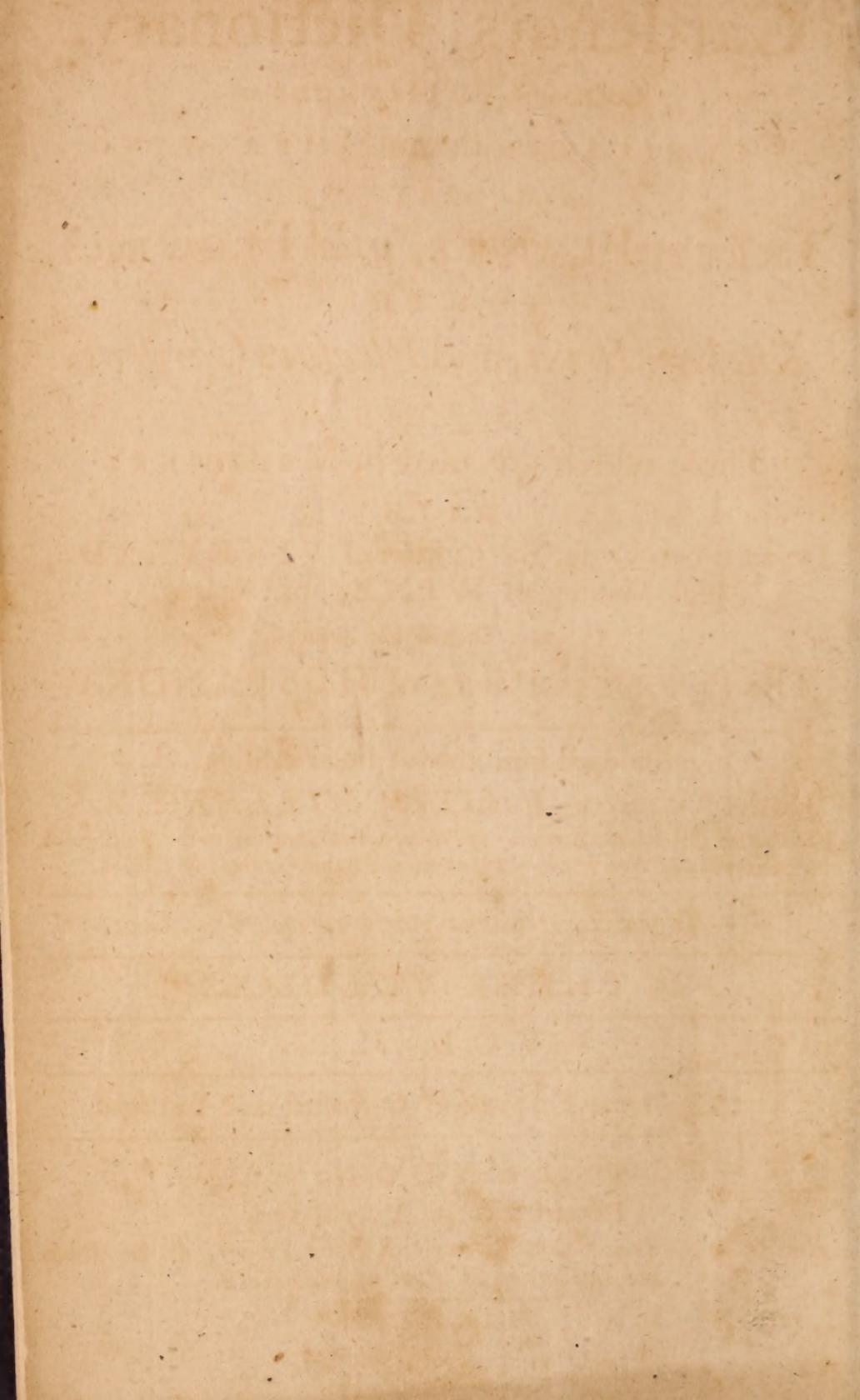


To Kington House
From Edward [unclear]



580,3
M6151

T H E

Gardeners Dictionary.

Containing the METHODS of

CULTIVATING and IMPROVING

ALL SORTS OF

Mr Anthon

TREES, PLANTS, and FLOWERS,

FOR THE

Kitchen, Fruit, and Pleasure Gardens;

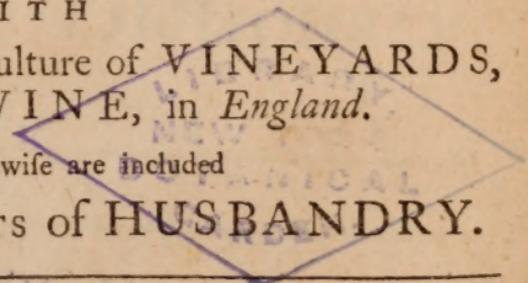
AS ALSO

Those which are used in MEDICINE:

WITH

DIRECTIONS for the Culture of VINEYARDS,
and Making of WINE, in *England.*

In which likewise are included



The PRACTICAL PARTS of HUSBANDRY.

Abridged from the last Folio Edition,

By the AUTHOR, *PHILIP MILLER*, F. R. S.

Member of the Botanic Academy at *Florence*, and Gardener to the Worshipful
Company of APOTHECARIES, at their Botanic Garden, at *Chelfea.*

— *Digna manet divina gloria ruris.* Virg. Geor.

In THREE VOLUMES.

V O L. II.

The FOURTH EDITION, Corrected and Enlarged.

L O N D O N:

Printed for the AUTHOR;

And Sold by JOHN and JAMES RIVINGTON, at the *Bible*
and *Crown*, in *St. Paul's Church-Yard.*

M. DCC. LIV.

+ 5B
45
.M6
1754
v. 2

THE PRACTICAL PARTS OF THE
ART OF BREWING
BY
WILLIAM
MILLER
OF
LONDON

Abridged from the last Edition.

By
WILLIAM MILLER
OF
LONDON
Author of the
"Practical Art of Brewing"
and
"The Art of Distilling"

— By the same Author, also
"The Art of Distilling"

IN THREE VOLUMES.

VOL. II.

THE FOURTH EDITION, CORRECTED AND IMPROVED.

LONDON:

Printed by the Author;

And Sold by James Rivington, at the
"Star and Garter," in St. Paul's Church-yard.

MDCCLXXV.



T H E

Gardeners Dictionary.

V O L. II.

G A

G A

GALANTHUS, The Snow-drop.

The Characters are;

The Sheath of the Flower is oblong, blunt, and compressed: this opens sideways, and becomes a dry Skin: the Flower has three oblong concave Petals, which spread open, and are equal: in the Middle is situated the Nectarium, which is cylindrical, obtuse, and bordered: in the Centre of the Flower is situated the Pointal, attended by six Stamina: the Pointal afterward becomes an oval Capsule, having three Cells, which are full of roundish Seeds.

This Plant, as also the great Snow-drop, was by Dr. Tournefort

V O L. II.

ranged together under the Title of *Narcissoleucoium*; which being a compound Name, Dr. Linnæus has altered it to this of *Galanthus*; and has separated the great Snow-drop from this, and given the simple Name of *Leucoium* to that Genus.

The Species are;

1. GALANTHUS. *Lin. Hort. Clif.* The Common Snow-drop.
2. GALANTHUS *flore pleno.* The double Snow-drop.

These Flowers are valued for their early Appearance in the Spring; for they usually flower in *January*, when the Ground is often covered with Snow. The single Sort comes out the first; and though the Flowers are but small, yet when they are

in Bunches, they make a very pretty Appearance: therefore these Roots should not be planted single, as is sometimes practised by way of Edging to Borders; for when they are so disposed, they make very little Appearance. But when there are twenty or more Roots growing in a close Bunch, the Flowers have a very good Effect: and as these Flowers thrive well under Trees or Hedges, they are very proper to plant on the Sides of Wood-walks, and in Wilderness-quarters; where, if they are suffered to remain undisturbed, the Roots will multiply exceedingly.

GALE. *Vide Myrica.*

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 filled with oblong kidney-shaped Seeds.

The Species are;

1. GALEGA *vulgaris, floribus caeruleis.* C. B. Common Goat's-rue, with blue Flowers.

2. GALEGA *vulgaris, floribus penitus candidantibus.* C. B. Common Goat's-rue, with white Flowers.

3. GALEGA *vulgaris, floribus ex caeruleo purpureis.* C. B. Common Goat's - rue, with bluish-purple Flowers.

4. GALEGA *Africana, floribus majoribus, & siliquis crassioribus.* Tourne. African Goat's-rue, with large Flowers, and thick Pods.

5. GALEGA *Americana, foliis subrotundis, floribus coccineis.* Host. American Goat's-rue, with roundish Leaves, and scarlet Flowers.

6. GALEGA *Americana frutescens, flore purpureo, foliis sericeis.* Plum.

Shrubby *American Goat's-rue*, with silken Leaves.

There are several other Varieties of this Plant, which are preserved in curious Botanic Gardens abroad; but these here mentioned 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, preserved 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 their 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 practised 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*

tumn 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.

The fifth Sort was discovered by the late curious Botanist Dr. *William Houstoun*, at *Campechy*, from whence he sent the Seeds into *Europe*. This Plant is an Annual, and must be raised on an Hot-bed early in the Spring, and plunged into a moderate Hot bed of Tanners Bark; and when the Plants come up, and are fit to transplant, they must be treated as hath been directed for other tender annual Plants, which are kept in the Bark-stove. With this Management they will flower in *July*, and in *September* they will perfect their Seeds, and the Plants will soon after decay.

The sixth Sort is also a Native of *America*, and was discovered by Father *Plumier*. This is also propagated by Seeds, which should be sown on an Hot-bed in the Spring; and when the Plants are come up, they must be transplanted, and treated as other tender Plants from the same Country: it should remain in the Tan-bed the first Year, and afterward may be placed in a moderate Stove in Winter, and in Summer must have free open Air.

GALENIA.

The Title of this Genus was given to it by Dr. *Linnaeus*, from the famous Physician *Galen*.

The Characters are;

The Flower is apetalous: the Empalement is small, and cut into four Segments: in the Centre is situated the Pointal, attended by eight slender Stamina: the Empalement afterward turns to a roundish Pod, or Seed-vessel, having two Cells, containing two oblong angular Seeds.

There is but one Species of this Genus at present known; viz.

GALENIA. Lin. Hort. Cliff. Low shrubby Galenia.

This is a low shrubby Plant, rarely growing above three Feet high: it is a Native of the *Cape of Good Hope*, from whence it was brought into the Gardens in *Holland*. There is very little Beauty in the Plant; for the Flowers are very small, and somewhat like those of the *Blite*, having no Petals; and the Empalement is of an herbaceous Colour. This Plant had the Name of *Sberardia* given to it by *Pontedera*, the Professor of Botany at *Padua*, in Honour to Dr. *William Sberard*, a famous Botanist; but Monsieur *Vaillant* of *Paris* having applied that Name to another Genus of Plants, Dr. *Linnaeus* has given it this.

This Plant will not live through the Winter in the open Air in *England*; so must be placed in the Greenhouse with other hardy Exotic Plants, where it may have a large Share of Air in mild Weather; for it only requires to be protected from Frost. In the Summer it may be exposed in the open Air with other Plants of the same Country; in dry Weather it must be frequently watered. This may be propagated by Cuttings, which, if planted during any of the Summer-months, and watered frequently, will take Root in about five or six Weeks; and may then be treated as is directed for the old Plants.

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 shaped, and divided into five Parts; and each Flower is succeeded by four naked Seeds.

The Species are ;

1. GALEOPSIS *angustifolia* *Cretica viscosa*, Boerb. Ind. alt. Narrow-leav'd viscous stinking Dead-nettle of Candy.

2. GALEOPSIS *procerior fœtida spicata*. Tourn. Common Hedge-nettle.

3. GALEOPSIS, *five Urtica iners*, flore luteo. J. B. Yellow Archangel, or Dead-nettle.

4. GALEOPSIS *procerior fœtidissima*, *spica longissima alba*. Michel. The most stinking taller Hedge-nettle, with a long white Spike.

The first Sort is a Native of the Island of *Candia*, and some other Places in the *Levant* ; and is too tender to live in the open Air in *England*, except in very mild Winters. This Sort is of very humble Growth, seldom rising a Foot high : the Branches are very slender, which are garnished with a few very narrow Leaves, which are thinly disposed on them. The Flowers grow from the Wings of the Leaves, and are of a dirty white Colour : the whole Plant is very viscous, and smells like *Bitumen*. This may be propagated by sowing the Seeds on a Bed of light Earth in the Spring ; and, when the Plants are strong enough to remove, some of them should be planted in Pots, that they may be sheltered in the Winter ; and others may be planted in warm Borders, where, if the Winter proves favourable, or the Plants are defended from severe Frost, they may be preserved.

This may also be propagated by Cuttings, which should be planted in *June* or *July* ; and if they are shaded from the Sun in warm Weather, and duly watered, they will take Root in six Weeks time, and may then be treated as the seedling Plants : if the Plants, in Pots, are placed under an Hot-bed-frame in the Winter, where they may enjoy the open

Air in mild Weather, and only covered when there is Frost, they will succeed better, than if they are treated more tenderly.

The second and third Sorts grow wild by the Side of Banks, and in the Woods, in most Parts of *England* : therefore are not admitted into Gardens ; for they spread greatly by their creeping Roots, and become very troublesome Weeds in Gardens.

The fourth Sort is a Native in *Italy*, from whence the Seeds have been sent to several Botanic Gardens, where it is preserved for the sake of Variety : but as this spreads at the Root, it is not proper for a Garden ; for it will be as troublesome to destroy, where it has been permitted to grow, as either of the *English* Kinds.

GALEOPSIS FRUTESCENS.
Vide Præfium.

GALLIUM, Ladies-bedstraw, or Cheese-rennet.

The Characters are ;

It is a Plant of the stellate Kind : the Leaves, which are neither rough nor knappy, are produced 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 Upper-part, and divided into several Segments : each of these Flowers are succeeded by two naked Seeds.

The Species are ;

1 GALLIUM *luteum*. C. B. Yellow Ladies-bedstraw.

2. GALLIUM *rubrum*. C. B. Red Ladies-bedstraw.

3. GALLIUM *nigro-purpureum tenuifolium*. Col. Narrow-leav'd mountain Ladies-bedstraw, with dark-purple Flowers.

4. GALLIUM *saxatile, glaucos folio*. Bocc. Rar. Ladies-bedstraw of the Rocks, with a glaucous Leaf.

5. *GALLIUM saxatile, glabro folio. Bocc. Rar.* Ladies-bedstraw of the Rocks, with a smooth Leaf.

The first of these Plants (which is the Sort commonly used in Medicine) is very common in moist Meadows, and in Pasture-grounds, in several Parts of *England*: the other Varieties are preserved in curious Botanic Gardens; but as they are Plants of very little Beauty, and are subject to spread very far, and overrun whatever Plants grow near them, 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 require a drier Soil, but will all grow in any Situation.

GARIDELLA [This Plant was so named by *Dr. Tournefort*, in Honour to *Dr. Garidel*, who was Professor of Physic at *Aix in Provence*].

The Characters are;

It hath a rose-shaped Flower, consisting of several Petals, which are bifid, and ranged in a circular Order; from whose many-leav'd Cup rises the Pointal, which after-ward becomes an Head composed of many oblong Pods, which open length-ways, and are full of roundish Seeds.

We know but one Species of this Plant; viz.

GARIDELLA foliis tenuissime divisis. Tourn. *Garidella* with very narrow-divided Leaves.

This Plant is very near akin to the *Nigella*, or Fenel-flower; to which Genus it was placed by the Writers on the Subject of Botany before *Dr. Tournefort*; and was by him separated from it, as differing in the Form of the Flower.

It grows wild in *Candy*, and on *Mount Baldus* in *Italy*, as also in *Provence*, where it was discovered by *Dr. Garidel*, who sent the Seeds to *Dr. Tournefort*, for the Royal Garden at *Paris*.

This is an annual Plant, whose Seeds should be sown in the Spring, on a Bed or Border of fresh light Earth, where the Plants are designed to remain (for they seldom thrive, if they are transplanted): when the Plants are come up, they must be carefully cleared from Weeds; and where they are too close, they must be thinned, leaving them about four or five Inches apart; and as they grow up, they must constantly be kept clear from Weeds, which, if suffer'd to grow among the Plants, will soon overbear and destroy them. In *June* these Plants will flower, and in *August* the Seeds will ripen; which, if permitted to fall, will come up in Autumn, and these Plants will flower early in the Summer, whereby good Seeds may be always obtained.

GENISTA, Spanish Broom.

The Characters are;

It hath very pliant Branches: the Leaves are placed alternately, or in Whorles: the Flowers are of the peabloom Kind, which are succeeded by smooth Pods, containing several kidney-shaped Seeds in each.

The Species are;

1. *GENISTA JUNCEA. J. B.* The yellow Spanish Broom.

2. *GENISTA hortensis major Lusitanica. Vir. Lusit.* The greater Portuguese Broom.

3. *GENISTA Hispanica pumila odoratissima. Tourn.* Most sweet-scented low Spanish Broom.

4. *GENISTA Lusitanica, parvo flore luteo. Tourn.* Portugal Broom, with a small yellow Flower.

5. *GENISTA tinctoria Germanica*. C. B. P. Green-wood, or Dyers-weed, or Wood-waxen.

6. *GENISTA tinctoria Austriaca maxima*. Boerb. Greater Austrian Dyers-weed, or Wood-waxen.

7. *GENISTA tinctoria Germanica, foliis angustioribus*. C. B. P. German Dyers-weed, or Wood-waxen, with narrow Leaves.

8. *GENISTA tinctoria frutescens, foliis incanis*. C. B. P. Shrubby Dyers-weed, with hoary Leaves.

9. *GENISTA tinctoria Lusitanica maxima*. Piurna Lusitanorum. Tourn. Great Portugal Dyers-weed, called Piurna by the Portuguese.

10. *GENISTA tinctoria latifolia Luccensis*. Tourn. Broad-leav'd Dyers-weed of Lucca.

11. *GENISTA humilior Pannonica*. Tourn. Lower Broom of Pannonia.

12. *GENISTA ramosa, foliis hyperrici*. C. B. P. Branching Broom, with St. John-wort-leaves.

13. *GENISTA JUNCEA, flore pleno*. The Spanish Broom, with a double Flower.

14. *GENISTA Africana frutescens, rusci angustis foliis*. Oldenl. Shrubby African Broom, with narrow Butchers-broom-leaves.

15. *GENISTA Africana arborescens, argentea lanugine pubescens*. Oldenl. Tree-like African Broom, covered with a silvery Down.

16. *GENISTA Africana frutescens spicata purpurea, foliis angustissimis*. Oldenl. Purple spiked shrubby African Broom, with very narrow Leaves.

17. *GENISTA Africana frutescens spicata, laricis foliis*. Oldenl. Spiked shrubby African Broom, with Larch-tree-leaves.

18. *GENISTA Africana frutescens capitata, laricis foliis*. Oldenl. Headed African shrubby Broom, with Larch-tree-leaves.

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.

The second Sort seems to be only a Variety of the first, from which it differs only in Size: the Flowers of this Sort are also much larger and sweeter.

The third Sort was formerly in the English Gardens; but has been lost since the severe Frost of 1740. but there are some young Plants which have been raised from Seeds, which were procured from Spain; so that this Sort may in time be more plenty in England.

The fourth Sort has also been propagated in plenty, from some Seeds which came from Portugal; but this is not so beautiful as the former Sorts.

The fifth Sort is very common in many Parts of England, where it is generally found upon strong clayey Lands: this creeps by the Root; so will soon spread over Ground it likes: this is gathered for the Use of the Dyers; from whence it had the Name of Dyers-weed.

The sixth, seventh, and eighth Sorts are Varieties of the last; from which they differ in their Growth, and the Breadth of their Leaves.

The ninth Sort grows much larger than either of the former, and continues much longer in Flower: this doth not creep by the Root; so deserves a Place among other Shrubs.

The tenth Sort is of humble Growth, seldom rising above two Feet and an half high: but as this Sort flowers very late in the Year, when few other Shrubs are in Beauty,

it merits a Place in every good Garden : this commonly flowers in *October* ; and if the Season is not very severe, will continue in Beauty all *November* ; and at that Season, the Branches are loaded with yellow Flowers.

The eleventh and twelfth Sorts are also low Shrubs, which may be admitted to make up the Variety in Plantations of Shrubs, for their green Appearance through the Year : and although their Flowers are not very beautiful, yet, by the Contrast which they make with the other Shrubs, they will set off the Plantation.

All these twelve Sorts are hardy enough to endure the Cold of our Winters in the open Air, except the third Sort, which is apt to suffer in very hard Frost ; though in the ordinary Winters this Sort will live abroad, especially if it is planted in a sheltered Situation : but as it is liable to be destroyed by hard Frost, a Plant or two should be sheltered in Winter to preserve the Kind.

The thirteenth Sort is a Variety of the first, which has been accidentally produced from Seeds, in some of the Gardens in *Germany* ; but at present it is rare in *England* : this may be propagated by inarching it upon the common Sort, or by laying down the Branches : but the first Method is the surest to obtain good Plants. This doth not produce Seeds ; or if there were any, the Plants so produced would rarely happen to have double Flowers.

The other Sorts before-mentioned are all propagated by Seeds, which may be sown in the Spring, upon a Bed of fresh light Earth, and treated in the same way as is commonly practised for raising of the *Spanish* Broom ; which is so well known, as to need no Instructions in this Place.

All the Sorts of Brooms are very apt to send out long tough stringy Roots, which run deep into the Ground ; therefore, if they are not transplanted young, they frequently miscarry ; for they have few Fibres to their Roots ; so that when they have stood long in any Place, the Roots will have struck deep into the Ground, which must be cut or torn off in transplanting ; and this is commonly their Destruction.

The fourteenth, fifteenth, sixteenth, seventeenth, and eighteenth Sorts are Natives of *Africa* ; most of them grow near the *Cape of Good Hope* : these are too tender to live in the open Air in Winter ; so are preserved in Green-houses ; but they are most of them very rare in *England* at present.

These may all be propagated by Seeds, which must be sown upon a very moderate Hot-bed in the Spring ; and when the Plants come up, they should have as much free Air as the Season will permit to be given them ; otherwise they will draw up weak : as soon as the Plants are strong enough to remove, they should be planted each into a small Pot filled with light Earth ; and if the Pots are plunged into a very temperate Hot-bed, where the Plants may be shaded until they have taken Root, it will be the safest Method ; and then they should be inured to the open Air by degrees. In the Summer-time these Plants may be placed abroad in a sheltered Situation ; but in Winter they should be placed in a good Green-house, where, in mild Weather, they should have as much free Air admitted to them as possible ; for if they are shut up too close, and the Air excluded from them, they are very apt to grow mouldy, and then their Branches will decay.

The third Year from the Seed, the Plants will flower very strong, and continue so to do every Year after; and then they make a fine Appearance among other Exotic Plants: and as they are green all the Year, they may deserve to be preserved as much as most other Green-house Plants.

These Plants will grow seven or eight Feet high; and if they are trained up to have clear Stems, while they are young, they may afterward be formed to have regular good Heads; for they are very manageable, especially when they are young: and where care is taken of them to form them handsomely, they will make a much better Appearance in the Green-house, during the Winter-season.

GENISTA SPINOSA, The Furz, Whins, or Gorse. *Vide Ulex.*

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 shaped like a Cup, being cut into four, five, or more Segments: it is succeeded by a membranous oval-shaped 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. J. B. Large-flower'd Gentian of the Alps, commonly called 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 Natives of England, and others are Inhabitants of the Alps, and other cold mountainous Parts of Europe: but as they are Plants which are rarely tamed, 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 used 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 filled 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 Autumn following they will be fit to transplant; at which time you should prepare a shady moist Border, that should

should be well dug and loosened; then shake the Earth out of the Pots, by which means you will the more readily take them out without hurting their Roots. The Distance they should be allowed, if designed to remain for good, must be fourteen Inches square: but if they are intended to be removed 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 placed 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 *October*, just as they begin to drop their Leaves: for as these Plants are Natives of cold Countries, if they remain till after *Christmas* unremoved, they will begin to shoot; therefore it will be unsafe to transplant them after.

In about five or six Years time, if the Plants thrive well, and are not disturbed, 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, the Beauty thereof is not such as would recommend the having it in great Quantities, though a few of them 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 in 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 increased by parting the Roots in Autumn. These Plants require a strong, moist, cool Soil, and should be planted where they may have only the morning Sun; for if they are too much exposed to Heat, they are very 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 occasioned their present Scarcity near *London*, where People are too apt to part and divide Plants often, in order to increase them, 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-mentioned 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 removed, but suffered 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

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 a crested or lipped Flower, with ten Stamina surrounding the Ovary: the Fruit is of a pentagonal Figure, with a long Beak, containing at the Base five Seed-vessels, in each of which is contained one tailed Seed, which, when ripe, is cast forth by the twisting of the Beak.

The Species are;

1. GERANIUM *batrachoides*, *Gratia Dei Germanorum*. C. B. P. Crane's-bill with a Crowfoot-leaf, and large blue Flowers.

2. GERANIUM *batrachoides*, *Gratia Dei Germanorum*, *flore albo*. Boerb. Ind. Crowfoot-leav'd Crane's-bill, with a white Flower.

3. GERANIUM *batrachoides*, *Gratia Dei Germanorum*, *flore variegato*. C. B. P. Crowfoot-leav'd Crane's-bill, with a striped Flower.

4. GERANIUM *batrachoides*, *longius radicum*, *odoratum*. J. B. Long-rooted sweet smelling Crane's-bill, with a Crowfoot-leaf.

5. GERANIUM *sanguineum*, *maximo flore*. H. Ox. Bloody Crane's-bill, with a large Flower.

6. GERANIUM *sanguineum*, *cauliculis erectis*, *folio obscure virenti*, *floribus minoribus*. H. L. Bloody Crane's-bill, with upright Stalks, dark-green Leaves, and small Flowers.

7. GERANIUM *hematodes*, *foliis majoribus pallidioribus*, *altius incis.* Raii Syn. Bloody Crane's-bill, with larger, paler, and more deeply-divided Leaves.

8. GERANIUM *hematodes Lancastrense*, *flore eleganter striato*. Raii Hist. Bloody Crane's-bill, with a variegated Flower.

9. GERANIUM *5. nodosum Plateau*. Clus. Hist. Knotty Crane's-bill.

10. GERANIUM *phaeum sive fuscum*, *petalis reflexis*, *folio non maculoso*. H. L. Brown Crane's-bill, with reflexed Petals, and Leaves not spotted.

11. GERANIUM *phaeum 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 striped Flowers.

13. GERANIUM *Alpinum*, *coriandri folio*, *longius radicum*, *flore purpureo majore*. Michel. Long-rooted Crane's-bill of the Alps, with a Coriander-leaf, and a large purple Flower.

14. GERANIUM *batrachoides montanum nostras*. Ger. Mountain Crane's-bill, with a Crowfoot-leaf.

15. GERANIUM *Orientale columbinum*, *flore maximo*, *asphodeli radice*. T. Cor. Oriental Dove's-foot Crane's-bill, with an Asphodel-root, and a large Flower.

16. GERANIUM *cicutæ folio*, *moschatum*. C. B. P. Musked Crane's-bill of Muscovy.

17. GERANIUM *latifolium annuum*, *cæruleo flore*, *acu longissima*. H. Ox. Broad-leav'd annual Crane's-bill, with a blue Flower, and a very long Beak.

18. GERANIUM *myrrhinum tenuifolium*, *flore amplo purpureo*. Bar. Obs. Fine cut-leav'd Crane's-bill, with an ample purple Flower.

19. GERANIUM *Africanum arborescens*, *ibisci folio rotundo*, *carlinæ odore*. H. L. African Tree Crane's-bill, with a round Marshmallow-leaf, and a Smell of the Carline-thistle.

20. GERANIUM *Africanum arborescens, ibisci folio angulato, floribus amplis purpureis. Phil. Trans. 388.* African Tree Crane's-bill, with an angular Marshmallow-leaf, and large purple Flowers.

21. GERANIUM *Africanum arborescens, alchimilla hirsuto folio, floribus rubicundis. Com. Præl.* African Tree Crane's-bill, with an hairy Ladies-mantle-leaf, and red Flowers.

22. GERANIUM *Africanum arborescens, malvæ folio plano lucido, flore elegantissime kermesino. Di van Leur. Boerb. Ind.* African Tree Crane's-bill, with a plain shining Mallow-leaf, and an elegant scarlet Flower.

23. GERANIUM *Africanum frutescens, malvæ folio odorato laciniato. H. L.* African shrubby Crane's-bill, with a jagged sweet-smelling Mallow-leaf.

24. GERANIUM *Africanum frutescens, malvæ folio laciniato, odorato instar melissæ, flore purpurascens. 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, malvæ folio mucronato, petalis florum inferioribus vix conspicuis. Phil. Trans.* African Tree Crane's-bill, with a pointed Mallow-leaf, and the under Petals of the Flower scarce discernible.

26. GERANIUM *Africanum frutescens, folio crasso & glauco, acetosæ sapore. Com. Præl.* 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, carnosæ caudice. Phil. Trans.* *Geranium Africanum, folio alceæ, flore albo. Boerb. Ind. alt.* African shrubby Crane's-bill, with a Celadine-leaf, the Petals of the

Flower white and narrow, and a fleshy Stalk.

28. GERANIUM *Africanum noctuolens, tuberosum & nodosum, aquilegiæ foliis. H. L.* African Crane's-bill, smelling sweet in the Night, with knotty tuberosé Stalks, and Leaves like Columbine.

29. GERANIUM *Africanum, folio alceæ, flore coccineo fulgidissimo. Boerb. Ind. alt.* *Geranium Surinamense, chelidonii folio, flore coccineo, petalis inæqualibus. 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 an hairy Ladies-mantle-leaf elegantly striped, and red Flowers, commonly called the striped Geranium.

31. GERANIUM *Africanum, foliis inferioribus asari, superioribus staphidisugriæ, maculatis, splendentibus, & acetosæ sapore. Com. Præl.* African Crane's-bill, with the under Leaves like Asarabacca, and the upper Leaves like Stavesacre, shining, spotted, and tasting like Sorrel.

32. GERANIUM *Africanum, alchimilla hirsuto folio, floribus albidis. H. L.* African Crane's-bill, with an hairy Ladies-mantle leaf, and whitish Flowers.

33. GERANIUM *Africanum, folio malvæ crasso molli odoratissimo, sifculo 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, noctuolens, radice tuberosa, triste. Corn. H. Ox.* American tuberosé-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 Anemony-leaf, and a pale fleſh-colour'd Flower.

36. GERANIUM *Æthiopicum, noctuolens, radice tuberoſa, foliis myrrhidis anguſtioribus.* Breyn. Cent. Night ſweet - ſmelling Ethiopian Crane's-bill, with a tuberoſe Root, and narrow Cicely-leaves.

37. GERANIUM *Africanum, noctuolens, folio vitis hirsuto, tuberoſum.* H. A. Night ſweet-ſmelling African Crane's-bill, with an hairy Vine-leaf, and a tuberoſe 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 Goosberry-leaf, and ſmall rediſh Flowers.

40. GERANIUM *Africanum, betonicae folio, procumbens, floribus parvis eleganter variegatis.* Pluk. Alm. African trailing Crane's-bill, with a Betony-leaf, and ſmall beautiful-ſtriped Flower.

The fifteen firſt-mentioned Sorts are abiding Plants: the Leaves of ſome of them 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 diſpoſed, they will have a good Effect, by adding to the Variety; and as they are very hardy Plants, and require but little Care in their Culture, growing in almoſt any Soil or Situation, 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, 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 come 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: whereas, if the ſpreading Kinds are ſuffered to grow undiſturbed, 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, it is hardly worth while to ſow their Seeds.

The ſixteenth, ſeventeenth, and eighteenth 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 always be ſure to have their Seeds perfected, which does not conſtantly happen to thoſe ſown in the Spring. The ſixteenth Sort is preferred in many Gardens, for the

sweet Scent its Leaves afford when rubbed between the Fingers, which occasioned its 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 seventeenth and eighteenth Sorts produce very handsome Flowers; and as they are Plants which take up but little room, and require very little Trouble to cultivate them, 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 nineteenth, twentieth, twenty-first, twenty-second, twenty-third, twenty-fourth, twenty-sixth, twenty-seventh, twenty-eighth, twenty-ninth, thirtieth, and thirty-first Sorts are Natives of a warmer Climate than ours, and require to be sheltered 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 Month's 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 transplanting: you must therefore prepare some Pots; 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 each Plant into a separate Pot, removing 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 exposed 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 Greenhouse, 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 refreshed 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 decayed Leaves, which, if suffered to remain upon them, will not only render the Plants unsightly, but also infect the Air of the Greenhouse, 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 screened from the Frost, it will be sufficient; and all artificial Warmths are prejudicial to these Plants.

The twenty-ninth Sort is very subject to cast its Leaves in Autumn,
and

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 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 its Continuance most Part of the Summer and Autumn in Flower, renders it very valuable ; as is the thirtieth Sort, for the Beauty of its variegated Leaves.

The twenty-second and twenty-third Sorts are of humbler Growth than the former, tho' they are Natives of the same Country, and therefore require the same Defence in Winter ; these may also be propagated by Heads cut off from the old Plants, and treated as was directed for the Cuttings of the shrubby Kinds. The thirty-second Sort is very subject to ramble, and affords Supply enough of Cuttings ; but the thirty-third 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 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 before directed for the Cuttings, and manage them in the same manner. During the Summer-season these Plants should be set abroad with Myrtles, Oleanders, and other Greenhouse Plants, where, being artfully intermixed therewith, they add greatly to the Variety, and continue flowering most Part of the Year.

The thirty-fourth, thirty-fifth, thirty-sixth, and thirty-seventh 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, the putting them into large Pots is very prejudicial to them. These are all esteemed 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 continued ; but when the Cool of the Evening approaches, these

Effluvia

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 Exotics, in the open Air, being very careful not to give them too much Water, which often occasions their rotting, 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 lay the Pots on one Side; or remove them under Shelter, to protect them from it: and about the Beginning of *October* you should carry 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 defend'd from Frost, and much Wet, it will be sufficient, they not being extreme tender; nor will they ever require any artificial Warmth 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 Tan-ners Bark: mix all well together, and let it lie in an 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 is 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 shew'd 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 thirty-eighth and thirty-ninth 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 managed as was directed for the last-mentioned Sorts: these will often produce Flowers and Seeds the same Summer; but the second Year, provided they are defend'd from the Frost in Winter, they will flower early, and perfect their Seeds before Autumn.

The fortieth 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, they 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, is worthy of a Place in every Collection of curious Plants.

There are a great Number of Geraniums, which I have not here mentioned, many of which are Natives of *England*, and others were brought from divers Parts of *Europe*; but as these, for the most part, are

annual Plants of no Beauty or Use, I thought it needless to trouble myself or the Reader therewith.

GERMANDER. *Vide Chamædrys.*

GESNERA.

This Plant was so named by Father Plumier, who discovered it in America, in Honour to *Conrade Gesner*, a very learned Botanist, and Natural Historian.

The Characters are;

It hath an anomalous personated Flower, consisting of one Leaf, from whose Cup arises the Pointal, fixed like a Nail in the hinder Part of the Flower; which afterward becomes a membranaceous Fruit, divided into two Cells, which are filled with small Seeds.

The Species are;

1. GESNERA *humilis, flore flavescente.* Plum. Nov. Gen. Low Gesnera, with a yellowish Flower.

2. GESNERA *amplo digitalis folio tomentoso.* Plum. Nov. Gen. Gesnera with a large woolly Fox-glove-leaf.

3. GESNERA *arborescens, amplo flore fimbriato & maculoso.* Plum. Nov. Gen. Tree-like Gesnera, with a large furbelowed and spotted Flower.

4. GESNERA *foliis lanceolatis serratis, pedunculo terminatrici laxo spicato.* Lin. Hort. Cliff. Gesnera with sawed spear-shaped Leaves, and the Stalk terminating in a loose Spike of Flowers, commonly called the Canary Fox-glove.

The first and second Sorts were found by the late Dr. *William Houstoun* in *Jamaica*, from whence he sent their Seeds to *England*; but by their being a long time out of the Ground, there was not any of them which grew. The third Sort was discovered by Father Plumier at *Martinico*: this Sort rises to the Height

of eight or ten Feet, and has a woody Stem; but the other two Sorts seldom rise above three Feet high.

These Plants are propagated by Seeds, which should be sown as soon as possible after they are ripe; for, being very small and light, if they are kept long out of the Ground, they will not grow: therefore the surest Method to obtain these Plants is, to procure them in Tubs of Earth from *America*. The Seeds should be sown in the Tubs filled with fresh Earth, and placed in a shady Situation; and when the Plants come up, they must be frequently watered, and kept clear from Weeds. These Tubs should remain in the Country, until the Plants are pretty strong; for if they are sent over too young, they will be in great Danger of perishing before they arrive in *England*. When they are put on board the Ship, they should be covered in the Heat of the Day with Tarpaulins, to screen them from the violent Heat of the Sun; as also in bad Weather, to prevent the Salt-water from washing of them. During their Passage they should be often refreshed with Water, while they are in a warm Latitude; and should have as much Air as possible, when the Weather will permit; but as they arrive in a cooler Latitude, they must have a less Quantity of Water given them, and should be screened from the Cold.

When these Plants arrive in *England*, they should be carefully taken out of the Boxes, and each planted into a Pot filled with rich light Earth, and then plunged into an Hot-bed of Tanners Bark, observing to water them, and screen them from the Heat of the Sun until they have taken Root; after which time they should have fresh Air admitted to them

them in proportion to the Warmth of the Season, and must be frequently watered. In this Bed the Plants may remain until *Michaelmas*, when they should be placed in the Bark-stove, where, if they are kept in a temperate Warmth, they will make good Progress, and the second Year will produce their Flowers, when they will make a fine Appearance: for they produce long Spikes of Flowers, which are shaped somewhat like those of the Fox-glove. These Plants do not continue many Years, so that new Plants should be frequently raised; for after the Sorts are procured from Abroad, they will perfect their Seeds in *England*, if they are carefully managed: but it will be the surest Method to raise the Plants, if the Seeds are sown soon after they are ripe: and if the Seeds, procured from Abroad, are sent over in the Pods, soon after they are ripe, and sown when they arrive in *England*, they will often succeed; especially the second Sort, which has grown with me very well.

The fourth Sort has been many Years preserved in some of the curious *English* Gardens. This Plant is a Native of the *Canary* Islands; so is too tender to live in the open Air in *England*: it is therefore kept in Pots, and preserved in Green-houses. This Sort hath woody Stems, and will rise to the Height of three Feet, and divides into many Branches, each of which will produce a Spike of pale orange-colour'd Flowers at their Top; and these flower frequently at different Seasons, so that the Plants are seldom long destitute of Flowers, during the Summer-months; and sometimes they will flower in Winter, which renders this Plant more valuable.

This Sort is propagated by Seeds; for although there have been some

Plants raised by Cuttings, yet it is very rare they can be so propagated. These Seeds frequently ripen in *England*; but they should be sown as soon as they are ripe, in Pots filled with fresh Earth, and covered very lightly with Earth; and the Pots should be placed in a shady Situation, and duly watered in dry Weather: and in Autumn, when the cold Weather comes on, the Pots must be sheltered under an Hot-bed-frame, which should have the Glasses taken off every Day in mild Weather; for these Seeds only require to be protected from Frost. With this Management, I have had Plenty of the Plants come up the following Spring; and this is the only sure Method to obtain these Plants: for if the Seeds are not sown till the next Spring, they seldom grow; and if they do, it is not till the Spring following that the Plants come up.

The Plants of this Sort must be set abroad toward the Middle of *May*, in a sheltered Situation, and will require frequent Watering in dry Weather; and in Autumn they must be removed into the Green-house, placing them where they may have free Air in mild Weather, otherwise they will grow mouldy, and decay.

GEUM, Hairy Kidneywort, or Sanicle.

The Characters are;

The Cup of the Flower is quinquesfid: 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 lateo 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.

5. *GEUM rotundifolium minus.* Tourn. Lesser round-leav'd Sanicle.

6. *GEUM folio circinato, pistillo floris pallido.* Tourn. Round-leav'd Sanicle, with a pale Pointal.

7. *GEUM folio subrotundo minori, pistillo floris rubro.* Tourn. Sanicle with a lesser roundish Leaf, and a red Pointal.

8. *GEUM folio circinato, acute crenato, pistillo floris rubro.* Tourn. Sanicle with a round sharp jagged Leaf, and a red Pointal

9. *GEUM folio subrotundo minimo.* Tourn. Sanicle with a very small roundish Leaf.

10. *GEUM Creticum, folio circinato villoso, flore magno albo.* Tourn. Cor. Candy Sanicle, with a round hairy Leaf, and a large white Flower.

11. *GEUM Orientale rotundifolium, lupinum, flore aureo.* Tourn. Cor. Low round-leav'd Eastern Sanicle, with a golden Flower.

12. *GEUM Orientale, cymbalariae folio molli & glabro, flore magno albo.* Tourn. Cor. Eastern Sanicle, with a soft smooth Ivywort-leaf, and a large white Flower.

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: but the surest Method is to plant them in Pots filled with strong poor Earth, and place them in a shady Situation, where, if they are constantly watered in dry Wea-

ther, they will thrive, and produce Flowers.

The second is found in some Parts of *Cheeshire*: 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 fixed, 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 supplied 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 it is for want of rightly considering how to adapt the proper Plants to each Soil and Situation, that we often see the Natives of a low Valley planted upon a dry barren Soil, and those of dry sandy Hills on 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 it well 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

merly in greater Request than at present, it having been in great Use for bordering of Flower-beds; but as it increases very fast, 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 preserved as proper Furniture for shady Borders; but it will grow upon a drier Soil than any of the former Sorts.

The five next-mentioned Sorts grow on the *Alps* and *Apennines* in Plenty, from whence they have been transplanted into some curious Gardens by Lovers of Variety: they are all extreme hardy; wherefore they should be planted in shady moist Places, and a poor Soil, where they will thrive much better than in an open Situation. They are propagated by Off-sets, which they send forth in great Plenty: the best Season for this Work is in *October*, that the Plants may be well rooted before Spring, otherwise they will not flower so strong the following Summer. Some of these Plants were formerly planted for Edgings on the Sides of Borders in the Flower garden; but they are by no means fit for this Purpose; therefore appear more beautiful when planted in Patches on shady moist Borders, where few other Plants will thrive: in such Places these Plants will make a pretty Variety. They flower in *May*, and some of them will produce good Seeds in Autumn; but as they increase so fast by Off-sets, few Persons regard their Seeds.

The other three Sorts were discovered by *Dr. Tournefort* in the *Levant*, who sent them to the Royal Garden at *Paris*. These are not quite so hardy as the former Sorts,

but will endure the Cold of our ordinary Winters very well in the full Ground, being never destroyed but by extreme hard Frost. These may be propagated by Off-sets, in the same manner as the former Sorts, and should have a shady Situation.

GILLIFLOWER, or JULY-FLOWER. *Vide Caryophyllus.*

GILLIFLOWER, or STOCK-GILLIFLOWER. *Vide Leucodium.*

GILLIFLOWER, the Queen's or Dame's Violet. *Vide Hesperis.*

GINGER. *Vide Zinziber.*

GINGIDIUM. *Vide Visnaga.*

GLADIOLUS, Cornflag.

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 shaped 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 wrap't up in a Cover.

The Species are;

1. GLADIOLUS *utrinque floridus.* C. B. P. Cornflag with Flowers on both Sides the Stalks.

2. GLADIOLUS *carnei coloris.* Swert. Flor. Flesh-colour'd Cornflag.

3. GLADIOLUS *floribus uno versu dispositis, major, floris colore purpureo-rubente.* C. B. P. Great Cornflag, with redish-purple Flowers rang'd on one Side the Stalk.

4. GLADIOLUS *major Byzantinus.* C. B. P. Great Cornflag of Constantinople.

5. GLADIOLUS *utrinque floridus, floribus albis.* H. R. Mons. Cornflag with white Flowers ranged on each Side the Stalk.

6. *GLADIOLUS maximus Indicus.*
C. B. P. The largest Indian Corn-
flag.

7. *GLADIOLUS floribus uno versu
dispositis, major & procerior, flore
candicante.* C. B. P. Greater and
taller Cornflag, with whitish Flowers
rang'd all on one Side.

8. *GLADIOLUS floribus uno versu
dispositis, minor & humilior.* C. B. P.
Smaller and lower Cornflag, with
Flowers ranged on one Side.

9. *GLADIOLUS minor, floribus uno
versu dispositis incarnatis.* H. L.
Smaller Cornflag, with flesh-colour'd
Flowers ranged on one Side.

10. *GLADIOLUS utrinque floridus,
flore rubro.* C. B. P. Cornflag with
red Flowers on both Sides.

11. *GLADIOLUS floribus uno versu
dispositis, minor.* C. B. P. Smaller
Cornflag, with Flowers ranged on
one Side.

All these Sorts of Cornflag are 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 suffered to remain unremoved, 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 Year, or once in three Years; whereas in Borders of a Pleasure-garden, if they were suffered 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 introduced, 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-mentioned.

These Plants may also be propagated by Seeds, which should be sown in Pots or Tubs of fresh light Earth soon after they are ripe: these Tubs should be placed 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 removed 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,

Boxes, you should prepare a Bed or two of fresh light 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 contained, 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 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 transplanted 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 Cornflag* is tender, and must be preserved in a warm Green-house, or a moderate Stove, during the Winter-season. These Roots should be planted in Pots filled with a light sandy Soil. The best time to transplant them is from the Month of *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 watered; but you must not give them Water in large Quantities: during the Summer-season, if they are suffered to remain in the Pots, they should have little Moisture,

but be only removed to a shady Place for much Wet, 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 Horned Poppy.

The Characters are;

The Cup of the Flower consists of two Leaves: the Flower hath five Leaves, which are placed 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 fastened many roundish Seeds.

The Species are;

1. GLAUCIUM *flore luteo. Tourn.* Yellow Horned Poppy.
2. GLAUCIUM *flore violaceo. Tourn.* Blue-flower'd Horned Poppy.
3. GLAUCIUM *hirsutum, flore phoeniceo. Tourn.* Hairy Horned Poppy, with a deep-scarlet Flower.
4. GLAUCIUM *glabrum, flore phoeniceo. Tourn.* Smooth Horned Poppy, with a deep-scarlet Flower.
5. GLAUCIUM *Orientale, flore magno rubro. Tourn. Cor.* Eastern Horned Poppy, with a large red 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 *Swafsham* and *Burnwel* in *Cambridge-shire*.

The third and fourth Sorts were brought from abroad: these 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 early 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-dung'd.

The fifth Sort was found by Dr. *Tournefort* in the *Levant*, who sent the Seeds to *Paris*. It is a biennial Plant, which may be propagated by Seeds, as the other Sorts; but should have a light poor Soil, in which it will endure the Cold of the Winter much better than if sown on a rich Ground.

GLAUX, Sea Milkwort.

The Characters are;

It hath a bell-shaped Flower, consisting of one Leaf, whose Brims are expanded, and cut into several Segments: from the Centre arises the Pointal, which afterward becomes a round Fruit or Husk, opening from the Top downward, and filled with small Seeds.

The Species are;

1. **GLAUX** *maritima*. C. B. P. Sea Milkwort, or black Saltwort.

2. **GLAUX** *maritima*, *flore albo*. *Tourn.* Sea Milkwort, with a white Flower.

3. **GLAUX** *palustris*, *flore striato clauso, foliis portulacæ*. *Tourn.* Marsh Milkwort, with a striped Flower, and Purslane-leaves.

These Plants grow wild in *England*, and are rarely preserved in Gardens, unless for the sake of Variety. They may be taken up in the Places of their Growth, and planted in Pots filled with poor gravelly Earth, and in Summer must be frequently watered: with this Management they may be preserved, and will produce Flowers every Year.

GLECHOMA, Ground-ivy.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, having a narrow compress'd Tube: the Upper-lip is erect and bifid: the Beard is large and open, and is divided into three; the middle Segment being large and bordered: there are four Stamina under the Upper-lip, two of them being longer than the other: after the Flower is past, there are four naked Seeds, which are inclosed in the Empalement.

This Genus of Plants is joined to the *Calaminth* by Dr. *Tournefort*; but by Dr. *Boerhaave* it is separated, and made a distinct Genus, by the Title of *Chamæclema*; which being a compound Name, Dr. *Linnaeus* has altered it to this of *Glechoma*, which is a Name in *Dioscorides*; and he has added to it one Species of *Marrubiastrum*: the old Name of this Genus was *Hedera terrestris*.

The Species are;

1. **GLECHOMA** *foliis reniformibus crenatis*. *Lin. Hort. Cliff.* Ground-ivy,

ivy, Gill-go-by-ground, Ale-hoof, or Tun-hoof.

2. *GLECHOMA foliis cordato-oblongis crnatis. Lin. Hort. Cliff.* Stinking marsh bastard Horehound.

The Ground-ivy is very common under Hedges, and upon the Sides of Banks, in almost every Part of England; so is rarely cultivated in Gardens; but as it is used in Medicine, I thought proper to mention it here; and whoever hath an Inclination to cultivate this Plant, need only take up some Roots from the Places of its Growth, and plant them in a shady moist Place; where they will thrive, and send out Roots from the trailing Branches at every Joint, which will soon overspread the Ground. There are two or three Varieties of this Plant mentioned by some Botanic Writers, which I believe to be only accidental Variations; for, on their being transplanted into the Garden, they soon altered to the common Sort.

The second Sort grows wild in moist Places in *Holland*, and other Parts of *Europe*; but as it is never cultivated in Gardens, I shall pass it over.

GLOBULARIA.

The Characters are;

It hath a flosculous Flower, consisting of many Florets, which are divided into several Segments, and have one Lip: these are contained in a proper Empalement, out of the Bottom of which arises the Pointal, fixed like a Nail to the lower Part of the Floret, and becoming a Seed, bidden in the Capsule, which before was the Empalement of the Floret: on that Capsule sit the Placenta's, which occupy the middle Part of the common Empalement.

The Species are;

1. *GLOBULARIA vulgaris. Tourn.* Common Globularia.

2. *GLOBULARIA Pyrenaica, folio oblongo, caule nudo. Tourn. Pyrenean.* Globularia, with an oblong Leaf, and naked Stalk.

3. *GLOBULARIA montana humilima repens. Tourn.* The lowest creeping mountain Globularia.

4. *GLOBULARIA fruticosa, myrti folio tridentato. Tourn.* Shrubby Globularia, with a trifold Myrtle-leaf.

5. *GLOBULARIA Africana frutescens, thymelææ folio lanuginoso. Tourn.* Shrubby African Globularia, with a woolly Spurge-laurel-leaf.

6. *GLOBULARIA spiuosa. Tourn.* Prickly Globularia.

7. *GLOBULARIA Alpina minima, origani folio. Tourn.* The smallest Alpine Globularia, with a Wild-marjoram-leaf.

8. *GLOBULARIA Orientalis, floribus per caulem sparsis. Tourn. Cor.* Eastern Globularia, with Flowers scattered along the Stalks.

9. *GLOBULARIA Orientalis, flore amplissimo. Tourn. Cor.* Eastern Globularia, with a very large Flower.

The first of these Plants grows plentifully about *Montpelier*, as also at the Foot of the Mountains *Jura* and *Salova*, and in many other Parts of *Italy*, and in *Germany*. This Plant hath Leaves very like those of the Daisy, but they are thicker and smoother; the Flowers grow on Footstalks, which are about six Inches high, and are of a globular Form.

The second Sort grows plentifully in the Woods, and on the *Pyrenean* Mountains: this is much larger than the former, and the Footstalk is quite naked; the Leaves are narrower, and much longer.

The third Sort is a very low Plant, whose Branches trail on the Ground, and strike Roots out from their

their Joints, whereby it propagates itself very fast. The Flowers grow on short Footstalks, and are of a blue Colour.

The first and second Sorts may be propagated by parting their Roots, after the manner of Daisies; but the third Sort is easily propagated from the trailing Branches, which take Root. The best Season for parting and transplanting of these Plants is in *September*, that they may take new Root before the frosty Weather comes on. They should be planted in Pots filled with fresh Earth, and placed in a shady Situation until they have taken Root. In the Summer-season they should be placed where they may have only the morning Sun; and in dry Weather should be frequently refreshed with Water. With this Management they will increase, and produce their Flowers every Year; but they rarely perfect their Seeds in this Country.

The fourth Sort grows about *Montpelier* in *France*; and in *Valentia*, and several other Parts of *Spain*. This has an hard woody Stem, and rises to about two Feet high; having many woody Branches, beset with Leaves like those of the Myrtle-tree. On the Top of the Branches the Flowers are produced, which are of a blue Colour, and globe-shaped. This Plant may be propagated by Cuttings, which should be cut off in *April*, just before they begin to make new Shoots. These Cuttings should be planted into Pots filled with fresh light Earth, and then placed into a very moderate Hot-bed; observing to water and shade them until they have taken Root; when they may be taken out of the Bed; and inured to bear the open Air by degrees. In Summer these Plants may be exposed with other hardy Exotic Plants; and in

Winter they should be placed under an Hot-bed-frame, where they may enjoy the free Air in mild Weather; but should be screened from hard Frost, which will destroy them, if they are exposed thereto; tho' in mild Winters they will live in the open Air. This Plant never produces good Seeds in this Country.

The fifth Sort grows in the Country about the *Cape of Good Hope*: this is a Shrub which rises to the Height of seven or eight Feet, and divides into many Branches, which are closely beset with thick stiff Leaves, much like those of the *Cneorum Matthioli*: at the Division of the Branches, the Flowers are produced, which are round, woolly, and of a silver Colour; and at first have the Appearance of the Katkin of the Mountain Osier. This Shrub may be propagated by Cuttings; which should be planted in *April*, just as the Plant begins to shoot, in Pots filled with fresh light Earth, and plunged into a very moderate Hot-bed of Tanners Bark; observing to water and shade them until they have taken Root; after which time you must inure them by degrees to bear the open Air; then they must be taken out of the Hot-bed, and may be placed amongst other Exotics in a well-sheltered Situation; observing to water them in dry Weather: in this Place they may remain till *October*, when they should be removed into the Green-house, and placed where they may have as much free Air as possible in mild Weather: for this Plant only requires to be screened from Frost, being tolerably hardy: with this Management the Plants will thrive well, and in a few Years produce Flowers.

The sixth Sort was found in the Mountains of *Granada*, by *D. Albinus*.

binus. This Plant is of low Growth, and may be propagated as the first; as may also the seventh Sort, which is the least of all the Sorts, and the most hardy; therefore should have a shady Situation in Summer; but in Winter it will be proper to shelter them from severe Frost.

The eighth and ninth Sorts were found by Dr. *Tournefort* in the *Levant*: these are somewhat tender, and should be sheltered from the Frost in Winter; but in Summer they may be exposed with other hardy Exotic Plants, and require to be frequently watered in dry Weather. These may be propagated by Seeds, or by planting the Cuttings, as was directed for the former Sorts.

GLORIOSA, The Superb-lily.

The Characters are;

The Flower is naked, having six long waved Petals, which are reflex'd to the Bottom; in the Centre is placed the Pointal, which is attended by six Stamina, which are shorter than the Petals: the Pointal afterward becomes an oval Pod, divided into three Cells, which are filled with roundish Seeds.

We have but one Species of this Plant; *viz.*

GLORIOSA. *Lin. Hort. Cliff.*
The Superb-lily.

This was by former Botanists titled, *Methonica Malabarorum*; but as that Name alluded to the Place of its Growth, Dr. *Linnaeus* has rejected it, and given this of *Gloriosa* to it, from the splendid Appearance which the Flowers of this Plant make.

This is a Native of *Malabar*, from whence the Roots have been brought to *Europe*, and are preserved in several curious Gardens. The Roots of this Plant are long and fleshy, being in Size about the Thickness of a little Finger. These Roots creep in the Ground, and the Plant

is thereby propagated; but it is too tender to live in the open Air in *England*. In *Holland* the Gardeners take the Roots out of the Ground in Autumn; and preserve them in dry Sand in their Stoves all the Winter; and in the Spring of the Year they plant them in Pots fill'd with light Earth, and plunge them into an Hot-bed of Tanners Bark, where they remain constantly during all the Summer; observing to give free Air to the Plants in mild Weather, and to water them as often as they find the Earth dry: with this Management they produce their Flowers in *July* and *August*, and their Stems decay to the Root in *October*, when they take up the Roots.

The Stems of this Plant usually grow about two Feet high, having Tendrils or Claspers at the End of the Leaves, by which they fasten themselves to any thing near them; therefore should be supported by Sticks, to prevent their trailing on the neighbouring Plants. The Flowers are produced at the Extremity of the Shoots, from the Wings of the Leaves, which are of a beautiful Flame-colour. There is seldom more than one Flower upon a Foot-stalk; but as there are many Foot-stalks on each Plant, they continue to flower after each other. This Plant is very poisonous: therefore Care should be taken not to let either the Leaves or Roots be in the Way of ignorant Persons, lest they should injure themselves unawares.

GLYCINE, Knobbed-rooted Liquorice-vetch.

The Characters are;

It hath a papilionaceous Flower, the Standard being heart-shaped; the Wings are oblong, and oval at the Top: the Keel is very narrow, falcated, and reflexed at the Point, where

where it meets the Standard, and is there broader: there are nine Stamina collected in a Body, and one single, which are shut up in the Standard, with a spiral Pointal, which afterward becomes a cylindrical Pod, opening both Ways, and filled with kidney-shaped Seeds.

The Species are;

1. *GLYCINE radice tuberosa*. Lin. Hort. Cliff. Apios, or knobbed-rooted Liquorice-vetch.

2. *GLYCINE caule perenni*. Lin. Hort. Cliff. The Carolina Kidney-bean-tree, vulgo.

The first Sort was brought from Virginia, where it grows plentifully in the Woods: this has large knobbed Roots, which remain several Years in the Ground, and annually shoot up several twining Stalks, which rise to the Height of ten or twelve Feet, twisting round whatever stands near them: these are garnished with winged Leaves, having many *Alæ*, and ending with an odd Lobe. The Flowers are produced in Spikes from the Wings of the Leaves, toward the Upper-part of the Stalks, which are of a dark Flesh-colour. These are rarely succeeded by Pods in England; or if they are, the Seeds are never perfected, the Seasons being too cool for them.

The Roots of this Plant will live thro' the Winter in the open Air, if they are planted in a light Soil, and a warm Situation; and will thrive much better, if they are planted in a warm Border, than when they are kept in Pots: and if in very severe Winters the Roots are well covered, either with rotten Tan, or Peas-haulm, to keep out the Frost, there will be no Danger of their decaying.

I have seen these Plants set round an Arbour, which they have covered in Summer; and when the Flowers

were blown, they made a good Appearance; but it is pretty late in the Season before they get up high enough to make a Shade.

The Seeds of this Sort are frequently brought from America, which may be sown in the common Ground in the Spring, and the Plants will come up the same Year; but should remain in the same Place until the next Spring: tho' they should be covered in Winter; for the young Roots will be in more Danger of suffering by the Frost, than when they have acquired more Strength. In the Beginning of April the Roots may be transplanted where they are to remain. These also propagate by Off-sets from the Root, which may be transplanted at the same time as the Seedling-plants.

This is ranged by Dr. Tournefort under the Genus of *Astragalus*, or Milk-vetch; and is titled, *Astragalus tuberosus scandens, fraxini folio*.

The second Sort was brought from Carolina; but has been since observed in Virginia, and some other Places in North America. This Sort has woody Stalks, which twist themselves together, and also twine round any Trees that grow near, and will rise to the Height of fifteen Feet, or more. The Leaves are winged, and in Shape somewhat like the Ash-tree, but have a greater Number of *Pinne*. The Flowers are produced from the Wings of the Leaves, which are of a purple Colour: these are succeeded by long cylindrical Pods, shaped like those of the scarlet Kidney-bean, containing several kidney-shaped Seeds; but these are never perfected in England.

This climbing Shrub is propagated in several Nurseries near London, where it is known by the Name of

of Carolina Kidney-bean-tree. It is increased by laying down the young Branches in *October*; which will be rooted well by that time Twelvemonth, especially if they are duly watered in dry Weather, and may then be transplanted either into a Nursery for a Year to get Strength, or to the Place where they are to remain for good; which should be in a warm light Soil, and a sheltered Situation, where they will endure the Cold of our ordinary Winters very well; and if their Roots are covered with Straw, Fern, Peas-haulm, or any other light Covering, there will be no Danger of their being destroyed by the Frost.

GLYCYRRHIZA, Liquorice.

The Characters are;

It hath a papilionaceous Flower: the Pointal, which arises from the Empalement, becomes a short Pod, containing several kidney-shaped Seeds: the Leaves are placed by Pairs joined to the Mid-rib, and are terminated by an odd Lobe.

The Species are;

1. GLYCYRRHIZA *fliquosa*, vel *Germanica*. C. B. P. Common Liguorice.

2. GLYCYRRHIZA *capite echinato*. C. B. P. Rough-podded Liguorice.

3. GLYCYRRHIZA *Orientalis*, *filiquis hirsutissimis*. Tourn. Cor. Eastern Liguorice, with hairy Pods.

The first Sort is that which is commonly cultivated in *England* for Medicine: the other two Kinds are preserved in curious Botanic Gardens for Variety; but their Roots are not so full of Juice as the first, nor is the Juice so sweet; tho' the second Sort seems to be that which *Dioscorides* has described and recommended; but I suppose the Goodness of the first has occasioned its be-

ing so generally cultivated in *Europe*.

The two Sorts last-mentioned perfect their Seeds in *England*, by which they may be propagated; whereas the common Sorts seldom produce any in this Country. They may also be propagated by Roots, as the common Sort.

This Plant delights in a rich light sandy Soil, which should be three Feet deep at least; for the greatest Advantage consists in the Length of the Roots: the greatest Quantity of Liguorice which is propagated in *England* is about *Pontefract* in *Yorkshire*, and *Godalmin* in *Surry*; tho' of late Years there hath been a great deal cultivated in the Gardens near *London*: the Ground in which you intend to plant Liguorice should be well dug and dunged the Year before you plant it, that the Dung may be perfectly rotted, and mixed 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, 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 ten Inches long, and perfectly sound.

The best Season for planting them is towards 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 would plant them; then with a long Dibble made on purpose, put in the Shoot, so that the whole Plant may be set strait into the Ground, with the

Head

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 decayed, 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 fork 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 injure the Roots. This stirring of the Ground will not only preserve it clean from Weeds a long time, but also greatly strengthen the Plants.

The Distance which I have allowed 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 Large-

ness of the Roots is 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 decayed; 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, Cudweed.

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 Cudweed.

2. GNAPHALIUM *minus*, *scu herba impia*. *Park.* Common Cudweed.

3. GNAPHALIUM *maritimum*. *C. B. P.* Sea Cudweed, or Cottonweed.

The two first Sorts are found wild in divers Parts of *England*, upon moist stony Heaths, especially in such Places where the Water stood during the Winter. The second Sort is placed in the Catalogue of Simples annexed

annexed 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; tho', 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 exposed until the End of *October*, when you should remove the Pots into Shelter for the Winter-season. But although I have advised the planting of 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 destroyed. They must be frequently watered in dry Weather, otherwise they will not flower.

GNAPHALODES.

The Characters are;

It is a Plant with a flosculous Flower, consisting of several barren Florets: the Embryoes, which constituted the Empalement of the Flower, become a crested Fruit, pregnant with a Seed for the most part oblong.

We have but one Species of this Plant at present in *England*; which is,

GNAPHALODES Lusitanica. Tourn. Portugal Gnaphalodes.

This is a low annual Plant, which seldom rises above four Inches high, but divides into several trailing Branches, which are beset with small silver-colour'd Leaves, which have a great Resemblance to those of Cudweed; tho' the Flowers are so small as not to be conspicuous, unless they are magnified by a Glass.

This Plant is seldom preserved in Gardens, unless it be for the sake of Variety; for there is little Beauty in it. The Seeds of this Plant may be sown the Beginning of *April*, on a Bed of light Earth, in an open Situation; and when the Plants are come up, they should be kept clean from Weeds, and in very dry Weather they should be sometimes refreshed with Water: with this Management the Plants will flower in *July*, and in *August* the Seeds will ripen, when the Plants will soon after decay.

GOOSBERRY. *Vide* *Grossularia*.

GORZ. *Vide* *Ulex*.

GOSSYPIUM.

The Characters are;

The Flower hath a double Empalement, the outer being large, consisting of one Leaf, and divided at the Brim into three Parts; the inner consists of one Leaf, which is cut into five Parts, and opens like a Cup: the Flower consists of five Leaves, which are joined together

together at the Bottom, are heart-shaped, and spread open, in the same manner as the Mallow: in the Centre of the Flower is situated a Column covered with Stamina at the Top, surrounding the Pointal, which afterwards turns to a roundish Pod, opening in four Cells, containing many oval Seeds wrapp'd up in the Cotton.

The Species are;

1. *Gossypium foliis palmatis quinquepartitis*. The common annual Cotton.

2. *Gossypium foliis palmatis, septem-angularis, ramis patulis hirsutis*. The green seeded Indian Cotton.

3. *Gossypium caule erecto arborico*. The American Tree Cotton.

The first Sort is the common Levant Cotton, which is cultivated in several Islands of the Archipelago, as also in Malta, Sicily, and the Kingdom of Naples: it is sown in tilled Ground in the Spring of the Year; and is ripe in about four Months after, when it is cut down in Harvest as Corn is in England; and is sown every Year, the Plants always perishing soon after the Seeds are ripe: this Plant grows about two Feet high, sending forth some lateral Branches toward the Upper-part, which produce Flowers and Fruit: the Pods of this Sort of Cotton are not bigger than a Nutmeg, and contain but little Cotton.

The second Sort is a Native of the East and West-Indies; from whence the Seeds have been brought to Europe: this is also an annual Plant, which perishes soon after the Seeds are ripe. It rises to the Height of three Feet or more, and sends out many lateral Branches, which extend to a great Distance, where they are allowed room to grow: some of these Branches will produce four or five Pods of Cotton upon each; so

that from a single Plant thirty or more Pods may be produced; and each of these are as large as middling Apples; so there will be a much greater Produce from this than from the other Sort; and the Staple is much finer: therefore it is well worth the Attention of the Inhabitants of the British Colonies in America, to cultivate and improve this Sort; since it will succeed in Carolina, and some other Parts of the Continent of America, full as well as in the Islands: and as the present Use of this Commodity is so great, as to advance the Price to double of what it was sold for some Years since; so there are few things which will produce more Profit to the Planter; than this of the fine Sort of Cotton.

This Sort may be easily distinguished by the Seeds, which are green; whereas those of all the other Sorts are black, as also by the Size of the Pods, which are much larger than those of the other; the Cotton is also much finer: the Flowers of this Sort are large, of a pale Sulphur-colour, inclining to white; and at the Bottom of each Petal there is a large purple Spot; so that when they are open, they make a fine Appearance.

The third Sort grows plentifully in most of the Islands in America, as also in Egypt, and many other warm Countries: this will grow to the Height of fifteen Feet or more, and becomes woody; the Plants continuing several Years: it is propagated in several of the Islands in America, as also in Egypt; but the Cotton is not so valuable as that of the second Sort, therefore not worth cultivating, where the other can be obtained, which is already in Plenty in South Carolina; so may be easily procured from thence.

All these Sorts are very tender Plants; therefore will not thrive in the open Air in *England*; but they are frequently sown in curious Gardens for Variety: the two first Sorts will produce ripe Seeds in *England*, if their Seeds are sown early in the Spring, upon a good Hot-bed; and when the Plants are come up, they may be planted into separate Pots, and plunged into an Hot-bed of Tanners Bark, to bring them forward; and when they are grown too tall to remain under the Frames, removed into the Tan-bed in the Stove, and shifted into larger Pots, when their Roots have filled the other: with this Management, I have had their Flowers appear in *July*; and toward the End of *September* the Seeds have been perfectly ripe, and the Pods as large as those produced in the *East* and *West-Indies*: but if the Plants are not brought forward early in the Spring, it will be late in the Summer before the Flowers will appear; and there will be no Hopes of the Pods coming to Perfection.

The Shrub Cotton will rise from the Seeds very easily, if they are sown upon a good Hot-bed; and when they are sown early in the Spring, and brought forward in the same manner as hath been directed for the former Sorts, the Plants will grow to be five or six Feet high the same Summer: but it is difficult to preserve the Plants thro' the Winter, unless they are hardened gradually in *August* during the Continuance of the warm Weather; for when they are forced on at that time, they will be so tender, as to render them incapable of resisting the least Injury. The Plants of this Sort must be placed in the Bark-stove in Autumn, and kept in the first Class of Heat; otherwise they will not live through the Winter in *England*.

GRAFTING is the taking a Shoot from one Tree, and inserting it into another; in such a manner, as that both may unite closely, and become one Tree. This is called by the antient Writers in Husbandry and Gardening, *Incision*, to distinguish it from Inoculating or Budding; which they call *inferere Oculos*.

The Use of Grafting is to propagate any curious Sorts of Fruits, so as to be certain of the Kinds; which cannot be done by any other Method; for as all the good Fruits have been accidentally obtained from Seeds, the Seeds of these, when sown, will many of them degenerate, and produce such Fruit as are not worth cultivating; but when Shoots are taken from such Trees as do produce good Fruit, these will never alter from their Kind, whatever be the Stock or Tree on which they are grafted; for though the Grafts receive the Nourishment from the Stocks, yet they are never altered by them, but continue to produce the same Kind of Fruit, as the Tree from which they were taken: the only Alteration is, that when the Stocks on which they are grafted do not grow so fast, and afford a sufficient Supply of Nourishment to the Grafts, they will not make near so great Progress, as they otherwise would do; nor will the Fruit they produce be so fair, and sometimes not so well flavour'd.

These Shoots are termed Cions or Grafts: in the Choice of these the following Directions should be carefully observed. 1st, That they are Shoots of the former Year; for when they are older, they never succeed well. 2^{dly}, Always to take them from healthy, fruitful Trees; for if the Trees are sickly from whence they are taken, the Grafts

very often partake so much of the Distemper, as rarely to get the better of it, at least for some Years: and when they are taken from young luxuriant Trees, whose Vessels are generally large, they will continue to produce luxuriant Shoots; and are seldom so fertile as those which are taken from fruitful Trees, whose Shoots are more compact, and the Joints closer together; at least it will be a much greater Number of Years before these luxuriant Grafts begin to produce Fruit, if they are managed with the greatest Skill. 3dly, You should prefer those Grafts which are taken from the lateral or horizontal Branches, to those from the strong perpendicular Shoots, for the Reasons before given.

These Grafts or Cions should be cut off from the Trees before their Buds begin to swell: which is generally three Weeks or a Month before the Season for Grafting; therefore, when they are cut off, they should be laid in the Ground with the Cut downwards, burying them half their Length, and covering their Tops with dry Litter, to prevent their drying: if a small Joint of the former Year's Wood is cut off with the Cion, it will preserve it the better; and when they are grafted, this may be cut off; for at the same time the Cions must be cut to a proper Length, before they are inserted into the Stocks; but till then, the Shoots should remain their full Length, as they were taken from the Tree, which will preserve them better from shrinking: if these Cions are to be carried to a considerable Distance, it will be proper to put their cut Ends into a Lump of Clay, and to wrap them up in Moss; which will preserve them fresh for a Month, or longer: but these should be cut off earlier from

the Trees, than those which are to be grafted near the Place where the Trees are growing.

Having given Directions for the Cions and Grafts, we next come to that of the Stocks, which is a Term applied to the Trees intended for grafting: these are either such old Trees as are already growing in the Places where they are designed to remain, whose Fruit is intended to be changed; or young Trees, which have been raised in a Nursery for a Supply to the Garden: in the former Case there is no other Choice, but that of the Branches; which should be such as are young, healthy, well situated, and as have a smooth Bark: if these Trees are growing against Walls or Espaliers, it will be proper to graft six, eight, or ten Branches, according to the Size of the Trees; by which Method they will be much sooner furnished with Branches again, than when a less Number of Cions are put in: but in Standard-trees, four, or at most six Cions will be sufficient.

In the Choice of young Stocks for Grafting, you should always prefer such as have been raised from the Seed, and that have been once or twice transplanted. Next to these, are those Stocks which have been raised from Cuttings or Layers; but those which are Suckers from Roots of other Trees, should always be rejected; for these are never so well rooted as the others, and constantly put out a great Number of Suckers from their Roots, whereby the Borders and Walks of the Garden will be always pestered with them during the Summer-season; which is not only unsightly, but they also take off Part of the Nourishment from the Trees.

If these Stocks have been allowed a proper Distance in the Nursery where

where they have grown, the Wood will be better ripened, and more compact, than those which have grown close, and have been thereby drawn up to a greater Height: the Wood of these will be soft, and their Vessels large, so that the Cions grafted into them will shoot very strong; but they will be less disposed to produce Fruit than the other; and when Trees acquire an ill Habit at first, it will be very difficult to reclaim them afterward.

Having directed the Choice of Cions and Stocks, we come next to the Operation; in order to which you must be provided with the following Tools:

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. Bals 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 turned and mixed, like Morter, 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 Stonehorse 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; and if there be a Quantity of Salt added, it will prevent the

Clay from dividing in dry Weather, these must be well stirred together, putting Water to them after the manner of making Morter: it should be hollowed like a Dish, and filled with Water, and kept every other Day stirr'd: but it ought to be remembered, that it should not be exposed to the Frost, or drying Winds, and that the oftener it is stirr'd and wrought, the better.

Of late Years some Persons have made use of another Composition for Grafting, which they have found to answer the Intention of keeping out the Air, better than the Clay before prescribed. This is composed of Turpentine, Bees-wax, and Resin, melted together, which, when of a proper Consistence, may be put on the Stock round the Graft, in the same manner as the Clay is usually applied; and tho' it be not above a quarter of an Inch thick, yet it will keep out the Air more effectually than the Clay; and as Cold will harden this, there is no Danger of its being hurt by Frost, which is very apt to cause the Clay to cleave, and sometimes fall off; and when the Heat of the Summer comes on, this Mixture will melt, and fall off without any Trouble. In using of this, there should be a Tin or Copper-pot, with Conveniency under it to keep a very gentle Fire with Small-coal, otherwise the Cold will soon condense the Mixture; but you must be careful not to apply it too hot, lest you injure the Graft. A Person who is a little accusom'd to this Composition, will apply it very fast; and it is much easier for him than Clay, especially if the Season should prove cold.

There are several Ways of Grafting; the principal of which are four:

1. Grafting in the Rind, called also Shoulder-grafting, which is only proper for large Trees: this is called Crown-grafting, because the Grafts are set in form of a Circle or Crown; and is generally performed about the Latter-end of *March*, or the Beginning of *April*.

2. Cleft-grafting, which is also called 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 performed in the Months of *February* and *March*, and supplies the Failure of the Escutcheon-way, which is practised in *June*, *July*, and *August*.

3. Whip-grafting, which is also called 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 Ablastation: 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 joined: this is to be performed in the Month of *April*, and is also called Inarching, and is chiefly used for *Jasmines*, *Oranges*, and other tender Exotic Trees, which will not succeed by either of the other Methods of Grafting.

We next come to the manner of performing the several Ways of Grafting:

The first Method, which is term'd Rind or Shoulder-grafting, is seldom practised, but on large Trees, where either the Head, or the large Branches, are cut off horizontally, and two or four Cions put in, according to the Size of the Branch or Stem: in doing of this, the Cions are cut flat on one Side, with a Shoulder to rest upon the Crown of the Stock; then

the Rind of the Stock must be raised up, to admit the Cion between the Wood and the Bark of the Stock, which must be inserted about two Inches; so as the Shoulder of the Cion may meet, and closely join the Crown of the Stock; and after the Number of Cions are inserted, the whole Crown of the Stock should be well clayed over, leaving two Eyes of the Cions uncovered therewith; which will be sufficient for shooting: this Method of grafting was much more in Practice formerly than at present: the Discontinuance of it was occasioned by the ill Success it was attended with; for as these Cions were placed between the Rind of the Stock and the Wood, so they were frequently blown out by strong Winds, after they had made large Shoots; which has sometimes happened after five or six Years Growth; so that whenever this Method is practised, there should be some Stakes fastened to support the Cions, until they have almost covered the Stock.

The next Method is termed Cleft or Stock-grafting: this is practised upon Stocks or Trees of a smaller Size; and may be used with Success where the Rind of the Stock is not too thick; whereby the inner Bark of the Cion will be prevented joining to that of the Stock: this may be performed on Stocks or Branches, which are more than one Inch Diameter; in doing of this, the Head of the Stock or Branch must be cut off with a Slope, and a Slit made the contrary Way, in the Top of the Slope, deep enough to receive the Cion, which should be cut sloping like a Wedge, so as to fit the Slit made in the Stock, being careful to leave that Side of the Wedge, which is to be placed outward, much thicker than the other; and in putting the Cion into the Slit of the Stock,

Stock, there must be great Care taken to join the Rind of the Cion to that of the Stock; for if these do not unite, the Grafts will not succeed: when this Method of Grafting is used to Stocks which are not strong, it will be proper to make a Ligature of Bafs, to prevent the Slit of the Stock from opening; then the Whole should be clayed over, to prevent the Air from penetrating the Slit so as to destroy the Grafts; only leaving two Eyes of the Cions above the Clay for shooting.

The third Method is termed Whip or Tongue-grafting, which is the most commonly practised of any by the Nursery-men near *London*, especially for small Stocks; because the Cions much sooner cover the Stocks in this Method, than in any other.

This is performed by cutting off the Head of the Stocks sloping; then there must be a Notch made in the Slope toward the Upper-part downward, a little more than half an Inch deep, to receive the Cion; which must be cut with a Slope upward, and a Slit made in this Slope like a Tongue; which Tongue must be inserted into the Slit made in the Slope of the Stock; and the Cion must be placed on one Side of the Stock, so as that the two Rinds of both Cion and Stock may be equal, and join together exactly; then there should be a Ligature of Bafs to fasten the Cion, so as that it may not be easily displaced; and afterward clay it over, as in the former Methods.

The fourth Sort of Grafting is termed Inarching-grafting, by Approach or Ablactation. This is only to be performed when the Stocks, which are design'd to be grafted, and the Tree from which the Graft is to be taken, stand so near together, or may be brought so near each other, as that their Branches may be united to-

gether: this Method of Grafting is commonly practised on tender Exotic Plants, and some other Sorts which do not succeed in any of the other Methods, as was before observed.

In performing of this Operation, a Part of the Stock or Branch must be cut off about two Inches in Length, observing always to make choice of a smooth Part of the Stock; then a small Notch should be made in the Stock downward, in the same manner as hath been directed for Whip-grafting; then the Branch of the Tree designed to be inarched should have a Part cut off in the like manner as the Stock, and a Slit made upward in this, so as to leave a Tongue; which Tongue should be inserted into the Slit of the Stock, observing to join their Rinds equally, that they may unite well together: then make a Ligature of Bafs, to keep them exactly in their Situation; and afterward clay this Part of the Stock over well, to keep out the Air: in this Method of Grafting, the Cion is not separated from the Tree, until it is firmly united with the Stock; nor is the Head of the Stock or Branch, which is grafted, cut off till this time, and only half the Wood pared off with a Slope, about three Inches in Length; and the same of the Cion or Graft.

This Method of Grafting is not performed so early in the Season, as those of the other, it being done in the Month of *April*, when the Sap is flowing; at which time the Cion and Stock will join together, and unite much sooner than at any other Season.

The Walnut, Fig, and Mulberry, will take, by this Method of Grafting; but neither of these will succeed in any of the other Methods: there are also several Sorts of Evergreens, which may be propagated by

this Method of Grafting: but all the Trees which are grafted in this Way are weaker, and never grow to the Size of those which are grafted in the other Methods; therefore this is rarely practised, but on such Sorts of Trees as will not take by the other Methods.

The next thing which is necessary to be known, by those who would practise this Art, is, what Trees will take and thrive by being grafted upon each other: and here there have been no sure Directions given by any of the Writers on this Subject; for there will be found great Mistakes in all their Books, in relation to this Matter; but as it would swell this Article to too great Size, if all the Sorts of Trees were to be here enumerated, which will take upon each other by Grafting, I shall put down such general Directions, as, if attended to, will be sufficient to instruct Persons, so as they may succeed.

All such Trees as are of the same Genus, *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 distinguished from all other Trees: but many of these are very subject to emit large Quantities of Gum from such Parts of the Trees as are deeply cut and wounded; which, in the tender Trees of this Kind, *viz.* Peaches and Nectarines, as it 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 joined with the Stock, whereby they are often destroyed; as also the Laurel on the Cherry, or the Cherry on the Laurel. All the Mast-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 performed, 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 Exotic Trees are not only propagated, but also rendered 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 rendered more capable to endure the Cold; as hath been experienced 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, rendered

rendered capable of resisting our severest Cold.

And these different Graftings seem to have been greatly in Use among the Antients; though 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 Chestnut, with many others of the like Kind; most of which I have already tried; and find them all Mistakes; or at least they did not mean the same Plants which at present are called 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 examined, it will be found, that they often copied 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 *Cæsalpinus'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 observed, from many repeated Trials, that however Plants may resemble each other in the Shape and Make of their Leaves, Manner of Shooting, &c. 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.

GRAMEN, Grafs.

There are a great Variety of this Tribe, which are divided into several *Genera* by some of the modern Botanists; but I shall not enlarge so far on this Article, as to enumerate all the Differences which they have made; but shall beg leave to insert

some of the Sorts which are commonly cultivated in *England*.

The *Species* are;

1. GRAMEN *loiaceum, angustiore folio & spica, C. B. P.* Red Darnel-grafs, or Rye-grafs.

2. GRAMEN *pratense minus seu vulgatissimum. Raii Syn.* The most common Meadow-grafs.

3. GRAMEN *secalinum. Ger. Emac.* Tall Meadow Rye-grafs.

4. GRAMEN *secalinum & secale sylvestre. Ger. Emac.* Wild Rye, or Rye-grafs.

5. GRAMEN *spicatum, semine miliaceo albo. Tourn.* Common Canary Grafs.

6. GRAMEN *spica triticea, repens vulgare, caninum dictum. Raii Syn.* Common Dogs-grafs, or Quick-grafs, or Couch-grafs.

7. GRAMEN *spicatum, durioribus & crassioribus locustis, spica brevi. Tourn.* French Haver-grafs.

8. GRAMEN *paniculatum aquaticum, Phalaridis semine, folio variegato. Inst. R. H.* The striped Grafs, or Ribband-grafs.

9. GRAMEN *dactylon esculentum. C. B. P.* The Manna-grafs.

The four first-mentioned Sorts grow pretty common in the Pastures in most Parts of *England*, and are often intermixed in the same Pasture; so that it is very rare to meet with a Pasture, which hath not several Sorts of Grafs in it; but the Sort which is generally sown about *London*, is the Rye-grafs, which is very hardy; and will grow on cold four Land better than most other Sorts; but as it seldom happens, that the Seed is saved intire, without a Mixture of other Grafs seeds, it is very difficult to meet with a Pasture, which has not many Sorts in it.

The best Season for sowing Grafs-seeds is the Latter-end of *August*, and the Beginning of *September*, that

the Grass may be well rooted before the Frost sets in, which is apt to turn the Plants out of the Ground, when they are not well rooted. This Seed should be sown in moist Weather, or when there is a Prospect of Showers, which will soon bring the Grass up; for the Earth being at that Season warm, the Moisture will cause the Seeds to vegetate in a few Days: but where this cannot be performed in Autumn, the Seeds may be sown in the Spring; toward the Middle of *March* will be a good time, if the Season proves favourable.

The Land on which Grass-seed is intended to be sown, should be well plowed and cleared from the Roots of noxious Weeds, such as Couch-grass, Fern, Rushes, Heath, Gorse, Broom, Rest-harrow, &c. which, if left in the Ground, will soon get the better of the Grass, and overrun the Land. Therefore in such Places where either of these Weeds abound, it will be a good Method to plow up the Surface in *April*, and let it lie some time to dry; then lay it in small Heaps, and burn it. The Ashes so produced will spread on the Land; and be a good Manure for it. The Method of burning the Land is particularly directed under the Article *Land*, which see; especially if it is a cold stiff Soil: but where Couch-grass, Fern, or Rest-harrow, is in Plenty, whose Roots run far under-ground, the Land must be plowed two or three times pretty deep in dry Weather, and the Roots carefully harrowed off after each Plowing; which is the most sure Method to destroy them. Where the Land is very low, and of a stiff clayey Nature, which holds Water in Winter, it will be of singular Service to make some under-ground Drains to carry off the Wet; which, if detained too long on the Ground,

will render the Grass four. The Method of making these Drains is prescribed under the Article *Land*; which see.

Before the Seed is sown, the Surface of the Ground should be made level and fine, otherwise the Seed will be buried unequal. The Quantity of Grass-seed for an Acre of Land is usually three Bushels, if the Seed is clean, otherwise there must be a much greater Quantity allow'd: when the Seed is sown, it must be gently harrowed in, and the Ground rolled with a wooden Roller; which will make the Surface even, and prevent the Seeds being blown in Patches. When the Grass comes up, if there should be any bare Spots, where the Seed has not grown, they may be sown again, and the Ground rolled, which will fix the Seeds; and the first kindly Showers will bring up the Grass, and make it very thick.

Some People mix Clover and Rye-grass-seeds together, allowing ten Pounds of Clover, and one Bushel of Rye-grass to an Acre: but this is only to be done where the Land is design'd to remain but three or four Years in Pasture, because neither of these Kinds are of long Duration; so that where the Land is designed to be laid down for many Years, it will be proper to sow with the Grass-seeds some white Trefoil, or *Dutch* Clover; which is an abiding Plant, and spreads close on the Surface of the Ground, sending forth Roots at every Joint; and makes the closest Sward of any; and is the sweetest Feed for Cattle: so that whenever Land is laid down to Pasture, there should always be six or eight Pounds of this Seed sown upon each Acre.

The following Spring, if there should be any Thistles, Ragwort, or such other troublesome Weeds, come

up among the Grass, they should be carefully cut up with a Spaddle before they grow large; and this should be repeated two or three times in the Summer, which will effectually destroy them; for if these Plants are suffered to ripen their Seeds, they will be blown all over the Ground, their Seeds having Down adhering to them, which assists their Transportation; so that they are often carried by the Wind to a great Distance, and thereby become very troublesome Weeds to the Grass. For want of this Care, how many Pastures may be seen almost overrun with these Weeds, especially the Ragwort; when a small Expence, if applied in time, would have intirely extirpated them! for a Man may go over several Acres of Land in one Day with a Spaddle, and cut up the Weeds just below the Surface of the Ground, turning their Roots upwards; which if done in dry Weather, they will soon decay; but this must always be performed before the Plants come to have their Seeds formed; because, after that, many Sorts will live long enough to nourish their Seeds after they are cut, so as to ripen them: and there will be a Supply of Weeds for some Years after, which cannot be extirpated without a much greater Expence.

The proper Management of Pasture-land is the least understood of any Part of Agriculture: the Farmers never have attended to this, being more inclined to the Plough; tho' the Profits attending that have not of late Years been so great, as to encourage them in that Part of Husbandry: but these People never think of laying down Land for Pasture, to continue longer than three Years; at the End of which time they plow it up again, to sow it with Grain.

Their usual Method is to sow Rye grass and Trefoil with Barley; when they intend to lay down the Ground; or sometimes sow only Clover with their Barley: nor is it possible to convince these People of their Error in sowing Corn with their Grass; which they affirm to be useful, in shading the Grass; not considering how much the Corn draws away the Nourishment from the Grass: but it is in vain to write to these People, who are not to be convinced, either by Argument or Experiment; so much are they swayed by Custom, as not to be led or driven out of their own Method: but as their Practice of Husbandry has greatly lessened the Circumstances of the Farmers, so that the Lands are daily falling into the Hands of the Owners; therefore this Part of Husbandry should by them be principally attended to, as it may be carried on with a much less Expence: for Pasture-land requires but few Hands to manage; whereas the sowing of Corn is attended with great Expence, and the Profit is very precarious: but when this is attended with Success, and the Grain at a moderate Price, if the whole Labour is to be paid for, there will be little coming to the Owner for Rent, when the Balance is fairly stated; but in this most Gentlemen deceive themselves, and often suppose they gain by Farming, when perhaps the whole Rent of the Land is lost: therefore to avoid the Trouble which attends this Sort of Husbandry, it will be the best Method to turn as much of their Land into Pasture, as they can; which, by Grazing and Feeding of Sheep, will be attended with little Expence, and a sure Profit.

The *Canary Grass* is sown in some Parts of *England*, for the Seeds, which

which are used to feed Birds: the white Sort is the best. These Seeds should be sown the Beginning of *March*, on a moderate light Soil; for they do not thrive well on strong cold Land. The Surface of the Ground should be well stirred, and made even, before the Seeds are sown, that they may be equally buried. Three Bushels of this Seed are sufficient for an Acre of Land. When the Seed is sown, which should be done in dry Weather, the Ground must be gently harrowed to bury the Seeds, and then the Whole should be rolled with a wooden Roller; which will smooth the Surface of the Ground, and prevent the Seeds from being removed by strong Winds. When the Grass is come up, if there should be any rank Weeds amongst it, they must be cut up with a Spaddle, as was before directed; for if they are permitted to grow, they will do great Damage to the Grass. The Middle of *August*, the Seeds will ripen, when it should be cut, and, as soon as it is dry, should be threshed out, or stacked; for if it remains abroad, the Birds will devour it: if the Crop arrives to any Degree of Perfection, there will be upward of four Quarters on an Acre of Land.

The Couch-grass is one of the most troublesome Weeds in Cornlands and Gardens, and is with great Difficulty extirpated: for the Roots of this Kind run very far underground, and every small Part of the Root will grow; so that if the Roots are torn into small Pieces, every one of them will propagate where-ever they are left in the Ground. Where the Land is stocked with this Grass, it should be plowed two or three times in dry Weather, during the Heat of the Summer; and after each Plowing, the Ground should

be carefully harrowed, to draw the Roots out, which should be drawn into Heaps, and then carted off the Ground; for if the Roots are left, they will strike into the Ground after the first Shower of Rain, and soon become troublesome: such foul Land is very unfit to sow with Grain; therefore it will be proper to sow with Turneps, and Beans or Peas, which require hoeing two or three times: which, if done in very dry Weather, will be of great Use to destroy the Couch-grass. Where this Method is not observed, it is common to see large Tracts of Land, which are sown with Grain, so much overrun with this Grass, that many times the Crop doth not produce the same Quantity of Grain as was sown on the Ground.

In Gardens this Grass is much easier destroyed than in large Fields because the Ground being frequently dug, Care may be taken to pick out the Roots in digging; and if there be any left, which appear afterward, the Roots may be easily forked out; so that in one Year it may be destroyed, if proper Care be taken. But where the Ground is very full of the Roots of Couch-grass, and the Land will admit of being trenched three Spits deep, that will be the most effectual Way of destroying it, and will be cheaper than picking out the Roots by Hand; for by trenching the Ground so deep, the Couch will be buried near two Feet, which will rot it; and turning the Ground so deep, will be moreover of great Service to it.

This Sort of Grass is what the College of Physicians have ordered to be used in Medicine; so that whenever Grass is prescribed, this is what is meant.

The bearded wild Oats, or Haver, is frequently found amongst Corn in several Parts of England, where sometimes they become troublesome weeds; for if they are not drawn out of the Corn before it is ripe, it will be difficult to be separated from the Corn in the Barn: but as they are annual Plants, they may be easily destroyed with a little Care.

The striped Grass is preserved in many Gardens for the Beauty of its variegated Leaves, which will continue fresh the greatest Part of the year.

This Sort is easily propagated by cutting the Roots, either in Spring or Autumn; for every Off-set will increase to be a large Root in one year's time. It will grow on any Soil, or in any Situation; therefore may be planted in any abject Part of the Garden, where it will thrive, and afford an agreeable Variety. This Sort is by many Persons called Ribband-grass, from the Stripes of white and Green, which run the whole Length of the Blade, like the Stripes in some Ribbands.

Clover-grass. See *Trifolium*.

Saint Fain. See *Onobrychis*.

La Lucerne. See *Medica*.

Noneuch. See *Melilotus*.

Trefoil. See *Trifolium*.

Spurry. See *Spergula*.

GRANADILLA, Passion-flower.

The Characters are;

It hath a double Calyx, the first consisting of three Leaves, the other five Leaves, which expand in form a Star: the Flowers consist of five awes each, and are of a rosaceous colour: in the Centre of the Flower rises the Pointal, with a Crown enlarged at the Bottom, but furnished with a tender Embryo at the Top, which stand three Clubs, under which are the Stamina with rough soft 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 to the Sides.

The Species are;

1. GRANADILLA *pentaphyllos, latioribus foliis, flore cœruleo magno*. Boerb. Ind. Common or broad-leav'd Passion-flower.

2. GRANADILLA *pentaphyllos, angustioribus foliis, flore cœruleo magno*. Narrow-leav'd Passion-flower.

3. GRANADILLA *pentaphyllos, angustioribus foliis, flore minore pallido cœruleo 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 tricuspidi, flore parvo flavescente*. Tourn. Passion-flower with a three-pointed Leaf, and a small yellowish Flower.

6. GRANADILLA *flore albo, fructu reticulato*. Boerb. Ind. White Passion-flower, with a netted Fruit.

7. GRANADILLA *fœtida, folio tricuspidi villoso, flore purpureo variegato*. Tourn. Stinking Passion-flower, with a three-pointed hairy Leaf, and a purple variegated Flower, called by the Inhabitants of Barbados, Love in a Mist.

8. GRANADILLA *fructu citriformi, foliis oblongis*. Tourn. Passion-flower with a Fruit shaped like a Citron, and an oblong Leaf, called by the Inhabitants of Barbados, Water-lemon.

9. GRANADILLA *latifolia, fructu maliformi*. Broad-leav'd Passion-flower, with an apple-shap'd Fruit.

10. GRANADILLA *flore suarverubente, folio bicorni*. Tourn. Passion-flower with a Leaf divided into two Horns, and a soft red Flower.

11. GRANADILLA *folio amplo tricuspidi, fructu olivæ forma*. Tourn. Passion-

Passion-flower with a three-pointed Leaf, and an olive-shaped Fruit.

