* upon the *Cheſnut*, with many others of the like Kind; ſome of

which I have already try'd, and find them all Miſtakes, or at leaſt they did not mean the ſame Plants which at preſent are call'd by thoſe Names: Tho' I can't help thinking we are apt to pay too much Deference to the Writings of the Antients, in ſuppoſing them ſeldom to be miſtaken, or to aſſert a Falſhood: Whereas, if their Works are carefully examin'd, it will be found that they often copy'd from each other's Writings, without making Experiments to prove the Truth of their Aſſertions: And it is well known, that the Ranging of Plants before *Casſalpinus's* Time (which is but about 150 Years ſince) was, by their outward Appearance, or from the ſuppoſed Virtues of them: Which Method is now juſtly exploded; and it hath been obſerv'd, from many repeated Trials, that however Plants may reſemble each other in the Shape and Make of their Leaves, Manner of Shooting, &c. that unleſs they agree in their Manner of Fruiting, and their other diſtinctive Characters, they will not grow upon each other, tho' grafted with ever ſo much Art.

GRANADILLA; Paſſion-Flower.

The Characters are;

*It hath a double Calix, the firſt conſiſting of three Leaves, the other of five Leaves, which expand in Form of a Star: The Flowers conſiſt of five Leaves each, and are of a roſaceous Form: In the Centre of the Flower ariſes the Pointal, with a Crown fringed at the Bottom, but furniſh'd with a tender Embryo at the Top, on which ſtand three Clubs, under which are the Stamina with rough, obtuſe Apices, which always incline downwards: The Embryo turns to an oval or globular Fruit, fleſhy, and conſiſting of one Cell, which is full of Seeds adhering*

adhering to the Sides, and cover'd with a sort of Hood or Veil.

The Species are ;

1. GRANADILLA ; *pentaphyllos, latioribus foliis, flore caruleo magno.* Boerh. Ind. Common or broad-leav'd Passion-Flower.

2. GRANADILLA ; *pentaphyllos, angustioribus foliis, flore caruleo magno.* Narrow-leav'd Passion-Flower.

3. GRANADILLA ; *pentaphyllos, angustioribus foliis, flore minore pallidâ caruleo serotino.* Late narrow-leav'd Passion-Flower, with a lesser and paler Flower.

4. GRANADILLA ; *Hispanis, Flos Passionis Italis. Col. in Recch.* Three-leav'd Passion-Flower.

5. GRANADILLA ; *folio tricuspide, flore parvo flavescente.* Tourn. Passion-Flower, with a three pointed Leaf, and a small yellowish Flower.

6. GRANADILLA ; *flore albo, fructu reticulato.* Boerh. Ind. White Passion-Flower, with a netted Fruit.

7. GRANADILLA ; *fœtida, folio tricuspide villoso, flore purpureo variegato.* Tourn. Stinking Passion-Flower, with a three-pointed hairy Leaf, and a purple variegated Flower, call'd by the Inhabitants of Barbadoes Love in a Mist.

8. GRANADILLA ; *fructu Citrifor-mi, foliis oblongis.* Tourn. Passion-Flower, with a Fruit shap'd like a Citron, and an oblong Leaf, call'd by the Inhabitants of Barbadoes Water-Lemon.

9. GRANADILLA ; *latifolia, fructu malformi.* Broad-leav'd Passion-Flower, with an Apple-shap'd Fruit.

10. GRANADILLA ; *flore suaverrubente, folio bicorni.* Tourn. Passion-Flower, with a Leaf divided into two Horns, and a soft red Flower.

11. GRANADILLA ; *folio amplo tricuspidi, fructu Oliva formâ.* Tourn. Passion-Flower, with a three-pointed Leaf, and an Olive-shap'd Fruit.

12. GRANADILLA ; *folio angusto tricuspidi, fructu Oliva forma.* Tourn. Passion-Flower, with a narrow three-pointed Leaf, and an Olive-shap'd Fruit.

13. GRANADILLA ; *Androsami folio, fructu Jujubino.* Tourn. Passion-Flower, with a Tutfan Leaf, and a Fruit like the Jujube.

The first Sort here mention'd is the most common in all the *English* Gardens, and (notwithstanding what Mr. Bradley has affirm'd) is very different from the second and third Sorts. Nor did I ever see any Fruit upon this Kind, tho' planted in many different Soils and Situations; whereas the second Sort rarely fails to produce Fruit every Year; and in order to observe the Truth of this, I planted one of each Kind in the same Soil and Situation, where the second Sort has produc'd Fruit every Year since, but the first has not as yet shewn any Appearance thereof. The second Sort does also differ in the Colour of the Flower, which is somewhat paler than the first, and the Petals are not quite so blunt at their Extremities.

The third Sort hath very narrow Leaves, and the young Branches are of a purplish Colour; it is a very great Shooter, but does not flower until the Latter-end of Summer: The Flowers of this Kind are smaller, and of a paler Colour than either of the former. There is also a Variety in this Plant with yellow blotch'd Leaves, which some People preserve as a great Curiosity; but as this Variegation is but small, and hardly to be seen in vigorous Shoots, so it is scarce worth mentioning.

These three Sorts are extreme hardy, and will endure our severest Cold in the open Air; tho' in very hard Winters their Shoots are subject

to be kill'd, and sometimes their whole Stems quite to the Surface: Yet it rarely happens that it destroys the whole Plant; for if the Roots are permitted to continue undisturb'd, they seldom fail to shoot up again in the succeeding Summer.

These are propagated by laying down their Branches, which in one Year's time will take good Roots, and may then be remov'd to the Places where they are design'd to remain: The best Season for transplanting these Plants, is towards the latter End of *March*, or the Beginning of *April*, just before they begin to shoot; for if they are remov'd earlier, and it should prove dry frosty Weather, with cold North-East Winds, (as it often happens in *March*) these Plants will scarcely endure it, which is the Occasion of the Death of so many of them, as is often observ'd upon Transplantation.

The Plants should be planted against a Wall or other Building, which should face the South-East or South-West; or else intermix'd amongst flowering Shrubs in Quarters; where, if they are regularly train'd up to Poles, they will flower extremely well, and have a very good Effect in diversifying such Plantations. The best Season for pruning of these Plants is in the Spring, after the cold Weather is past; for if they are pruned very early, and it should happen to be frosty Weather afterwards, it would endanger most of the young Branches; therefore it is much the better Way to let the whole Plant remain untouched (suffering all the rude Part to hang down before the Stem and Branches) during the Winter-season, which will be of Service in protecting them from the Severity of the Cold; and if at *Michaelmas*

you lay a little Dung or other Mulch about a Foot thick upon the Surface of the Ground near the Stems, it will effectually guard their Roots from Frost; which Method should be constantly practis'd with such as are planted in open Quarters. The Manner of Pruning is nothing more than to cut off all the small weak Shoots, and shorten the strong ones to about three Feet in Length: Or, if the Building is high against which they are planted, they may be left much longer, tho' you should be careful not to leave them too long; for as they are vigorous growing Plants, so they will soon get above the Building, and become troublesome. Those that are planted in Quarters, and train'd to Stakes, must be cut shorter, in order to have the Flowers nearer the Ground: These, when their Season for Flowering is past, should have a little Mulch laid about their Roots, and then their Stakes may be taken away, suffering their Branches to lie upon the Ground, which will also be of Service to protect the Plants from the Injuries of the Winter; and in the Beginning of *April* they may be trimmed and staked up again: And when the Plants begin to shoot, they should constantly be kept train'd up to the Stakes, whereby they will not only appear handsome, but the Place will be clearer to work in, as also to pass through.

The Fruit-bearing Kind may also be propagated by sowing of the Seeds in the Spring of the Year, in Pots fill'd with light rich Earth, which should be plung'd into a moderate Hot-bed, to facilitate the Growth of the Seeds; and when the Plants are come up, you must harden them by Degrees to bear the open Air; In these Pots they should

should remain until the succeeding Spring, observing to shelter them in Winter under a Frame, or else place the Pots into the Earth under a warm Wall, to prevent their Roots from freezing through the Pots; and the Beginning of *April* you may shake them out of the Pots, and divide the Plants from each other, planting them in the Places where they are design'd to remain; or, if you have not the Ground ready, they may be put each into a separate Pot, so that they may, at any Time, be turn'd out into the Ground, without disturbing their Roots; for they are difficult Plants to remove when old.

These Plants may also be planted to cover Arbors or Seats in warm-situated Places, where they will flower extremely well, and answer the Purposes of those Arbors, as well as any other Plants which are at present made Use of.

The fourth Sort is somewhat tenderer than any of the former: This dies to the Surface every Winter, and rises again the succeeding Spring, and, if the Summer be warm, will produce large Quantities of Flowers, which are near as large as the common Sort, but the Petals of the Flower are narrower, and striped with Purple. This is the first Sort of *Passion-Flower* which we find described in old Botanick Authors, and is what *Parkinson* has figur'd and describ'd in his *Flower-Garden*; but since the other Sorts have been brought into *Europe*, they have so much prevailed, that this last mention'd is rarely to be found, except in some few curious Gardens. This may be increas'd by parting their Roots, which should be done the Beginning of *April*, and must be either planted into Pots fill'd with rich light Earth, or

in a good warm Border under a South-Wall, for it is subject to be destroy'd in very hard Winters. The Pots, wherein these Plants are set, may be plung'd into a gentle Hot-bed, in order to promote their taking Root, it being somewhat difficult in rooting after it is remov'd; and this will promote its flowering, provided you do not draw it too much: And by this Means also you may propagate the Plant; for, when it has made pretty strong Shoots, if you lay them down and apply a gentle Warmth to the Pots, they will push out Roots in two or three Months time fit for transplanting, which, if done before the cold Weather comes on in Autumn, they will be settled so as to endure the Winter.

The Seeds of this Plant are many times brought over from *America*, (where the Plant grows in great Plenty) which, when obtain'd, may be sown in a moderate Hot-bed in the Spring, and treated as was before directed for the common Sort, with this Difference, *viz.* that this being more tender, should not be expos'd to the open Air so soon; and, in the Winter, the Pots should be plung'd into an old Bed of Tanners-Bark, which has lost most of its Heat, and it should be cover'd with Glasses and Mats in very bad Weather, but, when it is mild, they should have as much open Air as possible; you must also observe not to give them much Water in Winter.

The fifth Sort dies to the Ground every Year, as the last, and rises again the succeeding Spring: This is very hardy, enduring our severest Cold in the open Ground, and increases very fast by its spreading Roots; but this seldom produces Flowers with us, and when it doth,

they are so small and ill colour'd, that it scarce deserves a Place in a Garden, except for adding to the Variety.

The sixth Sort is an annual Plant with us, and requires to be rais'd upon a Hot-bed: The Seeds of this should be sow'd in *February* with *Amaranthus's*, &c. And when the Plants are come up, they should be transplanted singly into small Pots fill'd with light Earth, and plung'd into a fresh Hot-bed, to bring them forward; and, in a Month's time after (when the Bed will begin to lose its Heat) you should prepare a fresh Hot-bed; then shake the Plants out of the small Pots, and put them into larger, observing to take off the Roots of the Plant which are matted round the Outside of the Ball of Earth, being careful not to break too much of the Earth from the Roots: And, after having plac'd the Plant exactly in the Middle of the larger Pot, you must fill the Pot with the like fresh light Earth, plunging the Pots into the new Bed; in which Place they may remain a Month longer, observing to water them as they shall require, as also to give them Air in Proportion to the Heat of the Weather: And when their Roots have fill'd these Pots, they should be shaken out, and transplanted into larger, giving them a little Warmth to cause them to take fresh Root the sooner; and after they are well rooted, you may remove them into the Stove, where they may be protected from the Cold of the Nights and great Rains; in which Situation they will produce great Numbers of Flowers, and ripen their Seed perfectly well. In Autumn they commonly decay; tho' I doubt not but they would continue longer, if they were plac'd in a good Stove, and preserv'd with Care.

The seventh Sort is somewhat like the sixth, but differs therefrom in the Shape of its Leaves, which, in the sixth Sort, are long and narrow, but, in the seventh, broad and angular, approaching to the Shape of the white *Briony*, and are rougher and of a stronger Scent: The Flowers also of this are strip'd in the Middle with purple, whereas the others are all white; nor doth this Plant often produce its Flowers the first Year with us, but must be preserv'd in a warm Stove through the Winter, and the following Summer it will produce Flowers, and perfect its Seeds.

This Plant must be sown on a Hot-bed in the Spring, and manag'd as was directed for the last, with this Difference only, *viz.* That, as this seldom flowers the first Summer, so those Plants which you intend to preserve through the Winter, should be train'd up to endure the open Air in the Summer, whereby they will be better able to live in Winter.

This is found in great Plenty in many Places in the *West-Indies*, where the Inhabitants call it *Love in a Mist*. The Seeds are frequently brought into *England* by that Name. *Pere Plumier* says, That he found it in great Plenty in the Hedges, in the Island of *Martinico*, where he observ'd the Flowers constantly open'd before the Rising of the Sun, after which it seldom continued an Hour. He also says, that it continues flowering almost throughout the whole Year; but that the Birds, Lizards and Ants are so fond of this Fruit, that it is very difficult to find them entire when ripe.

The eighth Sort is a durable Plant, growing woody, and is more arborescent than any other Species of this Plant which I have yet seen.

The Seeds of this are often brought over from *Barbados*, where it is cultivated in the Gardens for the Goodness of its Fruit, although the Flowers (which are finer than those of the common Sort) renders it worthy of a Place in a good Garden, had the Plant no other good Qualities to recommend it.

This Plant may be rais'd by sowing the Seeds upon a Hot-bed, as was directed for the two other Sorts, and must be afterwards transplanted into Pots, and manag'd in the same manner; but this never produces its Flowers until the second or third Year after sowing, so it must be carefully preserv'd in Winter in a warm Stove with other tender Plants which come from the same Country; but, in the Summer, it should have a good Share of free Air, especially in warm Weather, tho' it will not bear to be wholly expos'd to the open Air.

It may also be propagated by laying down some of its Branches in the Spring, which, in two Months time, will strike Root, and may then be transplanted into Pots, and manag'd as the old Plants: During the Summer-season these Plants will require to be plentifully water'd, (especially if they are kept warm) but, in Winter, they should not have too much Wet, therefore you should often refresh them, but do not give them much at each Time. The Heat, in which they thrive best in Winter, is that mark'd *Piemento*, upon Mr. *Fowler's Botanical Thermometers*; but, in Summer, they will require a much greater Share of Warmth.

I don't find any Authors who have written upon this Plant, mention its growing wild in any Parts of the *West-Indies*. *Pere Plumier* says, it is cultivated in Gardens to

cover Arbors and Seats, for the Goodness of its Fruit, which ripens in *April* and *May*, and is of a wonderful refreshing Nature, and is commonly us'd in Fevers as a Cordial Syrup, in the Stead of Rob of Gooseberries. The *French* call the Fruit of this Plant *Pommes de Liane*, and the *English* *Water Lemon*, as chiefly delighting to grow in a moist Soil. The Flowers of this Plant have a very agreeable Scent, and are extremely beautiful.

The ninth Sort also is an abiding Plant, but never becomes so woody as the former: The Stalks are commonly of a green herbaceous Colour: The Leaves are broader and shorter, but not so thick as those of the former, and of a livelier green Colour: The Flowers of this Kind are very large, and of a fine red Colour, inclining to purple, and very sweet: The Fruit is about the Size of a middling Apple, and of an agreeable Flavour.

This may also be propagated by Seeds or Layers, as the former Sort, and must be manag'd exactly in the same Manner; so that I shall not repeat it here, but only observe, that this will also grow from Cuttings, if planted in a Hot-bed during any of the Summer Months.

*Pere Plumier* observ'd this Plant in the Isle of *St. Domingo*. It flowers there in *April*.

The tenth Sort is very common in most Parts of the *Caribbe* Islands. I have also receiv'd Seeds of it from the *Bahama* Islands, from which I have rais'd Plants of this Kind that have produc'd Flowers and Fruits in the *Physick Garden* at *Chelsea*. It requires much the same Management as the two former Sorts, tho' I could never propagate this either by Cuttings or Layers. It requires a great Share of Water, especially

in the Summer-season, without which it will rarely flower; but in Winter it must have it more sparingly, tho' it will often require to be refresh'd. This delights in the same Degree of Heat with the former.

The Flowers of this Plant are very small, and of short Duration; nor is there any great Beauty in the Plant, or any Thing valuable in its Fruit to recommend it; however, it may have a Place in great Collections of Plants, to add to the Variety.

The eleventh and twelfth Sorts I have had come up in the Earth, which came from the *West-Indies*; but I have not as yet seen their Flowers: These may be preserv'd in the same Manner as the former; but delight to grow in a moist Soil, therefore must be often refresh'd with Water. Neither of these do promise to be of long Continuance, tho' I am apt to believe they may be propagated by Layers.

The thirteenth Sort is also a perennial Plant, which is very common in divers Parts of the *West-Indies*: The Flowers of this Kind are very small, and of a greenish Colour, without Smell, and the Fruit is of a fine purple Colour when ripe. It requires the same Management as the former, and may be propagated by laying down the Branches early in the Spring.

These are all the Sorts of the *Passion-Flower* which I have, as yet, observ'd in the *English* Gardens, tho' there are some other Kinds describ'd in the Books of curious Botanists who have travelled in the *West-Indies*; but I have not heard of their being brought into *Europe*. As to what Mr. *Bradley* relates of his having seen above thirty different Kinds

of this Plant in the *Physick-Garden* at *Amsterdam*, I cannot entirely rely upon it; for when I was there at Midsummer 1727, I did not see a fourth-part of that Number, when, if they had been there, they would, at that Season, have appear'd; nor did I find their Stoves so contriv'd, as to be capable of maintaining some of the very tender Kinds, so that I am apt to think that Gentleman was mistaken in his Account.

GRAPES; *vide* Vitis.

GRASS. The *English Grass* is of so good a Quality for Walks or *Grass-Plots*, that if they be kept in good Order, they have that exquisite Beauty that they cannot come up to in *France*, and several other Countries.

But Green Walks and Green Plots are, for the most part, not made by sowing the Grass Seed, but by laying Turfs; and indeed, the Turfs from a fine Common are much preferable to sown *Grass*.

In sowing a fine Green-plot, there is a Difficulty in getting good Seed: It ought not to be such as is taken out of a Hay-loft without Distinction; for that Seed shooting too high, and making large Stalks, the lower Part will be naked and bare, and although it be mow'd ever so often, it will never make handsome *Grass*, but on the contrary, will come to nothing but Tufts of Weeds and *Quick-Grass*, very little better than that of the common Fields.

If Walks or Plots be made by Sowing, the best way is to procure the Seed from those Pastures where the Grass is naturally fine and clear, or else the Trouble of keeping of it from spiry and benty Grass will be very great, and it will scarce ever look handsome.



In order to sow Grass-Seed, the Ground must be first dug or broken up with a Spade; and when it has been dress'd and laid even, it must be finely rak'd over, and all the Clods and Stones taken off, and cover'd over an Inch thick with good Mould to facilitate the Growth of the Seed: This being done, the Seed is to be sown pretty thick, that it may come up close and short, and it must be rak'd over again to bury and cover the Seed, that if the Weather should happen to be windy, it may not be blown away.

As to the Season of sowing Grass, the latter End of *August* is a good Time, because the Seed naturally requires nothing but Moisture to make it grow: If it be not sown till the latter End of *February*, or the Beginning of *March*, if the Weather proves dry, it will not so soon make the Walks or Quarters green. It is also best to sow it in a mild Day, and inclining to Rain, for that, by sinking down the Seed in the Earth, will cause it to shoot the sooner.

After the Seed is well come up, and the Grass is very thick, and of a beautiful Green, it will require a constant Care to keep it in Order: This consists in mowing the Grass often; for the oftener it is mow'd, the thicker and handsomer it grows: It must also be roll'd with a Cylinder, or Roller of Wood, Stone, or Iron, to level it as much as possible.

If Grass be neglected, it will run into Quick-Grass and Weeds; and if it does so, there is no way to recover it, but either by sowing it, or laying it over again, and that once in every two Years; but if the Ground be well clear'd from the Roots of strong Weeds, and the Turf be taken from a fine level

Common, it will continue handsome for several Years, provided it be well kept.

In order to keep Grass Plots or Walks handsome and in good Order, in Autumn you may sow some fresh Seed over any Places that are not well fill'd, or where the Grass is dead, to renew and furnish them again.

GRAVEL and Grass are natural Ornaments to a Country-Seat, and are the Glory of the *English* Gardens, and Things by which we excel all other Nations, as *France*, *Holland*, *Flanders*, &c.

There are different Sorts of Gravel; but for those who can conveniently have it, I approve of that Gravel on *Black-Heath*, as preferable to most that we have in *England*, it consisting of smooth, even Pebbles, which, when mix'd with a due Quantity of Loam, will bind exceeding close, and look very beautiful, and continue handsome longer than any other Sort of Gravel which I have yet seen.

Some recommend a Sort of Iron-mould Gravel, or Gravel with a little binding Lime amongst it, than which nothing, they say, binds better when it is dry; but in wet Weather it is apt to stick to the Heel's of one's Shoes, and will never appear handsome.

Sometimes Loam is mix'd with Gravel that is over-sandy or sharp, which must be very well blended together, and let lie in Heaps; after which it will bind like a Rock.

There are many Kinds of Gravel which do not bind, and thereby cause a continual Trouble of rolling, to little or no Purpose: As for such,

If the Gravel be loose or sandy, you should take one Load of strong Loam, and two of Gravel, and to cast them well together.

## G R

If it be an old Walk, that only wants coating over, it will be sufficient to lay it two or three Inches thick: But where there is Plenty of this strong reddish Loam, then you may lay it the full Depth.

Some skreen the Gravel too fine, but this is an Error; if it be cast into a round Heap, and the great Stones only rak'd off, it will be the better.

Some are apt to lay Gravel Walks too round; but this is likewise an Error, because they are not so good to walk upon, and besides, it makes them look narrow; an Inch is enough in a Crown of five Foot, and it will be sufficient, if a Walk be ten Foot wide, that it lies two Inches higher in the Middle than it does on each Side; if fifteen Feet, three Inches; if twenty Feet, four; and so in Proportion.

For the Depth of Gravel Walks, six or eight Inches may do well enough; but a Foot thickness will be sufficient for any.

The Month of *March* is the properest Time for laying Gravel; it is not prudent to do it sooner, or to lay Walks in any of the Winter Months before that Time.

Some, indeed, turn up Gravel Walks in Ridges in *December*, in order to kill the Weeds, but this is very wrong; for besides that it deprives them of the Benefit of them all the Winter, it does not answer the End for which it is done, but rather the contrary; for tho' it does kill the Weeds for the present, yet it adds a Fertility to them as to the great future Increase of both them and Grass.

If constant rolling them after Rains and Frost will not effectually kill the Weeds and Moss, you should turn the Walks in *April*, and lay them down at the same Time.

## G R

In order to destroy Worms that spoil the Beauty of Gravel or Grassy Walks, some recommend the watering them well with Water in which Walnut-Tree Leaves have been steep'd and made very bitter, especially those Places most annoy'd with them; and this, they say, as soon as it reaches them, will make them come out hastily, so that they may be gather'd; but if in the first laying of the Walks there is a good Bed of Lime-rubbish laid in the Bottom, it is the most effectual Method to keep out the Worms; for they don't care to harbour near Lime.

Grounds that are gravelly and sandy, easily admit both Heat and Moisture; but they are not much the better for it; because they let it pass too soon, and so contract no Ligature; or else, if they have a clayey Bottom, they retain it too long, and by that Means either parch or chill too much, and produce nothing but Moss or cancerous Infirmities; but if the Bottom be a Gravel, and there are two Feet of good Earth upon the Surface, it is preferable to most other Soils for almost any Sort of Fruit; for tho' this Soil will not produce the Fruits planted thereon, so large as a loamy Soil, yet they will be much better tasted, and earlier ripe.

GREEN-HOUSE or Conservatory.

As of late Years there have been great Quantities of curious Exotick Plants introduc'd into the *English* Gardens, so the Number of Green-Houses or Conservatories has increased, and not only a greater Skill in the Management and Ordering of these Plants, has increased therewith; but also a greater Knowledge of the Structure and Convenience of these Places, so as to render

der them both Useful and Ornamental, hath been acquired: And since there are many Particulars to be observ'd in the Construction of these Houses, whereby they will be greatly improv'd, so I thought it necessary, not only to give the best Instructions for this I was capable of; but also to give a Design of one in the Manner I would chuse to erect it, upon the annex'd Copper-Plate.

As to the Length of these Houses, that must be proportion'd to the Number of Plants they are to contain, or the Fancy of the Owner; but their Depth should never be greater than eighteen or twenty Feet in the Clear, and the Length of the Windows should be at least equal to the Depth of the House, and if they are somewhat longer, it will be still the better: These Windows should be carried up quite to the Ceiling, that there may be no Room for dead Air in the upper Part of the House; and they should come down within about ten Inches or a Foot of the Floor; their Breadth should be proportion'd to the Length of the House; which in a small Green-House, may be four Feet broad; but in a large one, they should be six Feet: The Piers between these Windows should be as narrow as possible to support the Building; for which Reason, I should chuse to have them either of Stone, or of solid hard Bricks; for if they are built with fine rubb'd Bricks, those are generally so soft, that the Piers will require to be made thicker, otherwise the Building will be in Danger of falling in a short Time, especially if you have any Rooms over the Green-house: which is what I would always advise, as being of great Use, to keep the Frost out in very hard Winters.

If these Piers are made with Stone, I would have them about two Feet broad in Front, and slop'd off backwards to about eighteen Inches broad, whereby the Rays of the Sun will not be taken off or obstructed by the Corners of the Piers; which it would be, if they were square. And if they were made of solid Bricks, two Feet square would be strong enough to support the Building.

At the Back of the Green-house there may be erected a House for Tools, and many other Purposes, which will be extreme useful, and also prevent the Frost from entering the House that Way; so that the Wall between these need not be more than two Bricks and a half in Thickness; whereas if it were quite expos'd behind, it should be three Bricks, or three Bricks and a half in Thickness; and by this Contrivance, if you are willing to make a handsome Building, and to have a noble Room over the Green-house, you may make the Room to come over the Tool-house, and carry up the Stair-case in the Back, so as not to be seen in the Green-house; and hereby you may have a Room twenty-five or thirty Feet in Width, and of a proportionable Length: and under this Stair-case there should be a private Door into the Green-house, at which the Gardener may enter in hard frosty Weather, when it will not be safe to open any of the Glasses in the Front. The Floor of the Green-house, which should be laid either with Marble, Stone, or Broad Tiles, according to the Fancy of the Owner, must be rais'd two Feet above the Level of the Ground whereon the House is plac'd, which, if in dry Ground, will be sufficient; but if the Situation be moist and springy, and thereby  
subject

subject to Damps, it should be rais'd at least three Feet above the Surface: And under the Floor, about two Feet from the Front, I would advise a Flue of about ten Inches in width, and two Feet deep, to be carry'd the whole Length of the House, which may be return'd along the Back-part, and be carry'd up in proper Funnels adjoining to the Tool-house, by which the Smoke may pass off. The Fire-place may be contriv'd at one End of the House; and the Door at which the Fuel is put in, as also the Ash-grate, may be contriv'd to open into the Tool-house, so that it may be quite hid from the Sight, and be in the Dry; and the Fuel may be laid in the same Place, whereby it will be always ready for Use.

I suppose many People will be surpriz'd to see me direct the making of Flues under a Green-house, which have been disus'd so long, and by most People thought of ill Consequence; as indeed they have often prov'd, when under the Direction of unskilful Managers, who have thought it necessary, whenever the Weather was cold, to make Fires therein. But however injurious Flues have been under such Mismanagement, yet when skilfully manag'd, they are of very great Service: for tho' perhaps it may happen that there will be no Necessity to make any Fires in 'em for two or three Years together, as when the Winters prove mild there will not, yet in very hard Winters they will be extremely useful to keep out the Frost; which cannot be effected any other way, but with great Trouble and Difficulty.

Within-side of the Windows, in Front of the Green-house, you should have good strong Shutters,

which should be made with Hinges; to fold back, so that they may fall back quite close to the Piers, that the Rays of the Sun may not be obstructed thereby: These Shutters need not to be above an Inch and a Half thick, or little more, which, if made to join close, will be sufficient to keep out our common Frost; and when the Weather is so cold as to endanger the Freezing in the House, it is but making a Fire in your Flue, which will effectually prevent it: And without this Conveniency it will be very troublesome, as I have often seen, where Persons have been oblig'd to nail Mats before their Windows, or to stuff the hollow Space between the Shutters and the Glass with Straw; which when done, is commonly suffer'd to remain till the Frost goes away; which, if it should continue very long, the keeping the Green-house so closely shut up, will prove very injurious to the Plants: And as it frequently happens that we have an Hour or two of the Sun-shine in the Middle of the Day, in continued Frosts, which are of great Service to Plants, when they can enjoy the Rays thereof through the Glasses, so when there is nothing more to do than to open the Shutters, which may be perform'd in a very short Time, and as soon shut again when the Sun is clouded, the Plants may have the Benefit thereof whenever it appears; whereas where there is so much Trouble to uncover, and as much to cover again, it would take up the whole Time in uncovering and shutting them up, and thereby the Advantage of the Sun's Influence would be lost. Besides, where there is so much Trouble requir'd to keep out the Frost, it will be a great Chance if it be not neglected by  
the

the Gardener; for if he be not as fond of preserving his Plants, and as much in love with 'em as his Master, this Labour will be thought too great by him; and if he does take the Pains to cover the Glasses up with Mats, &c. he will not care to take them away again until the Weather alters, so that the Plants will be shut up close during the whole Continuance of the Frost.

There are some People who commonly make use of Pots fill'd with Charcoal to set in their Green-house in very severe Frosts; but this is very dangerous to the Persons who attend these Fires, and I have often known such as have been almost suffocated therewith, and at the same Time they are very injurious to the Plants; nor is the Trouble of tending upon these, small, and the many Hazards to which the Use of these Fires are liable, have justly brought them into Disuse with all skilful Persons: And as the Contrivance of Flues, and the Charge of the Fires are but small, so they are much to be prefer'd to any other Method for warming the Air of the House: But where there is no Flues contrived in the Green-house, the best way to keep out the Frost, is, to burn four or six Candles every Night in the Green-house, which, if rightly placed near the Front, will effectually answer the Purpose, provided the House be close.