12. GRANADILLA *folio angusto tricuspidi, fructu olivæ forma.* Tourn. Passion-flower with a narrow three-pointed Leaf, and an olive-shaped Fruit.

13. GRANADILLA *androsæmi folio, fructu jujubino.* Tourn. Passion-flower with a Tutsan-leaf, and a Fruit like the Jujube.

14. GRANADILLA *folio hastato, flore cæruleo majore.* Houst. Passion-flower with a spear-pointed Leaf, and a large blue Flower.

15. GRANADILLA *folio oblongo serrato, flore purpureo.* Houst. Passion-flower with an oblong serrated Leaf, and a purple Flower.

16. GRANADILLA *folio glabro tricuspidi & angusto, flore virescente minimo.* Tourn. Passion-flower with a narrow smooth three-pointed Leaf, and a small greenish Flower.

17. GRANADILLA *quæ Coanuepilli, seu Contrayerua* Hernand. Houst. Passion-flower or Contrayerua of Hernandez.

The first Sort here mentioned is the most common in all the *English* Gardens; and, notwithstanding what Mr. Bradley has affirmed, 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 produced 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 has very narrow Leaves, and the young Branches 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 small 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, it is scarce worth mentioning.

These three Sorts are extremely hardy, and will endure our severest Cold in the open Air; tho' in very hard Winters their Shoots are subject to be killed, and sometimes the 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 again in the succeeding Summer.

These are propagated by laying down their Branches, which in a Year's time will take good Root, and may then be removed to the Places where they are designed to remain; the best Season for transplanting these Plants is towards the Latter-end of *October*, or the Beginning of *March*, or the Beginning of *April* just before they begin to shoot; if they are removed earlier, and should prove dry frosty Weather with cold North-east Winds, as often happens in *March*, these Plants will scarcely endure it, which is the Occasion of the Death of many of them, as is often observed upon Transplantation; but those which are removed early in *Autumn* rarely fail.

The Plants should be planted against a Wall, or other Building, which should face the South-east.

uth-west; or else intermix'd
 amongst flowering Shrubs in Quar-
 ters; where, if they are regularly
 trained up to Poles, they will flower
 extremely well, and have a very
 good Effect in diversifying such Plan-
 tations. The best Season for prun-
 ing of these Plants is in the Spring,
 after the cold Weather is past; for
 if they are prun'd very early, and
 should happen to be frosty Weather
 afterward, it would endanger most
 the young Branches: therefore it
 is much the better Way to let the
 whole Plant remain untouch'd, suf-
 fering the rude Part to hang down
 before the Stem and Branches, du-
 ring the Winter-season, which will
 be of Service in protecting them
 from the Severity of the Cold; and
 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 ef-
 fectually guard their Roots from
 frost; which Method should be con-
 stantly practis'd with such as are
 planted in open Quarters. The Man-
 ner 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 Build-
 ing 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,
 they will soon get above the Build-
 ing, and become troublesome. Those
 that are planted in Quarters, and
 trained to Stakes, must be cut shorter,
 in order to have the Flowers nearer
 the Ground; these, when their Sea-
 son 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 pro-

tect 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 trained 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 filled with light rich Earth,
 which should be plunged into a mo-
 derate 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 re-
 main until the succeeding Spring, ob-
 serving to shelter them in Winter un-
 der 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 Begin-
 ning 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 designed
 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 turned 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 Arbours or Seats in warm-
 situated Places, where they will flower
 extremely well, and answer the Pur-
 poses of those Arbours, as well as
 any other Plants which are at present
 made use of.

The fourth Sort is somewhat ten-
 derer 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

produce great 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 Botanic 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 prevail'd, that this last-mention'd is rarely to be found, except in some few curious Gardens. This may be increased by parting of the Roots, which should be done the Beginning of *April*, and must be either planted into Pots filled with light rich Earth, or in a good warm Border under a South Wall; for it is subject to be destroyed in very hard Weather. The Pots, wherein these Plants are set, may be plunged into a gentle Hot-bed, in order to promote their taking Root, it being somewhat difficult in rooting after it is removed; 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 obtained, 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 Winter, the Pots should be plunged into an old Bed of Tanners Bark which has lost most of its Heat, and it should be covered with Glasses and Mats in very bad Weather; but when it is mild, they should have a 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 raised upon an Hot-bed; the Seeds of this should be sown in *February* with *Amaranthus's*, &c. And when the Plants are come up, they should be transplanted singly into small Pot filled with light Earth, and plunged 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, being careful not to break too much of the Earth from the Roots, plunging the Pots into the new Bed, in which Place they may remain a Month longer, observing to water them as they shall require, and also to give them Air in proportion to the Heat of the Weather, when 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 Seeds perfectly well

In Autumn they decay as soon as they have perfected their Fruit.

The seventh Sort is somewhat like the sixth, but differs therefrom in the Shape of its Leaves, which, in the sixth Sort, are large 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 preserved in a warm Stove thro' the Winter; and the following Summer it will produce Flowers, and perfect its Seeds.

This Plant must be sown on an Hot-bed in the Spring, and managed 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 thro' the Winter, should be trained 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 observed 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 intire when ripe. The Empalement of this Flower is netted; and this being stretched out beyond the Petals, the Flowers seem to be covered with an

Hood, which gave Occasion for the Name of *Love in a Mist*. This Empalement continues, and afterward surrounds the Fruit.

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, altho' the Flowers (which are finer than those of the common Sort) render it worthy of a Place in a good Garden, had the Plant no other good Qualities to recommend it.

This Plant may be raised by sowing the Seeds upon an Hot-bed, as was directed for the two other Sorts; and must be afterward transplanted into Pots, and managed in the same manner; but this never produces its Flowers until the second or third Year after sowing: so it must be carefully preserved 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 exposed 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 managed as the old Plants. During the Summer-season these Plants will require to be plentifully watered (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 marked *Piemento*, upon the Botanical

Botanical Thermometers; but in Summer they will require a much greater Share of Warmth.

I don't find any Authors, who have written on this Plant, mention its growing wild in any Parts of the *West-Indies*. *Pere Plumier* says, It is cultivated in Gardens, to cover Arbours and Seats, for the Goodness of its Fruit, which ripens in *April* or *May*, and is of a wonderful refreshing Nature; and is commonly used 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, and triangular: 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 managed exactly in the same manner; so that I shall not repeat here, but only observe, that this will also grow from Cuttings, if planted in an Hot-bed during any of the Summer-months.

Pere Plumier observ'd this Plant in the *Iste* of *St. Domingo*: it flowers there in *April*.

The tenth Sort is very common in most Parts of the *Caribbee* Islands. I have also received Seeds of it from the *Bahama* Islands, from which I

have raised Plants of this Kind that have produced Flowers and Fruits in the Physic-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 refreshed. 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 preserved in the same manner as the former, but delight to grow in a moist Soil; therefore must be often refreshed with Water. Neither of these 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.

The Seeds of the four last-mentioned Sorts were sent from *La Vera Cruz*, by the late Dr. *William Houstoun*: the fourteenth Sort is new, and has not been mentioned by any

Botanic Writer, before the Doctor. Since which time, this and the fifth Sort have been figured and described by Mr. *John Martyn*, Professor of Botany at *Cambridge*, in his fourth and fifth Decades of rare Plants. These two Sorts produce very beautiful Flowers; and the fifteenth continues flowering near three Months, which renders it more valuable. The other two Sorts, having little Beauty in their Flowers, are only preserved by those who are curious in the Study of Botany. These Plants are tender, and require to be placed in a Bark-stove; where they will climb to a great Height, and produce great Plenty of Flowers. There is now an Espalier in a very large Stove in the Physic-garden, which is sixteen Feet high, and covered over with these Kinds of Passion-flowers, which has a fine Effect. But as the Plants will soon root thro' these Pots into the Bark-bed, so, if they are disturbed, it will greatly check their Growth; therefore they should be permitted to remain in the Bark: or if, in the first making of the Stove, a Border be taken out of the Pit (on the Backside next the Flues) about two Feet wide, which may be boarded up with strong Ship-plank, and this Border filled with Earth, into which these Plants may be planted; they may remain several Years undisturbed in these Borders, and will make a fine Appearance. The Reason of my advising this Border to be divided from the Bark-bit with Boards, rather than by a Brick-wall, is, that the Heat of the Bark may more easily warm the Borders, which will be of great Service to the Plants.

These four Sorts may be propagated from Seeds, which should be sown on an Hot-bed in the Spring, and treated in the same manner as

hath been directed for the eighth and ninth Sorts.

GRAPES. *Vide Vitis.*

GRASS. The *English* Grass is of so good a Quality for Walks or Grass-plats, 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 Plats are, for the most part, not made by sowing the Grass-seed, but by laying Turfs: and indeed the Turfs from a fine Common or Down are much preferable to sown Grass.

In sowing a fine green Plat, there is a Difficulty in getting good Seed: it ought not to be such as it taken out of an Hay-loft without Distinction; for that Seed is always mixed, so that there will be many Sorts of Grass, which will be rank, and the Stalks large, so will never make a good Sward; 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 Plats 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 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 dressed, and laid even, it must be very finely raked over, and all the Clods and Stones taken off, and covered 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 raked 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. But where Grass is sown in Gardens, either for Lawns or Walks, there should always be a good Quantity of the white Trefoil or *Dutch Clover* sown with it; for this will make a fine Turf much sooner than any other sown Grass; and will continue a better Verdure than any of the grass Tribe.

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 mowed, the thicker and handsomer it grows: it must also be rolled with a Cylinder or Roller of Wood, 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 cleared 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-plats or Walks handsome, and in good Or-

der, in Autumn you may sow some fresh Seed over any Places that are not well filled, or where the Grass is dead, to renew and furnish them again: but there is nothing which improves Grass so much as constant rolling and polling it, to destroy Wormcasts, and thereby the Turf is rendered fine.

It is a general Practice, when Turf is laid in Gardens, to cover the Surface of the Ground under the Turf, either with Sand, or very poor Earth: the Design of this is to keep the Grass fine, by preventing its growing too rank. This is proper enough for very rich Ground, but is not so for such Land as is but middling or poor; for when this is practised in such Places, the Grass will soon wear out, and decay in Patches.

When Turf is taken from a Common or Down, there should be regard had to the Cleanness of it, and not to take such as is full of Weeds; for it will be a very tedious Piece of Work, to weed them out after the Turf is laid; and unless this is done, the Grass will never appear handsome.

Where Turf is designed to remain for Years without renewing, there should be Dressing laid upon it, every other Year, either of very rotten Dung, or Ashes; and where it can be easily procured, very rotten Tan is a good Dressing for Grass: but these Dressings should be laid on early in Winter, that the Rain may wash them into the Ground, before the Drought of the Spring comes on otherwise they will occasion the Grass to burn, when the Warmth of Summer begins. Where Grass is so dressed, and kept well rolled and mowed, it may remain very beautiful for many Years: but where it is not dressed

dressed, or fed with Sheep, it will rarely continue handsome more than eight or ten Years.

GRAVEL and Grass are naturally 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-beath*, as preferable to most that we have in *England*; it consisting of smooth even Pebbles, which, when mixed 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 Loam amongst it, than which nothing, they say, binds better when it is dry: but in wet Weather it is apt to stick to the Heels of one's Shoes, and will never appear handsome.

Sometimes Loam is mixed 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 so cast them well together.

There are many different Opinions about the Choice of Gravel: some are for having the Gravel as white as possible; and in order to make the Walks more so, they roll them well with Stone-rollers, which are often worn by the Maçons, that they may

add a Whiteness to the Walks: but this renders it very troublesome to the Eyes, by reflecting the Rays of Light so strongly; therefore this should ever be avoided; and such Gravel as will lie smooth, and reflect the least, should be preferred.

Some screen the Gravel too fine; which is an Error: for if it be cast into a round Heap, and the great Stones only raked 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: one Inch is enough in a Crown of five Feet; and it will be sufficient, if a Walk be ten Feet 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 to thirty Feet; which is wider than any Walk in a Garden ought to be made.

For the Depth of Gravel-walks, six or eight Inches may do well enough; but a Foot Thickness will be sufficient for any; but then there should always be a Depth of Rubbish laid under the Gravel, especially if the Ground is wet; in which Case there cannot be too much Care to fill the Bottom of the Walks with large Stones, Flints, Brick-rubbish, or any other Materials, which can be best procured; which will drain off the Moisture from the Gravel, and prevent its being poachy in wet Weather.

In the making of Gravel-walks, there must be great regard had to the Level of the Ground, so as to lay the Walks with easy Descents toward the low Parts of the Ground, that the Wet may be drained off easily; for when this is omitted, the Water will lie upon the Walks a considerable

time after hard Rains, which will render them unfit for Use, especially where the Ground is naturally wet or strong: but where the Ground is level, and there are no Declivities to carry off the Wet, it will be proper to have Sink-stones laid by the Sides of the Walks, at convenient Distances, to let off the Wet; and where the Ground is naturally dry, that the Water will soon soak away, the Drains from the Sink-stones may be contrived so as to convey the Water in Sesspools, from which the Water will soak away in a short time: but in wet Land, there should be under-ground Drains, to convey the Wet off, either into Ponds, Ditches, or the nearest Place to receive it; for where this is not well provided for, the Walks will never be so handsome, or useful.

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 the Rains and Frost will not effectually kill the Weeds and Moss, you should turn the Walks in *March*, and lay them down at the same time.

In order to destroy Worms that spoil the Beauty of Gravel or Grass-walks, some recommend the washing them well with Water, in which Walnut-tree-leaves have been steep-

ed, and made very bitter, especially those Places most annoyed with them; and this, they say, as soon as it reaches them, will make them come out hastily, so that they may be gathered: 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.

GREEN-HOUSE, or Conservatory.

As of late Years there have been great Quantities of curious Exotic Plants introduced 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 Contrivance of these Places, so as to render them both useful and ornamental, hath been acquired: and since there are many Particulars to be observed in the Construction of these Houses, whereby they will be greatly improv'd, 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 chouse to erect it, upon the annexed 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 their Height in the Clear; which in small or middling Houses may be sixteen or eighteen Feet; but for large ones, from twenty to twenty-four Feet, is a good Proportion; for if the Green-house is long, and too narrow, it will have a bad Appearance both within and without; nor will it contain so many Plants, if proper room be allowed for passing in Front,
and



A The Ground Plan of the Green house.

B.B. The Ground plan of the two Stoves.

C.C.C. The Streets behind the Green house & Stoves.

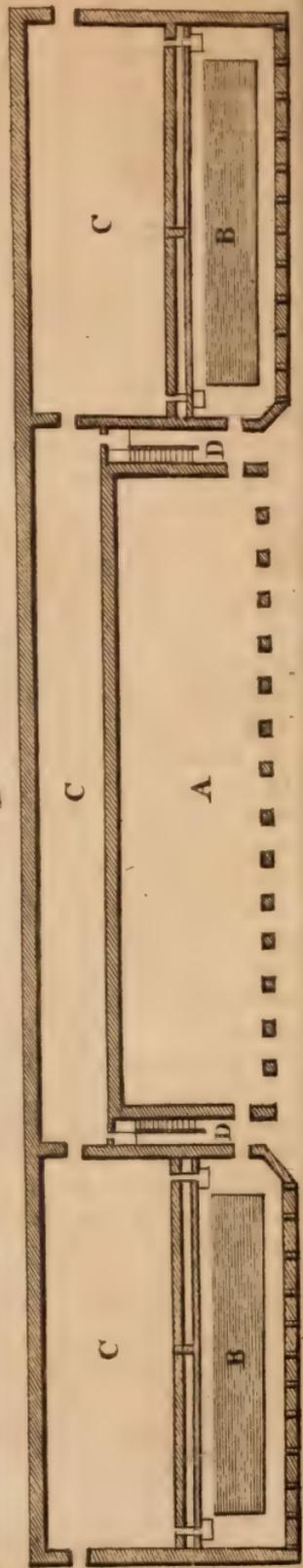
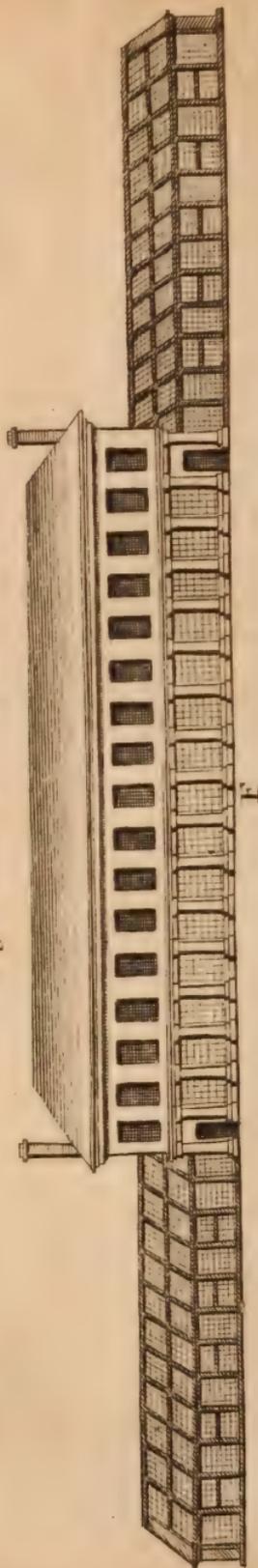
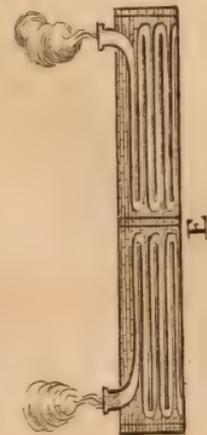
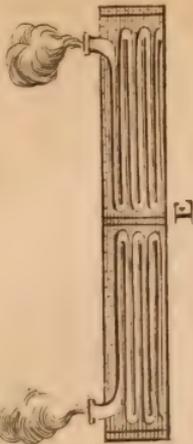
D.D.D. The Passage of communication between the

Green house and Stoves where the Stairs are

Placed which lead to y^e Rooms over y^e Green house.

E.E. The Section of the Stues in the back of the Stoves.

F. The upright of the Green house and Stoves.



and on the Backside, of the Stands, on which the Plants are placed: and on the other hand, if the Depth of the Green-house is more than twenty-four Feet, there must be more Rows of Plants placed to fill the House, than can with Conveniency be reach'd in Watering and Cleaning; nor are Houses of too great Depth so proper for keeping of Plants, as those of moderate Size.

The Windows in Front should extend from about one Foot and an half above the Pavement, to within the same Distance of the Cieling, which will admit of a Cornice round the Building, over the Heads of the Windows. As it is necessary to have these Windows so long, it will be impossible to make them in proportion as to their Breadth; for if in the largest Buildings the Sashes are more than seven, or seven and an half Feet broad, they will be so heavy, and troublesome to move up and down, as to render it very difficult for one Person to perform; besides, their Weight will occasion their soon decaying. There is also another Inconvenience in having the Windows too broad; which is, that of fixing proper Shutters to them, in such a manner, as that they may fall back close to the Piers, so as not to be incommodious; or, when open, to obstruct any Part of the Rays of Light from reaching the Plants. The Piers between these Windows should be as narrow as possible to support the Building; for which Reason I should choose to have them of Stone, or of hard well-burnt 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, and the Building will not be so substantial; especially if you have any Rooms over the Green-house: which is what I would always advise, as be-

ing of great Use to keep the Frost out in very hard Winters. If these Piers are made of Stone, I would advise them to be two Feet and an half broad in Front, and sloped off backward to about eighteen Inches; whereby the Rays of the Sun will not be taken off or obstructed by the Corners of the Piers; which would happen, if they were square: but if they are built with Bricks, it will be proper to make them three Feet broad in Front, otherwise they will be too weak to support the Building: these I would also advise to be sloped off in the manner directed for the Stone.

At the Back of the Green-house there may be erected an House for Tools, and many other Purposes; which will be extremely 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 an half in Thickness; whereas, were it quite expos'd behind, it should be at least three Bricks in Thickness: and by this Contrivance, if you are willing to make an handsome Building, and to have a noble Room over the Green-house, you may extend the Room 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 Stone, or broad Tiles, according to the Fancy of the Owner (but if it is laid with Stone, the *Bremen* Squares are the best, as being porous; so will not detain the Moist-

ure), must be rais'd two Feet above the Surface of the Ground whereon the House is placed; which, in dry Ground, will be sufficient; but if the Situation be moist and springy, and thereby subject to Damps, it should be rais'd at least three Feet above the Surface: and if the Whole is arched with low Brick Arches, under the Floor, it will be of great Service in preventing the Damps rising in Winter, which are often very hurtful to the Plants, especially in great Thaws, when the Air is often too cold to be admitted into the House, to take off the Damps. Under the Floor, about two Feet from the Front, I would advise a Flue of about one Foot in Width, and two Feet deep, to be carried the whole Length of the House, which may be returned along the Back-part, and be carried 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 always be ready for Use.

I suppose many People will be surpris'd to see me direct the making of Flues under a Green-house, which have been refus'd so long, and by most People thought of ill Consequence; as indeed they have often proved, 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 Management, yet when skilfully managed, they are of very great Service: for tho' perhaps it may happen, that there

will be no Necessity to make any Fires in them 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.

Withinside of the Windows, in Front of the Green-house, you should have good strong Shutters, which should be made with Hinges, to fold back, 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 an 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 obliged 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 suffered to remain till the Frost goes away; which if it should continue very long, the keeping the Green-house 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 is 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 performed in a very short time, and as soon shut again when the Sun is clouded, the Plants may have the Benefit thereof when,

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 required to keep out the Frost, it will be a great Chance if it be not neglected by the Gardener: for if he be not as fond of preserving his Plants, and as much in love with them, as his Master, this Labour will be thought too great by him; and if he takes 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 filled 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 they have been almost suffocated therewith; and at the same time they are very injurious to the Plants: nor is the Trouble of attending upon these small; and the many Hazards to which the Use of these Fires is liable, have justly brought them into Disuse with all skilful Persons; and as the Contrivance of Flues, and of the Fires, are but small Charges, they are much to be preferred to any other Method for warming the Air of the House.

The Back-part of the House should be either laid over with Stucco, or plastered with Morter, and white-washed; for otherwise the Air in severe Frost will penetrate through the Walls, especially when the Frost is attended with a strong Wind; which is often the Case in the most severe Winters. There are some Persons

who are at the Expence of wainscoting their Green-houses; but when this is done, it is proper to plaster the Walls with Lime and Hair behind the Wainscot, to keep out the Cold; and when they are lined with Wainscot, they should be painted white, as should the Cieling, and every Part withinside 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 closed, and but a small Share of Light is admitted through the Windows: for at such times I have observed, that in some Green-houses which have been painted black, or of a dark Colour, the Plants have cast most of their Leaves.

Where Green-houses are built in such Places as will not admit of Rooms over them; or the Person is unwilling to be at the Expence of such Buildings, there must be Care taken to keep out the Frost from entering through the Roof. To prevent which, it will be very proper to have a Thickness of Reeds, Heath, or Furz, laid between the Cieling and the Tiles: in the doing of which there must be Care taken in framing the Joists, so as to support these, that their Weight may not lie upon the Cieling-joists, and endanger it: for these should be laid a Foot thick at least, and as smooth as possible, and fastened down well with Laths, to prevent their rising; and then covered over with a Coat of Lime and Hair, which will keep out the Air, and also prevent Mice, and other Vermin, from harbouring in them; which, if left uncovered, they would certainly do. For want of this Precaution, there are many Green-houses built, which will not keep out the Frost in hard Winters; and

this is many times attributed to the Glasses in Front admitting the Cold, when the Fault is in the Roof: for where there is only the Covering either of Tiles or Slates, and the Cieling, every severe Frost will penetrate through them.

In this Green-house you should have Trussels, which may be moved out and into the House; upon which you should fix Rows of Planks, so as to place 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 placed about four Feet therefrom, 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 advanced above the first, the Stems only being hid thereby: and at the Backside of the House there should be allowed 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, occasioned by the Perspiration of the Plants, may be the better dissipated; 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, Euphorbiums, Torch-thistles, and other tender succulent Plants, amongst Oranges, Myrtles, and other ever-green Trees; for, by an Experiment which I made

Ann. 1729. I found that a Sedum,

placed in a Green-house among such Trees, almost daily increased its Weight, although there was no Water given to it the whole time: which Increase of Weight was owing to the Moisture imbibed from the Air, which, being replete with the rancid Vapours perspired from the other Plants, occasioned the Leaves to grow pale, and in a short time they decayed, and dropped off: which I have often observed has been the Case with many other succulent Plants, when placed in those Houses which were filled with many Sorts of ever-green Trees, that required to be frequently watered.

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 placed in the manner expressed in the annexed 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 placed 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 Exotic Plants, which will bear to be exposed 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, Ranunculus'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 used thereto, to take Pleasure in being out of the House.

In the Centre of this Area may be contrived a small Basin for Water, which will be very convenient for watering of Plants, and add much to the Beauty of the Place: besides, the Water, being thus situated, will be softened by the Heat which will be reflected from the Glasses upon it; whereby it will be rendered much better than raw cold Water for these tender Plants.

The two Wings of the Building should be contrived 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 *Stoves*. But I would here observe, that the Wing facing the South-east should always be preferred 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 annexed, allowed sixty Feet in Length, may be divided in the Middle by Partitions of Glass, with Glass-doors to pass from one to the other. To each of these there should be a Fire-place, with Flues carried up against the Back-wall, through which the

Smoke should be made to pass, as many times the Length of the House, as the Height will admit of the Number of Flues: for the longer the Smoke is in passing, the more Heat will be given to the House, with a less Quantity of Fuel: which is an Article worth Consideration, especially where Fuel is dear. By this Contrivance, you may keep such Plants as require the same Degree of Heat in one Part of the House, and those which will thrive in a much less Warmth in the other Part; but this will be more fully explained under the Article of *Stoves*.

The other Wing of the House, facing the South-west, may also be divided in the same manner, and Flues carried through both Parts, which may be used according to the Seasons, or the particular Sorts of Plants which are placed therein: so that here will be four Divisions in the Wings, each of which may be kept up to a different Degree of Warmth; which, together with the Green-house, will be sufficient to maintain Plants from all the several Countries of the World; and without having these several Degrees of Warmth, it will be impossible to preserve the various Kinds of Plants from the several Parts of *Africa* and *America*, which are annually introduced into the *English* Gardens: for when Plants from very different Countries are placed in the same House, some are destroyed for want of Heat, while others are forced and spoiled by too much of it; and this is often the Case in many Places, where there are large Collections of Plants.

In the building these Wings, if there are not Sheds running behind them, their whole Length, the Walls should be two Bricks and an half thick;

thick; and if they are more, it will be better; because, where the Walls are thin, and exposed to the open Air, the Cold will penetrate them; and when the Fires are made, the Heat will come out through the Walls; so that it will require a larger Quantity of Fuel, to maintain a proper Temperature of Warmth in the House. The Back-part of these Houses, having sloping Roofs, which are covered either with Tiles or Slates, should also be lined with Reeds, &c. under the Covering, as is before directed for the Green-house; which will keep out the cold Air, and save a great Expence of Fuel; for the closer and better these Houses are built, and the Glasses of the Slope, as also in Front, well guarded by Shutters or Reeds in hard Frost, the less Fuel will be required to warm the Houses; so that the first Expence in building these Houses properly, will be the cheapest, when the after Expence of Fires is taken into Consideration.

The sloping Glasses of these Houses should be made to slide, and take off; so that they may be drawn down more or less, in warm Weather, to admit Air to the Plants; and the upright Glasses in Front may be so contrived, as that every other may open as Doors upon Hinges; and the alternate Glasses may be divided into two: the Upper-part of each should be contrived so as to be drawn down like Sashes; so that either of these may be used to admit Air, in a greater or less Quantity, according as there may be Occasion.

But, besides the Conservatories here mentioned, it will be proper to have a deep Hot-bed-frame, such as is commonly used to raise large Annuals in the Spring; into which may be set Pots of such Plants as come

from *Carolina, Virginia, &c.* while the Plants are too small to plant in the open Air; as also many other Sorts from *Spain, &c.* which require only to be screened from the Violence of Frosts, and should have as much free Air as possible in mild Weather; which can be no better effected than in one of these Frames, where the Glasses may be taken off every Day when the Weather will permit, and put on every Night; and in hard Frosts the Glasses may be covered with Mats, Straw, Peas-haulm, or the like, so as to prevent the Frost from entering the Pots to freeze the Roots of the Plants, which is what will, many times, utterly destroy them; though a slight Frost pinching the Leaves or Shoots very seldom does them much Harm: if these are sunk a Foot or more below the Surface of the Ground, they will be the better, provided the Ground is dry; otherwise they must be wholly above-ground: the Sides of this Frame should be built with Brick, with a Curb of Wood laid round on the Top of the Wall, into which the Gutters; on which the Glasses slide, may be laid: the back Wall of this Frame may be four Feet high, and the Front one Foot and an half; the Width about six Feet, and the Length in proportion to the Number of Plants.

GREWIA.

This Genus of Plants was constituted by Dr. *Linnaeus*, who gave it this Name, in Honour to Dr. *Grew*, F. R. S. who published a curious Book of the Anatomy of Plants.

The Characters are;

The Emplacement of the Flower is composed of five thick spear-shaped Leaves, which are coloured within: the Flower has five Leaves of the same Shape with those of the Emplacement; but are smaller: in the Centre of the Flower

Flower is situated the Pointal, shaped like a Column, having five Angles or Borders; and is attended by many Stamina; which are inserted into the Column, at their Base, and are stretched out to the Length of the Petals: the Pointal afterward changes to a square Fruit, having four Cells, each containing a roundish Seed.

We have but one Species of this Plant in the English Gardens;

GREWIA corollis acutis. Lin. Hort. Cliff. Grewia with pointed Flower-leaves.

This Plant has been long preserved in many curious Gardens, both in England and Holland; and is figured by Dr. Plukenet, by the Title of *Ulmifolia arbor Africana bacifera, floribus purpureis*; but by Dr. Boerhaave it was supposed to be one of Father Plumier's American Plants, intituled *Guidonia ulmi foliis, flore roseo*: but the Characters of this do not at all agree with those of the *Guidonia*; that particular Species of the Genus being in the Royal Garden at Paris, which is extremely different from this: we have no English Name for it.

This will grow to the Height of ten or twelve Feet, and has a Stem and Branches very like those of the small-leav'd Elm; the Bark being smooth, and of the same Colour as that of Elm when young: the Leaves are also very like those of the Elm, and fall off in Autumn: the Flowers are produced singly, along the young Branches, from the Wings of the Leaves, which are of a bright-purple Colour: these appear toward the End of July, and continue in August, and the Beginning of September; but are never succeeded by Fruit, in this Country.

This may be propagated from Cuttings or Layers: the Cuttings should be taken off, and planted in

March, before the Buds begin to swell; for they do not succeed well after: they should be planted in small Pots filled with loamy Earth; and the Pots should be plunged into a moderate Hot-bed of Tanners Bark, where, if they are daly watered, and in the Middle of the Day shaded from the Sun, they will have taken good Root in about two Months; and may then be gradually inured to bear the open Air; into which they should be removed in June, and placed in a sheltered Situation, where they may remain till Autumn, when they must be removed into the Green-house: the best time to lay down the Layers of this Plant is in the Spring, before the Buds come out; and these will be rooted by the same time the following Year, when they may be cut off from the old Plants, and planted each into a separate Pot filled with a soft loamy Soil.

The best time to remove or transplant this Plant is, either in the Spring, just before the Buds begin to swell, or in Autumn, when the Leaves begin to drop; for in Summer, when the Plants are in full Leaf, it will be very improper to disturb them.

In Winter these Plants should be placed in the Green-house; for they are too tender to live abroad in England: but they should have as much free Air as possible in mild Weather; for they only require to be protected from Frost: and after their Leaves are fallen, they will require very moderate Watering; but in Summer they should be constantly watered, and placed in a sheltered Situation, with other hardy Green-house Plants, where they will add to the Variety.

GRONOVIA.

The Name of this Genus was given

given by the late Dr. *Houfoun*, in Honour to Dr. *Gronovius*, a learned Botanist at *Leyden*.

The Characters are ;

The Empalement is of one Leaf, which is cut into five Parts toward the Top : the Flower hath five small Petals, which are placed circularly, and expand in form of a Rose ; and sit upon the Embryo ; which afterward becomes one naked-winged Seed.

We have but one Species of this Genus ; viz. |

GRONOVIA scandens lappacea, pampinea fronde. Houft. Climbing burry *Gronovia*, with Tendrils like the Vine.

This Plant was discovered by the late Dr. *Houfoun* at *La Vera Cruz* ; from whence he sent the Seeds to *Europe*, which have succeeded in many Gardens. It is an annual Plant, which sends forth many trailing Branches, like those of the Cucumber, which are closely set with broad green Leaves, in Shape like those of the Vine ; but they are closely covered with small Spines on both Sides, which sting like the Nettle ; the Branches have many Tendrils or Claspers, by which they fasten themselves to whatever Plants they grow near ; and will rise to the Height of six or eight Feet : the Flowers are small, and of a greenish-yellow Colour ; so make no great Appearance.

This, being a very tender Plant, must be raised on an Hot-bed early in the Spring, and afterward placed in the Bark-stove, and treated in the same Way as the *Momordica* ; with which Management it will produce ripe Seeds : but this, having neither Use nor Beauty, is rarely cultivated but in Botanic Gardens, for the sake of Variety.

GROSSULARIA, The Gooseberry-tree.

The Characters are ;

The Leaves are lacinated, or jagged : the whole Plant is set with Prickles : the Fruit grows sparsedly upon the Tree, having, for the most part, but one Fruit upon a Footstalk, which is of an oval or globular Figure, containing many small Seeds surrounded by a pulpy Substance.

The Species are ;

1. *GROSSULARIA simpliciacino, vel spinosa sylvestris. C. B. P.* The common Gooseberry.

2. *GROSSULARIA spinosa sativa. C. B. P.* The large manured Gooseberry.

3. *GROSSULARIA fructu obscure purpurescente. Clus.* The red hairy Gooseberry.

4. *GROSSULARIA, sive Uva crispa 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. Boerb. Ind.* The large red Gooseberry.

8. *GROSSULARIA spinosa sativa, foliis flavescentibus.* 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 obtained from Seeds in divers Parts of *England*, which differ either in the Shape or Colour of the Berries : but as these are only seminal Variations, it is needless, in this Place, to enumerate them, especially since

the Number of these will be increased 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 produced from Suckers are always more disposed to shoot out a greater Number of Suckers from their Roots, than such as are raised from Cuttings, which generally form much better Roots.

The best Season for planting these Cuttings is in Autumn, just before their Leaves begin to fall; 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 produced 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, exposed to the morning Sun, about six Inches deep, observing to water them gently, when the Weather proves dry, to facilitate their taking 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 trained 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 cleansed from all noxious Weeds, Roots, &c. and being levelled, you should proceed to take up your Plants, trimming their Roots, and cutting off all lateral 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 one Year; being careful to keep them clear from Weeds; as also to trim off all lateral Shoots which are produced 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 produced commonly very irregular in the Head, 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 remained in this Nursery one Year, they will be fit to transplant to the Places where they are designed 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 Earth; though they will do very well upon moist Soils, which are not too strong or moist, and in all Situations: but where the 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

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 practised for Ever-greens, &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 thinned, and pruned according to Art ; which should always be done with a Pruning-knife, shortening 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 destroyed ; and

these are generally pulled 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 confined for room.

GROVES are the greatest Ornaments to a Garden ; nor can a Garden be complete which has not one or more of these. In small Gardens there is scarce room to admit of Groves of any Extent ; yet in these there should be at least one contrived, which should be as large as the Ground will allow it : and where these are small, there is more Skill required in the Disposition, to give them the Appearance of being larger than they really are.

Groves have been in all Ages held in great Veneration : the antient *Romans* had a Sort of Groves near several of their Temples, which were consecrated to some God, and were called *Luci* by *Antiphrasis*, a non *lucendo*, as being shady and dark ; and these were dedicated to holy Uses, being Places of Solitude and Retirement, and were never to be violated with the Ax.

These Groves are not only great Ornaments to Gardens, but are also the greatest Relief against the violent Heats of the Sun, affording Shade to walk under, in the hottest Part of the Day, when the other Parts of the Garden are useless ; so that every Garden is defective which has not Shade.

Groves are of two Sorts ; *viz.* open and close Groves : Open Groves are such as have large shady Trees, which stand at such Distances, as that their Branches may approach so near each other, as to prevent the Rays of the Sun from penetrating through them : but as such Trees are
a long

a long time in growing to a proper Size for affording a Shade; so where new Groves are planted, the Trees must be placed closer together, in order to have Shade as soon as possible: but in planting of these Groves, it is much the best Way to dispose all the Trees irregularly, which will give them a greater Magnificence, and also form a Shade sooner, than when the Trees are planted in Lines; for when the Sun shines between the Rows of Trees, as it must do some Part of the Day in Summer, the Walks between them will be exposed to the Heat, at such times, until the Branches of these Trees meet; whereas, in the irregular Plantations, the Trees intervene, and obstruct the direct Rays of the Sun.

When a Person, who is to lay out a Garden, is so happy as to meet with large full-grown Trees upon the Spot, they should remain inviolate, if possible; for it will be better to put up with many Inconveniencies, than to destroy these, which will require an Age to retrieve; so that nothing but that of offending the Habitation, by being so near as to occasion great Damps, should tempt the cutting of them down.

Most of the Groves which have been planted either in *England*, or those celebrated Gardens in *France*, are only a few regular Lines of Trees; many of which are Avenues to the Habitation, or lead to some Building, or other Object: but these do not appear so grand, as those which have been made in Woods, where the Trees have grown accidentally, and at irregular Distances; where the Trees have large spreading Heads, and are left, at such Distance as to permit the Grass to grow under them, then they afford the greatest Pleasure; for nothing is more noble, than fine spreading

Trees, with large Stems, growing through Grass, especially if the Grass is well kept, and has a good Verdure; besides, most of these planted Groves have generally a Gravel-walk, made in a strait Line between them; which greatly offends the Sight of Persons who have true Taste: therefore whenever a Gravel-walk is absolutely necessary to be carried through these Groves, it will be much better to twist it about, according as the Trees naturally stand, than to attempt Regularity: but dry Walks under large Trees are not so useful, as in open Places; because the dropping of the Trees will render these Walks useles, after Rain, for a considerable time.

Close Groves have frequently large Trees standing in them; but the Ground is filled under these with Shrubs, or Underwood; so that the Walks which are made in them are private, and screened from Winds; whereby they are rendered agreeable for walking, at such times when the Air is too violent or cold for walking in the more exposed Parts of the Garden.

These are often contrived so as to bound the open Groves, and frequently to hide the Walls, or other Inclosures of the Garden: and when they are properly laid out, with dry Walks winding through them, and on the Sides of these sweet-smelling Shrubs and Flowers irregularly planted, they have a charming Effect: for here a Person may walk in private, sheltered from the Inclemency of cold or violent Winds; and enjoy the greatest Sweets of the vegetable Kingdom: therefore where it can be admitted, if they are continued round the whole Inclosure of the Garden, there will be a much greater Extent of Walk; and these Shrubs will appear the best.

best Boundary, where there are not fine Prospects to be gained.

These close Groves are by the French termed *Bosquets*, from the Italian Word *Boschetto*, which signifies a little Wood: and in most of the French Gardens there are many of them planted; but these are reduced to regular Figures, as Ovals, Triangles, Squares, and Stars: but these have neither the Beauty or Use which those have that are made irregularly, and whose Walks are not shut up on each Side by Hedges, which prevents the Eye from seeing the Quarters; and these want the Fragrancy of the Shrubs and Flowers, which are the great Delight of these private Walks; add to this, the keeping of the Hedges in good Order is attended with a great Expence; which is a capital Thing to be considered in the making of Gardens.

GUAIABARA, Sea-side Grape, *vulgo*.

The Characters are;

It hath a Flower consisting of six Leaves, which expand in form of a Rose: in the Centre arises the Pointal, which afterward becomes a pulpy Fruit, inclosing one roundish Stone terminating in a Point.

The Species are;

1. GUAIABARA *alia racemosa, foliis oblongis*. Plum. *Manus*. Sea-side Grape, with oblong Leaves.

2. GUAIABARA *foliis rotundioribus*. *Houft.* The common Sea side Grape.

3. GUAIABARA *alia racemosa, foliis latissimis*. *Houft.* Sea-side Grape, with very broad Leaves.

4. GUAIABARA *foliis minoribus & longioribus, fructu racemoso minimo atro-purpureo*. *Houft.* Sea-side Grape, with smaller and longer Leaves, and the least dark-purple

Fruit growing in Bunches, commonly called Chigery Grape.

The second Sort is very common in *Jamaica*, and all the *Caribbee* Islands; where it grows on the sandy Shores, from whence it had the Name of Sea-side Grapes, the Fruit growing in a long slender Bunch. This Fruit is commonly sold in the Markets in *Barbados*, where it is much esteemed.

The first Sort is common at *Carthagena* in *New Spain*, from whence I received the Seeds; which were collected by the late Dr. *William Houstoun*.

The third Sort was also discovered by the same Gentleman at *La Vera Cruz*; who sent the Seeds into *England*, from which several Plants were raised. These two Sorts also grow on the sandy Shores near the Sea.

These Shrubs usually grow about ten or twelve Feet high, and have several Trunks arising from the same Root, so that they appear like large Bushes. The Fruit comes out from the Wings of the Leaves in long slender Bunches, which are about the Size of an ordinary Raisin in the second Sort: but the first and third Sorts produce very small Fruit, which are seldom gathered. The second Sort is figured in *Lobel's History of Plants*, under the Title of *Populus Novi Orbis*.

All these Sorts are propagated by Seeds, which should be sown in small Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark: in about a Month after which, the Plants will appear above-ground. When they are about two Inches high, they must be shaken out of the Pots, and separated carefully, planting each into a small Pot filled with light rich Earth, and then plunged

plunged into the Hot-bed again, observing to screen them from the Sun every Day, until they have taken Root; after which time they should have Air admitted to them every Day, in proportion to the Warmth of the Season, and the Heat of the Bed in which they are placed; they must also be frequently watered in hot Weather: in this Bed they may remain till *Michaelmas*; at which time they should be removed into the Stove, and plunged into the Tan. During the Winter-season, they must be kept very warm, and frequently refreshed with Water; but it must not be given to them in large Quantities; but in Summer they should have fresh Air admitted to them in warm Weather, and watered more plentifully: but they must constantly remain in the Stove; for they are too tender to live in the open Air in this Country in the warmest Season. These Plants, having thick, strong; green Leaves, make an agreeable Appearance in the Stoves; and it may be expected to see the Fruit brought to Perfection in some of the Stoves which have been lately erected.

GUAJACANA. *Vide* Diospyros.

GUAJACUM, Lignum Vitæ, *vulgo.*

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. **GUAJACUM** flore cæruleo, fructu subrotundo. Plum. Lignum Vitæ, or Wood of Life, with a blue Flower, and roundish Fruit.

2. **GUAJACUM** flore cæruleo frimbriato, 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 *W^{est}-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 Physic-garden, which were raised from Seeds, *Anno* 1726. and have come on very well, tho' they are naturally Plants of 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 destroyed 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 filled with fresh rich Earth, and plunged into an Hot-bed of Tanners Bark; to facilitate their making fresh Roots, that they may be enabled to live thro' 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 removed into a warm Stove, where the Thermometer should be kept up to twenty Degrees above Temperate, as mark'd

on the Botanical Thermometers; and during the Winter-season they should be often refreshed 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 Surface 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 exposed 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 gently 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.

But this Wood is of great Use to the Sugar-planters in *America*, for making of Wheels, Cogs for the Mills, &c. and it is brought to *Europe*, where Bowls, and many Utensils, are made of this Wood.

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, crowned 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.

3. **GUAJAVA alba, fructu parvo odorato.** The small white sweet-scented Guava.

The first and second Sorts are frequently cultivated in *America*, for the Fruit; which are reckoned among the good Fruits of the Islands: these produce Fruit about the Size and Shape of Medlars: the Flesh of the first Sort is red, and that of the second white; the latter being sweeter than the former, which is austere and astringent, somewhat like the Pomgranate: but whether these are specifically different, or both arise from the same Seeds, I cannot determine.

The third Sort is found wild in all the Islands of the *West-Indies*, where it is frequently intermixed with the two former: the Fruit of this Sort is oval, and about the Size of a large Gooseberry, of a dirty white Colour; and, when ripe smells exceeding sweet: a single Fruit of this will perfume the Air of a large Stove; which is what I never have observed in either of the other Sorts, which have ripened their Fruit often in *England*.

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 preserved in warm Stoves, and are rarely seen above eight or ten Feet high: there are several Trees which have produced Fruit in *England*.

These Plants are propagated by sowing their Seeds in an Hot-bed in the Spring; and if the Seeds are fresh, they will come up very soon and the Plants will grow pretty fast so that when they are about two Inches high, they should each of them be transplanted into a single Halfpeny Pot filled with light rich Earth, and plunged into a fresh Hot-bed, in order to bring them forward observing to give them Air, in proportion to the Warmth of the Weather.

ther; and in Summer-time they will require to be frequently watered; and in the Beginning of July you must let them have a plentiful Share of Air, in order to harden them before Winter; for if you continue forcing them quite thro' the Summer, you will get them to be very large in one Season; but then they'll be so tender, that it will be difficult to preserve them in Winter.

At the Latter-end of *August*, or Beginning of *September*, you should remove the Pots into the Stove, where they should be placed 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 the Botanical Thermometers, agreeing better with them than a greater Degree. During the Winter-season they must be often refreshed with Water, especially if they are plac'd upon Shelves in the Stove; but if they are plunged into Tanners Bark, they will not require it so often; nor must they have too much given at a time. You should also frequently wash their Leaves with a Cloth in Winter, in order to cleanse them from Dust, and other Filth, which have been collect'd upon the Surfaces of the Leaves, during their being in the House; as also from Vermin, which are very subject to infect these Plants. In Summer you may expose them to the Air, by removing or opening the Glasses in the Front of the Stove; and in very warm Weather they may be plac'd abroad in a warm Situation; but they should not remain long abroad, especially if the Season is cold: for when they are treated too hardily, they will never produce either Fruit or Flowers; whereas, when they are rightly managed, they

will flower the third Season after their being sown.

These Trees are planted everywhere in the *Caribbee Islands* for their Usefulness; though the usual Manner of their Cultivation is by being eaten: the Seeds, passing intire thro' the Body, are voided in the Excrements; so that where-ever 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 In-
“convenience, 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
“thro' the Intestines, especially the
“*Rectum*, by their irregular sharp
“Angles, will occasion very great
“Pain there, and very often bring
“a Flux of Blood.”

GUANABANUS, The Custard-apple.

The Characters are;

The Empalement of the Flower consists of three small pointed Leaves: the Flowers of some Sorts have only three, but in others six Petals; in the latter, three are alternately less than the other: from the Empalement arises the Pointal, which afterward becomes an oval or round fleshy soft Fruit, inclosing several oblong smooth hard Seeds.

The Species are;

1. GUANABANUS fructu aureo, & molliter aculeato. Plum. Nov. Gen.
The Custard-apple.

2. GUANABANUS *fructu e viridi lutescente molliter aculeato.* Plum. Nov. Gen. The Sour-apple.

3. GUANABANUS *palustris, fructu laevi viridi.* Plum. Nov. Gen. The Water-apple.

4. GUANABANUS *foliis odoratis, fructu subrotundo squamoso.* The Sweet-apple.

5. GUANABANUS *Persea folio, flore intus albo, exterius virescente, fructu nigricante squamato, vulgo Cherimolia. Feuille obs.* The Cherimolia or Cherimonias:

6. GUANABANUS *fructu subcaeruleo.* Plum. Nov. Gen. The Sweet-apple.

7. GUANABANUS *fructu purpureo.* Plum. Nov. Gen. The Purple-apple.

8. GUANABANUS *fructu viridi laevi, pyri inversi forma.* Water-apple with a smooth green inverted pear-shaped Fruit.

There are many more Sorts of these Trees in the *East* and *West-Indies*, where many of the Sorts produce esculent Fruits, some of which are esteemed by the Inhabitants, and brought to their Deserts; but others are Food for Birds, Guana's, and other Animals. These do many of them grow to the Size of our Apple-trees, especially in the warmest Countries; but those which grow in colder Countries, seldom rise above eight or ten Feet high, and have more the Appearance of Shrubs than of Trees; for they frequently rise with many Stems from the Root.

There are two Sorts of these Trees, which grow as far North as *Virginia*, where one is called Papaw-tree; but there they are never large Trees, and are often injured by Cold in Winter. These Sorts thrive much better in *Carolina*; but whether either of these are the same as are found in the Islands of the *West-*

Indies, I cannot absolutely determine: one of these Sorts will thrive in the open Air in *England*, if it is planted in a warm sheltered Situation; but the Plants should be trained up in Pots, and sheltered in Winter, for two or three Years, until they have acquired some Strength; then they may be turned out of the Pots in the Spring, and planted in the full Ground, where they are to remain. This Sort has produced Flowers in the curious Garden of his Grace the Duke of *Argyll* at *Whitton* near *Hounslow*; where it has been growing in the open Air for some Years. The Seeds of this Sort are frequently brought to *England* from *North America*; and many Plants have been lately raised in the Gardens near *London*. The Seeds of this Sort are very different in Shape, from any of those which I have yet seen, which have been brought from the Islands of the *West-Indies*, and the Shape of the Leaves is also different; and this casts its Leaves in Autumn, whereas all the others retain their Leaves, never casting them until the Spring, when the new Leaves come out; so that it may certainly be deemed a distinct Species. The Seeds of this Sort frequently remain a whole Year in the Ground; therefore the Earth should not be disturbed where they are sown, if the Plants do not come up the first Year: but the best Way is, to sow the Seeds in Pots, which may be sheltered in Winter; and if they are plunged into a moderate Hot-bed in the Spring, the Plants will come up much sooner than they will in the open Air; so will have more time to get Strength before the Winter.

The first Sort usually grows to the Height of twenty-five Feet or upward, in the *West-Indies*; and is well furnished with Branches or
ever

every Side: the Bark is smooth, and of an Ash-colour: the Leaves are oblong, pointed, and have several deep transverse Ribs or Veins, and are of a light-green Colour: the Fruit is of a conical Form, and as large as a Tennis-ball; of an Orange-colour, when ripe, having a soft sweet yellowish Pulp, of the Consistence of a Custard, from whence this Name was given to it.

The second Sort is not so large as the first; rarely rising above twenty Feet high, and not so well furnished with Branches; the Leaves are broader than those, and have a smooth Surface without any Furrows, and are of a shining-green Colour: the Fruit is large, of an oval Shape, irregular, and pointed at the Top; being of a greenish-yellow Colour, and full of small Knobs on the Outside: the Pulp is soft, white, and of a sour and sweet Taste intermixed, having many oblong dark-colour'd Seeds.

The third Sort commonly grows from thirty to forty Feet in the *West-Indies*. This hath oblong pointed Leaves, which have some slender Furrows, and when rubbed have a strong Scent: the Fruit of this Sort is seldom eaten but by the Negroes: the Tree grows in moist Places in all the Islands of the *West-Indies*.

The fourth Sort is a Tree of humbler Growth, seldom rising more than twenty Feet high, and is well furnish'd with Branches on every Side: the Leaves of this Sort have an agreeable Scent when rubbed: the Fruit is roundish and scaly, and when ripe turns to a purple Colour, and hath a sweet Pulp.

The fifth Sort is much cultivated in *Peru* for the Fruit; and from thence the Seeds have been brought to *England*, and many Plants have

been raised. This grows to be a very large Tree in the natural Country of its Growth, and is well furnished with Branches, which are garnished with Leaves of a bright green Colour, and much larger than those of any of the other Sorts. The Fruit is shaped like an Heart, and is scaly on the Outside, being of a dark-purple Colour when ripe: the Flesh is soft and sweet, has many brown Seeds intermixed: this Fruit is esteemed by the *Peruvians* as one of their most delicate Sorts. This has produced Flowers in *England*, but no Fruit.

The sixth and seventh Sorts grow in some of the *French* Islands, as also in *Cuba*, in great Plenty: these grow to the Height of three Feet or more: their Fruit are esteemed by the Inhabitants of those Islands, who frequently give them to sick Persons, as they reckon them very cooling and wholsome.

The eighth Sort grows plentifully in the *Babama* Islands, where it seldom rises to more than ten Feet high, having several Stems: the Fruit of this Sort is shaped like a Pear inverted, the largest End being at the Footstalk. This is seldom eaten but by the Negroes, and is the Food of *Guana's*, and other Animals.

All these Sorts, which are Natives of the warm Parts of *America*, are too tender to live in this Country, if they are not preserved in warm Stoves: they come up very easily from the Seeds which are brought from *America*, if they are fresh: but the Seeds must be sown on a good Hot-bed, or in Pots of light Earth, and plunged into an Hot-bed of Tanners Bark. These Seeds should be sown as soon as possible when they arrive, unless it is very late in Autumn, or in Winter: in

which Case, they should not be sown till *February*; because if the Seeds receive much Damp in the Winter, they will rot; and if the Plants should come up at that Season, it will be very difficult to preserve them till the Spring; so that when these Seeds come to *England*, pretty early in the Spring, it is by much the best time; because the Plants come up early, and will have time to get Strength, before the cold Weather comes on in Autumn.

If these Plants are kept in the Bark-stove, and carefully managed, they will make great Progress; but in warm Weather they should have plenty of fresh Air admitted to them; for when the Air is excluded from them too much, they are apt to grow sickly; when they will soon be attacked by Vermin, which will multiply and spread over the whole Surface of the Leaves, and cause them to decay: but if the Plants are carefully managed, their Leaves will continue green all the Winter, and make a very good Appearance in the Stove at that Season.

There are some of these Plants in *England*, which are upward of twelve Feet high, and have produc'd Flowers; so that they may probably produce Fruit here. As these Plants advance in their Growth, they become more hardy, and should have a greater Share of Air admitted to them, especially in the Summer: but there should be great Care taken, not to let them remain in the Bark-bed too long unremoved; because they are very apt to root thro' the Holes of the Pots into the Tan; and then these Roots will be torn off, whenever the Pots are removed, and the Plants seldom survive this; and when they do, it is generally a long time before they perfectly recover their former Vigour. These Plants,

when young, will require to be kept in the same Degree of Warmth with the *Ananas*; but as they get more Strength, they will thrive with less Warmth.

The *Virginia* Sort may be planted abroad, in a warm sheltered Situation, when the Plants have acquired some Strength, where they will endure the Cold of our ordinary Winters very well.

GUAZUMA, Bastard Cedar tree, *vulgo*.

The Characters are;

It hath a regular Flower consisting of five Leaves, which are hollowed like a Spoon at their Base; but at their Tops are divided into two Parts, like a Fork: the Flower-cup consists of three Leaves, from whence arises the Pointal, which afterward becomes a roundish warty Fruit, which has five Cells inclosing many Seeds.

The Species are;

1. **GUAZUMA** *arbor ulmifolia*, fructu ex purpura nigro. *Plum. Nov. Gen.* The bastard Cedar-tree, *vulgo*.

2. **GUAZUMA** *frutex chamædryfolia*, fructu lanuginoso, major. *Plum. Nov. Gen.* Shrubby Guazuma, with a Ground-pine-leaf, and a larger woolly Fruit.

3. **GUAZUMA** *frutex chamædryfolia*, fructu lanuginoso, minor. *Plum. Nov. Gen.* Shrubby Guazuma, with a Ground-pine-leaf, and a lesser woolly Fruit.

The first Sort grows plentifully in the Low-lands in *Jamaica*, where it rises to the Height of forty or fifty Feet, and has a large Trunk. The Timber of this Tree is cut into Staves for Casks of all Sorts, and used for many other Purposes. The Fruit is eaten by Cattle as it falls from the Trees, and is esteemed very good to fatten them; so that the Planters often leave these Trees standing in their Savannas, when they

they clear them from all other Wood; because, when there is a Scarcity of Grass, and other Food, these Fruit are a great Support to their large Cattle.

The other two Sorts are pretty common in several Parts of the *West-Indies*, where they grow about ten or twelve Feet high; but are of little Use to the Inhabitants.

These Plants may be propagated by Seed, which should be sown early in the Spring, in small Pots filled with fresh light Earth, and plunged into an Hot-bed of Tanners Bark. When the Plants are about three Inches high, they must be shaken out of the Pots, and parted carefully, planting each into a separate small Pot filled with fresh light Earth, and then plunged into the Hot-bed again, being careful to screen them from the Heat of the Sun, until they have taken new Root. In this Bed the Plants may remain all the Summer. About *Michaelmas* the Plants must be removed into the Stove, and plunged into the Tan in a warm Part of it. During the Winter-season they will not require so much Water as in Summer: if their Leaves should contract Filth, it must be carefully washed off with a Sponge; for if it is suffered to remain on them, it will greatly injure the Plants. These Plants being very tender, they must constantly remain in the Stoves, giving them a good Share of fresh Air in Summer; but in Winter they must be kept very warm, otherwise they will not live in this Country; but if they are carefully managed, they will thrive very well, and afford an agreeable Variety in the Stove amongst other tender Exotic Plants of the same Countries.

GUIDONIA.

This Name was given to this Genus of Plants by Father *Plumier*,

who discovered them in the *West-Indies*, in Honour to two Persons of Eminence in *France*; viz. Monsieur *Guido Fagon* the King's first Physician, and *Guidon Bros*, who was Intendant of the Royal Garden at *Paris*.

The Characters are;

The Empalement of the Flower is of one Leaf, and is divided into five Parts: the Flower is of one Leaf, which is in form of a truncated Cone, having deep Furrows, and is indented at the Brim: from the Centre of the Empalement arises the Pointal, which afterward turns to an oval fleshy Fruit, which opens in four Parts from Top to Bottom, inclosing many oblong Seeds, which are fastened to the Placenta.

The Species are;

1. *GUIDONIA ulmi foliis, flore roseo.* Plum. Nov. Gen. *Guidonia* with Elm-leaves, and a rose-colour'd Flower.

2. *GUIDONIA ulmi foliis, flore nigro.* Plum. Nov. Gen. *Guidonia* with Elm-leaves, and a white Flower.

3. *GUIDONIA aurantii foliis, aculeata.* Plum. Nov. Gen. Prickly *Guidonia*, with Orange-leaves.

4. *GUIDONIA nucis juglandis foliis, major.* Plum. Nov. Gen. Greater *Guidonia*, with Walnut-tree-leaves.

5. *GUIDONIA nucis juglandis foliis, minor.* Plum. Nov. Gen. Lesser *Guidonia*, with Walnut-tree-leaves.

These Plants are all of them very tender; so must be placed in the Bark-stove, especially while they are young, which will greatly forward their Growth. These may be all propagated by Seeds, which should be sown in Pots filled with fresh light Earth, early in the Spring, and plunged into an Hot-bed of Tanners Bark. When the Plants are about three Inches high, they should be carefully taken up, and each transplanted into a separate Pot, and

plunged into the Hot-bed again, observing to shade them from the Sun until they have taken Root; after which time they must be treated as hath been directed for the Guazuma. The two first Winters, these Plants may be placed in the Bark-stove; but when they have acquir'd Strength, they may be inured to bear the open Air in the warmest Part of the Summer; and in Winter they may be placed on Stands in the dry Stove, where, if they are kept in a moderate Temperature of Warmth, they will thrive very well, and produce their Flowers every Year in July and August; but they rarely perfect Seeds in this Country.

They may be also propagated by laying their Branches down into the Earth: this should be done in April; and if they are duly watered, they will be rooted enough to transplant by the following Year; when they should be taken off, and transplanted into Pots, and managed as is directed for the Seedling-plants. But when it is proposed to increase these Plants after this manner, it will be proper to encourage some Shoots near the Bottom of the Stems of the old Plants (from whence they are very apt to send forth Shoots); because these will be much more convenient to make Layers, than those which are placed higher from the Earth.

Some of these Plants will grow from Cuttings, when they are rightly managed. These Cuttings should be planted in the Beginning of April (just before the Plants begin to shoot) in Pots filled with rich light Earth, and plunged into a moderate Hot-bed of Tanners Bark, observing to water and shade them until they have taken Root, which will be in about two Months, if they succeed; when they may be inured to bear

the open Air by degrees; and in August they may be transplanted into separate Pots, and afterward must be managed as is before directed for the Seedling-plants and Layers. The Plants thus raised, will produce Flowers much sooner than those raised from Seed; but they seldom grow to make so large Plants as those do.

GUNDELIA.

This Plant was so named by Dr. Tournefort, in Honour to Dr. Gundelcheimer, who found it in his Travels in Company with Dr. Tournefort in the Levant.

The Characters are;

It is a Plant with a fasciculous Flower, gathered into a kind of Head, consisting of many Florets, coming out of a common Empalement, and sitting on the Embryos of the Seed, which are hid in the Cells of the Empalement, and afterward become roundish Seeds ending in a Point.

The Species are;

1. GUNDELIA *Orientalis, acanthi aculeati foliis, floribus intense purpureis, capite araneosa lanugine obsito.* Tourn. Cor. Eastern Gundelia, with a prickly Bears-breech-leaf, deep-purple Flowers, and an Head woven, as it were, with a Cobweb.

2. GUNDELIA *Orientalis, acanthi aculeati folio, capite glabro.* Tourn. Cor. Eastern Gundelia, with a prickly Bears-breech-leaf, and a smooth Head.

The second Sort is figur'd and described in the second Volume of Dr. Tournefort's Travels in the Levant. It was discovered, as I said, by Dr. Gundelcheimer near Baibout, in their Journey to Armenia, growing in dry stony Places.

The first Sort seems to be a Variety of the second, and was found intermixed with it in the same Places.

These Plants are propagated by Seed, which should be sown the Beginning of *March*, in a warm dry Border of fresh, but lean Earth; for they will not live long in a moist rich Soil. When the Plants come up, they must be carefully cleared from Weeds; as they grow large, they should be thinned and transplanted out in warm Borders, leaving the Plants, which are designed to remain, about two Feet asunder, that they may have room to spread. After this there is no other Culture required, but to keep them clear from Weeds; and in two Years they will produce their Flowers, when they will make a fine Appearance amongst other hardy Flowers in the Pleasure-garden: but these Plants rarely perfect Seeds in this Country, which is the Case of several other of the headed Plants; for if the Season should prove moist at the time when the Plants are in Flower, the Wet soaks into the Empalement where the Embryoes of the Seed are lodged, which prevents their ripening, and causes them to rot; so that the Seeds must be procured from Abroad.

These Plants are apt to shoot their Roots very deep into the Ground, which renders it very difficult to transplant them with Safety, especially after they are grown to any Size: therefore it will be proper to permit most of the Plants to remain in the Place where they were sown; and such of them as are removed, should be transplanted the Autumn following their coming up. If these are sown upon a shallow Ground, where there is a gravelly Bottom, they will succeed better than in a rich deep Soil, where the Roots frequently run so deep into the Ground, as to be rotted in Winter by Moisture.



H Æ

HÆMANTHUS, Blood-flower.

The Characters are;

The Empalement of the Flower is large, composed of six oblong Leaves, which grow in form of an Umbel, and do not fall off: the Flower is of one Leaf, which is cut into six slender Parts at the Top; but the Bottom is tubulous and angular: in the Centre if each Flower is situated the oblong Pointal, attended by six Stamina, which are inserted at their Base into the Petals of the Flower, but are stretched out much longer at the Top: the Pointal afterward changes to a roundish Berry, having three Cells, each containing one triangular Seed.

The Species are;

1. HÆMANTHUS *foliis linguæformibus*. Flor. Leyd. Blood-flower, or African Tulip, vulgo.

2. HÆMANTHUS *foliis lanceolatis*. Lin. Hort. Cliff. Blood-flower with spear-shaped Leaves.

These Plants were brought from the Cape of Good Hope to the curious Gardens in Holland, where the first Sort has been long an Inhabitant. This has been well figured in some of the old *Herbals*, and Books of Flowers: in some of these Books it is called a Lily, in others Liliomarcissus, and Narcissus Indicus; and by one Author *Tulipa Promontorii Bonæ Spei, i. e.* Tulip of the Cape of Good Hope. Of this Sort the Gardeners in Holland make two or three Varieties, which they distinguish by the Shape of their bulbous Roots; but they are not distinct Species. This Sort is only propagated

gated by the Roots in *Europe*; for it never produces any Seeds. The Season for transplanting the Bulbs is in *May* or *June*, when the Leaves are decayed, 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 mixed two or three Months before used, 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 drained off; and afterwards put the Earth into the Pots, planting the Bulbs therein, only so deep as that their Upper-parts may be just covered: 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 Latter-end of *August*, when they must be removed 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 removed into a moderate Stove, where they must be carefully preserved, observing frequently to refresh them with Water; for now their Leaves will appear, and will, in a short time, 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

placed should be kept to near the temperate Heat, as is mark'd on the Botanical Thermometers; in which they will thrive very well, and if the Bulbs are strong, will produce their beautiful Flowers late in Autumn, or 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.

The Flowers of this Sort generally come up before the green Leaves appear: but these Plants seldom flower in *Europe*, nor do the Roots propagate much by Off-sets; for in upward of twenty Years, which I have had this Plant, it has produced but one Off-set, and has flowered but twice in that time; nor do I find, that it flowers any better in *Holland*: but they have either a Method of propagating the Roots, by splitting them, or they are furnished with Seeds from abroad; for in some Gardens they have plenty of the Roots: but altho' this Plant doth not often flower, yet, for the Singularity of the Plant, it may have a Place in the Stove; for in Winter the green Leaves appear, which are seldom more than two: these are very long and broad, shaped like a Tongue, and are reflexed backward, one on each Side, to the Ground; so that they spread over the whole Surface of the Pots in which they grow, and have a different Appearance from all the Plants at present known.

The second Sort was brought from the *Cape of Good Hope* to the curious Garden of Mr. *Beaumont* in *Holland*; but is now become pretty common
in

most of the curious Gardens in Europe. This Sort rises up with a stem of one Foot in Height, which is covered with dark Spots like that of the Dragon; which occasioned Dr. Boerhaave to give it the Title of *Dracunculoides*; but, upon examining the Characters of the Flower, it was found to agree with those of the *Hæmanthus*, to which it has been since joined, by later Botanists. The Roots of this Sort are not bulbous, but run out into many fleshy wing Tubers, somewhat like those of the Spiderwort: the Stem rises about one Foot high, from whence the Leaves come out, embracing the herbaceous Stalk, which are about six Inches long, having a large Middle, and are waved on their Edges: the Flowers grow upon strong Foot-stalks, which are produced from the stems by the Side of the Leaves, and are about one Foot and an half high, supporting an Umbel of fine red flowers, inclosed in one common Empalement. These Flowers are often succeeded by fine scarlet Berries, each having one Seed.

It is propagated by Off-sets, which should be taken off in *May*, at which time these Plants begin to lose their leaves; for they are ready to put out new Leaves in *July*, and continue growing all the Autumn and Winter; but toward the End of *May* the Leaves begin to decay; at which time the Plants should be new-potted; and if they have any Off-sets which are sufficiently rooted, they must be taken off, and planted in Pots filled with light rich Earth. In transplanting of these Plants, there must be particular Care to lay some stones and Rubbish in the Bottom of the Pots to let the Moisture pass off; for if the Wet is detained in the Pots, it will soon cause the Roots to perish. During the Season of

their Inactivity, which is commonly from the Beginning of *May* to the Beginning of *July*, they must not have too much Water, lest it rot their Roots; but when they are in Vigour, they will require a little more.

These Plants must be constantly kept in dry Stoves; for they do not thrive well, if they are set abroad, even in the warmest Part of the Summer; so that it is much the better Method to let them remain in the Stove, with Euphorbiums, and other tender succulent Plants, which require a large Share of free Air in warm Weather; in which Situation they will thrive exceeding well, and will annually produce their beautiful Flowers, which make a fine Appearance among other rare Plants. During the Winter-season they must be kept in a moderate Temperature of Heat, and should be frequently refreshed with Water; but it must not be given to them in large Quantities, lest it rot them. This Plant is not constant in the time of its flowering, but the most usual Season is in *July* or *August*; but when it flowers in the Spring, it frequently perfects Seeds in this Country; which, if sown soon after they are ripe, and preserved in the Stove till Spring, and then placed in an Hot-bed of Tanners Bark, will grow very well; and by this Method a much greater Increase of the Plants may be obtained in a Year or two, than could be by Off-sets in many Years.

HÆMATOXYLUM, Logwood, or *Campechy* Wood.

The Characters are;

The Empalement of the Flower consists of one Leaf, which is cut into five Parts: the Flower has five oval Leaves, which spread open, and are larger than the Empalement: in the Centre

Centre of the Flower is situated the Pointal, attended by ten slender Stamina, which are stretched out beyond the Petals: the Pointal afterward turns to a compressed Pod, which opens both ways, and contains two or three compressed kidney-shaped Seeds.

There is but one Species of this Tree at present known, nor hath the Plant been long introduced into Europe; tho' the Wood has been long used in dyeing of Red and Scarlets; and it is from this Wood affording such Dyes, that Dr. *Linnaeus* has given this Title to the Genus of *Hæmatoxylum*, i. e. Bloodwood. Those Authors who have mentioned this Tree before him (which are but few) have given it the Title of *Campechy* Wood, from its growing plentifully in the Bay of *Campechy*: but as it is found growing in many other Places, that Name is very improperly applied to it.

HÆMATOXYLUM foliis pennatis, foliolis ovato-cordatis. Logwood with winged Leaves, whose small Lobes are of an oval Heart-shape.

This Tree, in the natural Places of its Growth, is from sixteen to twenty-four Feet in Height: the Stems generally are very crooked and deformed; the Branches also come out very straggling and irregular, and are seldom well clothed with Leaves, so that it makes but an indifferent Appearance: but the Wood is of great Service in dyeing of Reds, Scarlets, and some other Colours; without which it will be very difficult to dye some of these Colours. This Tree growing plentifully in the Bays of *Campechy* and *Honduras*, which Places are in the Possession of the *Spaniards*, who pretend to have a Right of excluding all other Nations from cutting of this Wood, has occasioned many Differences between them and the

other Powers of Europe; but particularly with the *English*, who claim a Privilege, granted to them by ancient Treaties, of cutting this Wood in both those Places: but it is to be hoped, that the *English* may be supplied with this Commodity from their own Settlements in *America*, where it grows as well, as in either of those Bays; so that it must be wholly ascribed to the Indolence of the Inhabitants of the *British* Colonies, in not cultivating these Trees in the Swamps, which will produce little else, if there is not enough of this Wood, to supply the *English* Consumption; for these Trees will grow large enough for Use, in ten or twelve Years from the Seed: and it is to be observed, that where any of these Trees have been planted in the *British* Islands, they have in a few Years produced Seeds, which have scattered, and filled the neighbouring Ground with young Plants, which have grown extremely well without any Care: so that if a few Trees were planted upon all the waste swampy Grounds in the Islands, and protected from being over-run with other Plants, they would, in a few Years, spread over these Swamps, and a sufficient Stock of the Wood would be produced: but I fear the Planters have little Curiosity to try these Experiments, and nothing but the Culture of Sugar will take Place among them.

This Plant is preserved in some curious Gardens in *England*, for the sake of Variety. The Seeds are frequently brought from *America*, which, if fresh, do readily grow when sown upon a good Hot-bed: and if the Plants are kept in a moderate Hot-bed, they will grow to be upward of a Foot high the same Year; and, while the Plants are young, they are generally well furnished

nished with Leaves; but afterward the Plants make but little Progress, and are frequently but thinly clothed with them. These Plants are very tender; so should be constantly kept in the Bark-stove; where if they are duly watered, and the Stove kept in a good Degree of Heat, the Plants may be preserved very well. There are some of these Plants now in *England*, which are upward of six Feet high, and as thriving as those in their native Soil.

HALICACABUM. *Vide* Alkekengi.

HALICACABUS PEREGRINA. *Vide* Corindum.

HALIMUS. *Vide* Atriplex.

HALLERIA, *African Fly Honey-suckle, vulgo.*

This Plant was so named by Dr. *Linnæus*, in Honour to *Albertus Haller*, Professor of Botany at *Gottingen*.

The Characters are;

The Empalement of the Flower is of one Leaf, which is cut into three Segments, the upper one being much broader than either of the other: the Flower consists of one Leaf, and is in Shape like the Snap-dragon, having a Tube, and the Upper-part joined, and reflexed, and at the Brim is divided into four Parts: in the Centre of the Flower is situated the Pointal, attended by four Stamina, two of which are longer than the other: the Pointal afterward changes to a round Berry having two Cells, each having one Seed.

We have but one Species of this Plant in *England*; which is,

HALLERIA foliis ovatis longitudinaliter serratis. *Flor. Leyd. African Fly Honey-suckle*, with oval Leaves sawed the whole Length.

The *English* Name which I have here added, has been given to this Plant by some Gardeners, who observed that the Shape of the Flower

had some Resemblance to that of the Upright or Fly Honey-suckle, and, for want of an *English* Name, gave this to it; or they might take it from the *Latin* Name, by which it was called by Dr. *Boerhaave*, who made it a Species of Honey-suckle.

This Plant grows to the Height of six or eight Feet, having a woody Stem, which is well furnished with Branches: these have oval sawed Leaves, which are placed opposite by Pairs, and continue green thro' the Year: the Flowers come out singly, and are of a red Colour; but, being intermixed with the Leaves, make but small Appearance: yet as the Leaves are green in Winter, the Plants make a Variety in the Green-house during that Season.

It may be propagated by Cuttings, which, if planted in Pots filled with light Earth in the Spring, and plunged into a gentle Hot-bed, will soon take Root. These Plants may be exposed in Summer, and will require Plenty of Water: in Winter they must be housed with Myrtles, and other hardy Exotic Plants.

HAMAMELIS, *Witch-hazel, vulgo.*

The Characters are;

The Empalement of the Flower is of one Leaf, which is cut into four Segments to the Bottom: the Flower consists of one Leaf, which is cut into four narrow Segments to the Bottom, and turn backward: the Pointal is situated in the Centre of the Flower, which is hairy, and is attended by four Stamina: the Pointal afterward changes to a Capsule or Husk, having two Cells, each containing one oblong smooth shining Seed.

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

HAMAMELIS coryli foliis. *Witch-hazel.*

This Shrub grows plentifully in *Virginia, Maryland, and Carolina*, from whence I have frequently received the Seeds, with this Name of *Witch-hazel*; which I suppose has been given to it, from the Resemblance which the Leaves of this Plant have to those of the Hazel tree. This was discovered by Mr. *Banister* in *Virginia*, and sent to Dr. *Plukenet*, who has figured it with the Title of *Pistachia Virginiana nigra, coryli foliis, i. e.* the black *Virginia Pistachia*-nut, with Hazel-leaves: but it is of late Years this Shrub has been introduced into the *English* Gardens, where it thrives very well in the open Air; but with us it is a low Shrub, seldom rising above three Feet high, shooting out many lateral Branches on every Side, which grow horizontally, spreading near the Surface of the Ground. The Leaves are in Shape like those of the Hazel, having many deep Furrows, and are blunt at their Ends. The Flowers appear late in Autumn, after the Leaves are fallen: these grow in small Clusters, and are of a yellowish Colour, but fall away without producing Seed.

This is propagated by laying down the young Branches in Autumn, which will take Root in one Year, provided they are duly watered in dry Weather: but most of the Plants which are in the Gardens, have been produced from Seeds which came from *America*. These Seeds always remain a whole Year in the Ground; so they should be sown in Pots, which may be plunged into the Ground in a shady Part of the Garden, where they may remain all the Summer, and require no other Care but to keep the Pots clean from Weeds, and in very dry Weather to water them now-and-then: in Autumn the Pots may be removed to a warmer

Situation, and plunged into the Ground under a warm Hedge; and if the Winter should prove very severe, they should have some light Covering thrown over the Pots, which will secure the Seeds from being destroyed. In the Spring the Plants will come up; therefore as the Season grows warm, the Pots may be removed where they may have the morning Sun till Eleven o'Clock; and if they are duly watered in dry Weather, the Plants will have made good Progress by Autumn; when they should be transplanted, either into small Pots, or into a Nursery-bed; where in one, or at most two Years time, they will be strong enough to plant where they are designed to grow.

HARMALA, Wild Syrian Rue.

The Characters are;

The Leaves are produced alternately on the Branches: the Flower consists of five Leaves, which expand in form of a Rose: the Ovary arises from the Bottom of the Calyx, and becomes a roundish Fruit, divided into three Cells.

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

HARMALA. *Dod.* Harmel, or Wild Rue

This Plant is propagated by sowing the Seeds in the Spring, upon a moderate Hot-bed, or on a Border of light Earth; and when the Plants come up, they should be transplanted into a Border of good light Earth, at the Distance of six Inches from each other, where they may remain until the succeeding Spring, when they may be removed to the Places where they are to continue. The second Summer after sowing they generally produce Flowers, and, if the Autumn proves favourable, will perfect their Seeds. The Branches die to the Stump or Head every Autumn,

Autumn, and fresh are produced in the Spring.

This Plant is mentioned in the Catalogue of Simples annexed to the *College Dispensatory*, as a Medicinal Plant; but it is rarely used in *England*: nor is it a Plant of any great Beauty; so that it is rarely preserved in Gardens, but for the sake of Variety.

HAWTHORN. *Vide Mespilus.*

HAZEL. *Vide Corylus.*

HERERA, The Ivy-tree.

The Characters are;

It is a parasitic Plant, sending forth Roots or Fibres from its Branches, by which it is fastened to either Trees, Walls, or Pales, which are near it; and from thence receives a great Share of its Nourishment: the Leaves are angular: the Flowers, for the most part, consist of six Leaves, and are succeeded by round black Berries, which grow in round Bunches, each of which, for the most part, contains four Seeds.

The Species are;

1. HEDERA arborea. C B. Common Ivy.

2. HEDERA arborea, foliis cymis flavescens. Common Ivy, with the Leaves upon the Upper-part of the Shoots of a pale-yellow Colour.

3. HEDERA communis minor, foliis ex albo & viridi variis. Boerb. Ind. alt. The silver-striped Ivy.

4. HEDERA communis minor, foliis ex luteo variegatis. The yellow variegated Ivy.

The first of these Plants is very common in most Parts of *England*, growing sometimes very large, and forming a sort of Trees, and at other times fastening itself to whatever Tree, Wall, or Pale, it stands near, where it appears like a trailing Plant; which has occasioned most Botanic Writers to mention them as

two distinct Plants, whereas in reality they are the same, their Difference being occasioned by their different Situations; as may be often observed, when the upper Branches of these trailing Plants get above the Trees or Walls to which they are fastened; then they grow more woody, and form large Heads producing Fruit; whereas that Part which is below, never makes any Effort to produce either Flowers or Fruit.

These Plants are easily propagated by their trailing Branches, which send forth Roots at every Joint; which Branches, being cut off, and planted, will grow in almost any Soil or Situation, and may be trained up to Stems, or suffered to remain Climbers, to cover Walls, Pales, &c.

They may also be propagated by Seeds, which should be sown soon after they are ripe: but they very often remain one Year in the Ground before they appear; which being a tedious Method, most People make use of the former, which is very expeditious and certain.

The second Sort is a Variety of the first, from which it differs in having the Leaves upon the Upper-part of the Branches, of a pale-yellow Colour: this is propagated in the same manner as the former, and may be preserved for the sake of Variety.

The third and fourth Sorts are very beautiful Plants, and are often planted against Walls or Buildings, where they adhere to the Bricks, and grow so close as to hide them from the Sight: these also may be trained up to regular Stems and Heads, and are increased as the former Sorts.

HEDERA TERRESTRIS. *Vide Glechoma.*

HEDY-

HEDYPNOIS, Trailing crooked-seeded Hawkweed.

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 Hawkweed, 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 Botanic 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 Tournesort. These may all be propagated by sowing their Seeds toward 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 care not 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 stand too close together. These Plants produce their Flowers in June and July; and their Seeds are perfected in August, when

they should be gathered, and preserved 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, rising out of the Empalement, becomes a jointed undulated Pod; in each of which Joints is lodged a kidney-shaped Seed.

The Species are;

1. HEDYSARUM *clypeatum*, *flore suaviter rubente*. H. Eyst. 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 *triphyllum* *Canadense*. Cornut. Three-leav'd Canada French Honey-suckle.

5. HEDYSARUM *annuum*, *siliqua aspera undulata intorta*. Tourn. Annual French Honey-suckle, with a rough waved and wreathed Pod.

6. HEDYSARUM *Alpinum*, *siliqua lævi*, *flore purpuro-cæruleo*. Tourn. Alpine French Honey-suckle, with a smooth Pod, and a blue purple Flower.

7. HEDYSARUM *Alpinum*, *siliqua lævi*, *flore albido*. Tourn. Alpine French Honey-suckle, with a smooth Pod, and a white Flower.

8. HEDYSARUM *minus* *diphyllum*, *flore luteo*. Sloan. Cat. Smaller two-leav'd French Honey-suckle, with a yellow Flower.

9. HEDYSARUM *triphyllum* *fruticosum*, *flore purpureo*, *siliqua varie distorta*. Sloan. Cat. Three-leav'd shrubby French Honey-suckle, with a purple

a purple Flower, and a variously distorted Pod.

10. *HEDYSARUM triphyllum fruticosum minus*. Sloan. Cat. Smaller three leav'd French shrubby Honey-suckle.

11. *HEDYSARUM triphyllum fruticosum supinum, flore purpureo*. Sloan. Cat. Three-leav'd shrubby dwarf French Honey-suckle, with a purple Flower.

12. *HEDYSARUM annuum majus Zeylanicum, mimosæ foliis*. Tourn. The greater annual French Honey-suckle of Zeylon, with Leaves like the sensitive Plant.

13. *HEDYSARUM annuum minus Zeylanicum, mimosæ foliis*. Tourn. The lesser annual French Honey-suckle of Zeylon, with Leaves like the sensitive Plant.

14. *HEDYSARUM arborescens, foliis mimosæ*. Plum. Cat. Shrubby French Honey-suckle, with Leaves like the sensitive Plant.

15. *HEDYSARUM caule hirsuto, mimosæ foliis alatis, pinnis acutis minimis gramineis*. Sloan. Cat. French Honey-suckle with an hairy Stalk, winged Leaves like the sensitive Plant, and smallest pointed grass-like Wings.

26. *HEDYSARUM minimum procumbens, foliis pinnatis subrotundis, flore luteo*. Houß. Smaller trailing French Honey-suckle, with roundish winged Leaves, and a yellow Flower.

17. *HEDYSARUM triphyllum frutescens, foliis subrotundis & subtus sessicis, flore purpureo*. Houß. Three-leav'd shrubby French Honey-suckle, with roundish Leaves, which are silky underneath, and a purple Flower.

18. *HEDYSARUM triphyllum humile, flore conglomerato, calyce villosa*. Houß. Dwarf three-leav'd French Honey-suckle, with Flowers

growing in Clusters, and an hairy Cup.

19. *HEDYSARUM triphyllum procumbens, foliis rotundioribus & minoribus, siliquis tenuibus, & intortis*. Houß. Trailing three-leav'd French Honey-suckle, with smaller and rounder Leaves, and narrow intorted Pods.

20. *HEDYSARUM triphyllum, caule triangulari, foliis mucronatis, siliquis tenuibus intortis*. Houß. Three-leav'd French Honey-suckle, with a triangular Stalk, pointed Leaves, and a narrow intorted Pod.

21. *HEDYSARUM triphyllum annuum erectum, siliquis intortis, & ad extremitatem amplioribus*. Houß. Three-leav'd annual upright French Honey-suckle, with intorted Pods, which are broad at their Extremity.

12. *HEDYSARUM triphyllum Americanum scandens, flore purpureo*. Three-leav'd climbing American French Honey-suckle, with a purple Flower.

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 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, at 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; and then 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 inter-
sperfed, to continue the Succeffion
of Flowers; where they will make
a fine Appearance when blown,
efpecially the red Sort, which pro-
duces very handsome Flowers.

These are tolerably hardy, and
are feldom hurt but by extreme Cold,
or great Rains. Moisture, efpecially
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
exposed, 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 Succeffion of
these Plants, their Seeds should be
fown every Spring; for the old
Roots feldom continue long after
they have flowered; and when they
do remain, their Flowers are feldom
so strong as from young Roots. Their
Season of flowering is in *June* and
July, and their Seeds are perfected
in *August* and *September*.

The third Sort is preserved in
some Gardens for Variety; but the
Flowers are not near so fair as those
of the two former: this requires the
fame Management as is directed for
them.

The fourth Sort hath a perennial
Root, which will abide many Years,
if planted in a dry Soil. This is
propagated by fowing 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 re-
main for good; for if they are not
too thick in the Seed-bed, they may
be fuffered to remain there until the

March following; at which time
they should be carefully taken up,
and transplanted into the Borders
where they are designed to stand; for
their Roots generally run down very
deep, fo that it is not safe to remove
them often. This Plant produces its
Flowers about the fame time of the
Year as the former, and perfects its
Seeds in Autumn; and the Roots
will abide in the open Air very well,
refusing the fevereft Cold, provided
they are planted in a dry Soil.

The fifth, sixth, and seventh Sorts
are very hardy Plants; fo will live
in the open Air in this Country.
These are propagated by Seeds, which
must be fown in *March*, in a Bed or
Border of light Earth, in the Place
where they are designed to remain;
because as they shoot their Roots
deep into the Earth, they do not
well bear transplanting. The Plants,
as they advance in their Growth,
should be thinned where they are too
close; leaving those which are de-
signed for Flowering, about a Foot
or eighteen Inches apart. In dry
Weather they will require some Wa-
ter; and to keep them clear from
Weeds, is all the Culture they want.
In *July* they will flower, and, if the
Autumn proves favourable, they will
perfect their Seeds in *September*.

The eighth, ninth, tenth, and
eleventh Sorts were discovered by
Sir Hans Sloane, Bart. in *Jamaica*;
from whence the Seeds have been
sent into *England*, and have succeed-
ed in feveral curious Gardens. These
are all of them annual Plants, not-
withstanding some of them grow
shrubby, and will rise to the Height
of eight or nine Feet; for they pe-
rish as soon as they have ripened
their Seeds in the Country of their
natural Growth.

The twelfth and thirteenth Sorts
were brought from *Ceylon*, by the
learned

learned Botanist, Dr. *Herman*, to the Physic-garden at *Leyden*; but they are not peculiar to that Country; for I have received Seeds of both these Sorts from several Parts of *America*, which have flourished in the Physic-garden at *Chelsea*.

The fourteenth Sort was discovered by Father *Plumier*, in some of the *French* Settlements in *America*. The Seeds of this Sort were sent me from *Campechy*, by the late Dr. *William Houstoun*.

The sixteenth, seventeenth, eighteenth, nineteenth, twentieth, and twenty-first Sorts were discovered by the late Dr. *William Houstoun* at *La Vera Cruz*, *Jamaica*, *Campechy*, and *Caribagena*; from which Places he sent the Seeds and Specimens into *England*. The twenty-second Sort I received from *South-Carolina*, which grew in the Physic-garden at *Chelsea*.

These are most of them annual Plants; and as they are Natives of warm Countries, require to be tenderly managed, to have them thrive in this Country. The Seeds of these Plants should be sown on an Hot-bed the Beginning of *March*; and when the Plants are about two Inches high, they must be carefully transplanted each into a separate small Pot filled with light rich Earth, and then plunged into an Hot-bed of Tanners Bark, being careful to shade them from the Sun until they have taken Root; after which time they must have fresh Air admitted to them every Day, in proportion to the Heat of the Weather: they must also be frequently refreshed with Water, which will greatly promote their Growth: and as those Sorts which grow upright, rise to touch the Glasses of the Hot-bed, they should be removed into the Bark-

bed in the Stove; or into a Glass-case, where they may have room to grow. If these Plants are brought forward early in the Spring, they will begin to flower by the Beginning of *July*, and then they will have time to ripen their Seeds before Winter; for if they are backward in flowering, they seldom perfect their Seed in this Country.

The twelfth Sort rarely perfects Seed in *England*; for it generally grows to be five or six Feet high, and is always late before it flowers; but the thirteenth Sort will produce good Seeds every Year, if rightly managed.

The seventeenth, eighteenth, and twenty-second Sorts will abide two Years, provided they are placed in a warm Stove in Winter; and these Plants, when they are kept through the Winter, will flower early the following Summer, so that good Seeds may be obtained from them.

All these Plants afford an agreeable Variety in the Stove amongst other Exotic Plants in Autumn, when they are in Flower; so that they are preserved by those who are curious in Botany.

HELENIA, Bastard Elecampane, or Willow-leav'd Sunflower.

The Characters are;

It hath a compound radiated Flower, consisting of many Florets, which are Hermaphrodite, and of Semiflorets, which are Female: the Ovaries stand on a naked Placenta, each bearing an antient Crown: all these Parts are included in a simple Empalement, which expands, and is cut almost to the Bottom in several Parts.

The Title of this Genus has been altered by Dr. *Linnaeus* from *Heleniastrum*, which was given to it by Monsieur *Vaillant*, Professor of Botany at *Paris*.

The *Species* are ;

1. HELENIA *foliis linearibus decurrentibus*. Bastard Elecampane, with a longer and narrower running Leaf.

2. HELENIA *foliis lanceolatis decurrentibus*. Bastard Elecampane, with a broader and shorter running Leaf.

These Plants are both of them Natives of *America*: the Seeds of both Sorts I have received from *Virginia* and *New-England*, where they grow wild in great Plenty in the Woods, and other shady Places, where the Ground is moist. They may be propagated by Seeds, or by parting their Roots; but the latter is generally practised in this Country, because they seldom perfect their Seeds here; but if Seeds are procured from abroad, they should be sown the Beginning of *March* on a warm Border of light Earth: and if the Seeds should not come up the first Year, the Ground should not be disturbed; because they often remain a whole Year under-ground, before the Plants appear: in which Case there is nothing more to be done, but to keep the Ground clear from Weeds, and wait till the Plants come up. When they appear, if the Season proves dry, they must be often watered, which will greatly forward their Growth; and where the Plants come up too close to each other, they should be thinned, and transplanted out into Beds a Foot asunder every Way; being careful to shade them until they have taken Root, as also to water them in dry Weather. In the Autumn they will produce their Flowers, which will continue till the Frost prevents them; and their Roots will abide many Years, and afford many Off-sets, by which they may be increased.

The best Season to transplant the old Roots, and to part them for In-

crease, is in *October*, or the Beginning of *March*, just before they begin to shoot; but if the Spring should prove dry, they must be duly watered, otherwise they will not produce many Flowers the same Year. These Plants should not be removed oftener than every other Year; for as they do not spread their Roots very wide, they will very well continue two Years within due Compass. They delight in a Soil rather moist than dry, provided it be not too strong, or hold the Wet in Winter: but if they are planted in a dry Soil, they must be often and plentifully watered in dry Weather, to make them produce plenty of Flowers.

These Plants generally rise about three Feet and an half, or four Feet high; therefore should be planted in the Middle of large Borders, intermixed with Flowers of the same Growth, where they will make a pretty Variety, because they continue a long time in Flower: and as they require very little Care to cultivate them, they deserve a Place in every large Garden. Their Flowers resemble those of the smaller Kinds of Sunflower, and have been by some Botanists ranged in that Genus. The time of their Flowering is from *July* until the Frost stops them.

HELENIUM, Elecampane.

The Characters are;

It hath a radiated Flower, whose Florets are Hermaphrodite, but the Semiflorets are Female; both these are yellow; the Ovaries, which rest on a naked Placenta, are crowned with Down: all these Parts are included in a scaly Cup: to these Notes may be added, The Leaves growing alternately on the Stalks, and the Flowers grow on the Top of the Branches.

The Species are;

1. HELENIUM *vulgare*. C. B. P. Common Elecampane.

2. HELE-

2. *HELENIUM virgæ pastoris folio, subtus incano & tomentoso. Vaill. Mem.* Yellow Starwort, with a wild Teasel-leaf, which is hoary and woolly underneath.

3. *HELENIUM villosum, conyzæ folio, magno flore. Vaill. Mem.* Yellow hairy Starwort, with a Fleabane-leaf, and a large Flower.

4. *HELENIUM conyzæ folio, prægrandi flore, calyce pilosissimo. Vaill. Mem.* Yellow Starwort, with a Fleabane-leaf, and a larger Flower, with a very hairy Cup.

5. *HELENIUM Creticum, conyzæ folio, asphodeli radice. Vaill. Mem.* Yellow Starwort of Crete, with a Fleabane-leaf, and an Asphodel-root.

6. *HELENIUM palustre, folio longiori lanuginoso. Vaill. Mem.* Marsh yellow Starwort, with a longer woolly Leaf.

7. *HELENIUM conyzæ folio lanuginoso, radice odora. Vaill. Mem.* Yellow Starwort, with a woolly Fleabane leaf, and a sweet-smelling Root.

8. *HELENIUM palustre villosum odoratum, conyzæ folio. Vaill. Mem.* Hairy marsh sweet-smelling Starwort, with a Fleabane-leaf.

9. *HELENIUM montanum villosum angustifolium, flore magno singulari. Vaill. Mem.* Hairy mountain yellow Starwort, with a narrow Leaf, and a large single Flower.

10. *HELENIUM lanuginosum angustifolium, summo caule ramofo. Vaill. Mem.* Woolly yellow Starwort, with a narrow Leaf, and branching at the Top of the Stalks.

11. *HELENIUM pratense autumnale, conyzæ foliis caulem amplexantibus. Vaill.* Meadow yellow Starwort of the Autumn, with Fleabane-leaves encompassing the Stalks, commonly called *Conyza media*.

12. *HELENIUM hirsutum, salicis*

folio. Vaill. Mem. Hairy yellow Starwort, with a Willow-leaf.

13. *HELENIUM montanum, salicis folio subtus incano. Vaill. Mem.* Mountain yellow Starwort, with a Willow-leaf, which is hoary underneath.

14. *HELENIUM salicis folio glabro. Vaill. Mem.* Yellow Starwort, with a smooth Willow-leaf.

15. *HELENIUM spirææ folio. Vaill. Mem.* Yellow Starwort, with a Spirea-leaf.

16. *HELENIUM glabrum, myrti lato, serrato, cuspidatoque folio. Vaill. Mem.* Smooth yellow Starwort, with a broad, sawed, and pointed Myrtle-leaf.

17. *HELENIUM cisti folio non crenato, magno flore. Vaill. Mem.* Yellow Starwort, with a Cistus-leaf, and a large Flower.

18. *HELENIUM lanuginosum, pilosellæ foliis. Vaill. Mem.* Woolly yellow Starwort, with Mouse-ear-leaves.

19. *HELENIUM palustre subhirsutum, foliis calthæ. Vaill. Mem.* Marsh roughish yellow Starwort, with Marigold-leaves.

20. *HELENIUM salicis folio, floribus parvis, fere umbellatis. Vaill. Mem.* Yellow Starwort with a Willow-leaf, and small Flowers growing almost in an Umbel.

21. *HELENIUM palustre annuum, foliis crispis. Vaill.* Annual marsh yellow Starwort, with curled Leaves, commonly called Marsh Fleabane.

22. *HELENIUM palustre annuum, hyssopi foliis crispis. Vaill. Mem.* Marsh annual yellow Starwort, with curled Hyssop-leaves.

23. *HELENIUM ramofo, cauliculis sparsis, calthæ arvensis folio. Vaill. Mem.* Branching yellow Starwort, with sparse Stalks, and a Field-marigold-leaf.

24. *HELENIUM Ægyptiacum tomentosum*

mentosum & incanum, bellidis, foliis crispis. D. Lippi. Hoary woolly Egyptian yellow Starwort, with curled Daisy-leaves.

25. HELENIUM *Aegyptiacum tomentosum & incanum, polii folio. D. Lippi.* Hoary woolly Egyptian yellow Starwort, with a Mountain-poley-leaf.

26. HELENIUM *bellidis, foliis amplis, asphodeli radice. Vaill. Mem.* Yellow Starwort, with large Daisy-leaves, and an Asphodel-root.

27. HELENIUM *perenne glabrum hyssopifolium. Vaill. Mem.* Smooth perennial yellow Starwort, with an Hyssop leaf.

28. HELENIUM *perenne glabrum, folio crasso in summo tricuspidato. Vaill. Mem.* Smooth perennial yellow Starwort, with a thick three-pointed Leaf.

29. HELENIUM *rorismarini crassus, obtusis, confertisque foliis. Vaill. Mem.* Yellow Starwort, with thick blunt Leaves growing in Clusters, commonly called Golden Samphire.

30. HELENIUM *saxatile, hyssopi folio villosa & glutinosa. Vaill. Mem.* Rock yellow Starwort, with an hairy clammy Hyssop-leaf.

The first Sort is the true Elecampane, which is used in Medicine; it grows wild in moist Fields and Meadows in several Parts of England, and is pretty much cultivated in Gardens near London, to furnish the Shops with the Roots; which is the only Part of the Plant in Use.

This Sort may be propagated by Seeds, or from small Off-sets, which are furnished with Buds on their Tops. If you would propagate it by Seeds, they should be sown on a moist Bed of light Earth soon after they are ripe; for if they are kept long out of the Ground, they will not succeed. These Seeds generally remain in the Ground until the fol-

lowing Spring, when the Plants will begin to appear: at which time they must be carefully weeded, and if the Season should prove dry, they must be frequently watered; which will greatly promote their Growth. In this Bed the Plants should remain till Michaelmas following; being careful to keep them constantly clear from Weeds during the Summer-season. Then you should prepare a Spot of Ground in proportion to the Number of Plants you have to transplant; which should be well digged, and cleansed from the Roots of all noxious Weeds; then you must carefully fork up the Roots of the seedling Plants, so as not to break them; and with a Dibble they should be planted in Rows about a Foot asunder, and nine Inches Distance in the Rows. In the planting these Roots, you must observe to make the Holes deep enough to receive them without being bent or broken, so that the Crown of the Roots may be just under the Surface of the Ground; then close the Earth gently about them with your Feet. When the Plantation is finished, there will be no farther Care required until the Spring, when the Plants begin to shoot; at which time the Ground should be carefully hoed to clear it from Weeds; which Work must be repeated three or four times in the Spring, but always in dry Weather; which will intirely destroy the Weeds, if it be carefully performed; and when the Elecampane-plants have acquired Strength, they will keep the Weeds under; because their Leaves, being large, will spread, and cover the Ground. If the Ground is good in which the Plants are placed, the Roots will be large enough to take up the Michaelmas following; but if the Ground is very poor, or too dry, they should remain two Years

after planting. before they are taken up for Use. *Note*, These Roots should not be taken up till the Leaves are decayed.

If you intend to propagate this Plant by Off-sets, you must take them carefully off from the old Roots at *Michaelmas* (which is the time they are taken up for Use), so as to preserve a good Bud to each Off-set; then plant them in a well-prepared Spot of Ground, in the same manner as hath been directed for the seedling Plants; and the following Summer they must be treated in the same manner as those.

All these Plants are ranged under the Genus of *Aster*, by Dr. *Tournefort*, as agreeing in the manner of their Flower and Seed with that Tribe: but as the Title of *Helenium* has been applied to the first Species by the Writers in Botany before his Time, and the outward Face of the the Plant being very different from the Starworts, as also the Flowers being yellow; Monsieur *Vaillant*, Professor of Botany at *Paris*, has constituted a Genus by the Name of *Helenium*, and separated all the Species which have yellow Flowers, from the *Asters*, and placed them under this Genus; for which Reason I have added the *English* Name of *yellow Starwort* to all the Species.

The eleventh Sort, being very common by the Sides of Ditches and Ponds in most Parts of *England*, is seldom planted in Gardens; because it creeps very much by the Root, and will soon overspread a large Spot of Ground, when it has once taken Root. This Sort is commonly known by the Name of *Middle Fleabane*, in *England*.

The twenty-first Sort is also very common in *England*: this is an annual Plant, which sows itself on moist Grounds, where the Water

usually stands in Winter: it flowers in *July* and *August*. This Plant is placed in the Catalogue of Simples annexed to the College-Dispensatory, under the Title of *Conyza minor*, *flore globofo*: it is also called *Pulicaria*; because, they say, the Smell of this Herb will drive away Fleas.

The twenty-ninth Sort grows on the Rocks and gravelly Shores by the Sea-side, in divers Parts of *England*; and is frequently gathered, and brought to the Markets for *Samphire*, and pickled as such. This is often distinguished from the true *Samphire*, by the Title of *Golden Samphire*, because the Flowers are yellow.

The other Sorts are not Natives of this Country, but are all of them hardy enough to thrive in the open Air; and several of them will grow in shady Places, and under the Drip of Trees; so that they deserve to be propagated in the *English* Gardens. They are commonly propagated by parting their Roots, because they seldom produce good Seeds in this Country. The best time to part their Roots is in Autumn, when their Stalks begin to decay: in doing this, you should be careful not to divide them too small, as also to preserve some good Buds to each Off-set. These should be planted in large Borders in the Pleasure-garden, intermixed with other hardy perennial Plants; where they will require no other Culture, but to keep them clear from Weeds, and to transplant the Roots every other Year, when they may be parted to increase them. In the Summer-time, when the Stalks are grown pretty high, they should have Sticks thrust into the Ground by each Root, and their Branches fastened thereto with Bafs, to support them; otherwise they are often broken down by heavy Rains, or

strong Winds, when they are in Flower; which renders them very unfitly in a neat Garden. Some of these Sorts begin to flower in July, and others succeed them, until the Frosts in Autumn put a Stop to their Flowering.

If these Plants are propagated by Seeds, they should be sown soon after they are ripe, in an open Bed of fresh Earth; for if the Seeds are kept out of the Ground till Spring, they seldom grow.

HELIANTHEMUM, Dwarf Cistus, or the 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 filled with roundish Seeds fixed 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 *Fuchsi*. *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

flowered Dwarf Cistus, with narrow hairy Leaves.

8. **HELIANTHEMUM saxatile**, foliis & caulibus incanis oblongis, floribus albis *Apennini montis*. *Mentz.* Rock Dwarf Cistus of the *Apennines*, 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 Marjoram-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. *Boerb.* 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.

16. **HELIANTHEMUM vulgare**, flore albo. *Tourn.* Common small Sun-flower, with a white Flower.

17. **HELIANTHEMUM serpilli folio**, flore minore aureo odorato. *Tourn.* Small Sun-flower, with a Mother-of-thyme-leaf, and a smaller golden sweet-smelling Flower.

18. **HELIANTHEMUM angustifolium luteum**. *Tourn.* Yellow narrow-leav'd small Sun-flower.

19. **HELIANTHEMUM foliis myrti minoris**, subtus incanis. *Tourn.* Small Sun-flower, with lesser Myrtle-leaves, which are hoary underneath.

20. *HELIANthemum tenuifolium*
labrum erectum, luteo flore. Tourn.
Narrow-leav'd smooth upright small
sun-flower.

21. *HELIANthemum tenuifolium*
labrum, luteo flore, per bimum spar-
m. J. B. Narrow-leav'd smooth
small Sun-flower, spreading on the
ground, with a yellow Flower.

22. *HELIANthemum folio thymi*
incano. J. B. Small Sun-flower,
with an hoary Thyme-leaf.

23. *HELIANthemum thymi folio*
labro. Tourn. Small Sun-flower,
with a smooth Thyme-leaf.

24. *HELIANthemum ad nummu-*
riam accedens, J. B. Small Sun-
flower, resembling Moneywort.

25. *HELIANthemum foliis roris-*
marini splendentibus, subtus incanis.
Tourn. Small Sun-flower, with shine-
ing Rosmary-leaves, hoary under-
neath.

26. *HELIANthemum Massiliense,*
viridis folio. Tourn. Small Sun-
flower of *Marseilles*, with a fair low
leath-pine-leaf.

27. *HELIANthemum polii folio*
ampliore, Lusitanicum. Tourn. Por-
tuguese small Sun-flower, with a
larger Mountain-poley-leaf.

28. *HELIANthemum polii folio*
angustiore, Lusitanicum. Tourn. Por-
tuguese small Sun-flower, with a nar-
row Poley-mountain-leaf.

29. *HELIANthemum humilius*
lusitanicum, halimi folio nigriore,
magno flore luteo. Tourn. Low Por-
tuguese small Sun-flower, with a
black Sea-purslain-leaf, and a large
yellow Flower.

30. *HELIANthemum Algarvi-*
nse, halimi folio, flore luteo puni-
cante macula insignito. Tourn. Small
sun-flower of *Algarve*, with a Sea-
purslain-leaf, and a yellow Flower
spotted with Scarlet.

31. *HELIANthemum Hispanicum,*
halimi folio rotundiore. Tourn. Spa-

nish small Sun-flower, with a round
Sea-purslain-leaf.

32. *HELIANthemum Hispanicum,*
halimi folio angustiore. Tourn. Spa-
nish small Sun-flower, with a narrow
Sea-purslain-leaf.

33. *HELIANthemum Hispanicum,*
halimi folio minimo. Tourn. Spanish
small Sun-flower, with the least Sea-
purslain-leaf.

34. *HELIANthemum Lusitani-*
cum, mari folio incano, flore luteo.
Tourn. Portuguese small Sun-flower,
with an hoary Marum-leaf, and a
yellow Flower.

35. *HELIANthemum Lusitani-*
cum, mari folio incano, capitulis
valde hirsutis. Tourn. Portuguese
small Sun-flower with an hoary
Marum-leaf, and very hairy Seed-
vessels.

36. *HELIANthemum Lusitani-*
cum, majorana folio, flore luteo puni-
cante macula insignito. Tourn. Por-
tuguese small Sun-flower, with a
Marjoram-leaf, and a yellow Flower
spotted with Scarlet.

37. *HELIANthemum Hispanicum,*
halimi folio amplissimo, incano, &
nervoso. Tourn. Spanish small Sun-
flower, with a very large hoary rib-
bed Leaf.

38. *HELIANthemum Hispanicum,*
angusto folio, flore carneo. Tourn.
Spanish small Sun-flower, with a
narrow Leaf, and a carnation
Flower.

39. *HELIANthemum Alpinum,*
oleae folio, subtus incano. Tourn.
Small Sun-flower of the *Alps*, with
an Olive-leaf, hoary underneath.

40. *HELIANthemum Lusitanicum,*
folio bupleuri, flore maculato. Tourn.
Portuguese small Sun-flower, with an
Hares-ear-leaf, and a spotted Flower.

41. *HELIANthemum Lusitanicum,*
globulariae folio. Tourn. Portuguese
small Sun-flower, with a Daisy-
leaf.

42. *HELIANTHEMUM Hispanicum, origani folio, subtus incano. Tourn.* Spanish small Sun-flower, with an Origany-leaf, hoary underneath.

43. *HELIANTHEMUM plantaginis folio, perenne. Tourn.* Perennial small Sun-flower, with a Plantain-leaf.

44. *HELIANTHEMUM Hispanicum, folio minimo rotundiore. Tourn.* Spanish small Sun-flower, with a very small round Leaf.

45. *HELIANTHEMUM Hispanicum, ocymi folio, subtus incano. Tourn.* Spanish small Sun-flower, with a Basil-leaf, hoary underneath.

46. *HELIANTHEMUM pumilum, portulacæ marinæ folio argenteo. Tourn.* Dwarf small Sun-flower, with a silvery Sea purslain-leaf.

47. *HELIANTHEMUM Creticum, linariæ folio, flore croceo. Tourn. Cor.* Candy small Sun-flower, with a Toad-flax-leaf, and a saffron Flower.

48. *HELIANTHEMUM Creticum annuum, lato plantaginis folio, flore aurco. Tourn. Cor.* Annual Candy small Sun-flower, with a broad Plantain-leaf, and a golden Flower.

49. *HELIANTHEMUM Lusitanicum annuum, plantaginis folio, flore tricolore. Tourn.* Annual Portuguese small Sun-flower, with a Plantain-leaf, and a three-colour'd Flower.

50. *HELIANTHEMUM frutescens, folio majoranæ incano. Tourn.* Shrubby small Sun-flower, with an hoary Marjoram-leaf.

51. *HELIANTHEMUM halimi folio brevior obtuso. Tourn.* Small Sun-flower, with a shorter blunt Sea-purslain-leaf.

52. *HELIANTHEMUM folio halimi latiore mucronato. Tourn.* Small Sun-flower, with a broader sharp-pointed Leaf.

53. *HELIANTHEMUM Americanum frutescens, portulacæ folio. Plum.*

Cat. Shrubby American small Sun-flower, with a Purslain-leaf.

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 chalk Hills, in divers Parts of 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 produced all over the Plants, for two Months together, render them worthy of a Place in every good Garden.

The sixteenth Sort is sometimes found wild in England, and is only a Variety of the common Sort, differing merely in the Colour of the Flower.

The twenty-seven Sorts next following grow wild in Portugal, Spain, the South of France, and the Alps. These are all of them abiding Plants, which may be propagated by Seeds, in the manner before directed: and if they are planted on a warm Border, or on a sloping Bank, which is exposed to the South, they will live in the open Air in this Country very well. As these Plants require very little Trouble to cultivate them, they merit a Place in every large Garden; where, if they are properly disposed, they will afford an agreeable Variety.

These

These Plants should not be planted in a rich Soil; for they naturally grow on chalky Hills, or stony and gravelly Places, where they flower much better, and the Plants will continue longer, than when they grow in a rich Earth. As all these Plants are of humble Growth, and spread their Branches near the Ground; so they should not be placed among tall-growing Plants, which will overbear them; nor should large Weeds be permitted to remain amongst them, because they will greatly weaken the Plants, and prevent their flowering.

These are all propagated by Seeds (which the Plants annually furnish in great Plenty); and should be sown in a warm Border of fresh light Earth in *March*, or the Beginning of *April*; and when the Plants are come up, they may be transplanted to Beds of the like Earth about six Inches asunder, or somewhat more; in which Place they may remain until *September*, when they should be removed to the Places where they are to continue for good, serving to take them up with a good Ball of Earth to their Roots, otherwise they are subject to misery.

They may also be propagated by planting Cuttings of any of the sorts in *May*, in a Bed of fresh light 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, there will seldom be Occasion for propagating them any other way: because the seedling Plants are generally better than those obtained from Cuttings; and it becomes more Trouble to propagate them

by Cuttings, few People practise that Method.

The thirteenth, fourteenth, fifteenth, forty-seventh, and forty-eighth Sorts are annual Plants, and must be sown every Year, or the Seeds suffered 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 fifteenth 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.

The forty-ninth, fiftieth, and fifty-first Sorts are shrubby Plants, which rise to the Height of four or five Feet: these are preserved in Pots, and removed into the Green-house in Winter, being too tender to live in the open Air in this Country throughout the Year. They are usually propagated by Cuttings, because they seldom perfect Seeds in *England*: the best time to plant the Cuttings is in the Middle or latter End of *June*, after the Plants have been exposed in the open Air a sufficient time to harden the Shoots; for if they are taken off soon after the Plants are removed out of the Green-house, the Shoots are generally too weak to make Cuttings. They should be planted in a shady Border of light Earth, and frequently refreshed with Water: in about two Months the Cuttings will be sufficiently

ciently rooted to transplant, when they should be carefully taken up with Balls of Earth to their Roots, and each planted in a separate small Pot filled with fresh light Earth, and placed in a shady Situation, until they have taken new Root; after which time they may be placed amongst other hardy Exotic Plants in a sheltered Situation; where they may remain until the Middle of *October*, when they must be removed into the Green-house: during the Winter-season these Plants should have as much free Air as possible in mild Weather, and will require to be often watered; and in the Summer-season they must be removed into the open Air, and placed with other hardy Exotic Plants, such as Myrtles, Geraniums, &c. where they may be defended from strong Winds; and in hot dry Weather, they must be plentifully watered: with this Management the Plants will thrive, and in *June, July, and August*, they will flower, at which time they will make a pretty Appearance among other Exotic Plants.

The fifty-second Sort is much more tender than either of the former, being an Inhabitant of the warmest Parts of *America*. This was discovered by Father *Plumier*, in the *French Settlements*; and in the Year 1731. I had the Seeds of this Plant sent me by the late Dr. *William Houstoun*, from *La Vera Cruz*. This Sort grows about two Feet and an half, or three Feet high, and divides into many succulent Branches, which are beset with thick succulent Leaves, somewhat resembling those of Purslain: on the Top of the Branches is sent forth a slender Stalk about a Foot long, which is garnished with beautiful scarlet Flowers, growing in a Spike; these Flowers are succeed-

ed by tricapsular Seed-vessels, which are full of small Seeds.

This Sort, which was first procured by Seeds from abroad, has been since propagated by Cuttings and dispersed into several Parts of *Europe*. The best Season for planting of these Cuttings is in *July*; but they should be cut from the Plant and laid to dry, four or five Day before they are planted, otherwise they are very subject to rot. These Cuttings should be planted in Pot filled with fresh light sandy Earth and plunged into a moderate Hot bed, being careful to shade them from the Sun in the Heat of the Day, as also to refresh them now and-then with a little Water; but they must not be kept too moist, lest that should rot them. With this Management the Cuttings will take Root in about a Month, when they may be exposed to the Sun, giving them a proportionable Quantity of Air; but they should remain in the Bed till the latter End of *September* when they should be removed into the dry Stove, and placed in the warmest Part, where they may have Sun and Heat. During the Winter-season they should be sparingly watered; but in Summer they should have a greater Share, as also a large Quantity of fresh Air; but they must constantly remain in the Stove.

HELIANTHUS, *i. e.* S. flower.

This Genus of Plants was titled *Corona Solis*, by most of the Botanical Writers; but this being a compound Name, Dr. *Linnaeus* has altered it to this of *Helianthus*: it has also sometimes been titled *Heliotropium*; where the Name is now applied to another Genus of Plants, very different from this.

The Characters are ;

The Empalement of the Flower is
; the Scales lying over each other
files on an Houfe: the Flower is
iated: the outward Rays are Fe-
le: but those in the Disk are Her-
brodite Flowers: these are tubu-
e, and sit on the Top of the Ovary,
ich is crowned with two small
aves: the Ovary afterward becomes
oblong blunt angular Seed, each
ing in a separate Cell; so that
en the Seeds are thrust out, the Va-
ties have the Appearance of an
neycomb.

The Species are ;

1. HELIANTHUS radice annua.
n. Vir. The annual Sun-flower.
2. HELIANTHUS radice tereti in-
xa perenni. Lin. Hort. Cliff. The
ommon perennial or everlasting
n-flower.
3. HELIANTHUS radice fusiformi.
n. Hort. Cliff. Tall broad-leav'd
rennial Sun-flower.
4. HELIANTHUS foliis ovatis acu-
natis serratis, pedunculis longissimis.
lor. Virg. Sun-flower with oval
ointed, and sawed Leaves, having
ng Footstalks.
5. HELIANTHUS foliis ovatis cre-
ntis trinerviis scabris, squamis caly-
nis erectis, longitudine disci. Flor.
irg. Sun-flower with oval crenated
ugh Leaves, having three Veins,
id a scaly Flower-cup.
6. HELIANTHUS foliis lanceolatis
ssilibus. Flor. Virg. Sun-flower
with spear-shaped Leaves growing
lose to the Stem.
7. HELIANTHUS foliis oblongo-
vatis scabris, radice repente. Sun-
ower with oblong oval rough
leaves, and a creeping Root.
8. HELIANTHUS radice tuberosa.
Lin. Hort. Cliff. Sun-flower with a
uberous Root, commonly called Je-
usalem Artichoke.

All these Species of Sun-flowers
are Natives of America, from whence
we are often supplied 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 discovered, we
were wholly unacquainted with these
Plants. But although 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 plen-
tiful in England, that Persons unac-
quainted with the History of these
Plants would imagine them at least
to have been Inhabitants of this
Island many hundred Years; parti-
cularly the Jerusalem Artichoke,
which, though it doth not produce
Seeds in our Climate, yet doth so
multiply by its knobbed Roots, that,
when once well fixed in a Garden, it
is not easily to be rooted out.

The first Sort, being annual, must
be sown every Spring, in a Bed of
good light rich Earth; and when the
Plants are come up about three
Inches high, they 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 inter-
mixed in Bosquets of large-growing
Plants, observing to water them un-
til they are well rooted; after which
they will require no further Care
but to clear them from Weeds.

In *July* the great Flowers upon the Tops of the Stems will appear; among which, the best and most double Flowers of each Kind should be preserved 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 formed, you should carefully guard the Heads from the Sparrows, which will otherwise devour most of the good Seeds; and about the Beginning of *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.

There are several Varieties of this Sort, which differ in the Colour of their Flowers, as also their Seeds; some of them having Flowers of a Sulphur-colour, others yellow, some pale, and others deep: the Seeds of some are black, others Ash-colour, and some striped; and of all these Varieties, there are some with very double, and others single Flowers: but as these are very apt to sport, and vary from the Sorts sown, they should not be deemed as distinct Species: the double Flowers should be preferred for the saving of the Seeds; because most of the Plants which are produced from these Seeds, will have double Flowers.

The Seeds of this Sort of Sunflower are excellent Food for domestic Poultry; therefore, where a Quantity of it can be saved, it will be of great Use, where there are Quantities of these Fowls.

The other perennial Sorts rarely produce Seeds in *England*; but most of them increase very fast at their Roots, especially the common and creeping-rooted Kinds. The second 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 Smoke, 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 Chimneys in a Season when we are at a Loss for other Flowers. It begins flowering in *June*, and continues until *October*.

The third, fourth, fifth, sixth, and seventh 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 weak; but if they are planted in *Jobs*, you will save the Trouble watering them; their Roots being only fixed before the dry Weather, they will need no other Trouble than clear them from Weeds.

The *Jerusalem* Artichoke is propagated in many Gardens for the Roots, which are by some People as much esteemed as Potatoes; but they are more watry 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 unfightly while growing, and their Roots are apt to over-run whatever grows near them; nor can they be easily destroyed when they are once well fixed in Garden.

HELIOTROPIUM, Turnsole.

The Characters are;

The Flower consists of one Leaf, and shaped like a Funnel, having its Centre wrinkled and folded, and its Rim cut into ten Segments, alternately unequal: these Flowers are collected into a long reflexed Spike, resembling a Scorpion's Tail: each Flower is succeeded by four naked gibbose Seeds.

The Species are;

1. **HELIOTROPIUM majus** *Dioscoridis*. C. B. The great Turnsole of *Dioscorides*.

2. **HELIOTROPIUM Americanum** *cæruleum, foliis hormini*. *Acad. Reg.* c. Blue American Turnsole, with Clary-leaves.

3. **HELIOTROPIUM Americanum** *cæruleum, foliis hormini angustioribus*. H. L. Blue American Turnsole, with narrower Clary-leaves.

4. **HELIOTROPIUM arborescens, foliis teucree, flore albo in capitula densa congesto**. *Boerb. Ind.* Tree-like Turnsole, with a Germander-leaf, and white Flowers growing in thick short Heads.

5. **HELIOTROPIUM Canariense** *arborescens, folio scorodoniæ*. *Hort. Amst.* Canary Tree-like Turnsole, with a Wood-sage-leaf.

The first, second, and third Kinds are annual Plants: the first is very hardy, and may be preserved in a Garden, by suffering the Seeds to fall when ripe, which will come up in the succeeding Spring much better than when preserved and sown with Care; for it rarely happens, that those which are sown in the Spring grow; so that if it be intended to be had in a different Place from that 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 performed 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 an Hot-bed in the Spring, and managed as was directed for the *Cyanus Turcicus* (to which the Reader is desired 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 Botanic 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 filled with fresh light Earth, which should be placed in a shady Situation until the Plants are rooted in the Pots; when they may be removed into the open Air amongst Myrtles, Jasmines, &c. where they may remain until October; at which time they should be removed into the Green-house, where they should be placed 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, altho' it is by much the larger Plant. These two Species are confounded together by some late Authors.

HELLEBORE. Vide Helleborus.

HELLEBORINE, Bastard Hellebore.

The Characters are;

It hath a fibrose Root: the Leaves are broad and nervous, somewhat like those of the White Hellebore: the Flowers, which grow upon a short Footstalk, 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. HELLEBORINE *altera, atropubente flore*. C. B. P. Bastard Hellebore, with a blackish Flower.

3. HELLEBORINE *flore albo*. Ger. White-flower'd Bastard Hellebore.

4. HELLEBORINE *flore rotundo, sive Calceolus*. C. B. P. Lady's-slipper.

5. HELLEBORINE *Virginiana, flore rotundo luteo*. Banister. *Virginiana* Lady's-slipper, with a yellow Flower.

6. HELLEBORINE *Canadensis, sive Calceolus Marica*. Icon. Robert. *Canada* Lady's-slipper.

7. HELLEBORINE *latifolia, flore albo clauso*. Raii Syn. Broad-leav'd Bastard Hellebore, with a white shut Flower.

8. HELLEBORINE *foliis praelongis angustis acutis*. Raii Syn. Bastard Hellebore, with longer narrow-pointed Leaves.

9. HELLEBORINE *palustris nostras*. Raii Syn. Marsh Bastard Hellebore.

10. HELLEBORINE *montana angustifolia purpurascens*. C. B. P. Narrow-leav'd purple mountain Bastard Hellebore.

11. HELLEBORINE *Virginiana, ophioglossi folio*. D. Banister. Bastard Hellebore of Virginia, with an Adder's-tongue leaf.

12. HELLEBORINE *Mariana, bupleuri angustissimo folio, purpurascens flore, caule aphyllis*. Pluk. Bastard Hellebore of Maryland, with a very narrow Leaf, like that of Hare's-ear, a purplish Flower, and a Stalk without a Leaf.

13. HELLEBORINE *Mariana, flore pallide purpureo, trianthophoros*. Pluk. Mantiss. Bastard Hellebore of Maryland, with pale-purple Flowers, growing three on a Stalk.

14. HELLEBORINE *Mariana monanthos, flore longo purpurascens liliaceo*. Pluk. Mantiss. Bastard Hellebore of Maryland, with one long purplish lily-shaped Flower.

15. HELLEBORINE *Virginiana, flore rotundo magno ex purpureo albicante*. Banist. Cat. Bastard Hellebore of Virginia, with a large round Flower of a purplish-white Colour.

16. HELLE-

16. HELLEBORINE *foliis liliaceis, asphodeli radice*. Plum. Cat. Bastard Hellebore of America, with Leaves like the Lily, and an Asphodel-root.

17. HELLEBORINE *purpurea, tuberosa radice*. Plum. Cat. Purple Bastard Hellebore, with a tuberosé Root.

18. HELLEBORINE *Americana, foliis longissimis, tuberosa radice*. American Bastard Hellebore, with very long Leaves, and a tuberosé Root, commonly called, the Flower of the Holy Ghost.

19. HELLEBORINE *graminea, foliis rigidis carinatis*. Plum. Cat. Grass-like Bastard Hellebore, with stiff Leaves.

These are all Natives of Woods, and shady Places: the four first-mentioned, as also the seventh, eighth, and ninth Sorts, grow wild in the Woods of *Yorkshire, Lancashire*, and many Parts of *England*: the tenth Sort has been found in *Ireland*, and is pretty common in other Parts of *Europe*.

The fourth Sort is by much the most beautiful of all the *European* Kinds, as it is also the most scarce, being rarely to be found in any of the Gardens in the South; for this is an Inhabitant of the Northern Counties. I found this Sort growing wild in the Park at *Barrough-Hall* near *Kirby-Lonsdale*, the Seat of *Robert Fenwick, Esq*; These may be transplanted into Gardens, from the Places of their natural Growth; either in the Spring, soon after they appear above-ground, or in Autumn, when their Leaves begin to decay; but if they are transplanted in Spring, more should be great Care had, to preserve a large Ball of Earth to their Roots, otherwise they will not succeed. These Plants should be planted in shady moist Places, and

in a strong undunged Soil, where they will continue many Years, and produce their Flowers toward the latter Part of Summer.

The fifth, sixth, eleventh, twelfth, thirteenth, fourteenth, and fifteenth Sorts are Natives of *Virginia, Maryland*, and *New-England*; from which Places some of their Roots have been brought into *England*. The best Method to obtain these Kinds is, to procure some of their Roots to be taken up with Balls of Earth, and planted into Tubs of the natural Soil in which they grew, as close together as possible: these Tubs should remain in the Country, until the Leaves of the Plants begin to decay, when they may be put on board the Ships, and sent over; for as the Roots will then be in a State of Inaction, so they will be in less Danger of suffering in their Passage, than if they were in a vigorous growing State, and will require very little, if any Water. These Plants may be planted out of the Boxes into small Wilderness-quarters, where they will abide the Cold of the Winter very well, and produce their Flowers in Summer.

The sixteenth, seventeenth, and nineteenth Sorts were discovered by *Father Plumier*, in the *French* Settlements in *America*; these three Sorts were sent by the late *Dr. William Houstoun* from *Jamaica*, where they grow in the Woods, and shady Places, in great Plenty. The seventeenth Sort was also sent from the *Bahama* Islands to *Mr. Peter Collinson*, and hath been since distributed to many curious Persons in *England*. This is a very fine Plant, and deserves a Place in the Stove, because it produces a most beautiful Spike of purple Flowers every Year. This and the sixteenth and nineteenth Sorts are propagated by Off-sets, which they

send forth plentifully. The best Season for transplanting the Roots, and taking off the Off-sets, is in the Beginning of *February*, just before they begin to shoot. These Roots should be planted in Pots filled with rich light Earth, and then plunged into the Tan in the Stove, observing now-and-then to refresh the Earth with Water, which must not be given to them in great Quantities until they have sent forth their Leaves; for too much Moisture will rot these Roots while they are in an unactive State. These Plants should constantly be kept in the Bark-bed in the Stove, otherwise they will not flower. During the Summer-season they will require a larger Share of Moisture, and in hot Weather they should have plenty of fresh Air; but in Winter they must be kept warm, otherwise the Roots will perish. With this Management the Plants will thrive exceedingly, and produce their beautiful Flowers in *August* and *September*. The Roots of these Plants should not be disturbed in Winter; for although their Leaves decay in Autumn, and their Roots remain inactive, yet if they are taken up, and kept out of the Ground, they are very apt to shrink, unless great Care be taken of them. The seventeenth Sort was by Accident procured in *England*, the Root being sent over with a Specimen of the Plant, which was dried, and sent to Mr. *Collinson*; he took off the Root, and had it planted in the Stove at Sir *Charles Wager's* Garden: it grew and flowered; from which Root there has been a great Number produced. This Sort produces a Spike of Flowers near two Feet long, which, being of a bright purple Colour, make a fine Appearance in the Stove.

The eighteenth Sort grows in great Plenty on the Sides of the Road between *Porto Bello* and *Panama*; in the *Spanish West-Indies*, in shady Places, and on a stony Soil. The *Spaniards* say, it is only to be found in this Place; and that it cannot be transplanted to any other Part of the Country, so as to grow. The Flowers of the Plant resemble a Dove; from whence the *Spaniards* give it the Name of the Holy Ghost. Some of these Roots were sent to *England* by Mr. *Robert Millar*, Surgeon, who was on the Spot where they grew: some of which are yet alive in *England*; but have not as yet produced any Flowers. This and the nineteenth Sort are both very tender Plants; wherefore if they are brought into *England*, they must be very gently treated: their Roots should be planted in Pots filled with a sandy Soil mixed with Lime-rubbish, and then plunged into an Hot-bed of Tanners Bark, being careful not to give them much Water until they begin to shoot; after which time they should be frequently watered. During the Summer-season these Plants must have fresh Air admitted to them; but in Winter they must have a very warm Situation. They put forth their green Leaves in *May*, which continue till Autumn, when they decay; so that the Roots remain inactive about six Months.

There are many other Sorts of these Plants, which are Natives of *America*; but the greater Part of them, growing on Trees, cannot be cultivated in Gardens; wherefore it is needless to enumerate them in this Place.

HELLEBOROIDES HYEMALIS. *Vide* Helleborus.

HELLE-

HELLEBORORANUNCULUS. *Vide* Helleborus.

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 encompassed about the Base with several little Horns lying between the Chives and Petals, which afterward turn to a Fruit, in which the membranous Husks are gathered, as it were, into a little Head, ending, for the most part, in an Horn, opening lengthwise; and, for the most part, full of roundish or oval Seeds.

The Species are;

1. HELLEBORUS *niger fœtidus*. C. B. P. Stinking Black Hellebore, Bears-foot, or Setterwort.

2. HELLEBORUS *niger hortensis, flore viridi*. C. B. P. Green-flowered Black Hellebore, or Bears-foot.

3. HELLEBORUS *niger, flore albo, etiam interdum valde rubente*. J. B. True Black Hellebore, or Christmas Rose.

4. HELLEBORUS *niger trifoliatus*. Hort. Farn. Trifoliated Black Hellebore.

5. HELLEBORUS *niger, flore roseo, minor Belgicus*. H. R. *Blæs*. Small Belgic Black Hellebore.

6. HELLEBORUS *niger hortensis alter*. C. B. P. The other Garden Black Hellebore.

7. HELLEBORUS *niger, amplioribus foliis*. Tourn. Black Hellebore, with larger Leaves.

8. HELLEBORUS *niger autumnalis, flore maximo*. H. R. *Par*. Autumnal Black Hellebore, with a very large Flower.

9. HELLEBORUS *niger, sanguineo folio*. Bocc. *Mus*. Black Hellebore, with a bloody Leaf.

10. HELLEBORUS *niger Orientalis, amplissimo folio, caule præalto, flore purpurascente*. Tourn. *Cor*. Eastern Black Hellebore, with a very large Leaf, a tall Stalk, and a purplish Flower.

11. HELLEBORUS *foliis angulatis multifidis, flore globoso*. Lin. Hort. *Cliff*. Globe Ranunculus, or Locker-gowlans.

12. HELLEBORUS *flore folio infidite*. Lin. Hort. *Cliff*. The Winter Aconite.

The first, second, and eleventh Sorts grow wild in several Parts of England, especially in the Northern Counties: the first and second are Natives of Woods, and shady Places; but the eleventh Sort grows in very moist Meadows, and by the Sides of Brooks: this Sort I found in great Plenty near the Bridge at *Kirby-Lonsdale*, by the River-side.

All the other Sorts have been brought from other Countries; which thrive as well with us in the open Air, as those that are Natives. The two first Sorts, being Wood-plants, thrive much better when planted in shady moist Places, than when they are planted in a warmer Situation, and too much exposed to the Sun: and as they produce their Flowers in the Middle of Winter, when few other Plants appear, they deserve a Place in small Wilderness-quarters, Avenues, and shady Borders, where they will flourish exceedingly; and, if suffered 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 parting their Roots: the best Season for this Work is in *October*, when you may divide the Roots into small Heads, and plant them in a Situation

where they may have the morning Sun only till Ten o'Clock; for if they are too much exposed 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 exposed to the morning Sun, where the Plants will come up the following Spring, and should be kept clear from Weeds; which, if suffered 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 removed to the Places where they are to remain for good.

The third Sort is called the *Christ-mas* Rose, from its flowering at that Season: the Flowers of this Sort are much larger than those of any of the other Species: they are white on the Inside, and of a greenish-white on the Outside; and are produced singly on short Footstalks arising from the Root: but when the Roots are strong, they produce a great Number of these Flowers; so that they make a fine Appearance; and this being at a Season when there are few other Plants in Flower, it renders them the more valuable: if the Season should prove severe at the time they are in Flower, it will be proper to cover them, otherwise the Frost will pinch the Flowers, and soon destroy their Beauty.

The ninth and tenth Sorts are somewhat tenderer than the others; so should be planted in a warmer Situation; and if one or two Plants of each Sort are kept in Pots, and sheltered under an Hot-bed-frame in Winter, it will be a good Method to preserve the Species; because in very hard Winters, those which are planted in the full Ground may be destroyed.

The eleventh Sort must be planted in a very moist Soil, otherwise it will not thrive in Gardens; therefore may be placed in any wet Spot, where few other Things will grow; in which Situation these Plants will thrive exceedingly, and produce plenty of Flowers.

The twelfth Sort is well known in the Gardens under the Title of Winter Aconite, from its flowering soon after *Christmas*: the Flowers are yellow, each arising with a short Footstalk from the Root, being surrounded by Leaves. This Sort propagates very fast by its Root, and will thrive in any Soil or Situation.

There are great Doubts, whether any of these Species be the true Hellebore of the Antients; tho' Monsieur *Tournefort*, and some other Travellers, affirm that the third Species is it: but the *German* use the *Adonis bellebori radice*, but *phthalmi flore* for the Hellebore; and many other People believe it to be a Plant different from both these but it is hoped, that we shall shortly know, who are in the right.

HELLEBORUS ALBUS. *Vide* Veratrum.

HELMET-FLOWER, or MONK'S-HOOD. *Vide* Aconitum.

HEMEROCALLIS, The Liliasphodel, or Day-lily.

The Characters are ;

The Flower has no Empalement, and consists of one Leaf, which is cut into six Parts almost to the Bottom, having a short Tube ; but expands, and is reflexed at the Brim : in the Centre of the Flower is situated the Pointal, attended by six declining Stamina : the Pointal after-ward changes to an oval three-corner'd Fruit ; having three Cells, which are full of roundish Seeds : to these Notes may be added, The Root being composed of several thick fleshy Tubers, like the Asphodel.

This Genus of Plants was titled *Lilio-Asphodelus* by Dr. Tournefort, from the Flower being shaped like the Lily, and the Root like that of the Asphodel : but this, being a compound Name, is rejected by Dr. Linnaeus, who has applied this of *Hemerocallis* to it, and has joined Tournefort's Genus of *Liliastrum* to this ; tho' the Flowers of that have six Leaves.

The Species are ;

1. *HEMEROCALLIS radice tuberosa, corollis monopetalis.* *Lin. Hort. Cliff.* The yellow Day-lily.

2 *HEMEROCALLIS radice tuberosa, corollis monopetalis reflexis.* The scarlet Day-lily.

3. *HEMEROCALLIS radice tuberosa, corollis hexapetalis.* *Lin. Hort. Cliff.* St. Bruno's Lily, or great Savoy Spiderwort.

There are two Varieties of the first Sort, one with a large, and the other with a smaller Flower ; as there are also of the second and third Sorts : but these are not distinct Species ; so I shall not enumerate them here. Dr. Linnaeus has supposed the two first Sorts to be one Species ; and that they differ only in the Size and Colour of their Flowers ; but, from thirty Years Observation, I could not find, that they, by any

Culture, nor from Seeds, would vary from their original Species : the Roots of the first Sort do not multiply near so fast as those of the second ; the Flowers are much smaller, and have a very agreeable Scent, somewhat like the Flowers of the Tuberoſe ; for which it is esteemed by many Persons ; and from thence some have given it the Name of yellow Tuberoſe : as this Sort doth not grow so tall, nor spread by the Root so much, as the second Sort, so it may be admitted to have a Place in the Flower-garden, where it will thrive in almost any Soil or Situation ; therefore this may be planted in such Places, where few better Plants will grow.

It is chiefly propagated by parting the Root : the best time for doing of this is in *October*, when the Leaves are decayed : this should not be done oftener than every other Year ; because when they are too often removed, or the Roots parted too small, they will not produce many Flowers ; nor will the Flowers be near so large.

The second Sort multiplies so fast, as to spread over the Beds where they are planted very soon ; therefore is seldom allowed to have a Place in good Gardens ; but in large Wilderness-quarters, and other shady Places, they may be planted to hide the Ground ; for this will grow well under Trees ; and in such Places this Plant will add to the Variety.

The Flowers of both these Sorts are of very short Duration : they open early in the Morning, and by Noon they begin to decay ; and before the Evening they are quite withered, and do not open again ; from whence they had the Name of Day-lily : if the Flowers of the second Sort are handled, there will be a

fine Copper-colour come off, which will colour the Hands and Face: and some unlucky People advise Persons, who are ignorant of this, to smell to the Flower; in the doing of which, their whole Face will be dyed of a Copper-colour.

The *Savoy Spiderwort*, or, as the *French* call it, *St. Bruno's Lily*, is a Plant of humbler Growth than either of the former: this Sort flowers earlier in the Year: the Leaves of this Sort are somewhat like those of the Spiderwort; and pretty firm, and grow upright: the Flower-stalks grow about a Foot high, and have several white Flowers at the Top, shaped like those of the Lily, which hang on one Side, and have an agreeable Scent: these are but of short Duration, seldom continuing in Beauty above two or three Days; but when the Plants are strong, they will produce eight or ten Flowers upon each Stalk; so they make a good Appearance while they last.

This Sort is usually propagated by parting the Roots: Autumn is the best Season for doing this Work, as it also is for transplanting of the Roots; for when they are removed in the Spring, they seldom flower the same Year; or, if they do, it is but weakly: these Plants should not be transplanted oftener than every third Year, when the Roots may be parted to make an Increase of the Plants; but they should not be divided too small; for if they are, it will be two Years before they flower: this Sort delights in a light loamy Soil; and in an open Exposure; so must not be planted under the Drip of Trees: but if they are planted to an East Aspect, where they may be protected from the Sun in the Heat of the Day, they will continue in Beauty longer than when they are more exposed.

HEMIONITIS, Moonfern.

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 allied, and delights in the same Situation and Culture.

HEPATICÀ, Noble Liverwort.

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, composed 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 curved, as in the Lesser Celandine.

The Species are;

1. HEPATICÀ *trifolia, cœruleo flore. Clus.* The single blue Hepatica, or Noble Liverwort.
2. HEPATICÀ *trifolia, flore cœruleo pleno. Clus.* The double blue Hepatica, or Noble Liverwort.
3. HEPATICÀ *trifolia, flore albo simplici. Boerb. Ind.* The single white Hepatica, or Noble Liverwort.
4. HEPATICÀ *trifolia, rubro flore. Clus.* Single red Hepatica, or Noble Liverwort.
5. HEPATICÀ *trifolia, flore rubro pleno. Berb. Ind.* Double-red, or peach-colour'd Hepatica.

These Plants are some of the greatest Beauties of the Spring: their Flowers are produced 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

cially the double Sorts, which 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 mentioned in Books, but could never see it growing; tho' I don't know but such a Flower might be obtained 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 deceived, who have procured 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, mentioned 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 obtained. 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 placed so as to have only the morning Sun, until *October*, when they should be removed into the full Sun, to remain during the Winter-season: but in *March*, when the young Plants will begin to appear, they must be removed again to a shady Situation, and in dry Weather should be frequently watered; 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 Sorts, 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 removed and parted, they are very subject to die; whereas, when they are permitted to remain undisturbed 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, if they are planted in strong moist Ground, and are never injured by Cold.

HEPATORIUM. *Vide* Eupatorium.

HEPTAPHYLLUM. *Vide* Pentaphyllum.

HERACLEUM. *Vide Spondylium, and Panax.*

HERBA GERARDI. *Vide Angelica sylvestris minor.*

HERBA PARIS. *Vide Paris.*

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 Centre, which is surrounded by five Stamina, and it afterward 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 grossulariæ 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.* Tourn. Shrubby Hermannia, with an oblong serrated Leaf.

5. HERMANNIA *frutescens, folio oblongo molli cordato hirsuto.* Boerb. Ind. Shrubby Hermannia, with a soft oblong hairy heart-shaped Leaf.

6. HERMANNIA *frutescens, folio multifido tenui, caule rubro.* Boerb. Ind. alt. Shrubby Hermannia, with a narrow multifid Leaf, and a red Stalk.

7. HERMANNIA *frutescens, folio lasiocaulæ latiori & obtuso, flore parvo aureo.* Boerb. Ind. alt. Shrubby Hermannia, with a broad blunt La-

vender-leaf, and a small golden Flower.

All these Sorts of Hermannia are Natives of the *Cape of Good Hope*, from whence they have been brought into the *European Gardens*.

The fourth Sort is the most common in *Europe*, and was the first known in the Gardens: this will grow to the Height of eight or ten Feet: the Branches generally grow erect, and the Stem becomes woody: but the Flowers of this Sort, being of a whitish-green Colour, make but little Appearance.

The first and second Sorts do not grow so high as the other, and shoot their Branches more horizontally. These produce their Flowers in small Spikes, from the End of their Branches, which are of a yellow Colour; and in the Month of *April*, when they flower, make a fine Appearance in the *Green-house*.

The third, fifth, sixth, and seventh Sorts are yet of humbler Growth than either of the other. These seldom grow above three Feet high, and put out many Branches on every Side, so as to form bushy Heads. The Flowers of these Sorts are produced in very small Clusters, seldom more than three growing together; but these continue much longer in Flower than any of the other Sorts; so make an agreeable Variety among other hardy *Green-house Plants*.

These Plants are all propagated by planting Cuttings of them during any of the *Summer-months*, in a Bed of fresh light 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 filled with fresh light Earth, placing them in a shady Situation

tuation until they have taken fresh root; after which they may be exposed to the open Air, with Myrtles, Ceraniums, &c. until the Middle Latter-end of *October*, when they must be removed into the Green-house; observing to place them in the coolest Part of the House, and here 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 preserved 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 show in the Green-house: they must be frequently watered, 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, except the fourth sort, which ripens its Seeds every Year in *England*: but when they are obtained 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 plunged 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.

HERMODACTYLUS, The Hermodactyl, commonly called Snakes-head Iris.

The Characters are;

It hath a lily-shaped Flower, consisting of one Leaf, and shaped exactly like an Iris; but has a tuberose Root,

divided into two or three Dugs, like oblong Bulbs.

We have but one Species of this Plant; *viz.*

HERMODACTYLUS *folio quadrangulo. C. B. P.* Snakes-head Iris, *vulgo.* This is also called *Iris tuberosa Belgarum*; *i. e.* The tuberose Iris of the *Dutch*.

This Plant is easily propagated by its Tubers, which should be taken off soon after the green Leaves decay, which is the proper Season for transplanting the Roots; but they should not be kept long out of the Ground, lest they shrink; which will cause them to rot when they are planted. They should have a loamy Soil, not too strong; and must be planted to an East Aspect, where they will flower very well. These Roots should not be removed oftener than once in three Years, if you design to increase them; but then they should be planted at a farther Distance from each other, than if they were to remain but one Year; and the Beds should be kept clear from Weeds, and at *Michaelmas* there should be some fine Earth laid over the Beds, which will greatly strengthen their Roots. The Distance which these Plants should be allowed is six Inches square; and they should be placed four Inches deep in the Ground. These produce their Flowers in *May*, and their Seeds are ripe in *August*; but as they multiply pretty fast by their Roots, few People are at the Trouble of raising them from Seeds; but those who have an Inclination so to do, must treat them in the manner directed for the bulbous Iris's.

The Roots of this Plant are very apt to run deep into the Ground, and then they seldom produce Flowers; and many times they shoot so deep as to be lost, especially where

where the Soil is very light : therefore, to prevent this, it will be proper to lay a Thickness of Rubbish under the Border, where these are planted, to hinder them from getting down. This should always be practised in light Ground ; but in strong Land there will be no Occasion to make use of this Precaution ; because they do not shoot downward so freely in that.

This Plant has by some Botanic Writers been suppos'd the true *Hernodactyl* ; but what has been long used in *Europe* for that is the Root of a *Colchicum*.

HERNANDIA, Jack-in-a-Box, *vulgo*.

The *Characters* are ;

It hath a short multifid spreading bell-shaped Flower, or a rosaceous Flower, consisting of several Petals, which are placed in a circular Order; these are some of them barren, and others are fertile: the Cup of the Flower afterward becomes an almost spherical Fruit, which is swelled and perforated, containing a striated roundish Nut.

We have but one *Species* of this Plant ; which is,

HERNANDIA *amplo bederæ folio umbilicato*. Plum. *Hernandia* with a large umbilicated Ivy-leaf, commonly call'd in the *West-Indies*, Jack-in-a-Box.

This Plant is very common in *Jamaica*, *Barbados*, *St. Christophers*, and many other Places in the *West-Indies* ; where it is known by the Name of Jack-in-a-Box. The Fruit of this Plant, when ripe, is perforated ; and the Nut in the Inside becomes hard : so that when the Wind blows through the Fruit, it makes a whistling Noise, which may be heard at a Distance ; from whence, I suppose, the Inhabitants gave this Name to the Plant. It grows in the Gul-

lies, where there are Rills of Water.

In *Europe* this Plant is preserved in curious Gardens, with other tender Exotic Plants. It is propagated by sowing the Seeds on an Hot-bed in the Spring ; and when the Plants come up, they must be planted into separate Pots, and plunged into the Hot-bed again ; and afterward must be treated in the same manner as other tender Exotic Plants, always keeping them in the Bark-stove.

The best time to shift these Plants is in *July*, that they may be well rooted before the Cold approaches ; in the Winter-season they should have a moderate Share of Heat, and in the Summer they must have plenty of Air in hot Weather. With this Management the Plants will grow to the Height of sixteen Feet, or more and the Leaves, being very large, will make a beautiful Appearance in the Stove.

This Plant hath not as yet flowered in *England*, though we may expect some of the large Plants to flower in a short time.

HERNIARIA, Rupturewort.

The *Characters* are ;

The Calyx is quadrid, or, for the most part, quinquefid, and expanded in form of a Star, having five Stamina in the Centre: the Fruit (which grows on the Bottom of the Flower) becomes a membranaceous furrow'd round Capsule, which is divided into eight Cells, each of which contain a small pointed Seed.

The *Species* are ;

1 **HERNIARIA** *glabra*. *J.* 1
Smooth Rupturewort.

2. **HERNIARIA** *hirsuta*. *J.* 1
Rough or hairy Rupturewort.

3 **HERNIARIA** *alsines folio*. *Town*
Rupturewort with a Chickweed leaf.

4. **HERNIARIA** *fruticosa*, *viticern*
lignif

nos. C. B. Shrubby Rupture-
port, with woody Branches.

These Plants are seldom cultiva-
d but in Botanic Gardens, for the
ke of Variety: the three first are,
or the most part, annual Plants, sel-
om continuing longer than one
ear; and must be permitted to shed
eir Seeds, whereby they are bet-
er preserv'd than if sown with Art.
he fourth Sort is an abiding Plant,
hich may be propagated by Cut-
ngs: but as they are Plants of no
eauty, they are not worth cultivate-
ng.

The first Sort is what should be
fed in the Shops, but is rarely seen
n London; the Herb-women com-
monly bringing the Parsley Break-
tone to the Markets, which is sold
instead of this Plant.

HESPERIS, Dame's-violet, Roc-
ket, 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 interme-
diate Partition, to which the imbri-
cated Valves adhere on both Sides, and
are furnished with oblong, cylindrical,
or globular Seeds.

The Species are;

1. HESPERIS *hortensis*, *flore pur-
purco*. C. B. P. Garden Dame's-vio-
let, with a purple Flower, or single
purple Rocket.

2. HESPERIS *hortensis*, *flore candi-
do*. C. B. P. Garden Dame's-vio-
let, with a white Flower, or single
white Rocket.

3. HESPERIS *sylvestris inodora*.
C. B. P. Unfavoury wild Dame's-
violet.

4 HESPERIS *hortensis*, *flore varie-
gato*. *Jessieu*. Garden Dame's-violet,
with a variegated Flower.

5. HESPERIS *hortensis*, *flore pur-
pureo 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-vio-
let, 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 supina exi-
gua*. *Tourn.* Low maritime Dame's-
violet.

9. HESPERIS *montana pallida odo-
ratissima*. C. B. P. Pale mountain
Dame's-violet, with a very sweet
Smell.

10. HESPERIS *maritima angusti-
folia incana*. *Inst. R. H.* Dwarf an-
nual Stock, sometimes call'd *Virgi-
nia* Stock.

11. HESPERIS *foliis multifidis*.
Flor. Leyd. Annual Dame's-violet,
with small white Flowers, and Leaves
finely cut.

12. HESPERIS *lutea, filiquis stri-
atissimis*. *Inst. R. H.* Yellow Dame's-
violet, with very narrow Pods.

13. HESPERIS *allium redolens*.
Mor. Hist. Dame's-violet smelling
like Garlick, commonly call'd
Sawce-alone, or Jack-by-the-Hedge.

14. HESPERIS *leucoii folio serrato,
filiqua quadrangula*. *Inst. R. H.*
Dame's-violet with a Wallflower-
leaf, and a square Pod.

15. HESPERIS *maritima latifolia,
filiqua tricuspidi*. *Inst. R. H.* Broad-
leav'd maritime Dame's-violet, with
a three-pointed Pod.

The seven first-mention'd Sorts are
abiding Plants, and may be propa-
gated by parting their Roots in *Aug-
ust*, especially those with double
Flowers, which never produce Seeds;
but the single Kinds are better propa-
gated by sowing their Seeds in
March,

March, which will produce stronger Plants than those obtained from Offsets. The Heads, which are divided, should be well furnished with Roots, otherwise they are very subject to miscary: 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 mixed with Dung, which often causes the Roots to rot: but if you bury some rotten Woodpile 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 Stockgillflower: 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 succeed best. The single Kinds have very little Beauty in them, when compar'd with the double, and are therefore seldom cultivated in Gardens: but as they are much hardier than the double, and will thrive in a

shady Border, they may be admitted for Variety. These all produce their Flowers in *May*, and the single Kinds will 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, eleventh, fourteenth, and fifteenth Sorts are low annual Plants of little Beauty; so are seldom preserved but in Botanic Gardens. These may be sown either in the Spring or Autumn, upon a Border of light Earth, where they are to remain; for they do not bear transplanting well. The autumnal Plants will grow much stronger than those which are sown in the Spring; and if the Seeds of these are suffer'd to scatter when they are ripe, the Plants will come up, and require no other Culture, but to keep them clear from Weeds.

The twelfth Sort is an abiding Plant; but, having no Beauty, is seldom allowed a Place in Gardens.

The thirteenth Sort grows wild by the Sides of Ditches, and in shady Woods, in most Parts of *England*; and being of late much used in Medicine, I have inserted it here. It is a biennial Plant, which perishes soon after the Seeds are ripe.

The eleventh Sort is a very low Plant, which may be sown for Edgings, or in Patches on the Borders of the Pleasure-garden, as the Dwarf *Lychnis*, *Venus-looking-glass*, and other low annual Plants, are usually cultivated to embellish the Borders in Autumn, after most other Flowers are past: for which Purpose this Sort is justly esteem'd. The Seed may be sown in *April* or *May*, to flower late. 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,

fter, and the Plants will get strength enough to endure the Cold; and in the Spring following these will produce much larger Flowers than those 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 two or three Years.

The Flowers of this Sort are very small, and of a white Colour; so make no great Appearance; but they have a very agreeable Scent in the Night, so that many Persons cultivate it in their Gardens; and some plant them in Pots, to place in their Rooms in the Evening, for the sake of its Fragrancy.

HIBISCUS, Viscous-seeded Mal-
low.

This Title was formerly applied to the Marsh-mallow; but the Title of *Althæa* having been more generally applied to that Genus, by the modern Botanists, this of *Hibiscus* has been disused, till Dr. *Linnaeus* applied it to this Genus: but to this he has added *Tournefort's* Genus of *Ketmia*; which, if the Fruification be admitted as a Character, will by no means agree with this.

The Characters are;

The Flower is of the malvaceous Kind: the Petals are twisted at the Bottom, and closely embrace the Column, which is in the Centre: there is a double Empalement to the Flower, the outer being compos'd of several narrow Leaves; but the inner is of

one Leaf, cut at the upper Part into five Segments: the Pointal afterward changes to a roundish Fruit, having five Cells, each containing a single Seed, and the whole Fruit inclosed with a soft pulpy Flesh like a Berry.

We know but one Species of this Genus; viz.

HIBISCUS *foliis cordatis crenatis, angulis lateralibus solitariis parvis.* *Lin. Hort. Cliff.* Malvariscus, or viscous-seeded Mallow.

This grows to the Height of twelve or fourteen Feet in England; but in *Jamaica*, and other Parts of the *West-Indies* where it is a Native, it grows to be a large Shrub upward of twenty Feet high.

Toward the Extremity of the Branches, the Flowers come out singly, from the Footstalk of the Leaves: these are of a fine scarlet Colour; but the Petals of the Flowers being twisted, they never expand, but are shut up, and closely embrace the Column of *Stamina*, which is stretched out beyond the Petal of the Flower: after the Flower is past, the Pointal changes to a roundish pulpy Berry of a red Colour, inclosing the Seed-vessel.

This Plant may be easily propagated by planting Cuttings, during any of Summer-months, in Pots filled with light rich Earth, and plunged into a moderate Hot-bed, where they must be shaded from the Sun in the Heat of the Day, until they have taken Root; which, if they are duly watered, will be in six Weeks after planting; and in about a Month after, the Cuttings will have made sufficient Root to be transplanted; when they should be each planted into a separate Pot fill'd with light Earth, and placed in the Shade until they have taken fresh Root.

The

The Plants of this Sort must be placed in a Stove in the Winter, where they may enjoy a temperate Warmth, in which they will thrive, and produce Flowers, most Part of the Winter, and the Spring; and sometimes the Fruit will ripen well in England: in the Summer these should be placed abroad in a warm Situation; and although they will not grow much while they are abroad, yet they will be in better Condition for flowering in the Winter, than when they remain in the Stove all the Summer; because they are apt to draw, and produce weak Shoots; and the Leaves are subject to exude a sweet clammy Dew, which their whole Surfaces are covered with; and this draws Numbers of Insects, which infest both Leaves and Shoots, and thereby stints the Growth of the Plants, and renders them unsightly: but this rarely happens to those Plants which are placed in the open Air.

If this Plant is propagated by Seeds, they should be sown upon a good Hot-bed in the Spring; and when the Plants are strong enough to remove, they should be each planted into a separate Pot, and plunged again into the Hot-bed, to facilitate their taking fresh Root; and then they must be treated in the same manner, as those which are raised from the Cuttings. As this Plant flowers in the Winter and Spring, so at those Seasons it makes a good Appearance in the Stove among other tender Plants.

HIERACIUM, Hawkweed.

The Characters are;

The Stalks are branched and slender: the Leaves are produced alternately: the Cup of the Flower is short, firm, and expanded: the Flower consists of many Leaves, which are placed in an

orbicular Order, and open in form of a Marigold: 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 Hawkweed, with hairy Leaves.

2. *HIERACIUM Pyrenaicum, folio cerinthæ, latifolium.* Schol. Bot. Pyrenean Hawkweed, with a broad Honeywort-leaf.

3. *HIERACIUM folio dentis leonis, flore suave-rubente.* C. B. P. Red-flowered Hawkweed, with Dandelion-leaves.

4. *HIERACIUM lanatum, sonchi vel erigerontis facie.* H. L. Downy Hawkweed, with the Face of Sow-thistle or Groundsel.

5. *HIERACIUM medio-nigrum Bæticum majus.* Par. Bat. Greater Spanish Hawkweed, with yellow Flowers, having black Bottoms.

6. *HIERACIUM medio-nigrum Bæticum majus, flore sulphureo.* Greater Spanish Hawkweed, with brimstone-colour'd Flowers, having black Bottoms.

7. *HIERACIUM barbatum medio-nigrum minus.* H. L. Lesser Hawkweed, with yellow Flowers, having black Bottoms.

8. *HIERACIUM latifolium pilosum coccineum umbellatum Indicum.* H. L. Broad-leaf'd Indian Hawkweed, with scarlet Flowers growing in an Umbel.

9. *HIERACIUM longius radicum.* Ger. Emac. Long-rooted Hawkweed.

10. *HIERACIUM minus, præmorsæ radice.* Park. Hawkweed with bitten Roots, or yellow Devil's-bit.

11. *HIERACIUM primum latifolium.* Clus. Broad-leaf'd Hungarian Hawkweed.

12. *HIERACIUM fruticosum latifolium hirsutum*. C. B. Bushy Hawkweed, with broad rough Leaves.
13. *HIERACIUM fruticosum latifolium glabrum*. Park. Theat. Smoother broad-leav'd bushy Hawkweed.
14. *HIERACIUM fruticosum angustifolium majus*. C. B. Narrow-leav'd bushy Hawkweed.
15. *HIERACIUM pulmonariae dictum, angustifolium*. Raii Syn. Narrow-leav'd Hawkweed, commonly called Golden Lungwort.
16. *HIERACIUM macrocaulon hirsutum, folio rotundiore*. D. Lawson. Round-leav'd rough Hawkweed, with a tall Stalk.
17. *HIERACIUM hirsutum, folio longiore*. D. Lawson. Slender-stalk'd rough Hawkweed, with a longer Leaf.
18. *HIERACIUM murorum laciniatum minus pilosum*. C. B. Golden Lungwort, with more jagged Leaves.
19. *HIERACIUM murorum, folio longiore dissecto, maculis lividis asperso*. Vaill. Mem. Acad. Scien. Long cut-leav'd Golden Lungwort, with spotted Leaves.
20. *HIERACIUM castorei odore, Montpelienfium*. Raii Syn. Hawkweed of Montpellier, smelling like Castor.
21. *HIERACIUM luteum glabrum, sive minus hirsutum*. J. B. Smoother yellow Hawkweed.
22. *HIERACIUM montanum, cithorei folio, nostras*. Raii Syn. Succory-leav'd mountain Hawkweed.
23. *HIERACIUM maximum, chondrilla folio, asperum*. C. B. The greatest rough succory-leav'd Hawkweed.
24. *HIERACIUM echioides, capitulis cardui benedicti*. C. B. Hawkweed like Vipers Bugloss, with Heads like the Blessed Thistle, commonly called Ox-tongue.

25. *HIERACIUM pulmonariae dictum latifolium humilius, ramulis expansis*. Aët. Phil. N. 417. Dwarf branching Hawkweed, with broad Leaves.

26. *HIERACIUM Sabaudum altissimum, foliis latis brevibus crebrius nascentibus*. Mor. Hist. Tallest Savoy Hawkweed, with short broad Leaves.

27. *HIERACIUM fruticosum, angustissimo incano folio*. H. L. Bushy Hawkweed, with very narrow hoary Leaves.

28. *HIERACIUM Pyrenaicum rotundifolium amplexicaule*. Inst. R. H. Round-leav'd Pyrenean Hawkweed, whose Leaves embrace the Stalks.

29. *HIERACIUM murorum, foliis maculis & lituris atro-rubentibus, pulchre variegatis*. Vaill. Mem. Acad. Scien. Hawkweed whose Leaves are beautifully marked with dark-red Spots.

30. *HIERACIUM fruticosum latifolium, foliis dentatis, glabrum*. C. B. Broad-leav'd bushy Hawkweed, with smooth indented Leaves.

31. *HIERACIUM magnum Dalechampii, folio minus laciniato*. Greater Hawkweed of Dalechamp, with less cut Leaves.

32. *HIERACIUM magnum Dalechampii, folio majus laciniato*. Greater Hawkweed of Dalechamp, with more cut Leaves.

The first, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, fifteenth, sixteenth, seventeenth, eighteenth, nineteenth, twentieth, twenty-first, twenty-second, twenty-third, twenty-fourth, and twenty-fifth Sorts grow wild in England, but particularly in the Northern Counties; so are rarely introduced into Gardens: but whoever hath a mind to cultivate them, need only to sow their Seeds, or transplant their Roots into the Garden, where they will thrive

thrive fast enough, in any Soil or Situation: they are most of them abiding Plants.

The second, twenty-sixth, twenty-seventh, twenty-eighth, twenty-ninth and thirtieth Sorts are also abiding Plants, which grow upon the *Alps* and *Apennines*; and are preserved in the Gardens of such Persons as are curious in having a Variety of Plants; but as there is little Beauty in their Flowers, they are not much cultivated in *England*.

The eighth Sort is an abiding Plant, which produces Tufts of scarlet Flowers, which continue a long time in Beauty; and being a very hardy Plant, is frequently admitted into Gardens: this is sometimes called Grim the Collier, and Golden Mouse-ear.

The thirty-first and thirty-second Sorts grow wild in the South of *France*, and in *Italy*; yet are hardy enough to endure the Cold of our ordinary Winters very well in the open Air. The Seeds of these Plants should be sown in the Spring, on a Bed of fresh undung'd Earth, where they are designed to remain, because they seldom succeed when they are transplanted. When the Plants are come up, they should be cleared from Weeds; and where they are too close, they should be thinned, leaving them about eight or ten Inches asunder. Some of these Plants will flower the first Year they are sown; but these will not produce good Seeds; but those which live over the Winter will flower early the following Summer; and, if the Season proves favourable, will produce good Seeds in *August*. These Plants seldom continue longer than two Years; so that Seeds should be annually sown, in order to preserve their Kinds; for as they continue in

Flower the greatest Part of the Summer, they merit a Place in every good Garden.

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 raised in 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 toward 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 suffered to shed upon the Ground, will grow, and save the Trouble of sowing them.

HIPPOCASTANUM, Horse-chestnut.

The Characters are;

It hath digitated or fingered Leaves: the Flowers, which consist of five Leaves, are of an anomalous Figure, opening, as it were, with two Lips: there are Male, Female, and Hermaphrodite Flowers upon the same Spike, which, when fully blown, make a specious Show, being always produced at the Extremity of the Branches: the Hermaphrodite 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*,
his ex albo variegatis. The white-
 blotch'd Horse-chestnut.

I have here enumerated the two
 ped-leav'd Kinds, which have
 been by Accident obtained; but these
 are only occasioned by a Weakness
 of the Trees; for when either of
 these are budded or grafted upon
 Stocks of the plain-leav'd Kind, if
 they take kindly, and shoot freely,
 they will become plain: indeed, the
 Ripeness in the Leaves of the Tree
 have more the Appearance of a Dis-
 temper, than in any other Sort of
 Tree; so it is not worthy of being
 propagated.

In the Horse-chestnut there seem
 to be two or three Varieties differing
 in the Breadth of their Leaves, and
 in the Colour of their Flowers, one of
 which hath its Flowers remarkably
 spotted with Red and Yellow, so as
 may be seen at a great Distance, and
 somewhat later in flowering.

These Trees were greatly in
 Fashion some Years ago; when the
 Avenues to Houses, and other shady
 Walks, were commonly planted with
 them: but there are few Sorts of
 Trees more unfit for this Purpose;
 because their regular pyramidal
 Growth is obstructed, when they
 stand near each other; so that the
 Branches will interfere on each side
 of the Lines; by which they will
 be prevented flowering: and as these
 Leaves begin to decay by the End
 of July, they make a very bad Ap-
 pearance after that time; and by
 their Leaves falling, they occasion a
 Distemper for near three Months; upon
 these Accounts, this Tree has been
 little esteemed of late Years.

But although it is not so proper
 for planting of Avenues, as many
 other Trees, yet it should not be
 wholly excluded from Gardens;
 were, if they are properly disposed,

they have a very good Effect, espe-
 cially during their Continuance in
 Flower. These should always be
 planted singly at a Distance from
 each other, or from any other Trees;
 for when they have full room to ex-
 tend their Branches, they will form
 a natural Parabola or Cone, spread-
 ing twelve Feet or more on every
 Side; and this, in the Compass of
 a few Years: and when they stand
 thus detach'd, every Shoot will pro-
 duce a Spike of Flowers; so that
 the whole Tree will be covered with
 Flowers, and make a goodly Shew.

This Tree is propagated by plant-
 ing the Nuts early in the Spring,
 after the manner as was directed for
 the common Chestnut, to which I
 refer the Reader, to avoid Repeti-
 tion: the Autumn following the
 Plants may be transplanted into a
 Nursery, in Rows at three Feet
 Distance, and eighteen Inches asun-
 der in the Rows, where they may
 continue three Years; after which
 time they may be transplanted,
 where they are to remain: the best
 Season for transplanting these Trees
 is in Autumn, or during any of the
 Winter-months, when other deci-
 duous Trees are removed; for this
 Tree puts out early in the Spring.

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 al-
 ways 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 Nou-
 rishment, 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

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, 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 esteemed and cultivated on ever-green Trees; but are now very justly despised by all curious Persons: tho' 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*. The Laurel and the Horse-chestnut were made Denizens of *England*, at the same time, which was about the Year 1610. but altho' they are Natives of so warm a Country; yet they are now so inur'd to the Cold, as to defy the severest of our Winters, and 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 *Turky* they give them to Horses, in their Provender, that are troubled with Coughs, or short-winded, in both which Distempers they are supposed to be very good.

HIPPOLAPATHUM. *Vide* Lappathum.

HIPPOSELINUM. *Vide* Smyrnium.

HIRUNDINARIA. *Vide* Asclepias.

HOLLOW-ROOT. *Vide* Fumaria.

HOLLY-HOCKS. *Vide* Malva rosea.

HOLLY. *Vide* Aquifolium.

HONEYSUCKLE. *Vide* Caprifolium.

HOPS. *Vide* Lupulus.

HORDEUM, Barley.

The Characters are;

It hath a thick Spike: the Calyx, 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 polystrichum, *vel* *hybernium*. *Park.* Winter or square Barley, or Bear Barley; by some called Big.

3. HORDEUM distichum, *spica brevior* & *latiori*, *granis confertis* *Raii*. Sprat Barley, or Battledore Barley.

These are the Sorts of Barley which are most commonly cultivated near *London*; but, besides these three there are two other Sorts, which are cultivated in *England*; which are the Rath-ripe, and Naked Barley: this last is sometimes called *French* Barley: this makes tolerable good Bread

Bread, very good Malt, and yields a large Increase.

All these Sorts of Barley are sown in the Spring of the Year, in a dry Time; in some very dry light Land, the Barley is sown early in *March*; but, in strong clayey Soils, it is not sown till *April*, and sometimes not until the Beginning of *May*; but when it is sown so late, if the Season doth not prove very favourable, it is very late in Autumn before it is fit to mow, unless it be the rath-ripe Sort, which is often ripe in nine Weeks from the time of sowing.

The square Barley or Big is chiefly cultivated in the North of *England*, and in *Scotland*, and is hardier than the other Sorts; but this is seldom sown in the South of *England*, tho' it might be cultivated to good Purpose on some strong cold clayey Lands, where the other Kinds do not thrive so well.

Some People sow Barley upon Land where Wheat grew the former Year; but when this is practised, the Ground should be plowed the Beginning of *October* in a dry time, laying it in small Ridges, that the Frost may mellow it the better; and this will improve the Land greatly: then in *March* the Ground is plowed again, and laid even where it is not very wet; but in strong wet Lands the Ground should be laid round, and the Furrows made deep to receive the Wet. When this is finished, the Seed should be sown with a broad Cast at two Sowings: the first being harrowed in once, the second should be harrowed until the Seed is buried: the common Allowance of Seed is four Bushels to an Acre.

It is a very common Fault with Farmers to sow too much Grain of all Sorts on their Land; not considering, that if the Roots of Corn stand very close together, there will

not be room for them to put out many Stems; so that frequently there is not more than two or three Stalks to a Root; whereas, if the Roots were farther distant, there might be ten or twelve, and, on good Land, many more. I have counted upward of seventy Stalks of Barley from one Root, which was transplanted in a Garden, where the Ground was light, but not rich: and I am satisfied by several Experiments, that where Barley is sown early upon light Ground, it should not be too thick; for if it is rolled two or three times before it stalks, the Roots, by being pressed, will shoot out a greater Number of Stalks; and it will not be so liable to lodge with Wet, as the Barley which is sown thick; so must consequently be drawn up much taller, and have weaker Stalks.

When the Barley is sown, the Ground should be rolled after the first Shower of Rain, to break the Clods, and lay the Earth smooth; which will render it better to mow, and also cause the Earth to lie closer to the Roots of the Corn, which will be of great Service to it in dry Weather.

Where Barley is sown upon new broken up Land, the usual Method is, to plow up the Land in *March*, and let it lie fallow until *June*; at which time it is plowed again, and sown with Turneps, which are eaten by Sheep in Winter, by whose Dung the Land is greatly improved; and then in *March* following the Ground is plowed again, and sown with Barley, as before.

There are many People who sow Clover with their Barley; and some have sown the Lucern with Barley; but neither of these Methods is to be commended; for where there is a good Crop of Barley, the Clover or Lucern must be so weak as not to

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, Salading, &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 afterward, when rotted, becomes an excellent Manure for most Sorts of Lands, more especially for such as are of a cold Nature; and for stiff clayey Lands, when mixed 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 obtained 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 furnished with the several Products of the Garden, during the Winter and Spring-months, as they are at present in most Parts of *England*, better than in any other Country in *Europe*; for altho' we cannot boast of the Clemency of our Climate, yet *England* is better furnished with all Sorts of esculent Plants for the Table, much earlier in the Season, and in greater Quantities, than any of our Neighbours; which is owing to our Skill in Hot-beds.

The ordinary Hot-beds which are commonly us'd in the Kitchen-gardens, are made with new Horse-dung, in the following manner:

1st, Provide a Quantity of new

Dung from the Stable (in which there should be Part of the Litter or Straw which is commonly used 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; then it should be turned over, and the Parts well mixed together, and cast into an Heap again, where it may continue five or six Days longer; by which time it will have acquir'd a due Heat: then in some well-sheltered 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, or a Foot and an half 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 designed for a Bed to plant out Cucumbers to remain for good, you must make an 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 intended; 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
three

three or four 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 designed for other Plants; there need be no 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 observed 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 increased; otherwise the Plants in the Beds will be stinted in their Growth; if not intirely destroyed. 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, the Sun will supply the Loss of the Dung's Heat; but then it will be adviseable 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 altho' the Hot-bed I have described is what the Kitchen gardeners commonly use; yet those made with Tanners Bark are much more preferable; especially for all tender Exotic Plants or Fruits which require an even Degree of Warmth to be continued for several Months; which is what cannot be so well 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 raised 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 bricked up round the Sides to the above-mentioned Height 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 setting it too close: then you must put on the Frame over the Bed, covering it with the Glasses; 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 prepared (if the Bark be new, and not ground too small) will continue in a good Temper of Warmth for two or three 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, tho' it may sometimes be a Fortnight 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 the Lower-part fifteen Inches, which will be a sufficient Declivity to carry off the Wet; and the Back-side 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 altho' 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: tho' 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 commonly made use of in the Kitchen-gardens. As to their Length, that is generally according to the Fancy of the Owner; but they usually contain three Lights each, which is in the Whole about eleven Feet in Length; tho' sometimes they are made to contain four Lights; but this is too great a Length: the Frames thus made are not so convenient 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 mentioned; 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 better to have them contrived to take asunder at the four Corners; so that they may be removed 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.

HOTTONIA, Water-violet.

The Characters are;

It hath a rose-shaped Flower consisting of one Leaf, which is divided into five Parts almost to the Bottom: in the Centre of the Flower arises the Pointal, which afterward becomes a cylindrical Fruit, in which are contained several spherical Seeds.

We have but one Kind of this Plant; viz.

HOTTONIA. Boerb. Ind. alt. Water-violet.

This Plant is very common in deep standing Waters and Ditches, in several Parts of England. The Leaves of this Plant appear on the Surface of the Water the Beginning of April, and in May the Flowers arise on pretty long naked Stalks, growing in a Spike. These Flowers are of a fine Rose-colour, which, together with their fine-cut Leaves, make a beautiful Appearance on the Water.

It may be propagated in deep standing Waters, by procuring its Seeds, when they are ripe, from the Places of their natural Growth; which should be immediatly dropp'd into the Water, where they are designed to grow; and the Spring following they will appear; and if they are not disturbed, they will soon propagate themselves in great Plenty.

HURA, The Sand-box tree.

The Characters are;

It hath Male and Female Flowers on the same Plant: the Male Flowers consist of one Leaf, which is funnel-shaped, having a long incurved Tube; but is spread open at the Brim, where it is slightly cut into twelve Parts: in the Bottom of the Tube are placed several short Stamina, which are collected together: the Female Flowers have the same Figure with the Male, but have no Stamina; the Centre of the Flower being occupied by the short round compressed Pointal, which afterward becomes a round Fruit compressed at both Ends, having twelve deep Furrows, and as many different Cells, each containing one round compressed Seed: the Fruit, when ripe, bursts open with great Elasticity, and casts the Seeds abroad.

We know but one Sort of this Plant; viz.

HURA Americana, abutili Indici folio. H. Amst. American Hura, with a Leaf like the Indian Abutilon. This is sometimes called Jamaica Walnuts, and the Sand-box-tree; and by others Warnlia and Hawelia.

This Shrub is a Native of the Spanish West-Indies, from whence the Seeds have been brought into several of the British Islands in the West-Indies; where the Inhabitants cultivate these Plants in their Gardens, by way of Curiosity. It rises to the Height of fourteen or sixteen Feet, and divides toward the Top into several Branches, which are adorned with large Leaves indented on their Edges, and terminating in a Point. These Leaves, as also the younger Branches, are of a deep-green Colour, and are full of a milky Juice, which issues out on their being broken or bruised. This Juice is extremely corrosive. The Fruit of this Plant, if suffered to remain on till they are fully

fully ripe, burst in the Heat of the Day with a violent Explosion, making a Noise like the firing of a Pistol; which occasioned its being, by former Writers, called *Arbor crepitans*; i. e. the farting Tree; and hereby the Seeds are thrown about to a considerable Distance. These Seeds, when green, vomit and purge, and are supposed to be somewhat akin to the *Nux Vomica*.

The Seeds of this Plant were sent from *Carthage*, in *New Spain*, by the late Dr. *William Houstoun*; and since, there have been many of the Seeds sent into *England* from *Barbados*, where there are great Numbers of the Plants cultivated in the Gardens of the Curious.

It is propagated by Seeds, which should be sown early in the Spring, in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark. If the Seeds are fresh, the Plants will appear in about five Weeks after the Seeds are sown; and when the Plants are about four Inches high, they should be transplanted each into a separate small Pot filled with light rich Earth, and plunged again into the Hot-bed of Tanners Bark; and must be afterward treated in the same manner as is directed for other tender Exotic Plants, till the Autumn, at which time they must be removed into the Bark-stove, and plunged in the warmest Part thereof: during the Winter-season they must have frequent Watering; but it must not then be given in too great Quantities: they must also be kept very warm, otherwise they will not live in this Country. In Summer they must have a large Share of fresh Air in warm Weather; but they must not be removed into the open Air; for they are too tender to live abroad in the warmest Part of the Year in this Country.

This Plant is now pretty common in the *English* Gardens, where there are Collections of tender Plants preserved; some of which are grown to the Height of twelve or fourteen Feet; and many of them have produced Flowers; but there has not been any of their Fruit produced as yet in *England*.

As these Plants have ample Leaves, which are of a beautiful green Colour, they afford an agreeable Variety among other tender Exotic Plants in the Stove; for where they are kept warm, and duly refreshed with Water, they retain their Leaves all the Year in Verdure.

The Fruit of this Plant is, by the Inhabitants of the *West-Indies*, cut open on the Side where the Foot-stalk grew, and the Seeds carefully taken out; after which, the Shells are used as Standishes to contain Sand for Writing; which gave Rise to the Name of Sand box. When these Fruit are brought intire into *England*, it is very difficult to preserve them; for when the Heat of the Summer comes on, they usually burst with an Explosion, and scatter their Seeds about.

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 Panicle: the Flowers consist each of one Leaf; are naked, tubulose, and cut into six Divisions at the Brim, which are reflexed: the Ovary becomes a roundish Fruit with three Angles, which is divided into three Cells, that are filled with roundish Seeds.

The Species are;

1. HYACINTHUS *Anglicus*; flore *caeruleo*. Ger. Blue *English* Hair-bells.

2. HYAC-

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 præcocissimus, flore albo. Boerb. Ind. The earliest white Oriental Hyacinth, commonly called Januarius.*

5. *HYACINTHUS Orientalis brumalis, flore pallide cæruleo. Boerb. 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 præcox, dictus Zimbul Indi. Park. Par. The great Oriental Jacinth, commonly called Zimbul Indi.*

8. *HYACINTHUS Orientalis maximus; flore amœne cæruleo, polyanthus. H. R. P. The greatest Eastern Jacinth, with many Flowers of a fine blue Colour.*

9. *HYACINTHUS Orientalis, flore pleno cæruleo, vel purpuro-violaceo. Park. Par. The double blue Oriental Jacinth.*

10. *HYACINTHUS Orientalis candidissimus, flore pleno. Park. Par. The very white 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 cæruleo-purpureo, clavo longo, petalis modice reflexis. Boerb. Ind. Double blue Oriental Jacinth, with a long Style, and the Petals moderately reflex'd, commonly call'd The Double Cardinal.*

13. *HYACINTHUS Orientalis, flore plenissimo intus albo, eleganter roseo, clavo conico obtuso, petalis valde*

reflexis. Boerb. Ind. The most double Oriental Jacinth, with a white Flower of an elegant Rose-colour in the Middle, and the Petals greatly reflexed, commonly call'd The King of Great Britain.

14. *HYACINTHUS Orientalis, flore plenissimo candidissimo toto, & intus clavo conico obtuso, petalis valde reflexis. Boerb. Ind. The most double Oriental Jacinth, with a pure white Flower, and the Petals greatly reflexed, commonly called The Queen of Great Britain.*

15. *HYACINTHUS Orientalis, flore pleno lacteo, lituris carnis, clavis longis. Boerb. Ind. Double Oriental Jacinth, with a milk-coloured Flower streak'd with a pale Red, commonly call'd Claudius Albinus.*

16. *HYACINTHUS Orientalis, flore plenissimo carneo longissimo, intus roseo, petalis valde reflexis. Boerb. Ind. The most double Oriental Jacinth, with a flesh-colour'd Flower streak'd with a Rose-colour, and the Petals greatly reflexed, commonly called 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 reflexed Petals, commonly called Agath Mignon.*

18. *HYACINTHUS Orientalis, flore plenissimo albo, paucillo carnis admisto, clavo longo anguloso plano, ore amplissimo. Boerb. Ind. Double Oriental Jacinth, with a Flower intermixed with very little flesh-coloured Spots, commonly called 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*

greatly reflexed, commonly called 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 called 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 reflexed, and large Stalks and Flowers, commonly called *Kaisar'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 mentioned, there are a great Variety of fine double Hyacinths, with beautiful variegated Flowers, most of which have Names imposed 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 valued at five, six, seven, eight, or ten Pounds per Root: but as these are Varieties which have been obtained from Seeds, the Number of them is continually increas'd where People constantly sow of their Seeds; and those 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 obtained 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 proceed to their Culture.

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-mentioned are Varieties which have been accidentally obtained from the first, from which they differ only in the Colour of their Flowers. The twenty next-mentioned 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, they not only increase the Numbers of their Flowers, but have yearly some extraordinary Beauties appear; which are, according to their Stature, Figure, and other Properties, highly esteem'd; and are sometimes bought, at a very great Expence, by the curious Delighters in these Beauties.

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 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

lighters 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 when produced, perhaps there might not be one in forty that may merit to be preserv'd: but they do not consider, that it is only the Loss of the three or four first Years after sowing; for if they continue sowing every Year after they begin, there will be a Succession of Flowers annually, which will constantly produce some Sorts that may be different from what they have before seen; and new Flowers being always the most valuable to skilful Florists (provided they have good Properties to recommend them), it will always be a sufficient Recompence for their Trouble.

The Method of raising these Flowers from Seed is as follows: Having provided yourself with some good Seed (which should be saved 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 filled with fresh light sandy Soil, laying the Surface very level; then sow your Seed 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 placed where they may enjoy the morning Sun, only until the Middle or Latter-end of *September*; at which time they should be removed into a warmer Situation; and towards the End of *October* they should be placed under a common Hot-bed-frame; where they may remain during the Winter and Spring Months, that they may be protected from hard

Frosts; though they should be exposed to the open Air when the Weather is mild, by taking off the Glasses. In *February* the young Plants will begin to appear above-ground; at which time they must be carefully screen'd from Frosts, otherwise they will prove very injurious to them; but you must never cover them 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, but not too near a Wall; 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 overspread the tender Plants, and destroy them, if permitted to remain.

Toward the Latter-end of *April*, or the Beginning of *May*, these Boxes should be removed into a cooler Situation: for the Heat of the Sun at that Season will be too great for these tender Plants, causing their Blades to decay much sooner than they would, if they were screen'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 will 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

ring 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 placed upon the Bed at about two or three Inches asunder, observing to set the Bottom-part of their Roots downward; 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, 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 ever so small.

These Beds must be arch'd over with Hoops; and in very hard frosty Weather they must be cover'd with Mats, &c. to protect them from Frost; and in the Spring, when the green Leaves are above-ground, if the Weather should be very dry, you must refresh them 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 them 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 them, 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 ascertained 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 contained in their very succulent Leaves and Flower-stalks is exhaled, and prevented from entering the Roots; which, when suffered 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 cleared of all manner of Filth, which would be hurtful to them, they must be laid up in Boxes; where they may be preserved dry until *September*, which is the proper Season for planting them again. The Method of doing this shall be hereafter mentioned, when we treat of the Management of old Roots.

I shall now proceed to the Culture of such Hyacinths as have either been obtained from *Holland*, or are of our own Product from Seeds, that are very beautiful, and worthy to be preserved 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 degenerate after they have flower'd in *England*: which is a great Mistake; for were the Roots managed with the same Art as is practis'd in *Holland*, I am fully convinced they would thrive full as well in *England* as there, or elsewhere, as I have experienced; for, from some Hundreds of Roots which I have received from *Holland* at two or three different times, I have increased them to almost double the Number of strong Roots; all which flower'd in the Spring *Anno* 1730. stronger than they did when I first received them: and I dare say they were as large, and produced as many Flowers on their Stems, as if they were in *Holland*.

The Soil in which these Flowers 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 Cow-dung: 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 used, it will be much the better: but if you are obliged to use it sooner, then it should be oftener turned, that the Parts may the better unite.

This Soil should be laid two Feet deep on the Beds which are designed 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 ten or twelve Inches above the Surface; but if it be dry, they need not be raised above three or four 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, which should be three Feet; then spread a little rotten Dung or Tan in the Bottom, laying it very level; upon this you should lay the above-mentioned Earth twelve or fifteen 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 six Inches deep with the same prepared 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 toward the Middle or Latter-end of *September*, according to the Earliness or Lateness of the Season, or the Weather which then happens:

pens: but I would advise you, never to plant them 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 would certainly destroy them.

These Beds will require no farther Care until the Frost comes on severe, at which time they should have some rotten Tan spread over the Bed, about four Inches thick; and if the Alleys on each Side of the Bed are filled up, either with rotten Tan, Dung, or Sand, it will prevent the Frost from penetrating the Ground to the Roots, and secure them from being destroyed: but when the Winters prove very severe, it will also be proper to 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 happened when the Beds have been too close covered. 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 covered either with Mats, Canvas, or some other light Covering, to prevent the Frost from injuring 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 be-

come very weak; and the Pedicles of the Flowers will be long and slender, and so rendered 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 their Bells. When these Hoops are fixed over the Beds, the rotten Tan should be taken off them; in the doing of which, great Care should be taken not to bruise or injure the Leaves of the Hyacinths, which by that time will be beginning to break out of the Ground with the Flower-stem; therefore the Tan should be removed by the Hands, or, if any Instrument is used in the doing of it, there must be great Caution.

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 formed into an Hoop, the Stem of the Flowers should be fastened, 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 covered 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 decayed, and the Tops of their Leaves begin to change their Colour, you must carefully raise the Roots out of
the

the Ground with a narrow Spade, or some other handy Instrument: this is what the *Dutch* Gardeners term lifting of them: in the doing of this, the Instrument must be carefully thrust down by the Side of the Root, being careful not to bruise or injure it, as also to put it below the Bottom of the Root: then by the forcing of this Instrument on one Side, the Fibres of the Root are raised and separated from the Ground. The Design of this is, to prevent their receiving any more Nourishment from the Ground; for by imbibing too much Moisture at this Season, the Roots frequently rot after they are taken up: about a Fortnight after this Operation, the Roots should be intirely taken out of the Ground; and then raise the Earth of your Beds into an 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 contained in their 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. This is what the *Dutch* Gardeners term, the ripening of their Roots; because, by this Method, the Roots become firm, and the outer Cover is smooth, and of a bright purple Colour; whereas those Roots which are permitted to remain undisturbed, till the Leaves and Stalks are quite decayed, will be large, spongy, and their outer Coats will be of a pale Colour: for the Stems of many of these Flowers are

very large, and contain a great Quantity of Moisture; which, if suffered to return into the Roots, will infallibly cause many of them to perish. After they are so ripened, you must take them out of the Ground, and wipe them clean with a soft woollen Cloth, taking off all the decayed Parts of the Leaves and Fibres, putting them into open Boxes where they may lie singly, and be exposed to the Air: but they must be preserved carefully from Moisture; nor should they be suffered to remain where the Sun may shine upon them: in this manner they may be preserved out of the Ground until *September*, which is the Season for planting 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, tho' 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 produced Seeds, they seldom flower to well again, at least not in two

Years after; so that the best Method to obtain good Seeds is, to plant new Roots every Year for that Purpose: altho' these Roots are, by most Persons, taken up every Year, yet if the Beds are well prepared for them, they may remain two Years in the Ground unremoved; and the Roots will flower stronger the second Year than the first: but those Persons who cultivate them for Sale, do every Year take up their Roots which are large and saleable; but the Off-sets, and small Roots, they usually leave two Years in the Ground.

The common *English* Hyacinths are very hardy Plants, as are some of the single blue and white *Oriental* Sorts, and increase very fast by Off-sets from the old Roots; so 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, tho' common, are very pretty Ornaments in the Borders of the Flower-garden, where being intermixed 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, they are worthy of room in every good Garden.

I shall in this Place mention two or three *Species* of Hyacinth, which have been lately introduced into the *English* Gardens from the *Cape of Good Hope*. These have been figured by Dr. *Breynius* in his *Prodromus*: so I shall insert them by the Names there given to them; tho', by their Characters, they might be separated from this Genus.

1. *HYACINTHUS orchnioides Africanus major bifolius, flore cœruleo majore. Breyn. prod. 11. p. 72.*

Greater two-leaf'd *African* Hyacinth, shaped like the *Orchis*, with a large blue Flower.

2. *HYACINTHUS orchnioides Africanus major bifolius maculatus, flore sulphureo obsolete majore. Breyn. prod. 2. p. 72.* Greater *African* Hyacinth, with two spotted Leaves, and a large worn-out sulphur-coloured Flower.

3. *HYACINTHUS orchnioides aphyllus serpentarius major. C. B. P.* Greater serpent-like Hyacinth, without Leaves.

These Plants are too tender to thrive in the open Air in *England*; so must be planted in Pots filled with light rich Earth: and in Winter they must be placed in a good Greenhouse, or in a Stove, which is kept in a very moderate Heat; if in the latter, the Plants will require to be oftener watered; because the Heat will cause them to perspire more, and the Earth in the Pots will dry faster than those placed in the Green-house.

The Leaves of these Plants appear about *Michaelmas*, and grow about seven or eight Inches high; and in *February* the Flowers appear, which grow without Pedicles, close to the Stalk; this rises about six Inches high. There is no great Beauty in these Flowers; but as they appear at a Season, when there is a Scarcity of other Flowers, they may be allowed to have a Place. The Leaves and Flowers decay in *May*, and the Pots may then be placed abroad but during the Summer, that the Roots are inactive, they should have very little Water given them. The time for transplanting of these Roots is in *July*, before they begin to put out fresh Fibres.

The Seeds of the two first Sorts received from Dr. *Job Baster*, F. I. S. of *Zurikzee* in *Holland*; and one Year the Roots produced Flow

ers, from the time of the Seeds being sown.

HYACINTHUS PERUVIANUS. *Vide Ornithogalum*

HYACINTHUS STELLATUS. *Vide Ornithogalum.*

HYACINTHUS TUBEROSUS. *Vide Polyanthes.*

HYDROCOTYLE, Water Navelwort.

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.*

HYDROPHYLLON, Water-leaf.

The Characters are;

It hath a bell-shap'd Flower consisting of one Leaf, and cut into several Segments: from the Bottom-part of the Flower arises the Pointal, which afterward becomes a Fruit opening in two Parts, inclosing Seeds of the same Shape as the Vessel.

We have but one Species of this Plant: *viz.*

HYDROPHYLLON *Morini. Joncq. Hort.* Water-leaf of *Morinus.*

This Plant is very hardy in respect to Cold; but it should be planted in a moist rich Soil; for if it is planted in a dry warm Soil, it will not live, unless it is constantly watered in dry Weather. It may be propagated by parting of the Roots, which should be done in Autumn, that the Plants may be well rooted before Spring; for otherwise they will require a great deal of Water to preserve them. The Roots should not be parted too small, nor should it be done every Year, for that will weaken them too much: they will thrive very well in a shady Situation, provided it is not under the Drip of

Trees. It flowers in June, but doth not perfect Seeds in this Country.