The Back-part of the House should be plaister'd with Mortar, and white-wash'd; or if lined with Waincot, should be painted white, as should the Ceiling, and every Part within-side of the House, for this reflects the Rays of Light in a much greater Quantity than any other Colour, and is of signal Service to Plants, especially in the Winter, when the House is pretty much clos'd, so that

but a small Share of Light is admitted through the Windows; and at such Time I have observ'd that in some Green-houses which have been painted Black, or of a dark Colour, the Plants have cast most of their Leaves.

In this Green-house you should have Trussels, which may be mov'd out and in to the House, upon which you should place Rows of Planks, so as to fix the Pots or Tubs of Plants in regular Rows one above another, whereby the Heads of the Plants may be so situated as not to interfere with each other: The lowest Row of Plants, which should be the forwardest towards the Windows, should be plac'd about four Feet therefrom, so that there may be a convenient Breadth left next the Glasses to walk in Front; and the Rows of Plants should rise gradually from the first, in such a manner, that the Heads of the second Row should be intirely advanc'd above the first, the Stems only being hid thereby: And at the Back-side of the House there should also be allow'd a Space of at least five Feet, for the Conveniency of watering the Plants, as also to admit of a Current of Air round them, that the Damps occasion'd by the Perspiration of the Plants, may be the better dissipat'd, which by being pent in too closely, often occasions a Mouldiness upon the tender Shoots and Leaves; and when the House is close shut up, this stagnating, rancid Vapour is often very destructive to the Plants: For which Reason also you should never croud them too close to each other; nor should you ever place *Sedums*, *Euphorbium*, *Torch-Thistles*, and other tender succulent Plants, amongst *Oranges*, *Myrtles*, and other Ever-green Trees; for, by an Experiment  
which

which I made *Anno* 1729, I found that a *Sedum* plac'd in a Green-house among such Trees, almost daily increas'd its Weight, although there was no Water given to it the whole Time: Which increase of Weight was owing to the Moisture imbib'd from the Air, which being replete with the rancid Vapours perspir'd from the other Plants, occasion'd the Leaves to grow pale, and in a short Time they decay'd and dropp'd off; which I have often observ'd has been the Case with many other succulent Plants, when plac'd in those Houses which were fill'd with many Sorts of Ever-green Trees, that requir'd to be frequently water'd.

Therefore to avoid the Inconvenience which attends the placing of Plants of very different Natures in the same House, it will be very proper to have two Wings added to the main Green-house; which if plac'd in the Manner express'd in the annex'd Plan, will greatly add to the Beauty of the Building, and also collect a greater Share of Heat. In this Plan the Green-house is plac'd exactly fronting the South, and one of the Wings faces the South-East, and the other the South-West; so that from the Time of the Sun's first Appearance upon any Part of the Building, until it goes off at Night, it is constantly reflected from one Part to the other, and the cold Winds are also kept off from the Front of the main Green-house hereby; and in the Area of this Place, you may contrive to place many of the most tender Exotick Plants, which will bear to be expos'd in the Summer-season; and in the Spring, before the Weather will permit you to set out the Plants, the Beds and Borders of this Area may be full of *Anemonies*, *Ra-*

*nunculus's*, early *Tulips*, &c. which will be past flowering, and the Roots fit to take out of the Ground by the Time you carry out the Plants, which will render this Place very agreeable during the Spring-season that the Flowers are blown; and here you may walk and divert yourself in a fine Day, when, perhaps, the Air in most other Parts of the Garden will be too cold for Persons, not much us'd thereto, to take Pleasure in being out of the House.

In the Center of this Area, may be contriv'd a small Bason for Water, which will be very convenient for watering Plants, and very much add to the Beauty of the Place; besides, the Water being thus situated, will be soften'd by the Heat, which will be reflected from the Glasses upon it, whereby it will be render'd much better than raw cold Water for these tender Plants.

The two Wings of the Building should be contriv'd so as to maintain Plants of different Degrees of Hardiness, which must be effected by the Situation and Extent of the Fire-place, and the Manner of conducting the Flues; a particular Account of which will be exhibited under the Article of *Stove*: But I would here observe, that the Wing facing the South-East, should always be prefer'd for the warmest Stove, its Situation being such, as that the Sun, upon its first Appearance in the Morning, shines directly upon the Glasses, which is of great Service in warming the Air of the House, and adding Life to the Plants, after having been shut up during the long Nights in the Winter-season. These Wings being, in the Draught annex'd, allow'd sixty Feet in Length, may be divided in the Middle by Partitions

tions of Glafs, with Glafs-doors to pafs from one to the other, and the Fire-place may be order'd fo as to warm both Divifions, by placing a Regulator of Iron in the Flue, fo that the Smoke may pafs thro' the Flues of which Part foever you pleafe; and by this Contrivance you may keep fuch Plants as require the fame Degree of Heat in one Part of the Houfe, and thofe which will thrive in a much lefs Warmth in the other Part; but this will be more fully explain'd under the Article of *Stoves*.

The other Wing of the Houfe, facing the South-Weft, may alfo be divided in the fame Manner, and Flues carry'd through both Parts, which may be us'd according to the Seafons, or the particular Sorts of Plants which are plac'd therein; fo that here will be four Divifions in the Wings, each of which may be kept up to a different Degree of Warmth, which, together with the Green-houfe, will be fufficient to maintain Plants from all the feveral Countries of the World: And without having thefe feveral Degrees of Warmth, it will be impoffible to preferve the various Kinds of Plants from the feveral Parts of *Africa* and *America*, which are annually introduc'd into the *English* Gardens; for when Plants from very different Countries are plac'd in the fame Houfe, fome are destroy'd for want of Heat, while others are forc'd and spoil'd by too much of it; and this is often the Cafe in many Places, where there are large Collections of Plants.

But befides the Confervatories here mention'd, it will be proper to have a deep Hot-bed Frame, (fuch as is commonly us'd to raife large Annuals in the Spring;) into which may be fet Pots of fuch

Plants as come from *Carolina*, *Virginia*, &c. while the Plants are too fmall to plant in the open Air, as alfo many other Sorts from *Spain*, &c. which require only to be fcreen'd from the Violence of Frofts, and fhould have as much free Air as poffible in mild Weather, which can be no better effected than in one of thefe Frames, where the Glaffes may be taken off every Day when the Weather will permit, and put on every Night; and in hard Frofts, the Glaffes may be cover'd with Mats, Straw, Peafe-haulm, or the like, fo as to prevent the Froft from entring the Pots to freeze the Roots of the Plants, which is what will many times utterly deftroy them, tho' a flight Froft pinching the Leaves or Shoots very feldom does them much Harm. As to the Structure of thefe Frames, it will be fully explain'd under the Article of *Hot-beds*.

GROSSULARIA; The Gooseberry-Tree.

The Characters are;

*The Leaves are lacinated, or jagged; the whole Plant is fet with Prickles; the Fruit grows fparfely upon the Tree, having, for the moft part, but one Fruit upon a Footftalk, which is of an Oval or Globular Figure, containing many fmall Seeds, furrrounded by a pulpy Substance.*

The Species are;

1. GROSSULARIA; *fimplici acino, vel spinofa, fylveftris*. C. B. P. The common Goose-berry.

2. GROSSULARIA; *spinofa, fativa*. C. B. P. The large manur'd Goose-berry.

3. GROSSULARIA; *fructu obfcure purpurafcente*. Cluf. The red hairy Gooseberry.

4. GROSSULARIA; *fructu Uva Crifpa, alba, maxima, rotunda*. Hort. Ed. The large white Dutch Gooseberry.

5. GROSSULARIA; *maxima, subflava, oblonga*. Hort. Ed. The large Amber Gooseberry.

6. GROSSULARIA; *fructu rotundo, maximo, virescente*. The large green Gooseberry.

7. GROSSULARIA; *fructu rubro, majore*. Boerh. Ind. The large red Gooseberry.

8. GROSSULARIA; *spinosa, sativa, foliis flavescens*. The yellow-leav'd Gooseberry.

9. GROSSULARIA; *spinosa, sativa, foliis ex luteo variegatis*. The strip'd-leav'd Gooseberry.

There are several other Varieties of this Fruit which have been obtain'd from Seeds in different Parts of England, which differ either in the Shape or Colour of the Berries; but as these are only femal Variations, so it is needless in this Place to enumerate them, especially since the Number of these will be encreas'd continually from Seeds.

These are propagated either by Suckers taken from the old Plants, or by Cuttings; the latter of which I prefer to the former, because those Plants which are produc'd from Suckers, are always more dispos'd to shoot out a greater Number of Suckers from their Roots than such as are rais'd from Cuttings, which do generally form much better Roots.

The best Season for planting these Cuttings is in February, just before their Buds begin to open; observing always to take the handsomest Shoots, and from such Branches as generally produce the greatest Quantity of Fruit; for if you take those which are produc'd from the Stem of the old Plants, (which are commonly very luxuriant) they will not be near so fruitful as those taken from bearing Branches. These Cuttings should be about six or eight

Inches long, and must be planted in a Border of light Earth, expos'd to the Morning Sun, about three Inches deep, observing to water them gently, when the Weather proves dry, to facilitate their Root; and in the Summer, when they have put out, you should rub off all the under Shoots, leaving only the uppermost or strongest, which should be train'd upright to form a regular Stem. In October following, these Plants will be fit to remove; at which Time you should prepare an open Spot of fresh Earth, which should be well dug and cleans'd from all noxious Weeds, Roots, &c. and being levell'd, you should proceed to take up your Plants, trimming their Roots, and cutting off all lateral Side-branches; then plant them at three Feet Distance Row from Row, and one Foot asunder in the Rows, observing to place some short Sticks to the Plants, in order to train their Stems upright and regular. In this Place they may remain two Years, being careful to keep them clear from Weeds, as also to dig up the Ground between the Rows once a Year, which should be in the Spring; as also to trim off all lateral Shoots which are produc'd below the Head of the Plant, so that the Stem may be clear about a Foot in Height above the Surface of the Earth, which will be full enough; and as the Branches are produc'd commonly very irregular in the Head, so you must cut out such of them as cross each other, or thin them where they are too close, whereby the Head of the Plant will be open, and capable of admitting the Air freely into the Middle, which is of great Use to all kinds of Fruits.

After these Plants have remain'd in this Nursery two Years, they will



will be fit to transplant to the Places where they are design'd to remain, for it is not so well to let them grow in the Nurseries too large, which will occasion their Roots to be woody, whereby the removing of them will not only hazard the Growth of the Plants, but such of them as may take very well, will remain stunted for two or three Years before they will be able to recover their Check. The Soil in which these Plants thrive to the greatest Advantage, is a rich, light, sandy Loam, though they will do very well upon most Soils and Situations: But where this Fruit is cultivated, in order to procure it in the greatest Perfection, they should never be planted in the Shade of other Trees, but must have a free open Exposure: The Distance they ought to be planted, is eight Feet Row from Row, and six Feet asunder in the Rows: The best Season for transplanting them, is in *October*, when their Leaves begin to decay, observing, as was before directed, to prune their Roots, and trim off all lateral Shoots, or such as cross each other, shortening all long Branches, so as to make the Head regular.

In the pruning of these Shrubs, most People make use of Garden-Sheers, observing only to cut the Head round, as is practis'd for Evergreens, &c. whereby the Branches become so much crowded, that what Fruit is produced, never grows to half the Size as it would do, were the Branches thin'd and prun'd according to Art; which should always be done with a pruning Knife, shortning the strong Shoots to about ten Inches, and cutting out all those which grow irregular, and thinning the fruit-bearing Branches where they are too thick;

observing always to cut behind a Leaf-bud: With this Management, your Fruit will be near twice as large as those which are produced upon such Bushes as are not thus pruned, and the Shrubs will continue in Vigour much longer; but you must observe to keep the Ground clear from Weeds, and dig it at least once a Year, and every other Year you should bestow a little rotten Dung upon it, which will greatly improve the Fruit.

It is a common Practice with the Gardeners near *London*, who have great Quantities of these Bushes, in order to supply the Markets, to prune them soon after *Michaelmas*, and then to dig up the Ground between the Rows, and plant it with Coleworts for Spring Use, whereby their Ground is employed all the Winter without prejudicing the Gooseberries, and in hard Winters these Coleworts often escape, when those which are planted in an open Exposure, are all destroy'd; and these are generally pull'd up for Use in *February* or *March*, so that the Ground is clear before the Gooseberries come out in the Spring, which is a Piece of Husbandry well worth practising where Ground is dear, or where Persons are confin'd for Room.

GUAJACANA; Indian Date Plumb, or Bastard Lote Tree.

The Characters are;

*The Leaves are produced alternately upon the Branches, which fall off in Winter; the Cup of the Flower is divided into three Parts; the Flower consists of one Leaf, of a Bell-shape, the under Part being tubulose, and the upper Part is cut into five or more Segments, and is expanded; in the Center of the Cup arises the Ovary, which becomes a soft, roundish Fruit, having many depress'd Cells, in which*

are contained many hard Seeds dispos'd in a circular Order.

The Species are ;

1. GUAJACANA ; *J. B.* The Indian Date Plumb-tree.

2. GUAJACANA ; *angustiore folio.* *Tourn.* Narrow-leav'd Indian Date Plumb-tree.

3. GUAJACANA ; *Pishamin Virginianum.* *Park. Theat. Boerb. Ind.* Virginian Date-Plumb, or Pishamin.

The first and second Sorts are at present very rare in *England*, and only to be found in some curious Gardens ; but the third Sort is more common ; they are all supposed to be Natives of the *West-Indies* : The last Sort hath been rais'd in great Plenty, of late Years, in the Gardens near *London*, from Seeds which have been brought from *Virginia* and *Carolina*, in both which Countries this Tree greatly abounds.

These Plants may be propagated by sowing the Seeds (which are often brought into *England*) upon a moderate Hot-bed, in the Spring of the Year, and when the Plants come up, they should be transplanted each into a separate Half-penny Pot, which should be filled with fresh, light, sandy Earth, and plunged into another moderate Hot-bed, to facilitate their taking Root ; and as the Summer advances, so you should inure them to the open Air by degrees, and in *June* they may be removed into some Place that is pretty well shelter'd from Winds, where they may remain until *October*, at which Time they should be removed under the Shelter of a Hot-bed Frame, or into the Green-house, during the first Winter ; but in *April* following, they may be shaken out of the Pots and transplanted into the open Air, where they will thrive very fast, and resist the Cold of our Winters

very well, provided they are planted in a moderate dry Soil, and not too much expos'd to severe Winds.

They may also be propagated by laying down the young Shoots in the Spring, which if kept supplied with Water in very dry Weather, will take Root by the succeeding Spring, when they may be transplanted where they are to remain : The best Season for transplanting these Trees, is at the latter End of *March*, just before they begin to shoot, at which Time, if Care be taken not to hurt their Roots, there will be little Danger of their not succeeding, if the Plants are young ; but they are very difficult to remove when they are grown large ; therefore if your Ground be not ready to transplant these Trees into, while young, you should keep them in Pots or Tubs, until it be so, that they may be turned out with a Ball of Earth to their Roots, which will be much the surest Method.

The *Pishamin* is very subject to send forth great Numbers of Suckers from the Root, so that there will never want a Supply of Shoots for Laying ; which is by far the best Method of managing them ; tho' sometimes they may be taken from the old Plants with Roots to them ; yet these Roots are seldom very good, and will always be subject to push out a greater Quantity of Suckers, than such as are produc'd by Layers ; which is what no one would covet in any Sort of Trees, unless for the Sake of increasing the Number ; for they seldom make such fair Trees as the other. This makes a very large beautiful Tree in *Virginia*, and seems dispos'd to grow to the same Sature with us. There was formerly a large Tree of this Kind in the Gardens of the Bishop of *London* at *Fulham*, which flower'd ;

flower'd; but this hath been cut down several Years, to make room for Kitchen Stuff: so that at present I don't know of any that are very large; tho' there are some of those that have been rais'd from Seeds which have flower'd and produced Fruit: There are some Trees in the *Physick-Garden*, that I rais'd from Seeds in the Year 1724, which are at this Time, *Anno 1733*, upwards of nine Feet high, and do make vigorous Shoots every Year.

GUAIACUM; Lignum Vitæ.

The *Characters* are;

*It hath pinnated Leaves: The Flower consists of several Petals, which are placed orbicularly, and expand in Form of a Rose: The Pointal of the Flower, which arises from the Centre of the Calyx, becomes a fleshy, roundish, stony Fruit, or the stony Seeds are surrounded with a thin Pulp.*

The *Species* are;

1. GUAIACUM; *flore caruleo, fructu subrotundo. Plum.* Lignum Vitæ, or Wood of Life, with a blue Flower, and roundish Fruit.

2. GUAIACUM; *flore caruleo, simbrinato, fructu tetragono. Plum.* Lignum Vitæ, with a blue fringed Flower, and a four-corner'd Fruit.

These two Plants are Natives of the hottest Parts of the *West Indies*, and are with great Difficulty transplanted into *England*; for their Seeds seldom rise with us, unless they are brought very fresh, and are sown soon after they arrive: I have some young Plants in the *Physick-Garden*, that were rais'd from Seeds *Anno 1726*, which have come on very well, tho' they are naturally Plants of a very slow Growth.

These Plants may be brought over from *America* in any of the Summer Months, which is the

surest Method to obtain them, their Seeds being very difficult to grow; but great Care should be taken to transplant them into a Tub or Box of Earth at least a Month before they are put on Board the Ship, that they may be settled in the Earth, and Charge given to the Sailors not to over-water them in their Passage; which is what hath destroy'd more Plants sent from Abroad, than either the Cold, or any other Accident or Management whatever.

When the Plants arrive, they should be immediately taken out of the Tubs, preserving some Earth about their Roots, and planted into Pots fill'd with good fresh rich Earth, and plung'd into a Hot-bed of Tanners-Bark, to facilitate their making fresh Roots, that they may be enabled to live through the Winter; for if they are not well rooted in the Earth before the cold Weather comes on, it will be difficult to preserve them.

In *October* they should be remov'd into a warm Stove, where the Thermometer should be kept up to twenty Degrees above Temperate, (as mark'd on Mr. Fowler's Thermometers); and during the Winter-season they should be often refresh'd with Water: But it should be given them very cautiously; for too much Moisture is very hurtful to these Plants. You should also carefully wash their Leaves, from Time to Time, to cleanse them from Filth, which is very subject to lodge upon the Surfaces thereof: And in Summer they should have a good Share of fresh Air, by opening the Glasses of the Stove; but they should never be wholly expos'd to the open Air, even in the hottest Season, unless for a short Time, in a gentle warm Shower of Rain,

which will wash the Leaves, and greatly refresh them.

The Wood of these Trees is so hard as to break the Tools in felling them; so that it is seldom cut down for Fire-wood, being very difficult to burn.

**GUAJAVA**; The Guava.

The Characters are;

The Flowers, for the most part, consist of five Leaves, which are produced in a circular Order, and expand in Form of a Rose, having many Stamina or Threads surrounding the Ovary: The Ovary is of a long tubulous Figure, which becomes a fleshy Fruit, crown'd on the Top, and containing many small hard Seeds.

The Species are;

1. **GUAJAVA**; *alba, dulcis*. H. L. The white Guava.

2. **GUAJAVA**; *rubra, acida, fructu rotundiori*. H. L. The red Guava.

These Trees grow to the Height of twenty Feet, or more, in the *West-Indies*, and have Trunks as thick as a Man's Thigh: But with us in *England* they are preserv'd in warm Stoves, and are rarely seen above six or seven Feet high, tho' there are several Trees which have produc'd Fruit in *England*.

These Plants are propagated by sowing their Seeds in a Hot-bed in the Spring; and when they are come up, they should each of them be transplanted into a single Half-penny Pot, fill'd with light rich Earth, and plung'd into a fresh Hot-bed, in order to bring 'em forward; observing to give 'em Air, in Proportion to the Warmth of the Weather, by raising the Glasses with Stones, &c. and in the great Heat of the Day you should shade the Glasses with Mats, to prevent their being scorch'd; and in the Summer-time they will require to be fre-

quently water'd. As they increase in Bulk, so you must shift them into larger Pots: But you must be careful not to put them into Pots that are too large; for that will very much retard their Growth, as indeed it doth most other Plants; and towards the Beginning of *July* you must let them have a plentiful Share of Air, in order to harden 'em before Winter; for if you continue forcing 'em quite thro' the Summer, you will get 'em to be very large in one Season; but then they'll be so tender, that 'twill be difficult to preserve 'em in Winter.

At the Latter-end of *August* or Beginning of *September*, you should remove the Pots into the Stove, where they should be plac'd in a moderate Situation, *i. e.* not too near the Fire, nor at too great a Distance therefrom; the Temperate Heat, as mark'd upon Mr. *Fowler's* Thermometers, agreeing better with them than a great Degree. During the Winter-season they must be often refresh'd with Water, especially if they are plac'd upon Shelves in the Stove; but if they are plung'd into Tanners Bark, they will not require it so often; nor must they have too much given at a Time; and the Water wherewith they are water'd, should be plac'd in the Stove at least twenty-four Hours before it be us'd, that it may be nearly of an equal Proportion of Warmth with the Air of the House. You should also frequently wash their Leaves with a Cloth in Winter, in order to cleanse them from Dust and other Filth, which may have been collected upon the Surfaces of the Leaves during their being in the House; as also from Vermin, which are very subject to infest these Plants. In the Summer

Summer you may expose them to the Air, by removing or opening the Glasses in the Front of the Stove; but they should never be suffer'd to stand Abroad, unless it be for a few Hours in a warm Rain to wash them; for when they are treated too hardily, they will never produce either Fruit or Flowers; whereas, when they are rightly manag'd, they will flower the third Season after their being sown.

These Trees are planted everywhere in the *Charibbe* Islands for their Usefulness; tho' the usual Manner of their Cultivation is by being eaten: The Seeds passing intire through the Body, are voided in the Excrements; so that wherever the *Negroes* dung, there will never want a Supply of these Trees, which is often so great, as to become troublesome in their Plantations and Savanna's.

The Fruit (says Sir *Hans Sloane*) is accounted extremely pleasant, delicious and wholesome, and may very deservedly take the first Place among the *West-Indian* Fruits, if eaten when thoroughly ripe. They have (continues he) only this Inconvenience, that being very astringent, they stop up the Belly, if eaten in great Quantities; and the Seeds sometimes sticking to the hard Excrement, in coming through the Intestines, especially the *Rectum*, by their irregular sharp Angles, will occasion very great Pain there, and very often bring a Flux of Blood.

#### GUIDONIA.

The Characters are;

*The Cup of the Flower consists of five Leaves, which are stiff, and of a thick succulent Make, expanding in Form of a Star; these are of an Ash-colour on the Outside, and of a fine*

*Purple on the Inside: In the Centre of the Cup arises the Flower, which consists of several Leaves, which expand in Form of a Star: From the Bottom of the Flower arises the Pointal, which becomes a roundish Fruit, divided into three or four Cells, in which are contain'd many oblong Seeds:*

We have but one Species of this Plant in the *English* Gardens; which is,

GUIDONIA; *Ulmi foliis, flore roseo.*  
*Plum. Guidonia* with Elm Leaves, and a Rose-colour'd Flower.

The Characters of this Plant do not very well agree with those which *Pere Plumier* hath given to this Genus of Plants. However, as the modern Botanists have agreed that this Plant here named is the same which is figured by *Commelin* in the *Hortus Amstelodamensis*, with the Title of *Arbuscula Ulmi facie Aethiopica, ramulis alatis, floribus purpurascens*; so I have continu'd *Plumier's* Name to it: Tho' I am in doubt whether our Plant is really the same with *Plumier's*; but it is undoubtedly that which *Commelin* has figured and described.

This Plant may be propagated by laying down the Branches in the Spring, which by the succeeding Spring will be rooted sufficiently to transplant; and they should be taken up at the Latter-end of *March*, before the Plant shoots, and put into Pots fill'd with good rich Earth; and if you set the Pots upon a moderate Hot-bed to forward their Rooting, it will be a sure Method: Tho' they should not be too much forced; nor should they continue longer than to the End of *April* under Shelter, where they may be set abroad in some

Place which is pretty well defended from strong Winds, where they may remain until *October*, at which Time they should be remov'd into the Green-house, with *Oranges, Myrtles, Oleanders, &c.* placing them in the coolest Part of the House; for they are pretty hardy, requiring nothing more than to be protected from severe Frost: and during the Winter-season they should have but little Water; for they cast their Leaves in Autumn; and so being destitute of them until *April*, they are incapable of discharging much Moisture: But in Summer they will require frequently to be water'd, without which, they seldom produce Flowers.

These may, with Care, be train'd up to the Height of eight or ten Feet, with regular Stems, and their Heads may also be reduc'd into a handsome Shape; but they should not be clipp'd with Shears, for that will cause 'em to appear unsightly, as also prevent their flowering; but rather shorten all strong irregular Shoots with your Knife, observing to cut behind a Leaf-bud, otherwise the Stump left beyond the Eye will appear to Sight. The best Season for this Operation is at the Latter-end of *March*, at which Time you should cut out all decay'd Branches, and shift the Plants into fresh Earth.

They may also be propagated by planting some strong Cuttings into Pots of fresh Earth in *March*, and plunge them into a moderate Hot-bed, observing to water them, and shade the Glasses in the Heat of the Day, as also to give them a good Quantity of Air when the Weather is warm, and in about a Month or six Weeks Time they will have taken Root, when you must harden

them by Degrees to the open Air, to which they must be expos'd in Summer and manag'd as was directed for the Layers.



## H Æ

**H**ÆMANTHUS; Blood-flower.  
The Characters are;

*It has two Leaves springing from the Bulb on each Side, and bowing backwards: The Stem is single, fungous, thick and speckled, bearing a single Flower on the Top, as it is thought: The Flower appears naked, hexapetalous (i. e. consisting of six Petals), or heptapetalous (i. e. consisting of seven Petals); but upon a close Examination, the Flower appears to be flosculous, having a Calyx consisting of six Leaves, after the manner of a Tulip, of a red Colour, among (or within) which are monopetalous Flowers, that are hexapetaloid, consisting of six long, fine, deeply-cut Segments, tubulous at the Bottom, having six Stamina, proceeding from a triangular Ovary, and tricapsular; i. e. consisting of three Capsule or Partitions, in which are contain'd oblong Seeds to the Number of thirty in one Calyx: The Bulb is squamose, and often, as it were, bifoliated.*

The Species are;

1. HÆMANTHUS; *Africanus*. H. L. Blood-Flower, or African Tulip.
2. HÆMANTHUS; *Colchici foliis, perianthio herbaceo*. Hort. Elth. *Hæmanthus* with Leaves like *Colchicum*, and an herbaceous Empalement, commonly called *Dracunculoïdes*.

These

These Plants were originally brought from the *Cape of good Hope*, and have been many Years preserv'd in the curious Gardens in *Holland*, where they now have more Sorts than are here enumerated; but in *England* they are still very rare, and in but few Gardens. The Season for transplanting the Bulbs of the first Sort is in *May* or *June*, when the Leaves are decay'd, at which Time they may be kept out of the Earth two or three Months without Damage; tho' the sooner they are transplanted, the stronger the Roots will be, and more likely to flower. The Soil in which they must be planted should be one half fresh Earth from a Pasture, and a fourth-part rotten Dung, and the other part Sea-Sand; these should be well mix'd, two or three Months before us'd, that their Parts may be better incorporated. Then you should put a few Stones in the Bottom of each Pot, that the Water may be the easier drain'd off; and afterwards put the Earth into the Pots, planting the Bulbs therein, only so deep as that their upper Parts may be just cover'd: Then place the Pots in a shady Situation, giving them now and then a little Water in very dry Weather: But you must observe, never to let them have too much Moisture, especially at the Time when they are destitute of Leaves. In this Situation they may continue until the Beginning of *August*, when they must be remov'd to a warmer Place; for about that Season they will begin to push out new Roots; but they may remain abroad until the Middle or Latter-end of *September*, at which Time they should be remov'd into a moderate Stove, where they must be carefully preserv'd, observing frequently to refresh them with Water;

for now their Leaves will appear, and in a short Time will grow to a large Size, if the Roots are strong: But you must not give them too much Water at once, which will endanger their rotting. The Stove in which these Plants are plac'd, should be kept to near the temperate Heat as is mark'd on Mr. *Fowler's* Thermometers, in which they will thrive very well, and, if the Bulbs are strong, will produce their beautiful Flowers in Winter, which renders them very valuable, it being a Time when few other Flowers appear. These Roots should not be transplanted oftener than every other Year; but the Earth in the Upper-part of the Pots should be taken out twice a Year, and some fresh Earth put in, which will greatly strengthen the Roots.

This first Sort very rarely produces its Flowers with us, which from the small Number of Bulbs now in *England* may be accounted for, by supposing it to agree with the *Lilionarcifus* and some other Bulbous-rooted Flowers, which seldom flower oftener than every fourth Year.

The second Sort generally flowers every other Year, so that from a few Roots there will be annually some Flowers; these appear in *July*, and continue Part of *August*, and are of a beautiful Orange-colour. This Sort may be propagated by Seeds, which do ripen very well in *England*: These Seeds should be sown in a Pot of light, sandy Earth, soon after they are ripe, and the Pots placed in a shady Position till the Middle of *September*, when they should be removed more in View of the Sun, observing to refresh the Earth with Water, now and then when the Season is dry, as also keep it clear from Weeds. Toward  
the

difficult to get them to grow: As for the Size, the Sets ought to be about the Bigness of one's Thumb, and cut within about four or five Inches of the Ground; they ought to be fresh gather'd, frait, smooth, and well rooted.

2dly, If the Hedge has a Ditch, it should be made three Feet wide at Top, and one at Bottom, and two Feet deep, that each may have a Slope; but if the Ditch be four Feet wide, it ought to be two Feet and an half deep; and if it be five Feet wide, it should be three Feet, and so in Proportion.

3dly, If the Bank be without a Ditch, the Sets should be set in two Rows, almost perpendicular, at the Distance of a Foot from each other.

4thly, The Turf is to be laid with the Grass Side downwards, on that Side of the Ditch the Bank is designed to be made, and some of the best Mould should be laid upon it to bed the Quick; then the Quick is to be laid upon it, a Foot asunder, so that the End of it may be inclining upwards; and at equal Distances of thirty Feet, plant a young Oak, Ash, Crab, or Elm, to grow with the Quick.

5thly, When the first Row of Quick is laid, it must be covered with Mould, and the Turf laid upon it as before, and some Mould upon that; so that when the Bank is a Foot high, you may lay another Row of Sets against the Spaces of the lower Quick, and cover them as the former was done, and the Bank is to be topp'd with the Bottom of the Ditch, and a dry or dead Hedge laid to shade and defend the under Plantation.