HYDROPIPER, *Vide Perficaria.*

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 shaped, 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 inclosed within the Calyx, 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 viridanti. Jussieu.* 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 Botanic Gardens, to add to their Numbers of Plants; but since they are rarely cultivated for Use, 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 Dunghils 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 *Tottenbam-Court*; two of which slept two Days and two Nights before they could be awakened; and were with Difficulty recovered; but the third, being older and stronger, escap'd better.

The second Sort is by most Authors supposed to be the true white Hen-bane of the Shops, the Seeds of which should be used 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.

The Seeds of these Plants, when sown in the Spring, frequently lie in the Ground a whole Year before the Plants appear; but if they are sown in the Autumn, soon after they are ripe, they seldom fail to come up, either soon after they are sown, or the following Spring; so that I always prefer that Season.

The sixth Sort grows shrubby, and will abide several Years, provided the Plants are sheltered in the Winter; for they will not live in the

open Air at that Season: but it only requires to be protected from Frost; therefore if these Plants are placed under a common Hot-bed-frame in Winter, where they may enjoy as much free Air as possible in mild Weather, they will thrive better than when they are more tenderly treated. This Sort may be easily propagated by Cuttings, which, if planted in a shady Border, during any of the Summer-months, will take Root in a Month or six Weeks; and may be afterward planted in Pots, and treated like the old Plants.

This Sort will frequently ripen Seeds; but if these are not sown in the Autumn, they rarely grow.

HYPECOON. We have no *English* Name for this Plant.

The Characters are;

The Flower consists of four Leaves, which are placed in form of a Cross; these are usually divided into three Parts: out of the Flower-cup rises the Pointal, which afterward becomes a plain smooth jointed Pod, full of kidney-shaped Seeds, which are inclosed in each Joint.

The Species are;

1. **HYPECOON latiore folio.** *Tourn.* Broad-leav'd Hypecoon.

2. **HYPECOON tenuiore folio.** *Tourn.* Narrow-leav'd Hypecoon.

3. **HYPECOON Orientale, latiore folio, flore magno.** *Tourn. Cor.* Eastern Hypecoon, with a broader Leaf, and a large Flower.

4. **HYPECOON Orientale, fumarie folio.** *Tourn. Cor.* Eastern Hypecoon, with a Fumitary-leaf.

The first and second Sorts grow plentifully in the South of *France*, in *Spain*, and *Italy*; but the third and fourth Sorts were discovered by *Dr. Tournefort* in the *Levant*; from whence he sent their Seeds to the Royal Garden at *Paris*.

These Plants are all of them annual; so their Seeds should be sown the Beginning of *March*, on a Bed of fresh light Earth, where they are to remain; for they seldom succeed, if they are transplanted. When the Plants are come up, they should be carefully cleared from Weeds; and where the Plants are too close, they must be thinned, leaving them about six or eight Inches apart; after this they will require no other Culture, but to keep them constantly clear from Weeds. In *June* these Plants will flower, and their Seeds will be ripe in *August*.

Sometimes, when the Spring proves very dry, the Seeds will not grow the first Year; but if the Ground is kept clear from Weeds, and not disturbed, the Plants will come up the following Spring. I have known the Seeds of these Plants remain in the Ground two Years, and the Plants have come up the third Spring very well; so that it may be very proper to sow some of their Seeds in Autumn, soon after they are ripe, in a warm Border, where the Plants may come up early the following Spring; and these will be stronger, and more likely to perfect Seeds, than those sown in the Spring; by which Method the Kinds may be preserved.

These Plants are seldom propagated but by those who are curious in Botany, tho', for the sake of Variety, they may have a Place in large Gardens, because they require very little Trouble to cultivate them; and as they take up but little room, so they may be intermixed with other small annual Plants in large Borders, where they will make a pretty Appearance.

The Juice of these Plants is of a yellow Colour, resembling that of Celandine; and is affirmed by some

eminent Physicians to have the same Effect as *Opium*.

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 Stamina in the Centre, surrounding a conical Ovary, which becomes a three-cornered 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 quadrangalo*. J. B. St. John's-wort, with a square Stalk, commonly call'd St. Peter's-wort.

3. HYPERICUM *foetidum 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.

6. HYPERICUM *villosum erectum, caule rotundo*. Tourn. Upright hairy St. John's-wort, with a round Stalk.

7. HYPERICUM *elegantissimum non ramosum, folio lato*. J. B. The most beautiful St. John's-wort without Branches, and a broad Leaf.

8. HYPERICUM *minus erectum*. C. B. P. Small upright St. John's-wort.

9. HYPERICUM *minus supinum, vel supinum glabrum*. C. B. P. Small smooth trailing St. John's-wort.

10. HYPERICUM *folio brevior*. C. B. P. Short-leav'd St. John's-wort.

11. HYPERICUM *crispum, triquetro & cuspidato folio*. Bocc. Mus. Curt-

ed St. John's-wort, with a three-corner'd and pointed Leaf.

12. *HYPERICUM perfoliatum* & *perforatum*. *Tourn.* Perfoliated and perforated St. John's-wort.

13. *HYPERICUM amplo perfoliato folio*. *Tourn.* St. John's-wort with a large Thorough-wax-leaf.

14. *HYPERICUM Alpinum humiliss, magno fore punctato*. *Tourn.* Dwarf St. John's-wort of the Alps, with a large spotted Flower.

15. *HYPERICUM latifolium Lusitanicum*. *Tourn.* Broad-leav'd Portuguese St. John's-wort.

16. *HYPERICUM Lusitanicum, linariae folio*. *Tourn.* Portuguese St. John's-wort, with a Toad flax-leaf.

17. *HYPERICUM tomentosum Lusitanicum minimum*. *Tourn.* The smallest woolly Portuguese St. John's-wort.

18. *HYPERICUM Creticum supinum, folio subrotundo, flore magna*. *Tourn. Cor.* Candy trailing St. John's-wort, with a roundish Leaf, and a large Flower.

19. *HYPERICUM Creticum, amplissimo folio nitido*. *Tourn. Cor.* Candy St. John's wort, with a large shining Leaf.

20. *HYPERICUM villosum, foliis caulem ambientibus acutis, caeteris vero circinatis*. *Tourn. Cor.* Hairy St. John's-wort, with pointed Leaves encompassing the Stalk, and the Bottom-leaves exactly round.

21. *HYPERICUM Orientale, foliis subrotundis auritis, cauli adhaerentibus*. *Tourn. Cor.* Eastern St. John's-wort, with roundish-ear'd Leaves adhering to the Stalk.

22. *HYPERICUM Orientale, ptarmicæ foliis*. *Tourn. Cor.* Eastern St. John's wort, with Sneeze-wort-leaves.

23. *HYPERICUM Orientale, scetidissimo simile, sed inodorum*. *Tourn. Cor.* Eastern St. John's-wort, like the stinking Kind, but without Smell.

24. *HYPERICUM Orientale saxatile, majoranæ folio*. *Tourn. Cor.* Eastern Rock St. John's-wort, with a Marjoram-leaf.

25. *HYPERICUM Orientale, androsæmo hirsuto simile, sed glabrum*. *Tourn. Cor.* Eastern St. John's-wort, resembling hairy Tutsan, but smooth.

26. *HYPERICUM Orientale, polygoni folio*. *Tourn. Cor.* Eastern St. John's-wort, with a Knot-grass leaf.

27. *HYPERICUM Orientale, caule aspero purpureo*. *Tourn. Cor.* Eastern St. John's-wort, with a rough purple Stalk.

28. *HYPERICUM Orientale, caule aspero purpureo, linariae folio*. *Tourn. Cor.* Eastern St. John's-wort, with a rough purple Stalk, and a Toad-flax-leaf.

29. *HYPERICUM Orientale, rosmarinii folio glauco*. *Tourn. Cor.* Eastern St. John's-wort, with a sea-green Rosmary-leaf

30. *HYPERICUM Orientale latifolium subhirsutum, caule purpureo villoso*. *Tourn. Cor.* Broad-leav'd Eastern St. John's-wort, somewhat hairy, with a purple hairy Stalk.

The first and second Sorts are both very common Plants, growing in the Fields in most Parts of England: the first is used in Medicine, but the second is of no Use: these are rarely propagated in Gardens; but I choose to mention them, in order to introduce some 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 either in Autumn, or in *March*, just before 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 are 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 practised in *England*.

The only Care these Shrubs require, is, to clear them from Suckers every Spring, and to cut out all decayed 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 bruised, emit a very rank Odour.

The fifth 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 exposed 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 placed in the warm Borders of the Pleasure-garden; and the Summer following they will pro-

duce their Flowers in large Quantities upon the Tops of the Branches; which, being of a large Size, and a bright yellow Colour, make a very handsome Shew.

The sixth, seventh, eighth, and ninth Sorts are Natives of *England*, growing in Woods, and other shady Places, in divers Parts. The tenth, eleventh, twelfth, and thirteenth Sorts grow in the South of *France*, in *Italy*, and *Spain*; yet are hardy enough to endure the Cold of our ordinary Winters very well in the open Air. The fourteenth Sort grows on the *Alps*. The fifteenth, sixteenth, and seventeenth Sorts are Natives of *Portugal*: but all the following Sorts were discovered by Dr. *Tournefort*, in the *Levant*.

All these Plants may be propagated by sowing their Seeds, soon after they are ripe, on a Bed of fresh undung'd Earth; and when the Plants are come up, they should be kept clear from Weeds: the following Spring they may be transplanted to the Places where they are to remain; after the Plants have taken new Root, they will require no farther Care, but to keep them clear from large Weeds; which, if suffered to grow amongst them, will overbear and destroy them.

Most of the Kinds, being Natives of Woods, and shady Places, will grow very well under the Drip of Trees; so that they may be planted in large Wilderness-quarters, where they will thrive, and make a pretty Variety. But it will be proper to keep a few Plants of each Kind in a shady Border; where, if they are permitted to shed their Seeds, they will produce a Supply of young Plants, whereby the Kinds may be preserved: for as some of the Kinds do not continue above two or three Years, so, where there is not Care

taken to have a constant Supply of young Plants, their Kinds will be lost; for where the Shade of the Wilderness is very thick, the Seeds which fall there will not succeed; because the Leaves of the Trees, falling in Autumn, when the Seeds are ripe, cover the Ground; whereby the Seeds either do not reach the Earth, or, if they do, they are so closely covered by the falling Leaves, that they cannot enjoy the Benefits of the Air; so that they rarely grow.

HYPERICUM FRUTEX. *Vide Spiraea.*

HYPOCISTIS.

We have no *English* Name for this Plant.

The *Characters* are;

It hath a bell-shaped Flower consisting of one Leaf, which is cut into several Segments at the Brim: the hinder Part of the Flower becomes a soft Fruit, divided into Rays, in which are contained the Seeds.

The *Species* are;

1. HYPOCISTIS *Cretica, flore purpurea.* *Tourn. Cor.* Candy Hypocistis, with a purple Flower.

2. HYPOCISTIS *purpurea, flore candicante.* *Tourn. Cor.* Purple Hypocistis, with a white Flower.

3. HYPOCISTIS *flore luteo.* *Tourn. Cor.* Hypocistis with a yellow Flower.

4. HYPOCISTIS *palescentis coloris, lineis purpurascensibus & nonnihil viriscentibus distincta.* *Clus. Hist.* Pale-coloured Hypocistis, with purple Lines.

These Plants grow from the Root of the *Cistus*, or Rock-rose; so cannot be cultivated by Art; it being a Superplant, like the Mistleto; and it is not known to grow on any other Plant but the *Cistus*. But as one of the Species is used in Medicine, I thought it proper to mention

the several Kinds which have been discovered.

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 hollowed like a Spoon, having a double Point, and is somewhat winged: the Whorls of the Flowers are short, and at the Lower-part of the Stalk are placed at a great Distance, but toward the Top are closer join'd, so as to form a regular Spike.

The *Species* are;

1. HYSSOPUS *officinarum caerulea, 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 *montana Macedonica, Valerandi Dourez.* J. B. Mountain Macedonian Hyssop.

5. HYSSOPUS *humilior myrtifolia.* H. R. Par. Dwarf myrtle-leav'd Hyssop.

6. HYSSOPUS *utrinque florida.* Dod. *pempt.* Hyssop bearing Flowers on every Side.

7. HYSSOPUS *vulgaris, moschum redolens.* C. B. P. Common Hyssop, smelling like Musk.

8. HYSSOPUS *crispa.* Gesner. Hort. Curled Hyssop.

9. HYSSOPUS *foliis dissectis.* C. B. P. Hyssop with cut Leaves.

10. HYSSOPUS *spica brevi & rotunda.* C. B. P. Hyssop with a short and round Spike.

11. HYSSOPUS *versicolor sive aureus.* Park. Par. Gold-striped Hyssop.

4. *JACEA Lusitanica sempervirens*. *H. R. Par. Portugal* ever-green Knapweed.

5. *JACEA Epidaurica, candidissima & tomentosa*, *Tourn.* White woolly Knapweed of *Ragusa*.

6. *JACEA cyanoides, echinato capite*. *C. B. P.* Prickly-headed Knapweed.

7. *JACEA cum squamis ciliis instar pilosis*. *J. B.* Knapweed with hairy Scales.

8. *JACEA nigra, squamoso capite, major*. *C. B. P.* Greater black Knapweed, with a scaly Head.

9. *JACEA nigra, squamoso capite, minor*. *C. B. P.* Smaller black Knapweed, with a scaly Head.

10. *JACEA vulgaris laciniata, flore purpureo*. *Tourn.* Great Knapweed, or Matfellow.

11. *JACEA vulgaris laciniata, flore albo*. *Tourn.* Great Knapweed, or Matfellow, with a white Flower.

12. *JACEA latissimo laciniato folio*. *C. B. P.* Knapweed with a broad jagged Leaf.

13. *JACEA cinerea laciniata, flore purpureo*. *Triumpf.* Jagged ash-coloured Knapweed, with a purple Flower.

14. *JACEA foliis cichoraceis villosis, altissima, flore purpureo*. *Tourn.* The tallest Knapweed, with hairy Succory-leaves, and a purple Flower.

15. *JACEA foliis cichoraceis villosis, altissima, flore albo*. *Tourn.* The tallest Knapweed, with hairy Succory-leaves, and a white Flower.

16. *JACEA foliis erucae lanuginosis*. *Tourn.* Knapweed with woolly Rocket-leaves.

17. *JACEA foliis candicantibus laciniatis, calyculis non splendentibus*. *Tourn.* Knapweed with whitish jagged Leaves, and an Empalement not shining.

18. *JACEA foliis laciniatis viridibus, calyculis argenteis*. *Tourn.*

Knapweed with green jagged Leaves, and silver Empalements.

19. *JACEA calyculis argenteis, minor*. *Tourn.* Lesser Knapweed, with silver Empalements.

20. *JACEA Alpina, succisæ folio*. *Tourn.* Mountain Knapweed, with a Devils-bit-leaf.

21. *JACEA folio cerinthæ, e Rupe Victoriæ*. *Tourn.* Knapweed with an Honeywort-leaf.

22. *JACEA Hispanica latifolia, nervis foliorum lanuginosis*. *Bocc. Mus.* Broad-leav'd Spanish Knapweed, with the Nerves of the Leaves woolly.

23. *JACEA Cretica aculeata incana*. *Tourn.* Hoary prickly Knapweed of Crete.

24. *JACEA tomentosa, foliis undulatis*. *Tourn.* Woolly Knapweed, with waved Leaves.

25. *JACEA Cretica saxatilis, glabro folio*. *Tourn. Cor.* Rock Knapweed of Candy, with a Woad-leaf.

26. *JACEA Cretica laciniata argentea, parvo flore flavescente*. *Tourn. Cor.* Silver-jagged Candy Knapweed, with a small yellowish Flower.

27. *JACEA Cretica acaulos, cichorii folio*. *Tourn. Cor.* Candy Knapweed, without a Stalk, and a Succory-leaf.

28. *JACEA Orientalis acaulos, cichorii folio, flore citrino*. *Tourn. Cor.* Eastern Knapweed, without a Stalk, and a citron-colour'd Flower.

29. *JACEA Orientalis patula, carthami facie, flore luteo magno*. *Tourn. Cor.* Spreading Eastern Knapweed, with the Face of Bastard-saffron, and a large yellow Flower.

30. *JACEA Orientalis, conyzæ folio, flore magno*. *Tourn. Cor.* Eastern Knapweed, with a Fleabane-leaf, and a large Flower.

31. *JACEA Orientalis, cyani folio, flore parvo, calyce argenteo*. *Tourn. Cor.* Eastern Knapweed, with a Blue

Blue-bottle-leaf, and a small Flower with a silver Empalement.

32. *JACEA Orientalis, folio sinuato subtus tomentoso, flore purpureo.* Tourn. Cor. Eastern Knapweed, with a sinuated Leaf, hoary underneath, and a purple Flower.

33. *JACEA Orientalis maritima incana, coronopi folio.* Tourn. Cor. Eastern maritime hoary Knapweed, with a Bucks-horn-leaf.

34. *JACEA Orientalis perennis, lato coronopi folio, flore purpurascente.* Tourn. Cor. Perennial Eastern Knapweed, with a broad Bucks-horn-leaf, and a purplish Flower.

35. *JACEA Orientalis perennis, angustissimo & incano coronopi folio, flore purpurascente.* Tourn. Cor. Perennial Eastern Knapweed, with a very narrow and hoary Bucks-horn-leaf, and a purplish Flower.

36. *JACEA Orientalis laciniata incana & moschata.* Tourn. Cor. Hoary musk jagged-leaf'd Eastern Knapweed.

37. *JACEA lutea spinosa centaurioides.* C. B. P. Prickly yellow Knapweed, like the greater Centaury

38. *JACEA latifolia purpurea, capitulo spinoso.* C. B. P. Broad-leaf'd purple Knapweed, with a prickly Head.

39. *JACEA spinosa Cretica, an species bysiriidis Plinii.* Zan. Prickly Knapweed of Candy, supposed to be a Species of *Hyosiris* of Pliny.

40. *JACEA marina Batica.* Park. *Theat.* Sea Spanish Knapweed.

41. *JACEA cyanoides altera, caule alato.* Par. Bat. Another Knapweed like Blue bottle, with a winged Stalk.

42. *JACEA Melitensis, capitulis conglobatis.* Bocc. Rar. Plant. Knapweed of Malta, with conglobated Heads.

43. *JACEA Orientalis annua, coronopi folio, flore luteo.* Tourn. Cor. An-

nual Eastern Knapweed, with a Bucks-horn-leaf, and a yellow Flower.

44. *JACEA arborescens, styracis folio.* Tourn. Tree Knapweed, with a Storax-tree-leaf.

45. *JACEA Cretica frutescens, elichrysi folio, flore magno purpurascente.* Tourn. Cor. Shrubby Knapweed of Candy, with a Goldylock-leaf, and a large purplish Flower

46. *JACEA frutescens, plantaginis folio, flore albo.* Tourn. Cor. Shrubby Knapweed, with a Plantain-leaf, and a white Flower.

The first, second, seventh, eighth, ninth, tenth, eleventh, and twelfth Sorts are Plants of no great Beauty or Use: some of these grow wild by the Side of Foot-paths almost in every Part of *England*, and become very troublesome Weeds in the Fields: others of them grow upon arable Land amongst Corn, and are no less troublesome Weeds: but the first Sort is so common in many of the Pastures, as to occupy most Part of the Land, to the great Prejudice of the Grass; therefore, by all good Husbandmen, should be rooted out. The only Way to destroy this Plant in the Pastures is twice every Year, *viz.* Spring and Autumn, to cut up all the Roots with a Spaddle; for as these are perennial Plants, so, unless their Roots are cut up below the Buds, they will grow again, were their Tops cut off every Month: but if the Meadows are kept clear of these Plants, for two or three Years, in which time it may be supposed, that all, or the greatest Part, of the Seeds, which may have been scattered, has grown, a very little Trouble afterward will keep the Fields clean. The same Method should also be taken with these Plants, when they grow by the Sides of Foot-paths, or under Hedges; because, if these are

not

not rooted out, their Seeds, having Wings to them, will be waſted by the Wind over the whole Field; ſo that the Labour of weeding the Fields will be loſt, where the Hedges are full of bad Weeds.

The third, fifth, thirteenth, twenty-fourth, twenty-fifth, forty-fourth, and forty-fifth Sorts are abiding Plants, which are frequently preſerved in Gardens for their Beauty. The third and fifth have very white ſilver Leaves, which make a fine Appearance thro' the Year; but theſe are too tender to live in the open Air in *England* thro' the Winter; ſo that the Plants ſhould be planted in Pots filled with light loamy Earth; and if they are ſheltered under an Hot-bed-frame in Winter, giving them as much Air as poſſible in mild Weather, they will do better than when they are treated more tenderly; and ſome of the Plants may be turned out of the Pots in the Spring, and planted in warm Borders, where they will flower better than thoſe which are kept in Pots, and will more certainly produce Seeds: but it will be adviſeable to keep ſome Plants of each Sort in Pots, leſt thoſe which are planted abroad ſhould be deſtroyed, whereby the Sorts may be loſt.

The ſixteenth, ſeventeenth, eighteenth, nineteenth, twentieth, twenty-ſiſt, and twenty-ſecond Sorts are alſo perennial Plants. Theſe grow wild in ſeveral Parts of *Europe*; but are not Natives of *England*.

All theſe Sorts may be propagated by Seeds, which ſhould be ſown in *March*, on a Bed of freſh undunged Earth: when the Plants begin to appear, they muſt be carefully cleared from Weeds; and as ſoon as they are fit to tranſplant, they ſhould be removed, and planted in Beds of undunged Earth, at about a Foot Di-

ſtance every Way. Theſe Plants muſt be watered, and if the Seaſon is hot, they ſhould be ſhaded until they have taken new Root; after which time they will require no farther Care but to keep them clear from Weeds until *Michaelmas* following, when they ſhould be taken up and tranſplanted where they are deſigned to remain; the common hardy Sorts under Trees, in Wilderneſs-quarters, and other abject Parts of the Garden, where they will abide many Years, and only require to be kept clear from the largeſt Weeds, which will overbear them; but as for leſſer Weeds, they will not hurt them: the other Sorts, which are more tender, ſhould be planted in a warmer Situation, and on a lean ſtany Soil, where they will endure the Cold of our Winters very well, and afford an agreeable Variety.

The ſixth, fourteenth, fifteenth, thirty-ſeventh, forty-ſiſt, forty-ſecond, and forty-third Sorts are annual Plants. The Seeds of theſe muſt be ſown either in *March*, or the Beginning of *September*. Thoſe which are ſown in Autumn will come up, and the Plants will be ſtrong enough to reſiſt the Froſt, provided they are in a warm Border; and theſe Plants will flower much ſtronger, and come earlier in the Seaſon, than thoſe ſown in the Spring; ſo that theſe will always produce good Seeds. But if theſe autumnal Plants ſhould be deſtroyed by ſevere Froſt, then ſome of their Seeds ſhould be ſown in *March*, on a Bed of Earth, where they are deſigned to remain: for theſe Plants will not be large enough to tranſplant till *May*, when the Seaſon is generally warm; ſo that it will be difficult to make the Plants take Root, unleſs they are conſtantly ſhaded and watered: it is a better Method therefore to ſow theſe Seeds
in

in the Spring on the Borders where they are to remain; and then all the Care required will be, to clear them from Weeds, and thin the Plants where they come up too close: but those Plants which come up in Autumn, may be transplanted out the Beginning of *March*; at which time they will soon take Root, and then will require no farther Culture but to keep them clear from Weeds. These Plants continue a long time in Flower, especially the sixth Sort; which renders them worthy of a Place in every large Garden.

The twenty-fifth, forty-fourth, forty-fifth, and forty-sixth Sorts are shrubby Plants, which rise to the Height of four or five Feet, and their Stems become woody. These are Natives of the *Archipelago*, from whence their Seeds have been sent to several curious Botanic Gardens; but at present they are very rare in *England*. They may be propagated by sowing of their Seeds in *March*, on a warm Border of fresh Earth; and when the Plants are come up, they must be carefully weeded, and when they have acquired Strength enough, they should be carefully taken up, and each transplanted into a separate small Pot filled with fresh light Earth, and placed in the Shade until they have taken new Root; when they may be returned into an open Situation, where they may remain till *October* following: after this they should be treated in the same manner, as hath been directed for the third, fifth, &c. as may all the *Eastern* Kinds.

The following Spring a few Plants of each Kind may be shaken out of the Pots, and planted in warm dry Borders, where they will live thro' the Winter, provided the Frost is not very severe; and these Plants will flower much stronger than those in Pots; but it will be proper to keep

two Plants of each Kind in Pots to be sheltered in Winter, for fear those abroad should be destroyed, that the Kinds may be preserved.

These Plants seldom produce good Seeds in this Country; so that when the Plants are obtained, they may be propagated by Cuttings, which should be planted about the Middle of *June* on a shady Border; where, if they are duly watered, they will take Root in about two Months; but it will be proper to let them remain in the same Border until the Beginning of *September*, when they should be carefully taken up, and planted into Pots, and placed in the Shade until they are rooted: then they may be exposed in an open Situation till the Middle or Latter-end of *October*, when they should be removed into Shelter, and managed as hath been directed for those Plants which are raised from Seeds. In Summer these Plants will flower, when they will afford an agreeable Prospect, if they are placed among other hardy Exotic Plants; and as they are ever-green, they add to the Variety in Winter.

JACOBÆA, Ragwort.

The Characters are;

It hath a radiated Flower, the Tube of which is almost of a cylindrical Figure, and the Seeds are fastened to Down: to which may be added, The Leaves are deeply lacinated, or jagged.

The Species are;

1. JACOBÆA *vulgaris laciniata*. C. B. P. Common Ragwort.
2. JACOBÆA *latifolia palustris, five aquatica*. Raii Hist. Broad-leav'd Marsh Ragwort.
3. JACOBÆA *Alpina, foliis subrotundis serratis*. C. B. P. Roundish sawed-leav'd Ragwort of the Alps.
4. JACOBÆA *Alpina, foliis longioribus serratis*. Tourn. Ragwort of the Alps, with long sawed Leaves.

5. *JACOBÆA montana, betonica folio. Barr. Icon.* Mountain Ragwort, with a Betony-leaf.
6. *JACOBÆA chrysanthemii Cretici folio glauco. Tourn.* Ragwort with a sea-green Chrysanthemum-leaf.
7. *JACOBÆA senecionis folio incano, perennis. Rai Hist.* Perennial hoary Ragwort, with a Groundsel-leaf.
8. *JACOBÆA Pannonica prima. Clus. Hist.* Mountain Ragwort, with an undivided Leaf.
9. *JACOBÆA foliis amplioribus incanis. Mor. H. R. Bl. f.* Ragwort with large hoary Leaves.
10. *JACOBÆA maritima, sive Cineraria latifolia. C. B. P.* Broad-leav'd Sea Ragwort.
11. *JACOBÆA foliis ferulaceis, flore minore. Tourn.* Ragwort with Fenel-giant-leaves, and a smaller Flower.
12. *JACOBÆA foliis ferulaceis, flore majore. Tourn.* Ragwort with Fenel-giant-leaves, and a larger Flower.
13. *JACOBÆA Africana, botryes folio. Boerb. Ind. alt.* African Ragwort, with an Oak-of-Jerusalem-leaf.
14. *JACOBÆA Chia, senecionis folio villoso, flore magno. Tourn. Cor.* Ragwort of Chia, with an hoary Groundsel-leaf, and a large Flower.
15. *JACOBÆA Orientalis, senecionis folio tenuissime diviso, non incano, flore magno. Tourn. Cor.* Eastern Ragwort, with a very narrow-divided Groundsel leaf, not hoary, and a large Flower.
16. *JACOBÆA Græca maritima, foliis superne virentibus, inferne incanis. Tourn. Cor.* Greek Sea Ragwort, with Leaves green on their upper Side, but hoary underneath.
17. *JACOBÆA Africana frutescens, abrotani folio. Old.* Shrubby African Ragwort, with a Southern-wood-leaf.
18. *JACOBÆA Africana, absinthii foliis. Oldenl.* African Ragwort, with Wormwood-leaves.
19. *JACOBÆA Americana odorata & viscosa, florum radiis brevissimis albis. Houst.* Sweet-smelling viscous American Ragwort, with very short white Rays to the Flower.
20. *JACOBÆA maritima. C. B. P.* Sea Ragwort.
21. *JACOBÆA Africana frutescens, flore amplo purpureo, elegantissimo senecionis folio. Volk.* Shrubby African Ragwort, with an ample Flower, and Leaves like Groundsel.
22. *JACOBÆA Africana frutescens, foliis incis, & subtus cineraceis. Com. Rar.* African shrubby Ragwort, with cut Leaves, and the Under-part of an Ash-colour.

The first Sort of Ragwort here mentioned is one of the most troublesome Weeds, on poor wet Pasturelands, and on Commons, in almost every Part of England; but is never admitted into Gardens, because where the Seeds are permitted to scatter, the Down which adheres to them will carry them to a great Distance; so that all the Ground will be filled with the Weeds. The only Method to destroy this Plant in Pastures is, to go over the Land in April, when the Weather is dry, and with a Spaddle cut up the Plants by their Roots; and, if the Weather continues dry, they will soon decay. This Work should also be repeated in August, to cut up such Plants as may have come up since April; and if this be repeated two or three Years, never suffering any of the Plants to stand to flower, it will effectually destroy them.

The second Sort is also a very common Weed on low marshy Lands, where the Water usually stands in Winter. This is also very troublesome

some on many Commons, and other Pastures; but may be destroyed in the same manner as the former.

The third, fourth, and fifth Sorts are Natives of the *Alps*, and *Pyrenean Mountains*, from whence they have been procured, and are preserved in several curious Botanic Gardens for the sake of Variety. They may be propagated by Seeds, which should be sown in the Spring, on a Bed of fresh Earth; and when the Plants are come up, they should be carefully weeded; and when they are strong enough to be removed, they should be transplanted into a strong loamy Soil, where they will continue many Years, and require no other Culture but to clear them from Weeds.

The sixth, eighth, thirteenth, fourteenth, and fifteenth Sorts are annual Plants, which should be sown in the Spring on a Bed of fresh light Earth, where they are designed to remain; and when the Plants come up, they should be thinned where they are too close, and kept clear from Weeds; which is all the Culture they require. In *June* they will flower, and their Seeds will ripen soon after; which, if permitted to scatter, will furnish a Supply of young Plants where-ever the Seeds fall.

The seventh and eighth Sorts grow wild in *England*. The seventh is a lasting Plant, which grows under Hedges, and in Woods, in divers Parts of *England*; but the eighth Sort is an annual Plant, which is usually found on dry Hills in some Counties near *London*.

The tenth Sort differs from the common Sea Ragwort, in being much broader-leav'd, and not so hoary: this is a lasting Plant, which will endure the Frost in the open Air very well, and may be treated

as is directed for the common Sea Ragwort.

The eleventh and twelfth Sorts are also abiding Plants, which may have a Place in large Gardens, for the sake of Variety. These Plants have fine cut Leaves, and the Stems grow erect about two Feet high, on the Tops of which the Flowers grow in an Umbel, which are of a fine yellow Colour.

These maybe propagated by Seeds, which should be sown the Beginning of *March*, on a Bed of fresh light Earth; and when the Plants come up, they should be thinned where they are very close together, that those remaining may grow stronger: when they are strong enough to remove, they should be transplanted into a Bed of fresh Earth about six Inches apart, where they may remain till *Michaelmas*, being careful to keep them clear from Weeds; then they may be taken up, and transplanted into large Borders amongst other hardy Plants; where they will flower the following Summer, and make an agreeable Variety.

The twentieth 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 twenty-first Sort is preserved for the Beauty of its fine purple Flowers, which continue a long time; and growing in large Bunches, afford an agreeable Prospect.

The twenty-second and twenty-third 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 Exotic 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 two last Sorts into Pots fill'd with fresh light Earth, setting them in the Shade until they have taken Root; after which they may be exposed in an open Situation until the latter End of *October*, when they must be removed 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 pruned, especially the twenty-first and twenty-second Sorts, to make them regular; otherwise they are apt to be very rude and unsightly; for they grow very vigorously.

The twenty-first Sort will produce Flowers and Seeds the first Year, and is often treated as an annual Plant: but if it be housed in the Winter, it will live very well for two Years; but they should be renewed every Year, otherwise they are subject to decay. The Cuttings of the twenty-second Sort may be planted in a shady Border in any of the Summer-months; which, if carefully watered, 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 greatly diminished, especially upon the upper Parts of their Leaves; so that the surest Method is, to propagate it by Cuttings.

JALAPA, Marvel of Peru.

The Characters are;

It hath a long thick fleshy succulent Root: the Leaves, which resemble those of Nightshade, grow by Pairs opposite upon the Branches: the Stalks and Branches are very full of Knots: the Flower consists of one Leaf, and is shaped like a Funnel: in the Centre of the Flower is placed the Ovary, inwrapp'd in the Flower-cup, which becomes an oblong five-corner'd umbilicated Fruit, consisting of a mealy Nut.

This Title was given to this Genus of Plants by Dr. *Tournefort*, upon the Information which he had received from Father *Plumier*, that the Jalap which was used in Medicine was one Species of this Genus; and accordingly he supposed it to be the seventh Species; but from better Authority we are now well assured, that the Jalap is a Species of *Convolvulus*: however, as these Plants have, for near half a Century, been known by this Title, I shall continue it; tho' Dr. *Linnaeus* has altered it to *Mirabilis*: as by the old Writers in Botany it had been titled *Mirabilis Peruviana*, from whence the English Name of *Marvel of Peru*; but since the Title of *Mirabilis* was given to this Genus by Dr. *Linnaeus*,

næus, it hath been altered by Dr. *Van Royen*, Professor of Botany at *Leyden*, to *Nyctage*, from the Flowers opening in the Night.

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 officinarum, fructu rugoso. Tourn.* The supposed true Jalap of the Shops, with a rough Fruit.

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 raised 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 recovered 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 filled with rich light Earth, which should be plunged 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 hardened 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 forced in the Hot-bed. In the Middle of *May* the Pots may be removed into the Places where they are designed to be continued 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 Bordets 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 broken down by the Winds, which they are very subject to be, especially when their Heads are large.

The Plants, thus raised, 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); 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 continue expanded till the Sun shines warm upon them the next Day; so that when it happens to be cloudy Weather, as also late in Autumn, when the Weather is cool, the Flowers will remain open most Part of the Day.

As the Flowers are produced 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 produced 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, tho' they will sometimes degenerate into 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 an 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 raised 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 preserved in dry Sand all the Winter, if secured from the Frost; and in the following Spring these Roots should be planted into large Pots, and plunged 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 raised will be much larger than the Seedlings, and will flower earlier in the Year.

The Sort with purple and white Flowers is by much the most beautiful: however, a few Plants of the yellow and red Sort may be intermixed with them, for Variety. Where any Person is very curious to preserve the best Seeds, they should constantly pinch off all the plain Flowers from those Plants, which they intend for Seed: if this is carefully done, there will be scarce any of the Plants produced from this Seed with intire plain Flowers.

The two last Sorts are very common in the Islands of *America*, where by the *English* they are called the Four o'Clock Flower, from the Flowers opening about that time in the Afternoon; and by the *French* they are called *Belle de Nuit*, from the Flowers making a fine Appearance in the Night; but the Flowers of both of these are small, and generally plain-colour'd; and the Plants are also much tenderer than those of the other Sorts; so that these are seldom cultivated in *England*.

JASMINOIDES. *Vide* Cestrum. and Lycium.

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-shaped, 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-striped Leaves.

3. JASMINUM *vulgatius*, *flore albo*, *foliis ex albo elegantissime variegatis*. The common white Jasmine, with white-striped Leaves.

4. JASMINUM *humile luteum*. C. B. P. Dwarf yellow Jasmine, commonly called, The Italian yellow Jasmine.

5. JASMINUM *luteum*, *vulgo 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 called, The Ivy-leav'd Jasmine.

10. JASMINUM *sive Sambach Arabum*, *Alpini*. F. B. The single Arabian Jasmine.

11. JASMINUM *Arabicum*, *foliis limonii conjugatis*, *flore albo pleno odoratissimo*. Boerb. Ind. The double Arabian Jasmine.

12. JASMINUM *Arabicum*, *castanea folio*, *flore albo odoratissimo*, *cujus fructus Coffee in officinis dicuntur nobis*. Com. Pl. Us. The Coffee-tree.

13. JASMINUM *Malabaricum*, *foliis mali aurantii*, *flore niveo odoratissimo*. Com. Jasmine of Malabar, with Orange-leaves, and a snow-white very sweet-scented Flower.

14. JASMINUM *Americanum*, *foliis conjugatis*, *floribus spicatis albis*. Houst. American Jasmine, with Leaves growing opposite, and white Flowers growing in Spikes.

15. JASMINUM *arborescens*, *foliis laurinis*, *flore umbellato*. Houst. Tree-like Jasmine, with Bay-leaves, and Flowers growing in an Umbel.

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 obtained by inoculating the Buds of these into the common Jasmine; which, altho' 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 raised by Cuttings, which should be planted in Autumn in a moist Border, where they may have the morning Sun: but they must be screened from the Violence of the Sun in the Heat of the Day, and frequently watered in dry Weather. The Cuttings, thus managed, will many of them live, and have Roots fit to be removed in the following Spring: but this Method is seldom practis'd, the Layers always making the best Plants.

When these Plants are removed, they should be planted where they are design'd to be continued; 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 an 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 produced at the Extremity of the same Year's Shoots, which, if shorten'd 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 pruned off, and the strong ones are expos'd thereto, they are very often destroyed; 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 are very subject to be destroyed

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 removed into the Green-house in Winter, left, by exposing them to the Cold, they should all be destroyed, and the Variety lost.

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 reduced to a Standard than the other. This Plant flowers in *May* and *June*; but they have very little Scent, which has occasioned 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. This Sort seldom rises above five or six Feet high.

The Dwarf yellow Jasmine is somewhat tenderer than the former; yet will it 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 produced 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 obtained from Layers: they should be planted against a warm Wall; and in very severe Winters will require

to be sheltered with Mats, or some other Covering, otherwise they are subject to be destroyed. 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 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 Outside. This Plant is propagated by budding or inarching it upon the common white Jasmine, on which it takes very well, and is rendered 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 raised here: I shall therefore proceed to the Management of such Plants as are usually brought into *England* from the Place above-mentioned, which generally are ty'd up in small Bunches, containing three or four Plants, and their Roots wrapp'd about with Moss, 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 they are planted; otherwise they will exhaust the whole Nourishment of the Plant, and destroy the Graft.

In the making Choice of these Plants, you should carefully observe if their Grafts are alive, and in good Health: for if they are brown and shrunk, they will not push out; so that there will be only the Stock left, which is of the common Sort.

When you receive these Plants, you must clear the Roots of the Moss, 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 screened from the Cold: in this Situation they may continue two Days; after which you must prune off all the dry Roots, and cut down the Branches within four Inches of the Graft, and plant them into Pots filled 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 produced 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 hardened to endure the open Air, into which they should be removed 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 rendered somewhat tender by the Hot-bed. If the Summer proves 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 preserved in Green-houses, with Oranges, Myrtles, &c. and, during the Winter-season, will require to be frequently watered, which should be performed 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 fresh Air, when the Weather will permit; for which Purpose, they should be placed in the coolest Part of the Green-house, among Plants that are hardy, where the Windows may be opened every Day, except in frosty Weather: nor should they be crowded 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 shortened down to four Eyes, and all the weak Branches should be cut 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 covered with Mats in frosty Weather; they will 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 them in Pots two or three Years, whereby they may be sheltered 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 produced. 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 suffered 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.

Toward the Middle or End 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

when the Trees are perfectly dry, otherwise the Wet, being lodged 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 covered 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 thro' 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 exposed 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 decayed 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; tho' 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 rather regarded for its Cu-

riosity, 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.

Dr. *Linneus* supposes, that this Sort is only a Variety of the common Jasmine; and that the only Difference is in the Size and Colour of the Flower; and, as a Proof of it, says, that when it is propagated by Layers or Shoots from the Root, it always becomes the common Sort: but if he had observed, that all those Shoots are produced from the Stock, which is always of the common Jasmine, and not from the Sort grafted, he would have soon found his Mistake; for there can be no Dispute of this being a distinct Species; for the Number and Shape of the *Pinnae* of the Leaves, the Segments of the Empalement, and the Petals of the Flower being twisted and distorted, constitute an essential Difference between them.

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 filled 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 an Inch thick with the same light Earth, and observe to refresh the Pots with Water as often as you shall perceive the Earth dry; but do not give them too much at each time, which would be apt to rot the Seeds.

In about six or eight 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 is 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 the Hot-bed, and carry them to some well-sheltered Situation, where they may remain until the Beginning of *October*; at which time they must be carried into the Green-house, observing to place them where they may enjoy as much free Air as possible when the Windows are opened; as also to be clear from the Branches of other Plants.

During the Winter season they will require to be often watered; 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 fresh 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 removed 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 should be tried by planting 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 covered 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 covered 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 rolled 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 covered.

In the Spring these should be pruned,

pruned, 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 produced only at the Extremity of the Branches, which if shortened, they would be cut off ; and these growing of a more ligneous Substance 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 practised in laying of Carnations, it will promote their Rooting : you should always 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 filled with light Earth, and managed as was before directed for the Seedling-plants.

This Sort is frequently propagated by inarching the young Shoots into Stocks of the common yellow Jasmine ; but the Plants so raised do not grow so strong as those which are upon their own Stock : besides, the common yellow Jasmine is very apt to send out a great Number of Suckers from the Root, which renders the Plants unsightly : and if these Suckers are not constantly taken off, as they are produced, they will rob the Plants of their Nourishment.

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 managed, 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 endured the Winter, and were in a more flourishing State than any I have seen in Pots, and produced 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 produced in large Bunches, make an 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 is by Dr. *Linnaeus* removed from this Genus, and joined to the *Camara* of *Plumier*, under the Title of *Lantana* ; which is an old Name applied by many Authors to the common *Viburnum*, under which Title I have also placed it.

The *Arabian* Jasmynes of both Sorts are commonly brought into *England* from *Genoa* every Spring amongst the *Spanish* Jasmynes. These are all grafted upon the common Jasmine-stock, as are the *Spanish* ; but being much tenderer than those, are very often greatly injured 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 their succeeding. These must be put into Water, and washed, pruning their Roots and Branches, and planting them as was directed for the *Spanish* Jasmynes ; to which I shall refer the Reader, to avoid Repetition.

These Plants are more tender than any of the Sorts before-mentioned,
and

and must be preserved in a warm Stove in Winter; nor should they be exposed to the open Air in Summer, if you would have them flower well; tho' indeed the Plants will live and thrive in the open Air in *June, July, and August*; but then they will rarely produce any Flowers; and those which may appear, are easily destroyed by either Winds or Rain, both which will soon scatter them, being but slenderly fastened 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 cleans'd their Leaves and Stems from Dust; then I took out the Earth from the Upper-part of the Pots, and filled them with fresh Earth; then I plunged the Pots into a moderate Bed of Tanners Bark, which had lost most of its Heat: this occasions 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 thro' the greatest Part of *June and July*, during which time my Plants were never intirely 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* Jasmine, which will take Root in less than three Months, provided the Pots are plunged into an 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.

This is made a distinct Genus by Dr. *Linnaeus*, by the Name of *Nyct-anthes*, from the Flowers of this falling in the Night; so that in the natural Places of its Growth, where the Plants abound with Flowers, the Surface of the Ground under them is frequently covered with Flowers every Morning; from whence the Plant has been by some called *Arbor tristis*, or the Sorrowful-tree.

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 obtained 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; tho' the Professor of Botany to that Garden says, it increases greatly by Layers; by which means all *Europe* might be soon supplied 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 gathered from the Tree: for if they are kept but a short time out of the Ground, they will!

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 carried thither growing; but as this Difficulty is now overcome, by the Quantity of these Trees there are now growing both in *Europe* and *America*, we may expect to be furnished with Coffee from many different Parts, but especially from the *Caribbee* Islands, where the Trees are found to succeed as well as in their native Place of Growth: but whether the Coffee produced 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 to 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 Dr. *Douglas's* curious Account of the Coffee-tree, publish'd 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 *Tanners 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, 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, produced stronger Plants, and came up sooner, than those which were cleared from the Pulp; and altho' there 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 loamy Earth, and half a Load of rotten Cow-dung: these were well mix'd together, and laid in an Heap six Months before it was used; in which Space it was turn'd several times, the better to incorporate the several Parts.

It must also be observed, 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 *Tanners Bark*; observing to water them frequently, though they should not have too much given them at one time:

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 exposed 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 greatly retarded. As these Plants advance in Height, they should have a greater Proportion of fresh Air at all times when the Weather is warm; and their Waterings should be frequently repeated, though 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 recover'd, though managed with all possible Skill and Care.

During the Winter-season these Plants should be placed in a Bark-stove, that the Fibres of the Roots may not be too much dried (which often happens when the Pots are placed upon Shelves in a dry Stove), whereby the Top-shoots of the Plants are often decayed, 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 Ananas Heat (mark'd on the Botanical Thermometers), with which they thrive better than in a greater Warmth; for if they are kept over-hot, they perspire too freely; which will cause their Leaves to droop, and change their Colour. In this Situation they should be frequently water'd; but this must be perform'd sparingly.

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 Surfaces 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, or a Sponge, 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 entangle 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, 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 exposed 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 thro' 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 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: but the Plants so raised never grow so vigorous as those raised from the Berries.

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, though many times the Cuttings have remain'd 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.

The Coffee-tree has of late Years been much cultivated in the Islands of *America*, both by the *English* and *French*: but the Coffee which has been brought to *Europe* from thence, has been very little esteemed; so that the Price of it has been much less than of that which comes from the *East-Indies*. This great Difference in Goodness many Persons have attributed to the Soil in which it grows, and therefore have supposed it impossible for the Inhabitants of the *British* Islands ever to cultivate this Commodity to any real Advantage: but this is certainly a Mistake; for I have been assured by several Persons of undoubted Credit, who have resided in those Islands, that the Berries which they have gathered from the Trees, and roasted themselves, were as well flavoured as any of the Coffee which is brought from *Mocha*. And this I can readily believe

fiere from the Trials which have been made with the Berries which have been produced in England; which were as well flavoured as any Coffee brought from the East-Indies; so that the Fault is in the drying, packing, and bringing over: for if in the drying of the Berries they are laid in the Rooms near the Sugar-works, or near the House where the Rum is distilled, the Berries will soon imbibe the *Effluvia* of these, which will greatly alter their Flavour.

Also the Coffee brought in the same Ships with Rum and Sugar, were the Coffee ever so good, would by this be intirely altered: for there is scarce any thing more likely to be injured by being near strong *Effluvia*, than Coffee; for one Gallon of Rum, Spirit of Wine, or other strong Liquors, being placed but two or three Days in the same Room with an hundred Weight of Coffee, will communicate the Flavour to the Whole, and greatly damage it; as I have experienc'd: so that if the Planters in *America* propose to cultivate this Commodity, they should be particularly careful in drying the Berries, as also in the Packing up, and should send the Coffee over in Ships where there is neither Sugar nor Rum: and if this were duly observed, I dare answer, the Planters would find their Account in it.

As a Proof of what is here mentioned, I need only relate what has happened to Coffee which came from *India*, by being brought over in Ships, where there was Pepper: the Coffee imbibed the strong *Effluvia* of the Pepper, which rendered it of no Value.

IBERIS, Sciatica-crefs.

The Characters are;

The Empalement of the Flower con-

sists of four Leaves, which are vertically oval: the Flower has four Leaves, which are unequal, two of them being longer, and spread broader, than the other: in the Centre of the Flower is situated the Pointal, attended by six Stamina, two of which are shorter than the other: the Pointal afterward changes to a roundish compressed Pod, having two Cells, each containing one oval Seed.

The Species are;

1. *IBERIS foliis cuneiformibus obtusis integerrimis.* Lin. Hort. Cliff. Sciatica-crefs with whole blunt Leaves, commonly called the Tree-candy-tuft.

2. *IBERIS foliis linearibus acutis integerrimis.* Lin. Hort. Cliff. Sciatica-crefs with narrow-pointed whole Leaves, commonly called Perennial Candy-tuft.

3. *IBERIS foliis lanceolatis acuminatis, inferioribus serratis, superioribus integerrimis.* Lin. Hort. Cliff. Sciatica-crefs with spear-shaped pointed Leaves, the under being sawed, but the upper being intire, commonly called Candy-tuft.

4. *IBERIS foliis linearibus superne dilatatis serratis.* Flor. Leyd. Sciatica-crefs with narrow Leaves dilated at their Top, and sawed.

5. *IBERIS foliis sinuatis, caule nudo simplici.* Lin. Hort. Cliff. Sciatica-crefs with sinuated Leaves, and a single Stalk.

6. *IBERIS foliis lanceolatis acutis subdentatis, floribus racemosis.* Lin. Hort. Upsal. Sciatica-crefs with acute spear-shaped Leaves indented at their Top, and Flowers growing in Bunches.

This Genus of Plants was by Dr. Tournefort titled *Thlaspidium*; which being a compound Name, Dr. Linnaeus has applied this of *Iberis* to it: which is an old Name for a Plant of this Class; whose Characters agreeing

ing with those of *Lepidium*, it has been placed in that Genus.

The first Sort here mentioned is a low shrubby Plant, which seldom rises above a Foot and an half high, having many slender Branches, which spread on every Side, and fall to the Ground, if they are not supported. These Branches are well furnished with Leaves toward their Extremity, which continue green all the Year; and in the Autumn the Flowers are produced at the End of the Shoots, which are white, and grow in an Umbel. These Flowers continue long in Beauty, and are succeeded by others; so that the Plants are rarely destitute of Flowers for near eight Months, from the End of *October* to the Beginning of *June*, which renders the Plant valuable.

This Plant is somewhat tender; therefore is generally preserved in Green-houses in Winter; where, being placed among other low Plants toward the Front of the House, it makes an agreeable Variety, as it continues flowering all the Winter. But although it is commonly so treated; yet in moderate Winters this Plant will live in the open Air, if it is planted in a warm Situation, and on a dry Soil: and if in very hard Frost they are cover'd either with Mats, Reeds, Straw, or Peas-haulm, they may be preserved very well; and these Plants which grow in the full Ground, will thrive better, and produce a greater Number of Flowers, than those which are kept in Pots: but the Soil in which these are planted, should not be over-rich, nor too wet; for in either of these they will grow too vigorous in Summer; so will be in greater Danger of suffering by the Frost in Winter: but when they grow on a gravelly Soil,

or amongst Lime-rubbish, their Shoots will be short, strong, and not so replete with Moisture; so will better resist the Cold.

This Plant very rarely produces Seeds in *England*; therefore is only propagated by Cuttings; which, if planted during any of the Summer-months, and shaded from the Sun, and duly watered, will be rooted in two Months; and may afterward be either planted in Pots, or into the Borders where they are designed to stand.

There is a Variety of this with variegated Leaves, which is preserved in some of the Gardens where Persons delight in these striped-leav'd Plants. This is not so hardy as the plain Sort; therefore must be treated more tenderly in Winter; this is also increased by Cuttings in the same manner as the other.

The second Sort is a Plant of humbler Growth than the first: this seldom rises more than six Inches high, nor do the Branches grow woody, but are rather herbaceous: the Leaves of this Plant continue green through the Year, and the Flowers are of as long Duration as those of the first Sort; which renders it valuable. This rarely produces Seeds in *England*; but is propagated by Slips, which in Summer easily take Root; and the Plants may be treated in the same manner as hath been directed for the first Sort.

The four other Sorts are low annual Plants. The third and sixth Sorts are frequently cultivated in Flower-gardens, by the Title of Candy-tuft. There is of the third Sort sometimes a Variety with white Flowers; but the Red is the most common; so that the sixth Sort is usually sold by the Seedsmen for the white Candy-tuft, tho' it is evidently different from the other.

These

These Plants were commonly sown to make Edgings to large Borders in the Flower-gardens, and are as proper for that Purpose as any of the low annual Plants: but they make a much better Appearance when they are sown in Patches, intermixed with the Dwarf Lychnis, Venus Looking-glass, and other low Annuals. If the Seeds of these are sown in the Autumn, the Plants will grow much stronger, and flower earlier in the Year, than those which are sown in the Spring; but by sowing them at different Seasons, they will flower at so many different times; by which means there will be a Succession of them in Flower until the Frost puts a Stop to them.

All the Culture these require, is, to sow their Seeds in the Places where they are to remain; for they do not bear removing well, unless it is done while the Plants are young, and taken up with Balls of Earth to their Roots: afterward, if they are kept clear from Weeds, they will thrive and flower very well. All these low annual Flowers are very proper Ornaments for the Borders, or vacant Spaces, between flowering Shrubs; where, by the different Sorts being blended together, they will add much to the Beauty.

IBISCUS, or MARSH-MALLOW. *Vide* Althæa.

ICACO. *Vide* Chrysobalanus.

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 amentaceous Flowers, which are produced at remote Distances from the Fruit, on the same Tree: the Fruit is an Acorn, like the common Oak.

This Title of *Ilex* is, by Dr. *Linneus*, applied to the Holly, who

has placed this Genus to the *Quercus*, to which, by its Characters, it certainly belongs: but as this Title of *Ilex* is now more generally known, and applied to these Trees, by the *English* Gardeners, I shall continue it to them.

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, modiceque sinuato, sive Smilax Theophrasti*. C. B. P. The ever-green Oak, with round smooth sinuated Leaves.

5. ILEX *aculeata cocciglandifera*. C. P. B. The Holm-oak.

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 seminal Variations, and will arise from Seeds taken from the same Tree; so it is not worth troubling myself 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 preserved either in Sand, or dry Earth, until the Spring, otherwise they will lose their growing Faculty; which

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; especially if they are brought over in the Packet-boat to *Plymouth*.

The manner in which I would advise their being sown is, for large Quantities, in Drills at about four 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 levelled even, and the great Clods broken; then draw the Rills with an Hoe in a strait Line (as is practised in the sowing of Kidney beans) about two Inches deep, laying the Acorns therein three or four Inches asunder; then draw the Earth over them with the Head of a Rake, observing that none of them are left uncovered, which would entice the Vermin to attack your Acorns, especially the Mice, whereby your Seminary will be greatly injured, if not wholly destroyed.

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 observed, especially while they are young. The first Year from Seed they will make but small Progress; but afterward 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 designed to remain. But as these Trees are subject to have Tap-roots, they are very difficult to be removed: 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 prepared before; and if the Weather be dry, you should pour a good Quantity of Water into the Holes about the Earth to make it like Pap; 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 as soon as you have taken up those that are to be transplanted, the whole Ground should be slightly dug, and levelled 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 designed to remain for good): but you should, the two precedent Springs, dig near the Roots of those which are to be removed, 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 preserved to their Roots when they are transplanted, and there will be less Danger of their not 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 watered in dry Weather; otherwise they will be subject to fail, or at least will make but poor Progress. And altho' 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 convinced, 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 removed many of these Trees which were five or six Feet high; and though they had not been so well managed in the Place where they were rais'd, as might be wished, yet but one of the whole Number failed, notwithstanding the Season proved dry for near a Month after.

These Trees are by many People greatly esteemed 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 disposed in the Quarters, vastly more agreeable to the Eye, than the finest sheared 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 designed; 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 Lower-part of the Hedge is well strengthened, which would occasion its bending, and the Branches would be subject to be displaced with strong Winds, or great Snows, and thereby become very unsightly: but if they are regularly trained up, they will make

a good

a good thick Hedge from the Ground to the Height of thirty Feet, and in less time than any other ever-green Tree whatever.

The Soil in which these Trees thrive best, is an 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 pleasantest 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 Palisadoes; and affords the most durable Charcoal in the World, and is the common Fuel in the Southern Parts of *France*, and in *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 *Garidel's History of the Plants which grow in Provence*, it being too long to be inserted here.

IMPERATORIA, Masterwort.

The Characters are;

It is a Plant with a rose and umbellated Flower, consisting of several Petals, which are sometimes heart-shaped, and sometimes intire, ranged in a Circle, and resting on the Emplacement; which afterward becomes a Fruit, composed of two Seeds, which are plain, almost oval, gently streaked and bordered, and generally casting their Cover: to these Marks must be added, That their Leaves are winged, and pretty large.

The Species are;

1. *IMPERATORIA major. C. B. P.* Common Masterwort.

2. *IMPERATORIA Pyrenaica tenuifolia. Tourn.* Narrow-leav'd *Pyrenean* Masterwort.

3. *IMPERATORIA Alpina maxima. Tourn.* Greatest Masterwort of the *Alps*.

The Root of the first Species is used in Medicine; it has a very hot acrid Taste, and is esteemed alexipharmac, sudorific, and a great Attenuator and Opener.

This Sort is cultivated in Gardens to supply the Markets. It may be propagated either by Seeds, or by parting the Roots: if you would propagate it by Seeds, they should be sown in Autumn, soon after they are ripe, on a Bed or Border of light Earth, in

a shady Situation; observing not to sow the Seeds too thick, nor should they be covered too deep. In the Spring the Plants will appear, when they should be carefully weeded; and if the Season should prove very dry, they should be now-and-then refreshed with Water, which will greatly promote the Growth of the Plants: toward the Beginning of *May*, if you find the Plants come up too close together, you should prepare a moist shady Border (and thin the Plants carefully, leaving them about four Inches asunder); and plant those which you draw up, into the Border about six Inches apart every Way, being careful to water them duly, if the Season should prove dry, until they have taken Root; after which time, these Plants (as also those remaining in the Seed-beds) will require no other Culture but to keep them clear from Weeds; which may be easily effected by hoeing the Ground between the Plants now-and-then in dry Weather, which will destroy the Weeds; and by stirring the Ground, will be of great Service to the Plants. The following Autumn these Plants should be transplanted where they are designed to remain; which should be in a rich moist Soil, and a shady Situation; where they will thrive much better, than if too much exposed to the Sun, or in a dry Soil; for they delight in Shade and Moisture; so that where these are wanting, the Plants will require a constant Supply of Water in dry Weather, otherwise they will thrive but slowly. The Distance which these Plants should be placed, must not be less than twenty Inches, or two Feet every Way; for where they like their Situation, they will spread and increase very much. When these Plants are rooted, they will require no other Culture, but to

keep them clear from Weeds; and in the Spring before they shoot, the Ground should be every Year gently dug between the Plants; in doing of which great Care should be had, not to cut or bruise their Roots: these Plants, with this Management, will continue several Years, and will produce Seeds in plenty.

If you would propagate these Plants by Off-sets, their Roots should be parted at *Michaelmas*, and planted in a shady Situation, at the same Distance as has been directed for the Seedling-plants, observing to water them until they have taken Root; after which time they must be managed as the Seedlings.

The other two Sorts are preserved in Botanic Gardens for the sake of Variety; but as they are not used in Physic, nor are ornamental Plants, so they are seldom allowed a Place in other Gardens. These two Sorts may be propagated in the same manner as the former, and are both equally hardy; so that they may be placed in any shady moist cold Situation, where they will thrive very well.

INARCHING is a Method of Grafting, which is commonly call'd *Grafting by Approach*. This Method of Grafting is used, 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 joined 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 the Rind of both may join equally

equally together, that the Sap may meet; then cut a little Tongue upward in the Graft, and make a Notch in the Stock to admit it; so that when they are joined, the Tongue will prevent their slipping, and the Graft will more closely unite with the Stock. Having thus placed 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 fastened, to prevent the Wind from breaking them asunder, which is often the Case when this Precaution is not observed.

In this manner they are to remain about four Months, by 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 joined Parts with fresh grafting Clay, it will be of great Service to the Graft.

This Operation is always performed in *April* or *May*, that the Graft may unite with the Stock before the succeeding Winter; and is commonly practised upon Oranges, Myrtles, Jasmines, Walnuts, Firs, Pines, and several other Trees, which will not succeed by common Grafting or Budding. But altho' I have mentioned Orange-trees among the rest, yet I would by no means advise this Practice where the Trees are designed to grow large, which, in this Method, they rarely ever will do: and it is chiefly practised 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-lived.

INDIGO. *Vide Anil.*

INGA.

This is the *American* Name of the Plant; for which we have no *English* Name at present.

The *Characters* are;

It hath a funnel-shaped Flower, consisting of one Leaf, whose Tube is furbelowed: from the Flower-cup arises the Pointal, fixed like a Nail in the Hinder-part of the Flower, which after-ward becomes a soft fleshy Pod; in which are contained many irregular Seeds inclosed in a sweet Pulp.

We know but one *Species* of this Plant; *viz.*

INGA flore albo fimbriato, fructu dulci. Plum. Nov. Gen. Inga with a white furbelowed Flower, and a sweet Fruit.

This Tree is very common on the North Side of the Island of *Jamaica*, at *La Vera Cruz*, and in several other Parts of the *Spanish West-Indies*; where it rises to the Height of sixteen or twenty Feet, and sends forth many crooked straggling Branches, which hang downward, and are covered with a whitish Bark. The Flowers come out at the Ends of the Branches, which are succeeded by the Pods, which are sometimes eaten by the Negroes.

In *Europe* this Plant is preserved by those Persons who are curious in Exotic Plants: it is propagated by Seeds, which should be sown early in the Spring, in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark. When the Plants are come up two Inches high, they should be carefully transplanted into separate Pots filled with light rich Earth, and then plunged into the Hot-bed again, being careful to shade them from the Sun, un-

til they have taken new Root ; after which time they must be plentifully watered ; and in hot Weather the Glasses of the Hot-bed should be raised every Day, to admit fresh Air to the Plants, to prevent their being drawn up too weak. At *Michaelmas* these Plants must be removed into the Stove, and plunged into the Tan in the warmest Part of the Bed. During the Winter-season these Plants must be kept very warm, and they must be frequently refreshed with Water ; but it must not be given to them in too large Quantities in cold Weather : in the Summer they must be plentifully watered ; and in hot Weather they should have a large Share of fresh Air, by opening of the Glasses of the Stove ; but they must not be removed out of the Stove ; for they are too tender to endure the open Air of this Country, in the warmest Part of the Year. When the Plants have filled the Pots with their Roots, they should be transplanted into larger, and their Roots should be then carefully trimmed. With this Management the Plants will thrive, and in a few Years produce Flowers ; so will add to the Variety amongst other tender Exotic Plants.

INOCULATING, or Budding.

This is commonly practised upon all Sorts of Stone-fruit ; in particular, such as Peaches, Nectarines, Cherries, Plums, &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 soaked 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 choose a smooth Part of the Stock about five or six Inches above the Surface of the Ground, if designed 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 downward 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 Footstalk 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 raised 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 Underpart 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

you will see which of them have taken; those of them which appear shrivelled and black, being dead; but those which remain fresh and plump, you may depend, are joined: 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 covered 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 formed at the Extremity of the same Year's Shoots, which is a Sign of their having finished their Spring Growth.

The first Sort commonly inoculated is the Apricot; and the last the Orange-tree, which should never be done until the middle of *August*. And in doing this Work, you should 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 used: but if you are obli-

ged 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 quit this Head, I beg Leave to observe, that tho' it is a 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 occasioned some People to imagine, that some Sorts of Trees are not to be propagated by Inoculation; whereas, if they had perform'd it in this Method, they might have succeeded, as I have several times experienced.

INTYBUS. *Vide* Endivia.

JOHNSONIA.

The Title of this Genus was given by the late Dr. *Thomas Dale*, of *Carolina*, in Memory of Dr. *Johnson*,

son, who published an Edition of *Gerrard's Herbal*, improved and corrected.

The Characters are;

The Empalement of the Flower consists of one Leaf, which is cut at the Brim into four sharp Portions: the Flowers are monopetalous and tubulous, being divided into four Segments at the Brim: in the Centre of the Flower is situated the Pointal, attended by four Stamina, which support yellow oblong Summits: the Pointal afterward changes to a round succulent Fruit, having one Cell, inclosing many small Seeds.

We have but one Species of this Genus at present; viz.

JOHNSONIA floribus verticillatis sessilibus, foliis ovato-lanceolatis oppositis, caule fruticoso. Dale. Shrubby Johnsonia, with oval spear shaped Leaves growing opposite, and the Flowers growing in Whorles close to the Branches.

This is figur'd in Mr. *Catesby's History of Carolina*, Vol. II. p. 47. by the Title of *Frutex baccifer verticillatus, foliis scabris latis dentatis & conjugatis, baccis purpureis dense congestis*. It grows plentifully in the Woods near *Charles-Town* in *South-Carolina*; and the Leaves of the Shrub were often used by Dr. Dale, in the Cure of Dropsies. A particular Account of the Virtues of this, and many other Plants growing in the same Country, was written by the Doctor, and sent directed for me, during the time of the late War; but the Ship being taken, the Papers were lost; and, the Doctor dying soon after, I could not procure another Copy of them.

This Shrub rises from four to six Feet high, having many slender Branches coming out from the Ground upwards, so as to form a Thicket, where the Plants are

in plenty. These Branches are covered with a woolly Substance, and are garnished with oval Leaves, placed opposite by Pairs, having pretty long Footstalks. The Leaves are narrow at their Base, but extend to the Breadth of three Inches, and terminate in a Point, being a little indented on their Edges: they have a rough Surface, and are a little inclining to be mealy, like the Leaves of *Viburnum*. At each Joint of the Branches, where the Leaves are set on, the Flowers are produced in Whorles, closely adhering to the Branches, which are small, and of a purple Colour. These are succeeded by soft succulent Berries, of a bright red Colour, which change to a deep Purple as they decay: in each of these are many small Seeds.

The Seeds of this Shrub were sent to *England* by Mr. *Catesby* in 1724. and many of the Plants were raised in the Gardens near *London*, which were planted, when grown to have Strength, in the open Air, where they succeeded very well, and some of them produced their Flowers for several Years; but there was not any of their Fruit succeeded the Flowers in *England*. The Plants having succeeded so well in the open Air for some Years, occasioned their being in general planted abroad, and the severe Frost in the Year 1739. destroyed them all; so that until Dr. Dale sent a fresh Supply of Seeds in the Year 1744. there were none of the Plants left in the *English* Gardens.

The Plants arise very easily from the Seeds, if they are sown upon a moderate Hot-bed; but during the two or three first Years, they are tender; so that if they are not protected from the Frost, they are frequently killed to the Ground in Winter; but when they have acquired

quired Strength, they will resist the Cold of our ordinary Winters, provided they are planted in a shelter'd Situation; but as they are liable to be killed by severe Frost, it will be proper to have some Plants shelter'd to preserve the Kind. When the Plants are kept in a Green-house, they generally retain their Leaves till the Spring; but those which are exposed to the open Air, always shed their Leaves in Autumn. As these Plants do not produce Seeds in this Country, the only Method of propagating them is by Layers, which should be laid in the Autumn; and if they are duly supplied with Water the following Summer, they will have made good Roots by *Michaelmas*; and they may be then taken off, and transplanted, either into Pots to be sheltered in Winter, or in Borders where they are design'd to remain; but these should have Mulch laid about their Roots in Winter, to preserve them from the Frost. The Plants which are thus propagated, will be hardier than those which are raised from Seeds, so may be better inured to our Climate; and as this Plant grows in *Virginia*, the Seeds brought from thence will be better adapted to this Country, than those which are brought from *South-Carolina*.

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 bisid, 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 arise the Male Stamina, carefully defended by an hollow Case of Petals: the Flower grows to the Apex of the Ovary, which sends forth

these Beards and case-like Tubes; and hence it appears like a nine-leav'd Flower.

The Species are;

1. IRIS *purpurea, sive vulgaris*. *Park. Par.* Common purple Flower-de-luce.

2. IRIS *hortensis pallide cœrulea*. *C. B.* Pale-blue Garden Flower-de-luce.

3. IRIS *hortensis alba Germanica*. *C. B.* White Garden German 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 *Dalmatia*.

6. IRIS *Susiana, flore maximo ex albo nigricante*. *C. B.* The *Chalcedonian* Iris, with a large black-and-white Flower.

7. IRIS *latifolia Pannonica, colore 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 *fativa lutea*. *C. B. P.* Yellow Garden Flower-de-luce.

10. IRIS *lutea variegata*. *Clus.* Yellow variegated Flower-de-luce.

11. IRIS *latifolia candida, purpureis venis distincta*. *C. B.* Broad-leav'd Flower-de-luce, with a white Flower striped 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 Pannonica, sive versicolor*. *Clus.* Small variable narrow-leav'd Flower-de-luce of *Hungary*.

16. IRIS

16. *IRIS humilis minor angustifolia*, flore variegato. Dwarf narrow-leav'd Flower-de-luce, with a variegated Flower.

17. *IRIS sylvestris*, quam *Xyrim* vocant. *Plin. Raii Syn.* Stinking Gladdon, or Gladwyn.

18. *IRIS hortensis latifolia*. *C. B. P.* Broad-leav'd Garden Flower-de-luce.

19. *IRIS latifolia minor alba, oris cœruleis*. *Suvert.* Small broad-leav'd Flower-de-luce, with white Flowers, having blue Borders.

20. *IRIS latifolia minor alba, oris dilute purpureis*. *H. R. Par.* Lesser broad-leav'd Flower-de-luce, with white Flowers, having pale-purple Borders.

21. *IRIS Asiatica cœrulea polyanthos*. *C. B. P.* Many-flower'd blue Asiatic Flower-de-luce.

22. *IRIS Asiatica purpurea*. *C. B. P.* Purple Asiatic Flower-de-luce.

23. *IRIS peregrina subrabens inodora*. *C. B. P.* Redish foreign Flower-de-luce, without Smell.

24. *IRIS peregrina, odore oxycanthæ*. *C. B. P.* Foreign Flower-de-luce, smelling like Hawthorn.

25. *IRIS Byzantina purpuro-cœrulea*. *C. B. P.* Purple-blue Flower-de-luce of Constantinople.

26. *IRIS Damascena polyanthos*. *C. B. P.* Many-flower'd Flower-de-luce of Damascus.

27. *IRIS latifolia Germanica, odore suavi*. *C. B. P.* Broad-leav'd German Flower-de-luce, with a sweet Smell.

28. *IRIS latifolia Germanica, odore sambuci*. *C. B. P.* Broad-leav'd German Flower-de-luce, smelling like Elder.

29. *IRIS latifolia Germanica ochroleucos*. *C. B. P.* Broad-leav'd German Flower-de-luce, with a yellowish-white Flower.

30. *IRIS latifolia Germanica can-*

dido-purpurea. *C. B. P.* Broad-leav'd whitish-purple German Flower-de-luce.

31. *IRIS latifolia alba viridis*. *C. B. P.* White and green broad-leav'd Flower-de-luce.

32. *IRIS latifolia candida, caule aphylo*. *C. B. P.* Broad-leav'd white Flower-de-luce, with a naked Stalk.

33. *IRIS latifolia Belgica variegata*. *C. B. P.* Broad-leav'd variegated Dutch Flower-de-luce.

34. *IRIS Belgica cœrulea versicolor*. *C. B. P.* Blue variegated Dutch Flower-de-luce.

35. *IRIS latifolia humilior purpurea*. *C. B. P.* Broad-leav'd dwarf purple Flower-de-luce.

36. *IRIS latifolia humilior versicolor*. *C. B. P.* Broad-leav'd dwarf variegated Flower-de-luce.

37. *IRIS Dalmatica minor*. *Clus. Hisp.* Small Flower-de-luce of Dalmatia.

38. *IRIS palustris lutea*. *Tabern. Icon.* Yellow marsh Flower-de-luce.

39. *IRIS palustris pallida*. *Raii Syn.* Pale water Flower-de-luce.

40. *IRIS pratensis angustifolia humilior*. *C. B. P.* Lower narrow-leav'd meadow Flower-de-luce.

41. *IRIS angustifolia candida, lineis rubentibus notata*. *C. B. P.* White narrow-leav'd Flower-de-luce, striped with redish Lines.

42. *IRIS angustifolia, prunum redolens, minor*. *C. B. P.* Smaller narrow-leav'd Flower-de-luce, smelling like Plums.

43. *IRIS humilis candicans, venis & ora cœruleis*. *Tourn.* Low whitish Flower-de-luce, with blue Veins and Borders.

44. *IRIS humilis Pyrenaica, foliis repandis è luteo virescentibus*. *Tourn.* Low Pyrenean Flower-de-luce, whose bending Leaves are of a greenish-yellow Colour.

45. *IRIS humilis, flore rubello*. *Tourn.*

Tourn. Dwarf Flower-de-luce, with a redish Flower.

46. *IRIS humilis, flore pallido & albo.* *Tourn.* Dwarf Flower-de-luce, with a pale and white Flower.

47. *IRIS humilis, flore luteo.* *Tourn.* Dwarf yellow Flower-de-luce.

48. *IRIS humilis, flore pallide luteo.* *Tourn.* Dwarf Flower-de-luce, with a pale yellow Flower.

49. *IRIS humilis saxatilis Gallica.* *Tourn.* Dwarf Rock Flower-de-luce of France.

50. *IRIS humilis latifolia major acaulis.* *Tourn.* Greater broad-leav'd dwarf Flower-de-luce, without a Stalk.

51. *IRIS Americana versicolor, stylo non crenato.* *Hort. Elth.* Party-coloured American Flower-de-luce, whose Style is not crenated.

52. *IRIS Americana versicolor, stylo crenato.* *Hort. Elth.* Party-coloured American Flower-de-luce, with an indented Style.

53. *IRIS Virginiana pumila, sive Chamæiris verna angustifolia, flore purpuro-cæruleo odorato.* *Banist.* Dwarf narrow-leav'd Spring Flower-de-luce of Virginia, with a purple-blue sweet smelling Flower.

54. *IRIS Virginiana pumila, sive Chamæiris verna odoratissima latifolia cærulea repens.* *Banist.* The most sweet-scented dwarf Spring Flower-de-luce of Virginia, with broad Leaves, and a blue Flower.

Most of these Sorts have been introduced into curious Gardens, from Germany, Spain, and the Levant, which are the Countries of their natural Growth. All these are hardy Plants, which will thrive in the open Air in this Climate, and require very little Care to cultivate them: but as they afford a great Variety, and continue long in Flower (especially in a shady Situation), they merit a Place in every large Gar-

den. These Sorts usually grow from two to four Feet high, in a good Soil; therefore should be plac'd amongst hardy Flowers of the same Growth.

The twelfth, thirty-fifth, thirty-sixth, and thirty-seventh Sorts are of lower Growth than either of the former; these seldom rise above a Foot high, but have Leaves as broad as those before-mentioned; but not spreading so fast by their Roots, do not require so much room. These Sorts flower earlier in the Spring, than the tall-growing Kinds; therefore, if some of these Roots are planted in a warm Situation, their Flowers will appear in March; and those which have an East Exposure, will succeed these; so that some of them may be continued near two Months in Beauty.

The seventeenth, thirty-eighth, and thirty-ninth Sorts grow wild in marshy Places in several Parts of England; but the thirty-eighth is much more common than the others, which is found in standing Waters and Ditches almost every-where. The Roots of this Sort are used in Medicine, under the Title of *Acorus adulterinus*, or *false Acorus*. These two Sorts, being very common, are seldom admitted into Gardens; but where there happens a Bog, or any low moist Place, in a Garden, some of them may be planted for Variety-sake.

The fortieth Sort grows wild in moist Meadows in France and Germany; but is not a Native of this Country. This Sort has narrow Leaves, and is a much less Plant than either of the former; therefore may be allowed a Place in shady moist Borders for the sake of Variety, being a very hardy Plant, and requiring very little Care to cultivate.

The thirteenth, fourteenth, fifteenth,

teenth, sixteenth, forty-first, forty-second, forty-third, forty-fourth, forty-fifth, forty-sixth, forty-seventh, forty-eighth, forty-ninth, and fiftieth Sorts are also of humble Growth, seldom rising above eighteen Inches high; these have likewise narrow Leaves, and do not spread so much as those Sorts before-mentioned; therefore may be allowed Places in smaller Gardens, because there is a great Variety in their Flowers. They should be planted in an East Border, where the Soil is rather moist than dry; in which Position they will thrive, and produce a great Number of Flowers. The Places of their natural Growth are mentioned to their different Names; from whence their Seeds or Roots may be procured.

The fifty-first, fifty-second, fifty-third, and fifty-fourth Sorts are Natives of *America*; from whence their Seeds and Roots have been sent into *England*: the fifty-first and fifty-second Sorts were sent from *Maryland*, where their Roots are used in venereal Cases. These flower late in the Summer, after all the other Sorts are past: therefore should be admitted into every curious Garden; for they are as hardy, and require as little Care in cultivating, as any of the before-mentioned Kinds.

All these Sorts of Flower-de-luce may be propagated by parting their Roots: the best Season for performing this is at *Michaelmas*, that they may be well rooted before the Frost begins; for if it be delayed till Spring, the Plants will require to be frequently watered, if the Season should prove dry; and they will not flower near so strong, as those which were well rooted before Winter. The dwarf and narrow-leav'd Kinds may be removed and parted every second or third Year; because as these do

not spread so fast as the larger Kinds, they may be easily kept within Compass, without being often transplanted. But all the larger Sorts should be either removed and parted every Year, or dug about, and reduced; otherwise they will spread so much as to injure such Plants as grow near them: indeed in those Places where they are planted under Trees in large Wood-work, and are allowed room enough, they may be permitted to grow many Years unremoved.

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, Chimneys, &c. in the Summer-season, they may be allowed a Place in some remote Part of the Garden, where few other things will thrive.

The 1st, 4th, and 7th Sorts are used 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

a Wall or Pale where they may have the morning Sun; but must not be exposed 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.

The sixth Sort is the most beautiful and rare of all the Kinds: the Flowers of this Sort are very large, and finely variegated with black and white; so by some it is called, the Second-mourning Iris.

All these Sorts may also be propagated by Seeds, which they generally produce in great Plenty; which should be saved 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 be constantly kept clean from Weeds, and in dry Weather should be watered, 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 pulled up in Flower, and thrown away, to give the better Sorts more room.

IRIS BULBOSA. } *Vide Xiphium*
IRIS PERSICA. } *um.*
ISATIS, Woad.

The Characters are;

The Flower consists of four Leaves, which are disposed in form of a Cross; out of whose Flower-cup rises the Pointal, which afterward turns to a Fruit in the Shape of a Tongue, flat at the Edge, gaping two Ways, having but one Cell; in which is contained, 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*. *Bohart*. Greater Dalmatian Woad.

There are some other Varieties of this Plant, which are preserv'd in some curious Botanic Gardens: but as they are Plants of little Use or Beauty, 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 plow 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 plow'd and harrow'd, and all the Clods and Turfs broken, 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 hoed out, as is practis'd for Turneps, 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 continued, it robs the Soil: but if it be moderately used, 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, or 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 plowing 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 to 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; but as it is apt to fail, it is better to sow that of 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; though 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, though 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 mixed with either of the former Crops, spoil the Whole.

It many times sells from six Pounds to thirty Pounds a Ton, an Acre common yielding about a Ton.

ISORA, The Screw-tree.

The

The Characters are;

It hath a spreading anomalous Flower, consisting of one or many Leaves, divided into several Parts, and appearing like two Lips; from the Bottom of the Flower arises the Pointal, whose Apex afterward becomes a twisted Fruit, consisting of many Cells, which are intorted like a Screw: in which are contained several almost kidney-shaped Seeds.

The Species are;

1. ISORA *althææ foliis, fructu breviori & crassiori.* Plum. Nov. Gen. The Screw-tree with Marsh-mallow-leaves, and a shorter and thicker Fruit.

2. ISORA *althææ foliis, fructu longiori & angustiori.* Plum. Nov. Gen. The Screw-tree with Marsh-mallow-leaves, and a longer and slenderer Fruit.

3. ISORA *althææ folio amplissimo, fructu crassissimo & villoso.* Houst. The Screw-tree with very large Marsh-mallow-leaves, and a very thick hairy Fruit.

These Plants are Natives of the East and West-Indies, where they grow to the Height of ten or twelve Feet, and become shrubby. The first of these Sorts I received from the *Babama Islands*, where it grows in great Plenty; as also in several other Places in the warm Parts of *America*. The second Sort was found by Mr. Robert Millar, Surgeon, at *Carthagena* in the Spanish West-Indies, from whence he sent the Seeds to England; from which there have been several Plants raised. The third Sort was discovered by Dr. William Housloun in *Jamaica*, who sent the Seeds and dried Samples of this Kind to England.

All these Plants are propagated by Seeds, which should be sown in Pots filled with light rich Earth, and then plunged into a moderate Hot-

bed of Tanners Bark. When the Plants begin to appear, they should be gently refreshed with Water; and when they are grown about three Inches high, they should be carefully transplanted, each into a separate small Pot filled with light rich Earth, and then plunged into the Hot-bed again; observing to shade them until they have taken new Root. During the Summer-season these Plants may remain in the Hot-bed (provided they are not so high as to touch the Glasses); but at *Michaelmas* they should be removed into the Stove, and plunged into the Bark-bed. During the Winter they should be kept very warm, and they must be often watered; and if their Leaves contract Filth, they should be washed with a Sponge; otherwise Insects will attack them, which will weaken and destroy the Plants.

These Plants are too tender to thrive in the open Air in this Climate, if they are exposed thereto, even in the warmest Season; so that they should constantly remain in the Stove; observing in very hot Weather to open the Glasses of the Stove to admit fresh Air to the Plants, and to give them plenty of Water; as also to shift them into larger Pots as they increase in Magnitude. With this Management the Plants will thrive very well, and in two Years from Seeds, will produce their Flowers and Fruit.

The Name *Ifora*, which Father Plumier has given to this Genus, is the Indian Name for the Plant; but by the English Inhabitants of *America* it is called *Screw-tree*, from the Form of the Fruit, which is twisted like a Screw.

ITEA, *Flor. Virg.*

The Characters are;

The Empalement of the Flower is of

one Leaf, and is cut into five Parts: the Flower is also divided into five Parts to the Bottom: in the Centre of the Flower is situated the Pointal, attended by five Stamina: the Pointal afterward changes to an oval Seed-vessel, having one Cell, which is full of small Seeds.

We have but one Species of this Plant;

ITEA humilis, foliis lanceolatis, floribus spicatis albis. Dwarf Itea, with spear-shaped Leaves, and white Flowers growing in a Spike.

We have no English Name for this Shrub; the Latin Name was applied to it by Dr. Gronovius in his *Flora Virginica*.

This Shrub grows in moist Soils in several Parts of North America, where it rises to the Height of four or five Feet, sending out many Branches on every Side, from the Ground upward. At the Extremity of the same Year's Shoots, in the Month of July, are produced fine Spikes of white Flowers, somewhat resembling those of the Cornish Cherry; and when these Shrubs are in Vigour, they will be intirely covered with these Spikes of Flowers; so that they make a fine Appearance at their Season of flowering.

At present this Shrub is very rare in England: the only Garden where I have seen it in Vigour, is that of his Grace the Duke of Argyll at Whitton, near Hounslow; where the Soil agrees so well with this Plant, as that it thrives and flowers as well as in its native Country.

This Shrub will live in the open Air in England, the Cold never injuring it; but it will not thrive upon dry gravelly Ground, being very apt to die in such Places in the Summer-season. It is propagated by Layers; but as these are commonly two Years before they take Root, &

cannot be propagated in such Plenty as were to be wished: for as this Shrub flowers at a Season when there are few others in Beauty, it is the more valuable.

JUDAICA ARBOR. Vide *Cereis*.

JUGLANS, The Walnut.

The Characters are;

It hath Male Flowers or Katkins, which are produced at remote Distances from the Fruit on the same Tree: the Female Flowers grow two or three together, close to the Branches: these are divided into four acute Segments: the Pointal is situated in the Bottom of the Empalement, which turns to a large Nut covered with a thick green Coat: the Nut is deeply furrowed, and divided in the middle, containing a Kernel having four Lobes, which is covered with a thin Skin.

The Species are;

1. JUGLANS fructu maximo. C. B. P. The largest Walnut.
2. JUGLANS fructu tenero, & fragili putamine. C. B. P. The thin-shelled Walnut.
3. JUGLANS fructu perduro. Inst. R. H. The hard-shelled Walnut, by some called the French Walnut.
4. JUGLANS fructu serotino. Inst. R. H. Late-ripe Walnut.
5. JUGLANS nigra, fructu rotundo profundissime insculpto. Clay. Flor. Virg. The black Virginia Walnut.
6. JUGLANS nigra, fructu oblongo profundissime insculpto. Virginia black Walnut, with long Fruit.
7. JUGLANS alba, fructu ovato compresso, cortice glabro, pinnis foliorum latioribus & serratis. The Hickery Walnut.
8. JUGLANS alba, fructu ovato compresso, nucleo dulci, cortice squamoso. Clay. Flor. Virg. The Shag-bark Walnut.
9. JUGLANS alba, fructu minori, cortice glabro. Clay. Flor. Virg. The small

Small Hickery, or white *Virginia* Walnut.

10. *JUGLANS alba procerior, fructu minimo, putamine teneriori, pinnis foliorum minoribus.* Clay. Flor. Virg. The least white *Virginian* Walnut, commonly called Pignuts.

This Genus of Plants has been universally titled *Nux juglans*, till Dr. *Linnaeus* alter'd it to this of *Juglans*, the other being a compound Name.

The four Sorts first-mention'd are propagated promiscuously in *England*, and I believe are all femal Variations, and not distinct Species, as in most other Sorts of Fruit-trees; for it rarely happens, that the Trees raised from Seeds produce the same Sort of Fruit again: so that those who would be sure of their Fruit, should either make choice of such Trees in the Nursery which have produced Fruit, and prove to be the Sort they would have, or else inarch the Sorts intended upon any common Walnut-stock; in which Method they will succeed; but these seldom make so good Trees as those which are raised from Seeds.

The first and second Sorts are chiefly preferr'd for their Fruit, which are very large; and the Shells of the second Sort are so tender, as to be broken between the Fingers without any Difficulty; for which Reason it is esteem'd the best worth propagating; for the Fruit, of any of the Sorts.

The *Virginian* Sorts are preserved as Rarities, by such Persons who are curious in collecting the several Sorts of Trees; but these are all worth cultivating for their Timber, which is preferable to that of our common Walnuts; and these Trees are equally as hardy, and some of them of much quicker Growth than the common Sort, especially the fifth

and sixth Sorts; the first of which produces great Quantities of Fruit annually in the Physic-garden; but they are of no Use, except to propagate the Species; for their Shells are so hard as scarcely to be broken with a Mallet; and the Kernel is so small, that it is not worth the Trouble of coming at it.

All the Sorts of Walnuts which are propagated for Timber, should be sown in the Plates where they are to remain; for the Roots of these Trees always incline downward; which, being stopp'd or broken, prevent their aspiring upward; so that they afterwards divaricate into Branches, and become low-spreading Trees: but such as are propagated for Fruit, are greatly mended by transplanting; for hereby they are render'd more fruitful, and their Fruit are generally larger and fairer; it being a common Observation, that downright Roots greatly encourage the luxuriant Growth of Timber in all Sorts of Trees; but such Trees as have their Roots spreading near the Surface of the Ground, are always the most fruitful.

The Nuts should be preserved in their outer Covers in dry Sand until *February*; when they should be planted in Lines, at the Distance you intend them to remain; but in the Rows they may be placed pretty close, for fear the Nuts should miscarry; and the young Trees, where they are too thick, may be removed, after they have grown two Years, leaving the Remainder at the Distance where they are to stand.

In transplanting these Trees, you should always observe never to prune either their Roots or Branches, both which are very injurious to them; nor should you be too busy in lop-

ping or pruning the Branches of these Trees; for it often causes them to decay: but when there is a Necessity of cutting any of their Branches off, it should be done early in *September*, that the Wound may heal over before the Cold increases; and the Branches should always be cut off quite close to the Trunk, otherwise the Stump which is left will decay, and rot the Body of the Tree.

The best Season for transplanting these Trees is as soon as the Leaves begin to decay; at which time, if they are carefully taken up, and their Branches preserved intire, there will be little Danger of their succeeding, altho' they are eight or ten Years old, as I have several times experienced.

This Tree delights in a firm rich loamy Soil, or such as is inclinable to Chalk or Marl; and will thrive very well in stony Ground, and on chalky Hills, as may be seen by those large Plantations near *Leatherhead*, *Godstone*, and *Carshalton* in *Surry*, where are great Numbers of these Trees planted upon the Downs; which annually produce large Quantities of Fruit, to the great Advantage of their Owners; one of whom, I have been told, farms the Fruit of his Trees, to those who supply the Markets, for thirty Pounds *per Annum*.

The Distance these Trees should be placed, ought not to be less than forty Feet, especially if regard be had to their Fruit; though when they are only designed for Timber, if they stand near, it promotes their upright Growth. The black *Virginian* Walnut is much more inclinable to grow upright than the common Sort; and the Wood being generally of a more beautiful Grain, renders it preferable to that, and better worth cultivating. I have

seen some of this Wood which hath been beautifully vein'd with Black and White; which, when polish'd, has appear'd at a Distance like vein'd Marble. This Wood is greatly esteem'd by the Cabinet-makers for Inlaying, as also for Bedsteads, Stools, Tables, and Cabinets; and is one of the most durable Woods for those Purposes yet known, it being rarely infected with Insects of any Kind (which may proceed from its extraordinary Bitterness): but it is not proper for Buildings of Strength, it being of a most brittle Nature, and exceeding subject to break very short, tho' it commonly gives Notice thereof, by its cracking some time before it breaks.

The general Opinion, that the beating of this Fruit improves the Trees, I do not believe, since in the doing of this, the younger Branches are generally broken and destroyed: but as it would be exceeding troublesome to gather it by Hand, so in beating it off, great Care should be taken that it be not done with Violence, for the Reason before assigned. In order to preserve the Fruit, it should remain upon the Trees till it is thorough ripe; when it should be beaten down, and laid in Heaps for two or three Days; after which they should be spread abroad, when, in a little time, their Husks will easily part from the Shells: then you must dry them well in the Sun, and lay them up in a dry Place, where Mice or other Vermin cannot come to them: in which Place they will remain good for four or five Months; but there are some Persons who put their Walnuts into an Oven, gently heated, where they let them remain four or five Hours to dry; and then put them up in oil Jars, or any other close Vessel, mixing them with dry Sand; by which Method they will keep

keep good six Months. The putting of them in the Oven is, to dry the Germ, and prevent their Sprouting: but if the Oven is too hot, it will cause them to shrink; therefore great Care must be had to that.

JUIUBE. *Vide* Ziziphus.

JULIANS, or ROCKETS. *Vide* Hesperis.

JULY FLOWER. *Vide* Caryophyllus.

JUNCUS, Rush.

The Characters are;

It hath a Flower composed of many Leaves, which are placed orbicularly, and expand in form of a Rose: from the Centre of which rises the Pointal, which after ward becomes a Fruit or Husk, which is generally three-cornered, opening into three Parts, and full of roundish Seeds.

The Species are;

1. JUNCUS acutus, capitalis forghi. C. B. P. Prickly large Sea Rush.

2. JUNCUS acutus maritimus Anglicus. Park. English Sea prickly Rush.

3. JUNCUS acutus, panicula sparsa. C. B. P. Common hard Rush.

4. JUNCUS laevis, panicula sparsa, major. C. B. P. Common soft Rush.

5. JUNCUS laevis, panicula non sparsa. C. B. P. Soft Rush, with a more compact Panicle.

6. JUNCUS acumine reflexo, major. C. B. P. The greater bending Rush.

These Sorts of Rushes are not cultivated, but grow wild in several Parts of England; and some Sorts of them are very troublesome Weeds; in low moist strong Lands. The first and second Sorts grow on the Seashores, where they are frequently watered by the Salt-water. These two Sorts are planted with great

Care on the Banks of the Sea in Holland, in order to prevent the Water from washing away the Earth; which, being very loose, would be in Danger of removing every Tide, if it were not for the Roots of these Rushes; which fasten themselves very deep in the Ground, and mat themselves near the Surface, so as to hold the Earth closely together. Therefore, whenever the Roots of these Rushes are destroyed, the Inhabitants immediately repair them to prevent farther Damage. In the Summer-time, when the Rushes are fully grown, the Inhabitants cut them, and tie them up into Bundles, which are dried, and afterward carried into the larger Towns and Cities, where they are wrought into Baskets, and several other useful Things, which are frequently sent into England. These Sorts do not grow so strong in England, as they do on the Maese, and some other Places in Holland, where I have seen them upward of four Feet high.

The third and fourth Sorts grow on moist strong uncultivated Lands in most Parts of England, and consume the Herbage where they are suffered to remain. The best Method of destroying these Rushes is, to fork them up clean by the Roots in July; and after having let them lie a Fortnight or three Weeks to dry, to lay them in Heaps, and burn them gently; and the Ashes which these afford, will be good Manure for the Land; but in order to prevent their growing again, and to make the Pasture good, the Land should be drained and well plowed, and sown with Rye-grass, and White Dutch Clover, which will make a good Sward in one Year, if it be regularly managed; for the right ordering of which you are desired to

turn to the Article *Pasture*, where there are proper Instructions exhibited.

JUNIPERUS, The Juniper-tree.

The Characters are ;

The Leaves are long, narrow, and prickly: the Male Flowers are in some Species produced at remote Distances from the Fruit on the same Tree; but in other Species they are produced on different Trees from the Fruit: the Fruit is a soft pulpy Berry, containing three Seeds in each.

The Species are ;

1. **JUNIPERUS vulgaris fruticosa**. 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 cypressum referentibus**. Boerb. Ind. Red Virginian Cedar.
5. **JUNIPERUS Bermudiana**. H. L. The Cedar of Bermudas.
6. **JUNIPERUS minor montana, folio latiore, fructuque longiore**. C. B. P. Lesser mountain Juniper, with a broader Leaf, and a longer Fruit.
7. **JUNIPERUS major, bacca cærulea**. C. B. P. Greater Juniper, with a blue Berry.
8. **JUNIPERUS major, bacca rufescente**. C. B. P. Greater Juniper, with a redish Berry, commonly called the Phœnician Cedar.
9. **JUNIPERUS Cretica, ligno odoratissimo, uti et Græcorum recentiorum**. Tourn. Cor. Juniper of Crete, with a sweet-scented Wood, which is the Cedar of the modern Greeks.
10. **JUNIPERUS latifolia arborea, cerasi fructu**. Tourn. Cor. Broad-leav'd Eastern Tree-juniper, with a cherry-shap'd Fruit.

11. **JUNIPERUS Orientalis, vulgaris similis, magno fructu nigro**. Tourn. Cor. Eastern Juniper like the common Sort, with a large black Fruit.

12. **JUNIPERUS foliis undique imbricatis ovatis obtusis**. Flor. Leyd. Juniper with oval obtuse Leaves lying over each other, commonly called the Berry-bearing Cedar.

13. **JUNIPERUS major, foliis imbricatis obtusis, fructu flavescente**. Greater Juniper, with obtuse Leaves lying over each other, and a yellowish Fruit, commonly called Cedar of Lycia.

14. **JUNIPERUS foliis quadrifariam imbricatis acutis**. Flor. Leyd. Juniper with pointed Leaves lying four ways over each other, commonly called the great Spanish Juniper.

The first of these Plants is very common upon dry Heaths in divers Parts of England; but has been introduced into Gardens, and was formerly in great Request for ever-green Hedges: but as it is very subject to decay in Patches, and thereby render such Hedges very unsightly, as also being very troublesome to shear, they have been of late almost entirely rejected. But however improper these Trees may be for Hedges, or to clip into Pyramids or Balls; yet they should 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 intermixed 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.

The

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 until 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 dunged: it should be well dug, and level'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; though the greatest Part of them 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: but if the Bed, in which these Seeds are sown, is much exposed to the Sun, it should be shaded with Mats in the Day; for when the Plants come first up, they will not bear too much Heat. In this Bed they should remain till the following Autumn, 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 cleansed the Ground from all noxious Weeds and Roots, you should make them level: then, in the Beginning of *October*, 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 them 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 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 observed) is in the Beginning of *October*; and you should take them up carefully, to preserve a Ball of Earth to their Roots; and when planted, their Roots should be mulched: all which carefully attended to, observing also to refresh them with Water in very dry Weather, until they have taken new Root, will preserve them from the Danger of not 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 inclined 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: so 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 two Sorts of *Virginia Cedars* grow to a much greater Height than the former, and in their native Country afford excellent Timber for many Uses; but with us there are very few which are above twenty or twenty-five Feet high: tho' 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 procured 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; tho' sometimes it is two Years after sowing, before they come up. 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 Autumn following they should be transplanted into Beds (as was directed for the common Juniper), observing to preserve a

Ball of Earth to their Roots; and after they are planted, if the Season is dry, they must be carefully watered, and the Surface of the Ground covered with Mulch, to prevent the Sun and Wind from entering 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 impaired by hard Frosts, when too much exposed thereto; but when they have attained 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 designed 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 which

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 un-
 lightly; and will effectually answer all the Purposes of Mulch, without any Danger of hurting the Plants.

These Trees, being thus managed, 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 backward-
 est 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 overshadowed and destroyed: 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 placed much closer, will hide the naked Stems of the larger Trees, and have an agreeable Effect upon 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 destroyed 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*, if proper Care be taken in their Choice; which would be a great Improvement to many Parts of this Kingdom, which now lie unplanted, because the Owner, perhaps, finds that neither Oaks nor 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 designed 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 designed for the lower and richer Valleys, 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,

the Height of eighteen or twenty Feet, so the procuring as many of the Sorts, as can be gotten from the Countries of their Growth, will be adding to the Variety of our ever-green Plantations, which can't be too much propagated in England; where in general our Winters are temperate enough for them to thrive to Advantage: and as the Sorts, which are a little more tender than the others, obtain Strength, they will be in less Danger of suffering by severe Winters, as we find by many other Plants, which were so tender as not to live in the open Air at first, but now defy the severest Cold of our Climate.

JUSTICIA. This Plant was so named by the late Dr. *Houfston*, in Honour to *James Justice*, Esq; a great Lover and Encourager of Gardening and Botany.

The Characters are;

It hath an anomalous Flower consisting of one Leaf, which is divided into two Lips almost to the Bottom, the under one being, for the most part, entire; but the upper Lip is divided into two: the Flowers are succeeded by inverted spear-shaped Fruit, which have one Cell, containing many flat Seeds.

Dr. *Linnaeus* has joined to this Genus the *Abbatoda* of *Tournefort*, and the *Ecbolium* of *Rivinus*: but if the Fruit is admitted as a characteristic Note, they cannot be joined together; the *Abbatoda* having a bicapsular Pod, whereas the Pod of the *Justicia* is unicapsular.

The Species are;

1. *JUSTICIA annua, hexangulari caule, foliis circææ conjugatis, flore miniato.* *Houf.* Annual *Justicia*, with an hexangular Stalk, Inchanter's Nightshade-leaves growing opposite, and a carmine Flower.

2. *JUSTICIA frutescens, floribus spicatis majoribus, uno versu disposi-*

tis. Houf. Shrubby *Justicia*, with larger Flowers growing in Spikes, appearing on one Side of the Stalk.

These two Plants were discovered by the late Dr. *Houfston*, at *La Vera Cruz*, from whence he sent the Seeds and Specimens to *England*. The first Sort grows about two or three Feet high, and perishes soon after the Seeds are ripe; but the second Sort grows to the Height of six or seven Feet, and divides into many Branches, which become woody: at the End of the Branches the Flowers are produced in Spikes, which are of a carmine Colour.

These Plants may be propagated by Seeds, which should be sown early in the Spring in small Pots filled with fresh light Earth, and plunged into a moderate Hot-bed of Tanners Bark. When the Plants begin to appear, the Glasses of the Hot-bed should be raised every Day, when the Weather is warm, to admit fresh Air to them. The Plants must also be frequently watered in warm Weather.

When the Plants are about two Inches high, they should be carefully taken up, and each transplanted into a separate small Pot filled with fresh light Earth, and then plunged into the Hot-bed again, being careful to water and shade them until they have taken new Root; after which time they should have Air admitted to them every Day, in proportion to the Warmth of the Season.

As the Plants advance in their Growth, they should be shifted into larger Pots; for if their Roots are too much confined, the Plants will not make any considerable Progress: but they should not be over-potted; for that will be of worse Consequence than under-potting them; because when they are planted in

very

very large Pots, they will starve and decay, without producing any Flowers. They are too tender to endure the open Air in this Country; therefore they should always remain in the Hot-bed, being careful to let them have a due Proportion of Air in hot Weather: and the annual Sort should be brought forward as fast as possible in the Spring, that the Plants may flower early; otherwise they will not produce good Seeds in *England*.

The second Sort should remain in the Hot-bed during the Summer-season (provided there be room under the Glasses, without being scorched); but at *Michaelmas* they should be removed into the Stove, and plunged into the Bark-bed; where they must remain during the Winter-season, observing to keep them warm, as also to water them gently two or three times a Week, according as they shall require. The following Summer these Plants will flower, and abide several Years; but they rarely produce good Seeds in *Europe*.

IXIA.

The Characters are;

The Flower is inclosed in a permanent Sheath, which divides into two unequal Portions: the Flower is composed of six oblong Petals, which are equal: in the Centre of the Flower is situated an oval three-cornered Pointal, attended by three Stamina, crowned with short flat Summits: the Pointal afterward changes to an oval three-cornered Capsule, opening in three Cells, which are filled with roundish Seeds.

The Species are;

1. IXIA foliis gladiolatis alternis, floribus terminatricibus. Ixia with sword-shap'd Leaves growing alternate, and Flowers on the Tops of the Stalks.

2. IXIA foliis lineari-ensiformibus, floribus alternis, caule bulbifero. Ixia with narrow sword-shaped Leaves, Flowers growing alternate; and Stalks producing Bulbs.

3. IXIA foliis linearibus, floribus confertis terminatricibus. Ixia with narrow grassy Leaves, and Flowers, growing in a Cluster on the Top of the Stalks.

These Plants are all Natives of the Country near the *Cape of Good Hope*. The first Sort hath been some Years an Inhabitant of the *English* Gardens, but was not reduced to any Genus: by some Persons it has been intitled *Sisyrynchium*, to which Genus it is near a kin; but, on a strict Examination of the Characters, it appears to belong to this Genus, which must be placed between the *Crocus* and *Gladiolus*.

The other two Sorts I raised from Seeds, which were sent me by my learned Friend, Dr. *Job Baster*, F. R. S. of *Zirkzee* in *Holland*, who procured them from the *Cape of Good Hope*, with many other curious Plants.

The first Sort is hardy enough to resist the Cold of our ordinary Winters in the open Air, if it is planted in a warm Situation, and a dry Soil; but the Plants which grow abroad do not ripen Seeds in *England*. Therefore where Persons are desirous to obtain Seeds, the Plants should be plunged into an Hot-bed, where they will produce plenty of Flowers and Seeds every Year. Those Plants which are so managed, will flower in *June*, and their Seeds will ripen the Beginning of *September*; but those which grow in the open Air, do seldom flower before the latter End of *July*; however, these Flowers will continue longer in Beauty, than those which are placed in the Hot-bed.

The

The Roots of this Sort spread under the Surface of the Ground in the same manner as the flag-leaved *Iris*, to which they bear a great Resemblance, as do also their Leaves; but the Flowers are spread open in the middle of the Day, which are composed of six Leaves twisted at the Bottom; these are of an orange Colour, and spotted with red, and seldom continue longer than three or four Days in Beauty; but new Flowers are produced as the others decay, so that there is a Succession of them near a Month.

This Sort is propagated by Seeds, which if sown in a warm Border of light Earth in the Autumn, the Plants will come up the following Spring, and may afterward be treated in the same manner as the *Flag-Iris*; to which Article the Reader may turn for Directions.

The second and third Sorts are less hardy, so these must be sheltered from the Frost in Winter; but they should have as much free Air in mild Weather as possible: therefore if the Pots in which the Roots are planted, be placed under a Glass-frame in Winter, where they may enjoy the open Air at all times when the Weather is mild, they will flower much stronger, than if they are treated more tenderly, and the Flowers will continue much longer in Beauty.

The Flowers of the second Sort are white, having a dark Streak on the Back of each Leaf: these are produced alternately upon the Stalks; and below these, at the Joints of the Stalks, there are small Bulbs produced, which, if planted, will become Roots, whereby this Sort may be increased plentifully, as also by Off-sets from the Root; so that when the Plant is obtained, a single Root will soon furnish a Supply, to

stock the Garden: and as the Plant is not very tender, so it may succeed, if planted in a warm South Border of light Earth; at least, with a little Protection in severe Frost, there can be no hazard of its being lost.

The third Sort is more valuable than the second, the Flowers being much more beautiful: this hath a very small oval bulbous Root, covered with a grey Skin; the Leaves are long and narrow; the Flower-stem is produced immediately from the Root, which rises about one Foot high, being very slender: on the Top are produced five or six Flowers growing in a Cluster; these are composed of six oval Petals of a beautiful yellow Colour, each having a dark-purple Spot at the Bottom; so that when the Flowers are spread open, they make a fine Appearance. Both these Sorts flower in *April*, and the second generally produces ripe Seeds, but the third hath not as yet produced any Seeds in *England*; nor doth it send forth many Off-sets from the Root, so that it is at present pretty rare in *England*.

This Sort should be planted in small Pots filled with fresh light Earth, and in Winter must be placed in a Green-house, where, in mild Weather, it may enjoy the free Air, but protected from Frost. During the time that the Plants are in a growing State (which is from *November* to *May*) they must be frequently refreshed with Water; in the cold Months twice a Week will be sufficient; but in *April* they should be gently watered almost every Day, if the Season prove warm: toward the End of *May*, the Leaves and Stalks of the second and third Sorts decay; when the Pots may be placed in a shady Situation, where they will require but little

Water

Water during the time they are inactive: and in July the Roots may be transplanted, before they put out new Fibres, which they generally begin to do in August, especially if the Weather prove wet.



K A

KALI, Glasswort.

The Characters are;

The Flower is apetalous: the Em-palement consists of five Leaves, which expand in form of a Rose, in the Centre of which is placed the Pointal, which is attended by five short Stamina: the Pointal afterward becomes an almost globular Fruit, having one Cell, in which is lodged a single Seed, which is twisted spirally.

The Species are;

1. KALI majus, cochleato semine. C. B. P. Snail-seed Glasswort.

2. KALI spinosum, foliis longioribus & angustioribus. Tourn. Prickly Glasswort, with longer and narrower Leaves.

3. KALI spinosum, foliis crassioribus & brevioribus, Tourn. Prickly Glasswort, with thicker and shorter Leaves.

4. KALI Siculum lignosum, floribus membranaceis. Boc. Rar. Plant. Sicilian ligneous Glasswort, with membranaceous Flowers.

5. KALI fruticosum Hispanicum, tamarisci folio. Tourn. Shrubby Spanish Glasswort, with a Tamarisk-leaf.

6. KALI fruticosum Hispanicum, genistæ fronde. Tourn. Shrubby Spanish Glasswort, with Broom-tops.

7. KALI fruticosum Hispanicum, ca-

pillaceo folio villoso. Tourn. Shrubby Spanish Glasswort, with an hairy and downy Leaf.

8. KALI foliis longioribus & angustioribus subhirsutis. Tourn. Glasswort with longer and narrower somewhat hairy Leaves.

9. KALI Orientale fruticosum spinosum, camphoratæ folio. Tourn. Cor. Eastern shrubby prickly Glasswort, with a stinking Ground-pine-leaf.

10. KALI Orientale fruticosum, flore maximo albido. Tourn. Cor. Eastern shrubby Glasswort, with a very large whitish Flower.

11. KALI Orientale fruticosum, foliis sedi minoris, flore purpureo. Tourn. Cor. Eastern shrubby Glasswort, with Leaves like the lesser Houfleeck, and a purple Flower.

12. KALI Orientale fruticosum altissimum, florum staminibus purpureis. Tourn. Cor. The tallest shrubby Eastern Glasswort, with Flowers having purple Stamina.

13. KALI Orientale fruticosum lanuginosum. Tourn. Cor. Woolly Eastern shrubby Glasswort.

14. KALI Orientale fruticosum, linariæ folio. Tourn. Cor. Eastern shrubby Glasswort, with a Toad-flax-leaf.

15. KALI Orientale fruticosum, flore magno purpureo. Tourn. Cor. Shrubby Eastern Glasswort, with a large purple Flower.

16. KALI Orientale fruticosum, floribus albis. Tourn. Cor. Shrubby Eastern Glasswort, with white Flowers.

17. KALI Orientale spinosum subhirsutum, tenuissimo folio. Tourn. Cor. Prickly Eastern hairy Glasswort, with a very narrow Leaf.

18. KALI Orientale, capillaceo folio, flore purpurascente. Tourn. Cor. Eastern Glasswort, with a capillaceous Leaf, and a purplish Flower.

The first Sort here mentioned grows wild in the Mediterranean in several

several Places, where it is gathered for the making Sode, which is a Sort of Pot-ash used in the making of Soap. It is also cultivated in the South of *France*, in Salt-marshes, for the same Purpose. This Plant seldom grows large, unless it is cultivated, which greatly improves its Size; so that it often grows from two to three Feet high, and divides into many Branches; whereas in the natural Places of its Growth it is seldom above a Foot high. The *Spaniards* also cultivate several of the Species here mentioned, in order to make Sode thereof; the best of which is brought from *Alicant* and *Carthagena*, where the Inhabitants cultivate the eighth Sort of Kali for this Purpose; which, as I have been informed, is that which makes the best Sort of Pot-ash, called *Barillia*. The Salt of these Ashes is clear and white; so is used in making of the finest Glass, and the hardest Soap.

They also in the same Country cultivate another Plant of a different Genus, for the same Purpose, which is a Species of *Ficoides*, and has been already mentioned under that Article. The Seeds of the latter I have several times received from thence, by the Title of *Barillia*, as I have also from *Egypt*, with the *Arabic* Title of *Kali*: but this is by some very curious Persons affirmed to make a Pot-ash of less Value, than that of the former; so that there is room to doubt which of the two it is, that the *Spaniards* prefer.

The Inhabitants of those warmer Countries, who cultivate these Plants, sow their Seeds early in the Spring, on low marshy Ground, near the Sea, or on Salt-ponds, where the Plants soon come up, and in about three Months will be fit to cut for Use; when they mow it down, and dry it after the manner of Hay.

When it is well dried, they dig Holes or Pits, in the Nature of Lime-kilns; then they set Fire to a Bundle of the Herb, which they throw into the Pit; and after that they throw three or four more Bundles into the Pit, which they suffer to be well lighted; then they fill the Pit with the dried Herb, and stop the Top of it up, leaving it to consume for some time, to be reduced to Ashes. When they open the Pit, they find the Salt incorporated into a solid Rock, which they are obliged to break, and raise up as Stones out of a Quarry.

This is the best Sort of Pot-ash, and is brought from *Alicant*; and may be distinguished from the others, by being dry and clean, and of a bluish Grey, both without and within; and, when broken, has no offensive Smell.

The second Sort in Goodness is brought from *Carthagena*: this has not the same bluish Colour as the former, but is more crusted, and is generally brought over in larger Bales.

There are several other Sorts of Pot-ash, which are made in *England*, from different Plants: but these are of little Value, compared with the former; so are little esteemed. These may be known by their dark Colour, fetid Scent, and also by their Moisture.

The other Sorts of Kali here mentioned grow in the South of *France*, *Spain*, *Italy*, and the *Levant*: most of them are Inhabitants of the Seacoasts; but some have been found growing upon sandy Grounds at a great Distance from the Sea. These are frequently preserved in some Botanic Gardens for the sake of Variety; but they are too tender to perfect their Seeds in *England*, unless the Season proves very warm.

The first, second, third, and eighth Sorts are annual Plants: these I have several times cultivated in a Bed of common Earth, where the Plants have grown very large; but I could seldom procure good Seeds from them; for they seldom came into Flower till the Beginning of September, so that the Frost destroyed them before the Seeds were near ripe; for the first Frost in the Autumn kills them.

But if the Seeds of the best Kinds were sent to the *British* Colonies in *America*, these Plants might be there cultivated to the great Advantage of the Inhabitants, and be a national Benefit. If some of the marshy low Lands in *Carolina* and *Virginia* were employed for this Purpose, there can be no Doubt of the Success; provided there were proper Care taken in the Burning of the Plant, to make the Pot-ash: for as to the Growth of both the Plants, which are allowed to be the best, I have sent over their Seeds, which have grown as well in the *British* Colonies, as in their natural Soil, and in a much less time: and there is very little Trouble in the Culture of these Plants; for the Seeds must be sown where the Plants are to remain: if they are sown in the Spring, the Plant will be fit to cut in nine or ten Weeks: so the only thing to be observed in the Culture of it is, not to suffer Weeds to grow among the Plants; for where this happens, the Weeds will be cut with the Herb, and it will then be difficult to separate them; so that if they are burnt with the Plant, it will greatly lessen the Value of the Pot-ash. The not regarding of this, I fear, has been a great Detriment to the Inhabitants of *America*, by lessening the Value of several Commodities, and particularly the Indigo.

KARATAS, The Penguin or wild Ananas.

The Characters are;

It hath a tubulous bell-shaped Flower, which is divided into three Parts at the Mouth, from whose Calyx arises the Pointal, fixed like a Nail in the hinder Part of the Flower; which afterward becomes a fleshy almost conical Fruit, which is divided by Membranes into three Cells, that are full of oblong Seeds.

There is but one Sort of this Plant at present known; which is,

KARATAS *foliis altissimis, angustissimis & aculeatis.* Plum. Nov. Gen. The wild Ananas or Penguin.

Father Plumier has made a great Mistake in the Figure and Description of the Characters of this Plant, and the *Caraguata*; for he has joined the Flower of the *Caraguata* to the Fruit of the *Karatatas*, and *vice versa*; and this has led many Persons into Mistakes; who have joined the *Bromelia* and *Ananas* to this Genus, making them all of the same Genus; whereas, by their Characters, they should be separated.

This Plant is very common in the *West-Indies*, where the Juice of its Fruit is often put into Punch, being of a sharp acid Flavour. There is also a Wine made of the Juice of this Fruit, which is very strong; but it will not keep good very long; so is only for present Use. This Wine is very intoxicating, and heats the Blood; therefore should be drank very sparingly.

In *England* this Plant is preserved as a Curiosity; for the Fruit seldom arrives to any Degree of Perfection in this Country; tho' it has often produced Fruit in *England*, which sometimes has ripened pretty well; but if it were to ripen as thoroughly
here,

here, as in its native Country, it would be little valued on account of its great Austerity; which will often take the Skin off from the Mouths and Throats of those People, who eat it incautiously.

This Plant is propagated by Seeds; for tho' there are often Suckers sent forth from the old Plants, yet they, coming between the Leaves, are so long, slender, and ill-shapen, that if they are planted, they seldom make regular Plants. These Seeds should be sown early in the Spring, in small Pots filled with light rich Earth, and plunged into an Hot bed of Tanners Bark. When the Plants are strong enough to transplant, they should be carefully taken up, each planted into a separate Pot filled with light rich Earth, and plunged into the Hot-bed again; observing to refresh them frequently with Water, until they have taken new Root: after which time they should have Air and Water in proportion to the Warmth of the Season. In this Bed the Plants may remain till *Michaelmas*; at which time they should be removed into the Stove, and plunged into the Bark-bed, where they should be treated in the same manner as the Ananas.

These Plants will not produce their Fruit in *England*, until they are three or four Years old; so they should be shifted into larger Pots, as the Plants advance in their Growth; for if their Roots are too much confined, they will make but little Progress. They should also be placed at a pretty great Distance from each other; for their Leaves will be three or four Feet long; which, turning downward, occupy a large Space.

The Leaves of this Plant are strongly armed with crooked Spines, which renders it very troublesome

to shift or handle the Plants; for the Spines catch hold of whatever approaches them by their crooked Form, being some bent one Way, and others the reverse; so that they catch both Ways, and tear the Skin or Cloaths of the Persons who handle them, where there is not the greatest Care taken of them.

The Fruit of this Plant is produced in Clusters, growing upon a Stalk about three Feet high; and, having generally a Tuft of Leaves growing on the Top, has, at first Sight, the Appearance of a Pine-apple; but when closer viewed, they will be found to be a Cluster of oblong Fruit, each being about the Size of a Finger.

KEMPFERIA.

This Title was given to this Plant by Dr. *Linnaeus*, in Honour of Dr. *Kempfer*, a German Physician, who has figur'd and describ'd this Plant; in his Book intituled *Amœnitatum Exoticarum*. This Name was applied to another Plant by the late Dr. *Houssoun*, which has since been referred to the Genus of *Veronica*.

The Characters are;

The Flower consists of one Leaf, having a long slender Tube; but is spread open at the Top, and is divided into six Parts; three of the Segments standing upward, the other three hang down, so as to appear at first like a lipp'd Flower: in the Bottom of the Flower is situated the Pointal, attended by a single Stamen: the Pointal afterward changes to a roundish Fruit having three Cells, containing several roundish Seeds.

We know but one Species of this Plant; viz.

KEMPFERIA. *Lin. Hort. Cliff.* There has been no *English* Name applied to this Plant. It is by some called *Aro-orchis*; by others it has been ranged with the *Colchicum*; and

In the *Hortus Malabaricus* it is intitled *Katsjula Kelengu*; and by Dr. *Kempfer* it is called *Wanboom*.

This Plant is a Native in the *East-Indies*, where the Root is greatly used in Medicine, as a Sudorific, and it is reckoned carminative. It hath much the Scent of green Ginger, when taken out of the Ground; the Roots are divided into several fleshy Tubers, which are sometimes jointed, and grow about four or five Inches long: the Leaves are oval, being about four Inches long, and two broad: these are without Foot-stalks, growing close to the Root, and seem as if set on by Pairs, spreading open each Way: and from between these Leaves, the Flowers are produced singly, having no Foot-stalks; but are closely embraced by the Leaves: the Flowers are white, having a bright purple Bottom. These are not succeeded by any Fruit in *England*.

This Plant, being a Native of hot Countries, will not bear the open Air in this Climate; so requires a warm Stove to preserve it thro' the Winter: but as the Leaves decay in Autumn, the Plants should not have too much Wet while they are in an unactive State. If these Plants are placed in the Bark-stove, and treated in the same manner as is directed for the Ginger, they will thrive, and produce plenty of Flowers every Summer. It is propagated by parting of the Roots: the best time for this is in the Spring, just before they begin to put out their Leaves.

KETMIA. It is commonly call'd *Althæa arborescens*, or *Althæa frutex*.

The Characters are;

The Flower hath a double Empalement, and consists of one Leaf, which is cut into five Parts, and expands like that of the Mallow: in the Gen-

tre of the Flower arises the Pointal, like a Column, having a great Number of Stamina, which coalesce to the Column: the Pointal afterward changes to a roundish Vessel having five Cells, which are full of roundish Seeds.

The Species are;

1. **KETMIA** *Syrorum*, quibusdam. *C. B. Althæa frutex*, with red Flowers.

2. **KETMIA** *Syrorum*, flore purpureo-violaceo. *Tourn. Althæa frutex*, with purple Flowers.

3. **KETMIA** *Syrorum*, flore albo. *Boerb. Ind. Althæa frutex*, with white Flowers.

4. **KETMIA** *Syrorum*, floribus ex albo & rubro varitis. *Tourn. Althæa frutex*, with striped Flowers.

5. **KETMIA** *Syrorum*, foliis ex albo eleganter variegatis. *Cat. Plant. Hort. Lond. Althæa frutex*, with striped Leaves.

6. **KETMIA** *Sinenfis*, fructu subrotundo, flore simplici. *Tourn. China Rose*, vulgo.

7. **KETMIA** *Sinenfis*, fructu subrotundo, flore pleno. *Tourn. Double China Rose*, commonly call'd in the *West-Indies*, *Martinico Rose*.

8. **KETMIA** *Virginienfis*, folio inferiori ulmi, superiori aceris. *Boerb. Ind. Virginian Ketmia*, with under Leaves like the Elm, and upper Leaves like Maple.

9. **KETMIA** *Carolinienfis*, folio ribesii, flore amplo flavescente, fundo purpureo. *Carolina Ketmia*, with Curran-leaves, and an ample yellowish Flower, with a purple Bottom.

10. **KETMIA** *Carolinienfis*, folio oblongo magis acuminato, flore amplo purpureo. *Carolina Ketmia*, with a long sharp-pointed Leaf, and an ample purple Flower.

11. **KETMIA** *Americana*, folio papayæ, flore magis flavescente, fundo

do purpureo, fructu erecto pyramidali hexagono, semine rotundulo, sapore fatuo. Boerb. Ind. American Ketmia, with a Papaw-leaf, and a large yellowish Flower with a purple Bottom, an hexagonal pyramidal Pod growing upright, and roundish Seeds.

12. KETMIA Indica, vitis folio ampliore. Tourn. Indian Ketmia, with an ample Vine-leaf.

13. KETMIA Ægyptiaca, semine moschato. Tourn. Egyptian Ketmia, with Seeds smelling like Musk, commonly call'd in the West-Indies, Musk-seed.

14. KETMIA Indica aculeata, foliis digitatis. Tourn. Indian Ketmia, with rough-finger'd Leaves.

15. KETMIA Indica, gossypii folio, acetosæ sapore. Tourn. Capsula seminali rubra. Indian Ketmia, with a Cotton-leaf, whose Fruit tastes like Sorrel, commonly call'd in the West-Indies, Indian or Red Sorrel.

16. KETMIA Indica, gossypii folio, acetosæ sapore, capsula seminali albidâ. Indian Ketmia, with a Cotton-leaf, and a whitish Seed-veffel, tasting like Sorrel, commonly call'd White Sorrel.

17. KETMIA Brasiliensis, folio ficus, fructu pyramidato sulcato. Tourn. Brasil Ketmia, with a Fig-leaf, and a pyramidal furrowed Fruit, commonly called in the West-Indies, Okra.

18. KETMIA Indica, folio ficus, fructu pentagono recurvo esculento, graciliore & longiore. Indian Ketmia, with a Fig-leaf, and a five-corner'd long slender eatable Fruit, recurv'd at the Top, commonly call'd in the West-Indies, Long Okra.

19. KETMIA Indica, folio hastato, fructu duro. Tourn. Indian Ketmia, with a spear-shaped Leaf, and an hard Fruit.

20. KETMIA Ægyptiaca, vitis fo-

lio, parvo flore. Tourn. Egyptian Ketmia, with a Vine-leaf, and a small Flower.

21. KETMIA Americana aculeata, flore amplissimo coccineo. Plum. Cat. Prickly American Ketmia, with a very large scarlet Flower.

22. KETMIA Americana, amplissimo folio cordiformi, flore vario. Plum. Cat. American Ketmia, with a very large heart-shaped Leaf, and a variable Flower.

23. KETMIA Americana frutescens, mori folio, flore purpureo. Plum. Cat. American shrubby Ketmia, with a Mulberry-leaf, and a purple Flower.

24. KETMIA Americana, amplissimo folio angulato, fructu hispido clypeato. Plum. Cat. American Ketmia, with a large angular Leaf, and a rough Fruit shaped like a Shield.

25. KETMIA Indica, tilie folio. Plum. Cat. Indian Ketmia, with a Lime-tree-leaf, commonly called the Man-grove-tree in America.

26. KETMIA Indica humilis, folio dissecto aspero, flore parvo candido, instar jasmini Hispanici explicato, fundo purpurascente. Breyn. Low Indian Ketmia, with a rough cut Leaf, and a small white Flower, which, when open, is like the Flower of Spanish Jasmine, having a purple Bottom.

27. KETMIA Indica humilis, folio dissecto, flore parvo purpureo. Low Indian Ketmia, with a cut Leaf, and a small purple Flower.

28. KETMIA vesicaria vulgaris. Tourn. Venice Mallow, or Eladder Ketmia.

29. KETMIA vesicaria Africana. Tourn. African Bladder Ketmia.

30. KETMIA Africana vesicaria, foliis profundius incisîs, vix crenatis. Boerb. Ind. African Bladder Ketmia, with deeply cut Leaves.

The five first Sorts are very hardy Shrubs,

Shrubs, growing to the Height of seven or eight Feet, and may be trained up to regular Heads: these are very great Ornaments in small Wildernels-quarters, when regularly disposed amongst Plants of the same Growth. They produce their Flowers in *August*; and if the Autumn proves favourable, their Seeds will be ripe soon after *Michaelmas*. These are commonly sold by the Nursery-men, with other flowering Shrubs, under the Name of *Althæa frutex*; but by the modern Botanists they are removed from that Genus, and called by the Name of *Ketmia*, because their Seeds are produced in Vessels; whereas those of *Althæa* grow in form of Cheeses, in the same manner as those of the common Mallow: but Dr. *Linnaeus* has rejected this Name, being *Arabic*, and has given it the Title of *Hibiscus*, which is the old Name for the Marsh-mallow; as hath been observed before under that Article.

These five are not distinct Species, but accidental Varieties; but the Flowers of them being of different Colours, when they are intermixed, they make a finer Appearance in the Garden: sometimes the several Varieties are by the Nursery-men grafted on the same Plant, which renders them more beautiful when so many different-colour'd Flowers are blown upon the same Plant together.

These Plants are propagated by Seeds, which should be sown upon a Bed of rich light Earth in *February* or *March*: and when they come up, they should be constantly clear'd from Weeds; and, in dry Weather, often refresh'd with Water, which will forward their Growth. In these Beds they should remain until the succeeding Spring: but if the Winter should be severe, it will be proper to cover these Plants, because,

while young, they are somewhat tender; but after they have got Strength, they are very hardy: in the following *March* they must be carefully transplanted into Beds of the like Soil, at about ten Inches square each Way, observing to water them in dry Weather, as also to keep them clear from Weeds: in these Beds they may continue two Years, by which time they will spread so as to meet each other: therefore you must, in *March*, remove them either into the Places where they are design'd to remain, or into a Nursery, allowing them three Feet Distance, Row from Row, and eighteen Inches asunder in the Rows; being careful, in taking them up, not to break or bruise their Roots, which would endanger their growing; and, in dry Weather, give them some Water, until they have taken Root; and lay some Mulch upon the Surface of the Ground, to prevent its drying too fast; and be careful to cut down the Weeds between them.

As these Plants send out fleshy Roots, having but few Fibres, they do not bear transplanting well, when they are old, or have stood long unremoved; so that it is much the best to plant those which are about four or five Years old from Seed, than such as are much larger; for if the young Plants are carefully removed, scarce any of them will miscarry; whereas the larger Plants frequently fail, and such of them as grow will never be so good Plants as those which are removed young.

The Leaves of these Plants are seldom produced till very late in the Spring: it is often the Middle of *May* before their Buds shew any Signs of Life; so that many Persons have supposed their new-planted Shrubs were dead, and have pulled them out of the Ground: whereas,

if they had but observed the unre-moved Plants, they would have been undeceived.

These Plants may also be propagated by Layers, or Suckers taken from the Roots of old Trees: but the latter Method is by no means advisable; because the Plants raised that way are seldom so well rooted, and are very subject to produce Suckers, whereby the Shrubs are rendered unsightly.

The former Method may be practised, in order to preserve the particular Kinds: but as they are so easily propagated by Seeds, which generally produce the handsomest Plants, and there will be a Chance to obtain different-colour'd Flowers that way; so it is generally preferred to any other Method. They will also take by Inarching, whereby the several colour'd Flowers may be obtained upon one and the same Tree; and by this Method, that Sort with variegated Leaves may be increased. These Shrubs require very little Culture, but only to clear them from Weeds, and to dig the Ground about them every Spring; and if there are any decay'd Branches, they may be at that time cut out; but they will not require any other Pruning.

The sixth and seventh Sorts are tender, coming from a warmer Country: these may be propagated by Seeds, which should be sown on an Hot-bed in the Spring; and when they are come up, they should be transplanted into another moderate Hot-bed, to bring them forward: after which, they must be planted into Pots filled with fresh light Earth, and plunged into an Hot-bed, to encourage their Rooting; and in June they may be exposed to the open Air, in some Place where they may be defended from strong Winds: but they must be housed

early in Autumn, when they should be placed in a warm Green-house, where they will endure the Winter very well, without any artificial Warmth: tho' indeed they will make but very little Progress in this Management; nor will they ever produce Flowers, unless they are in the succeeding Spring placed into a moderate Bark-bed in the Stove, where they will thrive exceedingly; and if a due Proportion of Air be given to them, that they may not draw up too fast, they will produce Flowers in the Autumn: but unless they have the Assistance of a Fire, they will scarcely ripen their Seeds in *England*.

These Plants were originally brought from *China*, where they are greatly admired, not only for their Beauty, but also for an odd Circumstance in their Flowers, which is, their changing Colour at different times of the same Day; in the Morning they are white, at Noon red, and in the Evening purple. These Flowers are in Shape somewhat like the Hollyhock, but seem to be of a short Duration: the double being much preferable to the single, the Seeds of that should be constantly sow'd; for amongst the Plants produced from Seeds of the double, there will always be some single Flowers, as is the Case of all double Flowers which produce Seeds. They are known in the *West-Indies*, where they are now in great Plenty, by the Name of *Martinico Rose*; I suppose, because the Inhabitants of that Island first procured the Seeds from the East, and from thence they have since been spread into most of the other Islands.

The eighth, ninth, and tenth Sorts are perennial Plants, which die to the Surface every Winter, and rise again

again the succeeding Spring: they commonly produce their beautiful Flowers late in Autumn, but rarely perfect Seeds in our Climate. They are propagated by Seeds, which are easily propagated from *Virginia* or *Carolina*, where they are in great Plenty. The Seeds should be sown in *March*, upon a moderate Hot-bed; and when the Plants come up, they should be removed into small Pots filled with light rich Earth, and plunged into another Hot-bed, to bring them forward: and in the Month of *June* they may be exposed to the open Air, in a well-sheltered Situation, where they may remain until *October*, when they must be removed into Shelter for the Winter-season: during which time they will require no farther Care than to be protected from severe Frosts; so that if they are placed into an Hot-bed-frame, where they may be exposed to the open Air in mild Weather, and only covered in Frosts, they will do better than when they are placed in the Green-house.

In the Spring they may be turned out of the Pots, and planted into the full Ground, under a warm Wall or Pale, where they will thrive much better than in Pots, and will produce their Flowers much larger, and in greater Quantities: tho', if you would obtain Seeds from them, the only Method is, to keep one of each Sort in Pots, which should be plunged into a very moderate Bark-bed in the Stove, giving them a great Share of Air; in which Place they will flower in *June*, and produce ripe Seeds in Autumn.

The eleventh, twelfth, thirteenth, fourteenth, fifteenth, sixteenth, seventeenth, eighteenth, nineteenth, twentieth, twenty-first, twenty-second, twenty-third, twenty-fourth,

and twenty-fifth Sorts are much tenderer than any of the former: these are all propagated by Seeds, which must be sown on an Hot-bed early in the Spring; and when the Plants are come up, they should be treated in the same way, as hath been directed for the sixth and seventh Sorts; with this Difference only, that these will require a moderate Stove; otherwise they will not live thro' the Winter, nor will they thrive well in Summer, if they are exposed to the open Air.

The eleventh, twelfth, thirteenth, fourteenth, fifteenth, sixteenth, seventeenth, eighteenth, twentieth, twenty-sixth, and twenty-seventh Sorts will produce their Flowers, and ripen their Seeds the first Year, if the Plants are raised early in the Spring, and afterward placed in the Stove.

These Plants, tho' they may produce Seeds the first Year, yet they may be continued two or three Years, if preserved in a moderate Stove in Winter, and frequently refreshed with Water: yet since they are easily raised from Seeds, and young Plants are much more sightly than the old ones, it is hardly worth while to fill a Stove with them, since there are so many other Sorts that will not flower or seed the first Year, which will take up all the room there in Winter.

The Flowers of these Plants are very beautiful; but are of short Duration, seldom continuing longer than one Day; but they are succeeded by fresh Flowers, if the Plants are strong and healthy, otherwise there is little Pleasure in them in our Country: but in the *West-Indies*, where they grow in great Plenty, and often arise to the Height of a Shrub, they are more productive of

Flowers, and are in great Esteem amongst the Inhabitants of those Countries.

The thirteenth Sort is by some People valued for the exceeding Sweetness of its Seeds; as are the fifteenth and sixteenth Sorts for their Seed vessels, the Juice of which the People of *Barbados*, *Jamaica*, &c. make use of, to add a pleasant Tartness to their Viands. And the Pods of the seventeenth and eighteenth Sorts are by them put into their Soups, to thicken them. For all which Purposes these Plants are much cultivated in those Countries; but with us they are preserved only as Curiosities.

The nineteenth, twenty-first, twenty-second, twenty-third, twenty-fourth, and twenty-fifth Sorts rise to a considerable Height, before they produce their Flowers, and are perennial Shrubs: these are all very tender; so should be placed in the Bark stove, where they will make a fine Appearance, as they retain their Leaves all the Year; and when they produce their Flowers, which in some of the Species are very large, and fine Colours, they will appear very beautiful, but particularly the twenty-fourth and twenty-fifth Sorts, which have large Leaves; and the Flowers of the last are of a fine yellow Colour, with a very dark-purple Bottom.

The three last Sorts are annual Plants, which are propagated by sowing their Seeds in *March*, in the Places where they are designed to remain; for they generally form downright woody Roots, and seldom succeed well if transplanted, except it be done while the Plants are very young: they delight in a fresh light Soil, and an open Situation; for if they are overshadowed with Trees,

they never thrive well, nor produce so great a Number of Flowers.

They are very proper Ornaments for the Borders of Pleasure-gardens, where, being intermixed with other annual Plants, they make an agreeable Variety, and are very hardy, requiring no other Culture than only to sow their Seeds, and keep them constantly clear from Weeds. They produce their Flowers in *June* and *July*, and their Seeds are perfected soon after: and tho' their Flowers are of short Duration, seldom continuing open above half a Day, which occasion'd *Gerrard*, in his Herbal, to call them Flowers of an Hour; yet they are every Day succeeded by new Flowers, until the Frost prevents them.

KITCHEN - GARDEN: The Kitchen-garden should always be situated on one Side of the House, so as not to appear in Sight; but must be placed near the Stables, for the Conveniency of Dung; which ought always to be considered in the Disposition of the Buildings, and the laying out of the Garden: for if this Garden be placed at a great Distance from the Stables, the Labour will be very great in wheeling the Dung; and such Expences should ever be avoided, if possible.

As to the Figure of the Ground, that is of no great Moment, since in the Distribution of the Quarters all Irregularities may be hid; tho', if you are at full Liberty, an exact Square, or an Oblong, is preferable to any other Figure.

The great thing to be considered is, to make choice of a good Soil, not too wet, nor over-dry, but of a middling Quality; nor should it be too strong or stubborn, but of a pliable Nature, and easy to work; and if the Place where you intend

to make the Kitchen-garden should not be level, but high in one Part, and low in another, I would by no means advise the leveling it; for by this Situation you will have an Advantage which could not be obtained on a perfect Level, which is, the having one Part of dry Ground for early Crops, and the low Part for late Corps, whereby the Kitchen may be the better supplied throughout the Season with the various Sorts of Herbs, Roots, &c. And in very dry Seasons, when in the Upper-part of the Garden the Crops will greatly suffer with Drought, then the Lower-part will succeed, and so *vice versa*; but I would by no means direct the choosing a very low moist Spot of Ground for this Purpose; for altho' in such Soils Garden-herbs are commonly more vigorous and large in the Summer-season, yet they are seldom so well tasted or wholesome as those which grow upon a moderate Soil; and especially since in this Garden your choice Fruits should be planted, it would be wrong to have a very wet Soil.

This Garden should be fully exposed to the Sun, and by no means overshadow'd with Trees, Buildings, &c. which are very injurious to your Kitchen-plants and Fruit-trees; but if it be defended from the North Wind by a distant Plantation, it will greatly preserve your early Crops in the Spring; as also from the strong South-west Winds, which are very hurtful in Autumn to Fruit and Garden-herbs.

The Quantity of Ground necessary for a Kitchen-garden must be proportion'd to the Largeness of the Family, or the Quantity of Herbs desired: for a small Family, one Acre of Ground may be sufficient; but for a large Family, there should not be less than three or four Acres;

because, when the Ground is regularly laid out, and planted with Espaliers of Fruit-trees, as will hereafter be directed, this Quantity will be found little enough, notwithstanding what some Persons have said on this Head.

This Ground must be wall'd round; and if it can be conveniently contriv'd, so as to plant both Sides of the Walls, which have good Aspects, it will be a great Addition to the Quantity of Wall-fruit: and those Slips of Ground, which are without-side of the Walls, will be very useful for planting of Gooseberries, Currans, Strawberries, and some Sorts of Kitchen-plants; so that they may be rendered equally useful with any of the Quarters within the Walls: but these Slips should not be too narrow, lest the Hedge or Pale which incloses them should shade the Borders where the Fruit-trees stand: the least Width of these Slips should be twenty Feet; but if they are double that, it will be yet better, and the Slips will be more useful; and the Fruit-trees will have a larger Scope of good Ground, for their Roots to run. These Walls should be built about twelve Feet high, which will be a sufficient Height for any Sort of Fruit. If the Soil where you intend to place your Kitchen-garden be very strong, then you should plow or dig it three or four times before you plant any thing therein; and if you throw it up in Ridges, to receive the Frost in Winter, it will be of great Service to meliorate and loosen its Parts.

The Manure which is most proper for such Soils, is Sea-coal Ashes, and the Cleansing of Streets or Ditches, which will render it light much sooner than any other Dung or Manure; and the greater the Quantity of

Ashes, the better, especially if the Ground be cold; and where these Ashes are not to be obtained in plenty, Sea sand is very proper, or rotten Wood; or the Parts of Vegetables rotted are very good, all which will greatly loosen the Soil, and cause it to be not only easier to work, but also more advantageous for the Growth of Plants.

But, on the contrary, if your Soil be light and warm, you should manure it with rotten Neats-dung, which is much preferable to any other, for hot Soils; but if you use Horse-dung, it must be well rotted, otherwise it will burn up the Crops, upon the first hot dry Weather.

The Soil of this Garden should be at least two Feet deep; but if deeper, it will be still better, otherwise there will not be Depth enough for many Sorts of esculent Roots, as Carrots, Parsneps, Beets, &c. which run down pretty deep in the Ground; and most other Sorts of esculent Plants delight in a deep Soil: and many Plants, whose Roots appear short, yet if their Fibres, by which they receive their Nourishment, are traced, they will be found to extend to a considerable Depth in the Ground; so that when these are stopped by meeting with Gravel, Chalk, Clay, &c. the Plants will soon shew it, by their Colour, and stunted Growth.

You should also endeavour to have a Supply of Water in the different Parts of the Garden, which, if possible, should be contained in large Basins or Reservoirs, where it may be exposed to the open Air and Sun, that it may be softened thereby; for such Water as is taken out of Wells, &c. just as it is used, is by no means proper for any Sort of Plants.

In the Distribution of this Garden, after having built the Walls,

you should lay out Banks or Borders under them, which should be at least eight or ten Feet broad, whereby the Roots of the Fruit-trees will have greater Liberty than in such Places where the Borders are not above three or four Feet wide; and upon these Banks you may sow many Sorts of early Crops, if exposed to the South; and upon those exposed to the North, you may have some late Crops: but I would by no means advise the planting any Sort of deep rooting Plants too near the Fruit-trees; especially Peas and Beans; tho', for the Advantage of the Walls, to preserve them in Winter, and to bring them forward in the Spring, the Gardeners in general are too apt to make use of those Borders, which are by the best aspected Walls, to the great Prejudice of their Fruit-trees; but for these Purposes it is much better to have some Reed-hedges fixed in some of the warmest Quarters, under which you should sow and plant early Peas, Beans, &c. where they will thrive as well as if planted under a Wall; and hereby your Fruit-trees will be intirely freed from such troublesome Plants.

Then you should proceed to dividing the Ground out into Quarters, which must be proportion'd to the Largeness of the Garden; but I would advise, never to make them too small, whereby your Ground will be lost in Walks; and the Quarters being inclosed by Espaliers of Fruit-trees, the Plants therein will draw up slender, and never arrive to half the Size as they would do in a more open Exposure.

The Walks of this Garden should be also proportion'd to the Size of the Ground, which in a small Garden should be six Feet, but in a large one ten; and on each Side of

The Walk should be allow'd a Border three or four Feet wide between the Espalier and the Walk, whereby the Distance between the Espaliers will be greater, and the Borders being kept constantly work'd and manur'd, will be of great Advantage to the Roots of the Trees; and in these Borders may be sown some small Sallad, or any other Herbs, which do not continue long, or root deep; so that the Ground will not be lost.

The Breadth of these middle Walks, which I have here assigned them, may by many Persons be thought too great; but my Reason for this is to allow proper room between the Espaliers, that they may not shade each other, or their Roots interfere, and rob each other of their Nourishment: but where the Walks are not required of this Breadth, it is only enlarging of the Borders on each Side, and so reducing the Walks to the Breadth desired.

But the Walks of these Gardens should not be gravell'd; for as there will constantly be Occasion to wheel Manure, Water, &c. upon them, they would soon be defac'd, and render'd unsightly; nor should they be laid with Turf; for in green Walks, when they are wheeled upon, or much trodden, the Turf is soon destroyed; and those Places, where they are much used, become very unsightly also: therefore the best Walks for a Kitchen-garden are those which are laid with a binding Sand; but where the Soil is strong, and apt to detain the Wet, there should be some narrow under-ground Drains made by the Side of the Walks, to convey off the Wet; otherwise there will be no using of the Walks in bad Weather: and where the Ground is wet, if some Lime-rubbish, Flints, Chalk, or any

such Material as can be procur'd with the least Expence, is laid at the Bottom of these Walks, and the Coat of Sand laid over it, the Sand will be kept drier, and the Walks will be found in all Seasons: these Sand-walks are by much the easiest kept of any; for when either Weeds or Moss begin to grow, it is but scuffling them over with a *Dutch Hoe* in dry Weather, and raking them over a Day or two after, and they will be as clean as when first laid.

The best Figure for the Quarters to be disposed into, is a Square, or an Oblong, where the Ground is adapted to such a Figure; otherwise they may be triangular, or of any other Shape, which will be most advantageous to the Ground.

When the Garden is laid out in the Shape intended, if the Soil is strong, and subject to detain the Moisture, or is naturally wet, there should always be under-ground Drains made, to convey off the Wet from every Quarter of the Garden; for otherwise most Sorts of Kitchen-plants will suffer greatly by Moisture in Winter: and if the Roots of the Fruit-trees get into the Wet, they will never produce good Fruit; so that there cannot be too much care taken to let off all superfluous Moisture from the Kitchen-garden.

These Quarters should be constantly kept clear from Weeds; and when any Part of the Ground is unoccupied, it should always be trenched up into Ridges, that it may sweeten, and imbibe the nitrous Particles of the Air, which is of great Advantage to all Sorts of Land; and the Ground will then be ready to lay down, whenever it is wanted.

The Ground in these Quarters should not be sown or planted with
the

the same Crops two Years together: but the Crops should be annually changed, whereby they will prove much better than when they constantly grow upon the same Spot. Indeed the Kitchen-gardeners near *London*, where Land is dear, are often obliged to put the same Crop upon the Ground for two or three Years together; but then they dig and manure their Land so well every Year, as to render it almost new: tho', notwithstanding all this, it is constantly observed, that fresh Land always produces the best Crops.

If one of these Quarters, which is situated nearest to the Stables, and best defended from the cold Winds; or if either of the Slips without the Garden-wall, which is well exposed to the Sun; lies convenient, and is of a proper Width; that should be prefer'd, for a Place to make Hot-beds for early Cucumbers, Melons, &c. The Reasons for my giving the Preference to one of these Slips, is, first, there will be no Dirt or Litter carried over the Walks of the Kitchen-garden in Winter and Spring, when the Weather is generally wet; so that the Walks will be rendered unsightly: secondly, the View of the Hot-beds will be excluded from Sight; and lastly, the Convenience of carrying the Dung into these Slips; for by making of a Gate in the Hedge or Pale, wide enough for a small Cart to enter, it may be done with much less Trouble than that of barrowing it thro' the Garden: and where there can be a Slip long enough to contain a sufficient Number of Beds for two or three Years, it will be of great Use, because by the Shifting of the Beds annually they will succeed much better than when they are continued for a Number of Years on the same Spot of Ground. As it will be absolutely

necessary to fence this Melon-ground with a Reed-hedge, it may be so contrived as to move away in Panels; and then that Hedge which was on the Upper-side the first Year, being carried down to a proper Distance below that which was the lower Hedge, and which may remain, there will be no occasion to remove more than one of the cross Hedges in a Year; therefore I am persuaded, whoever will make Trial of this Method, will find it the most eligible

The most important Points of general Culture consist in well digging and manuring the Soil, and giving a proper Distance to each Plant, according to their different Growths (which is constantly exhibited in their several Articles in this Book), as also in keeping them clear from Weeds; for if Weeds are permitted to grow until their Seeds are ripe, they will shed upon the Ground, and fill it so as not to be gotten out again in several Years. You should also observe to keep your Dunghills always clear from Weeds; for it will be to little Purpose to keep the Garden clean, if this is not observed; for the Seeds, falling among the Dung, will be brought into the Garden, whereby there will be a constant Supply of Weeds yearly introduced, to the no small Damage of your Plants, and a perpetual Labour occasioned to extirpate them again. As for all other necessary Directions, they will be found in the Articles of the several Sorts of *Kitchen-garden Plants*; which renders it needless to be repeated in this Place.

KIGGELARIA.

This Name is applied to this Genus by Dr. *Linnaeus*, in Honour to the Memory of *Francis Kiggelav*, who was the Superintendent of the
curious

curious Garden of Plants belonging to Mr. Beaumont in Holland.

The Characters are;

It is Male and Female in distinct Plants: the Empalement of each Sex consists of one Leaf, which is cut into five concave Segments: the Flowers of each Sex are composed of five Leaves, and are shaped like a Pitcher: the Male Flowers have in their Centre an obtuse Gland, having three Lobes, the middle one being large, depressed, and coloured: this is fixed to the Bottom of the Petals, and is attended by ten small Stamina: the Female Flowers have a roundish Pointal, supporting five Styles in their Centre, which afterward changes to a rough spherical Fruit, opening in five Parts, and having one Cell, which is filled with angular Seeds.

The Species are;

1. KIGGELARIA *mas.* Lin. Hort. Cliff. Male Kiggelaria.

2. KIGGELARIA *fœmina.* Lin. Hort. Cliff. Female Kiggelaria.

These two Varieties are produced from the same Seeds; so must not be deemed as distinct Species: but it is the Male Sort which is the most common in the English Gardens, the other being very rare at present.

This Plant has been many Years preserved in some of the curious Gardens of Plants; and has been known by the Title of *Euonymo affinis Æthiopica sempervirens, fructu globosa scabro, foliis salicis rigidis serratis*, or ever-green bastard Spindle-tree of Ethiopia, with a rough globular Fruit, and stiff Willow-leaves sawed on their Edges: but we have no proper English Name for it.

This grows to be a Tree, with a strait woody Stem, ten or twelve Feet high, having a regular Head: the Branches are garnished with oblong stiff Leaves, which are shaped somewhat like those of the long-

leav'd Mountain-willow, which are sawed on their Edges: and tho' it is called an Ever-green, yet in the Spring of the Year these Leaves fall off a little before the new Leaves put out; so that for a Month or more the Trees are destitute of Leaves, or at least have very few remaining on them. The Flowers, which are of a yellowish Green, are produced in July, and the Fruit is formed soon after; but the Seeds are not perfected in England.

This Tree came originally from Ethiopia; so is too tender to live thro' the Winter in this Country in the open Air; but it only requires to be protected from hard Frosts; so that the same Green-house, where Myrtles and other hardy Plants are kept in Winter, will preserve this Plant; and it may be removed into the open Air, at the same time when they are, and treated in the same manner.

It may be propagated by laying down of the tender Shoots; but these are commonly two Years before they are rooted enough to be taken from the old Plants. I have also raised a few of the Plants from Cuttings, which were planted in the Autumn; but these were upward of a Year before they were rooted, and there were but few which succeeded with me, tho' I have planted many of these Cuttings at different Seasons.

KLEINIA.

The Title of this Genus of Plants was given to it by Dr. Linnæus in Honour to the Noble J. Tb. Klein of Dantzick, who was a great Cultivator of rare Plants.

The Characters are;

It hath a compound Flower composed of several hermaphrodite Flowers, which are inclosed in one common cylindrical Empalement, which is squamose:

Squamoſe: the Flowers are tubulous, and are extended a little above the Empalement, where they are cut into five Segments: in the Centre of each is ſituated the Pointal, attended by five Stamina: the Pointal afterward changes to an oblong Seed crown'd with long Down.

The Species are;

1. *KLEINIA foliis lanceolatis planis, caule lævi ventriculoſo. Lin. Hort. Cliff.* Kleinia with plain ſpear-shaped Leaves, and a ſmooth ſwelling Stalk.

2. *KLEINIA foliis carnoſis planis ovato-oblongis. Lijn. Hort. Cliff.* Kleinia with oblong oval plain fleſhy Leaves, commonly called *Anteuphorbium*.

3. *KLEINIA foliis carnoſis lanceolatis compreſſis, caule tereti. Lin. Hort. Cliff.* Kleinia with fleſhy ſpear-shaped Leaves, which are compreſſed, and a taper Stalk, commonly called *African Groundſel-tree*, with a *Ficoides*-leaf.

4. *KLEINIA caule petiolis truncatis obvallato. Lin. Hort. Cliff.* Kleinia with a Stem full of Protuberances.

The firſt Sort has been long preſerved in many curious Gardens in different Parts of *Europe*: it is a Native of the *Canary* Iſlands, and was firſt deſcribed under the Title of *Arbor lavenderæ folio*, i. e. a Tree with a Lavender-leaf. It was afterwards titled by ſome a *Linaria*, and by others a *Critbnum*; but Dr. *Dillenius*, who brought theſe Plants together under one Genus, gave it the Title of *Cacaliantbemum*, from a Similitude between the Flowers of theſe Plants, and thoſe of the *Cacalia*; ſo that in different Countries theſe firſt Species has paſſed under different Appellations; and by ſome of the *Engliſh* Gardeners has been called the *Cabbage-tree*; which Name,

I ſuppoſe, was given it, from a Reſemblance, which they imagined, between the Stem of this Plant, and that of the *Cabbage*: by others I have heard it called the *Carnation-tree*, but for what Reason I never could learn; ſo that I do not know any proper *Engliſh* Name for this Plant.

This Sort will grow to the Height of ten or twelve Feet in *England*; but I ſuppoſe, in its native Country, it is of much greater Growth. The Stems are rather fleſhy than woody, and grow deformed, having crooked Knees, at the End of each Year's Growth; and each of theſe Joints, or Shoots, ſwell with a Belly in the Middle. Theſe Shoots or Branches are naked all their Length, except toward their Top, where they are garniſhed with long narrow pale-green Leaves, which are produced without any Order, on every Side of the Branches: and from between the Cluster of Leaves at the Extremity of the Shoots, the Flowers are produced in large Cluſters, which are of a pale or yellowiſh-green Colour. Theſe generally appear in the Autumn, at which Season theſe Plants put out new Leaves, and are in their greateſt Vigour.

The ſecond Sort has alſo been long preſerved in Gardens, by the Title of *Anteuphorbium*; under which Name it hath been figured and deſcribed by ſeveral antient Authors, from a ſuppoſed Virtue in this Plant, of abating the cauſtic Quality of *Euphorbium*: but as this Plant had not produced any Flowers in *Europe*, till of late, that one of theſe Plants flowered in the Garden of his Grace the Duke of *Beaufort*, at *Badmington*; ſo the Botanifts were at a loſs to know under what Genus to range it: but by the Flowers there produced, it appeared to agree with thoſe

those of this Genus, where it is now placed.

This Plant sends out a great Number of fleshy Branches, which are about the Thickness of a Finger, and grow very luxuriant and irregular; so that there is no training of it up to one Stem. These Branches are naked below, but toward their Upper-part are garnish'd with Leaves which come out alternately on every Side of the Branches. These are oval and fleshy, smooth on their Edges, where they are waved; as the Shoots extend in Length, so the lower Leaves decay, and drop off: the whole Plant, if encouraged, will grow very luxuriant and rude; therefore the Roots should be confined in the Pots, and the Soil in which they are planted should be lean and dry.

The third Sort was first introduced into the *English* Gardens as one Species of *Ficoides*; but after it had produced Flowers, it was by several Botanists ranged in the Genus of *Senecio*, or Groundsel; and has since pass'd in common amongst the Gardeners, by the Name of *African* Groundsel-tree, with a *Ficoides*-leaf: but, upon a nicer Examination of the Flower, it is found to agree with those Characters ascribed to this Genus.

This Sort has many round taper Stems, which are very succulent, and are produced without Order: these branch out on every Side from the Bottom; so that it is absolutely necessary to cut off many of these annually, to keep the Plants within Compass. These Branches are garnished with fleshy taper Leaves, which are five or six Inches long, somewhat compressed, and ending in a Point. These Leaves are covered with a glaucous Flue, which wipes off; and when the Leaves are broken, the thick Juice contained

within has a strong terebinthinous Scent: at the Extremity of the Shoots, the Flowers are produced in Clusters, which are white.

The Leaves of this Plant are, by some of the Nobility in *France*, pickled: in the doing of which they preserve their glaucous Colour, which renders them ornamental on the Table. This Sort commonly flowers in the Autumn and Winter.

The fourth Sort is at present rare in *England*: this approaches nearer in Form to the first, than any of the other Species; but the Stem of this is all over full of *Papilla*, or Protuberances: the Leaves are also much narrower than those of the first; but, in other respects, there is great Similitude between them. The Leaves of this Sort generally decay, and fall off, in the Spring; so that, during the Summer-season, the Plants are quite naked: but in the Autumn the new Leaves are put out, which flourish all the Winter, when the Plants make their annual Shoots.

All these Plants are easily propagated by Cuttings; but the best Season for planting of the Cuttings of the first and fourth Sorts is toward the End of *July*, or the Beginning of *August*, which is a little before these Plants begin to shoot: but as these Cuttings are very succulent, they should be taken off a Fortnight or three Weeks before they are planted, during which time they should be laid in the Green-house, that the Part where they were cut may dry, and heal over, otherwise they are apt to rot: in the taking off these Cuttings, it should always be at a Joint; for these will more surely succeed, than those which are cut at random.

When these are planted, they should be each put into a separate
small

small Pot filled with light sandy Earth, and placed in the Shade for a Fortnight or three Weeks, giving them a little Water two or three times a Week; after this if the Pots are plunged into a very moderate Hot bed, it will promote their taking Root.

The Cuttings of the other two Sorts may be planted during any of the Summer-months, observing to cut them off some time before they are planted; but these may be planted in an open Bed of common Earth, where they will take Root, and may afterward be taken up and potted: but if the Cuttings of the second Sort are permitted to remain long in the full Ground, the Plants will grow so very luxuriant, as to render them not only unsightly, but also difficult to remove.

These Plants must be housed in Winter, otherwise they cannot be preserved in *England*: if they are placed in an airy Glass-case, with Ficoides, Sedums, and other succulent Plants, where they may be secured from Frost, and have as much free Air as possible in mild Weather, they will thrive better than in a common Green-house, which is often too damp for these Plants, especially the first and fourth Sorts, which are soon injured by the Damps, their Leaves growing mouldy, and this often affects their Stems: but the other two Sorts will thrive in any good Green-house. These must be exposed abroad in the Summer, in a sheltered Situation.

KNAUTIA.

This Name was applied to this Plant by Dr. *Linnaeus*, in Honour to the Memory of Dr. *Christian Knaut*, who published a Method of classing Plants.

The Characters are;

It hath several floscular Flowers inclosed in one common cylindrical Em-palement: these several Floscules have their Petals ranged so as to appear a regular Flower; but each separate Floscule is irregular, consisting of one Leaf, which is tubulous, but spread open at the Top, where it is cut into four Segments, the outer one being the largest: in the Bottom of each Floret is situated the Pointal, attended by four long Stamina; the Pointal afterward changes to a single oblong naked Seed.

There is but one Species of this Plant at present known; viz.

KNAUTIA. Lin. Hort. Cliff This Plant is very near akin to the Scabious, under which Genus it has been ranged by several Botanists; but the Appearance of the Flower at first Sight being like a *Lychnis*, Dr. *Boerhaave* separated it from the Scabious, and gave it the Title of *Lychni-scabiosa*, which being a compound Name, Dr. *Linnaeus* has altered it to this of *Knautia*.

This is an annual Plant: the Seeds of it were brought from the *Archipelago*, where it is a Native; but when it is allowed to scatter its Seeds in a Garden, it will propagate itself in as great Plenty as if it were a Native of *England*: and these autumnal Plants, which arise from the scattered Seeds, will grow much stronger than those which are sown in the Spring. All the Culture this Plant requires is, to keep it clear from Weeds; for it will thrive on almost any Soil, or in any Situation.

KNIGHTS-CROSS, or SCARLET CROSS, is the Scarlet *Lychnis*. *Vide Lychnis*.



L A

L ABLAB. *Vide Phaseolus.*
 LABRUM VENERIS. *Vide*
Dipsacus.

LABRUSCA. *Vide Vitis.*

LABURNUM. *Vide Cytisus.*

LACRYMA JOBI, Job's Tears.
Vide Coix.

LACTUCA, Lettuce.

The Characters are;

It hath a fibrose Root, which is, for the most part, annual: the Leaves are smooth, and grow alternately upon the Branches: the Stalks are, for the most part, slender and stiff, and commonly terminate into a sort of Umbel: the Cup of the Flower is oblong, slender, and scaly: the Seeds are oblong, depress'd, and generally terminate in a Point.

It would be beside my Purpose to mention in this Place the several Sorts of Lettuce that are to be found in Botanic Writers, many of which are Plants of no Use, and are never cultivated but in Botanic Gardens for Variety; and some of them are found wild in many Parts of England. I shall therefore pass over those here, and only mention the several Sorts which are cultivated in the Kitchen-garden for Use: 1. Common or Garden-lettuce. 2. Cabbage-lettuce. 3. Cilicia Lettuce. 4. Dutch Brown Lettuce. 5. Aleppo Lettuce. 6. Imperial Lettuce. 7. Green Capuchin Lettuce. 8. Versailles or Upright White Cos Lettuce. 9. Black Cos. 10. White Cos. 11. Red Capuchin Lettuce. 12. Roman Lettuce. 13. Prince-lettuce. 14. Royal Lettuce. 15. Egyptian Cos Lettuce.

The first of these Sorts is commonly sown very young, for cutting, to mix with other small Salad-herbs, and is only different from the second Sort, in being a Degeneracy therefrom; or otherwise the second is an Improvent by frequent Cultivation from the first: for if the Seeds are saved from such Plants of the second Sort as did not cabbage closely, the Plants produced from that Seed will all degenerate to the first Sort; which is by the Gardeners called Laped-lettuce, to distinguish it from the other, which they call Cabbage-lettuce. The Seeds of the first, which are commonly saved from any of the Plants, without having regard to their Goodness, are generally sold at a very cheap Rate (especially in dry Seasons, when these Plants always produce the greatest Quantity of Seeds); though sometimes this Seed is sold in the Seed shops, and by Persons who make a Trade of selling Seeds, for the Cabbage-lettuce; which is often the Occasion of Peoples being disappointed in their Crop: so that this Sort should never be cultivated but to be cut up very young; for which Purpose this is the only good Sort, and may be sown any time of the Year; observing only in hot Weather to sow it on shady Borders; and in the Spring and Autumn upon warm Borders; but in Winter it should be sown under Glasses, otherwise it is subject to be destroy'd by severe Frosts.

The Cabbage-lettuce may also be sown at different times of the Year, in order to have a Continuation of it thro' the whole Season. The first Crop is generally sown in February; which should be upon an open warm Spot of Ground; and when the Plants are come up, they should be thinn'd out, to the Distance of ten Inches each Way; which may be done by
 hoeing

hoeing them out, as is practis'd for Turneps, Carrots, Onions, &c. provided you have no Occasion for the superfluous Plants; otherwise they may be drawn up, and transplanted into another Spot of good Ground at the same Distance; which if done before the Plants are too large, they will succeed very well, though they will not be so large as those which were left upon the Spot where they were sown; but they will come somewhat later, which will be of Service, where People do not continue sowing every Month.

You must also observe in sowing the succeeding Crops, as the Season advances, to choose a shady moist Situation, but not under the Drip of Trees; otherwise, in the Heat of Summer, they will run up to Seed before they cabbage. In the Beginning of *August* you should sow the last Crop, which is to stand over Winter; and should be sown thin upon a good light Soil, in a warm Situation; and when the Plants are come up, they must be hoed out, so as to stand singly, and cut down all the Weeds to clear them. In the Beginning of *October* they should be transplanted into warm Borders; where, if the Winter is not very severe, they will stand very well: but in order to be sure of a Crop, it will be adviseable to plant a few upon a Bed pretty close, where they may be arched over with Hoops; and in severe Frosts they should be cover'd with Mats, and Straw, or Peas-haulm, to secure them from being destroy'd; and in the Spring of the Year they may be transplanted out into a warm rich Soil, at the Distance before-mentioned; but still those which grew under the Wall, if they escap'd the Winter, and were suffered to remain, will cabbage sooner than those which are remo-

ved; but you must observe not to place them too close to the Wall, which would occasion their growing up tall, and prevent their being large or hard.

In order to save good Seeds of this Kind, you should look over your Lettuces when they are in Perfection; and such of them as are very hard, and grow low, should have Sticks thrust into the Ground, by the Sides of as many of them as you intend for Seed, to mark them from the rest; and you should carefully pull up all the rest from amongst them as soon as they begin to run up, if any happen to be left, left, by intermixing with the good ones, the Seeds may degenerate.

It may be some Persons may object, that suppose some bad ones should happen to be left among them (for Seeds to sow for small Sallads), yet the good ones being mark'd, the Seeds need not be mixed, and so no Danger can ensue from thence: but notwithstanding ever so much Care being taken to keep the Seeds separate, yet, whether from the intermixing of the *Farina* during the time of their being in Flower, or what other Cause, I can't say; but it hath been observed, that where good and bad Plants have seeded upon the same Spot, the Seeds of the good Plants, which were carefully saved separately, have very much degenerated, and proved worse than such as have seeded by themselves. The Seeds should always be saved either from those which stood thro' the Winter, or those which were sown early in the Spring; for the late ones very seldom perfect their Seeds.

The *Cilicia*, Imperial, Royal, Black, White, and Upright *Cor* Lettuces may be sown at the following times: the first Season for sowing

sowing these Seeds is at the latter End of *February*, or the Beginning of *March*, upon a warm light Soil, and an open Situation; *i. e.* not overshadow'd with Trees; and when the Plants are come up, they should be either hoed out, or transplanted into another Spot of Ground (as was directed for the Cabbage-lettuce), observing to leave these Sorts fifteen or sixteen Inches apart each Way; which will be full near enough for these Plants, especially if the Soil be good; and you must carefully keep them clear from Weeds, which is the only Culture they will require, except the Black *Cos* Lettuce, which should be tied up when they are full-grown (in the manner as was directed for blanching of Endive), to whiten their inner Leaves, and render them crisp; otherwise they are seldom good for much, rarely cabbaging without this Assistance.

When your Lettuces are in Perfection, you should look over them, and mark as many of the best of them as you intend for Seed (in the same manner as was before directed for the common Cabbage-lettuce); being very careful not to suffer any ordinary ones to seed amongst them, as was before observed; which would prove more injurious to these Sorts than to the common, as being more inclinable to degenerate with us, if they are not carefully preserved.

You may also continue these Sorts through the Season, by sowing them in *April*, *May*, and *June*; observing (as was before directed) to sow the late Crops in a moist shady Situation, otherwise they will run up to Seed before they grow to any Size; but in *August*, toward the latter End, you may sow of these Sorts, to abide the Winter; which Plants should be transplanted either under Glasses, or

into a Bed, which should be arch'd over with Hoops, in order to be cover'd in the Winter, otherwise in hard Winters they are often destroy'd; but you must constantly let these Plants have as much open free Air as possible, when the Weather is mild; only covering them in hard Rains, or frosty Weather; for if they are kept too closely cover'd in Winter, they will be subject to a Mouldiness, which soon rots them.

In the Spring these Plants should be planted out into a rich light Soil, allowing them at least eighteen Inches Distance each Way; for if they are planted too close, they are very subject to grow tall, but seldom cabbage well; and from this Crop, if they succeed well, it will be proper to save your Seeds: tho' you should also save from that Crop sown in the Spring; because sometimes it happens, that the first may fail by a wet Season, when the Plants are full in Flower, and the second Crop may succeed, by having a more favourable Season; and if they should both succeed, there will be no Harm in that, since the Seeds will grow very well when two Years old; and if well saved, at three; but this will not always happen.

The most valuable of all the Sorts of Lettuce in *England* are the *Egyptian Green Cos*, and the *Versailles*, or *White Cos*, the *Cilicia*, and *Black Cos*; tho' some People are very fond of the Royal and Imperial Lettuces; but they seldom sell so well in the *London* Markets as the other, nor are so generally esteem'd. Indeed of late Years, since the *White Cos* has been commonly cultivated, it has obtain'd the Preference of all the other Sorts, until the *Egyptian Green Cos* was introduced; which is so much sweeter and tenderer than the *White Cos*, that it is by all good Judges esteem'd

the best Sort of Lettuce known. This Sort will endure the Cold of our ordinary Winters full as well as the White *Cos*; but at the Season of its Cabbaging, if there happens to be much wet, this Sort, being very tender, is very subject to rot.

The Brown *Dutch* and Green *Capuchin* Lettuces are very hardy, and may be sown at the same Seasons as was directed for the common Cabbage-lettuce; and are very proper to plant under a Wall or Hedge to stand the Winter; where many times these will abide, when most of the other Sorts are destroy'd; and therefore they will prove very acceptable, at a time when few other Sorts are to be had; they will also endure more Heat and Drought than most other Sorts of Lettuce, which renders them very proper for late sowing; for it often happens, in very hot Weather, that the other Sorts of Lettuce will run up to Seed in a few Days after they are cabbaged; whereas these will abide near three Weeks in good Order, especially if Care be taken to cut the forwardest first, leaving those that are not so hard cabbaged to be last. In saving of these Seeds, the same Care should be taken to preserve only such as are very large, and well-cabbaged, otherwise the Seeds will degenerate, and be good for little.

The Red *Capuchin*, *Roman*, and *Prince*-lettuces are pretty Varieties, and Cabbage very early; for which Reason a few of them may be preserved; as may also some of the *Aleppo*, for the Beauty of its spotted Leaves; tho' very few People care for either of these Sorts at Table, when the other more valuable ones are to be obtain'd; but in a Scarcity, these may supply the Place pretty well; and these Sorts are very proper for Soups. The Seeds of these

must also be saved from such as cabbage best, otherwise they will degenerate, and be good for little.

In saving Seeds of all these Sorts of Lettuce, you should observe, when the Plants have run up, to fix a Stake down by the Sides of each, to which the Stem should be fasten'd, to prevent their being broken, or blown out of the Ground by Wind; to which the *Cilicia*, and the other large-growing Lettuces, are very subject when they are in Flower. You must also observe to cut such Branches of the large-growing Lettuces as ripen first, and not wait to have the Seed of the whole Plant ripe together, which never happens; but, on the contrary, some Branches will be ripe a Fortnight or three Weeks before others: and when you cut them, they must be spread upon a coarse Cloth in a dry Place, that the Seeds may dry; after which you should beat them out, and dry them again, and then preserve them for Use, being careful to hang them up where Mice and other Vermin can't come at them; for if they do, they will soon eat them up.

LACTUCA AGNINI. *Vide* Valerianella.

LADY'S SLIPPER. *Vide* Hel-leborine.

LADY'S SMOCK. *Vide* Car-damine.

LAGOECIA, Bastard Cumin.

The Characters are;

It hath many Flowers collected into an Head, which have one common Empalement composed of eight indented Leaves; but the simple Empalement to each Flower hath four Leaves, which are very narrow and pennated: the Flower consists of five horned Petals, which are shorter than the Empalement: at the Bottom of each Flower is situated the Pointal, attended by few Stamina, which are

long and narrow: the Pointal afterward changes to an oval Seed crown'd with the Empalement.

There is but one Species of this Plant; which is;

LAGOECIA. *Lin. Hort. Cliff.* Bastard, or Wild Cumin.

We have no other *English* Name for this Plant, nor is this a very proper one; but as it has been titled by some of the antient Botanists *Cuminum sylvestre*, i. e. Wild Cumin; and by Dr. *Tournefort* it is made a distinct Genus, by the Title of *Cuminoides*; it may be stiled Wild Cumin.

This is an annual Plant, which grows about a Foot high; the Leaves resemble those of the Honewort: the Flowers, which are of a greenish-yellow Colour, are collected in spherical Heads at the Extremity of the Shoots: but there being little Beauty in the Plant, it is rarely cultivated but in Botanic Gardens. It grows plentifully about *Aix* in *Provence*, as also in most of the Islands of the *Archipelago*. The Seeds of this Plant should be sown in the Autumn, soon after they are ripe; or if they are permitted to scatter, the Plants will come up; and require no other Care but to clear them from Weeds. When the Seeds are sown in the Spring, they commonly remain in the Ground a Year before they grow, and sometimes I have known them lie two or three Years in the Ground; so that if the Plants do not come up the first Year, the Ground should not be disturbed.

LAGOPUS. *Vide* Trifolium.

LAMIUM, Archangel or Dead-nettle:

The Characters are;

It hath a labiated Flower consisting of one Leaf, whose upper Lip is hollow like a Spoon; but the under one

is divided into two Segments, in the form of an Heart, and both end in Chaps, which are brimmed and edged: out of the Flower-cup, which is fistulous, and cut into five Segments; rises the Pointal, fixed like a Nail in the hinder Part of the Flower; and attended, as it were, by four Embryoes, which afterward become so many triangular Seeds, shut up in an Husk, which was before the Flower-cup.

The Species are;

1. LAMIUM *purpureum fœtidum*, folio subrotundo, sive Galeopsis Dioscoridis. C. B. P. Purple stinking Archangel or Dead-nettle.

2. LAMIUM *purpureum fœtidum*, folio subrotundo, minus. H. L. Lesser purple stinking Dead-nettle.

3. LAMIUM *folio oblongo*, flore rubro. *Park. Theat.* Archangel with an oblong Leaf, and a red Flower.

4. LAMIUM *album*, non fœdens, folio oblongo. C. B. P. White Archangel or Dead-nettle.

5. LAMIUM *parietariæ facie* Moriff. H. R. *Blas.* Dead-nettle with the Face of Pellitory.

6. LAMIUM *folio caulem ambiente*, minus. C. B. P. Lesser Dead-nettle, with the Leaves encompassing the Stalk.

7. LAMIUM *rubrum minus*, foliis profunde incis. Raii *Syn.* Lesser red Dead-nettle, whose Leaves are deeply cut.

8. LAMIUM *album fœtidum*, folio subrotundo, minus. C. B. P. Lesser stinking Dead-nettle, with white Flowers, and a roundish Leaf.

9. LAMIUM *foliis caulem ambientibus*, majus. C. B. P. Greater Dead-nettle; with the Leaves encompassing the Stalk.

10. LAMIUM *Orientale*, nunc moschatum, nunc fœtidum, magno flore. *Tourn. Cgr.* Eastern Dead-nettle;

nettle, sometimes sweet-scented, and sometimes stinking, with a large Flower.

11. *LAMIUM Orientale, foliis elegantè laciniatis. Tourn. Cor.* Eastern Dead-nettle, with elegantly jagged Leaves.

12. *LAMIUM Orientale incanum, flore albo, cum labio superiori crenato. Tourn. Cor.* Hoary Eastern Dead-nettle, with a white Flower, whose Upper-lip is notched.

13. *LAMIUM Orientale incanum, flore purpurascete, cum labio superiori crenato. Tourn. Cor.* Hoary Eastern Dead-nettle, with a purplish Flower, whose Upper-lip is notched.

14. *LAMIUM Orientale album latifolium altissimum. Tourn. Cor.* Tall-est Eastern Dead-nettle, with a broad Leaf, and a white Flower.

The first, second, sixth, seventh, eighth, and ninth Sorts are annual Plants, which grow wild on dry Banks in several Parts of *England*; so are seldom preserved but in Botanic Gardens, for the sake of Variety. All these Sorts flower in *March* and *April*, and their Seeds are ripe soon after; which if permitted to scatter, the Plants will come up in great Plenty, and become troublesome Weeds. The first Sort is used in Medicine; but the Markets are supplied with it from the Fields.

The fourth Sort is also very common under Hedges, in divers Parts of *England*: this is also used in Medicine. The Roots of this Sort spread very far under-ground; and where it once fixes, it is very difficult to eradicate, especially under Hedges or Trees, where the Roots of this Plant will intermix with those of the Plants, so that they cannot be easily taken out, without disturbing the Roots of the Plants. The third Sort is a Variety of the fourth, from

which it differs in the Colour of the Flowers, which in this are of a bright red Colour. These two are abiding Plants, which propagate themselves very fast by their creeping Roots.

The fifth, tenth, and eleventh Sorts are annual Plants, which do not grow wild in *England*, but are equally hardy with those before-mentioned. These flower early in the Spring, and if their Seeds are permitted to scatter, the Plants will come up in the Autumn in great Plenty. The fifth Sort has no great Beauty, so is only preserved for Variety; being very like our common Dead-nettle, except in the Difference of the Leaf. But the tenth Sort deserves a Place in some abject Part of the Garden, for the Beauty of its Leaves in Winter; which are variegated somewhat like the common *Cyclamen*, and make an Appearance very like that Plant in Winter. These Leaves, in dry Weather, have a musky Scent on their being gently rubbed; but if they are bruised, they become stinking and disagreeable.

The twelfth, thirteenth, and fourteenth Sorts are abiding Plants, which will trail on the Ground, and send forth Roots from the Joints of their Stalks, whereby they propagate themselves very fast: so where-ever they are permitted to have room in a Garden, they should be kept within Compass; otherwise they will spread, and become troublesome.

LAMPSANA, Nipplewort.

The Characters are;

It hath a semispherical Flower, consisting of many Half-flowets, upon which the Embryos sit, and are included with them in a multiseed Cup, consisting of one Leaf, which afterwards becomes a streaked Vessel including many narrow-pointed Seeds.

The

The Species are ;

1. LAMPSANA. *Dod. Pempt.* Common Nipplewort.

2. LAMPSANA *folio amplissimo crispa. Petiver.* Nipplewort with a large curled Leaf.

3. LAMPSANA *Orientalis elatior, foliis nigris maculis aspersis. D. Sherard.* Taller Eastern Nipplewort, with Leaves spotted with black Marks.

The first Sort is a very common Weed on dry Banks, and on the Way-sides, in most Parts of England: the other two Sorts were brought from abroad into Botanic Gardens, where they are preserved for Variety ; but they are not allowed a Place in any other Gardens.

These are all annual Plants, which flower in April, and their Seeds ripen in June ; which, if permitted to scatter, will stock the Ground with Plants : so that where they are admitted, there should be but few of the Plants suffered to seed, and those should be in some rude abject Part of the Garden ; lest, by their scattering Seeds, they should fill the Garden, and overbear such Plants as better deserve a Place.

But where the common Sort hath been suffered to seed its Seeds, and thereby become a troublesome Weed, it may be destroyed by keeping it hoed down before it comes to flower, so that no Plants be permitted to scatter Seeds ; for as it is an annual Plant, so where-ever Care is taken to prevent its seeding, it will in two or three Years be absolutely destroyed.

The first Sort was formerly used in Medicine in England, and is still continued in Use in other Countries ; but it is not mentioned by the College of Physicians in their Dispensatory.

LANTANA, *American Viburnum*, or Camara.

The Characters are ;

The Empalement of the Flower is cut into four Segments : the Flower is monopetalous, of an irregular Shape, having a cylindrical Tube, which extends beyond the Empalement, and is spread open at the Brim, where it is divided into five Parts : in the Centre of the Flower is situated the Pointal, supporting a crooked Stigma, attended by four Stamina, two being longer than the other : the Pointal after-ward changes to a roundish Fruit opening into two Cells, and inclosing a roundish Seed.

This Genus of Plants was titled by Father Plumier, Camara, which is the American Name of the Plant ; therefore Dr. Linnaeus has altered it to this of Lantana, which is an old Name applied to the Viburnum, or common Wayfaring-tree.

The Species are ;

1. LANTANA *foliis oppositis petiolatis, floribus capitatis. Lin. Hort. Cliff.* American Viburnum, with Leaves growing opposite, and the Flowers collected in an Head.

2. LANTANA *foliis oppositis petiolatis, caule aculeato. Lin. Hort. Cliff.* American Viburnum, with opposite Leaves, and a prickly Stalk.

3. LANTANA *foliis oppositis cordatis petiolatis hirsutis, floribus capitatis. American* Viburnum, with rough heart-shaped Leaves growing by Pairs, and the Flowers collected in an Head.

4. LANTANA *foliis lanceolatis sessilibus, caule glabra. American* Viburnum, with spear-shaped Leaves growing close to the Stalks, and a smooth Stalk.

5. LANTANA *foliis oppositis petiolatis, caule hirsuto, floribus spicatis.*

American Viburnum, with Leaves growing opposite, an hairy Stalk, and Flowers growing in Spikes.

6. *LANTANA foliis alternis sessilibus, floribus solitariis. Lin. Hort. Cliff.* Viburnum with Leaves growing alternately without Footstalks, and Flowers growing singly, commonly called Hex-leav'd Jasmine.

The five Sorts first mentioned are Natives of the warmest Parts of *America*, where there are several other Species, which differ in their Growth, Shape of their Leaves and Flowers; and there are several Varieties of these differing in the Colour of their Flowers. We have two Varieties of the first and second Sorts here enumerated, one with an orange-coloured Flower, and the other a yellow Flower, which varies to a Purple as it decays. The third Sort produces white Flowers, which are but small; so they make no great Appearance.

The fourth Sort is of humble Growth, seldom rising more than three Feet high: the Stalks of this Sort are smooth, and the Leaves grow very close to the Branches; the Flowers are of a bright purple Colour.

The fifth Sort is also of low Growth: the Branches are not so woody, as are those of the other Kinds: the Leaves are broad, and pointed; and the whole Plant is very hairy. The Flowers grow on long Footstalks, being of a purple Colour, set close together in a Spike: these are succeeded by large purple Berries, which are eaten in the *West-Indies*.

All these Sorts grow wild in the Island of *Jamaica*, from whence I have received their Seeds several times. The last Sort was sent me from the North Side of that Island. All these

Sorts require a moderate Stove to preserve them thro' the Winter, in *England*; but in Summer they may be exposed abroad in a sheltered Situation, where they will continue a long time in Flower, and make a very fine Appearance. The two first Sorts will often continue their flowering for four or five Months, provided they are not too much drawn in the Stove; for as these produce their Flowers from the Wings of the Leaves, so as the Shoots advance, there are new Flowers produced till very late in the Autumn: and if the Plants are preserved in a moderate Degree of Warmth in Winter, they will begin to flower in *May*; but as the Spring advances, they should have a large Share of Air; otherwise the Shoots will be very weak, and the Plants will be infested with Insects, which will deface the Plants, and prevent their Growth: therefore when the Weather is warm, the Glasses of the Stove should be opened every Day, to admit as much Air as possible; and about the Middle of *June*, the Plants may be removed into the open Air; but they should have a warm-sheltered Situation, and in dry warm Weather they will require plenty of Water.

These Sorts may be propagated either from Seeds, or by Cuttings. The first, second, and fifth Sorts frequently perfect their Seeds in *England*: but the other have not as yet produced any here. These Seeds must be sown on a good Hot-bed early in the Spring; and when the Plants come up, they must be each transplanted into a separate small Pot, and plunged again into the Hot-bed to bring them forward: but as the Plants advance in Strength, so they should, by degrees, be hardened to bear the open Air;

Air; and may afterward be removed into it, and treated in the same manner as the old Plants.

If they are propagated by Cuttings, the best time for planting them is in *July*, after the Plants have been exposed to the open Air for about a Month; by which time the Shoots will be hardened so as to be out of Danger of rotting with a little Moisture. These Cuttings should be planted in small Pots filled with light Earth, and plunged into a moderate Hot-bed: and if they are screened from the Violence of the Sun in the Middle of the Day, they will be rooted in about six Weeks time; when they must be hardened gradually to bear the open Air, and afterward treated as the old Plants.

The last Sort has been long in the *English* Gardens, and is commonly called the *Ilex-leav'd Jasmine*. This Plant was brought from the *Cape of Good Hope*; so is not very tender; therefore may be preserved in a good Green-house in Winter: but during that Season it must have a large Share of Air in mild Weather, otherwise it is apt to grow mouldy; and this will cause the tender Branches to decay. In the Summer-season it may be exposed in the open Air, with other Green-house Plants, in a sheltered Situation, where it will add to the Variety: and altho' the Flowers are small, and are produced singly from between the Leaves, so do not make any great Appearance; yet as there is a Succession of these Flowers most Part of the Year, and the Leaves continuing green throughout the Year, it is worthy of a Place in every Collection of Plants.

LAPATHUM, The Dock.

The Characters are;

The Empalement of the Flower is composed of three small Leaves, which are reflexed: the Flower hath three

Leaves, which are larger than those of the Empalement, and are coloured: in the Centre of the Flower is situated the three-cornered Pointal, supporting three small Styles, and is attended by six Stamina: the Pointal afterward becomes a triangular Seed, inclosed by the Petals of the Flower.

The Species are;

1. LAPATHUM *præstantissimum*, *Rhabbarbarum officinarum dictum. Mor. Hist.* The Pontic Rhubarb.

2. LAPATHUM *Alpinum, folio subrotundo. Mor. Hist.* Round-leav'd Alpine Dock, by some called Monks Rhubarb:

3. LAPATHUM *bortense, folio oblongo, sive secundum Dioscoridis. C. B. P.* Long-leav'd Garden-dock, or Patience.

4. LAPATHUM *folio acuto plano. C. B. P.* Sharp-pointed Dock.

5. LAPATHUM *folio acuto crispo. C. B. P.* Curled sharp-pointed Dock.

6. LAPATHUM *folio acuto rubente. C. B. P.* Bloodwort or sharp-pointed Dock, with red Veins, and Foot-stalks to the Leaves.

7. LAPATHUM *folio acuto, flore aureo. C. B. P.* Sharp-pointed Dock, with golden Flowers.

8. LAPATHUM *acutum minimum. J. B.* The least sharp-pointed Dock.

9. LAPATHUM *vulgare, folio obtuso. J. B.* Common broad-leav'd Dock, vulgarly call'd the Butter-dock.

10. LAPATHUM *sylvestre, folio subrotundo, seminis involucris dentatis nobis. Mor. Hist.* Common broad-leav'd Dock, with indented Covers to the Seeds.

11. LAPATHUM *aquaticum, folio cubitali. C. B. P.* Great Water-dock.

12. LAPATHUM *aquaticum minus. C. B. P.* Lesser Water-dock.

13. LAPATHUM *pulchrum Bononiense*

niense sinuatum. J. B. The Fiddle Dock.

14. LAPATHUM *hortense latifolium.* C. B. P. The true Monks Rhubarb.

15. LAPATHUM *Chalepense, folio acuto, seminum involucris profunde dentatis.* Mor. Hist. Sharp-pointed Aleppo Dock, with the Seed-covers deeply indented.

16. LAPATHUM *Ægyptiacum annuum, parietariæ folio, capsula seminis longius barbata.* Hort. Pis. Annual Egyptian Dock, with a Pellitory-leaf, and long Beards to the Seed-vessels.

17. LAPATHUM *Orientale, folio latissimo undulato & mucronato, sive Rhabarbarum verum.* The true Rhubarb.

The first Sort here mentioned was brought to England many Years since, for the true Rhubarb; but since it hath been commonly used in the Shops for the *Rhaponticum*, being greatly inferior to the *Rhabarbarum*. This Sort is frequently cultivated in the Gardens, and is call'd *Englisb* Rhubarb. The Roots of this enter as an Ingredient into several compound Medicines: and of late Years, the Footstalks of the Leaves have been used for making of Tarts in the Spring of the Year, as these may be had before Gooseberries are large enough for that Purpose. These Footstalks must have their outer Skin peel'd off, otherwise they will be very stringy: when this is done, the pulpy Part will bake very tender, and almost as clear as the Apricot; and having an agreeable acid Flavour, is by many Persons esteem'd for this Purpose.

Where these Plants are propagated for this Use, they should be planted at least three Feet asunder, and in rich Ground, which will encou-

rage them to put out large Leaves; so that the Footstalks will be very large, in which is the chief Excellence of them: for in those which are small, there will be very little Pulp; and that will not be near so good for Use as that of the large.

The second Sort is sometimes cultivated in Gardens, for medicinal Use; tho' there is a Dispute, whether this be the true Monks Rhubarb, or not: but there is no great Difference between the Roots of this Plant, and the other disputed Sort: but Dr. *Boerhaave*, and some other Botanists, have mentioned the fourteenth Sort, as the true Monks Rhubarb; but I suspect this to be only an accidental Variety of the ninth Sort, and not a distinct Species: however, I believe that the Roots of this, and the third Sort, are indifferently used in London, for the Monks Rhubarb.

The third Sort was formerly cultivated in Gardens as a Pot-herb; but of late Years it has been wholly disused for that Purpose, and now only preserved in Gardens for medicinal Use.

The ten next-mentioned Sorts grow wild in many Parts of England, and are seldom admitted into Gardens; but as several of these are used in Medicine, I have put down the Names by which they are distinguished amongst the Botanists. The first and third Sorts are directed by the College of Physicians to be used in Medicine; but the People who supply the Markets, take the Roots of all the Sorts promiscuously, as they find them. These two Sorts grow near Hedges, and in shady Lanes, which are not much frequented, in most Parts of England; but the third Sort is less common than the first, from which it differs in nothing

nothing but the Stalks and Veins of the Leaves being red. This is frequently called Bloodwort.

The Roots of the eighth Sort are also used in Medicine: this is the Plant which *Muntingius*, a curious Botanist of *Groningen* in *Holland*, supposes to be the *Herba Britannica* of the Antients, which was found to be a sovereign Remedy for the Scurvy. This Sort grows frequently in standing Waters, where it produces Leaves two and an half or three Feet in Length. When this Sort is planted on dry Land, or the Water drained off the Ground, where it naturally grows, it will not rise to near the Size of those Plants which grow in deep Waters.

The eleventh Sort, whose Roots are used in Medicine, and is by some thought to be the true Monks Rhubarb, is not common in *England*, if it is really different from our broad-leav'd Dock; so that those who use Roots of *English* Growth, are supplied with the Patience Dock, or the round-leav'd *Alpine* Dock; both which Sorts are cultivated in the *English* Gardens.

The twelfth and thirteenth Sorts are Foreigners, which have been introduced by the Curious in Botany, for the sake of Variety; but they are not used in Medicine: and as they are Plants of no great Beauty, they do not merit a Place, unless in Botanic Gardens, for Variety-sake. The twelfth Sort will continue two or three Years; but the thirteenth Sort is an annual Plant.

The Seeds of the fourteenth Sort I received for the true Rhubarb: these were gathered by a Gentleman who was on the Spot, where the Roots are taken up, and sent to *Petersburgh* in *Muscovy*, for the Supply of *Europe*; so that we may sup-

pose there is no great Reason to doubt of its being the true Kind.

But, however it happens, the Roots which have grown in *England*, are not comparable to the foreign Rhubarb: whether this may be occasion'd by the not taking up of the Roots at a proper Season, or from what other Cause, we cannot as yet determine; but we may hope some future Trial may inform us better. Indeed there are some Persons who imagine, that there are several Species of Rhubarb, which grow in different Countries; and that the Sort here mentioned is not the best: whether this is so or not, I cannot determine: but I have great Reason to suspect these Plants are not specifically different, but vary from Seeds: for from the Seeds of one Plant of the first Sort, which grew by a Plant of this last, I had almost an equal Number of Plants produced intermixed, tho' none of the Seeds of the last came to Maturity: therefore it could not happen from any Mixture of the Seeds, nor could it scarce arise from any Impregnation of the Male Dust, because the Flowers of the last were decayed before those of the first were open.