6thly, Then there should be Stakes driven into the loose Earth, at about two Feet and a half Distance, so low as to reach the firm Ground.

Oak Stakes are accounted the best, and Blackthorn and Sallow the next: Let the small Bushes be laid below, but not too thick, only a little to cover the Quick from being bit by the Cattle, when it springs; and also to lay long Bushes at the Top, to bind the Stakes in with, by interweaving them.

And in order to render the Hedge yet stronger, you may edder it (as it is call'd) *i. e.* bind the Top of the Stakes in with some small long Poles or Sticks on each Side, and when the Eddering is finish'd, drive the Stakes a new, because the Waving of the Hedge and Eddering are apt to loosen the Stakes.

The Quick must be kept constantly weeded, and secur'd from being cropp'd by Cattle, and in *February* it will be proper to cut it within an Inch of the Ground, which will cause it to strike Root afresh, and help it much in the Growth.

When a Hedge is of about eight or nine Years Growth, it will be proper to plash it: The best Time for this Work is either in *February* or *October*.

When a Hedge is grown old, *i. e.* of about twenty or thirty Years Growth, and there are in it old Stubs as well as new Shoots, the old Stubs should be cut sloping off within two or three Inches of the Ground, and the best and longest of the middle Size should be left to lay down, and some of the strongest, at the Height of five or six Feet, according as you design the Height of the Hedge to be, may be left to serve instead of Stakes; and fresh Stakes should be put in those Places where they are wanting; the Hedge should be thin'd, so as to leave on the Stubs only such Shoots as are design'd to



be of Use, that there may be Room left to put a Spade in between them; the Ditch also should be cleans'd, and each Side of the Slope kept as in a new Ditch; and where the Earth is wash'd from the Roots of the Quick, or is hollow, face it a new, with so much of the first Spit of Earth that is dug out of the Ditch, as there is Occasion for, and lay what is dug out at the second Spit on the Top of the Bank; for if it be laid on the Side or Face of the Bank, it will slip into the Ditch again when Wet comes, and also take a great deal of the Bank along with it.

In planting *Quicks* there are two Extrems to be avoided; the first is laying it too low and too thick, because it makes the Sap run all into the Shoots, and leaves the Plashes without Nourishment; which, with the Thickness of the Hedge, kills them.

Secondly, It must not be laid too high, because this draws all the Sap into the Plashes, and so causes but small Shoots at the Bottom, and makes the Hedge so thin, that it will neither hinder the Cattle from going through, nor from cropping of it.

When the Shoot that is design'd to be plashed is bent, give it a small Cut with a Bill, half through, sloping a little downwards, and then weave it about the Stakes, and trim off the small superfluous Branches, that straggle too far out on both Sides of the Hedges.

If the Stubs are very old, cut them quite down, and secure them with good dead Hedges on both Sides, till the young Shoots are got up tall enough to plash, and plant new Sets in the void Spaces.

In making a Hedge, if it be set with *Crab* or *Apple Stocks*, it will be proper to leave one standing un-

cut up at every ten, twelve, or twenty Feet, on both Sides the Hedge, if the Ground be your own, which being done, they may be so ordered by pruning or staking, that one may lean into one Ground, and the other into another, &c.

These Stocks should be prun'd up every Year, till they are brought out of the Reach of the Cattle, and then they may be grafted with the *Red streak*, *Gemmet-moyl*, or what other Fruit you please.

If the Stocks be of Apple Kernels, they may stand ungrafted, and they will yield very good Cyder Fruit; but then such Stocks as are not grafted will be longer before they bear; and also when you do graft, you may be certain of your Kind; but if you find a very natural Stock, which by Leaf, Shoot, and Bud appears likely, you may try it, and so you may have a new fine Fruit, and if you do not like it, you may graft it when you please.

As for the rest of the Hedge, when it has shot three or four Years, you may lay it to make a Fence with, for the doing of which take the following Directions;

1st, At every Laying to lay down some old Plashes, or if the Hedge be thin, young ones; but they must be so laid, as to point with their Ends to the Ditch Side of the Bank, the Ends being kept low on the Bank, by being so ordered they will the better thicken the Bottom of the Hedge, and keep up the Earth of the Bank.

2dly, To heighten the Bank every Time you lay Earth on it, so as to cover the Layers all but the Ends; this Earth will very much help the Quick, and by heightning the Banks and deepning the Ditch, you will render the Fence the better.

3dly, Not

3dly, Not to cut the Plashes too much; but just so as they may bend down well, not to lay them too upright, as some do; but to lay them near to a Level, and by so doing, the Sap will the better break out at several Places, and not run so much to the Ends, as it will when they lie much upon the Slope.

If you have much Wood to spare, you may cut up great Part of those that grow near the Ditch; but then you ought to hang the Bank with Bushes, to prevent Cattle from cropping them the first Year; these will shoot strong, and secure the Hedge, keep up the Bank, and thicken the Bottom of the Hedge.

4thly, Take Care to lay the Hedge pretty thick, and turn the Beard on the Ditch Side; but you must not let the Beard hang uncut (tho' it makes a good Shew at the first making) but you must cut off all the straggling Boughs within half a Foot of the Hedge on both Sides, and this will cause it to shoot strong at these Places, and make the Hedge much the thicker.

5thly, If the Bank be high, make the Hedge so low, that it may but just serve for a Fence the first Year, for it will soon grow higher; and the lower the Hedge is made, the better the Quick will grow, and also the thicker at the Bottom; but Care must be taken to preserve it from Cattle on the Field Side, for the first Year that it is made.

6thly, If you would have a good Hedge or Fence, you should fell it often, and at every Felling root out *Elder*, *Travellers-joy* (which some call *Bull-bine*) *Briony*, &c. and do not leave too many high Standards or Pollards in it, though the *Elm* is one of the best; also too much dead Wood is not to be left in the

Bottom of the Hedges, for that will choak the Quick; but if there be a Gap, the dead Hedge should be made at a Distance.

HEDYPNOIS; Trailing crooked-seeded Hawk-weed.

The Characters are;

The Cup of the Flower is like a striated Column, or a Melon; the little Leaves of the Flower-Cup, when the Flower is fallen off, embrace each of them one single umbilicated Seed; but in the Middle of the little Head are other naked Seeds, which form an Head.

The Species are;

1. HEDYPNOIS; *annua*. Tourn. Trailing crooked-seeded Hawk-weed, or common *Hedypnois*.

2. HEDYPNOIS; *minor*, *Cretica*, *annua*. Tourn. Cor. Annual *Hedypnois* from Crete.

3. HEDYPNOIS; *annua*, *capite maximo*. Boerb. Ind. Annual *Hedypnois*, with a large Head.

These Plants are seldom propagated, except in *Botanick* Gardens, for the Sake of Variety, as being Plants of no great Beauty or Use. The first and third *Species* are found wild in the Southern Parts of *France*, in *Spain* and *Italy*; but the second Sort was brought from *Crete* by *Monsieur Tournefort*. These may all be propagated by sowing their Seeds towards the latter End of *March*, or the Beginning of *April*, in an open Situation and a dry Soil, where they may remain to flower and seed, for they don't care to be transplanted: The Distance which these Plants should be allowed, must not be less than a Foot; and if the Soil be good, a Foot and an half asunder will be full little enough, for they are very apt to spread to a great Distance, and their Branches trailing upon the Ground, would occasion their rotting, were they to

to stand too close to each other. These Plants produce their Flowers in *June* and *July*, and their Seeds are perfected in *August*, when they should be gather'd and preserv'd for the succeeding Year.

**HEDYSARUM** ; French Honey-suckle.

The *Characters* are ;

*It hath papilionaceous Flowers, which are collected into an Head or Spike : The Pointal of the Flower, which rises out of the Empalement, becomes a jointed undulated Pod ; in each of which Joints is lodg'd a Kidney-shap'd Seed.*

The *Species* are ;

1. **HEDYSARUM** ; *clypeatum, flore suaviter rubente. H. Eyf.* French Honey-suckle, with a delicate red Flower.

2. **HEDYSARUM** ; *clypeatum, flore albido. Tourn.* French Honey-suckle, with a whitish Flower.

3. **HEDYSARUM** ; *clypeatum, minus, flore purpureo. Raii Hist.* Smaller French Honey-suckle, with a purple Flower.

4. **HEDYSARUM** ; *tryphillum, Canadense. Cornut.* Three-leav'd Canada French Honey-suckle.

There are several other Species of this Plant, which are preserv'd in some curious Gardens abroad ; but these here mentioned are the chief of what I have observed in the *English* Gardens. The two first Species are very common in *England*, being propagated by the Gardeners near *London*, who supply the Markets with Plants and Flowers in the Spring of the Year.

They are all propagated by sowing their Seeds in *April*, in a Bed of light fresh Earth ; and when the Plants come up, they should be transplanted into other Beds of the like Earth, and in an open Situation, to about six or eight Inches

Distance from each other, leaving a Path between every four Rows, to go between them to hoe, and clear them from Weeds : In these Beds they may remain until *Michaelmas* ; at which Time they may be transplanted into the large Borders of a Parterre or Pleasure Garden, allowing them, at least, two Feet Distance from other Plants, amongst which they should be interspers'd, to continue the Succession of Flowers, where they will make a very fine Appearance when blown, especially the red Sort, which produces very handsome Flowers.

These are tolerably hardy, and are seldom hurt but by extreme Cold or great Rains ; Moisture, especially in the Winter Season, is very apt to rot their Roots, therefore they should be planted in a dry Soil and in a warm Situation ; and in the Spring they may be removed to the Borders, where, if they are much expos'd, or the Soil moist, they should not be transplanted 'till *March*, just before they begin to shoot out their Flower-Stems ; but then they will not produce their Flowers so strong as those which are planted in Autumn.

In order to have a Succession of these Plants, their Seeds should be sown every Spring, for the old Roots seldom continue long after they have flower'd ; and when they do remain, their Flowers are seldom so strong as from young Roots. Their Season of Flowering is in *June* and *July*, and their Seeds are perfected in *August*.

The third Sort is preserv'd in some Gardens for Variety, but the Flowers are not near so fair as those of the two former : This requires the same Management as is directed for them.

The

The fourth Sort hath a perennial Root, which will abide many Years, if planted in a dry Soil. This is propagated by sowing the Seeds in the Manner directed for the former; but when the Plants are come up two Inches high, they should be transplanted where they are to remain for good; for if they are not too thick in the Seed-bed, they may be suffer'd to remain there until the *March* following; at which Time they should be carefully taken up and transplanted into the Borders where they are design'd to stand, for their Roots generally run down very deep, so that 'tis not safe to remove them often. This Plant produces its Flowers about the same Time of the Year as the former, and perfects its Seeds in Autumn, and the Roots will abide in the open Air very well, resisting the severest Cold, provided they are planted in a dry Soil.

HELIANTHEMUM; Dwarf Cistus, or little Sun-Flower.

The Characters are;

The Flower-cup consists of three Leaves; the Flower, for the most part, consists of five Leaves, which are plac'd orbicularly, and expand in Form of a Rose; the Pointal of the Flower becomes a globular Fruit, which divides into three Parts, having three Cells, which are fill'd with roundish Seeds fix'd to small Capillaments.

The Species are;

1. HELIANTHEMUM; *vulgare, flore luteo*. *J. B.* Common Dwarf Cistus, with a yellow Flower.

2. HELIANTHEMUM; *vulgare, flore dilutiore*. *Tourn.* Common Dwarf Cistus, with a fainter Flower.

3. HELIANTHEMUM; *Alpinum, folio pilosella minoris Fuchsii*. *J. B.* Hoary Dwarf Mountain Cistus, with Cat's-foot Leaves.

4. HELIANTHEMUM; *Montanum, polii folio*. *Pluk.* Mountain Dwarf Cistus, with Poley-mountain Leaves.

5. HELIANTHEMUM; *foliis majoribus, flore albo*. *J. B.* Great-leav'd Dwarf Cistus, with a white Flower.

6. HELIANTHEMUM; *album, Germanicum*. *Tab. Icon.* White German Dwarf Cistus.

7. HELIANTHEMUM; *flore albo, folio angusto, hirsuto*. *J. B.* White-flower'd Dwarf Cistus, with narrow hairy Leaves.

8. HELIANTHEMUM; *saxatile, foliis & caulibus incanis, oblongis, floribus albis, Appennini montis*. *Mentz.* Rock Dwarf Cistus of the Appennines, with hoary oblong Leaves and Stalks, and white Flowers.

9. HELIANTHEMUM; *sive Cistus humilis, folio Sampfuchi, capitulis valde hirsutis*. *J. B.* Dwarf Cistus, with a Marjorum Leaf, and very hairy Heads.

10. HELIANTHEMUM; *folio Thymi, floribus umbellatis*. *Tourn.* Dwarf Cistus, with a Thyme Leaf, with Flowers growing in an Umbel.

11. HELIANTHEMUM; *polii folio ampliore, Lusitanicum*. *Tourn.* Portugal Dwarf Cistus, with large Poley-mountain Leaves.

12. HELIANTHEMUM; *Germanicum, luteum, Cisti folio*. *Boerh.* German Dwarf Cistus, with a yellow Flower and Cistus Leaf.

13. HELIANTHEMUM; *salicis, folio*. *Tourn.* Dwarf Cistus, with a Willow Leaf.

14. HELIANTHEMUM; *Ledi, folio*. *Tourn.* Dwarf Cistus, with a Ledum Leaf.

15. HELIANTHEMUM; *flore maculoso*. *Col.* Dwarf Cistus, with spotted Flowers.

There are many other Species of this Plant, which are found in the warm Parts of Europe, as Portugal, Spain,

*Spain, Italy, and the South Parts of France*, but these here mention'd are all the Varieties which I have observ'd in the *English Gardens*.

The four first Sorts are found wild in several Parts of *Great-Britain*; but the first is the most common of them all, and is found upon the Sides of dry Banks and chalky Hills in divers Places in *England*. The twelve first *Species* are perennial Plants, which grow woody, but of low Stature, seldom rising above a Foot high, the Branches, for the most part, trailing upon the Ground. These Plants are very ornamental to a Garden, especially if planted in a warm Position and a dry Soil, where they will thrive and flower exceedingly, and are very proper to plant in sloping Borders or little Declivities, where few other Plants will thrive to Advantage; and altho' the Flowers of these Plants are of no great Beauty, yet the vast Quantities which are produc'd all over the Plants, for two Months together, render them worthy of a Place in every good Garden.

These are all propagated by Seeds, (which the Plants annually furnish in great Plenty) and should be sown in a warm Border of light fresh Earth in *March* or the Beginning of *April*; and when the Plants are come up, they may be transplanted into Beds of the like Earth about four Inches asunder, or somewhat more: In which Place they may remain until *September*, when they should be remov'd to the Places where they are to continue for good, observing to take them up with a good Ball of Earth to their Roots, otherwise they are subject to miscarry.

They may also be propagated by planting Cuttings of any of the Sorts in *May*, in a Bed of light

fresh Earth, observing to water and shade them until they have taken Root: These also may remain in the Beds until *September*, when they should be planted out, as was directed for the Seedling Plants; but as they generally produce great Quantities of Seeds every Year, so there will seldom be Occasion for propagating them any other way, because the Seedling Plants are generally better than those obtain'd from Cuttings, and it being more Trouble to propagate them by Cuttings, few People practise that Method.

The 13th, 14th, and 15th Sorts are annual Plants, and must be sown every Year, or the Seeds suffer'd to fall, which, if the Ground be clear from Weeds, will come up, and abide the Winter, and flower early in the succeeding Summer; which is the surest Method to obtain large Plants, especially of the 15th Sort, of which, if the Seeds are sown in the Spring, the Plants are apt to be very small, and produce but few Flowers, and many times the Seeds will not come up at all, so that if you sow them, it should be done soon after they are ripe: The Flowers of this last Sort are very beautiful, each Petal or Leaf having a deep Purple Spot at the Bottom; and since it is a Plant which requires but very little Care, it is well worth keeping in a Garden.

#### HELIOTROPIUM; Turnsole.

The Characters are;

*The Flower consists of one Leaf, and is shap'd like a Funnel, having its Center wrinkled and folded, and its Brim cut into ten Segments, alternately unequal: These Flowers are collected into a long reflex'd Spike, resembling a Scorpion's Tail; each Flower is succeeded by four naked gibbous Seeds.*

The *Species* are;

1. HELIOTROPIUM; *majus, Dioscoridis*. C. B. The great Turnsole of Dioscorides.

2. HELIOTROPIUM; *Americanum, caruleum, foliis Hormini*. Acad. Reg. Sc. Blue American Turnsole, with Clary Leaves.

3. HELIOTROPIUM; *Americanum, caruleum, foliis Hormini angustioribus*. H. L. Blue American Turnsole, with narrower Clary Leaves.

4. HELIOTROPIUM; *arborescens, folio teucrii, flore albo in capitula densa congesta*. Boerb. Ind. Tree-like Turnsole, with a Germander Leaf and white Flowers growing in thick, short Heads.

5. HELIOTROPIUM; *Canariense, arborescens, folio scorodonia*. Hort. Amst. Canary Tree-like Turn-tre-sole, with a Wood-sage Leaf.

The first, second, and third Kinds are annual Plants: The first is very hardy, and is better preserv'd in a Garden, by suffering the Seeds to fall when ripe, which will come up in the succeeding Spring much better than when preserv'd and sown with Care, for it rarely happens that those which are sown in the Spring do grow; so that if it be intended to be had in a different Place from where the Plants grew the preceding Year, the Seeds ought to be sown soon after they are ripe; which should be in the Place where they are to remain, for these Plants seldom thrive well when transplanted, especially if it be not perform'd while the Plants are young.

This Plant produces its Flowers in June, and the Seeds ripen in August.

The second and third Sorts must be sown upon a Hot-bed in the Spring, and manag'd as was directed for the *Cyanus Turcicus* (to

which the Reader is desir'd to turn, to save Repetition); for if they are not brought forward in the Spring, they seldom perfect their Seeds: There is no great Beauty in these two Plants, nor are they often cultivated but in *Botanick* Gardens for Variety sake.

The fourth and fifth Sorts grow to be large shrubby Plants: These are propagated by planting Cuttings of them in any of the Summer Months, in a Bed of light Earth, observing to shade and water them until they have taken Root; and in August they should be transplanted into Pots fill'd with light fresh Earth, which should be plac'd in a shady Situation until the Plants are rooted in the Pots; when they may be remov'd into the open Air amongst *Myrtles, Jasmines, &c.* where they may remain until October; at which Time they should be remov'd into the Green-house, where they should be plac'd so as to have as much free Air as possible, and will require frequent Waterings.

The fifth Sort produces Flowers every Summer; but I have never yet seen any on the fourth Sort, although it is by much the larger Plant.

HELLEBORE; *vide* Helleborus.

HELLEBORINE; Bastard Hellebore.

The *Characters* are;

*It hath a fibrose Root; the Leaves are broad and nerveose, somewhat like those of the White Hellebore; the Flowers, which grow upon a short Foot-stalk, are collected into a Spike, each consisting of six dissimilar Leaves; the Ovary becomes a Fruit very like that of the Orchis.*

The *Species* are;

1. HELLEBORINE; *latifolia, montana*. C. B. P. Common Bastard Hellebore.

2. HELLE-

2. HELLEBORINE; *altera, atrovibente flore.* C. B. P. Bastard *Hellebore*, with a blackish Flower.

3. HELLEBORINE; *flore albo.* Ger. White-flower'd Bastard *Hellebore*.

4. HELLEBORINE; *flore rotundo, five Calceolus.* C. B. P. Ladies Slipper.

5. HELLEBORINE; *Virginiana, flore rotundo, luteo.* Banister. Virginian Ladies Slipper, with a yellow Flower.

6. HELLEBORINE; *Canadensis, five Calceolus Maria.* Icon. Robert. Canada Ladies Slipper.

There are several other *Species* of this Plant, some of which are of *English* Growth, but as they are Plants of no great Beauty, and are with great Difficulty cultivated in a Garden, so I shall pass them over without naming, these here mention'd being the most valuable Kinds which we are at present acquainted with.

These are all Natives of Woods and shady Places: The four first mention'd are found in the Woods of *Yorkshire*, *Lancashire*, and other Northern Counties in *England*; but the two last mention'd are Natives of *America*, from whence some of the Plants have been sent into *England*, which thrive and produce Flowers very well every Year. There is no other Method to obtain these Plants but by searching them out in their natural Places of Growth, and taking up their Roots, with a large Ball of the natural Soil to 'em, and then to transplant 'em into a shady Place in the Garden, and in a strong undung'd Soil: These are very pretty Ornaments to small Wildernesses, where, if the Ground between the Trees be planted with these, and other common Flowers which grow naturally in Woods, it will render such Places very agreeable; and as

these require little other Culture than to preserve them from being over-run with Weeds, so the only Expence is in the first procuring them, which is easily effected in many Parts of *England*. The best Season for transplanting them is in *May*, soon after they appear above-ground.

HELLEBOROIDES HYEMALIS; *vide* Aconitum Hyemale.

HELLEBORO-RANUNCULUS; *Globe-Ranunculus, vulgò.*

The Characters are;

*It hath single round circumscribed Leaves like the Ranunculus: The Cup of the Flower consists of five small Leaves of the same Colour with the Flower. The Flower consists of many Leaves growing in Form of a Ranunculus, having many Stamina in the Centre: The Fruit consists of many small Cells, which are collected into a Head, each containing many Seeds.*

We have but one *Species* of this Plant; which is,

HELLEBORO-RANUNCULUS; *flore luteo globoso.* Boerh. Ind. The *Globe-Flower*, or *Lockergowllons*.

This Plant is found wild in the North Parts of *England* and *Wales* in great Plenty. It is propagated by parting the Roots in Autumn, which should be planted in a moist shady Situation, where they will thrive and flower exceedingly, and require very little Care, except to keep them clear from Weeds, and parting the Roots every other Year; for if they are permitted to continue too long unremov'd, the Flowers will not be so large, nor in so great Quantity.

HELLEBORUS; *Black Hellebore*, or *Christmas Flower*.

The Characters are;

*It hath a digitated Leaf: The Flower consists of several Leaves,*

which are placed orbicularly, and expand in Form of a Rose: In the Centre of the Flower rises the Pointal, which is compass'd about the Base with several little Horns lying between the Chives and Petals, which afterwards turn to a Fruit, in which the membranaceous Husks are gather'd, as it were, into a little Head, ending for the most part in a Horn, opening lengthwise, and for the most part full of roundish or oval Seeds.

The Species are;

1. HELLEBORUS; *niger, foetidus*. C. B. P. Stinking Black Hellebore, Bear's-foot, or Setterwort.

2. HELLEBORUS; *niger, hortensis, flore viridi*. C. B. P. Green-flower'd Black Hellebore, or Bear's-foot.

3. HELLEBORUS; *niger, flore albo, etiam interdum valde rubente*. F. B. True Black Hellebore, or Christmas Rose.

4. HELLEBORUS; *niger, trifoliatius*. Hort. Farn. Trifoliated Black Hellebore.

5. HELLEBORUS; *niger, flore roseo, minor, Belgicus*. H. R. Blcf. Small Belgick Black Hellebore.

The two first Species are found wild in the Woods in divers Parts of England; but the 3d, 4th, and 5th Sorts are brought from other Countries, which do thrive as well with us in the open Air, as those that are Natives. The two first Sorts being Wood Plants, do thrive much better, when planted in shady moist Places, than when they are planted in a warmer Situation, and too much expos'd to the Sun. And as they produce their Flowers in the Middle of Winter, when few other Plants appear; so they deserve a Place in small Wilderness Quarters, Avenues, and shady Borders, where they will flourish exceedingly, and, if suffer'd to shed their Seeds, will soon furnish a Garden with

Plants enough; and this is the easiest and best Method to propagate them.

The other Sorts are propagated either from Seeds, or by planting of their Roots: The best Season for this Work is in February, when you may divide the Roots into small Heads, and plant them in a Situation where they may have the Morning Sun only till 10 o'Clock; for if they are too much expos'd to the great Heats of the Sun, they will not thrive. These should also have a moist light Soil; but the Ground should not have Dung in it, which is very subject to rot the Roots of these Plants.

If you propagate them by Seeds, they should be sown soon after they are ripe, which is commonly in May, in a Border expos'd to the Morning Sun, where the Plants will come up the Spring following, and should be kept clear from Weeds, which, if suffer'd to grow, would soon destroy the young Plants: In this Border they should remain until the February following, at which Time they should be transplanted into another Border to the Distance of six Inches square, observing to keep them constantly clear from Weeds; and in one Year after planting out, they will flower, and may then be remov'd to the Places where they are to remain for good.

There are great Doubts whether any of these Species be the true Hellebore of the Antients; tho' Mons. Tournefort and some other Travellers affirm, that the third Species is it; but yet the Germans use the *Adonis, Hellebori radice, buphthalmi flore* for the Hellebore; and many other People believe it to be a Plant different from both these: but it is hop'd that we shall



shall shortly know who are in the right.

HELLEBORUS ALBUS; *vide* Veratrum.

HELMET-FLOWER, or MONK'S-HOOD; *vide* Aconitum.

HEMEROCALLIS; *vide* Lilium.

HEMIONITIS; Moon-Fern.

This is a Plant which is seldom propagated in Gardens; therefore I shall not trouble the Reader with any Account of it more than this, that whoever hath a mind to cultivate it, may see full Directions for that Purpose under the Article *Lingua Cervina*, to which this Plant is nearly ally'd, and delights in the same Situation and Culture.

HEPATICÀ; Noble Liver-wort.

The Characters are;

*The Root is fibrose and perennial: The Leaf consists of three Lobes growing on a Pedicle which arises from the Root: The Pedicle of the Flower is naked and single, arising from the Root: The Cup of the Flower is, for the most part, compos'd of one Leaf, which is sometimes cut into three or four deep Divisions: The Flower consists of many Leaves, which expand in Form of a Rose: The Fruit is globular, consisting of one single Cell, which is curvated, as in the lesser Celandine.*

The Species are;

1. HEPATICÀ; *trifolia, caeruleo flore. Clus.* The single blue Hepaticà, or Noble Liver-wort.

2. HEPATICÀ; *trifolia, flore caeruleo, pleno. Clus.* The double blue Hepaticà, or Noble Liver-wort.

3. HEPATICÀ; *trifolia, flore albo, simplicì. Boerb. Ind.* The single white Hepaticà, or Noble Liver-wort.

4. HEPATICÀ; *trifolia, rubro flore. Clus.* Single red Hepaticà, or Noble Liver-wort.

5. HEPATICÀ; *trifolia, flore rubro, pleno. Boerb. Ind.* Double red, or Peach-colour'd Hepaticà.

These Plants are some of the greatest Beauties of the Spring; their Flowers are produc'd in February and March in great Plenty, before the green Leaves appear, and make a very beautiful Figure in the Borders of the Pleasure-Garden, especially the Double Sorts, which do commonly continue a Fortnight longer in Flower than the Single Kinds, and the Flowers are much fairer. I have seen the Double White Kind often mention'd in Books, but could never see it growing; tho' I don't know but such a Flower might be obtain'd from Seeds of the Single White, or Blue Kinds. I have sometimes known the Double Blue Sort produce some Flowers in Autumn which were inclining to White; and thereby some People have been deceiv'd, who have procur'd the Roots at that Season, and planted them in their Gardens, but the Spring following their Flowers were Blue as before: And this is a common Thing when the Autumn is so mild as to cause them to flower. But whether the Double White Sort mention'd in the Books, was only this accidental Alteration in the Colour of the Flower, I can't say; tho' it seems very probable it was, since I never could hear of any Person who ever saw the Double White Sort flower in the Spring.

The Single Sorts produce Seeds every Year, whereby they are easily propagated, and also new Flowers may be that way obtain'd. The best Season for sowing of the Seeds is in the Beginning of August, either in Pots or Boxes of light Earth, which should be plac'd to as to have only the Morning Sun until

*October*, when they should be remov'd into the full Sun, to remain during the Winter-season: but in *March*, when the young Plants will begin to appear, they must be remov'd again to a shady Situation, and in dry Weather should be frequently water'd; and about the Beginning of *August* they will be fit to be transplanted, at which Time you should prepare a Border, facing the East, of good fresh Loamy Earth, into which you should remove the Plants, placing them at about six Inches Distance each way, closing the Earth pretty fast to their Roots, to prevent the Worms from drawing them out of the Ground, which they are very apt to do at that Season, and in the Spring following they will begin to shew their Flowers; but it will be three Years before they flower strong, and till then you cannot judge of their Goodness; when, if you find any double Flowers, or any of a different Colour from the common Sort, they should be taken up and transplanted into the Borders of the Flower-Garden, where they should continue at least two Years before they are taken up, or parted; for it is remarkable in this Plant, that where they are often remov'd and parted, they are very subject to die; whereas, when they are permitted to remain undisturb'd for many Years, they will thrive exceedingly, and become very large Roots.

The Double Flowers, which never produce Seeds, are propagated by parting their Roots, which should be done in *March*, at the Time when they are in Flower: but you should be careful not to separate them into very small Heads; nor should they be parted oftener than every third or fourth Year, if you intend to have them thrive, for the

Reason before given. They delight in a strong Loamy Soil, and in an Eastern Position, where they may have only the Morning Sun; tho' they will grow in almost any Aspect, and are never injur'd by Cold.

HEPATORIUM; *vide* Eupatorium.

HEPTAPHYLLUM; *vide* Pentaphyllum.

HERBA PARIS. Herb - Paris, True-love, or One-berry.

The Characters are;

*The Cup of the Flower consists of four Leaves, which expand in Form of a Cross: The Flower also hath four Leaves, which expand in the same Manner, and is generally furnish'd with four Stamina: The Pointal of the Flower becomes a soft globular Fruit, which is divided into four Cells, and are fill'd with oblong Seeds.*

We have but one Species of this Plant in *England*, which is,

HERBA PARIS. *J. B. Solanum, quadrifolium, bacciferum. C. B. Herb True-love, or One-berry.*

This Plant is found wild in shady Woods in divers Parts of *England*, and is rarely cultivated in Gardens: Those who have a mind to propagate it, should search it out in the natural Places of its Growth in *April*, when it first appears above-ground, and take up the Roots with a Clod of the natural Earth to them, and transplant them into a shady Part of the Garden, where, if they are not disturb'd, they will live and flower, but they are not very apt to increase when cultivated. There is no great Beauty in this Plant, but those who delight in Variety, may give it Place in a Wilderness, where few other Things will thrive.

## HERMANNIA.

The Characters are;

The Cup of the Flower consists of one Leaf, which resembles a Bladder, and is cut into five Segments; the Flower consists of five Leaves, the lowermost of which are narrow, but the upper ones are broad and twisted, having a pentangular Ovary in the Center, which is surrounded by five Stamina, and is afterwards turn'd to a five-corner'd long Tube.

The Species are;

1. HERMANNIA; *frutescens, folio oblongo, serrato, latiori.* Boerb. Ind. Shrubby *Hermannia*, with a broader oblong serrated Leaf.

2. HERMANNIA; *frutescens, folio grossularia, parvo, hirsuto.* Boerb. Ind. Shrubby *Hermannia*, with a small hairy, Gooseberry Leaf.

3. HERMANNIA; *frutescens, folio Ibisci, hirsuto, molli, caule piloso.* Boerb. Ind. Shrubby *Hermannia*, with a soft, hairy Marshmallow Leaf, and a woolly Stalk.

4. HERMANNIA; *frutescens, folio oblongo, serrato.* Town. Shrubby *Hermannia*, with an oblong, serrated Leaf.

There are some other Species of this Plant in the *Botanick Gardens in Holland*, but these here mention'd are all the Sorts which I have yet seen in the *English Gardens*.

These Plants are all propagated by planting Cuttings of them, during any of the Summer Months, in a Bed of light fresh Earth, observing to water and shade them until they are well rooted, which will be in about six Weeks after planting; then you should take them up, preserving a Ball of Earth to their Roots, and plant them into Pots fill'd with light fresh Earth, placing them in a shady Situation until they have taken fresh Root; after

which they may be expos'd to the open Air, with *Myrtles, Geraniums*, &c. until the Middle or latter End of *October*, when they must be remov'd into the Green-house, observing to place them in the coolest Part of the House, and where they may have as much free Air as possible, for if they are too much drawn in the House, they will appear very faint and sickly, and seldom produce many Flowers; whereas, when they are only preserv'd from the Frost and have a great Share of free Air, they will appear strong and healthy, and produce large Quantities of Flowers in *April* and *May*, during which Season they make a very handsome Shew in the Green-house: They must also be frequently water'd, and will require to be new potted at least twice every Year, *i. e.* in *May* and *September*, otherwise their Roots will be so matted as to prevent their Growth.

These Plants rarely produce good Seeds with us; but when they are obtain'd from Abroad, they must be sown upon a moderate Hot-bed, and when the Plants come up, they must be transplanted into small Pots, and plung'd into another very moderate Hot-bed, in order to promote their Rooting; after which they must be harden'd by degrees, to endure the open Air in Summer, and may then be treated as the old Plants.

HERNANDIA; Jack in a Box, *vulgô.*

The Characters are;

It hath a short, multifid Bell-shap'd Flower, or a Rosaceous Flower, consisting of several Petals, which are placed in a circular Order, these are sometimes Barren, and at other times are Fertile: The Cup of the Flower afterwards becomes an almost Spherical

vical Fruit, which is swelled and perforated, containing a striated round Nut.

We have but one Species of this Plant, viz.

HERNANDIA; *amplo Hederæ folio, umbilicato Plum. N. Gen. 6.* *Hernandia* with a large umbilicated Ivy Leaf, commonly called, in the West-Indies, Jack in a Box.

This Plant may be propagated by Seeds, (which are easily obtain'd from *Jamaica* or *Barbados*, where the Trees are in great Plenty) these must be sown on a Hot-bed early in the Spring, and when the Plants are come up, they must be each planted into a separate Pot, filled with fresh light Earth, and plunged into a moderate Hot-bed of Tan, observing to water and shade 'em until they have taken Root, after which they should have a large Share of free Air, in Proportion to the Warmth of the Season, and the Heat of the Bed; when the Plants have filled the Pots with their Roots, they must be removed into other Pots of a larger Size, plunging them again into the Hot-bed, observing to water them plentifully, for this Plant grows naturally in moist Places, so requires to be often water'd, and in Winter must be placed in the Bark-Stove with the Coffee-Trees, &c. where, when they have obtain'd Strength, they make a beautiful Appearance, their Leaves being 16 or 18 Inches long, and 10 or 12 Inches broad, having a large red Spot at the Place where the Foot-stalk joins it. I have not as yet seen the Flowers of this Tree, so can say nothing concerning their Beauty.

HERNIARIA; Rupture-wort,

The Characters are;

The Calix is quadrifid, or, for the most part, quinquefid, and expanded

in Form of a Star, having five Stamina in the Center: The Fruit (which grows in the Bottom of the Flower) becomes a membranaceous, furrow'd, round Capsule, which is divided into eight Cells, each of which contains one small pointed Seed.

The Species are;

1. HERNIARIA; *glabra. J. B.* Smooth Rupture-wort.

2. HERNIARIA; *hirsuta. J. B.* Rough or hairy Rupture-wort.

3. HERNIARIA; *Alfines folio. Tourn.* Rupture-wort, with a Chick-weed Leaf.

4. HERNIARIA; *fruticosa, viticulis lignosis. C. B.* Shrubby Rupture-wort, with woody Branches.

These Plants are seldom cultivated but in *Botanick* Gardens, for the Sake of Variety: The three first are, for the most part, annual Plants, seldom continuing longer than one Year, and must be permitted to shed their Seeds, where-by they are better preserv'd than if sown with Art. The fourth Sort is an abiding Plant, which may be propagated by Cuttings; but as they are Plants of no Beauty, so they are not worth cultivating.

The first Sort is what should be us'd in the Shops, but is rarely seen in *London*; the Herb-women commonly bringing the *Parsley Breakstone* to the Markets, which is sold instead of this Plant.

HESPERIS; Dame's Violet, or Queen's Gilliflower.

The Characters are;

The Flower consists, for the most part, of four Leaves, which expand in Form of a Cross; out of the Flower-cup arises the Pointal, which becomes a long, taper, cylindrical Pod, which is divided into two Cells by an intermediate Partition, to which the imbricated Valves do adhere on both Sides, and are furnish'd with

with oblong cylindrical or globular Seeds.

The Species are;

1. HESPERIS; *hortensis, flore purpureo*. C. B. P. Garden Dame's Violet, with a purple Flower.
2. HESPERIS; *hortensis, flore candido*. C. B. P. Garden Dame's Violet, with a white Flower.
3. HESPERIS; *sylvestris, inodora*. C. B. P. Unlavoury wild Dame's Violet.
4. HESPERIS; *hortensis, flore variegato*. *Jessieu*. Garden Dame's Violet, with a variegated Flower.
5. HESPERIS; *hortensis, flore purpureo, pleno*. H. R. Par. Garden Dame's Violet, with a double purple Flower, commonly call'd Double Purple Rocket.
6. HESPERIS; *hortensis, flore albo, pleno*. H. R. P. Garden Dame's Violet, with a double white Flower, or double white Rocket.
7. HESPERIS; *hortensis, flore vario, pleno*. H. R. Par. Garden Dame's Violet, with a variable Flower.
8. HESPERIS; *maritima, angustifolia, incana*. *Tourn.* Low Maritime Dame's Violet, or Dwarf annual Stock; *vulgò*.
9. HESPERIS; *Montana, pallida, odoratissima*. C. B. P. Pale Mountain Dame's Violet, with a very sweet Smell.

There are many other Varieties of this Plant, which are preserv'd in *Botanick* Gardens, to add to their Variety, but these here mention'd are the most beautiful Kinds, and best worth propagating in the Flower-Garden.

The seven first mention'd Sorts are abiding Plants, and may be propagated by parting of their Roots in *August*, especially those with double Flowers, which never produce Seeds; but the single Kinds are better propagated by sowing

their Seeds in *March*, which will produce stronger Plants than those obtain'd from Off-sets: The Heads, which are divided, should be well furnish'd with Roots, otherwise they are very subject to miscarry; nor should the old Roots be separated into very small Heads, which would occasion their flowering weak the succeeding Season: The Soil in which these Plants should be planted, ought to be fresh and inclining to a sandy Loam, but should not be mix'd with Dung, which often causes the Roots to rot; but if you bury some rotten Wood-pile Earth, or very rotten Tanners-bark, just deep enough for their Fibres to reach it, the Plants will thrive exceedingly, and produce great Quantities of very large fair Flowers, as I have several times experienc'd; but if this should be so shallow as to touch the main Roots, 'tis ten to one if they don't rot away, which is very often the Case with these Flowers when they are planted in a rich dung'd Soil. The double white *Rocket* is by far the most beautiful Plant of all the Kinds, the Flowers of which are as large and double as the fairest double *Stock-Gilliflower*: It was formerly planted in great Plenty in the Gardens near *London*, to supply the Markets with Flowers for *Basons*; for which Purpose there is not any Plant better adapted, and will continue in Beauty for a long Time: But of late Years these Plants have not succeeded so well as formerly, which may be owing to the dunging of the Soil; for it is observable, that in fresh Ground, which has not been till'd, these Plants do succeed best. The single Kinds have very little Beauty in them, when compar'd with the Double, and are therefore seldom cultivated

cultivated in Gardens, but as they are much hardier than the Double, and will thrive in a shady Border, so they may be admitted for Variety. These all produce their Flowers in May, and the single Kinds do perfect their Seeds in August, which if suffer'd to shed upon the Ground, will come up very well, and save the Trouble of sowing them.

The eighth Sort is often sown for Edgings to large Borders in the Pleasure-Garden, and is commonly known by the Name of *Dwarf-Annual Stock-Gilliflower*. The Seeds of this Kind are commonly sown in March, which will come up in a short Time, and produce Flowers in June, and the Seeds will ripen in August: But the Method to have this Plant in the greatest Perfection, is to sow the Seeds in small Patches in the Borders under warm Walls in August, which will come up soon after, and the Plants will get Strength enough to endure the Cold, and in the Spring following these will produce much larger Flowers, than those Plants which come up in the Spring.

The ninth Sort is a biennial Plant, seldom continuing longer than two Years; this must be propagated by sowing the Seeds in the Manner directed for the first Sorts, and the second Year the Plants will flower, which if you intend to preserve, you must cut off most of the Flower-stems, before the Flowers decay, which will occasion the Roots to put out new Heads, if they are found, whereby they may be often continued three or four Years.

HIERACIUM; Hawk-weed.

The Characters are;

The Stalks are branched, and slender; the Leaves are produc'd alter-

nately; the Cup of the Flower is short, firm and expanded; the Flower consists of many Leaves, which are plac'd in an orbicular Order, and open in Form of a Marygold; the Seeds are slender and angular, or furrowed; to which may be added, the whole Plant hath a milky Juice.

The Species are;

1. HIERACIUM; *murorum, folio pilosissimo*. C. B. P. Golden Hawk-weed, with hairy Leaves.

2. HIERACIUM; *Pyreniacum, folio cerinthes, latifolium*. Schol. Bot. Pyrenian Hawk-weed, with a broad Honey-wort Leaf.

3. HIERACIUM; *folio dentis leonis, flore suave rubente*. C. B. P. Red flower'd Hawk-weed, with Dandelion Leaves.

4. HIERACIUM; *lanatum, sonchi vel erigerontis facie*. H. L. Downy Hawk-weed, with the Face of Sow-thistle or Groundsel.

5. HIERACIUM; *medio nigrum, Baticum, majus*. Par. Bat. Greater Spanish Hawk-weed, with yellow Flowers, having black Bottoms.

6. HIERACIUM; *medio-nigrum, Baticum, majus, flore sulphureo*. Greater Spanish Hawk-weed, with Brimstone colour'd Flowers, having black Bottoms.

7. HIERACIUM; *barbatum, medio-nigrum, minus*. H. L. Lesser Hawk-weed, with yellow Flowers, having black Bottoms.

8. HIERACIUM; *latifolium, pilosum, coccineum, umbellatum, Indicum*. H. L. Broad-leav'd Indian Hawk-weed, with Scarlet Flowers growing in an Umbel.

There are a great Variety of these Plants, which grow wild in the different Parts of Europe, many of which are preserv'd in the curious Botanick Gardens, to add to their Variety of Plants; but these here

here mention'd, are the most beautiful Kinds, and best worth cultivating for the Beauty of their Flowers.

The first, second and eighth Sort are abiding Plants, and may be propagated by parting their Roots either in Spring or Autumn, and should be planted in a fresh, light Soil, and an open Situation, where they will greatly increase, especially the eighth Sort, which is very subject to creep under Ground, and send forth abundance of Heads, whereby the Season of flowering is continued thro' most Part of the Summer; for the new Off-sets commonly produce Flowers soon after they come up. These are also propagated by Seeds, which should be sown either in the Autumn, soon after they are ripe, or very early in the Spring; for if they are sown very late, the Plants seldom come up until the Autumn following, whereby a whole Season is lost; but as they increase so fast by Off-sets, it is hardly worth while to sow their Seeds.

The other Sorts here mentioned are annual Plants, which, for the Variety of their Flowers, deserve a Place in a Garden; these Plants are much stronger, and produce a greater Quantity of Flowers, when they are rais'd in the Autumn, than those which are sown in the Spring, and they are so hardy as to endure the severest Cold of our Climate in the open Air, provided they are planted or sown upon a dry Soil, for too much Wet is apt to rot them: The best Season for sowing the Seeds is in *August*, and towards the latter End of *September* the Plants will be strong enough to transplant, which should be into the Borders where they are to remain for Flowering; these will

produce their Flowers in *May*, and their Seeds will be ripe in *July*, which if suffer'd to shed upon the Ground, will grow and save the Trouble of sowing them.

HIPPOCASTANUM; Horse-Chestnut.

The Characters are;

*It hath digitated or finger'd Leaves; the Flowers, which consist of five Leaves, are of an anomalous Figure, opening as it were with two Lips; there are Male and Female upon the same Spike, which, when fully blown, make a specious Shew, being always produced at the Extremity of the Branches; the Female Flowers are succeeded by Nuts, which grow in green prickly Husks.*

The Species are;

1. HIPPOCASTANUM; *vulgare*. *Tourn.* Common Horse Chestnut.

2. HIPPOCASTANUM; *vulgare, foliis ex luteo variegatis*. The yellow blotch'd Horse Chestnut.

3. HIPPOCASTANUM; *vulgare, foliis ex albo variegatis*. The white blotch'd Horse Chestnut.

The first of these Trees (of which there seem to be two or three Varieties differing in the Breadth of their Leaves, and the Colour of their Flowers, one of which hath its Flowers remarkably spotted with Red and Yellow, so as to be seen at a great Distance, and is somewhat later in flowering) is very common in *England*, having been greatly cultivated for planting Avenues and shady Walks near Habitations, where, in the Spring of the Year, (which is their Season of flowering) they make a most beautiful Shew, and their Leaves being very large, afford an agreeable Shade in the Heat of Summer; but if the Number of these Trees be too great, or too near the Habitation, they cause the Circumambient Air

to be moist and unhealthy, by the large Quantities of Moisture which they perspire through their Leaves, so that they should always be placed at such a Distance, as to admit of a free Current of Air to pass between them and the Building, that the rancid Air may be carried off thereby.

This Tree is propagated by planting the Nuts early in the Spring, after the Manner as was directed for the common Chestnut, (to which I refer the Reader, to avoid Repetition) the Spring following the Plants may be transplanted into a Nursery, in Rows at three Feet distance, and eighteen Inches asunder in the Rows, where they may continue three Years; after which Time, they may be transplanted for Avenues, &c. where they are to remain: The best Season for transplanting these Trees is at the latter End of *February*, or the Beginning of *March*; (though indeed they may be transplanted in Autumn, or during any of the Winter Months, when other deciduous Trees are removed) but the other is the surest Season, especially for moist Soils.

In transplanting of these Trees, we should never shorten any of their Branches; but only cut off intirely all such as are ill placed, or grow irregular, for these Trees have always a large turgid Bud placed at the Extremity of their Branches, in which is inclosed the Shoot for the succeeding Spring, which Bud is of great Service in attracting the Nourishment, and promoting the future Growth of the Tree, and it is often observable, where their Branches are shortened, that there is produced a glutinous Substance, almost of the Consistence of Turpentine, which often

occasions the Decay of those particular Branches, and sometimes of the whole Tree.

These Trees have something very singular in their Growth, *i. e.* that their whole Year's Shoot is commonly performed in three Weeks Time, after which it does no more than increase in Bulk, and become more firm and substantial; and all the latter Part of the Summer is occupied in forming and strengthening the Buds for the next Year's Shoots. There is a great Regularity in the natural Growth of these Trees, their Under-branches being always greatly extended, and the succeeding ones decreasing gradually to the Top, do form a natural obtuse Pyramid, which Regularity is by many People greatly disliked, as appearing too much like those artificial Pyramids, which were formerly so much esteem'd and cultivated on ever-green Trees; but are now very justly despised by all curious Persons: Though it must be allowed, where these Trees are rightly disposed in forming of Clumps, &c. their conical Figure has a very good Effect, by rendering such Plantations very agreeable to the Eye at some Distance, especially when the under Parts of the Trees are hid from Sight, by other Trees which surround them.

These Trees were originally brought from *Constantinople* into *Europe*; but although they are Natives of so warm a Country, yet they are now so enur'd to the Cold, as to defy the severest of our Winters, and do grow to be very large Trees, and produce great Quantities of Nuts annually, from which they may be multiplied at Pleasure. The Fruit of this Tree is very bitter, and of no Use amongst us at present; but in *Turkey* they give them



them to Horses, in their Provender, that are troubled with Coughs, or are Short winded, in both which Distempers they are supposed to be very good.

HIPPOLAPATHUM; *vide* Lappathum.

HIPPOSELINUM; *vide* Smyrneum.

HIRUNDARIA; *vide* Asclepias.

HOLLOW ROOT; *vide* Fumaria.

HOLLY HOCKS; *vide* Malva rosea.

HOLLY; *vide* Aquifolium.

HONEY-SUCKLE; *vide* Caprifolium.

HOPS; *vide* Lupulus.

HORDEUM. Barley.

The Characters are;

*It hath a thick Spike; the Calix, Husk, Awn and Flower, are like those of Wheat or Rye, but the Awns are rough; the Seed is swelling in the Middle, and for the most part ends in a sharp Point, to which the Husks are closely united.*

The Species are;

1. HORDEUM; *distichum*. Ger. Common long-ear'd Barley.

2. HORDEUM; *polystichum*, *vel* *hybernum*. Park. Winter or Square Barley, or Bear Barley; by some call'd Big.

3. HORDEUM; *distichum*, *spica brevior* & *latiori*, *granis confertis*. Raii. Sprat Barley, or Battle-door Barley.

There are some other Varieties of Barley of less Note; but these here mention'd are preferred for Use, as being the most profitable Sorts: The first and third Sorts are commonly cultivated in England; but the second is rarely to be seen near London, though I think it much preferable to the other two, as producing a larger Seed and very full thick Spike.

The Manner of propagating these being so well known to every Farmer, it would be needless to mention any thing of that Kind in this Place.

HORIZONTAL SHELTERS, have by some Persons been greatly recommended to preserve Fruit-Trees from Blights; but with how little Reason, or upon what slight Experiments, every one who has ever made use of them, will easily judge; especially those which are contrived by placing Tiles in the Wall at certain Distances, nothing being more obvious than that Vegetables, when prevented from receiving the Benefit of Dews, Rains, &c. those kindly Benefits of Heaven, do grow weak, languid, and at last entirely decay: And since from vast Numbers of Experiments which have been lately made, we find that Trees imbibe great Quantities of Nourishment through the Pores of their Leaves and Branches, whereby they are rendered vigorous and healthy, even in such Seasons, and upon such Soils, where one would think it impossible they should receive much Nourishment from the Earth; so to deprive them of this Advantage, is no less than destroying them; though perhaps if the Trees are vigorous, it may not be effected suddenly, but there will be very visible Signs of Decay on them daily, and a few Years will put a Period to their Lives, as I have more than once observed, where such Walls were built.

The only Sort of these Shelters which I have ever observed useful for Fruit-Trees, was made with two Leaves of Slit Deal, join'd over each other and painted, this being fixed upon the Top of the Wall with Pullies, to draw up and down at Pleasure, formed a sort of

Peathouse,

Penthouse, which being let down in the great Rains, or Cold Nights, during the Time that the Trees were in flower, or the Fruit was setting, proved serviceable; but then these Shelters were removed away soon after the Fruit was set, so that the Trees might enjoy all the Advantages of Rain, Dew, &c. in the Summer; which is absolutely necessary, if we would have healthy Trees, or good Fruit.

HORMINUM; Clary.

The Characters are;

*It hath a labiated Flower, consisting of one Leaf, whose upper Lip is short and crested, but the under one is divided into three Parts, the middle Division is hollowed like a Spoon; out of the Flower-cup arises the Pointal, fixed like a Nail to the hinder Part of the Flower, and attended with four Embryo's which afterwards turn to so many roundish Seeds, inclosed in the Cup of the Flower.*

The Species are;

1. HORMINUM; *sylvestre, lavendera flore.* C. B. P. Common English wild Clary, or *Oculus Christi*.

2. HORMINUM; *comâ purpureo violaceâ.* I. B. Clary, with a Purple-violet Top.

3. HORMINUM; *sylvestre, latifolium, verticillatum.* C. B. P. Broad-leav'd wild Clary, with whorled Spikes.

The first of these Plants is found wild upon dry Banks, in divers Parts of England, and is seldom cultivated in Gardens; the Seeds of this Kind are by some People greatly esteem'd for clearing the Eyes, of any thing that may have gotten into them, which is effected by the glutinous Quality of the Seed, which, when put into the Eye, and moved about, will fasten any thing thereto which it meets with, and thereby it is taken out.

The second Sort is a beautiful annual Plant, and deserves to have a Place in a good Garden, for the Oddness of its Spikes, which have fine Purple-violet colour'd Tops: But the third Sort is not very beautiful, and is chiefly cultivated in Botanick Gardens, with many other Varieties of less Note.

These may all be propagated by sowing their Seeds in the Spring in an open Situation, and when the Plants are come up, they should be either transplanted out to the Distance of a Foot square, or hoe'd out to the same Distance, observing to keep 'em clear from Weeds, which is all that is needful to be regarded in their Culture.

The first and third Sorts are abiding Plants, their Roots continuing several Years; but the second Sort will decay soon after the Seeds are perfected. If the Seeds of this Kind are permitted to shed upon the Ground when they are ripe, the Plants will come up in Autumn, abide the Winter, and flower early in the succeeding Summer, and their Flowers will be much larger than those which are sown in the Spring. For *Garden Clary*, see *Sclarea*.

HORNBEAM; *vide* Carpinus.

HORSE-CHESTNUT; *vide* Hippocastanum.

HORSE-DUNG is of great Use to make Hot-beds for the raising all Sorts of Early Garden Crops, as *Cucumbers, Melons, Asparagus, Salleting*, &c. for which Purpose no other Sort of Dung will do so well, this fermenting the strongest, and, if mix'd with long Litter and Sea-coal Ashes in a due Proportion, will continue its Heat much longer than any other Sort of Dung whatsoever; and afterwards, when rotted, becomes an excellent Manure for most

most Sorts of Land, more-especially for such as are of a cold Nature; and for stiff, clayey Lands, when mix'd with Sea-coal Ashes, and the Cleanings of *London* Streets, it will cause the Parts to separate much sooner than any other Compost will do; so that where it can be obtain'd in Plenty, I would always recommend the Use of it for such Lands.

HOT-BEDS are of general Use in these Northern Parts of *Europe*, without which, we could not enjoy so many of the Products of warmer Climates as we do now; nor could we have the Tables furnish'd with the several Products of the Garden, during the Winter and Spring Months, as they are at present in most Parts of *England*. The Ordinary *Hot-beds* which are commonly us'd in the Kitchen-Gardens, are made with new Horfe-dung, in the following manner.

1<sup>st</sup>. Provide a Quantity of new Dung from the Stable (in which there should be Part of the Litter or Straw which is commonly us'd in the Stable) in Proportion to the Length of the Bed intended; which, if early in the Year, should not be less than one good Load for each Light; this Dung should be thrown up in an Heap, mixing therewith a few Sea-coal Ashes, which will be of Service to continue the Heat of the Dung; it should remain six or seven Days in this Heap, by which Time it will have acquir'd a due Heat: Then in some well-shelter'd Part of the Garden you must dig out a Trench in Length and Width proportionably to the Frames you intend it for, and, if the Ground be dry, about a Foot deep; but if wet, not above six Inches: then wheel the Dung into the Opening, observing to stir every Part of it with a Fork, and lay it

exactly even and smooth thro' every Part of the Bed; as also to lay the Bottom-part of the Heap (which is commonly free from Litter) upon the Surface of the Bed; this will prevent the Steam from rising so plentifully as it would otherwise do: And if it be design'd for a Bed to Plant out *Cucumbers* or *Melons* to remain for good, you must make a Hole in the middle of each Light about ten Inches over, and six deep, which should be fill'd with good fresh Earth, thrusting a Stick into the Middle, to shew the Place where the Hole is; then cover the Bed all over with the Earth which was taken out of the Trench about four Inches thick, and cover it with the Frame, letting it remain until the Earth be warm, which commonly happens in two Days after the Bed is made; then you may place the Plants therein, as is directed for each Kind under their proper Heads.

But if your Hot-bed be design'd for other Plants, there need be no other Holes made in the Dung, but after having smoothed the Surface with a Spade, you should cover the Dung about three or four Inches thick with good Earth, putting on the Frames and Glasses as before.

In the making of these Hot-beds, it must be carefully observ'd to settle the Dung close with a Fork; and if it be pretty full of long Litter, it should be equally trod down close in every Part, otherwise it will be subject to heat too violently; and consequently the Heat will be much sooner spent, which is one of the greatest Dangers this Bed may be liable to. During the first Week or ten Days after the Bed is made, you should cover the Glasses but slightly in the Night, and in the Day-time carefully raise them to let out the Steam, which is subject

to rise very copiously while the Dung is fresh; but as the Heat abates, so the Covering should be encreas'd, otherwise the Plants in the Beds will be stunted in their Growth, if not intirely destroy'd. In order to remedy this Evil, if the Bed be very Cold, you must put a pretty good Quantity of new hot Dung round the Sides of it, which will add a fresh Heat thereto, and cause it to continue a considerable Time after; and as the Spring advances, so the Sun will supply the Loss of the Dung's Heat: but then it will be advisable to lay some Mowings of Grass round the Sides of the Bed, especially if the Nights should prove cold, as it often happens in *May*, which is many times, even at that Season, very hurtful to tender Plants on Hot-beds.

But although the Hot-bed I have described is what the Kitchen Gardeners commonly use, yet those made with Tanner's Bark are much more preferable, especially for all tender Exotick Plants or Fruits, which require an even Degree of Warmth to be continu'd for several Months; which is what cannot be effected by Horse-dung. The Manner of making these Beds is as follows:

You must dig a Trench in the Earth about three Feet deep, if the Ground be dry; but if wet, it must not be above a Foot deep at most, and must be rais'd two Feet above-ground. The length must be proportion'd to the Frames intended to cover it; but that should never be less than eleven or twelve Feet, and the Width not less than six, which is but a sufficient Body to continue the Heat. This Trench should be brick'd up round the Sides to the above-mentioned Size of three Feet, and should be fill'd in

the Spring with fresh Tanners Bark, (*i. e.* such as the Tanners have lately drawn out of their Vats, after they have us'd it for tanning Leather) which should be laid in a round Heap for three or four Days before it is put into the Trench, that the Moisture may the better drain out of it, which, if detain'd in too great a Quantity, will prevent its Fermentation; then put it into the Trench, and gently beat it down equally with a Dung-fork: But it must not be trodden, which would also prevent its heating, by settling too close: Then you must put on the Frame over the Bed, covering it with the Glass'es, and in about ten Days or a Fortnight it will begin to heat, at which Time you may plunge your Pots of Plants or Seeds into it, observing not to tread down the Bark in doing of it.

A Bed thus prepar'd (if the Bark be new, and not ground too small) will continue in a good Temper of Warmth for six Months, and when you find the Heat decline, if you stir up the Bark again pretty deep, and mix a Load or two of fresh Bark amongst the old, it will cause it to heat again, and preserve its Warmth two or three Months longer: There are many People who lay some hot Horse-Dung in the Bottom of the Trench under the Bark, to cause it to heat, but this is what I would never practise, unless I wanted the Bed sooner than the Bark would heat of itself, and then I would put but a small Quantity of Dung at Bottom, for that is subject to make it heat too violently, and will occasion its losing the Heat sooner than ordinary, and there will never be any Danger of the Bark's heating, if it be new and not put into the Trench too wet, though it may sometimes be a Fortnight

night, or more, before it acquires a sufficient Warmth; but then the Heat will be more equal and lasting.

The Frames which cover these *Beds*, should be proportion'd to the several Plants they are design'd to contain; for Example, if they are to cover the *Anana* or *Pine-Apple*, the back Part of the Frame should be three Feet high, and lower Part fifteen Inches, which will be a sufficient Declivity to carry off the Wet, and the Backside will be high enough to contain the Plants that are in Fruit, and the lower Side will be sufficient for the shortest Plants; so that by placing them regularly, according to their Height, they will not only have an equal Distance from the Glasses, but also appear much handsomer to the Sight: And although many People make their Frames deeper than what I have allotted, yet I am fully persuaded, that where there is but Height enough to contain the Plants, without bruising their Leaves, it is much better than to allow a larger Space; for the deeper the Frame is made, the less will be the Heat of the Air inclos'd therein, there being no artificial Warmth but what the Bark affords, which will not heat a large Space of Air; and as the *Pine-Apple* requires to be constantly kept very warm, in order to ripen the Fruit well, so it will be found, upon Trial, that the Depth I have allow'd, will answer that Purpose, better than a greater.

But if the *Bed* be intended for taller Plants, then the Frame must be made in Depth proportionable thereto; but if it be for sowing of Seeds, the Frame need not be above fourteen Inches high at the Back, and seven Inches deep in the

Front, by which Means the Heat will be much greater: And this is commonly the Proportion allow'd to the Frames usually made use of in the Kitchen-Gardens. As to their Length, that is generally according to the Fancy of the Owner, but they commonly contain three Lights each, which is in the Whole, about eleven Feet in Length, though sometimes they are made to contain four Lights, but this is too great a Length; the Frames thus made, are not so handy to remove, as when they are shorter, and are more subject to decay at their Corners. Some, indeed, have them to contain but two Lights, which is very handy for raising *Cucumber* and *Melon* Plants while young; but this is too short for a Bark-bed, as not allowing Room for a proper Quantity of Bark, to continue a Warmth for any considerable Time, as was before mention'd; but for the other Purposes, one or two such Frames are very convenient.