All the Sorts of Dock are propagated by Seeds, which should be sown in Autumn, soon after they are ripe; for when the Seeds are kept out of the Ground until Spring, they will remain a whole Year in the Ground before the Plants appear; whereas those sown in Autumn will come up the following Spring. Where the Seeds of the true Rhubarb (or any of the other Sorts, whose Roots are used in Medicine) are sown to propagate the Plants, they should have a Soil rather moist than dry, and of a pretty good Depth, that the Roots may have room

room to run down. The Seeds should be sown thin; and in the Spring, when the Plants come up, they should be hoed out after the manner directed for Parsneps and Carrots, leaving the large-growing Kinds (as the true Rhubarb, Rhapsodic, and *Alpine* round-leav'd Dock) two Feet and an half asunder at least, because these produce very large-spreading Leaves; and if they have not sufficient room to grow, the Roots will be small. When this is done, the Plants will require no other Management, but to keep them clear from Weeds; and in two or three Years time the Roots will be fit for Use, when they should be taken up soon after their Leaves decay in Autumn. But it will be well worth trying, whether those Plants, whose Flower-stems are pinched off, soon after they appear in Spring (and are never suffered to flower or seed), do not produce better Roots, than those which are permitted to seed, because we find most other Roots grow sticky and tough, after they have seeded, and not near so good for Use as before; and as these Plants frequently send out Flower-stems the second Year, it may be necessary to prevent their Growth, in order to encourage their Roots.

LARIX, The Larch-tree.

The Characters are;

The Leaves (which are long and narrow) are produced out of little Tubercles, in form of a Painter's Pencil: the Cones are produced at remote Distances from the Male Flowers on the same Tree: the Male Flowers are very like small Cones at their first Appearance, but afterward stretch out in Length.

The Species are;

1. *LARIX folio deciduo, conifera.*
J. B. The Larch-tree.

2. *LARIX folio deciduo, rudimentis conorum candidissimis.* Pluk. Alm. Larch-tree with white Rudiments, or rather, with white Male Flowers.

3. *LARIX Orientalis, fructu rotundiori obtuso.* Inst. R. Herb. The Cedar of Libanus.

There are two other Varieties of the Larch-tree: one of them is brought from *North America*, and is called the Black Larch; the other came from *Archangel*. This last Sort usually puts out its Leaves three Weeks before the common Sort: both these grow different from the common Sort, having slender hanging Branches: but I believe they can hardly be deemed distinct Species.

The first of these Trees is pretty common in the *English* Gardens: this is a Native of the *Alps*, and *Pyrenean* Mountains; but thrives exceeding well here, especially if it be planted upon an elevated Situation; as may be observed by those which were planted a few Years since at *Wimbleton* in *Surry*, which are now grown to be large Trees, and produce annually a large Quantity of Cones.

The second Sort seems to be only a seminal Variety from the first, from which it differs in the Colour of the Male Flowers, which in this is white, but in the other of a bright-red Colour; as also in the Colour of the Leaves, which in this Sort are a somewhat lighter Green than those of the other; nor do the Trees of this Kind seem to be so vigorous: but whether the Seeds of this Kind will produce the same, I can't as yet say, having never seen any of the Plants which were raised from these Seeds produce any Flowers; but however, it may be obtain'd by inarching it into the common Sort.

These

These Trees are propagated by Seeds, which should be sown in the Beginning of *March*, upon a Bed of light Soil, exposed only to the morning Sun: or otherwise it may be sown in Pots or Boxes of light Earth, and placed near an Hedge, where they may have the morning Sun only. The Seed should be cover'd about half an Inch thick with fine light Earth, and in very dry Weather should be gently refresh'd with Water. In about six Weeks, if your Seeds were good, the Plants will come up, at which time you should carefully guard them against the rapacious Birds, which would otherwise pull off the Heads of the Plants, as they thrust themselves out of the Ground with their Covers on them; and observe to refresh them with Water in dry Weather, especially if they are sown in Pots or Boxes, as also to keep them constantly clear from Weeds, which, if suffer'd to grow among the young Plants, will soon destroy them: nor should they be too much expos'd to the Sun, or strong Winds; both which are very injurious to these Plants while they are young: but in *October* you should (if they are in Boxes or Pots) remove them into a Situation where they may be defended from sharp Winds, which are sometimes hurtful to them while young; but afterwards they will endure the severest Weather of our Climate.

The Latter-end of *October*, or the Beginning of *November* following, you should remove these Plants into Beds of fresh light Earth, at about ten Inches Distance each Way; observing to water them, if the Season should prove dry, as also to lay a little Mulch upon the Surface of the Ground, to prevent the Sun and Winds from drying their Roots: in

these Beds they may remain two Years, during which time you should carefully keep them clear from Weeds; as also observe, if any of them incline their Heads downward, to thrust a small Stake into the Ground by such of them, and fasten their Heads upright thereto; for if they are suffer'd to grow on one side while young, they are rarely to be reduced to an upright Figure again.

When the Plants have remain'd in these Beds two Years, they will be fit to transplant into the Nursery; in order to which, you should make choice of a Piece of fresh light Earth, not over-dry, nor too wet: this Ground should be well dug, and cleans'd from Weeds, and Roots of Plants or Trees; and after having laid it level, you should mark out the Rows at three Feet Distance; then you should take up the Plants carefully, preserving a good Ball of Earth to their Roots, and plant them in the Lines at eighteen Inches asunder, observing to mulch their Roots, and also to water them, to preserve their Roots from drying. The best Season for this Work is toward the Middle or Latter-end of *October*, according as the Season proves; for as soon as they begin to cast their Leaves, they may be removed with great Safety. During the time they remain in this Nursery, they must constantly be kept clean from Weeds; and the Ground between them should be dug every Spring, that it may be loose for the Fibres of their Roots to strike into; and the Weeds will be hereby more effectually destroy'd than by any other Method: and the Roots of the Plants, being annually cut round, will cause them to push out a greater Number of Fibres, whereby they will be much safer to remove, than they would be, if permitted

mitted to grow undisturb'd for several Years.

You must also observe to train their Heads upright, and not suffer them to grow awry, which they are naturally too much inclin'd to: but I would by no means advise the shearing them in Pyramids (as is too often practis'd), but rather lead them up for Timber-trees; for they will grow to a considerable Size, provided they like the Soil they are planted in.

In removing these Trees from the Nursery to the Places where they are design'd to be continued, you should always observe to do it just as they cast their Leaves; as also to take them up with a large Ball of Earth to their Roots; and, when planted, the Ground should be mulch'd, and the Plants stak'd, to prevent the Wind from loosening them, or blowing them out of the Ground. These Directions, if duly executed, will be sufficient, and there will be no Danger of their succeeding. But the chief Cause why many of these Trees have fail'd, upon their being remov'd, was the not doing it in a proper Season, or else that they were not carefully taken up.

These Trees should not remain long in the Nursery before they are transplanted where they are to stand for good; for when they are large, they do not bear removing well. The best Size for transplanting are those of about two Feet, or two Feet and an half high. These will soon outgrow such as are much larger when transplanted.

As these Trees put out early in the Spring, so where they cannot be removed at *Michaelmas*, it should not be deferred later than *February*; because when they begin to shoot, it will be too late.

These Trees are very proper for the Sides of barren Hills, where few other Sorts will thrive so well; nor is this Tree very delicate in its Soil; but will grow much better on poor strong stony Land, than in rich Ground: and during the Summer they appear very beautiful; but in Autumn they cast their Leaves, whereby some People have been deceiv'd, by supposing them dead, and have destroy'd them.

From the wounded Bark of this Tree exudes the purest *Venice Turpentine*; and on the Body and Branches of it grows the *Agaric*, which is a Drug used in Medicine: the Wood is very durable, and (by some) reported to be very difficult to burn. But I don't know how this should be, to a Tree which abounds with Turpentine; tho' it is said also to be so ponderous as to sink in Water. It will polish exceeding well, and is by the Architects abroad much coveted, both for Houses, and building of Ships.

Witsen, a Dutch Writer upon *Naval Architecture*, mentions a Ship to be long since found in the *Numidian Sea*, twelve Fathoms under Water, being chiefly built of this Timber and *Cypress*, both which Woods were reduced to that Hardness, as to resist the sharpest Tools; nor was any Part of it perish'd, tho' it had lain above a thousand Years submerged. And it was upon Tables of this Wood that *Raphael*, and several of the greatest Artists, eterniz'd their Skill, before the Use of Canvas was introduced.

The third Sort is the *Cedar of Libanus*, and is a Tree of great Antiquity; and, what is remarkable, this Tree is not found as a Native in any other Part of the World, so far as hath come to our Knowledge.

The Cones of this Tree are brought from the *Levant*, which, if kept intire, will preserve their Seeds good for several Years: the time of their ripening is commonly in the Spring, and consequently they are near one Year old before we receive them; for which they are not the worse, but rather the better, the Cones having discharged 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 thro' the Centre length-ways, and so pull the Seeds out with your Fingers, which you will find are fastened to a thin leafy Substance, as are those of the Fir-tree: but before the Seeds are taken out, it will be proper to put the Cones in Water for twenty-four Hours, which will render them easier to split; so that the Seeds may be taken out with greater Safety; for there will require Care in the doing of it, otherwise many of the Seeds will be spoiled; for they are very tender, and will bruise where there is any Force employed to get them out.

These Seeds should be sown in Boxes or Pots of light fresh Earth, and treated as was directed for the Firs (to which I refer the Reader); but only shall observe, that these require more Shade in Summer than the Firs; and the sooner they are planted into the open Ground, the better.

When these Plants begin to shoot strong, you will generally 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 tied 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 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 Physic-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.* 1750.) upwards of eleven Feet in Girt, at two Feet above ground; and

and their Branches extend more than twenty Feet on every Side their Trunks; which Branches (tho' produced twelve or fourteen 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 an 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 consequently are cramp'd 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, that 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 are but two of them which have as yet produc'd Cones; nor is it above sixteen or eighteen Years, that these have ripen'd their 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 being soon supply'd with 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; 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 were 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 16 large Trees remaining, when he visited the Mountains, 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 12 Yards 6 Inches in Girt, and yet found, and 37 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 assured 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 agrees with my Friend's Account.

Monfieur le Brun reckons about thirty-five or thirty-six Trees remaining upon *Mount Libanus*, when he was there; and would persuade us it was not easy to reckon their Numbers (as is reported of our *Stonehenge* on *Salisbury Plain*). He also says, their Cones do some of them grow dependent. 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 Sawdust 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 Oil which is famous for preserving Books and Writings; and the Wood is thought, by the Lord *Bacon*, to continue above a thousand Years sound. It is also recorded, that in the Temple of *Apollo* at *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.

LARKSPUR. *Vide* Delphinium.
LASERPITIUM, Laserwort.

The Characters are;

It hath an umbellated Flower, composed of five heart-shaped Leaves, which are equal, and expand in form of a Rose, and rest on the Empalement, which after-ward turns to a Fruit composed of two Seeds, which are gibbous on one Side, with four large

large foliaceous Wings, which extend the Length of the Fruit, and are shaped like a Water-mill.

The Species are;

1. *LASERPITIUM foliis latioribus lobatis. Mor. Umbel.* Laserwort with broader Leaves.

2. *LASERPITIUM foliis amplioribus, semine crispo. Inst. R. H.* Laserwort with large Leaves, and curl'd Seeds.

3. *LASERPITIUM humilius, paludapii folio, flore albo. Inst. R. H.* Lower Laserwort, with a Smallage-leaf, and a white Flower.

4. *LASERPITIUM Gallicum. C. B. P.* French Laserwort.

5. *LASERPITIUM angustissimo & oblongo folio. Inst. R. H.* Laserwort with a very narrow oblong Leaf.

6. *LASERPITIUM selinoides, semine crispo. Inst. R. H.* Laserwort resembling sweet Smallage, with a curl'd Seed.

7. *LASERPITIUM angustifolium, umbella contracta & concava. Inst. R. H.* Narrow-leav'd Laserwort, with a contracted and hollow Umbel.

8. *LASERPITIUM Orientale, foliis feseleos Massiliensis, flore luteo. Cor. Inst. R. H.* Eastern Laserwort, with Leaves like the *Marseilles* Hartwort, and a yellow Flower.

There are several other Varieties of this Plant, which are enumerated in Botanic Authors; but some of them only differ in the Colour of their Flowers, and the Indentures of their Leaves; so must not be deemed as distinct Species. Indeed the Number of Species has been greatly lessen'd by some late Writers, who have erred as much in lessening, as those before them had done in multiplying, of the Species; which Mistake they may have fallen into by sowing of the Seeds near old Plants of the same Genus, or

on Ground where some of these Sorts have grown; so that their Seeds have been scattered and buried in the Ground, where they will remain two or three Years, and afterward grow; so that unless their Seeds are sown at a Distance from any of the other Species, there will always be a Mixture of Plants come up, whereby People have been often confus'd in distinguishing these Plants; nay, I have frequently observed the Seeds of one Species fall, and the Plants come up on the Head of another Plant which grew near it; and this young Plant, if not timely rooted out, has gotten the better of the old Plant, and destroyed it: where there is not great Care taken to prevent this, the different Sorts cannot be preserved in Gardens where the Species grow near each other.

It is generally supposed, that the *Silphium* of the Antients was procured from one Species of this Genus; but from which of them we are at present ignorant. All the Species, if wounded, drop a very acrid Juice, which turns to a resinous gummous Substance very acrimonious. This was externally applied by the Antients to take away black and blue Spots that came by Bruises and Blows, as also to take away Excrescences: it was also by some of the Antients prescribed in internal Medicines; but others have cautioned People not to make use of it this way, from the Effects which they mention to have seen produced from the Violence of its Acrimony.

All these Plants are extreme hardy; so will thrive in most Soils and Situations. They are propagated by Seed, which if sown in the Autumn, the Plants will come up the following Spring; but when they are sown in

In the Spring, the Seeds commonly remain in the Ground a whole Year. The Plants should be transplanted the following Autumn, where they are designed to remain; for they send out long deep Roots, which are frequently broken: when the old Plants are removed, they should be planted three Feet asunder; for the Plants grow very large. They decay to the Ground every Autumn, and come up again the following Spring; but the Roots will continue many Years, and require no other Culture, but to clear them from Weeds, and to dig between the Roots every Spring.

LATHYRUS, Chichling Vetch.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, cover'd with a membranaceous Sheath, which afterward becomes a Pod, sometimes round, sometimes cylindrical, and at other times angular: to which may be added, It hath a compress'd Stalk, with a raised Rib, and a leafy Border; and has only one Pair of Leaves, growing on the Nerves, which terminates in a Tendril.

The Species are;

1. LATHYRUS *latifolius*. C. B. Broad-leav'd or common Everlasting-Peas.
2. LATHYRUS *latifolius minor*, *flore majore*. Boerb. Ind. Lesser broad-leav'd Everlasting-Peas, with a larger Flower.
3. LATHYRUS *major Narbonensis angustifolius*. C. B. Greater narrow-leav'd Everlasting-Peas.
4. LATHYRUS *arvensis repens tuberosus*. C. B. Creeping Chichling, or Peas Earth-nut, with a tuberose Root.
5. LATHYRUS *Tingitanus*, *siliquis orobi*, *flore amplo ruberrimo*. Mor. Hist. Tangier Chichling, with a large deep-red Flower.

VOL. II.

6. LATHYRUS *displatyphyllus* *hirsutus mollis*, *maguo* & *peramano* *flore odoro*. Hort. Cath. Broad-leav'd hairy soft Chichling, with a large and very beautiful purple sweet-smelling Flower, commonly call'd Sweet-scented Peas.

7. LATHYRUS *sativus*, *flore frugue albo*. C. B. P. Garden Chichling Vetch, with white Flowers and Fruit.

8. LATHYRUS *sativus*, *flore purpureo*. C. B. P. Garden Chichling Vetch, with a purple Flower.

9. LATHYRUS *sylvestris major*. C. B. P. Great wild Chichling Vetch.

10. LATHYRUS *sylvestris major*, *flore atro-purpureo*. Inst. R. H. Great wild Chichling Vetch, with a dark-purple Flower.

11. LATHYRUS *latifolius*, *flore albo*. Inst. R. H. Everlasting-Pea, with a white Flower.

12. LATHYRUS *angustifolius*, *semine maculoso*. C. B. P. Narrow-leav'd Chichling Vetch, with a spotted Seed.

13. LATHYRUS *angustissimo folio*, *Americanus variegatus*. C. B. P. The most narrow-leav'd American Chichling Vetch, with a variegated Flower.

14. LATHYRUS *annuus*, *flore cœruleo*, *ochri siliqua*. H. L. B. Annual Chichling Vetch, with a blue Flower, and a Pod shaped like Ochrus.

15. LATHYRUS *Baticus*, *flore luteo*. Park. Theat. Spanish Chichling Vetch, with a yellow Flower.

16. LATHYRUS *luteus latifolius*, *Bot. Monsp.* Broad-leav'd yellow Chichling Vetch.

17. LATHYRUS *angustifolius*, *siliqua hirsuta*. C. B. P. Narrow-leav'd Chichling Vetch, with an hairy Pod.

18. LATHYRUS *latifolius annuus*, *siliqua articulata hirsutiore*. H. R.

Bbb

Par

Par. Broad-leav'd annual Chichling Vetch, with a very rough-jointed Pod.

19. *LATHYRUS angustissimo folio, semine rotundo. H. R. Par.* Narrow-leav'd Chichling Vetch, with a round Seed.

20. *LATHYRUS angustissimo folio, semine anguloso. H. R. Par.* Narrow-leav'd Chichling Vetch, with an angular Seed.

The three first Sorts are abiding Plants, which send forth strong downright Roots very deep into the Earth; for which Reason they should not be often removed, which would prevent their growing strong, or producing many Flowers.

They are propagated by Seeds, which should be sown in the middle of *March*, upon a Bed of light fresh Earth; covering them about half an Inch deep. But the best Method is, to make a shallow Drill in the Ground, and then drop the Seeds therein, about six Inches Distance: these Drills should be a Foot asunder, for the Conveniency of hoeing and cleaning the Ground between them; which must constantly be done, otherwise the Weeds will overbear and destroy them: but they will require no farther Care, being very hardy Plants, until the Spring following; at which time (*viz.* in *March*) just before they begin to shoot, the Roots should be carefully taken up, and transplanted where they are to continue, placing them at least three Feet asunder; otherwise they will over-run each other, or whatever Plants stand near them. If the Season should prove dry, you must give them some Water, to settle the Earth to their Roots; which should be now-and-then repeated, if it continue dry Weather, until the Plants have taken Root: after which, they will

require no farther Culture but to keep them clear from Weeds, and in the Summer to support them with strong Stakes, otherwise they will trail upon the Ground, and rot the Branches, and destroy whatever Plants grow near them.

These Plants are very proper to plant against a dead Hedge, where they will run over it; and if they be kept train'd up, will cover it in the Summer, and in such Places they will produce great Quantities of Flowers; but if they are planted in a Flower-garden, they must have a great deal of room; and in Summer should have very strong Stakes placed down by them, to which they must be closely fasten'd, otherwise they will ramble, and trail upon the Ground, and appear very unsightly; for if the Ground be good in which they are planted, and the Roots are very strong, they will sometimes grow eight or ten Feet high in a Season, and produce abundance of Flowers; which are very ornamental in Basons or Pots of Flowers, to place in Chimneys, or other Parts of large Rooms. These produce their Flowers in *June* and *July*, and their Seeds are perfected in *August*; their green Leaves decay in Autumn, and rise again the succeeding Spring, their Roots continuing good for many Years: they delight most in a light Soil, not too dry, nor over-wet; but will grow in almost any Soil or Situation, but best in that which is expos'd to the Sun.

The first Sort is most commonly cultivated in the *English* Gardens; but the second is much preferable to that, as being of humbler Growth; never rising above five Feet high, and so is more proper for Flower-gardens; and the Flowers are much larger, and of a deeper red Colour,
and

and are commonly produced in larger Clusters. The third Sort is seldom propagated in Flower-gardens, though for Variety it should have a Place amongst other large Plants. The Flowers of this Kind are smaller, and of a purple Colour.

The tuberosse-rooted Sort is preserv'd as a Curiosity in many Gardens, tho' there is no great Beauty in its Flowers. This may be propagated either by Seeds, as the others, or by its Roots, which increase very fast under-ground; and is an abiding Plant, but should not be placed among other curious Flowers; for the Roots, propagating under-ground, will come up, and spread over whatever Plants grow near them. The Roots of this Sort are commonly eaten in *Holland*, where the Plant is frequently cultivated in their Kitchen-gardens. These Roots are about the Size of a Nutmeg; and, when roasted, have the Taste of Chestnuts.

The fifth and sixth Sorts are annual Plants, which are propagated only by Seeds: these may be sown in *March*, in the Places where they are to remain for good; being Plants that seldom will grow, if transplanted, except it be done while they are very young. These should be either sown near a Pale, Wall, or Espalier, to which they may be train'd; or if sown in the open Borders, should have Stakes placed by them, to which they should be fasten'd; otherwise they will trail upon the Ground, and appear very unsightly; which is the only Culture these Plants require, except the clearing them from Weeds. They produce their Flowers in *July*, and their Seeds are perfected in *August* and *September*.

But the best Method to have them

very strong is, to sow their Seeds in *August*, under a warm Wall or Hedge, where they will come up in Autumn, and abide the Winter very well; and these will begin to flower in *May*, and continue to produce fresh Flowers until *July*, or later, according to the Heat of the Season: and one of these autumnal Plants will be as large as four or five of those sown in the Spring, and produce ten times the Number of Flowers; and upon these Plants you will always have good Seeds, when sometimes the other will miscarry; however, it is very proper to sow their Seeds at two or three different Seasons, in order to continue their Flowers the longer; for the late-planted ones will continue blowing until the Frost prevents them.

The sweet-scented Sort is the most valuable, both for the Beauty and Fragrancy of its Flowers.

Of this Sort there are two other Varieties: one of these has pale-red Flowers, which is commonly called by the Gardeners, Painted-lady Peas; the other hath intire white Flowers: both these may be allowed a Place in the Borders of the Flower-garden, for the sake of Variety.

The seventh Sort here mentioned is frequently cultivated for Use in several Parts of *Europe*; but in *England* it is rarely to be met with, unless it be in Botanic Gardens, where it is preserved for the sake of Variety. This Plant may be cultivated in the same manner as Tares, and may be used for the same Purposes; but the best Method is, to sow them in Drills about eighteen Inches asunder, and keep the Ground hoed with a Plough to destroy the Weeds between the Rows, in the same manner as is practised for Peas; by which Method the Plants will thrive exceed-

ceedingly, and become a great Improvement to poor sandy Land.

The eighth Sort is a Variety of the seventh, from which it only differs in the Colour of the Flower; this having a fine purple Flower, and is by many Persons sown in Gardens by way of Ornament. If the Seeds of this Sort are sown in Autumn, the Plants will come up, and abide the Winter very well; so will flower the following May; but if the Seeds are sown in Spring, the Plants will not flower till July or August: so that by sowing at the two different Seasons, these may be continued in Beauty for several Months.

The ninth Sort has been by some Persons sown for Feed for Cattle: but it doth not answer near so well for this Purpose as the first Sort; so is not worth cultivating. The tenth Sort is a Variety of the first, from which it differs in the Colour of the Flower; so is preserved by the Curious in Botany, for the sake of Variety.

The eleventh Sort is a Variety of the common Everlasting-Pea: the Flowers of this, being white, are preserved by several Persons for the Variety; but it is not so beautiful as the common Sort. This may be propagated in the same manner as is directed for the common Sort.

The nine following Sorts are preserved in some curious Gardens for the Variety of their Flowers. These may all of them be propagated by sowing their Seeds, either in Spring or Autumn; but those which are sown in Autumn should have a light Soil, and a warm Situation, where the Plants will abide the Winter, and come to flower early the following Spring, and their Seeds will ripen in July: but those which are sown in the Spring, should have an open Exposure, and may be planted upon al-

most any Soil; for they are not very tender Plants in their Culture. These Sorts should all of them be sown where they are designed to remain; for they seldom succeed, when they are transplanted: so that where they are sown for Ornament, there should be six or eight Seeds sown in a small Patch, in different Parts of the Borders of the Flower-garden; and when the Plants come up, they should be carefully kept clear from Weeds; but when they are grown two or three Inches high, there should be some Sticks put down by them to support them; otherwise they will trail on the Ground, and become unsightly; besides, they will trail on whatever Plants grow near them.

LAVATERA.

The Characters are;

The Leaf, Flower, Style, and Cup of the Flower, have the Appearance of a Mallow: the Style becomes a Fruit, which is arm'd in Front with an hollow Shield; the Seeds, which are shaped like a Kidney, growing to the inner Part.

The Species are;

1. LAVATERA folio & facie althææ. Tourn. Lavatera with the Leaf and Face of Marshmallow.

2. LAVATERA folio & facie althææ, flore albo. Lavatera with the Leaf and Face of Marshmallow, and a white Flower.

3. LAVATERA Africana, flore pulcherrimo. Boerb. Ind. African Lavatera, with a most beautiful Flower.

4. LAVATERA foliis ovato-lanceolatis, inferne angulatis, pedunculis unifloris, caule herbaceo. Flor. Leyd. Lavatera with oval spear-shaped Leaves, the under Leaves angular, one Flower upon each Footstalk, and an herbaceous Stalk, commonly called, Mallow with variable Leaves.

These are all annual Plants, which are

are propagated by Seeds: the Season for sowing them is in *March*, upon a Bed of fresh light Earth; and when the Plants are come up, you must carefully clear them from Weeds; and, in very dry Weather, they must be now-and-then refresh'd with Water. When they are about two Inches high, you must transplant them into the Places where they are design'd to remain, which should be in the middle of the Borders in the Flower-garden; for, if the Soil be good, they will grow two or three Feet high: in transplanting them, you must take them up very carefully, preserving a Ball of Earth to their Roots, otherwise they are apt to miscarry: and also water and shade them until they have taken Root; after which they will require no other Care but to clear them from Weeds, and to fasten them to Stakes, to prevent their being injur'd by strong Winds. You may also sow their Seeds in Autumn; and when the Plants are come up, transplant them into small Pots, which, toward the End of *October*, should be placed into a common Hot-bed-frame, where the Plants, being defended from severe Frosts, will abide the Winter very well; and in the Spring, you may shake them out of the Pots, and plant them into larger, or else into the full Ground, where they may remain to flower. The Plants, thus manag'd, will be larger, and flower stronger and earlier, than those sown in the Spring; and from these you will constantly have good Seeds; whereas those sown in the Spring sometimes miscarry. When the Seeds of these Plants are sown in the Spring, it should be in the Place where they are to remain; for they do not well bear removing in the Summer.

These produce their Flowers in

June, July, and August; and their Seeds ripen soon after.

They are very ornamental Plants in a fine Garden, when placed among other Annuals, either in Pots or Borders: their Flowers are very like those of the Mallow; but are larger, and of a more beautiful Colour.

LAVENDULA, Lavender.

The Characters are;

It is one of the verticillate Plants, whose Flower consists of one Leaf, which is divided into two Lips: the Upper-lip, standing upright, is roundish, and for the most part bifid; but the Under-lip is cut into three Segments, which are almost equal: these Flowers are disposed in Whorles, and are collected into a slender Spike upon the Top of the Stalks.

The Species are;

1. LAVENDULA *latifolia*. C. B. Common broad-leav'd Lavender.

2. LAVENDULA *angustifolia*, C. B. Common narrow-leav'd Lavender, commonly call'd Spike-lavender.

3. LAVENDULA *latifolia sterilis*. Mor. Hist. Broad-leav'd barren Lavender.

4. LAVENDULA *angustifolia, flore albo*. C. B. P. Narrow-leav'd Lavender, with white Flowers.

5. LAVENDULA *folio dissecto*. C. B. Cut-leav'd Lavender.

6. LAVENDULA *folio dissecto, flore albo*. Boerb. Ind. Cut-leav'd Lavender, with a white Flower.

7. LAVENDULA *folio longiore, tenuius & elegantius dissecto*. Tourn. Lavender with a longer and more beautiful fine-cut Leaf, commonly call'd Canary Lavender.

8. LAVENDULA *latifolia Indica subcinerea, spica brevior*. H. R. Par. Broad-leav'd Indian Lavender, with a short Spike.

9. LAVENDULA *latifolia Hispanica tomentosa*. Infr. R. H. Broad-leav'd woolly Spanish Lavender.

10. *LAVENDULA latifolia, flore albo.* C. B. P. Broad-leav'd Lavender, with a white Flower.

The first of these Species, tho' very common in most Parts of Europe, yet in England is rarely to be found, notwithstanding it is as easily propagated as any of the other Sorts.

The second is the most common Sort in the English Gardens, being propagated for medicinal Uses, &c.

The third Sort is a Degeneracy from the second, having much broader and greener Leaves, but rarely ever flowers while it continues with the Leaves broad; but whenever it flowers, the Leaves of that Part of the Plant become narrow again.

The fourth Sort is also a Variety of the second, from which it differs in the Colour of the Flowers; which in this Sort are white, and those of the second are blue.

These are all propagated by Cuttings or Slips; the best Season for which is in March, when you should plant them in a shady Situation, or at least shade them with Mats until they have taken Root; after which they may be exposed to the Sun, and when they have obtain'd Strength, may be remov'd to the Places where they are design'd to remain. These Plants will abide the longest in a dry, gravelly, or stony Soil, in which they will endure our severest Winters; though they will grow much faster in the Summer, if they are planted upon a rich light moist Soil; but then they are generally destroy'd in Winter; nor are the Plants half so strong-scented, or fit for medicinal Uses, as those which grow upon the most barren rocky Soil.

The first and second Sorts may also be propagated from Seeds, which should be sown in March upon a dry undung'd Soil; and when the Plants are come up, they must

be carefully clear'd from Weeds, until they are about two Inches high; when they should be transplanted into other Beds, allowing them a Foot Distance each Way: in these Beds they may remain to be cut for Use; or you may afterward transplant them into dry Borders or Beds, in any other Place where you would have them stand, observing never to dung the Ground where they are planted; which would cause them to grow vigorously in Summer, but will hasten their Decay, as was before observ'd.

The eighth Sort is mentioned in most of the Books on Botany, as a distinct Species; but I rather believe it to be only a Variety of the third Sort; for I have often found this to vary in the same manner as that.

The tenth Sort is a Variety of the first, from which it only differs in the Colour of the Flowers.

The ninth Sort hath woolly Leaves and Branches, in which it differs from the first Sort; but this, when planted in a rich Soil, will alter; and is often so like the first, as hardly to be distinguish'd from it.

These may be propagated in the same manner as the common Lavender, and are equally hardy.

These Plants were formerly in Use to make Edgings to Borders in Gardens; for which Purpose they are by no means proper; for they will grow too large for such Designs; and if they are often cut in very dry Weather, they are subject to decay; and in hard Winters they are very often kill'd, so that the Edging will not be complete: besides, these Plants greatly exhaust the Goodness of the Soil, whereby the Plants in the Borders will be depriv'd of their Nourishment; so that they should never be planted in a fine Garden amongst other choice Plants and Flowers,

Flowers, but rather be placed in Beds in the Physic-garden. These Plants producetheir Flowers in *June* and *July*; at which time they should be gather'd, and dry'd in a shady Place, and preserved dry for Use.

The fifth and sixth Sorts are commonly sown every Spring on Borders or Beds of fresh light Earth; and when the Plants come up, they may be transplanted into other Borders of the Flower-garden, or into Pots, to remain for good; where they will produce their Flowers in *July* and *August*, and their Seeds are ripe soon after. These are pretty Plants to place in large Borders, amongst other Plants, for Variety; but they are never used with us: they may also be preserved over the Winter, if placed into a Green-house in Autumn: but they seldom continue longer than two Years with us, and many times (if they have produced Seeds the first Year) they will not continue longer. These Plants will sometimes grow from Cuttings; but then the Cuttings must be strong, and inclinable to be woody; for if they are very soft and spongy, they seldom succeed; and they should also be placed upon a moderate Hot-bed, which will greatly promote their taking Root. This Method is sometimes necessary to preserve the Sorts, which might otherwise be in Danger of being lost.

The seventh Sort is tenderer than either of the former; so the Seeds of this must be sown on a moderate Hot-bed in the Spring; and when the Plants come up, they should be each planted into a separate small Pot filled with light Earth, and plunged into another Hot-bed, to bring the Plants forward; and in the Beginning of *June*, they should be inured to the open Air, where they should be placed in a shel-

tered Situation toward the End of that Month: in *July* the Plants will flower, and if the Autumn proves warm, the Seeds will ripen in *September*: but when they do not perfect Seeds, the Plants may be preserved through the Winter in a good Green-house; where they will produce Flowers most Part of that Season, and the next Season good Seeds may be obtained.

The Leaves of this Sort are much finer cut than those of the other; and there are several Spikes of Flowers growing closely together at the Extremitie of the Branches; by both which it is easily distinguished from the other Sort, tho' some Persons have supposed they were not different Plants.

LAUREOLA. *Vide* Thymelæa.

LAUROCERASUS. *Vide* Padus.

LAURUS, The Bay-tree.

The Characters are;

It hath a Flower consisting of one Leaf, which is shaped like a Tunnel, and divided into four or five Segments: the Male Flowers (which are produced on separate Trees from the Female) have eight Stamina, which are branched into Arms: the Ovary of the Female Flowers becomes a Berry, inclosing a single Seed within an horny Shell, which is covered with a Skin.

The Species are;

1. LAURUS *vulgaris*. C. B. The common Bay, with Male Flowers.

2. LAURUS *vulgaris* *fœmina*. Boerb. Ind. The common fruit-bearing Bay-tree.

3. LAURUS *vulgaris*, *folio elegantissime variegato aureo*. Boerb. Ind. The Gold-striped Bay-tree, *vulgo*.

4. LAURUS *vulgaris*, *folio undulato*. H. R. Par. The common Bay-tree, with waved Leaves, and Male Flowers.

5. LAURUS *vulgaris*, *folio undulato, fœmina*. Boerb. Ind. The

Berry-bearing Bay-tree, with waved Leaves.

6. LAURUS tenuifolia. Tab. Icon.

Mas. The narrow-leav'd Bay, with Male Flowers.

7. LAURUS tenuifolia fœmina.

Boerb. Ind. The narrow-leav'd Berry-bearing Bay-tree.

8. LAURUS latiori folio. Lugd.

Mas. The broad-leav'd Bay-tree, with Male Flowers.

9. LAURUS latifolia fœmina.

Ind. The broad-leav'd Berry-bearing Bay-tree.

10. LAURUS Indica. Hort. Farnes.

Ald. The broad-leav'd Indian Bay-tree, commonly call'd Wild Cinnamon.

11. LAURUS foliis integris & trilobatis. Lin. Hort. Cliff. The Sassafras-tree.

12. LAURUS foliis ovatis utrinque acutis integris annuis. Lin. Hort. Cliff. The Benjamin-tree.

13. LAURUS foliis ovatis utrinque acuminatis trinerviis nitidis, petiolis laxis. Lin. Hort. Cliff. The Camphor-tree.

14. LAURUS Americana mas, foliis subrotundis, floribus in capitulum collectis. Houst. MSS. Male American Bay, with roundish Leaves, and Flowers collected in an Head.

15. LAURUS Americana fœmina, foliis subrotundis, fructu albo umbellato. Houst. MSS. Female American Bay, with roundish Leaves, and white Fruit growing in an Umbel.

The first and second Sorts are old Inhabitants of the English Gardens; and as they are Varieties obtained from the same Seeds, so they are promiscuously cultivated, and are not to be distinguished asunder, until they have produced Flowers.

These Plants are propagated either from Seeds, or by laying down the

tender Branches, which will take Root in one Year's time, and may then be taken off, and transplanted either into a Nursery, or the Places where they are design'd to remain. These Trees are often propagated from Suckers, which they put out in plenty from their Roots (especially those Trees which were produced from Suckers): but these never grow so large, nor are so handsome, as those which are raised from the Berries: and as these are very subject to put out Suckers from their Roots, so they spread, and fill the Ground with young Plants; whereby the principal Plants are starved, and make but little Progress. But if you would propagate them from Seeds, you must gather them from the Trees in November (at which time they commonly are ripe), and preserve them in Sand until the Beginning of March, when you must prepare a Bed of light dry Earth, which should be situated in a warm Place, where the Plants may be defended from the North and East Winds. This Bed must be levell'd exactly even, and then draw some Furrows cross it at about eight Inches Distance, and an Inch deep, into which you should drop the Seeds, about two Inches asunder; then cover them with Earth; and if the Season should prove very dry, you must often refresh them with Water. In about two Months time the young Plants will appear above-ground, when you must carefully clear them from Weeds; and in dry Weather if you refresh them with Water, it will greatly promote their Growth. In these Beds they should continue two Years, by which time they will be large enough to transplant; you must therefore make choice of a warm dry Spot of Ground, which should be well dug, and cleans'd from

from

from Weeds, and Roots of Trees, &c. and laid even; then mark out the Lines three Feet distant from each other; and having taken up the Plants carefully with a Ball of Earth to their Roots, you must plant them exactly strait in the Rows, at eighteen Inches asunder, observing to water them well, as also to lay some Mulch upon the Surface of the Ground, near the Stems, to preserve the Ground from drying too fast. The best Season for removing these Trees is in *April*, just before they begin to shoot, or in a dry Soil about *Michaelmas*.

During the time these Plants remain in the Nursery, you must observe to keep them clear from Weeds, digging the Ground between the Rows every Spring; as also to fasten the Shoots of the Plants to strait Stakes, to prevent their growing crooked and unsightly; and also observe to prune off the Under-shoots, to make them advance in Height: but I can by no means recommend the shearing of these Plants into conical or pyramidal Figures (as is often practised) for the same Reason as I gave for the Laurel; *viz.* that the Leaves, being large, are cut in Pieces, whereby the Plants are rendered very unsightly; but rather, that they should be improved, so as to make large Trees, to which they are naturally dispos'd to grow, could we prevent the Shears from continually gnawing them.

These Trees are very proper to plant upon the warm Sides of dry Hills, where they may be protected from the severe Blasts of the North and East Winds; in which Situations I have seen some of these Trees upward of thirty Feet in Height, which is a plain Indication of their large Growth.

But I know it will be objected,

that these Trees are often destroyed by hard Winters, and so are improper to make large Plantations of in *England*. That they have been sometimes killed by severe Winters, I can't deny: but if they are brought up thus hardily, as has been directed, and not shear'd, I dare affirm, they will resist the severest Cold of our Climate, when grown to a moderate Age, provided they are planted in a dry Soil; in which, tho' their Leaves should be intirely shrivell'd by extreme Cold, yet if permitted to remain undisturbed, and not cut, they will shoot again in the succeeding Summer, as I have more than once experienced. And in the hard Winter, *Anno 1739*. when most of the Bay-trees seem'd to be destroyed which grew abroad, and many People were so inconsiderate as to dig them up, and throw them away, it was observable, that all those which were permitted to stand did shoot out again in the succeeding Summer, and recovered their usual Verdure: which should caution every Person, not to be over-hasty in condemning Trees to the Fire, but to wait for the Success of a whole Season, before they are pulled up.

Bay-leaves dry'd, and reduced to Powder, as much as will cover an Half-crown, being drank in a Glass of White-wine, are said seldom to fail of curing an Ague. These Leaves are also used in divers Sawces in the Kitchen, and the Berries are often used in Medicine.

The Gold-striped Bay is much more tender than the common Sort; for which Reason it must be planted in Pots, and housed in Winter with Oranges, Myrtles, &c. and must be placed so as to have as much free Air in mild Weather as possible, and will require to be frequently water,

tered. This Plant may be propagated by Layers, or by budding it upon the common Bay: but you must not plant it into very rich Earth, which will cause it, to grow vigorously, whereby it will become quite plain; but, on the contrary, let it have a fresh light sandy Soil, in which it will very well preserve its beautiful Stripe.

The 4th, 5th, 6th, 7th, 8th, and 9th Sorts are commonly preserved in Pots or Tubs, and placed in the Green-house with Oranges, Myrtles, &c. But I dare say, either of these Sorts will thrive in the open Air, if planted in a warm dry Soil, and defended from the North and East Winds; but especially the broad-leav'd Sort, which, I have experienced, will endure more Cold than the common Bay: but as they are less common, so they are generally preserved with more Care; tho' they may either of them be propagated in as great Plenty either by Layers or Seeds; for they will bear great Plenty of Berries, provided they are not kept shear'd; and these Berries will rise full as well, and, many times, out-grow the common Bay, as I have frequently observed: so that why we have not these Trees in as great Plenty as the common Sort, is only owing to their not being propagated and planted abroad; most People imagining, because they have been hitherto treated with great Care, that therefore they will not endure the Cold: which is a great Mistake; for we have found, by repeated Trials, which have been made within a few Years past, that many of those Plants which had been nurs'd up in Green-houses with great Care (whereby their Roots were confin'd, and the Plants circumscrib'd and starv'd in their Growth), when planted abroad, have made great

Progress, and defy'd the most severe Cold of our Climate to injure them: which is a great Encouragement to proceed in our Trials of this Kind; since, by this Method, we may naturalize a great Variety of valuable Trees and Plants to our Country, which may hereafter be found of great Benefit. Nor should we be discouraged, if, in the first Attempt, we should not succeed so well as we might wish; for, by several Essays, we may overcome the Difficulty; and then the Pleasure of having denizen'd any Exotic Trees, will sufficiently compensate the Trouble, since hereby we establish living Monuments of Praise.

The *Indian Bay* is too tender to endure our cold Winters abroad as yet: tho' I doubt not but that when these Plants are very strong and woody, and some Care taken in their first Exposure, they may be brought to thrive in the open Air; which if once obtain'd, so as to have Seeds produced in *England*, the Off-spring will be better inured to our Climate. And if this Plant can be once well naturaliz'd, so as to grow as in the warmer Parts of *Europe*, it will be one of the noblest Ever-greens, for Shade and Beauty, we ever obtained; for it is naturally a very strait-growing Tree, and the Leaves are very broad, and of a shining-green Colour, which renders it very agreeable.

This Plant is propagated by Seeds (which are easily procured from *Portugal*, where these Trees grow in great Plenty); they should be put into Pots filled with fresh light Earth, and plunged into a gentle Hot-bed, to facilitate their Growth; and when the Plants are come up, you should remove the Pots into another moderate Hot-bed, to forward them, where they should remain until the Begin-

Beginning of *June*, when you must harden them by degrees, to endure the open Air, into which they should be removed about the Middle of that Month, observing to place the Pots in a well-sheltered Situation; and in dry Weather you must often refresh them with Water. The Beginning of *October* you must remove the Pots into the Green-house, placing them near the Windows, that the Plants may have as much free Air as possible in mild Weather; and observe that they do not suffer with Drought; for they will require to be frequently refreshed with Water. In *April* following you must take the Plants out of the Pots, preserving the Roots, and put each into a separate Pot filled with the before-mentioned fresh light Earth: then plunge them into a moderate Hot-bed for a Month or six Weeks, to hasten their taking Root; which done, you must harden them again, and expose them to the open Air, as before: and in Winter they must be housed again, observing the Directions before given. After five or six Years thus managing them (still observing every Year to let them continue longer out of the House in Autumn, than the preceding), you should in *April* plant some of them into the full Ground, in a warm well-sheltered Situation, that they may have good Rooting in the Ground before the Winter comes on: and in Autumn you must lay a little Mulch upon the Surface of the Ground, to prevent the Frost from penetrating to their Roots: but if the Winter following should prove severe, you should twist a Band of Hay or Straw round their Stems, which will be of great Service to protect them from Cold: and after they have endured two or three Winters abroad, they will be pretty much out of Danger; for tho' a very

hard Winter may afterwards kill some of their Branches, yet they will shoot again the following Summer.

I had a large Plant of this Kind, which had been planted in the full Ground in the Spring 1739. which was killed to the Ground by the following hard Winter, and, as I then imagin'd, totally destroyed: but the following Summer it put out from the Roots very strong, and, had the Stem of the Plant been defended, I believe it would have put out again above.

The Sassafras-tree is a Native of *North-America*, where it commonly grows on low swampy Ground: it never rises to any great Height, nor are their Stems very large; so may be ranged amongst the Shrubs: the Roots of these Shrubs spread underground; and in their native Soil put out great Quantities of Suckers: but in *England* it is very difficult to preserve the Plants long; for in very severe Winters they are commonly destroyed by the Cold; and in warm dry Summers they are often killed by Drought, unless they are planted in a very moist Soil: nor do these Shrubs thrive well when they are sheltered in a Green-house in Winter; therefore the best Way is to plant them in the open Air, in a sheltered Situation, and a light moist Soil, where they will thrive better than with any other Management: in such Places I have seen some of these Plants upward of seven Feet high, and pretty well furnished with Branches.

This is commonly propagated by the Berries, which are brought from *America* (for they do not produce any in *England*); but these Berries generally lie in the Ground a whole Year, and sometimes two or three Years, before they grow; therefore

the

the surest Method of obtaining the Plants will be, to get the Berries put into a Tub of Earth soon after they are ripe, and sent over in the Earth; and as soon as they arrive, to sow the Berries on a Bed of light Ground, putting them two Inches into the Earth: and if the Spring should prove dry, the Bed must be frequently watered, and shaded from the great Heat of the Sun in the middle of the Day: with this Management many of the Plants will come up the first Season: but as a great many of the Berries will lie in the Ground till the next Spring, so the Bed should not be disturbed, but wait until the Season after, to see what will come up: the first Winter after the Plants come up, they should be protected from the Frost, especially in the Autumn; for the first early Frost at that Season is apt to pinch the Shoots of these Plants, and do them more Injury than the severe Frost of the Winter; for when the extreme Part of the Shoots is killed, it generally affects the whole Plant.

When the Plants have grown a Year in the Seed-bed, they may be transplanted into a Nursery, where they may stand one or two Years to get Strength, and may then be transplanted into the Places where they are to remain for good.

There have been some of these Plants propagated by Layers: but these are commonly two, and sometimes three Years before they put out Roots: and if they are not duly watered in dry Weather, they rarely take Root; so that it is uncertain, whether one in three of these Layers do succeed; which makes these Plants very scarce in England.

The Wood of this Plant is frequently used to make Tea, which is

esteemed a great Antiscorbutic: and in *Carolina* they frequently give a Decoction of the Wood and Leaves in Intermitting Fevers.

The Benjamin-tree is also a Native of *North-America*, and seldom grows much higher in that Country than the Sassafras-tree: this has been by some Authors thought to be the Tree from whence the Benjamin of the Shops was procured; but that Drug is brought from the *East-Indies*, and is the Gum of a Tree very different from this.

This Shrub is hardy enough to resist the Cold in *England*; and if it is planted on a moist Soil, will grow to the Height of fourteen or sixteen Feet; and the Leaves will be large and fair; but in dry Ground they make but little Progress: this is generally propagated by Layers; for the Plants do not produce Seeds in *England*: the Layers should be laid down in Autumn; and if the Branches are slit, as is commonly practised in laying of Carnations, they will succeed the better: in dry Weather these Layers must be duly watered, otherwise they will not take Root; nor should they be disturbed until the second Year; for they rarely have sufficient Roots for transplanting sooner.

It may also be propagated by Seeds, which may be procured from *Virginia*, *New-England*, *Carolina*, or any of the Northern Parts of *America*; and should be treated in the same manner as hath been directed for the Sassafras.

The Camphor-tree is a Native of the Island of *Borneo*; but is also found in many Places on the Coast of *Malabar*, and upon several Islands in the *South-Sea*: this is too tender to live abroad in *England*, but may be preserved thro' the Winter in a good Green house; and in the Summer-

Winter-season may be placed in the open Air, in a warm-sheltered Situation, with other tender Exotic Plants.

This Tree is very near akin to the Cinnamon-tree, from which it differs in the Leaves, those of the Cinnamon-tree having three Ribs running longitudinally from the Footstalk to the Point, which are remarkably large; whereas the Ribs of the Leaves of this Tree are small, and extend toward the Sides, and have a smooth shining Surface: they are both Male and Female in different Trees; so that there is a Necessity for both Sexes to stand near each other, in order to have good Seeds.

In *Europe* this Tree is propagated by Layers, which are two Years, and sometimes longer, before they take Root; so that the Plants are very scarce; and as all those which I have seen flower are Male Trees, so there can be no Hopes of procuring Seeds from them here: but if the Berries of this, and also of the Cinnamon-tree, were procured from the Places of their Growth, and planted in Tubs of Earth, as hath been directed for the Sassafras-tree, there may be a Number of these Plants procured in *England*: and if they were sent to the *British* Colonies in *America*, they might be there cultivated, so as to become a public Advantage; especially the Cinnamon-tree, which will grow as well in some of our Islands in the *West-Indies*, as it doth in the native Places of its Growth; and in a few Years the Trees might be had in Plenty; for they propagate easily by the Berries. The *Portuguese* brought some of these Trees from the *East-Indies*, and planted them on the Island of *Princes*, on the Coast of *Africa*, where they now abound, having spread over a great Part of the Island.

The Camphor-tree is preserved in several curious Gardens, as a rare Plant: the Leaves when bruised, and the Wood, smell very like the Camphor of the Shops; and the Leaves being of a fine shining-green Colour, and continuing all the Year, the Plants make a good Appearance in the Conservatory during the Winter-season; and in Summer, when the Plants are placed abroad, with other tender Exotics, they add to the Variety.

These Plants do not require any artificial Heat in Winter; so that if they are placed in a warm dry Greenhouse, they will thrive very well: during the Winter-season they will require to be frequently watered; but they must not have too much at each time. In the Summer they should be placed in a warm Situation, where they may be defended from strong Winds, and not too much exposed to the direct Rays of the Sun; and during this Season they must have plenty of Water.

They may be propagated by laying down the young Branches in Autumn, which should be treated in the same manner as is before directed for the Sassafras.

LAURUS ALEXANDRINA.
Vide Ruscus.

LAURUSTINUS. *Vide* Tinus.

LAYERS: Many Trees may be propagated by Layers, the Evergreens about *Bartholomew-tide*, and other Trees about the Month of *October*.

This is to be performed by slitting the Branches a little Way, and laying them under the Mould about half a Foot: the Ground should first be made very light; and after they are laid, they should have a little Water given them.

If they do not comply well in the laying of them down, they must be

pegged

pegged down with an Hook or two; and if they have taken sufficient Root by the next Winter, they must be cut off from the main Plants, and planted in the Nursery, as is directed about Seedlings.

Some twist the Branch, or bare the Rind; and if it be out of the Reach of the Ground, they fasten a Tub or Basket near the Branch, which they fill with good Mould, and lay the Branch in it.

Laying of Trees.

This Operation is thus performed.

1st, Take some of the Boughs, and lay them into the Ground about half a Foot deep in fine fresh Mould, leaving them with the End of the Layer about a Foot, or a Foot and an half, out of the Ground, and keep them moist during the Summer-season, and they will probably have taken, and be fit to remove, in Autumn; and if they have not by that time taken Root, they must lie longer.

2dly, Tie a Piece of Wire hard round the Bark of the Bough, at the Place you intend to lay in the Ground; and twist the Ends of the Wire, so that they may not untie; and prick the Place above the Wire thro' the Bark with an Awl in several Places; and then lay it in the Ground, as before directed.

3dly, Cut a Slit upwards at a Joint, as is practised in laying of Carnations, which by Gardeners is called Tonguing the Layers.

4thly, Twist the Place that you design to lay in the Ground like a Withy, and lay it into the Ground as directed in the first Way of Laying.

5thly, Cut a Place round about the Bough (that is design'd to be laid) an Inch or two, at the Place that is most convenient to lay into the Ground, and manage it as is

directed in the first Method of Laying.

The Season for laying hardy Trees, that shed their Leaves, is in *October*; but for such as are tender, in *March*; for Ever-greens, *June* or *August* are good Seasons.

Tho' Layers may be laid in any time of the Year, the before-mention'd Seasons are most proper, for the Reasons following; because they have the whole Winter and Summer to prepare and draw Root; for at these times of the Year the Sun has sufficient Power on the Sap of the Tree to feed the Leaf and Bud, but has not Power sufficient to make a Shoot.

And if that small Quantity of Sap that does arise be hinder'd, as it will by some of the preceding Ways of Laying, the Leaves and Buds will gently crave of the Layer, and by that means will prepare the Layer to take Root, or put forth Roots a little to maintain itself, finding it cannot have Nourishment from the Mother-plant.

And therefore, because it wants but little Nourishment at that time of the Year, it is better to lay Layers of Trees, or to set Cuttings, than at other times, either in the Winter; when the Sap stirs but little, or in the Summer, when the Sap abounds; or in the Spring, when it begins to rise; because it is then apt to come too suddenly to draw Sap from the Layer, before the Layer has drawn or prepar'd for Root.

However, the Spring or Summer may do well for small Plants; because such Plants, being but short-liv'd, draw Root the quicker.

If you would lay young Trees from an high Standard, the Boughs of which cannot be bent down to the Ground, then you must make use of Osier-baskets, Boxes, or Pots,

fill'd with fine-sifted Mould, mix'd with a little rotten Willow-dust. which will keep Moisture to assist the Layer in taking Root: the Basket, Box, &c. must be set upon a Post or Tressel, &c. and the Bough must be laid according to either of the four first Ways of Laying; but too much Head must not be left on, lest that be injur'd by the Wind, or by its own Motion rub off the tender Root; and the smaller the Boughs are, the less Way they should be set out of the Ground, and Care must be taken to keep them clear from Weeds.

The harder the Wood is, the better will the young Wood take Root; but if the Wood be soft, the older Boughs will take Root the best.

LEMON-TREE. *Vide* Limon.

LENS, Lentils.

The Characters are;

It hath a papilionaceous Flower; the Pointal of which becomes a short Pod, containing orbicular Seeds, which are, for the most part, convex: to which may be added, The Leaves are conjugated, growing to one Mid-rib, and terminated by Tendrils.

The Species are;

1. LENS *vulgaris*. C. B. P. Common Lentils.

2. LENS *major*. C. B. P. Greater Lentils.

3. LENS *monanthos*. H. L. Lentils with a single Flower.

There are several Varieties of the first and second Sorts, which differ from each other in Colour of their Flowers and Fruits; but these are accidental, and will often rise from the same Seeds; for which Reason they are not worth observing in this Place.

These Plants are very common in the warm Parts of Europe, and in the Archipelago, where they are the Food of the poorer Sort of People,

which they loath when they meet with better Fare; from whence came the Proverb, *Dives factus jam desistit gaudere Lente*; which is apply'd to such as spurn at those Things in easy Circumstances, which they were glad of in a low Condition.

These Plants are one of the least of the Pulse-kind, and call'd in some Places Tillis: they may be propagated in the same manner as Vetches, &c. but must be sown a great deal thinner. They will grow upon a dry barren Soil best, and are a very good Fodder for Cattle; but as they require an annual Culture, they are not at present very much esteem'd. Their Seeds are very good for Pigeons.

LENTISCUS, The Mastich-tree.

The Characters are;

The Leaves are pinnated, the Lobes growing opposite, and are fastened to one common Mid-rib: the Male Flowers, which are produced upon separate Trees from the Fruit, have short green quadrifid Cups, which expand in form of Stars, having four or five short Stamina, with large red Apices: these Flowers are collected into a Bunch: the Ovary, in the Female Plants, which grows upon the Top of a long thick Footstalk, is commonly branch'd, and becomes a Fruit, which contains a Nut with an hard Shell.

The Species are;

1. LENTISCUS *vulgaris*. C. B. P. Common Mastich-tree.

2. LENTISCUS *vulgaris, foliis minoribus & pallidioribus*. H. L. The Male Mastich-tree, with lesser and paler Leaves.

These two Plants are promiscuously preserv'd in many curious Gardens in England, where they are commonly kept in Pots and Tubs, and housed in the Winter, with Oranges, Myrtles, &c. but in some Places, which are well defended

from cold Winds, I have observed them growing in the open Air, without suffering the least Injury from our ordinary Winters; but in extreme hard Weather they are sometimes greatly damaged; however, as they are seldom quite destroy'd, especially if the Plants are strong, and have taken good Root in the Ground, it is worth our Care to endeavour to naturalize them to our Climate; which may easily be effected, provided you keep them in Pots until they have acquired a sufficient Strength; and then shake them out in the Spring of the Year, preserving as much of the Earth to their Roots as you can, planting them on a dry warm Soil, and in a well-shelter'd Situation; and in Winter lay some Mulch upon the Surface of the Ground about their Roots, to prevent the Frost from penetrating to them; as also in very severe Frosts you should cover their Stems and Heads with some Straw, or Peas-haulm, which will prevent their being destroy'd; and after they have been inured to the open Air for two or three Years, they will then be mostly out of Danger, and will grow much better than those Plants which are kept in Pots or Tubs.

These Plants are propagated by laying down their young Branches in the Spring, which should be slit at a Joint (as is practis'd in laying Carnations); and in dry Weather they must be frequently water'd, to encourage their striking Root, which they rarely do until the second Year, before which they should not be disturb'd; but then, if they have taken sufficient Root, they should be transplanted in *April*, placing them, as was before directed, in a warm Situation; observing to water them in dry Weather, as also to lay some

Mulch about their Roots, to prevent the Ground from drying too fast; and in Winter lay a little fresh Mulch about them, to keep out the Frost; after two or three Years, they will be sufficiently hardy, and will require no farther Care, but to dig the Ground about them every Spring, and keep them clean from Weeds, as also to trim up the lateral Branches, to make them aspire in Height; but by no means should you shear them into Balls and Pyramids (as the common Practice); but let them grow in their utmost Luxuriancy, in which manner they will appear much more beautiful than in those studied Figures.

These Plants may be propagated from the Berries, which may be obtain'd from the Southern Parts of *France* or *Spain*, where they grow in great Plenty; they must be sown in Pots or Tubs of fresh light Earth, and hous'd in Winter (for the Plants seldom come up until the second Year); but in Summer they should be expos'd in a warm Situation, and often refreshed with Water: when the Plants come up, they must be carefully clear'd from Weeds, and refresh'd with Water in dry Weather; and in Winter the Pots or Tubs must be remov'd into Shelter, but should have a great Share of free Air in mild Weather; and the Spring following, the Plants should be taken up, and each of them planted into a separate Pot; then plunge the Pots into a moderate Hot-bed, to facilitate their taking Root; after which they may be expos'd to the open Air (as was directed for the older Plants), and continue to house them every Winter, until they are three or four Years old; after which they may be planted into the open Air, when they must be treated as the old Plants.

These Trees are always green, which renders them more valuable; and their Leaves being of a beautiful Figure, and their Heads generally growing very regular, renders them worthy of a good Situation: they seldom rise above twelve or fourteen Feet high with us, and should therefore be intermixed with other Ever-greens of the same Growth: but as these Trees are sometimes injured by severe Frost, so it is proper to keep some Plants in Tubs, which may be sheltered in Winter in the Green-house, in order to preserve their Species.

LEONTOPETALON, Lion-leaf.

The Characters are;

It hath a thick tuberose perennial Root: the Flower is naked, and consists of five or six Petals, which expand in form of a Rose, attended by Stamina: in the Middle of the Flower rises the Pointal, which afterwards becomes a Bladder, containing many spherical Seeds.

We have but one Species of this Plant in the English Gardens; which is,

LEONTOPETALON foliis costæ ramosæ immascentibus. Flor. Lion-leaf with Leaves growing on a branched Rib.

This Plant is found in great Plenty in the Islands of the Archipelago, but in the greatest Plenty about Aleppo, and also in some Parts of Italy; but at present is very rare in England: it may be propagated by sowing the Seeds, or parting the Roots; but the former is the best Method, if the Seeds could be obtained from abroad; for they seldom produce good Seeds in England, nor do they increase very fast by their Roots.

The Seed of this Plant should be sown soon after it is ripe, in Pots or Tubs fill'd with fresh light Earth, that the

Plants may be removed into Shelter in the Winter; for if they are exposed at that Season (which is the time they arise), the Cold will destroy them; but in the Summer they should be set abroad, where they may have the morning Sun until Ten of the Clock; and when the Plants are strong enough to be transplanted, they should be each of them put into a separate Pot, and in Winter placed into an Hot-bed-frame, where they may be shelter'd in severe Frosts; but in mild Weather they should be expos'd to the open Air.

When the Plants are two Years old, they may be taken out of the Pots, and planted into a warm Border under a South Wall, where they will endure the Cold of our ordinary Winters very well, being seldom hurt but by severe Frosts, or too much Wet; for which Reason they should always be planted in a dry Soil.

The best Season for transplanting these Roots is in June, when their Leaves are decay'd; for if you defer it till July or August, they will be striking out new Roots, when they will not be so safely remov'd. They produce their Flowers in Winter, for which they are chiefly valued.

LEONTOPODIUM. Vide Plantago.

LEONURUS, Lion's-tail.

The Characters are;

It is one of the verticillate Plants with a Lip-flower, which consists of one Leaf, whose Galea or Crest is imbricated, and much longer than the under Lip, which is divided into three Segments: out of the Flower-cup rises the Pointal, fix'd like a Nail to the hinder Part of the Flower, surrounded by four Embryoes, which afterwards turn to so many Seeds, which are ob-

long, and inclosed in a long fistulous Husk, which before was the Flower-cup.

The Species are;

1. *LEONURUS perennis, fideritidis folio, flore phœniceo majore.* Breyn. Prod. Perennial African Lion's-tail, with an Ironwort-leaf, and a large scarlet Flower.

2. *LEONURUS perennis Africanus, fideritidis folio variegato, flore phœniceo majore.* Perennial African Lion's-tail, with a variegated Ironwort-leaf, and a large scarlet Flower.

3. *LEONURUS minor, Capitis Bonæ Spei, vulgo. Boerb. Ind.* Lesser Lion's-tail from the Cape of Good Hope, with a Cat-mint-leaf.

These Plants are very great Ornaments in a Green-house, producing large Tufts of beautiful scarlet Flowers in the Months of *October* and *November*, when few other Plants are in Perfection; for which Reason a good Green-house should never be wanting of these Plants, especially since they require no artificial Heat, but only to be preserved from hard Frosts; so that they may be placed amongst Oranges, Myrtles, Oleanders, &c. in such a manner, as not to be too much overshadowed with other Plants; but that they may enjoy as much free Air as possible in mild Weather.

They are easily propagated by planting Cuttings of any of the Sorts in Pots filled with light Earth, any time in *July* or *August*, observing to shade and water them until they have taken Root; after which they must be each of them planted into a separate Pot fill'd with light rich Earth, and often refresh'd with Water (for it is an aquatic Plant in its native Country); and in *October* they must be removed into the

Green-house; but in *May* they should be expos'd again to the open Air, placing them where they may have the morning Sun till Eleven of the Clock, observing never to let them want Water, which will encourage them to produce strong Tufts of Flowers in Autumn.

These Plants will grow to be eight or nine Feet high, and abide many Years; but are very subject to grow irregular; therefore their Branches should be pruned early in the Spring, in order to reduce them to a tolerable Figure; but they will not bear to be often pruned or shear'd, nor can they ever be form'd into Balls or Pyramids; for if they are often shorten'd, it will prevent their flowering.

The strip'd Sort is, by many People, valued for the Variety of its Leaves; but as that is occasion'd by a Weakness in the Plant, the Flowers of that Sort are never so large and fair, as are those of the plain Sort, nor produced in so great Bunches.

The third Sort is also preserv'd for Variety more than its Beauty; the Flowers of this being much smaller, and not so well colour'd, as are those of the common Sort. This Plant seldom grows above three Feet high.

LEPIDIUM, Dittander or Pepperwort.

The Characters are;

The Flower consists of four Leaves, which are placed in form of a Cross, from whose Cup arises the Pointal, which afterward becomes a spear-shaped Fruit, which is divided in the Middle by a Partition into two Cells, which contain many oblong Seeds.

The Species are;

1. *LEPIDIUM latifolium. C. B. P.* Common broad-leav'd Dittander, or Poor man's Pepper.

2. **LEPIDIUM**

2. *LEPIDIUM humile incanum arvense. Inst. R. H.* Low hoary Dittander, or Pepperwort.

3. *LEPIDIUM gramineo folio, sive Iberis. Inst. R. H.* Grass-leaf'd Dittander, or Sciatica Cress.

4. *LEPIDIUM humile minus incanum Alepicum. Inst. R. H.* Low greener Dittander of Aleppo.

5. *LEPIDIUM capillaceo folio, fruticosum Hispanicum. Inst. R. H.* Shrubby Spanish Dittander, with very narrow Leaves.

6. *LEPIDIUM Orientale, nasturtii crispi folio. Tourn. Cor.* Eastern Dittander, with a curled Cress-leaf.

7. *LEPIDIUM Orientale, nasturtii folio, caule vesicario. Tourn. Cor.* Eastern Dittander, with a Cress-leaf, and a swelling Stalk.

8. *LEPIDIUM Orientale, caryophylli folio. Tourn. Cor.* Eastern Dittander, with a Clove-gilliflower-leaf.

The first and third Sorts are directed by the College of Physicians to be used in Medicine. The first grows wild in some Parts of England; but is generally cultivated in Gardens for Use. The Herb and Root of this Sort were formerly used in Sawce, to give a warm biting Taste thereto; and some poor people have mixed a few of the leaves in their Sallads, for the same purpose. This Sort is easily propagated by planting any small Pieces of the Root, either in Spring or Autumn, after the manner directed for Horse-radish; but it should be planted in some odd Corner of the Garden, and not near other Plants, because the Roots will spread, and shoot up at a great Distance, so as to over-run the Ground where it is planted.

The third Sort may be propagated by Seeds, which should be sown in the Spring; and when the Plants

are come up, they should be thinned, so as to leave them eight or ten Inches asunder, and keep them clear from Weeds; which is all the Culture they require. The second Year the Plants will produce Seeds, and the old Roots will remain several Years, provided they are not in too rich Ground. The Leaves and Seeds of this Plant are used in Medicine.

The second and fourth Sorts are trailing Plants, which propagate very fast by their creeping Roots: these are preserved in Botanic Gardens for Variety; but there is little Beauty in them.

The fifth Sort was discovered by Dr. Tournefort in Spain. This grows shrubby, and will abide the Cold of our ordinary Winters in the open Air, provided it is planted on a poor dry Soil. It may be propagated either by Seeds or Cuttings.

The other three Sorts were discovered by Dr. Tournefort in the Levant, from whence he sent their Seeds to the Royal Garden at Paris. These are also preserved in Botanic Gardens for the sake of Variety, and may be easily propagated by Seeds.

LEPIDOCARPODENDRON.

Vide Protea.

LETTUCE. *Vide Lactuca.*

LEUCANTHEMUM, Ox-eye Daisy.

The Characters are;

It agrees in every respect with the Chrysanthemum, except in the Colour of its Semi-florets, which in these are constantly white.

The Species are;

1. *LEUCANTHEMUM vulgare. Tourn.* Common Ox-eye Daisy.

2. *LEUCANTHEMUM Alpinum majus, rigido folio. Tourn.* Greater Ox-eye Daisy of the Alps, with stiff Leaves.

3. *LEUCANTHEMUM radice repente, foliis latioribus serratis. Tourn.* Creeping-rooted Ox-eye Daisy, with broad serrated Leaves.

4. *LEUCANTHEMUM folio absinthii, Alpinum. Ciaffi.* Alpine Ox-eye Daisy, with a Wormwood leaf.

5. *LEUCANTHEMUM tanacetii folio, flore majore. Boerb. Ind.* Ox-eye Daisy, with a Tansy-leaf, and a large Flower.

6. *LEUCANTHEMUM Canariense, foliis chrysanthemi, sapore pyrethri. Tourn.* Canary Ox-eye Daisy, with a Chrysanthemum-leaf, and a Taste like Pellitory of Spain, vulgarly call'd Pellitory of Spain.

7. *LEUCANTHEMUM montanum, foliis chrysanthemi. Inst. R. H.* Mountain Ox-eye Daisy, with Corn-margold-leaves.

8. *LEUCANTHEMUM gramineo folio. Inst. R. H.* Grass-leav'd Ox-eye Daisy.

9. *LEUCANTHEMUM latissimo folio, flore maximo. Inst. R. H.* Broadest-leav'd Ox-eye Daisy, with a large Flower.

10. *LEUCANTHEMUM Lustanicum, argenteo laciniato folio. Inst. R. H.* Portugal Ox-eye Daisy, with a silver jagged Leaf.

11. *LEUCANTHEMUM Americanum frutescens, foliis latis conjugatis & asperis, flore albo, capitulis squamosis. Houst.* Shrubby American Ox-eye Daisy, with broad rough Leaves growing opposite, a white Flower, and a scaly Cup.

The first of these Plants is very common in the Meadows in most Parts of England, from whence the Flowers are gathered, and brought into the Markets in London for medicinal Uses; but it is seldom cultivated in Gardens.

The second and fifth Sorts are many times planted in Gardens, for their Beauty: these produce large

Tufts of white radiated Flowers upon the Summits of their Stalks, which continue a long time in Beauty: they commonly grow two Feet high or more; for which Reason they should always be placed in the Middle of large Borders, and require to be planted at a good Distance from other Plants, otherwise they will overbear them: so that they are not very proper for small Gardens, taking up too much room.

These are very hardy Plants, and may be propagated either by sowing their Seeds, or parting their Roots: the best time for sowing their Seeds is in *March*, upon a Border of fresh light Earth; and when the Plants are come up pretty strong, they must be transplanted into fresh Borders of the like Earth, placing them at eight Inches Distance each Way: in these Borders they may remain till *Michaelmas*, when they should be removed into the Borders where they are to continue, and the Summer following they will produce Flowers and Seeds.

But if you would propagate them by parting their Roots, the best Season for this Work is in *September* or *October*; for if it be done in the Spring, they seldom flower so strong the succeeding Summer.

The third Sort multiplies too fast by its creeping Roots, which will spread, and come up at a great Distance from the old Plant, so that it is hardly to be kept within tolerable Bounds; but it is very apt to run over whatever Plants stand near; for which Reason it should never be placed amongst choice Flowers, but allowed a Place in some abject Part of the Garden, in a Corner allotted to it; where it will grow to the Height of four Feet, and produce large radiated white Flowers in *September* and *October*.

The fourth Sort is seldom admitted into curious Flower-gardens, it being a rambling Plant; and the Branches trailing upon the Ground, render it unsightly, nor are the Flowers very beautiful; so that it is seldom preserv'd but in Botanic Gardens.

The other Sorts are all very hardy Plants, and will grow in almost any Soil or Situation; and there being very little Trouble in their Culture, they deserve room in all large Gardens.

The sixth Sort was brought from the *Canary* Islands; so is tenderer than any of the former, and must be preserv'd in Pots, and sheltered in the Winter. This is propagated by planting Cuttings, in any of the Summer-months, in a North Border of light Earth; where they will soon take Root, after which they must be planted into Pots filled with fresh light Earth, and expos'd to the open Air until the Middle or Latter-end of *October*, when they must be hous'd; but should be plac'd in the coolest Part of the House, where they may have much free Air in mild Weather, and must be frequently refresh'd with Water; but in Summer-time they may be expos'd to the open Air, in a shady Situation, where they will thrive much better than if expos'd to the Sun; which would dry the Earth too fast, so that they would constantly require to be water'd.

This Plant is not apt to continue above three or four Years without renewing; therefore Cuttings should be planted every other Year, to maintain the Kind, where People are curious to preserve their Varieties. The great Beauty of this Plant consists in its long Continuance in Flower; for when the Plants are properly managed, they will pro-

duce Flowers throughout the Year; and although their Flowers are not very beautiful, yet in the Winter-season, when there is want of better Sorts, this Plant will add to the Variety in the Green-house; therefore may be allowed a Place in all such Gardens where Collections of Plants are preserv'd, In Botanic Gardens it is preserv'd for the sake of Variety; and some have suppos'd it to be the true Pellitory of *Spain*, which, in reality, is a different Plant; tho' this has a very sharp acrid Taste, much like that of the Pellitory.

The four next-mentioned Sorts are very hardy Plants; so may be treated in the same manner as hath been directed for the five Sorts first-mentioned.

The last Sort was discovered by *Dr. William Houstoun*, at *Campechy*, from whence he sent the Seeds to *England*. This is a shrubby Plant, which grows eight or nine Feet high, having many Stems, and irregular Branches; but it hath not produced any Flowers in *England*. This Plant may be propagated by Cuttings, during any of the Summer-months, if they are planted in a Bed of light Earth, and shaded from the Sun. In the Winter this must be plac'd in a moderate Stove; and in Summer it may be plac'd abroad, in a warm Situation.

LEUCOIUM, Stock-gilliflower.

The Characters are;

The Flower is compos'd, for the most part, of four Leaves, which are plac'd in form of a Cross: out of the Flower-cup rises the Pointal, which becomes a long flat Pod, divided into two Cells by an intermediate Partition, to which the Valves adhere on both Sides, and are furnish'd with flat smooth Seeds, which are orbicular; and bordered round their Edges: to

which may be added, The Flowers are specious, and sweet-smelling.

The Species are;

1. *LEUCOIMUM incanum majus*. C. B. P. Greater hoary Stock-gilliflower, with single white Flowers.

2. *LEUCOIMUM incanum majus, flore cinericeo*. C. B. P. The great hoary Stock-gilliflower, with an ash-colour'd Flower.

3. *LEUCOIMUM purpureum, vel rubrum*. C. B. P. Purple or red Stock-gilliflower.

4. *LEUCOIMUM incanum majus coccineum*. Mor. Hist. The greater hoary crimson Stock-gilliflower, vulgarly call'd The Brumpton Stock.

5. *LEUCOIMUM violaceum*. Tabern. Violet-colour'd Stock-gilliflower.

6. *LEUCOIMUM incanum majus multiplex, flore purpureo*. C. B. P. Greater hoary Stock-gilliflower, with a double purple Flower.

7. *LEUCOIMUM incanum majus multiplex, flore rubro*. C. B. P. Greater hoary Stock-gilliflower, with a double red Flower.

8. *LEUCOIMUM incanum majus multiplex, flore albo*. Tourn. Greater hoary Stock-gilliflower, with a double white Flower.

9. *LEUCOIMUM incanum majus variegatum, pleno flore*. C. B. P. The greater hoary Stock-gilliflower, with a double variegated Flower.

10. *LEUCOIMUM majus incanum variegatum album, flore simplici, maculis ex albo rubris*. C. B. P. The greater hoary Stock-gilliflower, with a single white Flower, spotted and strip'd with red.

11. *LEUCOIMUM pleno flore, album, sanguineis maculis signatum*. Hort. Eyst. White Stock-gilliflower, with a double Flower mark'd with bloody Spots.

12. *LEUCOIMUM pleno flore, album, purpurcis maculis signatum*. Hort. Eyst. White Stock-gilliflower, with

a double Flower mark'd with purple Spots.

13. *LEUCOIMUM incanum majus variegatum, pleno flore, foliis in ambitu argenteis*. H. L. The greater hoary variegated Stock-gilliflower, with a double Flower, and Leaves edg'd with Silver.

14. *LEUCOIMUM minus & annuum*. Dod. Lesser annual Stock gilliflower.

15. *LEUCOIMUM album odoratissimum, folio viridi*. C. B. P. The most sweet-smelling Stock-gilliflower, with a green Leaf, commonly call'd The white Wall-flower.

16. *LEUCOIMUM album odoratissimum folio viridi, pleno flore*. The double white Wall-flower, vulgo.

17. *LEUCOIMUM luteum vulgare*. C. B. P. The yellow Wall-flower.

18. *LEUCOIMUM luteum, flore pleno, minus*. C. B. P. The common double Wall-flower.

19. *LEUCOIMUM angustifolium Alpinum, flore sulphureo*. H. R. Par. Narrow-leav'd Alpine Wall-flower, with a brimstone-colour'd Flower.

20. *LEUCOIMUM angustifolium Alpinum, flore pleno sulphureo*. Narrow-leav'd Alpine Wall-flower, with a double brimstone-colour'd Flower, commonly call'd The straw-colour'd Wall-flower.

21. *LEUCOIMUM luteum, magno flore*. C. B. P. Wall-flower with a large Flower.

22. *LEUCOIMUM luteum, flore pleno, majus*. C. B. P. The greater Wall-flower, with a double Flower.

23. *LEUCOIMUM majus, flore intus luteo, extus ferrugineo*. Greater Wall-flower, with larger Flowers, yellow within, and on the Outside of an Iron-colour, commonly call'd The Ravenal Wall-flower.

24. *LEUCOIMUM majus, flore majore pleno, intus luteo, extus ferrugineo*. The double Ravenal, vulgo.

25. LEU

25. *LEUCOIMUM majus, flore pleno ferrugineo.* Tourn. The old double bloody Wall-flower.

26. *LEUCOIMUM luteum, pleno flore, foliis ex luteo variegatis.* The yellow variegated Wall-flower, with a double Flower.

27. *LEUCOIMUM luteum, pleno flore, foliis ex albo eleganter variegatis.* The silver-strip'd Wall-flower, with a double Flower.

There are several other Varieties of these Flowers, which are preserv'd in some curious Botanic Gardens; but those here mention'd are the most beautiful, and best worth propagating in all curious Flower-gardens.

All the Sorts of Stock-gilliflowers are propagated by Seeds: the best time for sowing them is in the Beginning of *April*, upon a Border of fresh light Earth, where they may be expos'd to the morning Sun; for if they are too much expos'd to the Sun in the Heat of the Day, they are very subject to be eaten by a sort of Fly; as they often are while young, upon an hot dry Soil. To remedy which, you should always sow a few Radishes amongst them, which will secure them from this Mischief: for the Flies will always prey upon the Radishes, whereby your Gilliflower-plants will be preserv'd; but then you must not suffer the Radishes to be too thick amongst them; for that would draw them up very weak, and cause them to be long-shank'd. When your Plants have gotten six Leaves, they must be transplanted into other Borders of the like fresh Earth, and expos'd to the morning Sun at about six Inches Distance; observing to water and shade them until they have taken Root; after which they will require no farther Care, than only to keep them clear

from Weeds, until the Latter-end of *August*, or the Beginning of *September*, when you must transplant them into the Borders of the Pleasure-garden; which should be done, if possible, in moist Weather, that they may the sooner strike Root, whereby they will be securely fasten'd in the Ground before the Frost comes on; which would prevent their taking Root, and thereby either quite destroy them, or at least cause them to flower very weak the succeeding Spring.

There are many People who make a great Stir about sowing these Seeds, and transplanting the Plants always at the same time when the Moon is at the Full, in order to obtain a greater Number of double Flowers; but from several Years Observation, I could never find any thing in this Management, nor from the frequently removing the Plants, as is by some directed; which only weakens them, and causes them to produce smaller Bunches of Flowers; but I never could obtain any more double Flowers by this Management, than if they had never been remov'd: but the best Method that I have observ'd, to have these Flowers in the greatest Perfection, is, to change the Seeds every Year, if you can procure a good Correspondent at some Place at a great Distance from you, who will faithfully furnish you with good Seeds: and in saving these Seeds, if you observe a greater Number of Petals than usual in the single Flowers, it is a good Sign, that the Seeds of such Plants will produce double Flowers. I have also observ'd, that if the Seeds are preserv'd in the Pods a Year before they are sown, a greater Number of Plants with double Flowers has been produced, than from the same Seeds sown the first Year.

As these Plants are commonly biennial, and seldom continue longer than the second Year, hence there will be a Necessity of sowing Seeds every Year; for when they have flowered and seeded, they commonly decay soon after; as also do the double Flowers soon after they are out of Flower; or if some of them should continue another Year, they are seldom so strong, or produce such fair Flowers, as the young seedling Plants: so that, upon the Whole, they are scarcely worth standing. And tho' some People recommend the propagating the double Sorts from Slips and Cuttings, as the surest Way to have double Flowers, which indeed is very true; yet the Plants thus rais'd are always weaker than those rais'd from Seeds, and never produce their Flowers near so large or fair: wherefore (as I said before) it is better to have a Succession of seedling Plants every Year, amongst which you will always have a Quantity of double Flowers, provided your Seed be good.

The *Brumpton* Stock-gilliflower is by many People most valued for the Largeness of its Flowers, and the Brightness of their Colour: but this Sort seldom produces more than one Spike of Flowers upon a Plant; whereas the *Italian* and purple Sorts produce several very fair Bunches upon each Plant, especially if they have Strength: and there is a Sort commonly call'd the Stock-major (which, probably, is the seventh Sort here mention'd), which branches out on every Side, and produces many fair Spikes of Flowers from one Root; these are of a beautiful red Colour: as doth another Sort, commonly (though falsely) call'd the Annual-stock, which will produce its Flowers the first Year from Seed;

but then the Plants commonly continue the next Season, and flower again very strong; and these often produce some Variety in the Colour of their Flowers; some being of a beautiful scarlet, others of a pale-red Colour, and some of them are finely variegated; and these all produc'd from Seeds taken from the same Plant: but this Sort is very apt to degenerate, if the Seeds are not frequently changed.

The small annual Stock-gilliflower will produce Flowers in about ten Weeks after sowing (which has occasion'd its being call'd the ten Weeks Stock); and if the Season be tolerably cool and moist, these Flowers will be very large: and often there are large double Flowers produc'd among them, which renders them well worth propagating, especially if you sow them in *May*, which will cause them to flower in *August* and *September*, when Flowers are beginning to be scarce in the Gardens. These Plants produce ripe Seeds the same Year, and rarely survive a Winter.

These Plants should all be planted in a fresh light Soil, which must not be dung'd; for they don't succeed upon a rich Soil, in which they are apt to grow very rank, and then their Roots canker and decay; so that they seldom abide the Winter in such Soils; but in a fresh Soil they will stand our ordinary Winters extremely well, and will produce large fair Flowers.

The common single Wall-flower is very seldom cultivated in Gardens, but is often found growing upon old Walls and Buildings in divers Parts of *England*: this is the Sort which is directed in the College Dispensatory for medicinal Uses: but the double of this Kind is very common in most of the *English* Gardens;

Gardens; which is propagated by planting Slips or Cuttings in any of the Spring-months, observing to water and shade them until they have taken Root; after which they may be remov'd to the Places where they are to remain.

The straw-colour'd Wall-flower with double Flowers was formerly more common in the *English* Gardens than at present: this is a much finer Sort for Shew than the common, the Plants generally growing more upright; and the Spikes of Flowers are much larger, and grow much closer together, than those: but the Flowers have very little Scent; which, I suppose, has occasion'd its being less cultivated than it was formerly; though indeed, for Shew, it is inferior to none of the Sorts of Wall-flowers: this is also propagated by Slips, as the common Sort.

The white Wall-flower is propagated by sowing the Seeds in *April*, in the manner before directed for the Stock-gilliflowers; and if the Seeds are good, there will be many double Flowers produc'd amongst them; which may be continu'd, by planting the Slips in the same manner as has been directed for the common Wall-flower. But the double of this Kind, being somewhat tenderer than the other Sorts of Wall-flowers, should be planted into Pots fill'd with fresh light Earth; and, in the Winter-season should be plac'd under an Hot-bed-frame, where they may be shelter'd from severe Frosts; but in mild Weather they should have as much free open Air as possible; in which Management they will endure two or three Years, and produce fair Flowers.

The large-flowering Wall-flower is also propagated by Seeds in the same manner as the Stock-gilliflow-

ers; for though it will grow from Slips, yet these seldom make so good Plants as those produc'd from Seeds, nor will they flower so strong. This Sort rarely produces many double Flowers; but yet is well worth propagating, for the Largeness and Sweetness of its Flowers; and if they are planted in a very poor dry Soil, will continue two or three Years, and endure the Cold extremely well.

The *Ravenal* Wall-flower is at present in the greatest Esteem with the curious Florists, the Flowers of this Kind being full as large as the last-mention'd Sort, and are of a fine redish or iron Colour on the Outside, as also of an extraordinary Sweetness; and this is more apt to produce double Flowers than the former: it is propagated by Seeds, which should be sown in *March*, and manag'd as was directed for the Stock-gilliflower; observing never to plant them in a rich Soil, which will cause them to grow very fast during the Summer-season; but they seldom endure the Winter in such Soils. The double-flower'd Plants of this Kind may also be propagated by Slips, in the same manner as the before-mention'd Sorts; but these should be shelter'd in Winter, as was directed for the white Wall-flower, otherwise they are subject to be kill'd by very sharp Frosts. The Seeds of this Kind should be often chang'd, or else they will greatly degenerate.

The old double-bloody Wall-flower was formerly more common in *England* than at present, it being at this time rarely to be seen: this is a Variety of the common double Wall-flower, from which it only differs in having the Outside of the Petals of a bloody Colour: it may be propagated by Slips, as the common

mon Sort; but requires to be shelter'd from extreme Cold in the Winter; which often destroys these Plants, if they are too much expos'd to it.

The yellow-strip'd Wall-flower is also a Variety of the common double Sort, having its Leaves beautifully variegated in the Spring and Winter-season; but in the Summer, when the Plants are very free of Growth, they degenerate to be almost quite plain; so that at that Season there is very little Beauty in them. This is also propagated by Slips, as the common Sort; but should be planted in a warm Situation, otherwise it will often suffer by great Colds in Winter.

The silver-strip'd Wall-flower is much more beautiful than the last, and generally retains its curious Variegation through the whole Year. This is propagated by Slips, as the former; but should be shelter'd in Winter, being much tenderer than the last: for which Reason, the Plants should be set into Pots, and treated as the double white Wall-flower: but you should observe, never to plant them in a rich Soil; which will cause them to become plain (as I have often observ'd): nor should they have too much Moisture, which very often destroys them.

All the Sorts of Wall-flowers will abide the Cold much better, if planted in a very gravelly and stony Soil, than when they are in a rich Earth; as may be observ'd by those which grow upon the Tops of Walls, and other Buildings; where sometimes they are very much expos'd to the cold Winds, and yet often endure the sharpest Winters; when those which were planted in a good Soil have been destroy'd, tho' they have had a warm Situation.

LICHEN, Liverwort.

There being two Sorts of this Plant, which are used in Medicine, and one of those being accounted a sovereign Remedy for the Bite of mad Dogs, I thought it would not be improper to mention them here, tho' they are Plants which cannot be propagated by any Method, except by paring up the Turf of Grass whereon they grow, and laying it down in some moist shady Place; where, if the Turf takes Root, and thrives, these Plants will spread, and do well.

The two Sorts are;

1. LICHEN *petraeus latifolius*, five *Hepatica fontana*. C. B. P. Common broad-leav'd Liverwort.

2. LICHEN *terrestris cinereus*. *Raii Syn.* Ash-colour'd Ground-liverwort.

The first Sort grows on the Sides of Wells, and in moist shady Places not only on the Ground, but on Stones, Bricks, or Wood. Of this there are several Varieties, which are distinguished by the Curious in Botany: but as they are Plants of no Use, I shall not enumerate them.

The second Sort (which is used to cure the Bite of mad Dogs) grows on Commons, and open Heaths, where the Grass is short, in most Parts of *England*, especially on Declivities, and on the Sides of Pits. This spreads on the Surface of the Ground; and, when in Perfection, is of an Ash-colour; but as it grows old, it alters, and becomes of a dark Colour. This is often carried into Gardens with the Turf, which is laid for Walks and Slopes; and where the Soil is moist and cool, it will spread, and be difficult to destroy, so that it renders the Grass unprofitable: but this is the only Method yet known to have it grow in Gardens, where it is desired.

This

This is esteemed a sovereign Remedy for the Bite of mad Dogs, and hath been for many Years used with great Success. It was communicated to the Royal Society by Mr. George Dampier, whose Uncle had long used this Plant, to cure the Bite of mad Dogs on Men and Animals, with infallible Success. The Method of taking it he has delivered as followeth: "Take of the Herb, and dry it either in an Oven, by the Fire, or in the Sun; then powder it, and pass it thro' a fine Sieve; mix this with an equal Quantity of fine-powdered Pepper. The common Dose of this Mixture is four Scruples, which may be taken in warm Milk, Beer, Ale, or Broth." He also advises, that the Part bitten be well washed, as also the Cloaths of the Person who is bit, lest any of the Snivel or Drivel of the mad Dog should remain. If the Person bitten be full-grown, he advises, that he be blooded before the Medicine is taken; and to use the Remedy as soon after the Bite as possible, as also to repeat the Dose two or three several Mornings fasting.

LIGUSTICUM, Lovage.

The Characters are;

The Lobes of the Leaves are cut about their Borders, like those of Parsley: the Flowers consist, for the most part, of five Leaves, which expand in form of a Rose: each of these Flowers are succeeded by two oblong, gibbose, furrow'd Seeds, which on one Side have a leafy Border.

The Species are;

1. LIGUSTICUM *vulgare*, *foliis apii*. J. B. Common Lovage.
2. LIGUSTICUM *Scoticum*, *apii folio*. Tourn. Scotch Lovage, with a Parsley-leaf.
3. LIGUSTICUM *Græcum*, *apii folio*. T. Cor. Greek Lovage, with a Parsley-leaf.

4. LIGUSTICUM *foliis multiplicato-pinnatis, foliolis pinnatim incis. Lin. Hort. Cliff.* Lovage with many Pair of Pinnae, and the little Leaves cut; commonly called *Cicutaria*, or Barkard Hemlock.

The first of these Plants is often used in Medicine, and was formerly reckoned amongst the Kitchen-herbs; but is now almost intirely cast out of the Kitchen-garden, and only cultivated for physical Uses. This Plant may be easily propagated by sowing the Seeds, soon after they are ripe, in a moist Spot of Ground: and when the Plants come up the Spring following, they should be transplanted out to the Distance of eighteen Inches or two Feet asunder, in a moist Soil; where, if they are kept clear from Weeds, they will thrive exceedingly, and the second Summer will produce Seeds: but the Herb may be frequently cut for Use; their Roots abiding several Years, will shoot again continually after being cut; so that a few Plants will be sufficient for the Use of a Family.

The second and third Sorts are only preserved in Collections of Plants for Variety; but are not in any Use at present. These may be propagated in the same manner as the former.

The fourth Sort has by some Persons been supposed to be the Hemlock of the Antients: it is a very strong Plant: when the Leaves are bruised, they emit a very rank Odour; and the Plant is generally thought to be very poisonous: tho' Parkinson writes, That he could find no poisonous or stinking Smell in the Plant which he cultivated in his Garden: but that must have been a different Plant from this: for a more fetid Scent was never observed in any Plant.

This is extreme hardy: if the Seeds

Seeds are permitted to scatter, the Plant will come up the following Spring: but when the Seeds are sown in the Spring, they generally lie in the Garden a whole Year. As this Plant grows very large, it will require three Feet Space at least; and it will grow upward of four Feet high.

LIGUSTRUM, The Privet.

The Characters are;

The Leaves grow by Pairs opposite to each other: the Flower consists of one Leaf, is tubulous, and divided at the Top into five Segments: the Ovary in the Centre of the Flower-cup becomes a globular soft Fruit, full of Juice, in which are lodg'd four Seeds.

The Species are;

1. **LIGUSTRUM vulgare.** Park. Theat. The common Privet.

2. **LIGUSTRUM foliis majoribus & magis acuminatis, toto anno folia retinens.** Pluk. Alm. The ever-green Privet.

3. **LIGUSTRUM foliis e luteo variegatis.** H. R. Par. The yellow-blotch'd Privet.

4. **LIGUSTRUM foliis argentatis.** Breyne. Prod. The silver-striped Privet.

5. **LIGUSTRUM aculeatum, fructu testiculato.** Plum. Cat. Prickly American Privet, with testiculated Fruit.

The first of these Plants is very common in the Hedges in most Parts of England, and therefore it is not so much valued by the generality of People, as some Shrubs which are more rare; but it deserves a Place in Plantation of Shrubs, as it adds to the Variety: it commonly grows about eight or ten Feet high, in form of a Shrub; but may, by Art, be trained up to a much greater Height, and may be intermixed amongst other Trees of middling Growth in Wildernesses.

This Shrub is frequently cultivated

in the Nurseries near London, to furnish the small Gardens and Balconies in the City, it being one of the few Plants which will thrive in the Smoke of London: but altho' it will live some Years in the close Part of the Town, yet it seldom produces Flowers after the first Year, unless in some open Places, where there is a free Air. In the Country the Leaves will continue green great Part of the Winter: it flowers in June, and the Berries ripen in Autumn, which generally hang upon the Branches till Christmas.

The second Sort will grow much larger than the first, and is equally hardy. The Leaves of this commonly remain upon the Trees until the Spring, unless in very hard Winters; for which Reason it is more esteemed than the common Sort.

The Leaves of this Sort are broader than those of the first, and are of a deeper Green; the Bunches of Flowers are larger, and of a purer white Colour; the Berries are also much larger, and of a shining-black Colour; therefore make a fine Appearance in October and November. This Sort will grow to fourteen or sixteen Feet; and is a proper Shrub to fill up in Wilderness-quarters.

I cannot but think this Sort, which is the most common in Italy, is the *Ligustrum* mentioned by *Virgil* in the second Eclogue: and my Reason for it is, that as the Flowers of this Shrub are of a pure White, but fall off very soon, they are by no means proper to gather for Garlands, &c. and the Berries being of a fine black Colour, and continuing long upon the Plants, make a fine Appearance. To confirm that these Berries were gathered for Use, we find in several Authors of undoubted Credit, that they were used in dyeing, as also that the best Ink was made of them.

Besides,

Besides, is it not much more reasonable to suppose, that *Virgil* would rather draw his Comparison from the Flowers and Fruit of the same Plant, when he is warning the Youth not to trust to his Beauty, than to mention two different Plants, as has been generally supposed? for here are the white Flowers of the Privet appearing early in the Spring, which is an Allusion to Youth; but these are of short Duration, soon falling away; whereas the Berries, which may be applied to mature Age, are of long Continuance, and are gathered for Use.

These Plants are easily propagated by laying down their tender Shoots in Autumn, which in one Year's time will be rooted enough to transplant; when they may be removed to the Places where they are designed to remain, or planted in a Nursery for two or three Years; where they may be trained for the Purposes design'd.

They are also propagated by Suckers, which these Plants send forth in great Plenty: but these are too apt to put out a great Number of Suckers from their Roots; so are not easily kept within Bounds; nor do the Plants rise so high, as those which are propagated by Layers; therefore this Method should be preferred.

Formerly these Plants were greatly in Use for Hedges; but since so many others of greater Beauty have been introduced, which are much preferable to these for such Purposes, they have been intirely rejected, the Trouble in keeping them in Order being very great; nor are the Hedges made with them ever so thick and handsome, as those made with divers other Plants.