As to those Frames which are made very deep, it is much the better Way to have them made to take asunder at the four Corners, so that they may be remov'd with Ease, otherwise it will be very difficult to take the Frame off, when there is Occasion to put in new Bark, or take out the old. The Manner of making these Frames is generally known, or may be much better conceiv'd, by seeing them, than can be express'd in Writing; therefore I shall forbear saying any thing more on this Head.

HOUGHING or HOEING, is necessary, and beneficial to Plants, for two Things, *First*, For destroying of Weeds. *Secondly*, Because it disposes the Ground the better to imbibe the Night Dews, and keep

it in a constant Freshness, and addeth a Vigour to the Trees, whose Fruit, by that Means, becomes better condition'd, than otherwise it would be.

HYACINTHUS; Hyacinth or Jacinth.

The Characters are;

It hath a bulbous Root; the Leaves are long and narrow; the Stalk is upright and naked, the Flowers growing on the upper Part in a Spike; the Flowers consist each of one Leaf, are naked, tubulose, and cut into six Divisions at the Brim, which are reflex'd; the Ovary becomes a roundish Fruit with three Angles, which is divided into three Cells that are fill'd with roundish Seeds.

The Species are;

1. HYACINTHUS, *Anglicus, flore caruleo*. Ger. Blue English Hair-bells.

2. HYACINTHUS, *Anglicus, flore albo*. Ger. White English Hair-bells.

3. HYACINTHUS, *Anglicus, flore incarnato*. Flesh-colour'd English Hair-bells.

4. HYACINTHUS, *Orientalis, brumalis, pracocissimus, flore albo*. Boerh. Ind. The earliest White Oriental Hyacinth, commonly call'd, Januarius.

5. HYACINTHUS, *Orientalis, brumalis, flore pallide caruleo*. Boerh. Ind. Oriental Jacinth, with a pale blue Flower, commonly call'd, The Imperial.

6. HYACINTHUS, *Orientalis, albus primus*. C. B. Common Oriental Jacinth, with a White Flower.

7. HYACINTHUS, *Orientalis, major, pracox, dictus Zimbul* Indi. Park. Par. The Great Oriental Jacinth, commonly call'd, Zimbul. Indi.

8. HYACINTHUS, *Orientalis, maximus, flore amœne caruleo, polyanthus*. H. R. P. The greatest East-

ern Jacinth, with many Flowers of a fine blue Colour.

9. HYACINTHUS, *Orientalis, flore pleno, caruleo, vel purpureo-violaceo*. Park. Par. The double blue Oriental Jacinth.

10. HYACINTHUS, *Orientalis, candidissimus, flore pleno*. Park. Par. The whitish double Oriental Jacinth.

11. HYACINTHUS, *Orientalis, multiplici flore pallide incarnatus*. H. L. Double Oriental Jacinth, with a pale Flesh-colour'd Flower, commonly call'd, The Pulchra.

12. HYACINTHUS, *Orientalis, flore pleno, caruleo-purpureo, clavo longo, petalis modice reflexis*. Boerh. Ind. Double blue Oriental Jacinth, with a long Style, and the Plants moderately reflex'd, commonly call'd, The Double Cardinal.

13. HYACINTHUS, *Orientalis, flore plenissimo, albo, intus eleganter roseo, clavo conico, obtuso, petalis valde reflexis*. Boerh. Ind. The most double Oriental Jacinth, with a white Flower of an elegant Rose-colour in the Middle, and the Petals greatly reflex'd, commonly call'd, The King of Great-Britain.

14. HYACINTHUS *Orientalis, flore plenissimo, candidissimo toto & intus, clavo conico, obtuso, petalis valde reflexis*. Boerh. Ind. The most double Oriental Jacinth, with a pure white Flower, and the Petals greatly reflex'd, commonly call'd, The Queen of Great-Britain.

15. HYACINTHUS, *Orientalis, flore pleno, lacteo, lituris carnis, clavis longis*. Boerh. Ind. Double Oriental Jacinth, with a milk-colour'd Flower streak'd with a pale Red, commonly call'd, Claudius Albinus.

16. HYACINTHUS, *Orientalis, flore plenissimo, carneo, lituris roseis, clavo conico, longissimo, intus roseo, petalis valde reflexis*. Boerh. Ind. The most double

double oriental *Jacinth*, with a Flesh-colour'd Flower streak'd with a Rose-colour, and the Petals greatly reflex'd, commonly call'd, Apollo.

17. *HYACINTHUS, orientalis, flore pleno, squallide candido, clavo ad basin utriculato, longo, petalis valde reflexis.* Boerb. Ind. Double oriental *Jacinth*, with a dirty white Flower and reflex'd Petals, commonly call'd, Agaath Mignon.

18. *HYACINTHUS, orientalis, flore plenissimo, albo, paucillo carnei admisto, clavo longo, anguloso, plano ore amplissimo.* Boerb. Ind. Double oriental *Jacinth*, with a Flower intermix'd with very little Flesh-colour'd Spots, commonly call'd, Claudius Civilis.

19. *HYACINTHUS, orientalis, flore plenissimo, carneo & corallino rubro, clavo crasso, brevi, petalis maxime reflexis.* Boerb. Ind. Oriental *Jacinth*, with a very double red Coral-colour'd Flower, and the Petals greatly reflex'd, commonly call'd, Coralline.

20. *HYACINTHUS, orientalis, flore plenissimo, candidissimo, in fundo oris roseo.* Boerb. Ind. Oriental *Jacinth*, with a very double pure white Flower, and the Bottom of the Rim of a Rose-colour, commonly call'd, The Queen of Flowers.

21. *HYACINTHUS, orientalis, flore plenissimo, candidissimo, petalis angustis & magis acutis.* Oriental *Jacinth*, with a very double pure white Flower, with narrow sharp-pointed Petals, commonly call'd, The King of Flowers.

22. *HYACINTHUS, orientalis, flore plenissimo, candidissimo, toto clavo conico, petalis maxime reflexis, caule & flore maximis.* Boerb. Ind. Oriental *Jacinth*, with a very double white Flower, and the Petals very much reflex'd, and large Stalks and

Flowers, commonly call'd, Kaifar's white Jewel.

23. *HYACINTHUS, orientalis, flore plenissimo, candido, carneo, lituris rubellis, clavo brevissimo crassissimo.* Boerb. Ind. Oriental *Jacinth*, with double white Flowers streak'd with Red, commonly call'd, The Princess Royal.

Besides these here mention'd, there are a great Variety of fine double *Hyacinths*, with beautiful variegated Flowers, most of which have Names impos'd on them according to the Fancy of their Owners, and some of these are highly esteem'd by the Florists in *Holland*, where, according to their printed Catalogues, they have many Flowers which are valu'd at five, six, seven, eight or ten Pounds per Root: But as these are Varieties which have been obtain'd from Seeds, so the Number of them are continually increas'd, where People do constantly sow of their Seeds; and thole new Flowers which are rais'd, if they are large, beautiful, and very double, will always be much valu'd at first, until there has been a good Number of Roots obtain'd from them; after which they constantly decrease in their Value according to their Plenty: But to enumerate all the Sorts that are now printed in the *Dutch Catalogues*, would be to no Purpose in this Place, therefore I shall only mention some of the starry *Hyacinths*, and afterwards proceed to their Culture.

1. *HYACINTHUS, stellaris, bifolius, Germanicus. C. B. P. flore caeruleo.* Early blue starry *Hyacinth*; vulgò.

2. *HYACINTHUS, stellaris, bifolius, Germanicus, flore exalbido.* Boerb. Ind. Early white starry *Hyacinth*; vulgò.

3. HYACINTHUS, *stellaris*, *Byzantinus*. *Clus.* Great starry Hyacinth; vulgò.

4. HYACINTHUS, *stellaris*, *caruleus*, *amœnus*. *C. B. P.* Fine blue starry Hyacinth.

5. HYACINTHUS, *stellatus*, *Peruanus*. *H. Eyst.* Blue starry Hyacinth of Peru.

6. HYACINTHUS, *stellatus*, *Peruanus*, *flore albo*. White starry Hyacinth of Peru.

The first of these Species is a Native of *England*, growing in Woods, and under Hedges, in divers Parts, but especially near *London*. The two next mention'd are Varieties which have been accidentally obtain'd from the first, from which they differ only in the Colour of their Flowers. The twenty next mention'd, are all of them Varieties of the oriental *Hyacinths*, which were originally brought from *Asia*; but by the Industry of the Florists in *Holland* and *Flanders*, they have been so much improv'd, as to become one of the most ornamental Flowers of the *Spring*: And as they continue sowing Seeds annually of these Flowers, so they not only increase the Numbers of their Flowers, but have yearly some extraordinary Beauties appear, which are, according to their Stature, Beauty and other Properties, highly esteem'd, and are sometimes bought at a very great Expence, by the curious Delighters in these Beauties.

The first and second Sorts of the starry *Hyacinths*, are found in some Parts of *Germany*: The first is also a Native of *England*; the second being only a Variety of the first, which probably was obtain'd from Seeds: The third and fourth Sorts were brought from *Constantinople*; and the fifth and sixth Sorts, tho'

by their Names suppos'd to be brought from *Peru*, yet are they found in many Places in the *Levant*, and Monsieur *Tournefort* mentions them as Natives of *Portugal*; but my ingenious Friend Mr. *Henry Hopkey*, sent me some Seeds of them, which he gather'd upon *Gibraltar* Hills, where he found them growing in great Plenty. The two first mention'd do flower in *February*, which causes them to be greatly esteem'd. The third and fourth Sorts produce their Flowers in *April*; but the fifth and sixth do not flower until the Middle of *May*, so that they keep a regular Succession from the Middle of *February* until the End of *May*; and if their Roots are permitted to remain three Years undisturb'd, they will produce many Stems of Flowers from each Tuft, whereby they will make a very beautiful Appearance, and continue the Succession much better than when they are transplant-ed every Year, and their Flowers will be much stronger.

All the different Sorts of *Hyacinths*, are propagated by Seeds or Off-sets from the old Bulbs; the former Method has been but little practis'd in *England*, till very lately, but in *Holland* and *Flanders*, it hath been continually follow'd for many Years, whereby they have obtain'd a very great Variety of the most beautiful Flowers of this kind; and it is owing to the Industry of the Florists in those Countries, that the Lovers and Delighters in Gardening are so agreeably entertain'd, not only with the curious Variety of this, but of most other bulbous-rooted Flowers, few other Florists thinking it worth their Trouble to wait four or five Years for the Flowers of a Plant which



which when produc'd, perhaps, there might not be one in forty that may deserve to be preserv'd; but they did not consider that it was only the Loss of the three or four first Years after sowing, for if they continu'd sowing every Year after they began, there would be a Succession of Flowers annually, which would constantly produce some Sorts that might be different from what they had before seen; and new Flowers being always the most valued by skilful Florists, (provided they have good Properties to recommend them) it would always be a sufficient Recompence for their Trouble and Loss of Time.

The Method of raising these Flowers from Seed, is as follows: Having provided yourself with some good Seed, (which should be sav'd from either semi-double, or such single Flowers as are large, and have good Properties) you must have a Parcel of square shallow Boxes or Pots, which must be fill'd with fresh, light, sandy Soil, laying the Surface very level; then sow your Seeds thereon as equally as possible, covering it about half an Inch thick with the same light Earth: The Time for this Work is about the Beginning of *August*: These Boxes or Pots should be plac'd where they may enjoy the Morning-Sun only until the Middle or latter End of *September*; at which Time they should be remov'd into a warmer Situation; and towards the End of *October*, they should be plac'd under a common Hot-bed Frame, where they may remain during the Winter and Spring Months, that they may be protected from hard Frosts, tho' they should be expos'd to the open Air at all Times when the Wea-

ther is mild. In *February* the young Plants will begin to appear above-ground; at which Time they must be carefully skreen'd from Frosts, otherwise it will prove very injurious to them: but you must never cover 'em at that Season, but in the Night, or in very bad Weather; for when the Plants are come up, if they are close cover'd, they will draw up very tall and slender, and thereby prevent the Growth of their Roots. In the Middle of *March*, if the Weather proves good, you may remove the Boxes out of the Frame, placing them in a warm Situation, observing if the Season be dry, to refresh them now and then with a little Water, as also to keep them very clear from Weeds, which would soon over-spread the tender Plants, and destroy them, if permitted to remain.

Towards the latter End of *April*, or the Beginning of *May*, these Boxes should be remov'd into a cooler Situation, for the Heat of the Sun at that Season, would be too great for these tender Plants, causing their Blades to decay much sooner than they would, if they were skreen'd from its Violence: In this shady Situation, they should remain, during the Heat of Summer, observing to keep them constantly clear from Weeds; but you must not place them under the Dripping of Trees, &c. nor should you give them any Water, after their Blades are decay'd, for that would infallibly rot the Roots. About the Middle, or latter End of *August*, you should sift a little light rich Earth, over the Surface of the Boxes, and then remove them again into a warmer Situation, and treat them, during the Winter, Spring and Summer Months, as

was before directed; and about the Middle of *August*, you should prepare a Bed of light, rich, sandy Soil, in Proportion to the Quantity of your seedling Plants, and having levell'd the Surface very even, you should take out the Earth from the Boxes, in which your Plants were rais'd, into a Sieve, in order to get out all the Roots, which, by this Time (if they have grown well) will be about the Thickness of a small Quill; these Roots should be plac'd upon the Bed at about two or three Inches asunder, observing to set the Bottom Part of their Roots downwards; then cover them over two Inches thick, with the same light Earth: but as it will be impossible to get all the small Roots out of the Earth in the Boxes, so you should spread the Earth upon another Bed equally, and cover it over with light Earth; by which Method you will not lose any of the Roots, be they never so small.

These Beds must be arched over with Hoops, and in very hard frosty Weather, they must be cover'd with Mats, &c. to protect 'em from Frost; and in the Spring, when the green Leaves are above-ground, if the Weather should be very dry, you must refresh 'em with Water: but do this sparingly; for nothing is more injurious to these Bulbs, than too great Quantities of Moisture. During the Summer season, you must constantly keep the Beds clear from Weeds; but after the Blades are decay'd, you must never give them any Water; and in *Autumn*, you should stir the Surface of the Bed with a very short Hand-fork, being exceeding careful not to thrust it so deep, as to touch the Roots, which, if hurt, are very subject

to perish soon after: Then sift a little fresh, light, rich Earth over the Bed, about an Inch thick, or somewhat more, and in Winter cover 'em again (as was before directed:) In this Bed, the Roots may continue until they flower, which is commonly five Years after sowing, observing to treat 'em, both in Summer and Winter, as before.

When their Flowers begin to shew themselves, you should mark all such as appear to have good Properties, by thrusting a small Stick down by each Root, which Roots, at the Time for taking them up, should be selected from the rest, and planted by themselves: Tho' I would by no means advise the rejecting any of the other Roots, until they have blown two Years, before which you cannot be ascertain'd of their Value. When the green Leaves of these Plants begin to decay, their Roots must be taken up; and the Earth of the Bed being rais'd into a Ridge, the better to shoot off the Moisture, they should be laid into the Earth again, in an horizontal Position, leaving the green Leaves hanging downwards from the Roots, whereby the great Moisture contain'd in their very succulent Leaves and Flower-stalks is exhale'd, and prevented from entering the Roots; which, when suffer'd to return into them, is very often the Cause of their Rotting: In this Ridge, the Roots should remain until the Leaves are quite dried off, when they must be taken up; and after being clear'd of all Manner of Filth, which would be hurtful to them, they must be laid up in Boxes, where they may be preserv'd dry until *September*, which is the proper Season for planting them

them again. The Method of doing this, shall be hereafter mention'd, when we treat of the Management of old Roots.

The *Hyacinth* of *Peru*, may also be rais'd from Seeds in the same Manner as the common *Hyacinths*, with this Difference only, that as they seldom lose their green Leaves or their Fibres, so their Roots must not be kept out of the Ground, but should be planted again immediately, when they are taken up. The best Season for this Work is in *August*, and they should be planted in a Border expos'd to the Morning Sun; for if they are planted in a very hot Situation, the Flowers decay soon after they are expanded, so that they seldom continue in Beauty above a Week; whereas, if they are skreen'd from the violent Heat of the Sun, they may be preserv'd near three Weeks, and will have a greater Number of Flowers open at once upon the same Stem.

I shall now proceed to the Culture of such *Hyacinths* as have either been obtain'd from *Holland*, or are of our own Product from Seeds, that are very beautiful, and worthy to be preserv'd in Collections of good Flowers; and it hath been the want of Skill in the Management of these noble Flowers, which has occasion'd the ill Success most People have had with them in *England*, whereby they are almost intirely neglected, supposing their Roots do degenerate after they have flower'd in *England*, which is a great Mistake; for were the Roots manag'd by the same Art as is practis'd in *Holland*, I am fully convinc'd they would thrive full as well in *England* as they do in *Holland*, or elsewhere, as I have experienc'd: for, from about an

hundred Roots which I have receiv'd from *Holland*, at two or three different Times, I have increas'd them to almost double the Number of strong Roots, all which have flower'd with me, stronger than they did when I first receiv'd them; and I dare say, they were as large, and produc'd as many Flowers upon their Stems, as the same Sorts ever did in *Holland*: And by Letters which I have lately receiv'd from my very worthy ingenious Friend *James Justice*, Esq; near *Edinburgh*, he hath succeeded so well in the Management of these Flowers, as to equal any of the *Dutch* Florists, in the Number and Strength of his Flowers; and he has rais'd great Quantities of Flowers from Seed of his own sowing, from amongst which he has obtain'd some most extraordinary fine ones, which he has given Names to.

The Soil in which these Flowers do succeed best, is a light, sandy, fresh rich Earth, which may be compos'd after the following manner: Take half fresh Earth from a Common, or Pasture Land, which is of a sandy Loam; this should not be taken above eight or nine Inches deep at most; and if you take the Turf or Green-sward with it, it will still be better, provided you have Time to let it rot; to this you should add a fourth-part of Sea-Sand, and the other fourth-part of rotten Tanners Bark, or Cow Dung, either of which will do, provided they are well rotted: Mix these well together, and cast it into an Heap, where it may remain until you use it, observing to turn it over once in three Weeks or a Month. If this Compost be made two or three Years before it be us'd, it will be much the better.

ter; but if you are oblig'd to use it sooner, then it should be oftener turn'd, that the Parts may the better unite.

This Soil should be laid ten Inches deep on the Beds which are design'd for your *Hyacinths*; and you may lay a little rotten Cow Dung or Tanners Bark at the Bottom, which may be within reach of the Fibres: but it should by no means touch the Bulb. If the Soil be very wet, where these Beds are made, you should raise them seven or eight Inches above the Surface; but if it be dry, they need not be rais'd above three Inches.

The manner of preparing the Beds, is as follows: First, take all the former old Earth out of the Bed, to the Depth you intend, then spread a little rotten Dung or Tan in the Bottom, laying it very level; upon this you should lay the above-mention'd Earth five Inches thick, levelling it very even; then score out the Distances for the Roots, which should be eight Inches square, in strait Rows, each Way; after which, place your Roots exactly in the Squares, observing to set the Bottom-part downward; then cover the Roots five Inches deep with the same prepar'd Earth; being very careful, in doing of this, not to displace any of them: And if the Tops of these Beds are made a little rounding, to shoot off the Wet, it will be of Service, provided they are not made too high, which is a Fault the other way.

The best Season for planting these Roots, is towards the middle or latter End of *September*, according to the Earliness or Lateness of the Season, or the Weather which then happens: But I would advise you never to plant 'em when the Ground is extreme dry, unless there

be a Prospect of some Rain soon after; for if the Weather should continue dry for a considerable Time after, the Roots would receive a Mouldiness, which will certainly destroy them.

These Beds will require no farther Care, until the Frost comes on severe, at which Time they should have some Peas-haulm, or such-like Covering, laid over them, which will keep out the Frost better than Mats; and lying hollow, will admit the Air to the Surface of the Ground, and also permit the Exhalations to pass off, whereby the Earth will remain dry, and prevent the Roots from rotting, which has often happen'd when the Beds have been too close cover'd. But you must observe to take off this Covering whenever the Weather is mild, and only let it continue on in very hard Frosts; for a small Frost cannot injure the Roots before the green Leaves appear above-ground, which is seldom before the Beginning of *February*; at which Time the Beds must be arched over with Hoops, that they may be cover'd either with Mats, Canvas, or some other light Covering, to prevent the Frost from hindring the Buds as they arise above-ground: but these Coverings must be constantly taken off every Day, when the Weather is mild, otherwise the Flower-stems will be drawn up to a great Height, and become very weak, and the Pedicles of the Flowers will be long and slender, and so render'd incapable of supporting the Bells: which is a great Disadvantage to the Flowers; for one of their greatest Beauties consists in the regular Disposition of the Bells.

When the Stems of the Flowers are advanced to their Height, before the Flowers are expanded, you should place a short Stick down by each Root, to which, with a Wire form'd into a Hoop, the Stem of the Flowers should be fasten'd, to support them from falling, otherwise when the Bells are fully expanded, their Weight will incline them to the Ground, especially if they are permitted to receive a Shower of Rain.

During their Season of flowering, they should be cover'd in the Heat of the Day from the Sun, as also from all heavy Rains; but they should be permitted to receive all gentle Showers, as also the Morning and Evening Sun; but if the Nights are frosty, they must be constantly defended therefrom: With this Management you may continue your *Hyacinths* in Beauty, at least one whole Month, and sometimes more, according to their Strength, or the Favourableness of the Season.

When their Flowers are quite decay'd, and the Tops of their Leaves begin to change their Colour, you must carefully raise the Roots out of the Ground with a narrow Spade, or some other handy Instrument, and then raise the Earth of your Beds into a high, sharp Ridge, laying the Roots into it in an horizontal Position, with their Leaves hanging out, by which means a great Part of the Moisture contain'd in thick succulent Stalks and Leaves will evaporate, which if it were permitted to return back to the Roots, would cause them to rot and decay after they are taken up, which has been the general Defect of most of the *Hyacinths* in *England*.

In this Position the Roots should remain until the green Leaves are intirely dried up, which, perhaps, may be in three Weeks time, then you must take them out of the Ground, and wipe them clean with a soft woollen Cloth, taking off all the decay'd Parts of the Leaves and Fibres, putting them into open Boxes where they may lie singly, and be expos'd to the Air; but they must be preserv'd carefully from Moisture, nor should they be suffer'd to remain where the Sun may shine upon them: In this manner they may be preserv'd out of the Ground until *September*, which is the Season for replanting them again, at which Time you must separate all the strong flowering Roots, planting them in Beds by themselves, that they may make an equal Appearance in their Flowers; but the Off-sets and smaller Roots should be planted in another separate Bed for one Year, in which Time they will acquire Strength, and by the succeeding Year will be as strong as the older Roots.

The single and semi-double Flowers, should be planted also in a Bed by themselves, where they should be carefully sheltered, as was directed before, from the Frost, until the Flowers are blown, at which time their Covering should be intirely removed, and they suffered to receive the open Air, which though it may soon deface the Beauty of the Flowers, yet is absolutely necessary to promote their Seeding; and when the Seeds are quite ripe, you must cut off the Vessels and preserve them with the Seeds therein until the Season for sowing it. But you must observe, that after these Flowers have produc'd Seeds, they seldom flower  
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fo well again, at leaft not in two Years after, fo that the beft Method to obtain good Seed, is to plant new Roots every Year for that Purpofe.

The common *English* and *Starry Hyacinths* are very hardy Plants, as are fome of the fingle blue and white *Oriental* Sorts, and do increafe very faft by Off-fets from the old Roots, fo that it is hardly worth while to propagate them by Seeds; eſpecially ſince it can ſcarcely be expected to receive any great Varieties from them: Theſe Flowers, though common, are very pretty Ornaments in the Borders of the Flower-Garden, where being intermix'd with other bulbous-rooted Flowers, they add to the Variety, and continue the Succeſſion of Flowers a long Time in the Spring; and as they are very hardy, and only require to be tranſplanted every other Year, fo they are worthy of a Place in every good Garden.

The *Hyacinth of Peru* is one of the lateſt Flowers of all this Tribe, ſeldom appearing before the Middle, and ſometimes not until the latter End of *May*: This, as I before obſerv'd, ſhould have a Situation expoſed to the Morning Sun, and a light, rich Soil; but as this ſeldom loſes its Leaves or Fibres intirely, fo it cannot be kept long out of the Ground; the beſt Season for tranſplanting their Roots, is in *Auguſt* or *September*, at which Time the Off-ſets ſhould be taken from them, and the ſtrong Roots planted again for flowering; but the ſmall Roots ſhould be plac'd in a Nurfery-bed, until they have acquir'd Strength to flower. The Diſtance and Depth of planting theſe, being much the ſame with what I have already mention'd for

the other *Hyacinths*, I ſhall forbear repeating it.

I ſhall add in this Place, another *Hyacinth*, which is now preſerved in curious Collections of Exotick Plants; it was originally brought from the *Cape of Good Hope*, and being a Native of a warm Climate, will not endure the Cold of our Winters in the open Air; but for the Beauty of its Flowers, well deſerves a Place in a Green-houſe. It is called,

*HYACINTHUS; Africanus, tuberosus, flore caeruleo, umbellato. Breyner. prod.* The African *Hyacinth*, with a tuberoſe Root and blue Flowers, growing in Umbels.

The Roots of this Plant ſhould be put in Pots, filled with the ſame Earth as was directed for the other *Hyacinths*; theſe Pots, during the Summer-ſeaſon, may be expoſed to the open Air with other Green-houſe Plants, and in Winter muſt be houſed with them; the Time for tranſplanting the Roots, is toward the End of *March*, before the green Leaves are produc'd too far, alter which it is not ſo ſafe to remove them: During the Time that their green Leaves are in Vigour, they muſt be frequently water'd, but when their Leaves begin to decay, it muſt be given them very ſparingly; for much Wet at that time will rot their Roots: They ſhould alſo have as much free open Air, when the Weather is mild, as they can poſſibly receive; for which Purpoſe they ſhould be plac'd near the Windows of the Green-houſe, for they require only to be ſhelter'd from Froſt and extreme cold Air, being in other reſpects very hardy.

This Plant is propagated by Off-ſets taken from the old Roots, at the

the Time of transplanting them, which must be managed as hath been directed for the old Roots. The Flowers of this Plant are produc'd in *August* and *September*; but it seldom perfects Seeds in *England*.

### HYACINTHUS; Tuberosus.

The *Characters* are;

*It hath a tuberosè Root; the Stalk is erect, and surrounded with a leafy Covering, by Intervals; the Flowers are large, and of a Lily-shape, being much longer and larger than those of the Bulbous Hyacinths.*

The *Species* are;

1. HYACINTHUS; *Indicus, tuberosus, flore Hyacinthi Orientalis. C. B. P.* The Indian Tuberosè-rooted *Hyacinth*, commonly called the *Tuberosè*.

2. HYACINTHUS; *Indicus, tuberosus, flore pleno. Boerh. Ind. alt.* The Indian Tuberosè-rooted *Hyacinth*, with a double Flower, commonly call'd the *Double Tuberosè*.

The first of these Plants is very common in most Parts of *Europe*; the Roots of this Sort are generally brought from *Genoa* in great Plenty every Spring, by the Persons that bring over *Orange-Trees* for Sale. But the second Sort is very rare, and till of late only in the Gardens of *Monf. de la Court* near *Leyden* in *Holland*, who obtain'd it from Seeds of the Single Kind some Years since; this Plant he kept as a great Curiosity in his Garden, till he had obtain'd vast Quantities of them, and destroy'd many of them rather than dispose of them to other Persons; but lately he hath altered his Mind, and distributed them to several curious Gentlemen in *England*.

These Plants are propagated by Off-sets taken from the old Roots, which send them forth in great Plenty; but as they require to be

shelter'd from the Cold of our Winters, so this Method is seldom practis'd in *England*, because we can be furnish'd with fresh strong Roots annually from Abroad, at a very cheap Rate: I shall therefore proceed to the Culture of those Roots which are brought over.

The Roots of this Plant generally arrive here in *February*, which is full early enough to plant them for the first Season: but in order to continue a Succession of their Flowers, they should be planted at three different Times. The first, at the Latter-end of *February*, or the Beginning of *March*; these will flower at the Latter-end of *May*, or Beginning of *June*. The second should be planted the Beginning of *April*; these will flower in *July*. The third should be planted in the Beginning of *May*, which will flower in *August* or *September*, and some of them will continue till *October*. By which Method we may continue this fragrant Flower for four or five Months in Beauty.

When you are provided with the Roots, you must prepare a moderate Hot-bed, upon which should be plac'd a Parcel of small Flower-Pots, fill'd with fresh, light, rich Earth; then having taken off the Fifth and decay'd Leaves and Fibres of the Roots, as also the Off-sets, (which, if permitted to remain upon the flowering Roots, will exhaust much of their Nourishment, and cause 'em to blow very weak) you must plant the Roots one into each separate Pot, observing that the Bud or Upper-part of the Root is but just cover'd with the Earth: for if they are bury'd too deep, they will sometimes miscarry.

These should have but little Water until they appear above-ground,  
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but afterwards they require frequently to be refresh'd therewith; and as the green Leaves advance, so you must be careful to give them Air, in Proportion to the Heat of the Weather, and the Bed in which they are planted; for if they are forc'd too fast, it will cause their Flower-stems to run up very weak and tall; but the Flowers will be fewer in Number, and much smaller than when they are brought up hardier. As the Stems advance, so you must raise your Coverings, and increase the Proportion of free Air; and in the Middle of *May* a slight Covering with Mats will be sufficient; for then you must harden them by Degrees to bear the open Air. When the Flowers begin to open, the Pots should be remov'd into Shelter; for if they are permitted to continue abroad, the Wet will soon deface the Flowers: but if they are skreen'd from Wet, and the violent Heat of the Sun, they will continue in Beauty a long Time.

Those Roots which are planted later in the Season, will require a less Degree of Heat; so that if the Hot-bed does but bring them well up above-ground, the Heat of the Sun will be sufficient for them afterwards, provided the Season be not very cold and wet; for if it should happen to prove so, you must add fresh Warmth to the old Bed, or remove the Pots to a new one to bring them forward, otherwise they will not flower that Season.