The two variegated Kinds are pretty Varieties amongst other stri-

ped Shrubs. These may be propagated by budding, or inarching them upon the plain Sort, as also by laying down their Branches; but as they seldom shoot so fast, as to produce many Branches proper for Layers, the other Method is chiefly us'd. The silver-striped Sort is somewhat tenderer than the plain; but will endure the open Air, if planted in a dry Soil, and in a warm Situation; but if either of the variegated Kinds be planted in a moist rich Soil, they are subject to become plain from their vigorous Growth.

LILAC, The Pipe-tree.

The Characters are;

The Flowers consist of one Leaf, are funnel-shaped, but divided at Top into five Segments, and are collected into oblong specious Spikes: the Flowers are succeeded by compress'd Pods, which are scarce an Inch long, and are divided into two Cells, in which are contained broad flat Seeds, which are compress'd on their Edges.

The Species are;

1. LILAC *Matthioli*. The common blue Lilac, or Pipe-tree.
2. LILAC *flore albo*. *Tourn.* The white Lilac, or Pipe-tree.
3. LILAC *flore saturate purpureo*. *Tourn.* The deep-purple Lilac, or Pipe-tree.
4. LILAC *flore albo, foliis ex luteo variegatis*. *Cat. Plant. Hort.* The yellow-blotch'd Lilac.
5. LILAC *flore albo, foliis ex albo variegatis*. *Cat. Plant. Hort.* The white-blotch'd Lilac.
6. LILAC *folio ligustri*. *Tourn.* Lilac with Privet-leaves, falsely called the *Persian Jasmine*.
7. LILAC *laciniato folio*. *Tourn.* Lilac with cut Leaves, falsely called the cut-leav'd *Persian Jasmine*.
8. LILAC *folio ligustri, flore albo*. The privet-leav'd Lilac, or *Persian Jasmine*, with a white Flower.

The three first Sorts commonly grow eighteen or twenty Feet high, and are very great Ornaments to Quarters of flowering Trees in the Spring during their flowering Season, if rightly dispos'd amongst Trees of the same Growth. The first and second Sorts are more common than the third; but the third is much preferable to the second, the Flowers of that growing much closer upon the Bunches, and are of a finer purple Colour, and the Trees generally produce them in greater Quantities; so that this, and the white Sort, being regularly intermixed, afford an agreeable Variety, tho' the second may be admitted to add a Lustre to the other.

These Plants are easily propagated by Suckers, which they send forth in great Plenty from the old Plants. These should be taken off in *October*, and planted into a Nursery, where they may remain three or four Years; after which time they will be fit to transplant into the Wilderness, where they are to continue: they will require no other Culture than to dig the Ground about them every Year, and take off the Suckers which are produc'd from their Roots; which, if suffered to remain, would starve the old Plants, and grow up into an irregular Thicket.

As these Plants are always propagated by Suckers, their Roots are always disposed to send out great Plenty of Suckers again; therefore where there is not Care taken to clear away these every Autumn, they will grow into a Thicket, and the old Plants will be stunted in their Growth, and not appear so beautiful: but altho' this Method of propagating these Plants is by much the easiest, yet I would choose that of laying down the Branches, because

the Plants so raised will not be liable to produce Suckers; therefore are much to be preferred, especially for small Gardens.

These Trees thrive best on light rich Ground, where there is a Depth of Soil; for on strong shallow Soils they grow mossy, and make little Progress. Where these are planted in a good Soil, they will grow upward of twenty Feet high, and produce great Numbers of Flowers; but in stiff shallow Ground they seldom arrive to half that Height; nor do they produce many Flowers.

During the time these Shrubs are in Flower, there are very few others comparable to them for Beauty or Sweetness; the Leaves being large, and of a beautiful Green, set off the Flowers greatly: but these seldom continue in Beauty longer than eight or ten Days, unless the Season proves cool and moist, when they will remain a Fortnight or longer.

The two variegated Sorts are preserved by some Persons, who delight in striped Plants, as Curiosities; but they have no great Beauty in them; for in Summer-time, when these Plants are free of Growth, their white and yellow Blotches do not appear very plain; and when they do, it appears more like a Distemper in them, than any real Beauty. These may be propagated by budding or inarching them upon the common Sort.

The privet-leav'd Lilacs are of humbler Growth than those before-mention'd, seldom rising above six or seven Feet high; but are very great Ornaments in small Wilderness-quarters of flowering Shrubs, where being intermix'd with other Shrubs of the same Growth, they afford an agreeable Prospect. These produce their Flowers in much longer

er and slenderer Bunches than the other Sorts, and have a more agreeable Scent.

They may be propagated from Suckers, as the former; but as they seldom produce them in such Plenty, hence the most expeditious Method is, to propagate them by Layers, which will take Root in one Year fit to transplant; and the Plants thus raised will have better Roots, and not so liable to put out Suckers as the other; so should be preferred to them.

The Sort with white Flowers is an accidental Variety from the other; and having pale Flowers, inclining to white, is preserved by the Nursery-gardeners, for the sake of Variety.

The cut-leav'd Sort differs from the other in having many of its Leaves deeply cut into several Segments; the Flowers are also of a brighter purple Colour, and make a finer Appearance.

These are very hardy Shrubs, and will grow in almost any Situation; but they thrive best on a light loamy Soil. They flower in *May*, and their Flowers are of longer Duration than those of the common Lilac.

LILIASTRUM. *Vide* Hemerocallis.

LILIO-ASPHODELUS. *Vide* Hemerocallis & Crinum.

LILIO-FRITILLARIA. *Vide* Fritillaria.

LILIO-HYACINTHUS. *Vide* Scilla.

LILIO-NARCISSUS. *Vide* Amaryllis.

LILIUM, The Lily.

The Characters are;

It hath a bulbous Root, consisting of several fleshy Scales adhering to an Axis: the Stalk is greatly furnished with Leaves: the Flower is compos'd of six Leaves, and is shap'd somewhat

like a Bell: in some Species the Petals are greatly reflex'd, but in others but little: from the Centre of the Flower rises the Pointal, which becomes an oblong Fruit, that is commonly triangular, divided into three Cells, and full of compress'd Seeds, which are border'd, lying upon each other in a double Row.

The Species are;

1. LILIUM album, flore erecto & vulgare. C. B. P. Common white Lily.

2. LILIUM album inodorum, flore pleno. H. R. Par. The double white Lily, without Smell.

3. LILIUM album, floribus dependentibus, sive peregrinum. C. B. P. The foreign white Lily, with hanging Flowers.

4. LILIUM album, lato caule, multiflorum. H. R. Par. The white Lily, with broad flat Stalks, bearing many Flowers.

5. LILIUM album vulgare, foliis ad limbos flavescens. H. L. Common white Lily, with strip'd Leaves.

6. LILIUM album, flore lineis purpureis variegato. D. Marchant. The white Lily, strip'd with Purple.

7. LILIUM purpureo-croceum majus. C. B. P. The common Orange-lily, vulgo.

8. LILIUM pumilum cruentum. Park. Par. The dwarf red Lily.

9. LILIUM rubrum, multiplici flore. Park. Par. The double red Lily.

10. LILIUM bulbiferum angustifolium. C. B. P. Narrow-leav'd bulbiferous Lily, commonly call'd the Fry-lily.

11. LILIUM floribus reflexis, montanum. C. B. P. The Imperial Martagon.

12. LILIUM floribus reflexis albis punctatis. C. P. B. The white-spotted Martagon.

13. LILIUM floribus reflexis albis

non punctatis. C. B. P. The white Martagon, without Spots.

14. *LILIAM floribus reflexis, montanum, flore pleno*. H. R. Par. The double-flowering Martagon.

15. *LILIAM flavum angustifolium, flore flavo, maculis nigris distincto*. C. B. P. The spotted Canada Martagon, *vulgo*.

16. *LILIAM miniatum odorum angustifolium*. C. B. P. The scarlet Martagon of *Pompony*, *vulgo*.

17. *LILIAM Byzantinum miniatum polyanthos*. C. B. P. The scarlet Martagon, with many Flowers.

18. *LILIAM Byzantinum miniatum*. C. B. P. The common scarlet Martagon.

19. *LILIAM Byzantinum, flore flavo*. C. B. P. The yellow Martagon of *Constantinople*.

20. *LILIAM purpureo-croceum majus, foliis ex luteo eleganter variegatis*. The Orange-lily, with beautiful variegated Leaves.

21. *LILIAM purpureum minus, flore pleno*. C. B. P. Lesser red Lily, with a double Flower.

22. *LILIAM cruentum polyanthos*. Hort. Eyst. Firy-lily, with many Flowers.

23. *LILIAM bulbiferum latifolium majus*. C. B. P. Greater broad-leav'd bulb-bearing Lily.

24. *LILIAM bulbiferum minus*. C. B. P. Smaller bulb-bearing Lily.

25. *LILIAM floribus reflexis, montanum, flore albicante*. C. B. P. The Martagon with a whitish Flower.

26. *LILIAM floribus reflexis, montanum, flore maculis rubris inordinatis asperso*. The Martagon with Flowers spotted inordinately with red.

27. *LILIAM floribus reflexis, montanum, flore carneo*. H. R. Par. The pale-red or flesh-coloured Martagon.

28. *LILIAM floribus reflexis, montanum, longiore spica*. C. B. P. The Martagon with a long Spike of Flowers.

29. *LILIAM floribus reflexis variis, sive tertium*. C. B. P. The strip'd Martagon.

30. *LILIAM floribus reflexis, polyanthos album punctatum*. C. B. P. The white-spotted Martagon, with many Flowers.

31. *LILIAM Byzantinum serotinum*. Hort. Eyst. The late flowering Martagon of *Constantinople*.

32. *LILIAM floribus reflexis, Americanum maximum, flore rubente, serotinum*. The greatest *American* late-flowering Martagon, with red Flowers.

There are some other Varieties of these Plants, which are preserved in the curious Gardens abroad, most of which were formerly in *England* (as may be gather'd from *Parkinson*, and several other Writers upon curious Flowers); but these which are here mention'd are all the Sorts I can, at present, find in the Gardens near *London*: tho' it is very probable, many of the other Sorts may be found in some old Gardens of this Kingdom, which were formerly possess'd by curious Delighters in Flowers: for as most of these Sorts are very hardy, and will grow with little Culture, so when they are once fix'd in a Garden, they are not very subject to decay, unless their Roots are destroy'd, but will abide many Years without any Care; therefore from such Places there may be Hopes of retrieving those Flowers again.

The common white Lily is so well known, that it will be needless to say any thing of it in this Place. The second Sort with double Flowers is, by some Persons, preserved by way of Curiosity; but there is no Beauty in it; for the Flowers seldom open,
and

and have no Scent; so that it scarcely deserves a Place in a good Garden. The third Sort with pendulous Flowers is sometimes called the white *Constantinople Lily*, from whence it was formerly brought; but is now become almost as plenty as the common white Lily in many Gardens: this differs from the common Sort in having slender Stems, which are of a purplish Colour; and the Petals of the Flowers are narrower, and the Flowers are somewhat less, and always hang down.

These Plants are all very hardy, and require no other Culture, than to be taken up every other Year (in *July*, after the Flowers are decay'd), and pull off the Suckers from them; which, if suffer'd to remain on, would starve the old Roots, and cause them to flower very weak: but they should not be kept long out of the Ground, nor removed after their Leaves appear above-ground; both which will weaken the Roots so much, that they will not flower the following Summer. They increase greatly from Off-sets, whereby they are become so common as to be little esteem'd.

The fourth Sort is only an accidental Variety of the common white Lily, which proceeds from the Strength of the Roots, and by two or three Stems joining together in one, as is frequently observed in the Buds of Asparagus, and many other Kinds of Vegetables; in which, whenever this happens, they are always flat: but this is far from being a distinct Species: however, as it hath been mentioned by many Writers on Botany, I thought proper to insert it in this Place.

The strip'd-leav'd Lily is a great Ornament to Flower-borders during the Winter-season, their beautiful variegated Leaves always appearing

in *September*; and are continu'd all the Winter, making a fine Appearance in the Depth of Winter, when few other Plants are in Beauty: for which Reason this Plant hath been greatly propagated of late Years. This is increas'd as the common Sort; but the Roots should always be planted in a fresh light Soil, in which they will thrive exceedingly: but if you make the Ground rich with Dung, it will certainly destroy them, as will also a very wet or strong Soil. The Season for transplanting these Roots is the same with the common Sort.

The white Lily strip'd with Purple has not been many Years brought into *England*. Of this Kind there are two Sorts; one of which is much more beautifully variegated than the other; both of which were obtain'd originally from Seed. These are both propagated in the same manner as the common Sort; but should be planted in a dry sandy Soil, mix'd with a little Lime rubbish, and expos'd to the morning Sun: in which Soil and Situation they will flower exceeding well; and their Stripes will be much deeper colour'd than when they are planted in a richer Soil, and their Roots will make a better Increase.

The Orange-lily is so well known, that it is needless to say any thing of it here. That Sort which is commonly call'd the double Orange-lily, differs from the common only in having two or three more Petals in each Flower, which is not constant, but very apt to degenerate to the common Sort; so that it is scarcely worth preserving, unless for Variety-sake. These are propagated by Off-sets from the old Roots, which are commonly sent forth in great Plenty; and therefore the Roots should never remain more than two Years unre-mov'd,

mov'd, because the Number of Offsets would greatly weaken them, and render their Flowers small, and fewer in Number. These may be transplanted any time from the Beginning of *August* to the End of *October*; for they do not shoot again soon after their Stems are decay'd, as do the white Lilies; but, on the contrary, remain till *February* before they appear above-ground; but, however, they should not be removed later than *October*. They will grow in almost any Soil or Situation, but best in a dry light Soil, and an open Exposure.

The bulbous fiery Lily produces its Flowers three Weeks before the common Sort, and is much more beautiful. This Sort was formerly more common than at present, as were several other Sorts of Lilies: it is equally as hardy as the common Sort, and doth increase much faster: for upon the Flower-stems, between the Wings of the Leaves and the Stalk, are produc'd small Bulbs; which, when taken off, and planted, become strong Roots in two Years; so that it may be render'd very plentiful in a short time, were People to plant all their Increase. This requires the same Soil and Culture as the Orange-lily; as doth also the dwarf red Lily, which is nearly allied to this. They will grow under Trees; which renders them proper to plant in Wilderesses; where, when intermix'd amongst other hardy Flowers of the same Growth, they will make a beautiful Appearance, and are very useful to furnish Basins and Flower-pots for Halls, Chimneys, &c. during the Season of Flowering.

The Imperial Martagon is very common in most old Gardens in *England*. This is equally as hardy as the common Lily, and requires no other Culture: the Flowers are pro-

duced the latter End of *May*, and make a very handsome Figure in the Middle of large Borders in a Flower-garden; but the Scent is too strong to be borne by many People: for which Reason they should never be placed in Basins of Flowers in a Room, nor be planted too near the House.

The white, and the white-spotted Martagons flower about the Middle of *June*, or sometimes later. These produce a greater Number of Flowers upon a Stalk than the former; but the Flowers are seldom so large, and commonly grow more sparsely on the Stalks. These have a strong Scent, but not quite so disagreeable as the former. The Roots of these Plants should be transplanted soon after their Stems decay; for if they are taken up late in the Autumn, they seldom produce their Flowers strong the succeeding Summer. These require a fresh light Soil, and an open Situation: if they are suffered to remain three Years undisturb'd, they will make a good Increase, and produce strong Flowers.

The double Martagon requires the same Soil and Culture with the two last. This produces a large Quantity of fair double Flowers upon each Stem, which renders it very valuable: the Flowers commonly appear the Beginning of *July*, or somewhat later.

The spotted *Canada* Martagon is much tenderer than any of the former. The Roots of this Sort should be planted in a warm Border, where they may be protected from severe hard Frosts, by covering the Surface of the Ground with Peas-haulm, &c. It must also have a fresh light dry Soil, and should be planted at least six Inches deep: for when the Roots lie near the Surface, they are often injured by Frosts in Winter.

This Plant was originally brought from *Canada* by the *French*, from whom we were first supply'd with it; but since we have receiv'd many Roots of it from *Virginia*, where it also grows in great Plenty in the Fields. The Flowers of this Kind are almost as large as those of the *Orange-lily*, but are more reflex'd, and of a fine yellow Colour, spotted with Black: this flowers in *July*.

The red Martagon of *Pompony* is one of the most beautiful Sorts of all the Martagons which I have yet seen; and produces the greatest Number of Flowers upon a Stem of any of the Kinds (especially when the Roots are strong, and have remain'd undisturb'd two or three Years), when they will many times have upward of four-score Flowers upon a Stem: the Flowers are not so large, nor so deep-coloured, as the scarlet Martagon, but rather of a yellowish-red Colour, and spotted with black: this flowers commonly the Latter end of *May*, or the Beginning of *June*.

The Roots of this Plant are tender, and will not endure to be often transplanted; for that will destroy them: the best Season to remove them, is soon after their Stems decay; when they should never be kept long out of the Ground, but planted again as soon as possible. These require a fresh light sandy Soil, but will by no means thrive in a rich moist Soil, which will cause them to rot; and they must have an open Exposure; for if they are overhung by Trees, they will not thrive. This should also be planted as deep in the Ground as the *Canada Martagon*, for the same Reason as was before observ'd on that.

The scarlet Martagon with many Flowers is in some curious Gardens very common, it being a very hardy Plant in respect to Cold, which it

endures very well, and is easily propagated from Off sets, as the other Sorts; but must have a warm light dry Soil, which should not be dung'd, nor overshadow'd with Trees, either of which will cause the Roots to decay. This is a very beautiful Flower, and very proper to adorn the Borders of large Flower-gardens. It produces its Flowers in *July*, after most of the other Sorts, which are of a deep-scarlet Colour, growing many upon a Stalk.

The other scarlet Martagon is also common in some Gardens, but is not so much valu'd as the last: the Flowers are not so deep-colour'd, and it seldom has more than six or eight upon a Stem. This flowers about the time of the former, and requires the same Soil and Culture.

The yellow Martagon of *Constantinople* is very rare in *England* at present, and only to be found in the Gardens of some curious Collectors of these Beauties. This requires much the same Culture as the two last-mentioned; but must not be often remov'd, which will not only weaken the Root, but also prevent its flowering. When the Roots of this Kind have been standing three Years upon a good fresh dry Soil, I have observ'd above forty Flowers upon a Stem, which have made a very beautiful Appearance. This flowers about the same Season as the former.

The strip'd-leav'd *Orange-lily* is a very beautiful Plant, and was a few Years since sold at a very great Price; but of late it hath been more common, as being easily propagated by Off-sets; so that when it is once obtain'd, it may be soon increas'd to what Number you please, provided you plant it in a dry Soil, and a warm Situation. This beautiful Plant was, some Years since, accidentally produc'd from Seeds of the common

Orange-lily, which were shed upon a Border, where they were suffered to grow, until this Plant appear'd with its fine variegated Leaves; which the Owner, upon Discovery, mark'd, and, at a proper Season, remov'd into a better Situation, where it thrrove, and increas'd so well, as in a few Years to be spread into divers Parts of the Kingdom. This Plant must never be planted in a rich Soil, which will greatly diminish its Beauty, and many times cause the Roots to decay.

The seven Sorts next-mentioned are also worthy of a Place in every good Garden. These were some Years past in greater Plenty in the *English* Gardens, than they are at present; but in some of the curious Gardens in *Holland* they are yet preserved: these are as hardy as those before-mentioned, and should be treated in the same way. The last Sort was brought from *America*, where it grows wild in the *Savannas*: this hath a Stem, upwards of three Feet high, and produces a large Number of beautiful Flowers upon each Stem; and as it seldom flowers till after all the others are over, so it is the more valuable. This is hardy in respect to Cold, but must have a light dry Soil.

All the Sorts of Lilies and Martagons may be propagated by sowing their Seeds; by which Method some new Varieties may be obtain'd, provided the Seeds are fav'd from the best Sorts; especially the Martagons, which are more inclinable to vary than the other Lilies. The manner of sowing them is as follows:

You must be provided with some square Boxes about six Inches deep, which should have Holes bored in their Bottoms to let the Wet pass off: these Boxes should be fill'd with fresh light sandy Earth, and in the

Beginning of *August*, soon after the Seeds are ripe, you must sow them thereon pretty thick, covering them over with light sifted Earth about half an Inch; then place the Boxes where they may have the morning Sun only; observing, if the Season should prove dry, to refresh them often with Water, as also to pull out all Weeds which may be produced. In this Situation the Boxes should remain until *October*, when you must remove them where they may have as much Sun as possible, as also be screen'd from the cold North and East Winds, during the Winter-season: but in the Spring of the Year, about the Beginning of *April*, you must remove the Boxes into their former Position; for now the young Plants will appear above-ground, which are impatient of too much Heat: besides, the Earth in the Boxes will dry too fast at this Season, if expos'd to the full Sun at Noon. You must also observe, at this Season, to keep them intirely clear from Weeds, as also to refresh them gently with Water, if the Season should prove dry: in this Place you should let the Boxes remain until the Beginning of *August*, at which time you should prepare some Beds of the above-mention'd fresh light Earth, which must be levell'd very even: then take the Earth out of the Boxes, together with the small Bulbs, and strew it equally over the Beds, covering it over about half an Inch thick with fine-sifted Earth; and if the Season should prove very hot and dry, you would do well to shade the Beds in the Middle of the Day from the great Heat of the Sun, and to refresh them now-and-then with Water.

You must also observe to keep them intirely clear from Weeds; and if the following Winter should prove
very

very cold, you must cover the Beds with Peas-haulm, or some other light Covering, to keep out the Frost, which would prejudice the Roots, if suffer'd to enter deep into the Ground (especially while they are so young): but you must never let the Covering remain on in mild Weather, which would also be very injurious to them.

In *February*, when the hard Frosts are over, you should gently clear off the Earth upon the Surface of the Beds (which, during the Winter-season, will often have contracted a Mossiness); and sift a little fresh Earth equally over the Beds, which will greatly encourage the Roots: but in doing this, you must be very careful not to stir the Ground so deep as to injure the Roots: nor should you defer doing it too late, lest the Shoots should be coming up; which, by this Operation, might be broken, and greatly hurt: and as the Season advances, you must be careful to clear them from Weeds, and in dry Weather to water them; and in very hot Days, if you shade them from the Sun, it will be of great Service to them: but this need not be done till the Latter-end of *April*, or the Beginning of *May*, when the Season is sometimes very hot and dry.

When their Leaves are quite decay'd, you should stir the Surface of the Beds again (but do not go too deep); which will prevent the Weeds from growing very fast, and be of Service to the Roots: and in *September* you must sift some more fresh Earth over the Beds about half an Inch thick: and in Winter and Spring you must manage them as was directed for the preceding Year.

In *September* following these Roots will require to be transplanted to a greater Distance, when you must

prepare some Beds of the same fresh light Earth, as was before directed, making them level: then take up the Roots, and transplant them into the Beds, placing them about eight Inches asunder, observing to put the Roots with their Buds uppermost, and about four Inches below the Surface.

This Work should be done when the Weather is moist; for if the Roots are transplanted in a very dry Season, and there doth not happen Rain soon after, they will take a Mouldiness, which many times rots them.

You must also observe, as was before directed, to keep the Beds intirely clear from Weeds: and in Winter, if the Frost should be very severe, you must cover them with Peas-haulm, to prevent the Roots from being injured thereby: and in the Spring you should take off the Earth from the Surface of the Beds, as before, laying some fresh thereon, and so continue the Summer and Winter's Work, as before.

The second Year after being planted in these Beds, the strongest Roots will begin to flower; at which time, if you observe any peculiar Varieties, you should put down a Stick by each of those Roots to mark them; which may be taken up when their Leaves are decay'd, and remov'd into the Borders of the Flower-garden, or transplanted into other Beds at a greater Distance, to encourage them to flower strong. But you can't be a Judge which of those will be good by their first Flowers; therefore you should never reject any of them until they have flower'd two or three Years; for many times some of these Flowers will make but a mean Appearance the first Year, and afterwards become fair handsome Flow-

ers, when they have obtained Strength; so that you should suffer all such, of whose Worth you are not assured, to remain undisturbed two or three Years, that you may be ascertain'd which of them are worthy preserving; which should be remov'd into the Flower-garden at a proper Season: but the ordinary ones may be rejected, or planted in shady outer Walks, where, tho' they are mean Flowers, they will appear well enough.

LILIUM CONVALLIUM. *Vide* Convallaria.

LILIUM PERSICUM. *Vide* Fritillaria.

LILIUM SUPERBUM. *Vide* Gloriosa.

LIME-TREE. *Vide* Tilia.

LIMON, The Lemon-tree.

The Characters are;

It hath large stiff Leaves like the Citron, without any Appendage at the Bottom: the Flowers consist of many Leaves, which expand in form of a Rose: the Fruit is almost of an oval Figure, and divided into several Cells, in which are lodged hard Seeds surrounded by a thick fleshy Substance, which, for the most part, is full of an acid Juice.

The Species are;

1. LIMON *vulgaris*. *Ferr. Hesp.* The common Lemon.

2. LIMON *dulcis*. *Ferr. Hesp.* The sweet Lemon.

3. LIMON *acris*. *Ferr. Hesp.* The lesser sour Lemon.

4. LIMON *dulci medulla, vulgaris*. *Ferr. Hesp.* The common sweet Lemon.

5. LIMON *pyri effigie*. *Ferr. Hesp.* The pear-shap'd Lemon.

6. LIMON *Imperialis*. *Ferr. Hesp.* The Imperial Lemon.

7. LIMON *Adami Pomum commune*. *Ferr. Hesp.* Lemon; commonly called Adam's Apple.

8. LIMON *spinulosas*. *Ferr. Hesp.* The wild Lemon, *vulgo*.

9. LIMON *striatus vulgatiore*. *Ferr. Hesp.* The furrow'd-Lemon.

10. LIMON *citratu*, *altero factu*. *Tourn.* The Childing Lemon, *vulgo*.

11. LIMON *qui lima acris dicitur*. *Ferr. Hesp.* The four Lime.

12. LIMON *qui lima dulcis dicitur*. *Ferr. Hesp.* The sweet Lime.

13. LIMON *vulgaris, foliis ex luteo eleganter striatis*. The gold-strip'd Lemon.

14. LIMON *vulgaris, foliis ex albo variegatis*. The silver-strip'd Lemon.

There are some other Varieties of these Trees in the curious Gardens abroad, from whence we may expect to be supply'd with them all, since there are every Year large Quantities of these Trees brought over from Italy, where the Gardeners are as fond of any new Kinds to supply their Customers with, as our Countrymen are of new Sorts of Fruit. But since these Varieties are annually increased from Seeds, like other Fruits, it would be needless to attempt an Account of them all, because in a very short time many new Varieties may be produced.

The Fruit of the four first Sorts are generally brought over from *Lisbon* every Year in great Plenty, and are sold promiscuously in *London*, in Winter and Spring; as are great Numbers of the Trees; which are annually brought over from *Italy*.

The fifth, sixth, and seventh Sorts are preserv'd, for their Variety, in many curious Gardens; but the fifth is very uncommon in *England* at present.

The sixth is a very large beautiful Sort, and of an agreeable Flavour: this has produced very good Fruit in divers Gardens in *England*, which

which have been as well-tasted as any of those which are brought over from *Italy*.

The seventh Sort is somewhat tenderer than the other, and requires a warmer Situation in Winter; otherwise the Fruit is very subject to drop off at that Season.

The eighth Sort is commonly call'd the wild Lemon (though improperly), because it has many Thorns upon the Branches; but this will produce very fair Fruit in this Kingdom. The Flowers of this Kind are generally of a redish or purplish Colour on the Outside before they open; but afterwards fade, and change to a paler. The Leaves of this are also of a very deep Green, and gently serrated upon their Edges.

The furrow'd Lemon is in divers Gardens in *England*, where the Fruit very often ripens well, and is chiefly kept for Variety, as differing from the common Sort in having deep Furrows in the Fruit; but it is not so good for Use, nor does the Fruit produce so much Juice, as the common Sort.

The childing Lemon is also preserved as a Curiosity, the old Fruit commonly producing a young one from its Centre.

The two Sorts of Limes are likewise in many Gardens in this Kingdom; but these require the same Degree of Warmth as the Shaddock Orange, in order to produce Fruit; for if they are placed among Orange-trees, the Fruit will fall away in Winter, and come to nothing.

The two variegated Sorts are preserved for their strip'd Leaves (which are greatly esteem'd by some Persons who are curious in collecting variegated Plants); but these are tenderer than the plain Sorts; and if not duly attended in Winter, will

be very apt to cast their Leaves, and appear very unsightly.

There is also another Sort, which produces double Flowers; but this seems not to be very constant; for I have observ'd upon the same Tree some Flowers single, and others double, at the same time.

All these Sorts are propagated by budding or inarching them on Stocks of Lemons or Citrons produced from Seeds; but they will not so readily unite on Orange-stocks; for which Reason the Citrons are preferable to either Oranges or Lemons for Stocks, as they readily join with either Sort; and being of larger Growth, cause the Buds of the other Sorts to shoot much stronger than if they were on Stocks of their own Kind. The Method of raising these Stocks, and the Manner of budding them, being already exhibited under the Article of *Aurantium*, it would be superfluous to repeat it here.

The Culture of the Lemon being the same with that of the Orange-tree, it would be also needless to repeat it here: therefore I shall only observe, that the common Lemons are somewhat hardier than the Oranges, and will bring their Fruit to Maturity with us better than they will do, and require a greater Share of fresh Air in Winter; for which Reason they should always be placed nearer to the Doors or Windows of the Green-house: and in some curious Gardens these Trees have been planted against Walls; where, by covering them with Glasses in Winter, and protecting them from severe Frost, they have produced plenty of large Fruit: as these Trees generally produce stronger Shoots, so they require more Water to be given them, than the Orange; but as to the tender Sorts, they must be

treated with a little more Care, otherwise their Fruit will fall off in Winter, and come to nothing. These Things being fully exhibited before, I refer the Reader (as I hinted) to the Article *Aurantium*, where their Culture is fully set forth.

LIMONIUM, Sea-lavender.

The Characters are;

It hath a fibrose Root: the Stalks are naked and branched: the Cup of the Flower is long and tubulose, but expanded at the Top: the Flower in some Species consists of one Leaf, but in others of several, and is shaped like a Clove-gilliflower: the Pointal, which arises out of the Flower-cup, becomes an oblong Fruit, wrapped up in the Flower-cup, as in an Husk.

The Species are;

1. LIMONIUM *maritimum majus*. C. B. P. Common great Sea-lavender.

2. LIMONIUM *maritimum majus alterum serotinum Narbonense*. H. R. Par. Another large late-flowering Sea-lavender of Narbonne.

3. LIMONIUM *maritimum minus, oleæ folio*. C. B. P. Small Sea-lavender, with an Olive-leaf.

4. LIMONIUM *Anglicum minus, caulibus ramosioribus, floribus in spicis rarius fitis*. Raii *Hist.* Lesser *English* Sea-lavender, with branch'd Stalks, and Flowers seldom growing in a Spike.

5. LIMONIUM *Orientale, plantaginis folio, floribus umbellatis*. T. Cor. Oriental Sea-lavender, with Plantain-leaves, and Flowers growing in an Umbel.

6. LIMONIUM *peregrinum, foliis asplenii*. C. B. P. Foreign Sea-lavender, with Spleenwort-leaves.

7. LIMONIUM *Siculum lignosum, gallas ferens, & non ferens*. Bocc. *Rar.* Woody *Sicilian* Sea-lavender.

8. LIMONIUM *minus, flagellis tortuosis*. Bocc. *Mus.* Small Sea-lavender, with twisted Shoots.

9. LIMONIUM *maritimum minus, foliis cordatis*. C. B. P. Small Sea-lavender, with little Leaves, which are heart shap'd.

10. LIMONIUM *minus annuum, bullatis foliis, vel echioides*. Bot. *Monsp.* Small annual Sea-lavender, with studded Leaves.

11. LIMONIUM *Ægyptiacum fruticosum, foliis lanceolatis obtusis*. Shrubby *Egyptian* Sea-lavender, with blunt spear-shap'd Leaves.

There are several other Species of this Plant, which are found upon the Sea-coasts of *Italy*, *Spain*, and the Southern Parts of *France*; but these here mention'd are all the Sorts I have observ'd in the *English* Gardens. The first and fourth Sorts are found upon the Sea-coasts in divers Parts of *England*, especially the first, which is the most common; the other being only found in some particular Places. The eighth Sort has been found on the Coast of *Norfolk*. The second and third Sorts are pretty common in the Southern Parts of *France*. The fifth Sort was found by *Monf. Tournefort* in the *Lewant*. The sixth, which is the most beautiful of all the Sorts, was found by *Mr. Ray* in great Plenty in divers Parts of *Sicily*; and *Clusius* observ'd it at *Malaga*, and about *Cadix*. The seventh Sort, which grows to the Stature of a Shrub, was found in *Sicily* by *Pere Boccone*, and by him figur'd and describ'd in his Book of *Rare Sicilian Plants*.

The five first-mention'd Sorts are pretty hardy, and will endure the Cold of our ordinary Winters very well, provided they have a sandy Soil, and a warm Situation: these may be propagated by parting the

Roots

Roots toward the Latter-end of *October*. When they are planted, which should be in a light sandy Soil, you must water and shade them until they have taken Root; after which, they will require no other Culture than to keep them clear from Weeds. In *July* these Plants will produce beautiful Spikes or Tufts of blue or purple-coloured Flowers, which will continue in Perfection a long time; and if the Season proves favourable in Autumn, they will ripen their Seeds.

The sixth Sort is somewhat tenderer than the others, and must be preserved in Pots fill'd with fresh light Earth, and placed in the Green-house in hard Weather, otherwise the Cold of our Winters often destroys them. This Plant must be propagated by Seeds; for it seldom lives longer than two Years; for which Reason the best Method is, to be furnish'd with good Seeds from abroad (for it seldom perfects its Seeds in *England*); which, if sown upon a warm Border of fresh light Earth, will come up very well; tho' sometimes the Seed will lie in the Ground a whole Year, before the Plants will appear. In the Summer, when the Plants have acquir'd sufficient Strength for Transplantation, they must be taken up, and planted in Pots, placing them in the Shade until they have taken Root; after which, they may be expos'd to the open Air until *October*, when they must be removed into the Green-house, observing to place them where they may have as much free Air as possible in mild Weather. This Plant produces its Flowers in *July* and *August*, and many times continues in Beauty the greatest Part of *September*.

The seventh Sort rises to be two

or three Feet high, and hath slender woody Pranches; from which, in *July* and *August*, are produced Spikes of small blue Flowers, which make a very handsome Appearance (especially in a warm Season, when their Flowers open kindly), and continue in Beauty a long time.

This Plant is propagated by planting some of the tender Cuttings in any the Summer-months, in Pots fill'd with light sandy Earth, and placed in a moderate Hot-bed to facilitate their taking Root; and after they are rooted, they may be expos'd to the open Air until *October*, when they must be removed into a Green-house, placing them in a Situation where they may have as much free Air as possible in mild Weather: during the Winter-season, they should have frequent, but gentle Refreshings with Water: you must also observe to keep them clear from decay'd Leaves and Branches, which, if suffer'd to remain, will render the Plants unsightly: and in the Summer-season they should be expos'd in some well-shelter'd Place amongst other Exotic Plants.

The tenth Sort is an annual Plant, which rarely perfects Seeds in *England*; so that the Seeds must be annually procured from abroad. This is found wild in *Italy*, and several Parts of *Spain*: it flowers with us the Beginning of *September*, and is commonly destroyed by the first Frosts in the Autumn.

The eleventh Sort is a shrubby Plant, which grows five or six Feet high. The Seeds of this Sort I received from *Egypt* some Years since. This Sort is hardy enough to live thro' the Winter in a common Green-house, and may be treated in the same manner as hath been directed for the seventh Sort.

LINARIA, Toad-flax.

The Characters are;

The Leaves are oblong, and produced alternately on the Branches: the Cup of the Flower consists of one Leaf, which is divided into five long acute Segments: the Flower, which consists of one Leaf, is of an anomalous personated Figure, ending in a Tail behind, and in the Fore-part divided into two Lips; of which the upper is cut into two or more Parts, and the under into three: the Ovary (which rises from the Centre of the Flower-cup) becomes a roundish Fruit or Husk, divided into two Cells or Apartments, by an intermediate Partition, and full of Seeds, which are sometimes flat and boarded, sometimes cornered and roundish, adhering to the Placenta.

The Species are;

1. LINARIA *vulgaris lutea*, flore *majori*. C. B. P. Common yellow Toad-flax, with a large Flower.

2. LINARIA *purpurea major odorata*. C. B. P. Great purple sweet-smelling Toad-flax.

3. LINARIA *latifolia Dalmatica*, *magna flore*. C. B. P. Broad-leav'd Dalmatian Toad-flax, with a large Flower.

4. LINARIA *latissimo folio*, *Lusitanica*. Tourn. Broad-leav'd Portugal Toad-flax.

5. LINARIA *Hispanica procumbens*, *foliis glaucis*, *flore luteo striato*, *labiis nigro-purpureis*. Spanish trailing Toad flax, with sea-green Leaves, and yellow-strip'd Flowers, with purple Lips.

6. LINARIA *Sicula multicaulis*, *folio molluginis*. Bocc. Rar. Sicilian Toad-flax, with many Stalks, and a Leaf of the white Ladies Bed-straw.

7. LINARIA *triphylla minor lutea*. C. B. P. Small three-leav'd yellow Toad-flax.

8. LINARIA *triphylla minor lutea*,

floris vexillo & calcari purpureo. Boerb. Ind. Small three-leav'd yellow Toad-flax, with the Standard and Heel of a purple Colour.

9. LINARIA *segetum, nummularia folio villoso*. Inst. R. H. Corn Toad-flax, with an hairy Moneywort-leaf, commonly called Fluellin or Female-speedwel.

10. LINARIA *segetum, nummularia folio aurito & villoso, flore luteo*. Inst. R. H. Corn Toad-flax, with an hairy eared Moneywort-leaf, and a yellow Flower.

11. LINARIA *pumila vulgatio arvensis*. Inst. R. H. Common low annual Toad-flax.

12. LINARIA *hederaceo folio glabro, seu Cymbalaria vulgaris*. Inst. R. H. Toad-flax with a smooth Ivy-leaf, commonly known by the Name of *Cymbalaria*.

13. LINARIA *quadrifolia lutea*. C. B. P. Four leav'd yellow Toad-flax.

14. LINARIA *annua angustifolia, flosculis albis longius caudatis*. *Triumphet*. Narrow-leav'd annual Toad-flax, with small white Flowers, having long Tails or Spurs.

15. LINARIA *quadrifolia supina*. C. B. P. Trailing four-leav'd Toad-flax.

16. LINARIA *capillaceo folio, odora*. C. B. P. Sweet-smelling Toad-flax, with a very narrow Leaf.

17. LINARIA *Orientalis, flore luteo maximo*. Tourn. Cor. Eastern Toad-flax, with a very large yellow Flower.

18. LINARIA *latifolia triphylla, flore purpureo magno, rictu aureo*. Inst. R. H. Broad three-leav'd Toad-flax, with a large purple Flower having a golden Standard.

19. LINARIA *annua angustifolia, flore majore luteo*. Mor. Hist. Narrow-leav'd annual Toad-flax, with a larger yellow Flower.

The first of these Plants grows in great Plenty upon the Sides of dry Banks in most Parts of *England*, and is seldom cultivated in Gardens; for it is a very troublesome Plant to keep within Bounds, the Roots being very apt to spread under-ground, and rise at a great Distance from the Mother-plant, whereby it greatly injures whatever Plants stand near it. This is one of the Species mention'd in the Catalogue of Simples at the End of the *College Dispensatory* to be used in Medicine.

The second is a perennial Plant, which is often cultivated in Gardens: this produces fine Spikes of purple Flowers in *June* and *July*, and it being a very hardy Plant, growing in almost any Soil or Situation, should be admitted into every large Garden, where it may be planted in shady Situations, or upon the middle of large Borders in the Pleasure-garden, in which Place it will make an handsome Appearance, and continues a long time in Flower.

This Plant is propagated by sowing the Seeds in Spring, which will come up soon after: and the Plants must be transplanted out into Beds at the Distance of six or eight Inches; in which Beds they may remain until the *Michaëlas* following (observing to keep them clear from Weeds); at which time they should be transplanted into the Places where they are to remain for good, and will require no other Culture than only to keep them clear from Weeds; and when the Flower-stems advance in the Spring, they should be supported by Stakes, otherwise they are subject to be broken by strong Winds: they may also be propagated by parting their Roots in Autumn; but as the Seed ripens very well, it is the better Way to raise them from that; or if the Seeds

are permitted to scatter, the Plants will come up, and require very little Care.

The third and fourth Sorts are tenderer than the last, and should be planted in a dry Soil, and a warm Situation; otherwise they are often destroyed in Winter. These are propagated by Seeds in the same manner as the former, as also by parting their Roots; but it is adviseable always to keep some of these Plants in Pots, that they may be removed into Shelter in the Winter, otherwise in hard Frosts they will be kill'd.

The fourth is the most beautiful Sort of them all: this produces very large Spikes of purple Flowers, which make a fine Appearance; but it seldom produces ripe Seeds in this Country; so that the Seeds must be obtain'd from abroad, and the Plants propagated from Off-sets or Cuttings; which, if planted in the Spring, will take Root very well, whereby it may be maintain'd.

The fifth Sort was brought over from *Gibraltar* by Sir *Charles Wager*, *Anno 1727*. and hath since been communicated to several curious Persons: this Plant is easily propagated by parting the Roots, or planting Cuttings in any of the Summer-months, which, if water'd and shaded, will soon take Root, and may afterwards be planted in Pots filled with fresh light undung'd Earth, in which they will succeed much better than in a richer Soil; for if they are planted in a fine rich Earth, it causes them to grow very fast for a short time, but they seldom fail to rot soon after. These must be remov'd into Shelter in Winter, where they must have as much free Air as possible in mild Weather, and be only protected from severe Cold; so that if the Pots are placed under an Hot-bed-frame, it will be better than

than to place them in a Green-house, where they are apt to draw too much, which will cause them to decay. This Sort never produces Seeds in *England*.

The sixth, seventh, and eighth Sorts are annual Plants, which should be sown early in the Spring upon a Bed of fresh light Earth, in the Borders of the Flower-garden, where they are to remain; for they do not bear transplanting well: these produce their Flowers in *June* and *July*, and their Seeds are ripe in *September*. The Seeds of these Plants may also be sown in Autumn, soon after they are ripe, under a warm Wall or Hedge, where they will endure the Cold of our ordinary Winters very well: and these autumnal Plants will grow much larger, and come to flower much sooner, than those raised in the Spring and from these you will always have good Seeds.

The ninth Sort here-mentioned is directed by the College of Physicians, to be used in Medicine: this stands in their Catalogue of Simples under the Title of *Elatine*. This, and the tenth Sort, grows wild amongst the Corn in divers Parts of *England*. They are both annual Plants, which scatter their Seeds where-ever they are permitted to grow; and the young Plants generally come up in Autumn; so that they are more frequently to be met with amongst Wheat, Rye, and other Crops which are sown in Autumn, than in such Lands as are plowed in the Spring. The Flowers of these Plants are very small, and come out at the Joints close to the Footstalks of the Leaves, and the whole Plant trails on the Ground: they usually flower in *June*, and their Seeds are ripe in *August*.

The eleventh Sort is a low annual Plant, which is very common on arable Land in most Parts of *England*; so is seldom admitted into Gardens.

The twelfth Sort was originally brought from abroad; but is now become so common in many Parts of *England*, as to be thought a Native by some Persons. This has been esteemed a Plant very efficacious in some Distempers; but is not used by any of the *English* Physicians at present. It grows not only on the Ground, but on Walls, Pales, or whatever Place the Seeds fall; so it becomes a very troublesome Weed where-ever it is suffered to feed.

The other Sorts are not Inhabitants of this Country; but are by the Curious preserved in their Gardens, for the Variety of their Flowers. They are all of them Plants of short Duration, seldom continuing after they have perfected their Seeds; so that where the Seeds are not permitted to scatter, they should be sown every Year, in order to preserve the Kinds. The Seeds should be sown in the Places where they are designed to remain; for the Plants do not thrive so well when they are transplanted. Some of these Seeds may be sown in the Autumn on a dry Soil, where the Plants will come up, and abide the Winter; and these will flower much sooner the following Year, than those which are sown in the Spring; so that good Seeds may be certainly obtained from those, whereas the Seeds of some Sorts do not ripen well in bad Seasons on such Plants which come up from the Spring-sowing: but by sowing at the two Seasons there will be a longer Continuance of the Plants in Flower.

As these Plants require no farther Care, when they come up, but to thin them where they grow too close, and to keep them clear from Weeds; so they may be allowed room in the Borders of large Gardens, where they will add to the Variety; for they are Plants which do not spread far; so may be kept in proper Compass; and the different Colours of their Flowers will make a pretty Appearance amongst other hardy Plants.

LINGUA CERVINA, Hart's-tongue.

These Plants commonly grow out from the Joints of old Walls and Buildings, where they are moist and shady; but are seldom cultivated in Gardens. There is a very great Variety of these Plants both in the *East* and *West-Indies*; but there are very few of them in *Europe*: they may be propagated by parting their Roots, and should have a moist Soil, and shady Situation.

LINUM, Flax.

The Characters are;

The Leaves, for the most part, grow alternately on the Branches: the Cup of the Flower consists of one Leaf, is tubulous, and divided into five Parts at the Top: the Flower consists of five Leaves, which expand in form of a Clove-gillflower: the Ovary, which rises from the Centre of the Flower-cup, becomes an almost globular Fruit, which is generally pointed, and composed of many Cells, in which are lodged many plain smooth Seeds, which are blunt at one End, and generally sharp at the other.

The Species are;

1. LINUM *sativum*. C. B. P. Manur'd Flax.

2. LINUM *sativum latifolium Africanum*, fructu majore. Town.

Broad-leav'd *African* manur'd Flax, with a large Fruit.

3. LINUM *maritimum luteum*. C. B. P. Yellow maritime Flax.

4. LINUM *sativum humilius*, flore majore. Bobart. Dwarf manur'd Flax, with a large Flower.

5. LINUM *perenne majus caeruleum*, capitulo majore. Mor. Hist. Greater perennial blue Flax, with a large Head.

6. LINUM *perenne majus caeruleum*, capitulo minori. Mor. Hist. Greater perennial blue Flax, with a smaller Head.

7. LINUM *catharticum*. Rupp. flor. Mountain, or Purging Flax.

There are several Sorts of this Plant, which are preserv'd in some curious Gardens of Plants for Variety-sake; but as they are of little Use or Beauty, it would be needless to mention them in this Place.

The first Sort is that which is cultivated for Use in divers Parts of *Europe*, and is reckon'd an excellent Commodity: the right tilling and ordering of which is esteem'd a good Piece of Husbandry.

This should be cultivated upon a rich Soil, that has not been plow'd for several Years, upon which Flax always makes the best Improvement: but as it draws greatly from the Soil, it should not be sown two Years together upon the same Ground.

The Land must be well plow'd, laid flat and even, upon which the Seeds should be sown about the middle of *March*, when the Weather is mild and warm. During the Spring you must carefully weed it; which if neglected (especially in a moist Season), the Weeds will overgrow and destroy the Crop. There are some People who recommend the feeding of Sheep with Flax, when it

it is a good Height; and say, they will eat away the Weeds and Grass, and do the Flax good; and if they should lie in it, and beat it down, or flatten it, it will rise again the next Rain: but this must not be practis'd but in a moist Season, and upon a rich Soil; for if the Ground be poor, or the Spring dry, it will not rise again to any considerable Height.

All the other Sorts of Flax may be cultivated (by such who have a Curiosity) by sowing their Seeds upon a Bed of fresh rich light Earth, in March, or the Beginning of April; and when the Plants come up, they must be carefully weeded, which is all the Culture they require; and they will produce their Flowers, and perfect their Seeds very well.

LINUM UMBILICATUM. *Vide Omphalodes.*

LIPPIA.

This Plant was so named by the late Dr. *William Houstoun*, who discovered it at *La Vera Cruz*, in Honour to Dr. *Augustus Lippi*, a famous Botanist, who travell'd to *Egypt*, and discover'd many new Plants.

The Characters are;

It hath an anomalous Flower, consisting of one Leaf, which is divided into four Parts, and rests on the Embryo, which afterward becomes the Fruit, having two Seeds, which are inclosed in a small Covering.

We know but one Species of this Plant at present; *viz.*

LIPPIA arborestens, foliis conjugatis oblongis, capitulis squamosis, & rotundis. Housl. Tree Lippia, with oblong Leaves growing by Pairs, and having round scaly Heads.

This Plant, in the Country of its native Growth, commonly rises to the Height of eighteen or twenty Feet, and hath a rough Bark: the Branches come out by Pairs opposite,

as also the Leaves, which are oblong, pointed, and a little sawed on their Edges. From the Wings of the Leaves come out the Footstalks, which sustain many round scaly Heads, about the Size of a large Grey Pea, in which are many small yellow Flowers appearing between the Scales, which are succeeded by the Seed-vessels.

The Seeds of this Plant were sent to several curious Gardens in *Europe*, where some of the Plants have been raised; but as the Country from whence it came is very warm, the Plants will not thrive in this Climate, unless they are preserved in a warm Stove. These may be treated in the same manner as the other shrubby Plants, which are Natives of warm Countries; which is, to keep them always in the Stove, plunged in the Bark-bed; observing to give them a large Share of Air in warm Weather, and frequently refresh them with Water; but in Winter they must be watered more sparingly, and be kept in a moderate Degree of Warmth; otherwise they will not live thro' the Winter, especially while they are young; but when they have acquired Strength, they may be preserved with a less Share of Warmth.

LIQUIDAMBER, The Sweet Gum, or Liquid Storax-tree.

The Characters are;

It hath Male and Female Flowers on the same Tree: the Male Flowers are produced in Spikes at the Extremity of the Branches; these have no Petals: the Empalement consists of four oval Leaves, and incloses a great Number of Stamina, which are collected into a spherical Body: the Female Flowers are produced on long Pedicles, coming from the Base of the Male Flowers; these have no Petals, but an Empalement, the same

as the Male Flowers, inclosing several Germs, which join in a spherical Body, supporting two recurved Styles: these afterward change to a spherical Fruit full of Protuberances, which are perforated, and contain many oblong Seeds.

We have but one Species of this Genus; viz.

LIQUIDAMBER. *Clayt. Flor. Virg.*
The Sweet Gum, or Liquid Storax-tree.

This Tree has by some Writers been ranged with the Maple; but on no other Account, except from the Similitude of the Leaves; for in Flower and Fruit it is very different from the Maple, and most other Genera: nor has it any Affinity to the Storax-tree; but the Gum which issues from this Tree, being transparent, and having a great Fragrancy, has by some ignorant Persons been taken for that.

It grows plentifully in *Virginia*, and several other Parts of *North-America*, where it rises with a straight naked Stem to the Height of fifteen or sixteen Feet, and afterward branches out regularly to the Height of forty Feet, or upward, forming a pyramidal Head. The Leaves are angular, and shaped somewhat like those of the lesser Maple; but are of a dark-green Colour, and their upper Surfaces shining: a strong sweet glutinous Substance exudes thro' the Pores of the Leaves in warm Weather, which renders them clammy to the Touch.

The Flowers are generally produced early in the Spring of the Year, before the Leaves are expanded, which are of a Saffron colour, and grow in Spikes from the Extremity of the Branches: after these are past, the Fruit swells to the Size of a Walnut; being perfectly

round, having many Protuberances, each having a small Hole, and a short Tail, which extends half an Inch.

The Planks of this Tree, being beautifully veined, are often used in *America* for wainscoting Rooms; but it requires a long time to season the Boards, otherwise they are apt to shrink.

In *Europe* this Tree is cultivated in the Gardens of the Curious, for the sake of Variety; it is hardy enough to endure the severest Cold of this Country in the open Air, and there are some of them upward of twenty Feet high; though I have not heard of any of them which has produced Fruit.

This is commonly propagated by Layers in *England*; but those Plants which are raised from Seeds, grow to be much fairer Trees.

The Seeds of this Tree commonly remain in the Ground a whole Year before the Plants come up; so that the surest way to raise them is, to sow the Seeds in Boxes or Pots of light Earth; which may be placed in a shady Situation during the first Summer, and in Autumn they may be placed in a warm Situation; but if the Winter should prove severe, it will be proper to cover them with Peas-haulm, or other light Covering; which should be taken off constantly in mild Weather. In the following Spring, if these Boxes or Pots are placed upon a moderate Hot-bed, it will cause the Seeds to come up early, so that the Plants will have time to get Strength before Winter; but during the first and second Winters, it will be proper to screen the Plants from severe Frost; but afterward they will bear the Cold very well.

LITHOSPERMUM, Gromwel,
Gromil, or Graymil.

The Characters are;

The Cup of the Flower consists of one Leaf, which is cut almost to the Base into five long narrow Segments: the Flower, which is, for the most part, small, consists of one Leaf, is funnel-shap'd, and spread open at the Top: the Pointal is encompass'd by four Embryoes, which become so many roundish hard polish'd Seeds.

The Species are;

1. LITHOSPERMUM majus erectum. C. B. P. Greater upright Gromil.

2. LITHOSPERMUM perenne procumbens, flore purpureo-cœruleo majore. Mor. Hist. Trailing perennial Gromil, with a purple-blue Flower.

There are several other Sorts of this Plant, which are mention'd in Botanic Authors; but as they are rarely cultivated in Gardens, I shall omit taking Notice of them in this Place. The first Sort here mention'd is that which is order'd for medicinal Uses. This grows in shady Lanes, and uncultivated Places, in divers Parts of England; and is seldom cultivated in Gardens. The second Sort is found wild in some Parts of Wales; but is less common than the former. These may be cultivated by sowing their Seeds, soon after they are ripe, in a Bed of fresh Earth, allowing them at least a Foot Distance from each other; observing to keep them clear from Weeds, and they will thrive in almost any Soil or Situation.

LOAM is a common superficial Earth, that is, a Mixture of Sand and Clay, commonly of a yellowish Colour, though there is some Loam that is blackish. Some call Loam the most common superficial Earth met with in England, without any regard to the Proportion it bears to Sand or Clay; but most generally

the Appellation of Loam is applied to a soft fat Earth, partaking of Clay, but easy to work.

It is found by Experience, that Plants of all Sorts will grow in it; and where-ever it is found, it appears to be a more beneficial Soil to Plants than any other. A Clay us'd in Grafting is also call'd Loam:

LOBELIA.

The Characters are;

It hath a tubulous anomalous Flower, consisting of one Leaf, which is divided into many Parts, each being shaped somewhat like a Tongue, and are spread open like an Hand: this is inclosed in the Cup, which afterward becomes a soft oval Fruit, which is full of Juice, and surrounds a Nut of the same Shape, which has an hard Shell.

We know but one Sort of this Plant; viz.

LOBELIA frutescens, portulacæ folio. Plum. Nov. Gen. Shrubby Lobelia, with a Purslain-leaf.

This Plant was so named by Father Plumier, who discovered it in America, in Honour to Dr. Lobel, a learned Botanist, who published the Figures of a great Number of Plants at Antwerp 1581. and two or three other Books of Botany before that time.

The Seeds of this Plant were sent to England by Mr. Catesby in the Year 1724. who gathered them in the Bahama Islands, where the Plants grow in plenty, near the Shore of the Sea; and since that time the Seeds have been sent to England by Dr. William Houstoun, who gather'd them at La Vera Cruz: so that I believe the Plant is common in most of the warm Parts of America.

It is propagated by Seed, which must be procured from the Countries of its natural Growth; for the Plants will

will not produce them in *Europe*. These Seeds should be sown in Pots filled with light sandy Earth, and then plunged into an Hot-bed of Tanners Bark, where the Plants will come up in about three Weeks, provided the Bed is kept warm, and the Earth often watered. When the Plants are up, they should be kept in a temperate Hot-bed, and frequently refreshed with Water; but it must not be given them in large Quantities; for they are very succulent, and subject to perish with a great Degree of Moisture, especially while they are young. When the Plants are about two Inches high, they should, be carefully taken out of the Pots, in which they were sown, and each planted in a separate small Pot, filled with fresh light sandy Earth, and then plunged into the Hot-bed again; observing to shade them in the Heat of the Day until they have taken new Root. In this Hot-bed the Plants may remain until the Middle or Latter-end of *September*, when they must be removed into the Stove, and plung'd into the Tan-bed, in the warmest Part of the Stove; for they are very tender Plants while young; therefore must be kept very warm, otherwise they will not live through the Winter in this Country. In the Spring following the Plants may be shifted into somewhat larger Pots, and then plunged into a fresh Hot-bed to forward their Growth; for if they are not pushed on while they are young, they seldom grow to any Size, nor will they ever flower; so that in order to have them in any Beauty, they must be carefully managed. The Height to which these Plants usually grow, is five or six Feet; and they divide into several Branches, which are succulent; as are also the Leaves, which are as

thick, and full of Moisture, as Purslain; and being ever-green, they make an agreeable Diversity among other tender Exotic Plants in the Stove; for they are too tender to be removed into the open Air in this Country, even in the warmest Season of the Year. The Leaves of this Plant are very subject to contract Filth, by being constantly kept in the Stove; therefore they should be washed with a Sponge frequently, to keep them clean, otherwise they will appear unsightly.

LOBUS ECHINATUS. *Vide* Bonduc.

LONCHITIS, Rough Spleenwort.

The Characters are;

The Leaves are like those of the Fern; but the Pinnulæ are ear'd at their Base: the Fruit also is like that of the Fern.

The Species are;

1. LONCHITIS *aspera*. Ger. Rough Spleenwort.

2. LONCHITIS *aspera major*. Ger. *Emac.* Greater rough Spleenwort.

The first of these Plants is very common in shady Woods, by the Sides of small Rivulets in divers Parts of *England*: but the second Sort is not quite so common, and has been brought into several curious Botanic Gardens from the Mountains in *Wales*. There are also great Variety of these Plants in *America*, which at present are Strangers in the *European* Gardens. They are seldom cultivated but in Botanic Gardens, for the sake of Variety; where they must have a moist Soil, and shady Situation.

LONICERA, Upright Honey-suckle, *vulgo*.

The Characters of this Genus are;

The Flower is tubulous, and of one Leaf, which is deeply cut into several

ral Segments, which are reflexed: from the Empalement arise six long Stamina, surrounding the Pointal, which are extended the Length of the Petals: the Ovary rests on the Empalement, which after ward turns to a Berry, in which are included one or two compressed Seeds, surrounded by a glutinous Pulp.

The Species are;

1. LONICERA flore coccineo, baccis nigris. Plum. Nov. Gen. Lonicera with a scarlet Flower, and black Berries.

2. LONICERA pedunculis bifloris, baccis distinctis, floribus bilabiatis, foliis integerrimis. Flor. Leyd. The Upright red-berried Honeyfuckle.

3. LONICERA pedunculis bifloris, foliis ovatis acutis integris. Lin. Hort. Cliff. The Fly Honeyfuckle, vulgo.

4. LONICERA pedunculis bifloris bilabiatis, bacca solitaria globosa integerrima. Flor. Leyd. The blue-berried Upright Honeyfuckle, vulgo.

5. LONICERA pedunculis bifloris, baccis distinctis, foliis serratis. Flor. Leyd. The Upright blue-berried Upright Honeyfuckle, with double Fruit.

6. LONICERA pedunculis bifloris, baccis distinctis, floribus infundibuliformibus, ramis divaricatis. Flor. Leyd. The Pyrenean Upright Honeyfuckle.

7. LONICERA pedunculis bifloris, baccis distinctis, foliis cordatis obtusis. Hort. Upsal. Upright Honeyfuckle, with blunt heart-shaped Leaves.

8. LONICERA floribus verticillatis sessilibus, foliis ovato-lanceolatis coalitis, fructu trispermo. Lin. Hort. Cliff. Dr. Tinker's Weed, or false Ipecacuana.

The first Sort was discovered by Father Plumier, in some of the French Settlements in America: it was after ward found by Dr. William Housleum at Camperby, who sent

the Seeds to England. This Plant is very tender; so cannot be preserved in this Country through the Winter, unless it is placed in a warm Stove. The Seeds of this (as also of all the other Sorts) remain a whole Year in the Ground before the Plants appear; therefore when the Seeds are brought to England, they should be sown in Pots of light Earth, and placed in a shady Situation during the first Summer; and in the Autumn, the Pots should be plunged into a Bed of Tanners Bark, where they may be secured from the Cold; and the following Spring they should be removed into a fresh Hot-bed, which will bring up the Plants early in the Spring. When these are fit to remove, they should each be planted in a separate Pot, and plunged into the Hot-bed, and treated as other tender Plants which are Natives, of the same Country.

The Upright red-berried, and the Fly Honeyfuckle, have been long cultivated in the Nurseries near London, and are commonly sold as flowering Shrubs, to fill up Wilderness-quarters; but their Flowers are small, and have little Beauty to recommend them; but as these Shrubs have a different Appearance from most others, a few of each may be admitted for the sake of Variety. The first of these seldom grows above four Feet high; the Branches grow erect, and form an handsome Shrub. The other will grow seven or eight Feet high, and the Branches of this do not grow quite so regular as those of the other. The Flowers of this Sort are white, and those of the other are of a dark-purple Colour. They are produced two together on the same Footstalk, from the Setting on of the Leaves.

These Shrubs are Natives of the Mountains in Germany; so are ex-

treme hardy; they may be propagated by Layers, which should be laid down in the Autumn, as soon as the Leaves begin to decay; and by the next Autumn they will have made good Root; so may be transplanted either into a Nursery for two or three Years, to get Strength, or the Places where they are design'd to remain.

They may also be propagated by Cuttings, which should be planted in a shady Border of loamy Earth in the Autumn; and if the Spring should prove dry, they must be duly watered: if this is observed, they will have good Roots by the following Autumn, and may then be treated as the Layers.

The single blue-berried Upright Honeyfuckle is now in several Nurseries near London, though not very plenty. This Sort produces its Flowers very early in the Spring, about the same time as the Mezerion; but there is no great Beauty in the Flowers; however, it should have a Place in every curious Garden of Plants.

The fifth, sixth, and seventh Sorts are yet very rare in England; these are Natives of the Alps, Pyrenees, and other mountainous Places; so are extremely hardy. These Shrubs seldom rise above three or four Feet high; so may be intermixed with others of the same Growth: they love a shady Situation, and a moist Soil.

They may be propagated by Cuttings or Layers, in the same manner as hath been directed for the former Sorts; and when they are rooted, they should be planted in a Nursery for two or three Years, to get Strength, before they are planted out for good.

The last Sort is an herbaceous Plant, which decays to the Root

every Year, and rises again the Spring following. This grows plentifully in most Parts of North-America, where the Root has been long used for the Ipecacuana, to which this Plant seems to be near akin; for by some dried Specimens which were sent me of the true Ipecacuana, there seems but little Difference between the two, in the Leaves and Growth of the Plant, nor in their Fruit; but the Roots have a very different Figure.

This Plant is called in America Fever root, and Dr. Tinker's Weed, from the Physician who first brought it into Use for the Cure of Fevers. This was titled by Dr. Dillenius, in the *Hortus Elthamensis*, *Triosteospermum*, from the Fruit having ten Seeds in each.

It is a very hardy Plant; so will endure the greatest Cold of this Country in the open Air; and delights in a light moist Soil, and a shady Situation, where it may have only the morning Sun. It rises with several Stalks from the same Root, to the Height of two Feet or upward: these are garnished with oblong Leaves, which are broad in the Middle, but draw to a Point at each End: these are set on by Pairs, and the Tails of the Leaves closely embrace the Stalks. The Flowers are produced in Whorles round the Stalks, at the Setting on of the Leaves; and are of a dark-purple Colour, shaped like those of the Upright Honeyfuckle: these are succeeded by yellow succulent Berries, which have three Seeds in each.

It may be propagated by the Seeds; but these commonly remain a whole Year in the Ground before they come up, especially when they are kept out of the Ground till the Spring; therefore it is the best Way to sow them in the Autumn, soon

after they are ripe. It may also be propagated by parting of the Roots; but this should not be done oftener than every third Year, lest it weaken the Plants.

LOTUS, Birds-foot Trefoil.

The Characters are;

It hath a papilionaceous Flower: the Ovary, which rises out of the Flower-cup, afterward becomes a Pod; sometimes distinguish'd, as it were, into Cells, by transverse Partitions, which are full of Seeds for the most part roundish: to which may be added, The Leaves grow by Threes; but have two Wings, or little Leaves, at the Origin of their Footstalks.

The Species are;

1. LOTUS villosus altissimus, flore glomerato. Tourn. The tallest hairy Birds-foot Trefoil, with a glomerated Flower.

2. LOTUS pentaphyllus filiquosus villosus. C. B. P. Upright hoary Birds-foot Trefoil.

3. LOTUS πολυκερατος frutescens Cretica argentea, filiquis longissimis propendentibus rectis. Mor. Hist. Shrubby silver Birds-foot Trefoil of Crete, with long strait hanging Pods.

4. LOTUS hæmorrhoidalis humilior & candidior. Tourn. Lower and whiter Hæmorrhoidal Birds-foot Trefoil.

5. LOTUS angustifolius, flore luteo purpureo, ex insula Sancti Jacobi. Hort. Amst. Narrow-leav'd Bird's-foot Trefoil from the Island of St. James, with a purple-yellow Flower.

6. LOTUS ruber, filiqua angulosa. C. B. P. Red square-codded Birds-foot Trefoil, commonly call'd Winged Peas.

7. LOTUS ruber, filiqua angulosa, folio variegato. Boerb. Ind. Red square-codded Birds-foot Trefoil, with a variegated Leaf.

8. LOTUS filiquis ornithopodii. C. B. P. Birds foot Trefoil, with Pods like a Bird's-Foot.

9. LOTUS filiquosa maritima lutea, Cytisi facie. Barr. rar. Maritime Birds-foot Trefoil, with the Face of Cytisus.

10. LOTUS filiquis geminis, peregrina. Boerb. Ind. alt. Foreign Birds-foot Trefoil, with two Pods on each Stalk.

The first Sort dies to the Ground with us every Winter, and rises again the succeeding Spring; and when the Roots are strong, the Shoots will be four or five feet high, and produced in great Plenty. If it be cut while young, the Cows are very fond of it; but Horses will not eat it, unless they are very hungry.

The Roots, when strong, will admit of the Shoots being cut three or four times in a Summer; for they put out again soon after they are cut, and grow very strong in a short time; but this Plant does not come up before April in our Country, and commonly dies down in October; so that if it were the best Fodder for Cattle, it could only be obtained in Summer; for I am afraid it will hardly be of any Use when dried.

It may be propagated from the Seeds, which are generally produced in great Plenty, and must be sown very thin in Rows, at about eighteen Inches asunder, the Beginning of April; and in May, when the Plants will be come up, the Ground should be hoed between the Rows, in order to destroy the Weeds, and the Plants cut up, where they are too thick (for they should be eight or ten Inches apart in the Rows at least); for tho' they will appear but weak at their first coming up, yet when their Roots have taken fast hold of the Ground,

Ground, they will increase their Strength greatly; for I have had a single Root of this Plant, which has been a Foot Diameter over the Crown, and hath produced above an hundred Shoots.

You must also continue hoeing the Ground from time to time as the Weeds are produced, which, if permitted to overgrow the Plants while they are young, will certainly destroy them; so that the first Season they must be managed with great Care; but afterwards, when the Plants have obtained more Strength, they will be capable of encountering the Weeds; tho' then the Ground between the Rows should be stir'd with a Breast-plough after the Crop is cut down, which will greatly promote its Growth.

This Plant delights in a dry barren gravelly Soil, on which it will resist the severest Cold of our Climate, and abide many Years.

It may also be propagated by planting Cuttings or Slips taken from the old Plants in *July*, when they have acquired an Hardness, which should be planted in a moist cloudy Season, or watered and shaded, and in a short time they will take Root; but as this is difficult to perform when a Quantity is design'd, so the better way is to propagate it by Seeds.

The second, third, and fourth Sorts are preserved in Gardens as Curiosities; these are impatient of much Cold, and must therefore be planted in Pots, and housed in Winter, otherwise they are often destroyed in our Country. These may be all propagated by sowing their Seeds upon a moderate Hot-bed in the Spring; and when the Plants are come up, they must be transplanted into Pots, and plunged into an Hot-bed, to promote their

taking Root; after which in *May* they should be removed into the open Air, where they must be placed in some well-sheltered Situation, amongst other Exotic Plants, in which Place they may remain until the Middle or End of *October*, following when they must be removed into the Green-house, observing to place them where they may have as much free Air as possible in mild Weather; for if they are kept too closely shut up, or stand under the Branches of other Trees or Plants, they are very apt to draw very weak, and decay soon after: they must also be often refreshed with Water; but it should not be given them in Winter in too great Quantities; for that will rot their Roots: in the Spring they should be inured very early to the open Air, into which they should always be removed at the Beginning of *May*, or earlier, according as the Season proves favourable.

These may also be propagated by planting Cuttings, in any of the Summer-months, into a Bed of light Earth, observing to water and shade them until they have taken Root; after which they may be planted into Pots filled with fresh light Earth, and must be managed as was directed for the Seedling-plants. They all produce their Flowers in *June*, *July*, and *August*; and most of them ripen their Seeds very well in *England*.

The fourth Sort is hardy enough to live abroad in moderate Winters, provided it is planted in a dry Soil, and a warm Situation. This will produce plenty of Seeds every Year.

The fifth Sort is by much the most beautiful of all the Kinds: this will grow to the Height of three Feet, with woody Stems, and Branches which are garnished with long narrow hoary Leaves: the Flowers

are of a dark Copper-colour, approaching to black: these are continued in Succession upward of nine Months; so that the Plants are never destitute of Flowers, but in the middle of Winter, which renders them more valuable.

This may be propagated by Seeds, which should be sown upon a moderate Hot-bed early in the Spring: and when the Plants are fit to remove, they should be each planted into a separate small Pot filled with light Earth, and plunged into a fresh Hot-bed, to bring them forward: but they must not be kept too close; for that will cause them to draw up weak: they must also be hardened to bear the open Air, into which they should be removed in *June*; and in *July* they will begin to flower: during the Summer-season these Plants should remain abroad in a sheltered Situation; but in Autumn they must be removed into the Conservatory; for the early Frosts in Autumn will soon destroy them, if they are exposed to the open Air. These Plants should be placed in a very dry Glass-case in Winter, where they may be preserved from Damps; for they are very subject to grow mouldy in damp Weather, and this often destroys them; so that they can seldom be preserved in a common Green-house: and if they are placed in a Stove, they are apt to draw up weak, and rendered short-liv'd. The Seeds of this Plant commonly ripen well in *England*, when the Summers are warm: but when they fail, the Plants may be propagated by Cuttings, which must be planted in Pots, and plunged into an Hot-bed; where, if they are shaded from the Sun in the Heat of the Day, and duly watered, they will soon take Root, and afterward must

be treated as hath been directed for the Seedling-plants.

The sixth Sort is an annual Plant, which by many People is sown here and there, in small Patches, upon the Borders of the Flower-garden, with other small Annuals, amongst which it makes a pretty Variety.

The Flowers of this Plant (which are in form of a Pea-blossom) are of a deep-red Colour, and are succeeded by Pods with four Angles or Wings (which occasioned their being called Winged Peas) containing several hard round Seeds. The Pods of this Sort are by some Persons eaten as Peas when young; and are cultivated in some Gardens as an esculent Plant.

It is easily propagated by sowing the Seeds in *March* or *April*, upon the Borders where they are to remain; for they do not thrive so well when transplanted: and they will require no farther Care than only to keep them clear from Weeds. In *June* they will begin to flower, and continue till *August*, soon after which their Seeds will ripen.

The seventh Sort is only a Variety of the sixth, from which it differs in having a variegated Leaf: this Difference it commonly retains from Seeds, which is what few other Plants will do. This may be propagated as the former.

The eighth Sort is only preserved in some Gardens, more for the Oddness of its Pods, which very much resemble a Bird's Foot, than for any particular Beauty of the Plant: but in a large Garden it may be admitted, for the sake of Variety. This may be propagated in the same manner as the two former; and is also annual, as they.

The ninth Sort is a biennial Plant: this is found wild in *Portugal* and *Spain*, growing upon the Shore

Shore near the Sea: this Sort will rarely live thro' the Winter in the open Air in *England*; therefore the Plants should be potted, and placed under an Hot-bed-frame in Winter; where they should have as much free Air as possible in mild Weather, but sheltered from hard Frost: this may be propagated by sowing the Seeds in *April*, upon a Bed of light Earth; and when the Plants are fit to remove, some of them may be transplanted into small Pots, and placed in a shady Situation until they have taken Root; and afterward they may be exposed to the Sun all the Summer, and in Autumn removed into Shelter: but some few Plants may be planted in the full Ground, in a warm Situation, where in a favourable Winter they may remain without Shelter: and those Plants which live abroad will flower much better, and more certainly produce Seeds, than those Plants in the Pots.

The tenth Sort is an annual Plant, resembling very much the eighth Sort: the Branches of both these trail upon the Ground, and spread to a considerable Distance; but the Flowers, being very small, have no Beauty; so that these are only preserved by Persons who are curious in Botanical Studies: these should be sown in *April*, in the Places where they are to remain; for they do not love to be transplanted.

There are two or three Varieties of this Bird's-foot Trefoil, which grow wild in most Parts of *England*: when these are upon dry, gravelly, chalky Land, they are very low humble Plants, spreading on the Surface of the Ground: but in rich moist Land they grow much larger; and one of the Sorts will sometimes produce Branches near two Feet in Length: the Seeds of these Plants

have been sold, and recommended as profitable to sow for Fodder, by some Husbandry-Quacks, by the Name of Ladies-finger-grass: but I never could find any Animal that would eat it, either green or dry.

LOTUS ARBOR. *Vide Celtis.*

LOVE-APPLE. *Vide Lycopersicon.*

LUDWIGIA.

The *Characters* are;

The Empalement of the Flower is of one Leaf, cut into four Segments at the Top, and sits upon the Embryoes: the Flower consists of four heart-shaped Petals, which are equal, and spread open: in the Centre of the Flower is situated the four-cornered Pointal, attended by four Stamina: the Pointal afterward becomes a four-corner'd Fruit, crown'd with the Empalement; and has four Cells, which are full of small Seeds.

The *Species* are;

1. *LUDWIGIA capsulis subrotundis.*
Lin. Hort. Cliff. Ludwigia with round Seed-vessels.

2. *LUDWIGIA capsulis oblongis uncialibus.* *Flor. Leyd.* Ludwigia with Seed-vessels an Inch in Length:

We have no *English* Name for this Plant; but it is very near akin to the *Onagra*, or Tree-primrose. The second Sort is by Father *Plumier* ranged in that Genus: but Dr. *Linnaeus* has removed this to a great Distance, on account of the Number of *Stamina*, which in the Flowers of this Genus are but four; whereas those of the *Onagra* have eight: but Dr. *Van Royen*, in the *Flora Lugdunensis*, has brought them together in his Class, intituled, *Frustris floribus quadrifidis.*

These are both annual Plants, which must be raised on an Hot-bed in the Spring, and treated in the same manner as hath been directed for the *Amaranthus*; for if they are

not brought forward in the Spring, they seldom produce good Seeds in England. I received the Seeds of both these Sorts from my good Friend Dr. Dale, from South-Carolina.

LUFFA, Egyptian Cucumber.

The Characters are;

It hath a bell-shaped Flower, consisting of one Leaf, which is divided into five Parts to the Centre: there are Male and Female Flowers on the same Plant: the Male Flowers are produced on short Foot-stalks, having no Embryoes: but the Female Flowers rest on the Top of the Embryoes, which afterward becomes a Fruit like a Cucumber to outward Appearance, but is not fleshy, the inner Part consisting of many Fibres, which are elegantly netted: and there are three Cells, which are filled with Seeds, which are almost of an oval Shape.

We have but one Sort of this Plant; viz.

LUFFA Arabum. Tourn. The Luffa of the Arabians.

There are two Varieties of this Plant, one having white, and the other black Seeds; but these are not distinct Species.

This Plant may be propagated after the same manner as Cucumbers and Melons, by sowing the Seeds on an Hot-bed the Beginning of March: and when the Plants are come up, they must be pricked into a fresh Hot-bed to strengthen the Plants, observing to let them have fresh Air every Day in warm Weather, and to refresh them frequently with Water. When the Plants have four or five Leaves, they should be planted out on an Hot-bed, where they are designed to remain, which should be under Frames, and but one Plant put into each Hole; for as these Plants send forth a great Number of Side-shoots, so where

they are planted too close, they will entangle one into the other, and become so thick, as to cause the Fruit to drop. In the Management of these Plants after they are planted out for good, there must be the same Care taken as for Melons and Cucumbers, with this Difference only, that these require a larger Share of Air in warm Weather; otherwise the Vines will grow weak, and will not produce Fruit.

When the Plants have spread, so as to fill the Frames on every Side, the Frames should be raised on Bricks, and the Ends of the Plants drawn out, that they may have room to grow; for when these Plants are in a vigorous State, they will spread eight or ten Feet; so that if they are confined, they will become so thick, as to rot the tender Branches which are covered from the Air, and there will be no Fruit produced.

The Fruit, when it is young, is by some People, eaten, and made into Mango's, and preserved in Pickle; but it hath a very disagreeable Taste, and is not accounted very wholesome: wherefore these Plants are seldom cultivated in Europe, except by such Persons as are curious in Botany, for Variety.

LUNARIA, Moonwort, Sattin-Flower, or Honeysy.

The Characters are;

The Flower consists of four Leaves, which expand in form of a Cross: the Ovary (which rises in the Centre of the Flower) becomes a compress'd perfectly smooth Fruit, divided, as it were, into two Cells by an intermediate Partition, to which adhere the parallel and membraneous Valves, and filled with Seeds, which have commonly a broad Border, and are shaped like a Kidney.

The Species are;

I. LUNARIA major, siliqua rotundiora.

diore. F. B. Greater Moonwort, with round Pods, commonly called Honesty, or White Sattin.

2. *LUNARIA major, siliqua longiore. F. B.* Greater Moonwort, with a longer Pod.

3. *LUNARIA major perennis, siliqua rotundiori, flore albo. Tourn.* Greater perennial Moonwort, with a rounder Pod, and a white Flower.

4. *LUNARIA leucoid folio, siliqua oblonga majori. Tourn.* Moonwort with a Stock-gilliflower-leaf, and a large oblong Pod.

5. *LUNARIA fruticosa perennis incana, leucoid folio. Tourn.* Shrubby perennial Moonwort, with a Stock-gilliflower-leaf.

6. *LUNARIA Orientalis, leucoid folio incano, lutea patula. Jussieu.* Yellow spreading Eastern Moonwort, with a Stock-gilliflower-leaf.

7. *LUNARIA perennis lutea, folio leucoid, ramis expansis. Vail.* Branching yellow perennial Moonwort, with a Stock-gilliflower-leaf.

There are some other Varieties of this Plant, which are preserved in curious Botanic Gardens: but those here mentioned are the best worth cultivating, for their Beauty.

The first of these Plants is very common in most old Gardens in England, and is generally known by the Name of Honesty, or White Sattin: it requires very little Culture, and should be sown soon after the Seeds are ripe in Autumn, upon a Bed or Border of common Earth, in almost any Situation (provided it be not under the Dripping of Trees), in which Place they should be suffered to remain; for they seldom thrive well, if transplanted; and in May following they will produce Flowers, and the Seeds will ripen in August. The Seed-vessels of this Plant, when they are full ripe, become very transpa-

rent, and of the Appearance of white Sattin, at which time the Branches are cut off, and dry'd; after which, they are preserved to place in the Chimneys of Halls, and large Rooms, where they appear very agreeable.

The other Sorts may be all propagated in the same manner as the former, with this Difference; *viz.* That as they are somewhat tenderer, so they should have a warmer Situation, otherwise they are subject to be destroyed in very cold Winters: they should also have a dry Soil, which should be fresh, but not dunged; for if the Soil be too rank, they often canker and decay, especially in wet Seasons.

These Plants are all of them pretty Varieties in large Gardens, where there is room; but they are seldom cultivated in small Places, especially the two first Sorts, which grow pretty large, and take up too much room. Their Flowers are not very beautiful: but for the Oddness of their Seed-vessels, as also the different Appearances of the Plants, they may be admitted.

The third, fifth, and sixth Sorts are perennial Plants, which may be propagated by planting Cuttings of any of them in the Summer-months, in a shady Border of fresh light Earth, observing to water them until they have taken Root; after which, they may be removed into the Places where they are to remain, and must be treated as those Plants which were raised from Seeds.

LUPINUS, Lupine.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, which afterward turns into a Pod, that is filled with either plain or spherical Seeds: to which may

may be added, The Leaves grow like Fingers upon the Foot-stalks.

The Species are ;

1. LUPINUS *sylvestris, purpureo flore, semine rotundo vario.* J. B. Wild Lupine, with a purple Flower, and round variegated Seed, commonly called the lesser blue Lupine.

2. LUPINUS *angustifolius cœruleus elatior.* Raii Hist. Narrow-leav'd taller blue Lupine.

3. LUPINUS *sylvestris, flore luteo.* C. B. P. The common yellow Lupine.

4. LUPINUS *peregrinus major, vel villosus cœruleus major.* C. B. P. Foreign greater hairy Lupine, with a large blue Flower, commonly called the great blue Lupine.

5. LUPINUS *peregrinus major, flore incarnato.* H. L. Foreign greater Lupine, with a flesh-coloured Flower, commonly call'd the Rose Lupine.

6. LUPINUS *sativus, flore albo.* C. B. P. Garden or Manured Lupine, with a white Flower.

7. LUPINUS *cœruleus minor perennis Virginianus repens.* Mor. Hist. Smaller perennial creeping blue Lupine of Virginia.

There are several other Varieties of this Plant, which are preserved in some curious Botanic Gardens, that differ chiefly in the Colour and Size of their Flowers and Fruit ; but those here mentioned are such as generally are preferred for the Beauty of their Flowers, for which alone they are propagated in the *English* Gardens.

The first Sort is very common in every Garden, being sown in the Borders of the Flower-garden, with other hardy Kinds of annual Plants, which do not require the Assistance of an Hot-bed to bring them forward. The Seeds of this, and the common yellow and white Lupines,

are very frequent at every Seed-shop, where they are generally sold at a very reasonable Price. These Seeds may be sown in *April, May,* and *June,* in order to continue a Succession of their Flowers thro' the Summer. They must be sown where they are to remain ; for they seldom do well if transplanted. They love a light Soil, not too rich or moist ; in both which they are very subject to rot before they perfect their Seeds.

These produce their Flowers successively in *June, July,* and *August,* according to the time of their being sown ; and commonly grow about two Feet high : so that if they are rightly disposed amongst other annual Plants of the same Growth in Borders, they make an agreeable Variety. The Seeds of these Plants should always be sown in dry Weather ; for if there should happen to be much Wet soon after they are put into the Ground, it commonly rots them. The blue and white Sorts have no Scent ; but the yellow has a very agreeable Odour, for which it is commonly preferr'd by most People to the others.

The narrow-leav'd tall blue Lupine is not so common in *England* as the other Sorts ; tho' in *Italy* and *Spain* it is one of the most common : in the former of which Places it is sown to improve the Ground which is design'd for Vineyards ; where, when the Lupines are in Flower, they cut them down, and plow them into the Ground as Manure ; or, if they have not time enough to do this, they parboil the Seeds, to prevent their growing, and sow them upon the Ground, allowing sixteen Bushels to an Acre, and plow them in : so that in these Countries it is a valuable Plant.

The fourth and fifth Sorts are not

so common as the former. These Plants grow three Feet high, and spread out into many Branches, which are furnish'd with fine Spikes of large Flowers, which make an handsome Appearance, and continue a long time in Beauty. The Seeds of these Plants should be sown very early in the Spring, upon a warm dry Border, where they must remain to flower; for if they are sown late, they seldom perfect their Seeds with us: therefore the better way is, to sow them in *August*, under a warm Wall or Hedge, where the Plants will come up, and endure the Cold of our ordinary Winters very well: and these Plants will flower earlier the succeeding Summer, and never fail to produce ripe Seeds; whereas those sown in the Spring very often miscarry.

By not practising this Method, when there happened two or three succeeding cold Summers, these two Species were almost lost in *England* a few Years since.

The seventh Sort is an abiding Plant, which grows in great Plenty in *America*; from whence the Seeds have been brought into *England*, where it thrives very well, provided it be suffered to remain in the Place where it was sown; for the Roots of this Plant generally run very deep into the Ground, which by removing are commonly broken; after which the Plant seldom does well. This should be sown on a light dry Soil, in which it will thrive very well, and continue several Years, producing fine Spikes of blue Flowers: but this Sort creeps so much at the Root, as not to produce many Seeds in this Country.

LUPULUS, The Hop.

The Characters are;

- It hath a creeping Root: the Leaves are rough, angular, and con-

jugated: the Stalks climb and twist about whatever is near them: the Flowers are Male and Female on different Plants: the Male Flowers consist of a Calyx, divided into five Parts, which surrounds the Stamina, but has no Petals to the Flower: the Female Plants have their Flowers collected into squamose Heads, which grow in Bunches: from each of the leafy Scales is produced an horned Ovary, which becomes a single roundish Seed.

The Species are;

1. LUPULUS *mas.* C.B.P. The Male Hop, commonly called the wild Hop.

2. LUPULUS *fœmina.* C.B.P. The Female, or manur'd Hop.

Of this last Sort, the People who cultivate them reckon three different Varieties; as, first, the long and square garlick Hop; the long white Hop; and the oval Hop; all which are indifferently cultivated in *England*: but of the Male Hop there has been no Notice taken of any different Varieties. This Sort grows wild in Hedges in divers Parts of *England*; but is never cultivated, as being of no Use.

There being the greatest Plantation of Hops in *Kent*, that are in any County in *England*, it is very probable, that their Method of planting and ordering them should be the best.

As for the Choice of their Hop-grounds, they esteem the richest and strongest Grounds as the most proper: they choose a warm dry Soil, that has a good Depth of hazel Mould; and if it be rocky within two or three Feet of the Surface, the Hops will prosper well; but they will by no means thrive on a stiff Clay, or spongy wet Land.

If it may be, choose a Piece of Meadow or Lay-ground to plant Hops

Hops on, such as has not been till'd or sown for many Years, or an old decay'd Orchard; for Land that is worn out by long bearing of Corn, will require abundance of Dung, to bring it into any tolerable Condition to bear a Crop of Hops.

The *Kentish* Planters accounting new Land best for Hops, they plant their Hop-gardens with Apple-trees, at a large Distance, and with Cherry-trees between; and when the Land hath done its best for Hops, which they reckon it will in about ten Years, the Trees may begin to bear. The Cherry-trees last about thirty Years; and by that time the Apple-trees are large, they cut down the Cherry-trees.

The *Effex* Planters account a moory Land the properest for Hops; tho' there are several other Sorts of Soil that are esteemed very good.

Some account that Land that has a rosselly Top, and a brick earthy Bottom, the best: a true Rossel, or light Land, is what they generally plant in, whether it be white or black.

Persons ought to be very curious in the Choice of the Plants and Sets, as to the Kind of Hop; for if the Hop-garden be planted with a Mixture of several Sorts of Hops, that ripen at several times, it will cause a great deal of Trouble, and be a great Detriment to the Owner.

The Sets ought to be procured out of Grounds that are intirely of the same Sort you would have; they should be five or six Inches long, with three or more Joints or Buds on them, all the old Bind and hollow Part of the Set being cut off.

If there be a Sort of Hop you value, and would increase Plants and Sets from, the superfluous Binds may be laid down when the Hops are tied, cutting off the Tops, and

burying them in the Hill; or when the Hops are dress'd, all the Cuttings may be saved, and laid in Rows in a Bed of good Earth; for almost every Part will grow, and become a good Set the next Spring.

As to the Seasons of planting Hops, the *Kentish* Planters best approve the Months of *October* and *March*, both which succeed very well: but the common Sets are not to be had in *October*, unless from some Ground that is to be digg'd up, and destroy'd; and likewise there is some Danger, that the Sets may be rotted, if the Winter prove very wet: but the most usual time of procuring them is in *March*, when the Hops are cut and dress'd.

As to the manner of planting the Sets, you should put five good Sets in every Hole with a Setting-stick; one is to be placed in the middle, and the rest round about, sloping, the Tops meeting at the Centre: they must stand even with the Surface of the Ground: let them be press'd close with the Hand, and covered with fine Earth; and a Stick should be placed on each Side the Hill, to secure it.

A Mixture of Compost or Dung being prepared for your Hop-ground, the best time for laying it on, if the Weather prove dry, is about *Michaelmas*; that the Wheels of the Dung-cart may not injure the Hops, nor furrow the Ground: if this be not done then, you must be obliged to wait till the Frost has hardened the Ground, so that it will bear the Dung-cart: and this is also the time to carry on your new Poles, to recruit those that are decayed, and to be cut out every Year.

Those who have but a small Quantity of Dung, usually content themselves with laying on about
twenty

twenty Loads upon an Acre every Year; this they lay only on the Hills, either about *November*, or in the Spring; which last some account the best time, when the Hops are dress'd to cover them after they are cut; but if it be done at this time, the Compost or Dung ought to be very well rotted and fine.

About the End of *February*, if the Hops were planted the Spring before, or if the Ground be weak, they ought to be dress'd in dry Weather; but else, if the Ground be strong, and in Perfection, the Middle of *March* will be a good time; and the Latter-end of *March*, if it be apt to produce over-rank Binds, or the Beginning of *April*, may be soon enough.

In dressing those Hops that have been planted the Year before, you ought to cut off both the dead Tops, and the young Suckers, which have sprung up from the Sets, and also to cover the Stocks with an Hill with fine Earth a Finger's Length in Thickness.

About the Middle of *April* the Hops are to be poled, when the Shoots begin to sprout up; the Poles must be set to the Hills deep into the Ground, with a square iron Pitcher or Crow, that they may the better endure the Winds: three Poles are sufficient for one Hill. These should be placed as near the Hills as may be, with their bending Tops turned outward from the Hill, to prevent the Binds from entangling; and a Space between two Poles ought to be left open to the South, to admit the Sun-beams.

If you wait till the Sprouts, or young Binds, are grown to the Length of a Foot, you will be able to make a better Judgment where to place the largest Poles; but if you stay till they are so long as to fall into the

Alleys, it will be injurious to them, because they will entangle one with another, and will not clasp about the Pole so readily.

If, after the Hops are grown up, you find any of them have been under-poled, taller Poles may be placed near those that are too short, to receive the Binds from them.

Some advise, that if the Binds be very strong, and overgrow the Poles very much, you strike off their Heads with a long Switch, to increase their branching below.

Toward the Latter-end of *May*, when you have made an End of tying them, the Ground must have the Summer Digging: this is done by casting up with the Spade some fine Earth into every Hill; and a Month after this is done, you must pare the Alleys with a Shovel, and make the Hills up to a convenient Bigness.

When the Hops blow, you should observe if there be any wild barren Hills among them, and mark them, by driving a sharpen'd Stick into every such Hill, that they may be digg'd up, and replanted.

Hops, as well as other Vegetables, are liable to Distempers and Distalters, and, among the rest, to the Fen.

About the Middle of *July* Hops begin to blow, and will be ready to gather about *Bartholomew-tide*. A Judgment may be made of their Ripeness, by their strong Scent, their Hardness, and the brownish Colour of their Seed.

When by these Tokens they appear to be ripe, they must be pick'd with all the Expedition possible; for if at this time a Storm of Wind should come, it would do them great Damage, by breaking the Branches, and bruising and discolouring the Hops: and it is very well known,

that Hops, being pick'd green and bright, will sell for a Third-part more than those which are discolour'd and brown.

It will be best to begin to pick the Hops on the East or North Side of your Ground, if you can do it conveniently; this will prevent the South-west Wind from breaking in to the Garden.

When the Poles are drawn up to be pick'd, you must take great Care not to cut the Binds too near the Hills, especially when the Hops are green, because it will make the Sap to flow excessively.

And if the Poles do not come up without Difficulty, they should be raised by a Piece of Wood in the nature of a Lever, having a forked Piece of Iron with Teeth on the Inside, fasten'd within two Feet of the End.

The Hops must be pick'd very clean, *i. e.* free from Leaves and Stalks; and, as there shall be Occasion, two or three times in a Day the Bin must be emptied into an Hop-bag made of coarse Linen-cloth, and carried immediately to the Oast or Kiln, in order to be dried: for if they should be long in the Bin or Bag, they will be apt to heat, and be discolour'd.

If the Weather be hot, there should no more Poles be drawn than can be pick'd in an Hour; and they should be gathered in fair Weather, if it can be, and when the Hops are dry: this will save some Expence in Firing, and preserve their Colour better when they are dried.

The best Method of drying Hops is with Charcoal on an Oast or Kiln covered with Hair-cloth, of the same Form and Fashion that is used for drying Malt. There is no need to give any particular Directions for the making it; since every Carpen-

ter or Bricklayer, in those Countries where Hops grow, or Malt is made, knows how to build them.

The Hops must be spread even upon the Oast a Foot thick or more, if the Depth of the Curb will allow it: but Care is to be taken not to overload the Oast, if the Hops be green or wet.

The Oast ought to be first warmed with a Fire before the Hops are laid on; and then an even steady Fire must be kept under them: it must not be too fierce at first, lest it scorch the Hops: nor must it be suffered to sink or slacken, but rather be increased till the Hops be nearer dried, lest the Moisture or Sweat which the Fire has raised, fall back, or discolour them. When they have lain about nine Hours, they must be turn'd, and in two or three Hours more they may be taken off the Oast. It may be known when they are well dried, by the Brittleness of the Stalks, and the easy falling off of the Hop-leaves.

LUTEOLA, Weld, Would, Yellow-weed, or Dyers-weed.

The Characters are;

The Leaves are oblong and intire: it hath an anomalous Flower, consisting of many dissimilar Leaves: the Fruit is globular, hollow, and divided into three Parts.