The Double-flower'd Sort being propagated by Off-sets, I shall set down the Method us'd by *Monf. de la Court*, as I observ'd when I was at *Leyden*. In the Autumn he takes up the old Roots soon after their Leaves decay, and preserves them in a warm Room until the Spring,

at which times he takes off all the Off-sets from the old Roots; then he plants the strong Roots in the manner above directed for the single Sort: but the Off-sets he plants about four Inches asunder, upon a fresh Hot-bed cover'd over with very rich Earth; this Bed is arch'd over with Hoops, and closely cover'd with Canvas and Mats, which are continu'd on during the Spring Months while the Weather is cold; but as the Summer advances, so the Coverings are remov'd, and the Plants suffer'd to enjoy the free open Air until the Autumn following, that the Nights begin to be cold, when he covers them as before, until the Leaves are quite wither'd off, at which Time he takes them up and preserves their Roots in dry Sand in the Green-house, until the succeeding Spring.

By this Management, I observ'd some Hundreds of Roots of this Plant, in the Gentleman's Garden above-mention'd, which were in Flower, and a large Quantity of younger Roots, which were for the succeeding Year; (for these Roots do never flower two Years successively): But were it not for the Rarity, more than the Beauty of the Flower, few People would covet to have it; for the single Sort is by far the fairer Flower, and opens much better, as do those of the *White Lily*, and some others of that Kind, the Single Flowers of which are much preferable to the Double; but the Double being more rare, are often coveted.

HYDROCOTYLE; Water Navel-wort.

This Plant grows in great Plenty in moist Places in most Parts of *England*, and is never cultivated for Use, so I shall pass it over with only naming it.



HYDROLAPATHUM; *vide* Lapathum.

HYDROPIPER, the common biting Arfesmart, which grows in great Plenty in moist Places near Ditches Sides almost every where.

HYOSCYAMUS; Henbane.

The Characters are;

The Leaves are soft and hairy, growing alternately upon the Branches; the Cup of the Flower is short, and Bell-shap'd, and divided into five Segments; the Flower consists of one Leaf, the bottom Part of which is tubulose, but is expanded at the Top, and divided into five Segments, having five obtuse Stamina; the Fruit, which is enclos'd within the Calix, resembles a Pot with a Cover to it, and is divided by an intermediate Partition into two Cells, which contain many small Seeds.

The Species are;

1. HYOSCYAMUS, *vulgaris, vel niger*. C. B. P. Common black Henbane.

2. HYOSCYAMUS; *albus, major, vel tertius Dioscoridis, & quartus Plinii*. C. B. P. Greater white Henbane.

3. HYOSCYAMUS; *major, albo similis, umbilico floris atro-purpureo*. T. Cor. Great Henbane like the white, but with a dark purple Bottom to the Flower.

4. HYOSCYAMUS; *minor, albo similis, umbilico floris virenti. Fessieu*. Lesser Henbane like the white, with a green Bottom to the Flower.

5. HYOSCYAMUS; *rubello flore*. C. B. P. Henbane, with a reddish-colour'd Flower.

6. HYOSCYAMUS; *Creticus, luteus, major*. C. B. P. Great yellow Henbane of Candia.

There are several other Varieties of this Plant, which are preserv'd in Botanick Gardens, to add to their

Numbers of Plants; but since they are rarely cultivated for Use, so I shall forbear to say any thing of them in this Place.

The first of these Sorts is very common in England, growing upon the Sides of Banks and old Dung-hills almost every where. This is a very poisonous Plant, and should be rooted out in all Places where Children are suffer'd to come; for in the Year 1729, there were three Children poison'd with eating the Seeds of this Plant, near Tottenham-Court; two of which slept two Days and two Nights before they could be awaken'd, and were, with Difficulty, recover'd; but the third, by being older and stronger, escap'd better.

The second Sort is by most Authors suppos'd to be the true white Henbane of the Shops; the Seeds of which should be us'd in Medicine, tho' there is very little Difference in the Seeds of that and the third and fourth Sorts, either of which may probably do. The other Sorts are of no Use or Beauty; but whoever hath a mind to cultivate any of these Plants, may sow their Seeds in the Spring upon a light, dry, undung'd Soil: And when the Plants are come up, they should be transplanted out, allowing them two Feet Distance each Way: The second Summer they will produce Flowers and Seeds, and soon after the Roots perish.

HYPERICUM; St. John's-wort.

The Characters are;

It hath a fibrose Root; the Leaves grow opposite by Pairs at the Joints of the Stalks; the Flower-cup consists of one Leaf, which is divided into five Parts, and expanded; the Flower, which consists of five Leaves, expands in Form of a Rose, having many

many Stamina in the Center surrounding a conical Ovary, which becomes a three-corner'd pointed Fruit, and is divided into three Cells, containing many small Seeds.

The Species are;

1. HYPERICUM; *vulgare*. C. B. P. Common St. John's-wort.

2. HYPERICUM; *Ascyron dictum*, caule quadrangulo. F. B. St. John's-wort, with a square Stalk, commonly call'd, St. Peter's-wort.

3. HYPERICUM; *fœtidum*, frutescens. Tourn. Stinking, shrubby St. John's-wort.

4. HYPERICUM; *frutescens*, *Canariense*, *multiflorum*. Hort. Amst. Shrubby St. John's-wort from the Canaries, with many Flowers.

5. HYPERICUM; *orientale*, *flore magno*. T. Cor. Eastern St. John's-wort, with a large Flower.

The first and second Sorts are both very common Plants, growing in the Fields in most Parts of England; the first is us'd in Medicine, but the second is of no Use: These are rarely propagated in Gardens, but I chuse to mention them in order to introduce the other Sorts, which deserve a Place in every good Garden.

The third and fourth Sorts are shrubby Plants, which are very proper to intermix with other flowering Shrubs of the same Growths, where, by their long Continuance in Flower, they will make a very handsome Appearance. The third Sort is of an humble Stature, seldom rising above four Feet in Height; but the fourth will grow to the Height of seven or eight Feet.

These two Sorts are propagated by Suckers, which are plentifully sent forth from the old Plants. The best Season for taking off these Suckers is in *March*, just be-

fore they begin to shoot: They should be planted in a light dry Soil, in which they will endure the severest Cold of our Climate very well. They may also be propagated by Cuttings, which should be planted at the same Season; or by Seeds, which must be sown in *August* or *September*, which is as soon as they're ripe; for if they are kept till Spring, few of them will grow: But as they multiply so fast by Suckers, the other Methods of propagating them are seldom practis'd in *England*.

The only Care these Shrubs require, is, to clear them from Suckers every Spring, and to cut out all decay'd and luxuriant Branches, in order to reduce them to a regular Figure: They produce their Flowers in *July*, and continue flowering until the End of *September*, which renders them very agreeable, but their Leaves, when bruis'd, do emit a very rank Odour.

The Eastern Sort is also an abiding Plant, but it seldom rises above eighteen Inches or two Feet high: This is propagated by parting the Roots, and planting Cuttings in the Spring; it is somewhat tenderer than the last, but will endure the Cold of our ordinary Winters in the open Air, provided it be not too much expos'd to the cold Winds: It may also be propagated by sowing the Seeds in *March* upon a Bed of light Earth, in an open Situation; and when the Plants are large enough to be transplanted, they may be plac'd in the warm Borders of the Pleasure-Garden; and the Summer following they will produce their flowers in large Quantities upon the Tops of the Branches, which being of a large Size, and a bright yellow

yellow Colour, do make a very handsome Shew.

HYPERICUM FRUTEX; *vide* Spirea.

HYSSOPUS; Hyssop.

The Characters are;

It is a verticillate Plant, with long, narrow Leaves; the Galea (or Crest) of the Flower is roundish, erect, and divided into two Parts; the Barba (or Beard) is divided into three Parts; the middle Part is hollow'd like a Spoon, having a double Point, and is somewhat wing'd; the Whorles of the Flowers are short, and at the lower Part of the Stalk are plac'd at a great Distance, but towards the Top are closer join'd, so as to form a regular Spike.

The Species are;

1. HYSSOPUS; *officinatum, carulea, seu spicata*. C. B. P. Common Hyssop of the Shops, with blue flowers growing in a Spike.

2. HYSSOPUS; *vulgaris, alba*. C. B. P. Common Hyssop, with a white Flower.

3. HYSSOPUS; *rubro flore*. C. B. P. Hyssop, with a red Flower.

4. HYSSOPUS; *montanum, Macedonicum, Valerandi Dourez*. J. B. Mountain Macedonian Hyssop.

5. HYSSOPUS; *humilior, myrtifolia*. H. R. Par. Dwarf myrtle-leav'd Hyssop.

All the Sorts of Hyssop are propagated either by Seeds or Cuttings: If by the Seeds, they must be sown in March upon a Bed of light sandy Soil; and when the Plants come up, they should be transplanted out to the Places where they are to remain, placing them at least a Foot asunder each way: But if they are design'd to abide in those Places for a long Time, two Feet Distance will be small enough; for they grow pretty large, especially if they are not

frequently cut, to keep them within compass. They thrive best upon a poor dry Soil, in which Situation they will endure the Cold of our Climate better than when they are planted on a richer Soil. If you would propagate them by Cuttings, they should be planted in April or May, in a Border where they may be defended from the violent Heat of the Sun; and being frequently water'd, they will take Root in about two Months; after which, they may be transplanted where they are to continue, managing them as was before directed for the seedling Plants.

The first Sort was formerly more cultivated than at present in England, that being the Sort commonly us'd in Medicine. The other Species are preserv'd in curious Gardens for their Variety, but they are seldom cultivated for Use.

It hath been a great Dispute amongst modern Writers, whether the Hyssop now commonly known, is the same which is mention'd in Scripture: About which, there is great room to doubt; there being very little Grounds to ascertain that Plant; tho' it is most generally thought to be the *Winter Savory*, which Plant is now in great Request amongst the Inhabitants of the Eastern Countries, for outward Washings or Purification.



JACEA; Knap-weed.

The Characters are;

It is one of the *Herbæ Capitatæ* (or Headed Plants) which is destitute

of

of Spines: The Calix (or Cup) is squamose: The Borders of the Leaves are commonly equal, being neither serrated nor indented: The Florets round the Border of the Head are barren; but those plac'd in the Centre are succeeded each by one Seed, having a Down adhering to it.

The Species are;

1. JACEA; *nigra, pratensis, latifolia*. C. B. P. Broad-leav'd meadow black Knap-weed.

2. JACEA; *cum squamis pennatis, five capite villoso*. F. B. Woolly headed Knap-weed.

3. JACEA; *montana, candidissima, stœbes foliis*. C. B. P. Mountain Knap-weed, with very white Leaves.

4. JACEA; *Lusitanica, sempervirens*. H. R. Par. Portugal evergreen Knap-weed.

5. JACEA; *Epidaurica, candidissima & tomentosa*. Tourn. White woolly Knap-weed of Ragusa.

6. JACEA; *cyanoides, echinato capite*. C. B. P. Prickly-headed-Knap-weed.

There are great Varieties of these Plants, which are preserv'd in curious Botanick Gardens for Variety: But there being very few of them cultivated for Use or Beauty, I shall not trouble myself or the Reader with an Enumeration of their several Names here; those above-mention'd being the handfomest, and best worth cultivating.

They are all propagated by Seeds, which should be sown in March upon a Bed of light rich Earth; and when they are come up, they may be transplanted into a Nursery-Bed in some obscure Part of the Garden, at about ten Inches or a Foot asunder, where they may continue until the Michaelmas following, at which Time they may be transplanted into the middle of

large Borders in the Parterre Garden, where they may remain to flower: But the fifth Sort being tender, should be planted into Pots, and shelter'd from great Frosts in Winter, which if they are expos'd to, will destroy them. The sixth Sort is an annual Plant, which should be planted out in May, where it is design'd to remain, and in June it will flower, and the Seeds will ripen in August. The first Sort is a Native of England, and is very common in Pasture Lands, especially upon the Sides of Banks, or Foot Paths: This is seldom cultivated in Gardens.

These Plants may deserve a Place in large Gardens, for Variety; but they are not proper for small Gardens, their Branches taking up too much Room: And their Flowers having no great Beauty to recommend them, it is hardly worth excluding better Plants to make Room for them.

JACOBÆA; Ragwort.

The Characters are;

It hath a radiated Flower, the Tube of which is almost of a cylindrical Figure, and the Seeds are fasten'd to a Down; to which may be added, the Leaves are deeply laciniated, or jagged.

The Species are;

1. JACOBÆA; *maritima*. C. B. P. See Ragwort.

2. JACOBÆA; *Africana, frutescens, flore amplo, purpureo, elegantissimo senecionis folio*. Volk. Shrubby African Ragwort, with an ample purple Flower, and Leaves like Groundsel.

3. JACOBÆA; *Africana, frutescens, foliis incisiss & subtus cinereis*. Com. Rar. African Shrubby Ragwort, with cut Leaves, and the under-part of an Ash Colour.

4. JACOBÆA; *Africana, frutescens, foliis absinthii umbelliferi incanis.* H. A. Shrubby African Ragwort, with hoary Leaves like the umbellated Wormwood.

There are great Varieties of these Plants, known to the Curious in *Botany*, most of which are but of little Beauty, and being some of them Natives of *England*, are seldom cultivated in Gardens; but these here mention'd do deserve a Place in every good Collection of Plants.

The first Sort was formerly nurs'd up with great Care, and preserv'd in Winter amongst *Oranges, Myrtles, &c.* in Green-houses; but of late it has been transplanted into the open Air, where it is found to thrive exceeding well, and, if planted in a dry Soil, and warm Situation, will very well endure the severest Cold of our Climate.

This Plant, tho' there is no great Beauty in its Flowers, yet for the Oddness of its hoary, regular, jagged Leaves, deserves to have a Place in every good Garden.

The second Sort is preserv'd, for the Beauty of its fine purple Flowers, which do continue a long Time, and growing in large Bunches, afford an agreeable Prospect.

The third and fourth Sorts grow to the Height of five or six Feet, and will abide several Years, if carefully preserv'd in Winter from extreme Cold: These are commonly preserv'd in the Green-house among other exotick Plants, for their Variety.

All these Sorts may be propagated by Seeds or Cuttings: But if you propagate them by Seeds, you should sow them in *March*, upon a Bed of light Earth; observing to water the Bed frequently in dry

Weather, otherwise the Plants will not come up. About the middle of *May*, if your Seeds should succeed well, the Plants will be fit to transplant out; at which Time you should put some of the three last Sorts into Pots fill'd with light fresh Earth, setting them in the Shade until they have taken fresh Root; after which they may be expos'd in an open Situation until the latter End of *October*, when they must be remov'd into Shelter. During the Winter-season, they must be frequently water'd, without which they will soon decay; and in Summer they must be often prun'd, especially the second and third Sorts, to make them regular, otherwise they are apt to be very rude and unsightly, for they grow very vigorously.

The second Sort will produce Flowers and Seeds the first Year, and is often treated as an annual Plant; but if it be hous'd in the Winter, it will live very well for two Years. They should be renewed every Year or two, at least, otherwise they are subject to decay. The Cuttings whereof may be planted in a shady Border, in any of the Summer Months, which, if carefully water'd, will take Root in a Month's Time, whereby they may be greatly increased.

The *Sea Ragwort* may be also propagated by Cuttings or Slips, which must be planted and managed as the others, and, when they are rooted, may be transplanted into a warm Situation, where they may continue to flower and seed. It is very subject to degenerate, when rais'd from Seeds, whereby the Whiteness, which is the greatest Beauty of this Plant, is much diminish'd, especially upon the upper Parts of their Leaves; so that

the surest Method is, to propagate it by Cuttings.

**JALAPA;** Jalap, or Marvel of Peru.

The Characters are;

It hath a long, thick, fleshy, succulent Root: The Leaves, which resemble those of Night-shade, grow by Pairs opposite upon the Branches: The Stalks and Branches are very full of Knots: The Flower consists of one Leaf, and is shap'd like a Funnel: In the Centre of the Flower is plac'd the Ovary, inwrapp'd in one of the Flower-cups, which becomes an oblong, five-corner'd, umbilicated Fruit, consisting of a mealy Nut.

The Species are;

1. **JALAPA;** flore flavo. Tourn. Jalap, or Marvel of Peru, with a yellow Flower.

2. **JALAPA;** flore purpureo. Tourn. Jalap, or Marvel of Peru, with a purple Flower.

3. **JALAPA;** flore exalbido. Tourn. Jalap, or Marvel of Peru, with a whitish Flower.

4. **JALAPA;** flore ex rubro, luteo & albo mixto. Tourn. Jalap, or Marvel of Peru, with red, yellow, and white Flowers mix'd upon the same Plant.

5. **JALAPA;** flore ex albo & purpureo elegantissime variegato. Jalap, or Marvel of Peru, with white and purple Flowers finely variegated.

6. **JALAPA;** parvo flore. Tourn. Jalap, with a small Flower.

7. **JALAPA;** fructu rugoso. Tourn. Marvel of Peru, with rough Seeds.

These Plants are all propagated by Seeds, which should be sown upon a moderate Hot-bed in March; and when they come up, they should be transplanted into another Hot-bed, at six Inches Distance from each other; and when they have taken Root, the Glasses must be rais'd every

Day, that the Plants may have a great deal of Air, otherwise they are very subject to be drawn up tall and weak; nor can they be recover'd to a sufficient Strength again in a Month's Time, if once they are thus drawn. When the Plants are grown to be a Foot high, they should be put into Pots fill'd with rich light Earth, which should be plung'd into a very moderate Hot-bed, to facilitate their taking Root: And in removing them, you must be very careful to preserve as much Earth to their Roots as you can; for their Roots have but few Fibres to retain it in a Ball, as many other Plants will do: And it sometimes happens, when the Root is left bare, it seldom takes fresh Hold of the Ground, at least not in a considerable Time, so that the Plants will make but a poor Figure that Season. When they are transplanted into the Pots, and have taken Root again, they should be harden'd to endure the open Air; for they are not very tender; but on the contrary, they will not thrive well, if too much drawn or forc'd in the Hot-bed. In the middle of May, the Pots may be remov'd into the Places where they are design'd to be continu'd for that Season; observing to support the Branches with a strong Stake, and to water them as often as they require it. You may also in May plant some of them into the middle of the large Borders of the Pleasure-Garden, doing it carefully, and observing to shade and water them until they have taken Root; after which, they will require no farther Care, but to support them from being broke down by the Winds, which they are very subject to be, especially when their Heads are large.

The

The Plants thus rais'd, will grow to the Height of three or four Feet, and spread their Branches very wide (especially if the Roots have Room in the Pots) and their Flowers will begin to appear in *June*, and they will continue constantly flowering until the Frost prevents them; which, together with the great Diversity of Colours in the Flowers upon the same Plant, renders them valuable to every curious Person. The Flowers of these Plants never expand in the Day-time, while the Sun is hot, but in the Evening, when the Sun declines, they begin to open, and do continue expanded until the Sun shines warm upon them the next Day, so that when it happens to be cloudy Weather, as also late in the Autumn, when the Weather is cool, the Flowers will remain open most Part of the Day.

As the Flowers are produc'd successively almost every Day, so the Seeds are in a short Time after ripe, and do soon fall to the Ground; so that when your Seeds begin to ripen, you must carefully look for them upon the Ground twice a Week, otherwise, if they lie too long upon the Ground, and there should fall some Rain, they will sprout, and be good for nothing: In sowing these Seeds, you should be careful to take them from such Plants as produc'd the greatest Variety of Flowers; for if you save them from such as produce only plain-colour'd Flowers, the Seeds will always produce the same Sort, and those with yellow and red variegated Flowers will constantly produce the same, these never varying from the Red and Yellow to the Purple and White, though they will sometimes degenerate in-

to plain yellow or red Flowers, as will the other into plain Purple or White, but they will constantly retain one or both of their original Colours.

Altho' in the above-written Culture of these Plants, I have directed their Seeds to be sown on a Hot-bed, yet they may be propagated by sowing them in a warm Border of light Earth toward the latter End of *March*; and when the Plants come up, they should be transplanted as before directed: In which Method they will succeed very well, but will not flower so soon by a Month or six Weeks as those rais'd on the Hot-bed, nor will the Plants grow so large.

When the Frost has pinch'd the Leaves and Stems of these Plants, you should take up their Roots, which should be laid to dry, and then may be preserv'd in dry Sand all the Winter, if secur'd from the Frost; and in the following Spring these Roots should be planted into large Pots, and plung'd into a moderate Hot-bed, to promote their taking Root; and when the Shoots appear above ground, they should be treated as was directed for the seedling Plants, hardening them by Degrees to endure the open Air. The Plants so rais'd, will be much larger than the Seedlings, and will flower earlier in the Year.

These Plants are all affirm'd by *Pere Plumier* to be different Sorts of Jalap, but the seventh Sort, he says, is the particular Plant, whose Root is commonly us'd in Medicine. But I have been since inform'd by my worthy Friend Doctor *William Horslow*, that the Jalap is the Root of a *Convolvulus*, and is not akin to either of these Plants.

**JASMINUM.** The Jasmine, or Jessamine-Tree.

The Characters are;

The Leaves are in many Species pinnated; the Cup of the Flower consists of one Leaf, but is divided at the Top into five Segments; the Flower consists of one Leaf, is Funnel-shap'd, and divided into five Segments: The Flowers are succeeded by Berries, which split in the Middle, each Side, for the most part, containing a separate Seed.

The Species are;

1. **JASMINUM**; *vulgatius*, flore albo. C. B. P. The common white Jasmine.

2. **JASMINUM**; *vulgatius*, flore albo, foliis ex luteo elegantissime variegatis. The common white Jasmine, with yellow strip'd Leaves.

3. **JASMINUM**; *vulgatius*, flore albo, foliis ex albo elegantissime variegatis. The common white Jasmine, with white-strip'd Leaves.

4. **JASMINUM**; *humile*, *luteum*. C. B. P. Dwarf yellow Jasmine, commonly call'd, The Italian yellow Jasmine.

5. **JASMINUM**; *luteum*, *vulgò dictum bacciferum*. C. B. P. The common yellow Jasmine.

6. **JASMINUM**; *humilius*, *magno flore*. C. B. P. The Spanish white, or Catalonian Jasmine.

7. **JASMINUM**; *humilius*, *magno flore*, *pleno*. The double Spanish Jasmine.

8. **JASMINUM**; *Indicum*, *flavum*, *odoratissimum*. Fer. Flor. The yellow Indian Jasmine.

9. **JASMINUM**; *Azoricum*, *trifoliatum*, *flore albo odoratissimum*. H. A. The Three-leav'd Azorian Jasmine, with very sweet white Flowers, commonly call'd, the Ivy-leav'd Jasmine.

10. **JASMINUM**; *Africanum*, *folio Ilicis*, *flore solitario*, *ex alis foliorum*

*proveniente*, *albo*. Com. Rar. African Ilex-leav'd Jasmine, with a single white Flower produc'd from the Wings of the Leaves.

11. **JASMINUM**; *sive Sambach Arabum*, *Alpini*. F. B. The single Arabian Jasmine.

12. **JASMINUM**; *Arabicum*, *foliis Limonii conjugatis*, *flore albo*, *pleno*, *odoratissimo*. Boerb. Ind. The double Arabian Jasmine.

13. **JASMINUM**; *Arabicum*, *Castanea folio*, *flore albo*, *odoratissimo*, *cujus fructus Coffy in officinis dicuntur nobis*. Com. Pl. Us. The Coffee Tree.

The first Sort is very common in most English Gardens, being much cultivated for the Sweetness of its Flowers. The second and third Sorts are accidental Varieties from the first, and may be obtain'd by inoculating the Buds of these into the common Jasmine; which, although the Buds should perish, (as it often happens) yet it seldom fails to stain both the Leaves and Branches of the old Plant into which the Buds were put: So that by inoculating some of these Buds into some young Branches in divers Parts of an old Tree, they will not fail to tinge the whole Tree in a short Time.

The common white Jasmine is easily propagated by laying down the tender Branches in the Spring, which, by the succeeding Spring, will be rooted strong enough to be transplanted. They may also be propagated by Cuttings, which should be planted in March, in a moist Border, where they may have the Morning Sun: But they must be skreen'd from the Violence of the Sun in the Heat of the Day, and frequently water'd in dry Weather. The Cuttings thus manag'd, will many of them live, and have Roots fit to be remov'd in the following



lowing Spring: But this Method is seldom practis'd, the Layers always making the best Plants.

When these Plants are remov'd, they should be planted where they are design'd to be continu'd, which should be either against some Wall, Pale, or other Fence where the flexible Branches may be supported: For altho' it is sometimes planted as a Standard, and form'd into a Head, yet it will be very difficult to keep it in any handsome Order; or if you do, you must cut off all the flowering Branches: For the Flowers are always produc'd at the Extremity of the same Year's Shoots, which, if shortned before the Flowers are blown, will intirely deprive the Trees of Flowers. These Plants should be permitted to grow rude in the Summer, for the Reason before given: Nor should you prune and nail them until the Middle or Latter-end of *March*, when the frosty Weather is past; for if it should prove sharp frosty Weather after their rude Branches are prun'd off, and the strong ones are expos'd thereto, they are very often destroy'd; and this Plant being very backward in Shooting, there will be no Danger of hurting them by late Pruning.

The two Strip'd Sorts should be planted in a warm Situation, especially the White Strip'd, for they are much more tender than the Plain, and very subject to be destroy'd by great Frosts, if they are expos'd thereto; therefore it will be proper to preserve a Plant of each Kind in Pots, which may be remov'd into the Green-house in Winter, lest by exposing 'em to the Cold, they should all be destroy'd, and so you lose the Sorts.

The common Yellow *Jasmine* was formerly in greater Plenty in

*England* than at present, and was planted against Arbours, &c. to cover them, tho' it is not near so proper for that Purpose as the White Sort, it being of much slower Growth, nor will it ever extend its Branches so far as that; but however, it may have a Place among the Flowering Shrubs of low Growth, where it may be with more Ease reduc'd to a Standard than the other. This Plant flowers in *May* and *June*; but they have very little Scent, which has occasion'd its being less regarded. It may be propagated by Suckers, which it generally produces in great Numbers; or by Layers, as was directed for the common Sort, and are full as hardy.

The Dwarf Yellow *Jasmine* is somewhat tenderer than the former; yet it will endure the Cold of our ordinary Winters, if it be planted in a warm Situation. The Flowers of this Kind are generally larger than those of the common Sort, and better scented, but are seldom produc'd so early in the Season. It may be propagated by laying down the tender Branches, as was directed for the common White Sort; or by Budding or Inarching it upon the common Yellow *Jasmine*; the latter of which is preferable, as making the Plants hardier than those which are obtain'd from Layers: They should be planted against a warm Wall; and in very severe Winters will require to be shelter'd with Mats, or some other Covering, otherwise they are subject to be destroy'd. The manner of Dressing and Pruning being the same as was directed for the White *Jasmine*, I shall not repeat it.

The Spanish White, or *Catalonian Jasmine*, is one of the most beautiful

beautiful of all the Sorts, as also extremely sweet-scented: The Flowers of this Kind are much larger than any of the others, and are commonly of a Red Colour on the Out-side. This Plant is propagated by Budding or Inarching it upon the common White *Jasmine*, on which it takes very well, and is render'd hardier than those which are upon their own Stocks. But those of this Kind being brought over from *Italy* every Spring in so great Plenty, they are seldom rais'd here: I shall therefore proceed to the Management of such Plants as are usually brought into *England* from the Place abovemention'd, which generally are ty'd up in small Bunches containing three or four Plants, and wrap'd about their Roots with Moiss, to preserve them from drying; which, if it happen that the Ship has a long Passage, will often occasion them to push out strong Shoots from their Roots, which must always be taken off before planting, otherwise they will exhaust the whole Nourishment of the Plant, and destroy the Graft.

When you receive these Plants, you must clear the Roots of the Moiss, and all decay'd Branches should be taken off; then place their Roots into a Pot or Tub of Water, which should be set in the Green-house, or some other Room, where it may be screen'd from the Cold: In this Situation they may continue two Days; after which you must prune off all the dry Roots, and plant them into Pots fill'd with fresh light Earth; then plunge the Pots into a moderate Hot-bed of Tanners Bark, observing to water and shade them, as the Heat of the Season may require. In about three Weeks or a Month's Time they

will begin to shoot, when you must carefully rub off all such as are produc'd from the Stock below the Graft; and you must now let them have a great Share of Air, by raising the Glasses in the Heat of the Day; and as the Shoots extend, they should be topp'd, to strengthen them, and, by Degrees, should be harden'd to endure the open Air, into which they should be remov'd in *June*: but must have a warm Situation the first Summer; for if they are too much expos'd to the Winds, they will make but indifferent Progress, being render'd somewhat tender by the Hot-bed. If the Summer be warm, and the Trees have succeeded well, they will produce some Flowers in the Autumn following, tho' they will be few in Number, and not near so strong as they will be the succeeding Years, when the Trees are stronger, and have better Roots.

These Plants are commonly preserv'd in Green-houses, with *Oranges*, *Myrtles*, &c. and during the Winter-season will require to be frequently water'd, which should be given them sparingly each time, especially in cold Weather; for too much Wet at that Season will be apt to rot the Fibres of their Roots: They should also have a great Share of free Air when the Weather will permit; for which Purpose they should be plac'd in the coolest Part of the Green-house, among Plants that are hardy, where the Windows may be open'd every Day, except in frosty Weather; nor should they be crowd'd too close among other Plants, which often occasions their growing mouldy, and decays the younger Branches. In *April* the Shoots of these Plants should be shorten'd down to four Eyes, and all the weak Branches should be cut off;

off; and if you have the Convenience of a Glass-Stove, or a deep Frame, to place the Pots into at that Season, to draw them out again, it will be of great Service in forwarding their Flowering: yet still you should be careful not to force them too much; and as soon as they have made Shoots three or four Inches long, the Glasses should be opened in the Day-time, that the Plants may by degrees be inured to the open Air, into which they should be removed by the latter End of *May*, or the Beginning of *June*, otherwise their Flowers will not be so fair, nor continue so long. If the Autumn proves favourable, these Plants will continue to produce fresh Flowers until *Michaelmas*; and sometimes, when they are strong, they will continue Flowering till *Christmas*, or after; but then they must have a great Share of Air when the Weather is mild and will admit of it, otherwise the Flower-Buds will grow mouldy, and decay.

But notwithstanding most People preserve these Plants in Green-houses, yet they will endure the Cold of our ordinary Winters in the open Air, if planted against a warm Wall, and cover'd with Mats in frosty Weather; they'll also produce ten times as many Flowers in one Season as those kept in Pots, and the Flowers will likewise be much larger: but they should not be planted abroad till they have some Strength; so that it will be necessary to keep 'em in Pots two or three Years, whereby they may be shelter'd from the Frost in Winter: And when they are planted against the Wall, which should be in *May*, that they may take good Root in the Ground before the succeeding Winter, you must turn them out of the Pots, preserving

the Earth to their Roots; and having made Holes in the Border where they are to be planted, you should place them therein, with their Stems close to the Wall; then fill up the Holes round their Roots with good fresh rich Earth, and give them some Water, to settle the Ground about them, and nail up their Shoots to the Wall, shortening such of them as are very long, that they may push out new Shoots below, to furnish the Wall, continuing to nail up all the Shoots as they are produc'd. In the middle, or toward the latter end of *July*, they will begin to flower, and continue to produce new Flowers until the Frost prevents them; which when you observe, you should carefully cut off all the Tops of such Shoots as have Buds form'd upon them, as also those which have the Remains of faded Flowers left, for if these are suffer'd to remain on, they will soon grow mouldy, especially when the Trees are covered, and thereby infect many of the tender Branches, which will greatly injure the Trees.

Towards the middle of *November* (if the Weather be cold and the Nights frosty) you must begin to cover your Trees with Mats, which should be nail'd over them pretty close; but this should be done when the Trees are perfectly dry, otherwise the Wet being lodg'd upon the Branches, will soon cause a Mouldiness upon them, and the Air being excluded therefrom, will rot them in a short Time; it will also be very necessary to take off these Mats as often as the Weather will permit, to prevent this Mouldiness, and only keep them close cover'd in frosty Weather, at which time you should also lay some Mulch upon the Surface of the Ground about their Roots, and fasten some

Bands of Hay about their Stems, to guard them from the Frost, and in very severe Weather, you should add a double or treble Covering of Mats over the Trees, by which Method, if duly executed, you may preserve them through the hardest Winters. In the Spring, as the Weather is warmer, so you should by degrees take off the Covering; but you should be careful not to expose them too soon to the open Air, as also to guard them against the Morning Frosts, and dry Easterly Winds, which often reign in *March*, to the no small Destruction of tender Plants, if they are expos'd thereto; nor should you quite remove your Covering until the middle of *April*, when the Season is settled, at which time you should prune the Trees, cutting out all decay'd and weak Branches, shortening the strong ones to about two Feet long, which will cause them to shoot strong, and produce many Flowers.

The Double of this Kind is at present very rare in *England*, and only to be found in some very curious Gardens; though in *Italy* it is pretty common, from whence it is sometimes brought over amongst the Single: The Flowers of this Kind have only two Rows of Leaves, so that it is regarded rather for its Curiosity, than for any extraordinary Beauty in the Flowers: This may be propagated by budding it upon the common White *Jasmine*, as hath been directed for the Single, and must be treated in the same Manner.

The Yellow *Indian Jasmine* is propagated either by Seeds or laying down the tender Branches: If you would propagate them by Seeds, (which they often produce in *England* in great Plenty) you should

make a moderate Hot-bed in the Spring, into which you should plunge some small Pots, fill'd with fresh light Earth, and in a Day or two after, when you find the Earth in the Pots warm, you must put your Seeds therein, about four in each Pot will be sufficient, covering them about half an Inch thick with the same light Earth, and observe to refresh the Pots with Water as often as you should perceive the Earth dry; but do not give them too much at each Time, which would be apt to rot the Seeds.

In cold Weather, and in the Night, these Beds must be cover'd with Mats over the Glasses; but in warm Weather, the Glasses should be rais'd with Stones, to admit fresh Air, as also to let out the Steam of the Bed. In about five or six Weeks after sowing, the Plants will appear above Ground, at which Time it will be necessary to remove the Pots into another fresh Hot-bed, of a moderate Temperature, in order to bring the Plants forward; you must also be careful to water them as often as necessary, and in the great Heat of the Day the Glasses should be tilted pretty high, and shaded with Mats, to prevent the Plants from being scorch'd with Heat; about the middle of *May* you should begin to harden them to the open Air, by taking off the Glasses when the Weather is warm; but this must be done cautiously, for you should not expose them to the open Sun in a very hot Day at first, which would greatly injure them; but rather take off the Glasses in warm, cloudy Weather at first, or in gentle Showers of Rain, and so by degrees inure them to bear the Sun, and in *June* you should take the Pots out  
of

of the Hot-bed, and carry them to some well-shelter'd Situation, where they may remain until the Beginning of *October*; at which Time they must be carry'd into the Green-house, observing to place them where they may enjoy as much free Air as possible when the Windows are open'd, as also to be clear from the Branches of other Plants.

During the Winter-season they will require to be often water'd, but you must be careful not to give them too much at each Time; and in *March* you must remove these Plants each into a separate Pot, being careful not to take the Earth from their Roots, and if at this time you plunge them into a fresh moderate Hot-bed, it will greatly facilitate their rooting again, and be of great Service to the Plants; but when you perceive they are rooted, you must give them a great deal of Air; for if you draw them too much, they will become weak in their Stems, and incapable to support their Heads, which is a great Defect in these Trees.

You must also harden them to the open Air, into which they should be remov'd about the Middle of *May*, observing, as was before directed, to place them in a Situation that is defended from strong Winds, which are injurious to these Plants, especially while they are young. In Winter house them, as before, and continue the same Care, with which they will thrive very fast, and produce annually great Quantities of Flowers.

These Plants are pretty hardy, and will require no other Care in Winter than only to defend them from hard Frosts; nor do I know whether they would not live in the open Air, if planted against a warm Wall, which is what I am now

trying, for I have plantèd some against a Wall for that Purpose, and I think we have little Reason to doubt of the Success, since they are much hardier than the *Spanish*; but there is this Difference between them, *viz.* these Plants have large, thick, ever-green Leaves, so that if they were cover'd with Mats, as was directed for the *Spanish Jasmine*, the Leaves would rot and decay the Shoots; but as these will only require to be cover'd in extreme Frost, so, if their Roots are well mulch'd, and a Mat or two loosely hung over them in ordinary Frosts, it will be sufficient, and these Mats being either roll'd up, or taken quite off in the Day, there will be no great Danger of their being hurt, which only can proceed from being too long close cover'd.

In the Spring these should be prun'd, when you should cut off all decay'd Branches; but you must not shorten any of the other Branches, as was directed for the *Spanish* Sort, for the Flowers of this Kind are produc'd only at the Extremity of the Branches, which, if shorten'd, they would be cut off, and this growing of a more ligneous Substance in the Branches than the other, will not produce Shoots strong enough to flower the same Year.

If you would propagate this Plant from Layers, the Shoots should be laid down in *March*; and if you give them a little Cut at the Joint (as is practis'd in laying of *Carnations*) it will promote their Rooting: You should also observe to refresh them often with Water when the Weather is dry; which, if carefully attended to, the Plants will be rooted by the succeeding Spring fit to be transplanted, when they must be planted in Pots fill'd

fill'd with light Earth, and manag'd as was before directed for the Seedling Plants.

The *Azorian Jasmine* is also pretty hardy, and requires no more Shelter than only from hard Frosts; and I am apt to think, if this Sort was planted against a warm Wall, and manag'd as hath been directed for the Yellow *Indian Jasmine*, it would succeed very well; for I remember to have seen some Plants of this Kind growing against a Wall in the Gardens at *Hampton-Court*, where they had endur'd the Winter, and were in a more flourishing State than ever I saw any of the kind in Pots, and produc'd a greater Quantity of Flowers. These Plants are propagated in the same Manner as the Yellow *Indian*, and require the same Management. The Flowers of this Kind are small, but being produc'd in large Bunches, do make a handsome Figure, and are of a very agreeable Scent, and the Leaves being large and of a shining green Colour, add to the Beauty of the Plant very much.

The *Ilex-leav'd Jasmine* affords the least Pleasure of any of the Kinds of *Jasmines*, the Flowers being only produc'd singly from the Wings of the Leaves, and are very small; the Leaves also are of a pale Green, and the Plant naturally growing very ragged, has occasion'd its being but little v. lu'd; however, it should not be wanting in good Collections of Plants, for though the Flowers are small and produc'd singly, yet it continues flowering most part of the Year. This Plant is propagated by planting Cuttings in any of the Summer-months, which should be put into Pots fill'd with light sandy Earth, and plung'd into a Hot-bed, observing to water and shade them as the Season may require. When

these are rooted, (which will be in about five or six Weeks time) they may be remov'd into separate Pots; and when they have taken fresh Root, they may be remov'd into a Situation where they may be defended from strong Winds, in which Place they may remain until the Middle of *October*; at which time they must be hous'd with *Geraniums*, &c. observing to water them frequently, and give them as much free Air as possible, when the Weather is mild and will permit; for if they are too much drawn in Winter, their tender Shoots will be subject to grow mouldy and rot. These Plants should be often renew'd by planting Cuttings, for the old ones are very subject to decay.

The *Arabian Jasmines* of both Sorts are commonly brought into *England* from *Genoa* every Spring, amongst the *Spanish Jasmines*. These are all grafted upon the common *Jasmine* Stock, as are the *Spanish*; but being much tenderer than those, are very often greatly injur'd in their Passage, (which is always in the Winter-season) so that you should carefully examine them (when you purchase them of the *Italians*, who bring them over) to see if their Grafts are fresh and sound; if so, there is little Danger of succeeding. These must be put into Water and wash'd, pruning their Roots and Branches, and planting them, as was directed for the *Spanish Jasmines*, to which I shall refer the Reader to avoid Repetition.

These Plants are more tender than any of the Sorts before-mention'd, and must be preserv'd in a warm Stove in Winter, nor should they be expos'd to the open Air in Summer, if you would have them flower well, (though indeed the Plants will live and thrive in the open

open Air in *June*, *July* and *August*) but then they will rarely produce any Flowers; and those which may appear, are soon destroy'd by either Winds or Rain, both which will soon scatter them, being but slenderly fasten'd upon the Plants. The only Method in which I have found these Plants to thrive and flower well, is this, *viz.* After having preserved the Plants in a moderate Stove all the Winter, I clean'd their Leaves and Stems from Dust; then I took out the Earth from the upper Part of the Pots, and refill'd them with fresh Earth; then I plunged the Pots into a moderate Bed of Tanners Bark, which had lost most of its Heat: This occasion'd the Plants to shoot very strong, and in *June* and *July* I had great Quantities of Flowers, which were exceeding sweet, but of a short Duration, seldom continuing longer than two Days: however, these were succeeded by fresh Flowers through the greatest Part of *June* and *July*, during which Time my Plants were never entirely destitute of Flowers.

These *Jasmines* may also be propagated by laying down their tender Branches in the Spring, in the same manner as was directed for the yellow *Indian Jasmines*, which will take Root in less than three Months, provided the Pots are plung'd into a Hot-bed, otherwise they will not be rooted until the succeeding Spring. These must be planted into a light sandy Earth, and frequently watered in hot Weather; but during the Winter-season, it must be given them but sparingly, for too much Moisture at that Time will destroy them.

The Sort with double Flowers, which we have now in *England*, has rarely more than two Rows of

Leaves, (as I observed in the *Spanish*) so that it is but little better than the single: But there is another Sort of this *Jasmine*, which was formerly in *England*, and is now in the Duke of *Tuscany's* Gardens at *Pisa*, which produces Flowers almost as large as a Cinnamon *Rose*, and as double, as also of a most inoffensive sweet Scent; but this is not in *England* at present, nor is it likely to be obtain'd here, since it is not known to be growing in any other Part of *Europe* but the Garden at *Pisa*, where it is kept under a Guard to prevent its being stolen away: Such is the narrow Temper of the present Possessor, that he will not suffer it to be distributed into any other Gardens; though the Professor of Botany to that Garden says, it increases greatly by Layers, by which means all *Europe* might be soon supply'd with this valuable Plant, were it but once in the Possession of any communicative Person.

The *Coffee-Tree* is propagated by Seeds, which should be sown soon after they are gather'd from the Tree; for if they are kept but a short Time out of the Ground, they will not grow, which is the chief Reason that this Tree has not been spread into more different Countries: for the Seeds will not keep good long enough to be sent to any distant Place; so that in order to cultivate this Plant in any Part of the World, it is absolutely necessary to have it carry'd thither growing: But as this Difficulty is now overcome, by the Quantity of these Trees there are now growing both in *Europe* and *America*, so we may expect to be furnish'd with them from many different Parts, but especially from the *Caribbee Islands*, where the  
Trees

Trees are found to succeed as well as in their native Place of Growth; but whether the *Coffee* produc'd in the *West-Indies*, will prove as good as that brought from *Mocha*, Time will discover: But if it should, it may be of great Advantage, not only to the Inhabitants there, but also may turn to great Account in the *West-India* Trade. The manner how this Tree was first brought into *Europe*, and the several Parts of the World to which it is now spread, may be fully seen in Doctor *Douglas's* curious Account of the *Coffee*, published at *London Anno 1727*.

The Berries of this Plant are commonly ripe with us in *April*; at which Time they should be sown in Pots of fresh light Earth, covering them about half an Inch thick with the same light Earth; then plunge the Pots into a moderate Hot-bed of Tanner's Bark, observing to refresh them often with Water; as also to raise the Glasses in the Heat of the Day, to admit fresh Air; and in very hot Weather it will be proper to shade the Glasses with Mats, for otherwise the Earth in the Pots will dry too fast, and prevent the Vegetation of the Seeds. I must here observe, that the taking off the Pulp of the Berries, which has been by some People directed as absolutely necessary before they are planted, is a great Mistake; for I have experienced that those Berries which were planted whole as they came from the Tree, produc'd stronger Plants, and came up sooner than those which were clear'd from the Pulp; and although they are commonly two Seeds in each Berry (both which seldom fail to grow) yet when the Plants are young, they are easily parted and planted

into separate Pots; which is absolutely necessary to be done, when they are about an Inch and an half high. When these Plants are removed, great Care should be taken not to break or injure their Roots, as also to preserve the Earth to their Roots; nor should they be kept any Time out of the Ground; for if their Fibres are suffer'd to dry, they are very subject to mould, and perish soon after.

The Soil in which I have found these Plants to thrive best, was compos'd in the following Manner; viz. one Load of fresh light Earth, one Load of rotten Cow-Dung, with half a Load of Sea-Sand: These were well mix'd together, and laid in a Heap six Months before it was used; in which Space it was turned several Times, the better to incorporate the several Parts.

It must also be observ'd, that in transplanting these Plants, they should never be put into Pots too large, in which they seldom thrive: The young Plants, when taken out of the Pots in which they were sown, should be planted each into a small half-penny Pot fill'd with the above-mention'd Earth, and then plung'd into a moderate Hot-bed of Tanner's Bark, observing to water them frequently, though they should not have too much given them at one Time: The Glasses should also be raised to admit fresh Air every Day, and in the Heat of the Day, should be shaded with Mats; for if they are too much expos'd to the Sun, they will perspire so freely, as to have little Moisture remaining in their Leaves, whereby they will hang and appear very sickly, as will also the tender Shoots, by which their Growth will be great-ly



ly retarded. As these Plants advance in Height, so should they have a greater Proportion of fresh Air, at all Times, when the Weather is warm, and their Waterings should be frequently repeated; tho' it must be perform'd with great Moderation, for too much Moisture is very subject to rot the Roots; and when once the Roots are decay'd, it seldom happens that those Plants are ever recovered, tho' managed with all possible Skill and Care.

During the Winter-season, these Plants should be plac'd in a Bark-stove, that the Fibres of the Roots may not be too much dry'd (which often happens when the Pots are plac'd upon Shelves in a dry Stove) whereby the Top-shoots of the Plants are often decay'd, and the Leaves are apt to turn brown and fall off, which is of very ill Consequence to them; for if once the Leaves fall intirely off, the Plants are seldom recovered again so as to be beautiful.

This Stove should be kept up to the temperate Heat (mark'd on Mr. Fowler's Thermometers) with which they thrive better than in a great Warmth; for if they are kept over hot, they perspire too freely, so that their Leaves will droop and change their Colour. In this Season they should be water'd frequently, but it must be given them sparingly, and the Water should always be plac'd in the Stove twenty-four Hours before it be used, that it may acquire a Warmth nearly equal to the Temperature of the Air in the Stove.

You must also clean their Leaves frequently from Filth, which they are subject to contract when shut up close, as also many small Insects are harbour'd upon the Sur-

faces of the Leaves, which, if not carefully clean'd off, will greatly injure the Plants. The best Method to clean off these is, with a soft woollen Cloth dipt in Water, with which you may easily wash them off; but you should be careful not to bruise their Leaves, nor to wet them too much, especially in the Depth of Winter.

You should also be careful in placing them in the Stove, not to set them under the Branches of other Plants, nor too close to them, whereby their Branches may intangle therewith, which will cause them to shed their Leaves, or at least occasion their discolouring; and in the Spring, when their Blossoms begin to appear, they must be more frequently water'd, as also their Leaves and Branches often clean'd, which will cause their Leaves to look of a beautiful Green, and their Flowers to be strong, and their Fruit will set the better.

In the Summer they must be continu'd in the Stove, with their Pots plung'd in Bark (which should not be too hot) but they must have a great Share of fresh Air in warm Weather, and the Glasses should be shaded in the Heat of the Day, for they do not care to be too much expos'd to the direct Rays of the Sun, which occasions their tender Shoots and Leaves to flag and hang down, and thereby retards the Growth of the Plants: You must also observe to shift them into fresh Earth, whenever you find their Roots to shoot through the Holes at the Bottom of the Pots; but this will scarce happen oftener than twice a Year, so that I would advise the shifting them in May, and the Beginning of August, which are the properest Seasons

sons for this Work; but in the doing of it, you should be careful to preserve the Earth to their Roots, and only to pare off the Outside of the Ball, cutting away all mouldy or decay'd Fibres; then put them into Pots, one Size bigger than those which they came out of, filling up the Pots with the before-mention'd Earth, observing to water and shade them, as the Heat of the Weather shall require: And if at these Times you mix a little new Bark in the Bed, to add a fresh Heat thereto, before the Pots are plung'd therein, it will greatly facilitate their rooting again, but you must be careful not to make the Bed too hot: You should also, in Summer-time, refresh all the Branches and Leaves of the Trees, by watering them gently with a fine headed Watering-pot all over their Heads; and if in a very warm, gentle Shower of Rain, you draw off the Top-Glasses of the Stove, and let them receive the Benefit thereof, it will be of great Service to them: but you must be careful not to expose them to hard Rains, or strong Winds, which would prove very hurtful to them.

These Directions, if carefully attended to, will be found sufficient to instruct any Person in the Culture of this beautiful Plant; and although there may, perhaps, something occur to them which is not here related, yet I believe it will rarely happen, but that the Appearances, be they from what Cause soever, may be found owing to some Neglect or contrary Practice to this here mentioned: But before I leave this Head, I cannot help mentioning another Method in which I have propagated this Plant; which is, by laying down

some of their tender Shoots into Pots of Earth in the Spring of the Year, slitting them at a Joint (as is practis'd in laying *Carnations*) observing to refresh them frequently with Water, and in about three Months Time they will be rooted enough to transplant, when they should be gently cut from the old Plant, and planted into separate Pots, managing them as was directed for the seedling Plants.

There are some who have asserted, that this Plant will grow from Cuttings; but of all the different Trials which I have made, I could never obtain one Plant that way, tho' many Times the Cuttings have remained fresh for several Months, and sometimes have made small Shoots, yet upon taking them up, they have not had the least Appearance of any Roots.

IBERIS, or SCIATICA-CRESS; *vide* Lepidium.

IBISCUS, or MARSH-MALLOW; *vide* Althæa.

JET D'EAU, is a *French* Word, which signifies a Fountain that casts up Water to any considerable Height in the Air.

Mr. *Mariotte*, in his Treatise of *Hydrostaticks*, says, That a *Fet d'eau* will never rise so high as its Reservatory; but always falls short of it by a Space which is in a subduplicate Ratio of that Height, and this he proves by several Experiments. That tho' *Fets* ought to rise to the Height of the Reservatories, yet the Friction of the Sides of the Adjutages, and the Resistance of the Air, are the Causes that in *Fets* that have very high Reservatories, the Height of the *Fets* does not come up to that of the Reservatory by a great deal.

He adds, that if a greater branches out into many smaller ones, or is distributed through several *Jets*, the square of the Diameter of the main Pipe must be proportion'd to the Sum of all the Expences of its Branches: That if the Reservatory be 52 Feet high, and the Adjutage half an Inch in Diameter, the Pipe ought to be three Inches in Diameter.

He says, That the Beauty of *Jets* of Water consists in their Uniformity and Transparency at the going out of the Adjutage, and spreading but very little, and that to the highest Part of the *Fet*.

That the worst Sort of Adjutages are those that are Cylindrical; for they retard very much the Height of the *Jets*; the Conick retard it less: But the best way is to bore the Horizontal Plane, which shuts the Extremity of the Pipe or Conduit, with a smooth and polish'd Hole; taking Care that the Plate be perfectly plain, polish'd and uniform.

ILEX; The ever-green Oak.

The Characters are;

The Leaves are for the most part indented or sinuated (and in some the Edges of the Leaves are prickly) and are ever-green, it hath amaranthaceous Flowers, which are produced at remote Distances from the Fruit, on the same Tree; the Fruit is an Acorn like the common Oak.

The Species are;

1. ILEX; *folio angusto, non serrato*. C. B. P. The Olive-leav'd ever-green Oak.

2. ILEX; *folio oblongo, serrato*. C. B. P. Narrow-leav'd ever-green Oak, with serrated Leaves.

3. ILEX; *folio Agrifolii*. Bot. Monsp. Holly-leav'd ever-green Oak.

4. ILEX; *folio rotundiore, molli, medicæque sinuato*; *sive smilax Theo-*

*phrastrii*. C. B. P. The ever-green Oak, with round, smooth, sinuated Leaves.

5. ILEX; *aculeata, cocciglandifera*. C. B. P. The Holm Oak on which the Kermes are produced.

There are several other Varieties of these Trees, which differ in the Shape of their Leaves, some being long and smooth, others are rounder, and have many Prickles upon their Edges, and some have their Leaves sinuated and waved like those of the *Holly*; but as these are only feminal Variations, and will arise from Seeds taken from the same Tree, so it is not worth troubling my self or the Reader, to enumerate their several Distinctions in this Place, since those above-mentioned are the most common Varieties, and all the other Differences will be nearly allied to one or other of the four first Sorts.

These Trees are propagated by sowing their Seeds; the best Season for this Work is in the Beginning of *March*; but then, as the Acorns are ripe in *Autumn*, they should be preserv'd either in Sand or dry Earth until the Spring, otherwise they will lose their growing Faculty, which is commonly the Case with those brought annually from *Genoa*, scarce one Seed in fifty of them ever rising; however, since we have many large Trees now in *England* which produce good Seeds, we need not send to *Italy* for them; but were I to advise, I should much rather have them from *Portugal* than *Italy*; for the Voyage being much shorter, they are generally brought from thence in very good Condition.

The Manner in which I would advise their being sown, is, if for large Quantities, in Drills at about

two Feet Distance; but for a small Parcel, they must be sown in Rows on a Bed much nearer.

The Ground on which these Seeds are sown, should be well dug and cleansed from the Roots of all noxious Weeds, &c. and levell'd even, and the great Clods broken, then draw the Rills with a Hoe in a strait Line (as is practis'd in the sowing of *Kidney-beans*) about two Inches deep, laying the Acorns therein two or three Inches asunder, then draw the Earth over them with the Head of a Rake, observing that none of them are left uncover'd, which would intice the Vermin to attack your Acorns, especially the Mice, whereby your Seminary will be greatly injur'd, if not wholly destroy'd.

In the middle of *April* the young Plants will appear above Ground, you must then clear the Ground from Weeds, which would soon overspread and destroy the Plants, which must constantly be observ'd, especially while they are young. The first Year from Seed they will make but small Progress, but afterwards they will make amends by their quick Growth (especially if they agree with the Soil) in *March* following you must gently dig up the Ground between the Rows of Plants, in order to destroy the Weeds, and to render it light for the Roots to strike out on each Side, which will greatly promote the Growth of the Plants; but in doing of this you should be very careful not to disturb the Roots of the Plants, which would greatly injure them: In this Place they may remain until the second Spring after sowing, when, in the Beginning of *April*, you should take up the Plants where they are

too close, and transplant them where they are design'd to remain: But as these Trees are subject to have Tap-Roots, so they are very difficult to be remov'd; you must therefore observe to take them up with a good Ball of Earth to their Roots, and carry them immediately to the Places where they are to be planted, placing them into Holes which should be well prepar'd before, and if the Weather be dry, you should pour a good Quantity of Water into the Holes, making the Earth like Papp, then placing the Plants therein, you should fill up the Holes about their Roots with the like pappy Earth, and then lay some Mulch upon the Surface of the Ground round their Roots, and give them some Water to settle the Earth to their Roots, and if the Season should continue dry, you must repeat watering them once a Week, which Water should be poured all over the Heads of the Plants, but by no means give them too much, which, as I have already said, destroys more new planted Trees than any other Accident whatever.

But in taking up these Plants from the Seminary, you should be careful not to injure the Roots of those left remaining, nor must the Ground about their Roots remain long open, but so soon as you have taken up those that are to be transplanted, the whole Ground should be slightly dug and levell'd even: The Distance these Plants should be left in the Rows where they were sown, ought to be two Feet, which will allow them Room enough to grow three or four Years longer, at which Time they must be transplanted (especially all such as are not design'd to remain  
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for good) but you should the precedent Spring dig near the Roots of those which are to be remov'd, and cut underneath them with your Spade, to take off the Tap-Roots; but you must observe not to cut them too close to the Plants, lest you destroy them; this will occasion their pushing out many Fibres, whereby the Earth will be better preserv'd to their Roots when they are transplanted, and there will be less Danger of their growing.

It has been directed by most People who have written on these Trees, to sow the Acorns in Pots, and when the Plants have grown two or three Years therein, to shake them out of the Pots, preserving all the Earth about them, and to plant them where they are to remain, which is a very good Method for small Quantities; but the Trouble of this in large Plantations would be too great, especially if we consider that these Plants, while in Pots, will require constantly to be water'd in dry Weather, otherwise they will be subject to fail, or at least will make but poor Progress; and although it is generally thought very hazardous to remove these Trees, yet I believe, if great Care be taken, first, to observe the just Season, which is in the beginning of *April*; secondly, to preserve as much Earth to their Roots as possible; and, thirdly, not to keep them long above Ground, the removing of these Trees will not be found so dangerous as most People imagine.

And I am convinc'd, that Trees of seven or eight Years Growth, are in less Danger of suffering by Transplantation, than those that are much younger; for in the

Year 1727, I remov'd many of these Trees which were five or six Feet high, and though they had not been so well manag'd in the Place where they were rais'd, as might be wish'd, yet but one of the whole Number fail'd, notwithstanding the Season prov'd dry for near a Month after.

These Trees are by many People greatly esteem'd for Hedges, to surround Wilderness Quarters; but they are subject to grow too large for that Purpose, because we should never hide the Tops of the Trees in such Places from the Sight, for they are, if rightly dispos'd in the Quarters, vastly more agreeable to the Eye than the finest shear'd Hedge in the World; but they may do well enough for a large Fence to obstruct the Sight, or to defend a new Plantation of tender Trees, for which Purpose the Acorns should be sown in the Place where the Hedge is design'd, and when the Plants are come up, they should be thinned where they are too close, and if the Ground is kept clear from Weeds, and every Spring dug about the Plants, they will soon form a good Hedge; but you should observe not to let them grow too much in Height, before the bottom Part of the Hedge is well strengthen'd, which would occasion its bending, and the Branches would be subject to be displac'd with strong Winds or great Snows, and thereby become very unsightly; but if they are regularly train'd up, they will make a good thick Hedge from the Ground to the Height of forty Feet, and that in less Time than any other Ever-green Tree whatever.

The Soil in which these Trees thrive best, is a hazelly Loam, not too strong nor over light, in which

they will grow to a large Size, and resist the severest Cold of our Climate, and retaining their Leaves all the Winter, do afford an agreeable Prospect in that Season; but they should by no means be planted near such Walks or other Parts of the Garden, as are intended to be kept clean; for in the Month of *April*, when they cast their old Leaves, they make a great Litter, and are apt to blow about with the Wind, and become very troublesome, and in *June*, when their Male Flowers fall off, they occasion no less Trouble to clean them up daily in such Places; and in the pleasanter Season of the Year they are the most unsightly Trees in a Garden, the old Leaves decaying at that Season and falling off, and the Male Flowers, which are generally in great Plenty, are then produced, which renders it not so valuable in Places much frequented; but for larger Plantations, at a remote Distance from the Habitation, so as to be just within the View, they make a very handsome Appearance, especially in the Winter-season.

The Wood of this Tree is accounted very good for many sorts of Tools and Utensils, as *Mallet-Heads, Mall-Balls, Chairs, Wedges, Beetles, Pins, &c.* as also for *Palisado's*, and affords the most durable *Charcoal* in the World, and is the common Fuel in the Southern Parts of *France* and *Italy*.

The *Kermes* or *Holm-Oak* is of a much lower Stature than the former Sorts, and seldom grows to the Height of a Tree: This, tho' a Native of the warmest Parts of *France*, yet will endure the Cold of our Climate in the open Air. It may be propagated in the same manner as the former, and deserves

a Place amongst other Shrubs of low Growth, for its Curiosity, as being the Plant upon which the *Kermes* are bred; the History of which may be seen at large in *Garridel's History of the Plants* which grow in *Provence*, it being too long to be inserted here.

INARCHING, is a Method of *Grafting*, which is commonly call'd *Grafting by Approach*. This Method of *Grafting* is us'd, when the Stock you intend to graft on, and the Tree from which you would take the Graft, stand so near (or can be brought so near) that they may be join'd together. The Method of performing it is as follows: Take the Branch you would inarch, and having fitted it to that Part of the Stock where you intend to join it, pare away the Rind and Wood on one Side about three Inches in Length. After the same manner cut the Stock or Branch in the Place where the Graft is to be united, so that they may join equally together, that the Sap may meet; then cut a little Tongue upwards in the Graft, and make a Notch in the Stock to admit it; so that when they are join'd, the Tongue will prevent their slipping, and the Graft will more closely unite with the Stock. Having thus plac'd them exactly together, you must tie them with some Bass, or other soft Tying; then cover the Place with *Grafting Clay*, to prevent the Air from entering to dry the Wound, or the Wet from getting in to rot the Stock; you should also fix a Stake into the Ground, to which that Part of the Stock, as also the Graft, should be fasten'd, to prevent the Wind from breaking them asunder; which is often the Case, when this Precaution is not observ'd.

In this manner they are to remain about four Months, in which Time they will be sufficiently united; and the Graft may then be cut from the Mother-Tree, observing to slope it off close to the Stock: And if at this Time you cover the join'd Parts with fresh Grafting Clay, it will be of great Service to the Graft.

This Operation is always perform'd in *April* or *May*, that the Graft may unite with the Stock before the succeeding Winter, and is commonly practis'd upon *Oranges*, *Myrtles*, *Jasmines*, *Wall-Nuts*, *Firs*, *Pines*, and several other Trees, which will not succeed by common Grafting or Budding. But altho' I have mention'd *Orange-Trees* amongst the rest, yet I would by no means advise this Practice where the Trees are design'd to grow large, which, in this Method, they rarely ever will do; and it is chiefly practis'd upon those Trees only as a Curiosity, to have a young Plant with Fruit upon it, in a Year or two from Seed, by inarching a bearing Branch into a young Stock, whereby it is effected: yet these Plants are seldom long-liv'd.

INDIGO; *vide* Anil.

INOCULATING, or Budding: This is commonly practis'd upon all Sorts of Stone Fruit; in particular, such as *Peaches*, *Nectarines*, *Cherries*, *Plumbs*, &c. as also upon *Oranges* and *Jasmines*, and is preferable to any Sort of Grafting for most Sorts of Fruit. The Method of performing it is as follows: You must be provided with a sharp Penknife, having a flat Haft (the Use of which is to raise the Bark of the Stock, to admit the Bud) and some sound Bass-mat, which should be soak'd in Water, to increase its

Strength, and make it more pliable; then having taken off the Cuttings from the Trees you would propagate, you should chuse a smooth Part of the Stock about five or six Inches above the Surface of the Ground, if design'd for Dwarfs; but if for Standards, they should be budded six Feet above Ground: Then with your Knife make an Horizontal Cut cross the Rind of the Stock, and from the Middle of that Cut make a Slit downwards about two Inches in Length, so that it may be in the Form of a T: but you must be careful not to cut too deep, lest you wound the Stock: Then having cut off the Leaf from the Bud, leaving the Foot-stalk remaining, you should make a cross Cut about half an Inch below the Eye, and with your Knife slit off the Bud, with Part of the Wood to it, in Form of an Escutcheon: This done, you must with your Knife pull off that Part of the Wood which was taken with the Bud, observing whether the Eye of the Bud be left to it, or not; (for all those Buds which lose their Eyes in stripping, should be thrown away, being good for nothing:) Then having gently rais'd the Bark of the Stock with the flat Haft of your Penknife clear to the Wood, you should thrust the Bud therein, observing to place it smooth between the Rind and the Wood of the Stock, cutting off any part of the Rind belonging to the Bud, which may be too long for the Slit made in the Stock, and so having exactly fitted the Bud to the Stock, you must tie them closely round with Bass-mat, beginning at the under-part of the Slit, and so proceed to the Top, taking Care that you do not bind round the

Eye of the Bud, which should be left open.

When your Buds have been inoculated three Weeks or a Month, you will see which of them are taken; those of them which appear shrivell'd and black, being dead; but those which remain fresh and plump, you may depend, are join'd: And at this Time you should loosen the Bandage, which, if not done in Time, will pinch the Stock, and greatly injure, if not destroy, the Bud.

The *March* following you must cut off the Stock about three Inches above the Bud, sloping it, that the Wet may pass off, and not enter the Stock: To this Part of the Stock left above the Bud, it is very proper to fasten the Shoot which proceeds from the Bud, and would be in danger of being blown out, if not prevented: but this must continue on no longer than one Year, after which it must be cut off close above the Bud, that the Stock may be cover'd thereby.

The Time for *Inoculating* is from the middle of *June* until the middle of *August*, according to the Forwardness of the Season, and the particular Sorts of Trees, which may be easily known, by trying the Buds whether they will come off well from the Wood. But the most general Rule is, when you observe the Buds form'd at the Extremity of the same Year's Shoots, which is a Sign of their having finish'd their Spring Growth.

The first Sort commonly inoculated is the *Apricock*; and the last the *Orange-Tree*, which should never be done until the middle of *August*. And in doing of this Work, you should always make Choice of cloudy Weather: for if it be done in the middle of the

Day in very hot Weather, the Shoots will perspire so fast, as to leave the Buds destitute of Moisture. Nor should you take off the Cuttings from the Trees long before they are us'd: But if you are oblig'd to fetch your Cuttings from some Distance, as it often happens, you should then be provided with a Tin Instrument, having a Socket about ten Inches long, and a Cover to the Top, which must have five or six Holes; in this Socket you should put as much Water as will fill it about two or three Inches high, and place your Cuttings therein in an upright Position, so that That Part which was cut from the Tree may be set in the Water, and so fasten down the Cover to keep out the Air; and the Holes in the Cover will be sufficient to let the Perspiration of these Branches pass off; which, if pent in, would be very hurtful to them: And you must be careful to carry it upright, that the Water may not reach to the Buds; for it is a very wrong Practice in those who throw their Cuttings all over in Water, which so saturates the Buds with Moisture, that they have no attractive Force left to imbibe the Sap of the Stock, whereby they very often miscarry.

But before I leave this Head, I beg Leave to observe, that tho' it is the ordinary Practice to divest the Bud of that Part of the Wood which was taken from the Shoot with it; yet in many Sorts of tender Trees it is best to preserve a little Wood to the Bud, without which they often miscarry. The not observing this, has often occasion'd some People to imagine that some Sorts of Trees are not to be propagated by Inoculation; where-



as, if they had perform'd it in this Method, they might have succeed- ed, as I have several Times experi- enc'd.

INTYBUS; *vide* Endivia.

JONQUIL; *vide* Narcissus.

IRIS; Flower de Luce.

The Characters are;

*It hath an oblong, fleshy, creeping Root: The Flower consists of six Leaves, three of which are bifid, and stand erect; the other three are reflexed: Upon the under-part of the arched Leaves is placed a Congeries of Hairs resembling a Beard. From the very Bottom arises the Male Stamina, carefully defended by a hol- low Case of Petals. The Flower grows to the Apex of the Ovary, which sends forth those Beards and Case-like Tubes; and hence it ap- pears like a nine-leav'd Flower.*

The Species are;

1. IRIS; *purpurea, sive vulgaris.* Park. Par. Common purple Flow- er-de-Luce.

2. IRIS; *hortensis, pallide carulea.* C. B. Pale-blue Garden Flower-de-Luce.

3. IRIS; *hortensis, alba, Germanica.* C. B. White Garden Ger- man Flower-de-luce.

4. IRIS; *alba, Florentina.* C. B. White Florentine Flower-de-Luce.

5. IRIS; *Dalmatica, major.* C. B. Greater Flower-de-Luce of Dal- matia.

6. IRIS; *Susiana, flore maximo, ex albo nigricante.* C. B. The Chal- cedonian Iris, with a large black and white Flower.

7. IRIS; *latifolia, Pannonica, co- lore multiplici.* C. B. Broad-leav'd Hungarian Flower-de-Luce, with a many-colour'd Flower.

8. IRIS; *Illyrica, flore majore.* Tourn. Flower-de-Luce of Illyricum, with a large Flower.

9. IRIS; *sativa, lutea.* C. B. P. Yellow Garden Flower-de-Luce.

10. IRIS; *lutea, variegata.* Clus. Yellow variegated Flower-de-Luce.

11. IRIS; *latifolia, candida, pur- pureis venis distincta.* C. B. Broad- leav'd Flower-de-Luce, with a white Flower strip'd with purple.

12. IRIS; *humilis, minor, flore purpureo.* Tourn. Dwarf purple Flower-de-Luce.

13. IRIS; *angustifolia, maritima, major.* C. B. Greater narrow-leav'd Sea Flower-de-Luce.

14. IRIS; *angustifolia, maritima, minor.* C. B. Lesser narrow-leav'd Sea Flower-de-Luce.

15. IRIS; *angustifolia, minor, Pan- nonica, sive versicolor.* Clus. Small variable narrow-leav'd Flower-de- Luce of Hungary.

16. IRIS; *humilis, minor, angu- stifolia, flore variegato.* Dwarf nar- row-leav'd Flower-de-Luce, with a variegated Flower.

17. IRIS; *hyvestris, quam Xyrim vocant.* Plin. Raii Syn. Stinking Gladdon or Gladwyn.

There are several other Varieties of these Flowers, which are preserv'd in some curious Gardens a- broad; but these here mention'd, are what I have observ'd in the English Gardens: Tho' formerly we were possess'd of a greater Number of them, than are at present to be found, according to the Account which Parkinson and some other old Authors have given of them, who reckon up above thirty differ- ent Varieties which were then in the English Gardens. But these have suffer'd the same Fate as ma- ny other valuable Flowers, which have been thrown out, to make room for new Varieties, of which many People are now tired, and would be glad to retrieve their old Sorts again, if they were to be found.

All these Plants are easily propagated by parting their tuberose Roots, which commonly increase very fast. The best Season for this Work is in *August*, when their Flower-stems are decay'd, and their Leaves begin to change their Colour. But you should observe to do it when the Weather is moist, otherwise the Roots will grow mouldy, and decay. So that if *August* should prove dry, you may defer doing it till *September*; tho' the sooner it be done, the better; that the Roots may be fix'd before the Frost comes on, which is apt to loosen the Ground, and prevent their taking Root. These Plants should have a shady Situation, and a moderately light Soil: which should not be over-dung'd, that being destructive to their Roots; and when they are too much expos'd to the Sun, their Flowers soon fall away.

The greatest Part of these Plants grow too large for small Flower-Gardens; and their Leaves generally harbour great Quantities of Snails, and other Vermin, which come forth in the Night, and destroy whatever curious Plants grow near them: for which Reasons they are generally banish'd from very curious Gardens, and are proper only for large Gardens, or to plant in Wilderness Quarters, where; if the Trees are not too close, they will thrive and flower extremely well, especially if the Ground about them be annually dug: And the Flowers being proper Ornaments in Basons, for Halls, Chimnies, &c. in the Summer-season, they may be allow'd a Place in some remote Part of the Garden, where few other Things will thrive.

These Roots should be taken up every other Year, and parted, otherwise they will spread greatly over the Ground, and become very troublesome, in harbouring great Quantities of Vermin: Or if they are planted in Wilderness Quarters, they should be cut round at the least every Year with the Spade, to take off the outside Roots, and keep them within Compass.

The 1st, 4th, and 7th Sorts are us'd in Medicine; for which Purpose they may be easily propagated in the manner above directed, observing to plant the fourth Sort in a warmer Soil than the others, and the seventeenth into a moist shady Situation, where it will thrive exceedingly.

The 6th, 15th and 16th Sorts are not so subject to spread as the others, and, for their Beauty, may be admitted into every curious Garden; these should be planted under a Wall or Pale where they may have the Morning Sun; but must not be expos'd to the great Heat of the Mid-day Sun, which would soon destroy them: They delight most in a fresh, light, loamy, undung'd Soil, and to be pretty moist.

These may also be propagated by Seeds, which the Plants generally produce in great Plenty; which should be sav'd from such as have variegated Flowers, those being most likely to produce the greatest Variety.

The Seeds should be sown either in Cases of Earth, or upon an East Border, soon after they are ripe, which will come up the succeeding Spring: But if the Seeds are kept till that Time before they are sown, they will not come up until the second Year, and sometimes will not grow. The young Plants should  
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be constantly kept clean from Weeds, and in dry Weather should be water'd, which will greatly promote their Growth; and the *Michaelmas* following they should be transplanted into an East Border, at about eight or ten Inches Distance, where they may continue until they flower, which, in the small Sorts, will be the succeeding Spring: but the large Sorts will not flower till the third Year from sowing, when you may mark all such as produce valuable Flowers, which at *Michaelmas* may be transplanted into the Garden; but those which are of little Beauty may be pull'd up in flower, and thrown away, to give the better Sorts more Room.

IRIS BULBOSA; }  
 IRIS PERSICA; } *vide* Ziphium.  
 ISATIS; Woad.

The Characters are;

The Flower consists of four Leaves, which are dispos'd in Form of a Cross; out of whose Flower-cup rises the Pointal, which afterwards turns to a Fruit in the Shape of a Tongue, flat at the Edge, gaping two Ways, having but one Cell, in which is contain'd, for the most part, one oblong Seed.

The Species are;

1. ISATIS; *sativa*, *sive* *latifolia*. C. B. Broad-leav'd manured Woad.
2. ISATIS; *sylvestris*, *vel* *angustifolia*. C. B. Narrow-leav'd wild Woad.
3. ISATIS; *Dalmatica*, *major*. *Bobart*. Greater Dalmatian Woad.

There are some other Varieties of this Plant, which are preserv'd in some curious Botanick Gardens; but as they are Plants of little Use or Beauty, so I shall omit mentioning them here.

The first Sort is that which is cultivated in *England*, for the Use

of Dyers, who use it for laying the Foundation of many Colours, especially all Sad-colours.

It is a very rich Commodity, and well worth the propagating, which is done by Seed.

The Soil that it requires, is one that is dry and warm: it will not be amiss if it be a little gravelly or sandy; and it should have rested long, to be in good Heart: and the richest Garden Ground near great Towns is the best, tho' it will do well in many other Places.

Woad is commonly sown upon a Lay, which they plough into high Ridges, except the Land be very dry; and they harrow the Turf till they break it to Pieces, and pick out all the Grass, Weeds and Lumps of Earth, and fling them into the Furrows to rot.

The Land for this Seed ought to be finely plough'd and harrow'd, and all the Clods and Turfs broke, and the Stones pick'd up and carry'd off.

The best Time for sowing it, is the Latter-end of *July*, soon after the Seed is ripe, which will come up in *August*, and must be hoe'd out as is practis'd to *Turnips*, leaving the Plants ten or twelve Inches asunder; by which means they will grow strong, and produce much larger Leaves: And besides, that sown at this Season doth seldom miscarry; whereas that which is sown in the Spring will be very liable thereto; and if it doth not, the Plant will not have half the Strength the first Summer.

It ought to be kept constantly weeded; but if it come up good, it will need the less weeding: The ordinary Price of weeding is Eight Shillings per Acre.

Some recommend the sowing of it about the Beginning of *February*; for which they give this Reason, That whereas it is apt to be spoil'd by the Fly and Grub, it escapes the better being early sown; and if they do kill any of it, they have the better Opportunity of sowing more.

They do this by making Holes with a Stick, about seven or eight Inches asunder, and put five or six Seeds into each Hole.

They seldom or never sow it more than two Years upon the same Piece of Land: because, if it be long continu'd, it robs the Soil; but, if it be moderately us'd, it prepares Land for Corn; and where the Soil is rank, it abates the too great Fertility of it.

It is ripe when the Leaf is come to its full Growth, and retains its perfect Colour, and lively Greenness, which is sometimes sooner, and sometimes later, as the Year proves dry or moist.

As soon as it is fit to cut, it should be done with all the Speed that possibly may be, that it may not fade, nor grow pale; and when it is cut, it ought to be immediately carry'd to the Mill. The Manner of doing which, and the Way of ordering it, is best learn'd from experienc'd Workmen, and is not to be trusted to a verbal Description of it.

In ploughing it up, and sowing it again, they pick up all the old Roots as they harrow it, except what they design for Seed, which they let stand for the next Year: It many times produces fifty Quarters upon an Acre.

They always keep a good Quantity of Seed by them, to plant the Ground that fails: The Seed of

two Years old will sometimes grow as well as at the first. And if they sow or plant it late, if the Ground be dry and hard, they steep it in Water the Day before they sow it, which causes it to come up the sooner.

Good *Woad* may yield five or six Crops in a plentiful Year; tho' it ordinarily yields but four, sometimes but three, especially if it be let stand to grow for Seed: But what grows in Winter they do not use, tho' it is very good for Sheep. The two first Crops are the best, which are usually mix'd in the Seasoning. The latter Crops are much the worse, which, if mix'd with either of the former Crops, spoil the whole.

It many Times sells from six Pounds to thirty Pounds a Tun, an Acre commonly yielding about a Tun.

JUDAICA ARBOR; *vide* Siliquastrum.

JUJUBE; *vide* Zizyphus.

JULIANS, or ROCKETS; *vide* Heiperis.

JULY FLOWER or Gilli-flower; *vide* Caryophyllus.

JUNIPERUS; The Juniper-Tree.

The Characters are;

*The Leaves are long, narrow and prickly: The Male Flowers are in some Species produc'd at remote Distances from the Fruit on the same Tree, but in other Species they are produc'd on different Trees from the Fruit: The Fruit is a soft, pulpy Berry, containing three Seeds in each.*

The Species are;

1. JUNIPERUS; *vulgaris, fruticososa*. C. B. The common English Juniper.

2. JUNIPERUS; *vulgaris, arbor.*  
C. B. The Tree, or Swedish Juniper.

3. JUNIPERUS; *Virginiana.* H. L.  
*Folio ubique Juniperino.* Boerb. Ind.  
The Cedar of Virginia.

4. JUNIPERUS; *Virginiana, foliis inferioribus Juniperinis, superioribus Sabinam, vel Cypressam referentibus,* Boerb. Ind. Red Virginian Cedar.

5. JUNIPERUS; *Virginiana, baccis albis.* The White-berry'd Virginian Cedar.

6. JUNIPERUS; *Bermudiana.* H. L.  
The Cedar of Bermudas.

The first of these Plants is very common upon dry Heaths, in divers Parts of *England*, but has been introduc'd into Gardens, and was formerly in great Request for Ever-green Hedges. Yet as it is very subject to decay in Patches, and thereby renders such Hedges very unlighty, as also being very troublesome to shear, they have been of late almost intirely rejected. But however improper these Trees may be for Hedges, or to clip into Pyramids or Balls, yet they may have a Place in small Wilderness Quarters amongst Ever-green Plants of low Stature, where, by their Diversity, they will add to the Beauty of those Plantations.

The second Sort will grow to a larger Magnitude, sometimes rising to the Height of eighteen or twenty Feet: This may also be intermix'd with other Ever-green Trees of the same Growth, where, by its different shap'd Leaves and Colour, it will increase the Beauty of such Places.

These Plants are both propagated by sowing their Seeds, the best Season for which is in *September*, as soon as they are ripe; for if they are kept till Spring before they are

sown, they will not come up until the second Year. The Ground in which these Seeds are sown, should be fresh and light, but it should not be dung'd: It should be well dug, and levell'd very even, then sow your Seeds thereon pretty thick, and sift some Earth over them about half an Inch thick; this Bed will require no farther Care than only to keep it clear from Weeds, and toward the Middle or Latter-end of *April* you will find some of your Plants appear above-ground; tho' the greatest Part of 'em perhaps may lie till the Spring following before they come up, at which Time you should carefully clear the Beds from Weeds, and in very dry Weather refresh them with some Water, which will greatly promote their Growth; in this Bed they should remain 'till the following Spring, when you must prepare some Beds to transplant them into, which should also be of light fresh, undung'd Soil; and having well dug and cleans'd the Ground from all noxious Weeds and Roots, you should make them level: Then in the Beginning of *April*, which is the proper Season for Removing these Plants, you should raise up the young ones with a Trowel, preserving as much Earth as possible to their Roots, and plant them into the Beds about a Foot asunder each Way, giving 'em some Water, to settle the Earth to their Roots: And if it should prove very dry Weather, you may lay a little Mulch upon the Surface of the Ground round their Roots, which will be of great Service to the Plants.

In these Beds they may remain two Years, observing to keep them clear from Weeds; and in the Spring you should stir the Ground gently

gently between them, that their Roots may with greater Ease strike into it; after which Time they should be transplanted, either into a Nursery, at the Distance of three Feet Row from Row, and eighteen Inches asunder in the Rows, or into the Places where they are to remain for good. The best Season to transplant them (as I before observ'd) is in the Beginning of *April*; when you should take 'em up carefully, to preserve a Ball of Earth to their Roots; and when planted, their Roots should be mulch'd: All which, if carefully attended to, as also observing to refresh 'em with Water in very dry Weather, until they have taken new Root, will preserve them from the Danger of growing; and they being extreme hardy, in respect to Cold, will defy the severest of our Winters to injure them, provided they are not planted in a moist or rich Soil.

In order to have these Trees aspire in Height, their under Branches should be taken off, especially where they are inclin'd to grow out strong; but they must not be kept too closely pruned, which would retard their Growth, for all these Ever-green Trees do more or less abound with a resinous Juice, which in hot Weather is very apt to flow out from such Places as are wounded. That it will not be adviseable to take off too many Branches at once, which would make so many Wounds from which their Sap in hot Weather would flow in such Plenty, as to render the Trees weak and unhealthy.

The three Sorts of *Virginia Cedars* grow to a much greater Height than the former, and in their Na-

tive Country afford excellent Timber for many Uses; but with us there are very few which are above twenty or twenty-five Feet high, though there is no doubt of their growing larger, for they thrive very fast after the three first Years, and resist the sharpest Frosts of our Climate exceeding well, and are very apt to grow strait and regular, provided they are not suffered to shoot out too much at bottom.

These Plants are also propagated by Seeds, which must be procured from *Virginia* or *Carolina*, (for they rarely produce ripe Seeds in *England*) and sown as was directed for the other *Junipers*; but as this Seed can't be procur'd in *England* till Spring, so when sown at that Season, it remains in the Ground until the succeeding Spring before the Plants appear, therefore you must observe to keep the Beds clear from Weeds, and not suffer the Seeds to be disturbed, which is often the Fault of some impatient People, who think, because the Plants do not rise the first Year, that they will never come up, and so dig up the Ground again, whereby their Seeds are buried; but if they are let remain, they seldom fail to grow: When the Plants are come up, they must be carefully weeded, and in dry Weather should be refreshed with Water, which will greatly forward their Growth, and the Spring following they should be transplanted into Beds, (as was directed for the common *Juniper*) in *April*, observing to preserve a Ball of Earth to their Roots, and after they are planted, if the Season be dry, they must be carefully water'd, and the Surface of the Ground cover'd with Mulch, to prevent the Sun and Wind from entering  
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the Earth, to dry their Fibres; but they should not be too much watered, which often proves injurious to these Trees, by rotting their tender Fibres soon after they are emitted, whereby the Plants have been often destroyed.

In these Beds they may remain two Years, observing to keep them clear from Weeds, and in Winter you should lay a little fresh Mulch upon the Surface of the Ground round their Roots, which will prevent the Frost from penetrating to them, and effectually preserve them; for while the Plants are so young, they are liable to be impair'd by hard Frosts, when too much expos'd thereto; but when they have attain'd a greater Strength, they will resist the severest of our Cold.

After two Years, they should either be removed into a Nursery (as was directed for the common *Juniper*) or transplanted where they are design'd to remain, observing always to take them up carefully, otherwise they are subject to fail upon transplanting, as also to mulch the Ground and water them as was before directed, until they have taken Root, after which they will require no farther Care, than only to keep the Ground clear about their Roots, and to prune up their Side-branches to make them aspire in Height.

The Soil in which you plant these Trees, should be fresh and light, but must not be dunged, especially at the Time when they are planted, for Dung is very hurtful to them, especially if it be not quite rotted to Mould, therefore the Mulch that is laid upon the Surface of the Ground, should not be Dung, but rather some fresh Turf cut from a Common and the Grass turned

downward, which is certainly the best Sort of Mulching for most Plants, it affording no ill Scent, nor is it subject to breed Vermin, or be unsightly, and will effectually answer all the Purposes of Mulch, without any Danger of hurting the Plants.

These Trees being thus manag'd, will in a few Years rise to a considerable Stature, and by the Variety of their Ever-green Leaves, and Manner of Growth, will greatly add to the Beauty of such Plantations, if rightly disposed, which indeed is what we seldom observe in any of the *English* Gardens or Wildernesses, for there are few People who consider the different Growths of the several Trees with which they compose such Plantations, so as to place the tallest growing Trees the backwardest from Sight, and the next Degree to succeed them, and so gradually diminishing till we come to the common *Juniper*, and others of the same Growth, whereby all the Trees will be seen, and the gradual Declivity of their Tops will appear like a verdant Slope, and be much more agreeable to the Sight, as also more advantageous to the Growth of the Trees, than to place Shrubs of humble Growth, near such Plants as will grow to the first Magnitude, whereby the Shrub is hid from Sight, and will be over-shadowed and destroy'd; nor can the Distance which each Tree requires, be so justly proportioned any other way, for in this Distribution, the largest Trees being separated by themselves, may be planted at a due Distance, and then those of a middling Growth succeeding, may be accordingly allowed sufficient Room, and the smaller, which are next the Sight, being

being placed much cloſer, will hide the naked Stems of the larger Trees, and have an agreeable Effect to the Sight.

The Timber of theſe Trees is of excellent Uſe in *America*, for building of Veſſels, wainſcoting Houſes, and for making many Sorts of Utenſils, it abounding with a bitter Reſin, which prevents its being deſtroy'd by Vermin, but it is very brittle, and ſo not proper for ſtubborn Uſes; but however, by increaſing the Number of our Timber Trees, we ſhall find many Advantages, beſides the Pleaſure their Variety affords, for we may hereby have Trees of very different Kinds, which are adapted to grow in various Soils and Situations, whereby we ſhall never want proper Trees for all the different Sorts of Soils in *England*, it proper Care be taken in their Choice, which would be a great Improvement of many Parts of this Kingdom, which now lie unplanted, becauſe the Owner, perhaps, finds that neither *Oaks* or *Elms* will thrive there, and ſo conſequently concludes that no other Sort will; which is a great Miſtake, for if we conſider how different the Structure of Trees is, (being deſign'd by the Wiſe Author and Contriver of all Things, to grow on different Soils and Situations) and only obſerve what Sorts are adapted for growing upon dry, barren Mountains, and what are deſign'd for the lower and richer Vallies, we need never be at a Loſs for proper Trees for all Sorts of Ground.

The *Bermudas Cedar* coming from a more temperate Climate, is ſomewhat tenderer than the former, and more impatient of our Cold (eſpecially while the Plants

are young) but afterwards it endures it very well, as may be ſeen by divers Trees which are now growing in *England*, ſome of which are upward of twenty Feet high, and have reſiſted ſeveral ſevere Winters without Injury: But theſe *Cedars* are not of ſo quick a Growth here, as in a more temperate Climate; for in their native Country they will grow to be large enough for Ship-timber in twenty Years, from Seed (as I have been credibly informed by ſeveral Perſons who have lived there many Years:) However, when they have been ſome Time naturalized to our Country, there is no doubt but they will thrive much better than at preſent, eſpecially when the Trees here produce Berries, for the young Plants raiſed therefrom will be much hardier than thoſe procured from foreign Seeds, as is evident in many other Kinds.

Theſe Plants are propagated by Seeds in the ſame Manner as the former, with only this Difference, that theſe ſhould be ſown in Pots or Tubs of Earth, that they may be removed into Shelter in the Winter-time, otherwiſe the young Plants are often hurt by hard Froſts; but they will require no more Care than only to be placed under a common Hot-bed Frame, that the Glaſſes may be conſtantly kept off in mild Weather, when they can't have too much free Air, and only covered in hard Froſts. Theſe Seeds do conſtantly remain in the Ground until the ſecond Year before they come up, therefore the Earth in the Pots ſhould not be diſturb'd, and in the Summer-time they ſhould be placed in the Shade, to prevent the Earth from drying too faſt, and in very dry



dry Weather they should be often watered; but do not give too much Water to them at once, which would rot the Seeds.

The *Spring* following, when the young Plants come up, they must be carefully clear'd from Weeds, and in dry Weather refresh'd with Water; but should stand during the Summer-season, in a Place defended from strong Winds, and in Winter must be placed into Shelter, where they may be covered in hard frosty Weather, but must have open Air when the Weather is mild: In *April* following you should transplant them each into a single Half-penny Pot fill'd with fresh, light Earth, being careful to raise them up with a Ball of Earth to their Roots, and when they are planted, you should water them to settle the Earth to their Roots, then place the Pots in a warm Situation, where they may be defended from Sun and Wind; but if you will bestow a moderate Hot-bed to plunge the Pots upon, it will greatly promote their taking new Root; however, you must carefully defend them from the great Heat of the Sun, which is injurious to them when fresh removed; but when they have taken Root, you may expose them by Degrees to the open Air: If you suffer the Pots to remain plunged all the Summer, it will preserve the Earth therein from drying so fast as it would do, if they were set upon the Ground.

In *October* you should again remove these Plants into Shelter, or else plunge their Pots into the Ground under a warm Hedge, where they may be protected from the cold North and East Winds; and in the *Spring* following you

must shift the Plants into Pots a Size bigger, taking away some of the Earth from the Out-side of the Ball, and adding some fresh, which will promote their Growth, and so continue to manage them as was before directed, until you plant them out in the Places where they are designed to remain, which should not be done till they are three or four Years old, by which Time they will be strong enough to bear the Cold.

The Reason for my directing these Plants to be preserved in Pots until they are planted out for good, is, because they are difficult to transplant, and being tender, will require some Shelter while young; and whoever observes the Method here laid down, will find the Plants so managed, to gain two Years Growth in Six, from those rais'd in the open Air, and will be less Danger of being destroy'd; and as the Trouble and Expence of raising them this Way is not great, so it is worth practising, since in a few Years the Trees will recompense the Trouble.

These Plants should have a fresh, light, undunged Soil as the former, and may be placed in Plantations with them, observing to let these be placed in a Line below those, for they will not grow so fast with us as they do, nor do I believe they will make such large Timber, tho' this is much preferable to the Timber of the other Sorts.

The Timber of this Tree is of a redish Colour, and very sweet, and is commonly known in *England* by the Name of *Cedar Wood*, though there are divers Sorts of Wood called by that Name, which come from very different Trees, especially

especially in the *West-Indies*, where there are several Trees of vastly different Appearances which have that Appellation; it is this Sort of Wood which is used for Pensils, as also to wainscot Rooms, and make Stair-Cases, it enduring longer found than most other Sorts of Timber; which, perhaps, may be owing to some extreme bitter Taste in the Resin, with which the Tree abounds; for it is very remarkable, that the Worms do not eat the Bottoms of the Vessels

built with this Wood, as they do those built with *Oak*; so that the Vessels built with *Cedar* are much preferable to those built with any other Sort of Timber, for the Use of the *West-India* Seas; but they are not fit for Ships of War, the Wood being so brittle as to split to Pieces with a Cannon Ball; but when well polish'd and neatly fitted up in Wainscot, it appears very handsome, and will be found a valuable Timber in *England*.

*The END of the FIRST VOLUME.*





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