The Species are;

1. LUTEOLA *herba, salicis folio.* C. B. P. Common Weld.
2. LUTEOLA *minima, polygalæ folio.* D. du Bois. Raii Syn. Smallest Weld, with a Milkwort-leaf.

The first of these Plants is very common in England, growing upon dry Banks, and the Tops of Walls and Buildings, almost every-where; but the second Sort is very rare: this was found near Tunbridge-wells by Charles du Bois, Esq; several Years since.

The common Weld is accounted a rich Dyers Commodity, and is of great Advantage, considering the small Expence of its Culture: it will grow upon the poorest Sort of Land, provided it be dry; tho' upon a middling Soil it will grow much larger. The Seeds of this Plant should be sown the Beginning of *August*, soon after they are ripe; when it will come up with the first moist Weather, and will grow very strong the same Autumn, provided it be sown by itself; for most People sow it with Corn, which is very wrong; for that hinders its Progress greatly, and occasions the Loss of one whole Year. When the Plants are come up pretty strong, you should hoe them (as is practised with Turneps), in order to destroy the Weeds, as also to cut up the Plants where they grow too thick, which will greatly improve them; and the succeeding Spring, if the Ground produces many Weeds, you should give it a second Hoeing in *April*, which will preserve it clean from Weeds; for, after that, the Weld will grow, and prevent the Weeds from coming to an Head afterward.

You must be very cautious in the gathering of it, that the Seed be not over-ripe, so as to fall out, and that neither the Stalk nor Seed be under-ripe; because if it be, both will be spoil'd. It must be pull'd up, and bound in little Handfuls, and set to dry, as you do Flax; and then house it carefully, that you shake not out the Seed, which is easily beat out, and should be sown (as was before directed) soon after it is ripe.

This Seed is commonly sold for about ten Shillings per Bushel, or more; a Gallon of which will sow an Acre; for it is very small.

There are some who recommend the sowing this Seed in the Spring, mixing it with a Crop of Barley or Oats, and only harrowed in with a Bush, or roll'd with a Roller. But this is not a good Method: for the Barley or Oats will starve the Weld, and make it very poor: and, many times, the Seeds which are sown in the Spring do not grow, or not come up, till the Autumn following; whereas that sown in the Beginning of *August* rarely fails to come up soon after, and will be much stronger, and fit to pull the succeeding Summer, when the other is always two Years before it is pull'd. The Dyers use it for dyeing bright Yellows and Lemon Colours. It is much sown in *Kent*, especially about *Canterbury*; and often yields from Forty Shillings to ten or twelve Pounds an Acre. This is supposed to be the Plant which the antient Britons dyed themselves with.

LYCHNIDEA. *Vide Phlox.*

LYCHNIS, Campion.

The Characters are;

The Cup of the Flower is whole, and either tubulous or swelling, and, for the most part, furrow'd: the Flower consists of five Leaves, which expand in form of a Clove-gilliflower, and are generally heart-shaped: the Ovary, which rises in the Centre of the Calyx, becomes a conical Fruit, which is wrapt up in the Flower-cup; and has commonly one Cell, which is filled with Seeds, which are roundish, angular, and kidney-shaped.

The Species are;

1. LYCHNIS *coronaria* *Dioscoridis*, *sativa*, *flore dilute rubente*. C. B. P. Garden or Rose Campion, with a pale-red Flower.

2. LYCHNIS *coronaria* *Dioscoridis*, *sativa*, *flore rubro, velut flammeo, fulgens*. C. B. P. Rose Campion,

with

- with a flaming red - coloured Flower.
3. *LYCHNIS coronaria sativa multiplex*. C. B. P. The double Rose Campion.
4. *LYCHNIS coronaria sativa Dioscoridis, flore albo*. C. B. P. The single white Rose Campion.
5. *LYCHNIS umbellifera montana Helvetica*. Zan. Umbelliferous Mountain Campion of *Helvetia*.
6. *LYCHNIS alba multiplex*. C. B. P. Double white Campion, commonly called the Bachelor's-button.
7. *LYCHNIS purpurea multiplex*. C. B. P. Double red Campion, commonly call'd the double red Bachelor's-button.
8. *LYCHNIS pratensis, flore laciniato pleno*. Mor. Hist. The double Meadow Campion, with a jagged Flower, commonly called the double Ragged-Robin.
9. *LYCHNIS hirsuta, flore coccineo, major*. C. B. P. The scarlet Lychnis, Nonfuch, Jerusalem Cross, or Flower of *Constantinople*.
10. *LYCHNIS hirsuta, flore incarnato, major*. C. B. P. Great hairy Campion, with a flesh-coloured Flower, commonly called the pale Lychnis of *Constantinople*.
11. *LYCHNIS Chalcedonica, flore pleno miniato, seu aurantiaco*. Mor. Hist. The double scarlet Lychnis, or Flower of *Constantinople*.
12. *LYCHNIS seu saponaria, flore pleno*. Tourn. Double Soapwort, *vulgo*.
13. *LYCHNIS sylvestris, quæ Been album, vulgo*. C. B. P. Wild Campion, Spatling-poppy, or white Behen of the Shops.
14. *LYCHNIS sylvestris viscosa angustifolia rubra*. C. B. P. Red German Catchfly.
15. *LYCHNIS sylvestris viscosa angustifolia rubra, flore pleno*. Red
- German Catchfly, with a double Flower.
16. *LYCHNIS Orientalis, bupleuri folio*. Tourn. Cor. Eastern Campion, with an Hare's-ear-leaf.
17. *LYCHNIS facie auriculæ urf.* C. B. P. Campion with the Face of an Auricula.
18. *LYCHNIS maritima saxatilis, folio anacamperotis*. T. Cor. Maritime rocky Campion, with an Orpine-leaf.
19. *LYCHNIS noctiflora angustifolia odorata*. Tourn. Night flowered sweet-scented Campion, with a narrow Leaf.
20. *LYCHNIS frutescens myrtifolia, Been albo similis*. C. B. P. Shrubby myrtle-leav'd Campion, like the white Behen.
21. *LYCHNIS segetum rubra, foliis perfoliatæ*. C. B. P. Red Corn Campion, with Thorough-wax-leaves.
22. *LYCHNIS supina Sicula, calyce amplissimo striato*. Tourn. Low Sicilian Campion, with a large streak'd Flower-cup.
23. *LYCHNIS sylvestris viscosa angustifolia rubra altera*. C. B. P. Another narrow-leav'd wild Campion, with a viscous Stalk, and red Flowers.
24. *LYCHNIS viscosa purpurea latifolia lævis*. C. B. P. Purple viscous Campion, with a broad smooth Leaf, commonly call'd *Lobel's Catchfly*.
25. *LYCHNIS viscosa alba latifolia lævis*. C. B. P. White flowering broad-leav'd Catchfly.
26. *LYCHNIS hirsuta minor, flore variegato*. Tourn. Small hairy Campion, with a variegated Flower, commonly call'd Dwarf Lychnis.
27. *LYCHNIS Hispanica, folio kali, multiflora*. Tourn. Spanish many-flower'd Campion, with a Glasswort-leaf.

28. *LYCHNIS Hispanica, valeriana rubra folio, purpurascens flore.* *Tourn.* Spanish Campion, with a red Valerian-leaf, and a purplish Flower.

29. *LYCHNIS segetum meridionale annua hirsuta, floribus rubris, eto versu dispositis.* *Mor. Hist.* Corn annual hairy Campion, with red Flowers disposed on one Side of the Stalk.

30. *LYCHNIS sylvestris alba, spica reflexa.* *Bot. Monsp.* White wild Campion, with a reflex'd Spike.

The first, second, and fourth Sorts are very common in most *English* Gardens: these are very hardy Plants, and easily propagated either by parting their Roots, or from Seed; if by parting the Roots, it should be done about the Latter-end of *August*, or the Beginning of *September*, that they may take Root before the cold Weather comes on: they may be planted in any Situation, provided they have a light dry Soil. If you would propagate them from Seeds, they should be sown in *March*, upon a Bed of fresh light Earth; and in *May* the Plants should be transplanted into another Bed of the like fresh Earth, at about six Inches Distance from each other; observing to water and shade them until they have taken Root; after which they will require no farther Culture than to keep them clear from Weeds.

At *Michaelmas* following, these Plants may be placed into the large Borders of the Pleasure-garden; where, the Summer following, they will produce their Flowers in *June* and *July*; and soon after, their Seeds will ripen; which, if permitted to shed on the Ground, will rise the succeeding Spring, without any Care.

These Plants, when intermix'd with others of the like Size, make a agreeable Variety during the season of Flowering.

The double Rose Campion is somewhat nicer, and requires more Care in its Culture, than any of the former: this never produces any Seeds, and is therefore only to be propagated by parting the Roots; the best time for which is in *August*, when the Heads taken off should be planted on a Bed of fresh light Earth; and if the Season should prove dry, they must be water'd and shaded until they have taken Root: after which they must be kept clear from Weeds; and, during the Winter-Season, they should be screen'd from excessive Rains: for too much Moisture, at that Season, very often rots them. In *March* they may be taken up with a Ball of Earth to their Roots, and transplanted either into the Borders of the Flower-garden, or in Pots filled with fresh light Earth, and placed where they may have the morning Sun till Eleven o'Clock; in which Situation they will thrive better than when they have more of the Sun. In dry Weather they must be frequently water'd: but you should never let them have too much Wet; for that will canker and rot them, as will also a very rich Soil. This Plant commonly grows about two Feet high, and produces a great Number of beautiful red Flowers in *June* and *July*, which continue a long time; for which they are greatly esteem'd.

The umbelliferous Mountain Campion is nearly akin to the before-mention'd Sorts, but produces its Flowers in an Umbel upon the Top of the Stalks, which are of a bright red Colour, and make a pretty Variety in a Garden: this seldom grows above eight or nine Inches high, therefore it should be placed amongst Flowers of the same Growth: it delights in a light fresh undung'd Soil, and shady Situation; and may

be propagated either from Seeds, which it commonly affords in great Plenty; or from Slips, as the before-mention'd Sorts.

The red and white Bachelor's-button are very hardy Plants, in respect to Cold: but if they are suffer'd to remain long in a Place unremoved, they are very subject to rot and decay. They never produce Seeds; so are propagated only by parting of their Roots; which may be done either in *September*, or in the Beginning of *March*: but the former Season is preferable; for they will then be well-rooted in the Ground before the dry Weather of the Spring comes on, whereby they will be out of Danger from that; whereas those planted in the Spring, if the Weather should prove dry soon after, will starve, and be very weak, unless frequently water'd. These commonly grow above two Feet high, and produce their Flowers in *June* and *July*: they love a fresh loamy Soil, which should not be dung'd; and a Situation to the morning Sun, in which they will thrive better than in a more open Exposure.

The double Ragged-Robin is also increased by parting the Roots in Autumn: this Plant must have a moist Soil, and shady Situation, where it will thrive exceedingly; but in an hot dry Soil it seldom does well. It produces its Flowers about the same time as the former, and is very proper for shady cold Borders, where few other Plants will thrive.

The single scarlet Lychnis may be either propagated by sowing the Seeds, or parting the Roots: if from Seeds, it should be sown on a Bed of light Earth in the Beginning of *March*; and when the Plants are come up pretty strong (which is commonly in *May*), they should be

transplanted out into Nursery-beds at about six Inches Distance each Way, observing to water and shade them until they have taken Root; after which they will require no farther Care, but only to keep them clear from Weeds until *Michaelmas*; at which time they may be removed into the Borders of the Flower-garden, where the next Summer they will produce very strong Stems of Flowers: but if you would propagate them by parting the Roots, it should be done in *September* (as was directed for the before-mention'd Sorts). This Plant will grow in almost any Soil or Situation; but does best in a middling loamy Soil, and an open Exposure.

The double Lychnis or Nonfuch is only propagated by parting the Roots, or planting the Cuttings of its Flower-stems; which, if water'd and shaded, will take Root very well, and make good Plants. The best Season for parting the Roots is in *September*: but for planting the Cuttings, *July* is the most proper Season: in doing of this, you should take only the lower Parts of the Flower-stems, which generally succeed much better than the extreme Parrs. The Cuttings should have three Joints, two of which should be placed in the Ground, and the third only left above-ground; from which the Shoot will be produc'd, and make a good Plant: by which Method this beautiful Flower may be propagated much faster than from the Root alone.

This Plant delights in a fresh light Soil, which is not too dry; where it will produce very strong Stems, and rise about three Feet high. This flowers in *July*, and, if the Season does not prove very hot, will continue in Beauty a whole Month; for which it is greatly esteem'd.

The double Sopewort is a Plant of no great Beauty; and, being a very great Runner in Gardens, has been almost excluded from all curious Gardens; but as it is a Plant which requires very little Culture, it may be admitted to have a Place in some abject Part of the Garden. This is propagated by its running Roots, which should be transplanted in *October*, and may be placed in any Soil and Situation; but should never stand near any other Plants; for it will over-run and destroy them. It may be planted under Trees in large Avenues, &c. where it will thrive very well; and in *August* will produce large Bunches of double Flowers, which are very proper to place in Chimneys, &c. or in Basons among other Flowers, where it will make a fine Appearance; and, were it less common, it would be more esteem'd than it is at present.

The Spatling - poppy, or White Behen, is a very common Plant in the Fields, in most Parts of *England*, and is rarely cultivated in Gardens; but those who have a mind to preserve it for medicinal Uses, may propagate it by sowing the Seeds in *March*, on a Bed of common Earth; where the Plants will easily rise, and, if kept clear from Weeds, will soon overspread the Ground, and continue for several Years.

The red *German* Catchflies, both single and double, are easily propagated by parting the Roots, which should be done in Autumn; for if it be perform'd in the Spring, the dry Weather, which usually happens at that Season, greatly retards their Growth; whereby their Flowers are never so strong, nor produced in such Plenty, as when they are removed in Autumn. These produce their Flowers in Spikes upon

clammy Stalks, which grow about a Foot high, and flower in *April* and *May*: that with single Flowers always is the earliest; but the double Sort continues longest in Flower.

The single Sort may be propagated by Seeds, which should be sown in *March*, upon a Bed of light Earth; and when the Plants come up, they should be transplanted into Nursery-beds about six Inches asunder, where they will require no farther Care than to keep them clear from Weeds, and in very dry Weather to give them a little Water: at *Michaelmas* they may be removed where they are designed to remain.

The single-flower'd Sort is not near so beautiful as the double, and therefore hardly worth propagating, since the double is very easily multiplied, especially if planted in a moist light Soil, in which it will thrive exceedingly, and produce strong Flowers. This Sort is very proper to plant in Pots, to adorn small Court-yards at the time of its Flowering.

The sixteenth and nineteenth Sorts are pretty Varieties in a Garden; and as they take up but little room, and are not very nice in their Culture, they may have a Place amongst other Flowers of the same Growth. These are propagated by sowing their Seeds in *March*, upon a Bed of fresh light Earth; and when the Plants are come up, they should be transplanted into a Nursery-bed, as the former, and at *Michaelmas* may be removed into the Borders of the Flower-garden, where they are to remain. These Plants commonly grow about two Feet high; but as their Leaves are narrow, and the Flower-stems stand erect, they take up very little room, and their Roots will continue several Years, and annually produce large Quantities

ties of Flowers : these delight in a fresh light dry Soil.

The seventeenth is a biennial Plant, and is only propagated by Seeds, which should be sown on a Border of fresh light Earth in *March*; and when the Plants are come up, they should be transplanted; some of which should be planted in Pots filled with the same fresh Earth, that they may be removed under Shelter in Winter : for it often happens, in severe Winters, that those Plants which are placed in the open Air are destroyed; for which Reason it is adviseable to have some of the Plants in Shelter to secure the Kind.

The other Plants may be planted in a Nursery-bed, as was directed for the former Kinds, where they may remain until *Michaelmas*; at which time they should be transplanted into warm Borders, and in a light dry Soil; where they will endure the Cold of our ordinary Winters very well, and flower very strong the succeeding Summer. This Plant commonly grows three Feet high, and is apt to branch out pretty much: therefore should be supported by Stakes, otherwise the Wind often breaks down the Flower-stems before the Seeds are perfected.

The eighteenth Sort is also tender: this may be propagated by sowing the Seeds in the same manner as the former; and when the Plants come up, some of them should be planted into Pots filled with light fresh undung'd Earth, that they may be shelter'd in Winter; and the rest planted into a Nursery-bed, which should be prepared of fresh light Earth that has not been dung'd; for Moisture and Richness in the Soil will destroy them. In this Place they may remain till *Michaelmas*, then they should be removed into

very warm Borders; and if they are placed quite close to the Wall, where it is commonly very dry, they will succeed the better; as also planted on a dry rubbishy Soil; for the Leaves of this Plant are very thick and succulent, as are all the Stems, so that it is as impatient of Wet as the *Sedum* or *Houfeleek*; and I do not certainly know whether this Plant would not bear a greater Share of Cold, if it was planted upon an old Wall or Building, where it might be always dry, and not have too much Nourishment from the Ground. The following Summer this Plant will produce its Flowers (which, though they are not very beautiful, yet, for the Oddness of the Plant, it may have a Place in a good Garden), and the Seeds generally ripen in *August*: it may also be propagated by planting Cuttings in any of the Summer-months, which will take Root, and may be afterwards managed as the Seedling-plants.

The myrtle-leav'd shrubby *Campion* may be propagated by Seeds, as the former; or increased by planting Cuttings in any of the Summer-months, which will soon after take Root, and become strong Plants; some of which should be planted in Pots, that they may be shelter'd in Winter, for fear of being lost; though they will endure the Cold of our Climate very well, if planted on a dry Soil. There is no great Beauty in this Plant; but it is preserved for Variety-sake in several curious Gardens.

The twenty-seventh and twenty-eighth Sorts are abiding Plants, and may be propagated either by Seeds, or parting their Roots, in the manner which has been directed for the *Rose Campion*, and other Sorts before-mentioned: they are very hardy,

hardy, and will grow upon almost any Soil or Situation : they produce their Flowers in *June* and *July*, and their Seeds ripen soon after.

The other Sorts are all of them annual Plants, which may be easily propagated by sowing their Seeds either in *March* or *August*, when the Plants will soon come up, and may be transplanted, while young, into the Places where they are design'd to remain; or the Seeds may be scatter'd in Patches upon the large Borders of the Flower-garden; and when the Plants are come up, they may be thinn'd, leaving some of the strongest to flower in the same Places; and the other Plants may be removed into other Parts of the Garden.

Those Plants which come up in Autumn will be much larger, and flower earlier and stronger, than those sown in the Spring, and will produce good Seeds; whereas it sometimes happens in bad Seasons, that those sown in the Spring often decay, before their Seeds are perfected; though it is a good Method to sow at both Seasons; because hereby there will be a Succession of Flowers, and two Chances for good Seeds.

The Dwarf *Lychnis* has been by some recommended to be sown for Edgings in large Gardens; but I think it by no means proper for that Purpose; for when the Plants grow very close together, they draw up weak, so that in hard Rains they are beaten down flat to the Ground, and the Flowers seldom continue long in Beauty; so that it does not afford any Pleasure above a Fort-night or three Weeks at most, after which it appears very unsightly; for when it is in Seed, the Weight of that forces it down upon the Ground; but when the Plants grow singly, they will be much larger and stronger, and continue longer in Flower.

The two Sorts of *Lobel's Catch-fly* have been long cultivated in Gardens, and the Seeds are commonly sold at the Seed-shops in *London*: these grow upright to the Height of sixteen or eighteen Inches (if sown in the Autumn; but those which are sown in the Spring seldom grow so large): they produce pretty Tufts of Flowers upon the Tops of the Branches in form of an Umbel, which continue a long time in Perfection, and are pretty Ornaments in a large Garden.

The twenty-second Sort spreads upon the Ground, and therefore must be allowed more room than the former: these Plants should be planted two Feet asunder, otherwise they will run into each other (especially such as are sown in the Autumn); so that in wet Weather they are subject to rot and decay. This produces a great Number of beautiful red Flowers, which make a very agreeable Appearance during their Season of Flowering.

There are a great Number of Sorts more than I have here mention'd, which are preserv'd in curious Botanic Gardens for Variety-sake; but as most of them are Plants of little Beauty, I think it needless to enumerate them in this Place, since those here mentioned are the best worth propagating in a Flower-garden.

LYCIUM, Box-thorn, *vulgo*.

The Characters are;

The Flower is funnel-shaped, having an incurved Tube, which is spread open at the Top, where it is slightly cut into five Parts: in the Centre of the Flower is situated the Pointal; attended by five short Stamina, each supporting an erect Summit: the Pointal afterward becomes a round Berry, divided into three Cells filled with kidney-shaped Seeds.

The Species are ;

1. *LYCIUM foliis ex lanceolato obverse ovatis.* Lin. Box-thorn, or Bastard Jasmine with oblong Leaves, and a white Bark.

2. *LYCIUM foliis linearibus.* Lin. Hort. Cliff. Box-thorn, or Bastard Jasmine, with Rosmary-leaves.

3. *LYCIUM aculeatum humile, foliis linearibus, fructu croceo majore.* Dwarf prickly Box-thorn, or Bastard Jasmine, with narrow Leaves.

The first Sort grows wild in the South of *France*, in *Spain* and *Italy*, where it rises with many irregular Stems, to the Height of twelve or fourteen Feet; sending out many long rambling Branches without Order, so as to form Thickets in the same manner as the Black-thorn or Sloe does in *England*. This Sort hath been usually preserved in Green-houses in this Country; but of late it has been planted in the open Air, and is found to be hardy enough to resist the Cold of our ordinary Winters in the open Air, being rarely injured but by severe Frost; and if the Branches are killed, the Roots will put out fresh the following Summer. There is little Beauty in this Shrub; so it is chiefly preserved for the sake of Variety: it may be propagated by laying down the Branches, which in one Year will take Root; or, if Cuttings are planted in the Spring, on a shady Border, they will soon take Root, so that it may be propagated with Ease.

The second Sort is supposed to be a Native of *Africa*; but has been found growing wild in the Kingdom of *Valencia* in *Spain*: this is also preserved in Green-houses, being somewhat tenderer than the former Sort; yet in wild Winters it has remained abroad, in warm situations, without Injury. This Sort grows to the Height of fourteen or sixteen

Feet, having slender crooked Branches, which are armed with strong Thorns, and garnished with narrow Leaves coming out in Clusters; which abide green throughout the Year: the Flowers are produced the whole Length of the Branches at every Joint, on long slender Foot-stalks, being crooked, and in Shape of an Horn: these are of a dark-purple Colour, and are succeeded by Berries, which, when ripe, are of a faint yellow Colour.

It may be propagated by Cuttings, Layers, or from Seeds, which are often ripened well in *England*, especially if the Plants are housed in Winter; for the Fruit is seldom ripe, until late in Autumn; so that the Frost often destroys those which are exposed in the open Air. As this Sort produces its Flowers for several Months successively in Summer, it may merit a Place in those Gardens, where Persons are Lovers of Variety.

The third Sort is much like the second to Appearance; but it is of humbler Growth, seldom rising more than seven or eight Feet high: the Leaves are broader, the Flowers larger, as are the Berries also, which are of a Saffron-colour when ripe: this is hardier than either of the former Sorts, and will thrive very well in the open Air in *England*, if it is planted in a warm Situation: it may be propagated in the same manner as the other Sorts.

LYCOPERSICON, Love-apples, Wolf's-peach, or Tomatas.

The Characters are;

It hath a Flower consisting of one Leaf, which expands in a circular Order, as doth that of the Nightshade: the Style afterward becomes a roundish soft fleshy Fruit which is divided into several Cells, wherein are contain'd many flat Seeds.

The

The Species are;

1. LYCOPERSICON *Galenii. Ang.*
Yellow Love-apple.

2. LYCOPERSICON *Galenii, fructu rubro. Boerb. Ind.* Love-apple with a red Fruit.

3. LYCOPERSICON *fructu cerasi rubro. Tourn.* Love-apple with a red cherry-shaped Fruit.

4. LYCOPERSICON *fructu cerasi luteo. Tourn.* Love-apple with a yellow cherry-shaped Fruit.

5. LYCOPERSICON *fructu striato duro. Tourn.* Love-apple with an hard chanell'd Fruit.

6. LYCOPERSICON *fructu rubro non striato. Inst. R. H.* Love-apple with a smooth red Fruit.

7. LYCOPERSICON *fructu albo. Inst. R. H.* Love-apple with a white Fruit.

8. LYCOPERSICON *Americanum arborescens, ampliffimis foliis angulatis. Plum. Cat.* American tree-like Love-apple, with large angular Leaves.

9. LYCOPERSICON *radice tuberosa, esculentum.* The Potato, or Indian Batatas.

There are some other Varieties of these Plants in the Gardens of *Italy* and *Spain*; but those here mention'd are all the Sorts I have observ'd in the *English* Gardens.

The seven first Sorts are propagated by sowing their Seeds on a moderate Hot-bed in *March*; and when come up, they should be transplanted into another moderate Hot-bed, at about three Inches Distance from each other, observing to shade them until they have taken Root; after which they must have frequent Waterings, and a large Share of fresh Air; for if they are too much drawn while young, they seldom do well afterward.

In *May* these Plants should be transplanted either into Pots fill'd

rich light Earth, or into the Borders of the Flower-garden, observing to water and shade them until they have taken Root; and as the Branches are extended, they should be supported with Sticks; otherwise, when the Fruit begins to grow large, it will press them down, and break them.

Those Plants which are placed in Pots, should be often water'd, otherwise they will come to little (for they are very thirsty Plants); but when they are planted in a rich moist Soil, they will grow to a prodigious Size, and produce large Quantities of Fruit; which in Autumn, when they are ripe, make an odd Figure; but the Plants emit so strong an Effluvium, as renders them unfit to stand near an Habitation, or any Place that is much frequented; for upon their being brush'd by the Cloaths, they send forth a very strong disagreeable Scent.

The *Italians* and *Spaniards* eat these Apples, as we do Cucumbers, with Pepper, Oil, and Salt; and some eat them stew'd in Sawces, &c. and in Soups they are now much used in *England*, especially the second Sort, which is prefer'd to all the other. This Fruit gives an agreeable Acid to the Soup; though there are some Persons who think them not wholesome, from their great Moisture and Coldness, and that the Nourishment they afford must be bad. They are call'd by the *Portuguese* and *Spaniards* Tomatoes. The first of these Plants is the Sort directed for medicinal Use by the College in their Dispensatory.

The eighth Sort will rise to the Height of six or eight Feet, and become woody. This Sort is propagated by Seeds, which should be sown on an Hot-bed in the Spring; and when the Plants are come up

about two Inches high, they must be transplanted into a moderate Hot-bed, observing to water and shade them until they have taken new Root; after which they should have a large Share of free Air in warm Weather to prevent their drawing up weak. When the Plants have obtain'd a good Share of Strength, they should be carefully taken up with Earth to their Roots, and planted into Pots filled with light rich Earth, and placed in a shady Situation until they have taken Root; when they may be removed into a warm Situation, where they may remain abroad in the open Air until the Middle or End of *September*; when they must be removed into the Conservatory, and placed where they may have a moderate Share of Warmth in cold Weather; by which Method the Plants may be preserv'd through the Winter, and the following Summer they will produce Fruit.

The ninth Sort is the common Potato, of which there are two Varieties; one having a red Root, and a purple Flower; and the other a white Root, and a white Flower: but as these are accidental Varieties, I shall not make them different.

The common Name of *Potato* seems to be only a Corruption of the *Indian* Name *Batatas*. This Plant has been much propagated in *England* within thirty Years past; for although it was introduced from *America* about the Year 1623. yet it was but little cultivated till of late; these Roots being despised by the Rich, and deemed only proper Food for the meaner Sort of Persons; however, they are now esteemed by most People; and the Quantity of them which are cultivated near *London*, I believe, exceeds that of any other Part of *Europe*.

This Plant was always ranged in the Genus of *Solanum*, or Night-

shade, and is now brought under that Title by Dr. *Linnaeus*; but as *Lycopersicon* has been establish'd as a distinct Genus, on account of the Fruit being divided into several Cells; by intermediate Partitions, and as the Fruit of this Plant exactly agrees with the Characters of the other Species of this Genus, I have inserted it here.

This Plant is always propagated by its Roots; for it rarely perfects Seeds in *England*; and if it did, that Method would be more tedious and uncertain; and as the Roots greatly multiply, if planted in a proper Soil, there can be no Occasion for trying any other Method of Culture. The common Way is, either to plant the small Roots or Off-sets entire, or to cut the larger Roots into Pieces; preserving a Bud or Eye to each: but neither of these Methods is what I would recommend; for when the smaller Off-sets are planted, they generally produce a greater Number of Roots; but these are always small; and the Cuttings of the larger Roots are apt to rot, especially if wet Weather happens soon after they are planted: therefore what I would recommend is, to make choice of the fairest Roots for this Purpose, and to allow them a larger Space of Ground, both between the Rows, as also in the Rows, Plant from Plant; by which Method, I have observed, the Roots have been in general large the following Autumn.

The Soil in which this Plant thrives best, is a light sandy Loam, not too dry, or over-moist: this Ground should be well plowed two or three times, in order to break and divide the Parts; and the deeper it is Plowed, the better the Roots will thrive. In the Spring, just before the last Plowing, there should be a good Quantity of rotten Dung spread on the

the Ground, which should be plow'd in the Beginning of *March*, if the Season proves mild, otherwise it had better be deferr'd until the Middle, or Latter-end of that Month; for if it should prove hard Frost after the Roots are planted, they may be greatly injured, if not destroyed, thereby: but the sooner they are planted in the Spring, after the Danger of Frost is over, the better it will be, especially in dry Land. In the last Plowing, the Ground should be laid even, and then the Furrows should be drawn at three Feet Distance from each other, and about seven or eight Inches deep. In the Bottom of this Furrow the Roots should be laid, at about one Foot and an half asunder; then the Furrow should be covered in with the Earth, and the same continued through the whole Field, or Parcel of Land, intended to be planted.

After all is finish'd, the Land may remain in the same State till near the time when the Shoots are expected to appear above-ground; when the Ground should be well harrow'd over both Ways; which will break the Clods, and make the Surface very smooth; and by doing of it so late, it will destroy the young Weeds, which, by this time, will begin to make their Appearance; and this will save the Expence of Hoeing, as also break the upper Surface of the Ground; which, if much Wet has fallen after the Planting, is often bound into an hard Crust, and will retard the Appearance of the Shoots.

As I have allotted the Rows of Potatoes at three Feet Distance, it was in order to introduce the Hoe-plough between them, which will greatly improve these Roots; for by twice stirring and breaking of the Ground between these Plants, it

will not only destroy the Weeds, but also loosen the Ground; whereby every Shower of Rain will penetrate the Ground to the Roots, and greatly improve their Growth: but these Operations should be performed early in the Season, before the Stems or Branches of the Plants begin to fall, and trail upon the Ground; because, after that, it will be impossible to do it without injuring of the Shoots.

If these Plowings are carefully performed, it will prevent the Growth of Weeds, till the Haulm of the Plants cover the Ground; so that afterward there will be little Danger of Weeds growing so as to injure the Crop: but as the Plough can only go between the Rows, it will be necessary to make use of an Hoe to stir the Ground, and destroy the Weeds in the Rows between the Plants: and if this is carefully perform'd in dry Weather, after the two Plowings, it will be sufficient to keep the Ground clean until the Potatoes are fit to take up.

In Places where Dung is scarce, many Persons scatter it only in the Furrows, where the Roots are planted; but this is a very poor Method; because, when the Potatoes begin to push out their Roots, they are soon extended beyond the Width of these Furrows, and the new Roots are commonly formed at a Distance from the old; so will be out of the Reach of this Dung, and consequently will receive little Benefit from it. And as most of the Farmers covet to have a Crop of Wheat after the Potatoes are taken off the Ground, so the Land will not be so thoroughly dressed in every Part, nor so proper for this Crop, as when the Dung is equally spread, and plow'd in, all over the Land; nor will the Crop of Potatoes be so good. I have always

ways observed, where this Method of planting the Potatoes has been practised, the Land has produced a fine Crop of Wheat afterward, and there has scarce one Shoot of the Potato appeared among the Wheat; which I attribute to the Farmers planting only the largest Roots; for when they have forked them out of the Ground the following Autumn, there have been six, eight, or ten large Roots produced from each, and often many more, and scarce any very small Roots; whereas, in such Places where the small Roots have been planted, there has been a vast Number of very small Roots produced; many of which were so small, as not to be discovered when the Roots were taken up; so have grown the following Season, and have greatly injured whatever Crop was on the Ground.

The Haulm of these Potatoes is generally killed by the first Frost in the Autumn; when the Roots should be taken up soon after, and may be laid up in Sand in any shelter'd Place, where they may be kept dry, and secure from Frost. Indeed the People who cultivate these Roots near *London*, do not wait for the decaying of the Haulm, but begin to take up Part of them as soon as their Roots are grown to a proper Size for the Market; and so keep taking up from time to time, as they have Vent for them. There are others likewise, who do not take them up so soon as the Haulm decays, but let them remain much longer in the Ground: in which there is no Hurt done, provided they are taken up before hard Frost sets in, which would destroy them, unless where the Ground is wanted for other Crops; in which Case, the sooner they are taken up, the better, after the Haulm is decayed. When these

Roots are laid up, they should have a good Quantity of Sand, or dry Earth, laid between them, to prevent their heating; nor should they be laid in too large Heaps, for the same Reason.

LYCOPUS, Water-horhound.

This Plant grows in great Plenty on moist Soils by the Sides of Ditches, in most Parts of *England*; but is never cultivated in Gardens; so that it would be needless to say any thing more of it in this Place.

LYSIMACHIA, Loose-strife.

The Characters are;

The Leaves (which are intire and oblong) are produced sometimes by Pairs, or three or four at each Joint of the Stalk: the Flower consists of one Leaf, which expands in a circular Order, and is cut into several Segments at the Top: the Fruit is globular, and opens at the Top, inclosing many Seeds fixed to the Placenta.

The Species are;

1. LYSIMACHIA *lutea major*, quæ *Dioscoridis*. C. B. P. Common yellow Loose-strife or Willow-herb.

2. LYSIMACHIA *lutea major*, quæ *Dioscoridis*, *foliis quaternis*. C. B. P. Greater yellow Loose-strife or Willow-herb, with four Leaves at each Joint.

3. LYSIMACHIA *bifolia*, *flore luteo globofo*. C. B. P. Loose-strife with two Leaves growing at each Joint, and yellow Flowers growing in round Heads.

4. LYSIMACHIA *Orientalis angustifolia*, *flore purpureo*. T. Cor. Narrow-leav'd Eastern Loose-strife, with a purple Flower.

5. LYSIMACHIA *Hispanica spicata*, *salicis folio*, *flore albo*. Inst. R. H. Spanish Loose-strife, with white Flowers growing in Spikes.

The first of these Plants is pretty common by Ditch-sides in many Parts of *England*, and is seldom cultivated

vated in Gardens, though it is not very despicable Plant; for it produces large Tufts of fine yellow flowers in *July*: for which Reason may be admitted into a cold wet part of the Garden, where few others will thrive; whereby many Spot of Ground may be render'd agreeable, which often produces little but gross Weeds. This Plant may be taken up in the Autumn, from the native Places of its Growth, and transplanted where you intend it should grow; and it will soon increase, by its creeping Roots, to that Quantity you please; for it is so apt to ramble in a Garden. This Plant is order'd in the College Dispensatory for medicinal Use.

The second Sort is not a Native of our Country; but when transplanted hither, thrives equally with the former. This loves a moist rich Soil; and for Variety may be admitted into a Garden.

The third Sort is found in the North of *England* in great Plenty. This Plant is not very proper for a Garden; for the Roots spreading very far under-ground, will overcome whatever Plants stand near it; and are the Flowers of any Beauty.

The fourth Sort is a biennial Plant, which produces fine Spikes of small purple Flowers in *June*, and the Seeds are ripe in *August*.

This Plant may be propagated by sowing the Seeds, soon after they are ripe (for if they are kept until the Spring, they seldom grow), upon a warm Border of light Earth; and when the Plants are come up, they should be transplanted into a Border of strong Earth, where they may stand in the morning Sun; in which Place they should remain to flower; for it is a Plant that does not care to be often remov'd.

The fifth Sort is an abiding Plant, which may be propagated by parting its Roots. The best Season for this Work is at *Michaelmas*, when the Leaves begin to decay. It should be planted in a moist Soil, and a shady Situation, or must be often water'd, otherwise it will not produce large Spikes of Flowers. It may also be propagated by sowing the Seeds in the same manner as the former: but those Plants which rise from Seeds seldom flower until the second Year; whereas those propagated from Off-sets will flower the succeeding Year. These produce their Flowers in *July*; and their Seeds ripen in *September*.

LYSIMACHIA GALERICULATA. *Vide* Scutellaria.

LYSIMACHIA NON PAPPOSA. *Vide* Onagra.

LYSIMACHIA SILIQUOSA. *Vide* Epilobium.



M A

M ACALEB. *Vide* Cerasus.

M ADDER. *Vide* Rubia Tinctorum.

MAGNOLIA, The laurel-leav'd Tulip-tree, *vulgo*.

Although I have continued this Title to the Genus, yet I am far from thinking the Plants here mention'd to be of the same Genus with that which Father *Plumier* has given this Title to: for the Seeds of his are but few in Number, and those are lodged within the Fruit; whereas the Seeds of these are many, and are each lodged in a separate Cell on the Outside of the Fruit; and, when

when ripe, hang down by a slender Thread.

The Characters are;

The Flower hath no Empalement, but is composed of an uncertain Number of Petals, which expand in a circular Order; and greatly resembles the Flower of the Water-lily; having a great Number of Stamina closely embracing the conical Pointal, which is situated in the Centre of the Flower: the Pointal afterward becomes a conical Fruit, having many scaly Protuberances, each being a Cell including a large flattish Seed, which, when ripe, fall out, and are suspended by Threads.

The Species are;

1. *MAGNOLIA lauri folio subtus albicante. Catesb.* The lesser laurel-leav'd Tulip-tree, or sweet-flowering Bay.

2. *MAGNOLIA altissima, lauroce-rasi folio amplissimo, flore ingenti candido. Catesb. Hist. Nat. Car.* Commonly call'd the laurel leav'd Tulip-tree, or Carolina Laurel.

3. *MAGNOLIA flore albo, folio majore acuminato haud albicante. Catesb. Hist.* Magnolia with a large-pointed Leaf, and a white Flower.

4. *MAGNOLIA amplissimo flore albo, fructu coccineo. Catesb. Hist. Vol. 2. p. 80.* The Umbrella-tree.

The first Sort grows pretty common in Virginia and Carolina, and is found in moist Places, near Brooks: this usually grows about fifteen or sixteen Feet high, with a slender Stem. The Wood is white and spongy; the Bark is smooth and white; the Branches are garnished with thick smooth Leaves, resembling those of the Bay; but are of an oval Shape, and smooth on their Edges: these are white underneath. The Flowers are produced in May, at the Extremity of the Branches, which are white, and composed of six Pe-

tals, which are concave; these have an agreeable sweet Scent. After these are past, the Fruit increases in Size to be as large as a Walnut with its Cover; but of a conical Shape, having many Cells round the Outside in each of which is lodged a flat Seed, about the Size of a Kidney-bean. This Fruit is at first green, afterward red, and, when ripe, of a brown Colour. The Seeds, when ripe, are discharged from their Cells, and hang by a slender Thread.

In the natural Places of its Growth, there is a Succession of the Flowers on the Trees, for two Months; during which time the Woods are perfumed with them: but all those Trees which have produced Flowers in England, seldom have more than twelve or fourteen Flowers upon each, which are of short Duration, and are not succeeded by others: the Leaves of this Sort fall off in Winter.

When these Trees are transplanted from the Places of their Growth into dry Ground, they make handsome Trees, and produce a greater Number of Flowers: this is to be understood of America; for in Europe they do not thrive so well in a dry Soil, as in a moist loamy Land. The greatest Number of these Trees, which are now growing in England, are at his Grace the Duke of Richmond's, at Goodwood in Sussex.

The second Sort grows in Florida, and South-Carolina, where it rises to the Height of eighty Feet or more, with a strait Trunk upward of two Feet Diameter, having a regular Head: the Leaves of this Tree resemble those of the common Laurel; but are much larger, and are of a Shining-green on their Upper-side, and of a Rust or Buff-colour on their Under side: these Leaves continue all the Year; so that this

is one of the most beautiful evergreen Trees yet known. These Trees in their native Places of Growth begin to produce their Flowers in *May*, and continue a long time in Flower; so that the Woods are perfumed with their Odour for a long time: but those which have flowered in *England*, seldom begin till the Middle of *June*, and do not continue long in Beauty. The largest Tree of this Kind, which I have met with in *England*, is in the Garden of Sir *John Colliton*, of *Exmouth* in *Devonshire*; which has produced Flowers for several Years: there are also many pretty large Plants of this Sort in the Gardens of his Grace the Duke of *Richmond*, at *Goodwood* in *Suffex*, one of which has produced Flowers the two last Years: and in the Nursery of Mr. *Christopher Gray*, near *Fulham*, there is one very handsome Plant, which has also produced Flowers.

As this Sort is a Native of a warm Country, so it is a little impatient of Cold, especially while young; therefore the Plants should be kept in Pots, and sheltered in Winter for some Years, until they have acquired Strength; when they may be shaken out of the Pots, and planted in the full Ground; but they must be planted in a warm Situation, where they may be defended from the strong Winds, and screened from the North and East, otherwise they will not live abroad.

There were a great Number of young Plants in *England* before the Year 1739; but a great Part of them were destroyed by that severe Winter; and since then, there have been few good Seeds sent to *England*; so that there are very few of these to be purchased at present; and as almost every Person who is various in Gardening is desirous to

have some of these beautiful Trees in their Gardens, so the Demand for them of late has greatly increased their Value. If this Tree can be so far naturalized as to endure the Cold of our severe Winters abroad, it will be one of the greatest Ornaments to our Gardens: and this we may hope will in time be effected, by diligent Observation and Care: for the time when these Plants suffer most, is in Autumn, by the early Frosts; for the Extremity of the Shoots being tender, as they are then growing freely, a small Frost will pinch them, and afterward the whole Shoot frequently decays; so that the Plants should be guarded against this, by covering their Tops with Mats, until the Shoots are hardened: after which time they will not be in so much Danger of suffering; for I have constantly observed, that if these Plants escape the early Frosts of the Autumn, they are seldom injured afterward: in the severe Winter, in the Year 1739-40. I had a pretty large Plant growing in the open Air, which was killed down by the Frost, and I supposed was intirely destroyed, as there was not the least Appearance of Life in the Stem; so that after *Midsummer* I cut it down to the Ground; but left the Root remaining, which, to my great Surprise, shot up again the Year after. This I mention to caution People from being too hasty in destroying Plants after hard Frost, but to have them wait until there can be no Hopes of their Recovery.

The fourth Sort grows in *Carolina* pretty frequent; but in *Virginia* it is pretty rare: this usually grows from sixteen to twenty Feet high, with a slender Trunk: the Wood is soft and spongy: the Leaves of this Tree are remarkably large, and
are

are produced in horizontal Circles, somewhat resembling an Umbrella; from whence the Inhabitants of those Countries have given it this Name. The Flowers are composed of ten or eleven white Petals, which hang down without any Order: the Fruit is very like that of the former Sort: the Leaves of this Sort drop off at the Beginning of Winter.

This Tree is as yet very rare in *Europe*; but as it is propagated from Seeds, we may hope to have it in greater Plenty soon, if we can obtain good Seeds from *Carolina*; for it is rarely met with in *Virginia*.

The third Sort is also very rare in *England*: there are but few of the Plants at present here; nor is it very common in any of the habitable Parts of *America*: some of these Trees have been discovered by Mr. *John Bartram*, growing on the North Branch of *Susquebannah* River: the Leaves of this Tree are near eight Inches long, and five broad, ending in a Point; the Flowers come out early in the Spring, which are composed of twelve white Petals, and are shaped like those of the second Sort: the Fruit of this Tree is longer than those of the other Species; but in other respects agrees with them.

All these Sorts are propagated by Seeds, which must be procured from the Places of their natural Growth: these should be put up in Sand, and sent over to *England*, as soon as possible: for if they are kept long out of the Ground, they very rarely grow; therefore the Seeds should be sown as soon as possible, when they arrive here.

Some Years past I received a good Quantity of these Seeds from *Carolina*, which I sowed in Pots as soon as I received them, and plunged the Pots into a moderate Hot-bed:

and with this Management I raise a great Number of Plants: but from the Seeds which have been lately brought over, there have been but few Plants produced: whether the Seeds were not perfectly ripe when they were gathered, or from what other Cause this has happened, I can't say; but it is certain the Fault must be in the Seeds, because the were differently sown and managed by the several Persons who received them; and the Success was nearly alike every-where.

There have been several Plants of the first and second Sorts raised from Layers: but these do not thrive so well as those which come from Seeds, nor will they grow to near the Size of those; so that it is much the best way to procure their Seeds from *America*, and propagate them that way: when the Plants are obtained, there is little Difficulty in their Culture, more than that of observing to remove them early under Shelter, if there is any Appearance of Frost; and to supply the Plants duly with Water in the Summer-season: in Winter they should have as much free Air as possible, in mild Weather, and be only screened from hard Frost.

If the Plants make good Progress, they will be strong enough to plant in the full Ground in about six or seven Years. The time for removing or shifting these Plants is in *March*, before they begin to shoot; which may sometimes happen to be too soon to turn them out of the Pots into the full Ground, especially if the Season proves late: but as there will be no Danger in removing them out of the Pots, the Ball of Earth being preserved to their Roots; so it is best to defer this till the Month of *April*: but it will be necessary to harden those Plants which are intended

tended to be planted out, by exposing them to the Air as much as possible; for this will keep the Plants backward, and prevent their shooting; for if they make Shoots in the Green-house, those will be too tender to bear the Sun, until they are by degrees hardened to it; and the least Fröst will greatly pinch them; and such often happen very late in the Spring.

The two or three Winters after these are planted out, it will be necessary to lay some Mulch on the Surface of the Ground about their Roots, as also to throw some Mats over their Heads, especially at the Beginning of the morning Frosts in Autumn, for the Reasons before given: but they should never be too closely covered up, lest the Shoots should grow mouldy; for that will certainly kill the leading Buds of every Shoot, and prove to the full as injurious to them as the Fröst. As the Plants get Strength, so they will be better able to endure the Cold of our Climate; tho' it will be proper to lay some Mulch about their Roots every Winter, in very severe Frost, as also to cover their Heads and Stems.

It is the second Sort which requires the most Care, being much tenderer than any of the other Sorts; for they will endure the Cold very well, without much Care, after they have acquired Strength.

MAHALEB. *Vide* Cerafus.

MAJORANA, Marjoram.

The Characters are;

It is a verticillate Plant, whose Flower is composed of one Leaf: the Galea, or Crest, is upright, roundish, and divided into two Parts: the Barba, or Beard, is cut into three Segments, so as to appear almost like a quinquefid Flower: the Flowers are collected into a short thick round Head,

and come out of a fourfold Order of Leaves, which are placed like Scales or Plates.

The Species are;

1. MAJORANA *vulgaris*. C. B. P. Common sweet Marjoram.

2. MAJORANA *rotundifolia scutellata exotica*. H. R. Par. Round-leav'd Exotic Marjoram, with a Leaf shaped like a Sawcer.

3. MAJORANA *Cretica, origani folio villoso, satureiæ odore, corymbis majoribus albis*. Hairy Candia Marjoram, with an Origany-leaf, a Savory-smell, and large round tufted white Heads.

The first of these Plants is an Annual, and must be sown every Year: the Seeds of this are annually brought from *Marseilles*, and other Places in the South of *France*, where it grows spontaneously; for it never ripens Seeds in this Country. The Seeds of this Plant should be sown the Latter-end of *March*, or the Beginning of *April*, upon a dry warm Spot of Ground: and when the Plants come up, they must be carefully clear'd from Weeds, which, if permitted to grow, will soon overrun and destroy them; and in very dry Weather the Beds should be often watered, which will greatly promote the Growth of them.

In *June* these Plants will be pretty strong; at which time you should prepare some Beds of light rich Earth, into which you should transplant such of the Plants as require to be drawn out, where they come up too thick, at about four Inches Distance from each other, observing to water them, until they have taken Root; after which they will require no farther Care, but only to clear them from Weeds; and these Plants will grow strong, and produce a greater Number of Heads, or Knots; as they are commonly called, than those which

which remain'd in the Seed-beds unremoved; for which it is much prefer'd to it in the Markets, where it is called Knotted Marjoram, to distinguish it from that which is not so. Toward the Latter-end of *July* these Plants will flower, which is the proper Season to pull them up for medicinal Use, when they should be hung up in a shady Place to dry.

The second Sort is a perennial Plant, which is preserv'd by some curious Persons in Pots, and placed in the Green-house in Winter. This Sort never produces Seeds with us; but is easily propagated by planting Cuttings or Slips, during any of the Summer-months, in a Bed of rich light Earth, observing to water and shade them until they have taken Root: at *Michaelmas* these Plants should be taken up, and planted in Pots filled with rich light Earth; and when they are settled, they should be removed into the Green-house, placing them near to the Windows, that they may have a good Share of free Air when the Weather is mild: you must often refresh them with Water; but never give them too much at once, for that will rot them. With this Management the Plants may be preserv'd fresh thro' the whole Year, and will be in a Condition to gather for Nofegays any Part of the Winter, and have as good a Scent as the sweet Marjoram.

The third Sort was sent into *England* by Sir *George Wheeler* from *Smyrna*, where it grows in great Plenty. This Plant rises to the Height of two or three Feet, and becomes woody, but never produces any Seeds with us; tho' it is easily propagated by planting Slips or Cuttings in any of the Summer-months, after the manner as was directed for the former Sort; and must

be housed in Winter, tho' it must not be kept too close; for it only requires to be protected from great Rains and Frost; but should have as much free Air as possible in mild Weather, otherwise it is subject to draw, and grow very weak.

MALABAR-NUT. *Vide Adhatoda.*

MALA ÆTHIOPICA. *Vide Lycopericon.*

MALA ARMENIACA. *Vide Armeniaca.*

MALA COTONEA. *Vide Cydonia.*

MALA INSANA. *Vide Melongena.*

MALACOIDES. *Vide Malope.*

MALLOW. *Vide Malva.*

MALLOW-TREE. *Vide Althæa.*

MALOPE, Bastard Mallow.

The Characters are;

The Flower, which is shaped like that of the Mallow, hath a double Empalement, the outer being composed of three heart-shaped Leaves, and the inner is of one Leaf cut into five Segments: the Flower is of one Leaf, divided into five Parts to the Bottom, where they are joined; but it seems to have five Leaves: in the Centre arises the Pointal, having a great Number of Stamina surrounding it, which are joined closely, and form a sort of Column: the Pointal afterward becomes a Fruit composed of many Cells, which are collected into an Head; in each of which is lodged a single Seed.

We have but one Sort of this Plant; *viz.*

MALOPE *foliis ovatis crenatis glabris. Lin. Hort. Cliff.* Bastard Mallow with oval smooth Leaves, which are notched.

This Plant was by Dr. *Tournefort* separated from the Mallow, and made a distinct Genus, by the Title of *Malacoides*: but Dr. *Linnaeus* has altered the Title to this of *Malope*, being

being an Enemy to all Names which are compounded of *Oides*.

The whole Plant has greatly the Appearance of the Mallow; but differs from it, in having the Cells collected into a Button, somewhat like a Blackberry: the Branches spread, and lie flat upon the Ground, extending themselves a Foot or more each Way: the Flowers are produced singly upon long Footstalks, from the Setting on of the Leaves, which are in Shape and Colour like those of the Mallow.

This is propagated by Seeds, which should be sown in the Place where they are design'd to remain; or they do not transplant well: if these Seeds are sown upon a warm Border in *August*, the Plants will stand thro' the Winter, and flower early the following Season; so that good Seeds may be obtained; for those which are sown in the Spring rarely ripen Seeds the same Year in *England*: and these Plants, being large, are often destroyed in Winter: it seldom continues longer than two Years; so that young Plants should be annually raised.

MALPIGHIA, *Barbados* Cherry, *ulgo*.

The Characters are;

It hath a small quinquifid Calyx, which consists of one Leaf having bifid segments: the Flower consists of five leaves, which expand in form of a rose, having several Stamina collected in form of a Tube: the Ovary in the Bottom of the Flower-cup becomes globular fleshy soft Fruit, in which is a single Capsule, containing three winged Nuts.

The Species are;

1. **MALPIGHIA** *mali Punici* *fa-*
Plum. N. G. Malpighia with the
ce of a Pomgranate, commonly call-
in the *West-Indies* *Barbados* Cherry.

2. **MALPIGHIA** *foliis ovato-corda-*
tis sessilibus. Malpighia with oval
heart-shaped Leaves growing close
to the Branches.

3. **MALPIGHIA** *angustifolia, folio*
subtus spinoso. Plum. Nov. Gen. 46.
Malpighia with a narrow Leaf,
having Spines on the Under-side.

4. **MALPIGHIA** *latifolia, folio sub-*
tus spinoso. Plum. Nov. Gen. 46. Broad-
leav'd Malpighia, with Spines on
the Under-side of the Leaves.

5. **MALPIGHIA** *humilis, ilicis coc-*
ci-glandiferæ foliis. Plum. Nov. Gen.
46. Dwarf Malpighia, with Leaves
like those of the Kermes Oak.

6. **MALPIGHIA** *foliis oblongo-ova-*
tis, ramis divaricatis. The clammy
Cherry.

The first Sort is commonly culti-
vated, in the *West-Indies*, for the
sake of its Fruit: this usually grows
to the Height of sixteen or eighteen
Feet, having a slender Stem, co-
vered with a brown Bark: the
Leaves are produced by Pairs oppo-
site to each other; which are broader
than those of the Pomgranate, and
are of a stronger Substance, continu-
ing all the Year: the Flowers are
produced in Bunches, upon pretty
long Footstalks, which come out at
the small Divisions of the Branches:
these are composed of five Petals,
which are of a Rose-colour, and are
joined at their Base: these Flowers
are succeeded by red Fruit, shaped
like those of the small wild Cherry,
and of the same Size, each having
an angular furrow'd Stone, surround-
ed by a thin Pulp, which has an
agreeable acid Flavour: the Fruit of
this very often ripens in *England*.

The second Sort is of much hum-
bler Growth than the first, and
branches out near the Ground; so
that it seldom rises with us above
three Feet high: the Leaves are much

broader and shorter than those of the former, and grow very close to the Branches: this Sort has not as yet flowered in *England*.

The third Sort is known, in the *West-Indies*, by the Name of Cowhage Cherry, or Cow-itch Cherry: I suppose this was so called, from the small *Villi* growing on the Back of the Leaves, which, when touched, will sting, and be full as troublesome to the Flesh as the Cow-itch. This Tree will grow to the Size of the first Sort; the Leaves are somewhat narrower, and end with a sharper Point, than those; and are covered on the Under-side with small Hairs, which do not appear unless to those who search for them. This Sort hath not as yet flowered in *England*.

The fourth Sort differs from the third in having broader Leaves, and the Flowers are somewhat larger; but in other respects is the same, so far as has appeared to me.

The fifth Sort is a very low bushy Shrub, clothed with Leaves like those of the Holly: the Flowers of this Sort I have not seen: the Seeds were gathered by the late Dr. *William Houstoun*, at the *Harvannab*, and sent to *England*; from which several Plants were raised.

The sixth Sort grows to be a very large Tree in the Places of its natural Growth, often rising to fifty Feet high and upward: the Leaves of this Tree are as large as those of the Laurel, and shaped somewhat like them, but are of a softer Texture, and of a pale-green Colour: these are placed alternately on the Branches: the Branches of this Tree are produced by Threes, which form a Triangle, and grow almost horizontal: this Sort hath not produced Flowers in *England*; but as the Fruit agrees well with those of the

other Sorts, I have placed this in the same Genus with them.

We have also a Variety of the first Sort in the *English* Gardens, which has much broader Leaves; and the Flowers are larger, and of a deeper-red Colour; but as I have not seen the Fruit, I cannot determine whether it is a distinct Species, or only an accidental Variety. This and the first Sort are very ornamental Plants in the Stove, during the Winter-season; for they continue in Flower from the middle of *November* till the middle of *March*; and their Flowers are very numerous: the Fruit is commonly ripe in *July*; but as they have very little Flesh over the Stones, these Fruit are not of any Consideration in those Countries where there are much better Fruit.

As these Plants are Natives of the warmest Parts of *America*, they will not live thro' the Winter in *England*, unless they are preserved in a warm Stove: but when the Plants have obtained Strength, they may be exposed in the open Air, in a warm Situation, from the Middle or Latter-end of *June*, till the Beginning of *October*, provided the Weather continues so long mild; and the Plants so treated will flower much better than those which are constantly kept in a Stove.

They are all propagated by Seeds, which must be sown upon a good Hot-bed in the Spring; and when the Plants are fit to transplant, they must be each put into a separate small Pot filled with rich Earth, and plunged into an Hot-bed of *Tanners Bark*; and must be treated in the same manner as hath been directed for other tender Plants of the same Country: and for the two first Winters, it will be proper to keep them in the *Bark-bed* in the Stove; but afterward they may be placed upon

Stands in the dry Stove in Winter, where they may be kept in a temperate Warmth, in which they will thrive much better than in a greater Heat: these must be watered two or three times a Week, when they are placed in the dry Stove; but not in large Quantities.

MALVA, Mallows.

The Characters are;

It hath a fibrose-Root: the Leaves are round, or angular: the Flower consists of one Leaf, is of the expanded bell-shaped Kind, and cut into five Segments almost to the Bottom: from the Centre rise a pyramidal Tube, for the most part loaded with many small Threads or Filaments: from the Centre of the Flower-cut rises the Pointal in the Tube, which becomes the Fruit, which is flat, round, and sometimes pointed, wrapt up, for the most part, within the Flower-cup, and divided into several Cells so disposed round the Axle, that each little Lodge appears most artificially jointed within the corresponding Striæ or Chauls: the Seed is, many times, shaped like a Kidney.

The Species are;

1. MALVA vulgaris, flore majore, folio sinuato. J. B. Common Mallow, with a large Flower.

2. MALVA sylvestris, folio sinuato, flore albo. Sutherl. Common Mallow, with a large white Flower.

3. MALVA Sinensis erecta; flosculis albis minimis. China upright Mallow, with small white Flowers.

4. MALVA foliis crispis. C. B. P. The curl'd or furbelow'd Mallow.

5. MALVA caule erecto, foliis articulatis, floribus laxè verticillatis. Lin. Hort. Cliff. Eastern annual Mallow, with angular Leaves, and Flowers growing in loose Whorles.

6. MALVA Orientalis erectior, ore magno suavo-rubente. T. Cor. Upright Oriental Mallow, with a large beautiful red Flower.

The first of these Plants is found wild in most Parts of England; but is rarely cultivated in Gardens. This is the Sort commonly used in Medicine, with which the Markets are supplied by the Herb-folks, who gather it in the Fields.

The second Sort is a Variety of the first, from which it differs in the Colour of the Flower. This is preserved by such as are curious in collecting great Varieties of Plants: but is rarely cultivated in other Gardens.

The third Sort was formerly sent from China as a Pot-herb, and hath been cultivated in some curious Gardens in England; tho' it is not likely to obtain here as an esculent Plant, since we have many others which are preferable to it for that Purpose. This is an annual Plant, which will propagate itself fast enough, provided it be permitted to scatter its Seeds, which seldom fail to grow, and are often very troublesome when they have gotten Possession of the Ground.

The fourth Sort is preserved by some curious Persons, for the Beauty of its Leaves, which are naturally furbelow'd round their Edges. This is an annual Plant, which will rise four or five Feet high, and propagate itself in the same manner as the former.

The fifth Sort is more rare than any of the former Plants.

This Sort was discovered by Dr. Tournefort, in the Island of Candia; from whence he sent the Seeds. This is preserved in Botanic Gardens; but will become a Weed, if suffered to scatter the Seeds.

The sixth Sort is an annual Plant, which commonly grows upright to the Height of three or four Feet, and produces great Numbers of beautiful red Flowers; which re-

ders it the best worth propagating in large Flower-gardens; where being placed in the Middle of large Borders, it makes a fine Appearance.

The Seeds of these Plants should be sown in *March*, upon a Bed of fresh light Earth; and when they are come up four Inches high, they should be transplanted where they are design'd to be continued, allowing them a large Distance; for if they are planted too close, they do not appear so well: but they are best when intermixed with other Flowers of the same Growth, where they afford an agreeable Variety.

These Seeds may also be sown in *August*; and the Plants will endure the greatest Cold of our Climate, if plac'd on a dry Soil, and grow larger, and flower sooner, than those sown in the Spring: or if the Seeds are permitted to scatter, they will come up as the two former Sorts, and thrive equally as well.

There are several other Sorts of Mallows, some of which are Natives of this Country: but as they are Plants of no great Beauty or Use, it is needless to mention them in this Place.

MALVA ARBOREA, *Vide Althea*.

MALVA ROSEA, Rose Mallow, or Hollyhock.

The Characters are;

It hath a large and more expanded Flower than the Mallow, which closely adheres to the Stalk; and, in many Species, the Flowers are double, where the Petals occupy the Place of the Style: it is in every respect larger than the common Mallow; the Leaves are rougher; and the Plant grows almost scrubby.

Dr. *Linnaeus* has altered the Title of this Genus to *Alcea*, and has join'd the *Alcea* of former Authors to the Genus of Mallow; from which

he separates this, on account of the outward Empalement being divided into six Parts; whereas that of the Mallow is divided but into three; which is the only Distinction he makes between them; but as the whole Face of these Plants differs from the Mallow, and they have been so long separated from that Genus, I shall continue this Title of Rose Mallow to them.

The Species are;

1. MALVA ROSEA *seve hortensis, flore albo*, *J. B.* Single white Hollyhock.

2. MALVA ROSEA *hortensis, flore simplici rubro*, *H. Eyst.* Single red Hollyhock.

3. MALVA ROSEA, *folio rotundo, flore ex rubro nigricante*, *C. B. P.* Hollyhock with a blackish-red Flower.

4. MALVA ROSEA, *folio subrotundo, flore simplici luteo*, *H. R. Par.* Hollyhock with a single yellow Flower.

5. MALVA ROSEA, *folio subrotundo, flore pleno albo*, *C. B. P.* Double white Hollyhock.

6. MALVA ROSEA *hortensis, flore pleno rubro*, *H. Eyst.* Double red Hollyhock.

7. MALVA ROSEA *multiplex, flore incarnato*, *H. Eyst.* Hollyhock with a double flesh colour'd Flower.

8. MALVA ROSEA *hortensis, flore pleno atro-rubente*, *H. Eyst.* Double Hollyhock, with a dark-red Flower.

9. MALVA ROSEA, *folio subrotundo, flore pleno puniceo*, *C. B. P.* Hollyhock with a double scarlet Flower.

10. MALVA ROSEA, *folio subrotundo, flore pleno subluteo*, *H. R. Par.* Hollyhock with a double yellowish Flower.

11. MALVA ROSEA *hortensis maxima, folio ficus*, *Inst. R. H.* Greater

Greater Garden Holly hock, with a Fig-leaf.

There are some other Varieties of these Plants, which differ in the Colour of their Flowers; but as they are near to one or other of these Colours, and are either paler or deeper, none of the Sorts yet known being intirely different in Colour from those here mentioned, so it would be needless in this Place to insert all their minute Distinctions, especially as they are feminal Variations, and seldom produce the same exact Colours again from Seeds.

These Plants are all propagated from Seeds, which should be sown upon a Bed of fresh Earth in *April*: and when the Plants are come up pretty strong, they must be transplanted out into Nursery-beds at about a Foot Distance from each other, observing to water them until they have taken Root; after which they will require no farther Care until the *Michaelmas* following, but only to keep them clear from Weeds; at which time they should be transplanted into Rows two Feet asunder; in which Place they may continue until they flower, when you should mark all those with double Flowers, which have good Colours, with Sticks, that they may be transplanted into the Borders of large Gardens at *Michaelmas*, where they will remain four or five Years, and produce their Flowers very strong; but when the Roots are much older, they begin to decay, and do not produce their Stems so strong, nor are their Flowers so large; wherefore there should always be a Supply of young Plants rais'd from Seeds every third or fourth Year, in order to have the Flowers in Perfection: but it is the better way to change the Seeds every three or four Years,

with some Person of Integrity who lives at a considerable Distance, and is exact to save Seeds from none but double Flowers, and such as are well colour'd, by which means you may preserve the Sorts well from degenerating: but if you constantly save the Seeds in the same Place, they will in a few Years become little worth.

The several Varieties of these Plants, when carefully intermixed in large WilderNESS-borders or Avenues, afford an agreeable Prospect during their Season of flowering, which is commonly in *July* and *August*; but as they grow to a considerable Height, and spread pretty wide, so they take up too much room, and appear unsightly, in small Flower-gardens. They should also be supported with Stakes, otherwise they are subject to be broken down by strong Winds.

When the Stalks of these Plants begin to decay, they should be cut down pretty close to the Ground, to encourage them to shoot out fresh Heads for the succeeding Year, otherwise they sometimes rot, and destroy the Roots.

MALUS, The Apple-tree.

The Characters are;

The Tree groweth very large: the Branches spread (and are more depressed than those of the Pear-tree): the Flower consists of five Leaves, which expand in form of a Rose: the Fruit is hollowed about the Footstalk; is, for the most part, roundish, and umbilicated at the Top; is fleshy, and divided into five Cells or Partitions, in each of which is lodg'd one oblong Seed.

Dr. *Linneus* has joined the Pear, Apple, and Quince, together, making them all of the same Genus; and has reduced all the Varieties of each to one Species. The Apple he distinguishes

tinguishes by the Title of *Pyrus foliis serratis, pomis basi concavis*. Hort. Cliff. i. e. Pear with sawed Leaves, and the Apple hollow at the Base. But where the Fruit is admitted as a distinguishing Character of the Genus, the Apple should be separated from the Pear: and this Distinction is founded in Nature; for these Fruits will not take by budding or grafting upon each other, tho' it be performed with the utmost Care. Indeed I have sometimes succeeded so far as to have the bud or graft shoot; but they soon decayed, notwithstanding all possible Care was taken of them; therefore I shall beg leave to continue the Separation of the Apple from the Pear, as hath been always practised by the Botanists before his time.

The Species are;

1. *MALUS sylvestris, acido fructu albo*. Tourn. The Crab-tree.

2. *MALUS sylvestris, foliis ex albo eleganter variegatis*. Cat. Plant. Hort. The Crab-tree with strip'd Leaves.

3. *MALUS sylvestris Virginiana, floribus odoratis*. Cat. Plant. Hort. Virginian Crab-tree, with sweet Flowers.

4. *MALUS fructifera, flore fugaci*. H. R. Par. The Fig-apple.

5. *MALUS pumila, quæ potius frutex, quam arbor, fructu rubente & candido*. C. B. P. The Paradise-apple.

6. *MALUS sativa, foliis eleganter variegatis*. Cat. Plant. Hort. Apple-tree with strip'd Leaves.

7. *MALUS flore pleno*. C. B. P. The Apple with a double Flower.

8. *MALUS prægrandis præcox terrima*. H. R. P. *Pomme de Rambour*. The Rambour is a very large Fruit, of a fine Red next the Sun, and striped with a pale or yellowish Green. This ripens very early,

commonly about the End of August, and soon grows mealy; therefore is not esteemed in England.

9. *MALUS sativa, fructu pediculo ferme carente*. Inst. R. H. *Pomme de Courpendu*, The hanging Body. This is a very large Apple, of an oblong Figure, having some irregular Risings or Angles, which run from the Base to the Crown: it is of a red Cast on the Side toward the Sun, but pale on the other Side: the Footstalk is long and slender, so that the Fruit is always hanging downward, which occasioned the French Gardeners giving it this Name.

10. *MALUS sativa, fructu subrotundo e viridi pallecente acidodulci*. Inst. R. H. The Renette-blanche, or White-renette, or French Renette. This is a large fine Fruit of a roundish Figure, and of a pale Green, changing a little yellowish when ripe, having some small grey Spots: the Juice is sugary, and it is good for Eating and Baking: it will keep till after Christmas found.

11. *MALUS sativa, fructu subrotundo e viridi ferrugineo*. Inst. R. H. The Renette-grise. This is a middle-size Fruit, shaped like the Golden-renette, but is of a deep-grey Colour on the Side next the Sun; but on the other Side, intermixed with Yellow: it is a very juicy good Apple, of a quick Flavour: it ripens in October, and will not keep long.

12. *MALUS sativa, fructu splendide purpureo*. Inst. R. H. *Pomme d'Api*. This is a small hard Fruit, of a bright-purple Colour on the Side next the Sun, and of a yellowish-green on the other Side: it is a very firm Fruit, but not much Flavour; so is only preserved by some Persons, by way of Curiosity: it keeps

keeps a long time sound, and makes a Variety in a Dish of Fruit.

13. *MALUS sativa, fructu magno intense rubente, violo odore. Inst. R. H. Le Calville d' Automne.* The Autumn Calville. This is a large Fruit of an oblong Figure, of a fine red Colour toward the Sun: the Juice is vinous, and is much esteemed by the *French*.

14. *MALUS sativa, fructu oblongo & cinereo ferrugineo saccharato, anisi odore. Inst. R. H. Fenouillet ou Pomme d' Anis.* The Fennel, or Anise-apple. This is a middle-siz'd Fruit a little longer than a Golden Pippin, of a greyish Colour: the Pulp is tender, and has a spicy Taste like Anise seed: the Wood and the Leaves are whitish.

15. *MALUS sativa, fructu partim albide punctato, partim striis intense rubris distincto. Inst. R. H. Pomme violette.* The Violet-apple. This is a pretty large Fruit of a pale-green, striped with deep-red to the Sun: the Juice is sugary, and has a Flavour of Violets, which occasioned the Name.

The Crab, which is the first Sort here mentioned, has been generally esteemed as the best Stock for grafting Apples upon, being very hardy, and of long Duration: but of late Years there have been few Persons who have been curious enough to raise these Stocks, having commonly sown the Kernels of all Sorts of Cyder apples for Stocks without Distinction, as these are much easier to procure than the other; so the Gardeners generally call all those Crabs, which are produced from the Kernel, and have not been grafted: but were the Kernels of the Crabs sown, I should prefer those for Stocks; because they are never so luxuriant in their Growth, as those from Apple-kernels; and they will continue

longer sound: beside, these will preserve some of the best Sorts of Apples in their true Size, Colour, and Flavour; whereas the other Free-stocks produce larger Fruit, which are not so well tasted, nor will they keep so long.

The Paradise-apple hath, of late Years, greatly obtained for Stocks to graft or bud upon; but these are not of long Duration; nor will the Trees grafted upon them ever grow to any Size, unless they are planted so low as that the Cyon may strike Root into the Ground, when it will be equal to no Stock; for the Graft will draw its Nourishment from the Ground; so that it is only by way of Curiosity, or for very small Gardens, that these Stocks are proper, since there can never be expected any considerable Quantity of Fruit from such Trees.

These Trees have been much more esteemed in *France*, where they were frequently brought to the Table in the Pots growing with their Fruit upon them: but this, being only a Curiosity, it never obtained much in *England*; so that the Gardeners do not propagate many of them here at present.

There is another Apple which is called the *Dutch Paradise-apple*, much cultivated in the Nurseries, for grafting Apples upon, in order to have them Dwarfs: and these will not decay or canker as the other, nor do they stint the Grafts near so much; so are generally preferred for planting Espaliers or Dwarfs, being easily kept within the Compass usually allotted to these Trees.

Some Persons have also made use of Codlin-stocks, to graft Apples upon, in order to make them dwarf; but the Fruit which are upon these Stocks are not so firm, nor do they

last so long; therefore the Winter-fruits should never be grafted upon these.

The *Virginian* Crab-tree, with sweet Flowers, is preserved by such Persons as are curious in collecting great Variety of Trees: it may be propagated by budding or grafting it upon the common Crab or Apple-tree; but it is somewhat tender while young: wherefore it should be planted in a warm Situation, otherwise it will be subject to suffer by an extreme hard Winter. The Flowers of this Tree are said to be exceeding sweet in *Virginia*, where it grows in the Woods in great Plenty; but I could not observe much Scent in some of them which have flowered in *England*; so that I am in doubt whether the Sort at present in the Gardens is the very same with that of *Virginia*, or perhaps it may have degenerated by sowing the Seeds, which is the way it was first obtain'd in *England*.

The Fig-apple is suppos'd by many Persons to be produc'd without a previous Flower. But this Opinion is rejected by some curious Observers, who affirm, there is a small Flower precedes the Fruit, which is very fugacious, seldom continuing above a Day or two. Now, which of these Opinions is the right, I have not, as yet, had an Opportunity to determine, not having a Tree in my own Possession which is arriv'd at Maturity to produce Fruit; tho' it might reasonably be expected, that those who have had Trees of this Kind several Years, might have determin'd this Point long ere this time.

There is an Account of a Tree of this Kind, mention'd in a Letter from *New-England*, written by *Paul Dudley*, Esq; to the *Royal Society*, and publish'd in the *Philosophical Trans-*

actions, Numb. 385. which was exceeding large, and produc'd great Quantities of Fruit, without any previous Flowers; but it grew at some Distance from his Habitation, and he having no Opportunity to observe it strictly himself, but by visiting the Place two or three times about the Season of Flowering, and not being apprisd of the sudden Decay of the Flowers, they might easily be suppos'd to have appear'd, and dropt off, between the times of his visiting the Place.

The two Sorts with strip'd Leaves are preserv'd by such as are curious in collecting such Varieties; these may be propagated by grafting or budding them upon the common Apple or Crab-tree; but they should not be planted in a very rich Soil, which would cause them to grow very free, whereby their Leaves would become intirely green again.

The other Sorts, which are above-mentioned, are what have been introduc'd from *France*; but there are not above two or three of them, which are much esteemed in *England*; viz. the *French Renette*, the *Renette-grise*, and the *Violet-apple*; the other being early Fruit, which do not keep long, and their Flesh is generally mealy; so that they do not deserve to be propagated, as we have many better Fruits in *England*: but as there may be some Persons, who are willing to have all the Sorts, I have mentioned them here, for their Instruction; but I shall next put down those Sorts of Apples, which are best esteemed in *England*; placing them in the Order according to their time of Ripening.

The first Apple which is brought to the Markets is, the *Codlin*: This Fruit is so well known in *England*, that it is needless to describe it.

The next is the Margaret-apple : This Fruit is not so long as the Codlin, of a middling Size : the Side next the Sun changes to a faint Red, when ripe : the other Side is of a pale Green : the Fruit is firm, of a quick pleasant Taste ; but doth not keep long.

The Summer-pearmain is an oblong Fruit, striped with Red next the Sun : the Flesh is soft, and in a short time is mealy ; so that it is not greatly esteemed.

The *Kentish* Fill-basket is a Species of Codlin, of a large Size, and somewhat longer shaped than the Codlin : this ripens a little later in the Season, and is generally used for Baking, &c.

The Transparent - apple : This was brought to *England* a few Years since, and was esteemed a Curiosity : it came from *Petersburgh*, where it is affirmed to be so transparent, as that the Kernels may be perfectly seen, when the Apple is held to the Light ; but, in this Country, it is a mealy insipid Fruit ; so not worth propagating.

Loan's Pearmain : This is a beautiful Fruit, being of a middling Size : the Side next the Sun is of a beautiful Red, and striped with the same Colour on the other : the Flesh is vinous ; but as it soon grows mealy, it is not greatly esteemed.

The Quince apple : This is a small Fruit, seldom larger than the Golden-pippin ; but is in Shape like the Quince, especially toward the Stalk : the Side next the Sun is of a russet Colour, on the other Side inclining to yellow : this is an excellent Apple for about three Weeks, in *September* ; but it will not keep much longer.

The Golden-rennet is a Fruit so well known in *England*, as to need no Description : this ripens about

Michaelmas, and for about a Month is a very good Fruit, either for Eating raw, or Baking.

The Aromatic-Pippin is also a very good Apple : it is about the Size of a Nonpareil, but a little longer ; the Side next the Sun is of a bright-russet Colour : the Flesh is breaking, and hath an aromatic Flavour : it ripens in *October*.

The *Hertfordshire* Pearmain, by some called the Winter-pearmain : This is a good-siz'd Fruit, rather long than round, of a fine Red next the Sun, and striped with the same Colour on the other Side : the Flesh is juicy, and stews well ; but is not esteemed for eating by any nice Palates : this is fit for Use in *November* and *December*.

The *Kentish* Pippin is a large handsome Fruit, of an oblong Figure : the Skin is of a pale-green Colour : the Flesh is breaking, and full of Juice, which is of a quick acid Flavour : this is a very good Kitchen - fruit, and will keep till *February*.

The *Holland* Pippin is larger than the former : the Fruit is somewhat longer ; the Skin of a darker Green ; the Flesh firm and juicy : this is a very good Kitchen-fruit, and will keep late in the Season.

The Monstrous-renette is a very large Apple, of an oblong Shape, turning red toward the Sun, but of a Dark-green on the other Side : the Flesh is apt to be mealy ; so it is not much valued by those who are Curious ; and only preserved for the Magnitude of the Fruit.

The Embroider'd-apple is a pretty large Fruit, somewhat shaped like the Pearmain ; but the Stripes of Red are very broad ; from whence the Gardeners have given it this Title : it is a middling Fruit, and

is commonly used as a Kitchen-apple: tho' there are many better.

The Royal-russet, by some called the Leather-coat-russet, on account of the deep-russet Colour of the Skin: This is a large fair Fruit, of an oblong Figure, broad toward the Base; the Flesh is inclineable to yellow: this is one of the best Kitchen-apples we have, and is a very great Bearer: the Trees grow large and handsome; and the Fruit is in Use from *October* till *April*; and is also a pleasant Fruit to eat.

The *Wheeler's Russet* is an Apple of a middling Size, flat, and round: the Stalk is slender; the Side next the Sun, of a light-russet Colour; the other Side inclining to a pale-yellow, when ripe: the Flesh is firm; and the Juice has a very quick acid Flavour; but it is an excellent Kitchen-fruit, and will keep a long time.

Pile's Russet is not quite so large as the former, but is of an oval Figure, of a russet Colour to the Sun, and of a dark-green on the other Side: it is a very firm Fruit, of a sharp acid Flavour; but is much esteemed for Baking; and will keep sound till *April*, or later, if they are well preserved.

The *Nonpareil* is a Fruit pretty generally known in *England*; tho' there is another Apple which is frequently sold in the Markets for it, which is what the *French* call *Haute-bonne*: this is a larger fairer Fruit than the *Nonpareil*, more inclining to yellow: the russet Colour brighter, and is earlier ripe, and sooner gone: this is not so flat as the true *Nonpareil*, nor is the Juice so sharp; tho' it is a good Apple, in its Season: but the *Nonpareil* is seldom ripe before *Christmas*; and where they are well preserved, they will keep till *May* perfectly sound: this

is justly esteemed one of the best Apples yet known.

The *Golden-pippin* is a Fruit peculiar to *England*: there are few Countries abroad, where this succeeds well; nor do they produce so good Fruit in many Parts of *England*, as were to be wished: this is in some measure owing to their being grafted on Free-stocks, which enlarges the Fruit, but renders it less valuable; because the Flesh is not so firm, nor the Flavour so quick; and it is apt to be dry and mealy; therefore this should always be grafted upon the Crab-stock, which will not canker like the others; and tho' the Fruit will not be so fair to the Sight, yet it will be better flavoured.

There are yet a great Variety of Apples, which, being inferior to those here mentioned, I have omitted; as those which are here enumerated will be sufficient to furnish the Table, and the Kitchen, during the whole Season of these Fruits; so that where these Sorts are to be had, no Person of Taste will eat the other.

I shall here mention some of the Apples which are chiefly preferred for the making of Cyder; tho' there are, in every Cyder Country, new Sorts frequently obtained from the Kernels: but those hereafter mentioned have, for some Years been in the greatest Esteem:

The Red-streak.

Devonshire Royal Wilding.

The Whitfour.

Hertfordshire Under-leaf.

John-apple, or *Deux-annes*.

Everlasting-hanger.

Gennet-moyle.

All the Sorts of Apples are propagated by grafting or budding, upon the Stocks of the same Kind; for they will not take upon any other

other Sort of Fruit-trees. In the Nurseries there are three Sorts of Stocks generally used, to graft Apples upon: the first are called Free-stocks: these are raised from the Kernels of all Sorts of Apples, indifferently; and these are also termed Crab-stocks; for all those Trees which are produced from the Seeds, before they are grafted, are termed Crabs, without any Distinction: but, as I before observed, I should always prefer such Stocks as are raised from the Kernels of Crabs, where they are pressed for Verjuice: and I find several of the old Writers on this Subject, of the same Mind. Mr. *Austen*, who wrote an hundred Years ago, says, *The Stock which he accounts best for Apple-grafts, is the Crab: which is better than sweeter Apple-trees to graft on, because they are usually free from Canker, and will become very large Trees; and, I conceive, will last longer than Stocks of sweeter Apples, and will make Fruits more strong and hardy to endure Frosts.* And it is very certain, that by frequently grafting some Sorts of Apples upon Free-stocks, the Fruits have been rendered less firm and poignant, and of shorter Duration.

The second Sort of Stock is the *Dutch Creeper*, before mentioned: these are designed to stint the Growth of the Trees, and keep them within Compass for Dwarfs or Espaliers.

The third Sort is the *Paradise-apple*; which is a very low Shrub; so only proper for Trees which are kept in Pots, by way of Curiosity; for these do not continue long.

Some Persons have made use of *Codlin-stocks* for grafting of Apples, in order to stint their Growth: but as these are commonly propagated by Suckers, I would by no means advise the using of them; nor would

I choose to raise the *Codlin-trees* from Suckers, but rather graft them upon *Crab-stocks*; which will cause the Fruit to be firmer, last longer, and have a sharper Flavour: and these Trees will last much longer sound, and never put out Suckers, as the *Codlins* always do; which, if not constantly taken off, will weaken the Trees, and cause them to canker; and it is not only from the Roots, but from the Knots of their Stems, there are generally a great Number of strong Shoots produced, which fill the Trees with useless Shoots, and render them unsightly, and the Fruit small and crumpled.

The Method of raising Stocks from the Kernels of Crabs or Apples is, to procure them where they are pressed for Verjuice or Cyder; and after they are cleared of the Pulp, they may be sown upon a Bed of light Earth, covering them over about half an Inch thick with the same light Earth. These may be sown in *November* or *December*, where the Ground is dry; but in wet Ground, it will be better to defer it till *February*: but then the Seeds should be preserved in dry Sand, and kept out of the Reach of Vermin; for if Mice or Rats can get to them, they will devour the Seeds: there should also be Care taken of the Seeds, when they are sown, to protect them from these Vermin, by setting of Traps to take them, &c. In the Spring, when the Plants begin to appear, they must be carefully weeded; and if the Season should prove dry, it will be of great Service to water them two or three times a Week: and during the Summer, they must be constantly kept clear from Weeds; which, if suffered to grow, will soon over-top the Plants, and spoil their Growth: if these thrive well, they will be fit

to transplant into the Nursery the *October* following; at which time the Ground should be carefully digged, and cleansed from the Roots of all bad Weeds: then the Stocks should be planted in Rows three Feet asunder, and the Plants one Foot Distance in the Rows, closing the Earth pretty fast to their Roots: when the Stocks are transplanted out of the Seed-bed, the first Autumn after sowing, they need not be headed; but where they are inclined to shoot downward, the Tap-root must be shortened, in order to force out horizontal Roots: if the Ground is pretty good in which these Stocks are planted, and the Weeds constantly cleared away, the Stocks will make great Progress; so that those which are intended for Dwarfs, may be grafted the Spring Twelve-months after they are planted out of the Seed-bed: but those which are designed for Standards will require two Years more Growth, before they will be fit to graft; by which time they will be upward of six Feet high. The other necessary Work to be observed in the Culture of these Trees, while they remain in the Nursery, being exhibited under the Article of *Nursery*, I shall not repeat in this Place.

I shall next treat of the manner of planting such of these Trees, as are designed for Espaliers in the Kitchen-garden; where, if there is an Extent of Ground, it will be proper to plant, not only such Sorts as are for the Use of the Table, but also a Quantity of Trees to supply the Kitchen: but where the Kitchen-garden is small, the latter must be supplied from Standard-trees, either from the Orchard; or where-ever they are planted: but as many of these Kitchen-apples are large, and hang late in the Autumn upon the

Trees, they will be much more exposed to the strong Winds, on Standard-trees, than in Espaliers; whereby many of the Fruit will be blown down before they are ripe, and others bruised, so as to prevent their keeping: therefore where it can be done, I should always prefer the planting them in Espaliers.

The Distance which I should choose to allow these Trees, should not be less than twenty-five Feet, for such Sorts as are of a moderate Growth (if upon Crab or Free-stocks): but the larger-growing Sorts should not be allowed less room than thirty or thirty-five Feet, which will be found full near enough, if the Ground is good, and the Trees properly trained: for as the Branches of these Trees should not be shortened, but trained at their full Length, so in a few Years they will be found to meet. Indeed, at the first Planting, the Distance will appear so great, to those Persons who have not observed the vigorous Growth of these Trees, that they will suppose they never can extend their Branches so far, as to cover the Espalier; but if these Persons will but observe the Growth of Standard-trees of the same Kinds, and see how wide their Branches are extended on every Side, they may be soon convinced, that as these Espalier-trees are allowed to spread but on two Sides, so they will of course make more Progress, as the whole Nourishment of the Root will be employed in these Side-branches, than where there is a greater Number of Branches on every Side of the Tree, which are to be supplied with the same Nourishment.

The next thing to be observed is, the making choice of such Sorts of Fruits as grow nearly alike, to plant in the same Espalier. This is of great

great Consequence; because of the Distance which they are to be planted; otherwise those Sorts which make the largest Shoots, may be allowed less room to spread, than those of smaller Growth: beside, when all the Trees in one Espalier are nearly equal in Growth, they will have a better Appearance, than when some are tall, and others short: but for the better Instruction of those Persons who are not conversant in these things, I shall divide the Sorts of Apples into three Classes, according to their different Growths.

The largest-growing Tree.

All the Sorts of Pearmains.

Kentish Pippin.

Holland Pippin.

Monstrous Renette.

Royal Russet.

Wheeler's Russet.

Pile's Russet.

Nonpareil.

Violet Apple.

Middle-growing Tree.

Margaret Apple.

Golden Renette.

Aromatic Pippin.

Embroidered Apple.

Renette Grise.

White Renette.

Codlin.

Smallest-growing Tree.

Quince Apple.

Transparent Apple.

Golden Pippin.

Pomme d'Api.

Fenouillet, or Anis-Apple.

N. B. These are all supposed to be grafted on the same Sort of Stocks.

If these Apples are grafted upon Crab-stocks, I would willingly place them at the following Distance from each other; especially where the Soil is good; *viz.* the largest-growing Trees at forty Feet, the middle-growing at thirty Feet, and the

small-growing at twenty-five Feet, which, from constant Experience, I find to be full near enough: for in many Places, where I have planted these Trees at twenty-four Feet Distance, the Trees have shot so, as that in seven Years their Branches have met: and in some Places, where every other Tree hath been taken up, the Branches have almost joined in seven Years after: therefore it will be much the better way to plant these Trees at a proper Distance at first; and between these to plant some dwarf Cherries, Currans, or other Sort of Fruit, to bear for a few Years; which may be cut away when the Apple-trees have extended their Branches to them: for when the Apple-trees are planted nearer together, few Persons care to cut down the Trees, when they are fruitful; so that they are obliged to use the Knife, Saw, and Chissel, more than is proper for the future Good of the Trees: and many times, where Persons are inclinable to take away Part of their Trees, the Distances will be often so irregular (where there was not this Consideration in Planting) as to render the Espalier unsightly.

When the Trees are upon the *Dutch Dwarf*-stock, the Distance should be for the large-growing Trees twenty Feet; for those of middle Growth sixteen; and the smallest twelve Feet; which will be found full near, where the Trees thrive well.

The next is the Choice of the Trees, which should not be more than two Years Growth from the Graft; but those of one Year should be preferred: be careful that their Stocks are young, sound, and smooth; free from Canker; and which have not been cut down in the Nursery: when they are taken

up, all the small Fibres should be intirely cut off from their Roots, which, if left on, will turn mouldy, and decay; so will obstruct the new Fibres in their Growth: the extreme Parts of the Roots must be shortened, and all bruised or broken Roots cut off; and if there are any misplaced Roots, which cross each other, they should also be cut away. As to the Pruning of the Head of these Trees, there need be nothing more done, than to cut off any Branches, which are so situated, as that they cannot be trained to the Line of the Espalier: in the Planting there must be care taken not to place their Roots too deep in the Ground, especially if the Soil is moist; but rather raise them on a little Hill, which will be necessary to allow for the raising of the Borders afterward. The best Season for planting these Trees (in all Soils which are not very moist) is, from *October* to the Middle or Latter-end of *November*, according as the Season continues mild; but so soon as the Leaves fall, they may be removed with great Safety. After the Trees are planted, it will be proper to place down a Stake to each Tree; to which the Branches should be fastened, to prevent the Winds from shaking or loosening their Roots, which will destroy the young Fibres; for when these Trees are planted pretty early in the Autumn, they will very soon push out a great Number of new Fibres; which, being very tender, are soon broken; so the Trees are greatly injured thereby. If the Winter should prove severe, it will be proper to lay some rotten Dung, Tanners Bark, or some Sort of Mulch, about their Roots, to prevent the Frost from penetrating of the Ground, which might damage these tender Fibres: but I would not

advise the laying of this Mulch before the Frost begins; for if it is laid over the Roots, soon after the Trees are planted (as is often practised), it will prevent the Moisture entering the Ground, and do much Harm to the Trees.

The following Spring, before the Trees begin to push, there should be two or three short Stakes put down on each Side of the Tree, to which the Branches should be fastened down as horizontally as possible, never cutting them down, as is by some practised; for there will be no Danger of their putting out Branches enough to furnish the Espalier, if the Trees are once well established in their new Quarters.

In the Pruning of these Trees, the chief Point is, never to shorten any of the Branches, unless there is an absolute Want of Shoots to fill the Spaces of the Espalier: for where the Knife is much used, it only multiplies useles Shoots, and prevents their Fruiting; so that the best Method to manage these Trees is, to go over them three or four times in the growing Season, and rub off all such Shoots as are irregularly produced; and train the others down to the Stakes, in the Position they are to remain: if this is carefully performed in Summer, there will be little left to be done in the Winter; and by bending of their Shoots from time to time, as they are produced, there will be no Occasion to use Force, to bring them down, nor any Danger of breaking the Branches. The Distance which these Branches should be trained from each other, for the largest Sorts, should be about seven Inches; and for the smaller, four or five. If these plain Instructions are followed, it will save much unnecessary Labour of Pruning; and the Trees will, at all times, make an
hand-

handsome Appearance: whereas when they are suffered to grow rude in Summer, there will be much greater Difficulty to bring down their Shoots, especially if they are grown stubborn. All the Sorts of Apples produce their Fruit upon Cursons or Spurs, so that these should never be cut off; for they will continue fruitful a great Number of Years.

The Method of making the Espaliers having been already exhibited under that Article, I need not repeat it here; but only observe, that it will be best to defer making the Espalier, till the Trees have had three or four Years Growth; for before that time the Branches may be supported by a few upright Stakes; so that there will be no Necessity to make the Espalier, until there are sufficient Branches to furnish the Lower-part.

I shall now treat of the Method to plant Orchards, so as to have them produce the greatest Profit. And, first, in the Choice of the Soil and Situation for an Orchard: the best Situation for an Orchard is, on the Ascent of gentle Hills, facing the South, or South-east; but this Ascent must not be too steep, lest the Earth should be washed down by hasty Rains.

There are many Persons who prefer low Situations at the Foot of Hills; but I am thoroughly convinced from Experience, that all Bottoms where there are Hills on every Side, are very improper for this Purpose; for the Air is drawn down in strong Currents, which, being pent in on every Side, renders these Bottoms much colder, than the open Situations: and during the Winter and Spring, these Bottoms are very damp and unhealthy to all Vegetables: therefore the gentle Rise of an Hill,

fully exposed to the Sun and Air, is by much the best Situation. As to the Soil, a gentle hazel Loam, which is easy to work, and that doth not detain the Wet, is the best: if this happens to be three Feet deep, it will be the better for the Growth of the Trees; for altho' these Trees will grow upon very strong Land, yet they are seldom so thriving, nor are their Fruit so well flavour'd, as those which grow on a gentle Soil: and on the other hand, these Trees will not do well upon a very dry Gravel or Sand; therefore those Soils should never be made choice of for Orchards.

The Ground intended to be planted should be well prepared the Year before, by plowing it thoroughly; and if some Dung is laid upon it the Year before, it will be of great Service to the Trees: if the precedent Spring a Crop of Peas or Beans be planted on the Ground (provided they are sown or planted in Rows, at a proper Distance, so that the Ground between them is horse-hoed), it will destroy the Weeds, and loosen the Ground; so that it will be a good Preparation for the Trees; for the Earth cannot be too much wrought or pulverized for this Purpose: these Crops will be taken off the Ground before the Season for planting of these Trees; which should be as soon as possible performed when the Trees begin to shed their Leaves.

In choosing of the Trees, I would advise the taking such as are but of two Years Growth, from the Graft, and never to plant old Trees, or such as are grafted upon old Stocks; for it is losing of time to plant these, young Trees being always more certain to grow, and make a much greater Progress, than those which are old: as to pruning of the Roots,

it must be done in the same manner as hath been already directed for the Espalier-trees : and in pruning their Heads, little more is necessary than to cut out such Branches as are ill placed, or that cross each other : for I do not approve the heading of them down, as is by some often practised, to the Loss of many of their Trees.

The Distance which these Trees should be planted, where the Soil is good, must be fifty or sixty Feet ; and where the Soil is not so good, forty Feet may be sufficient : but nothing can be of worse Consequence, than the crowding Trees too close together in Orchards : and altho' there may be some who may imagine this Distance too great, yet I am sure, when they have thoroughly consider'd the Advantages attending this Practice, they will agree with me : nor is it my own Authority ; for in many of the old Writers on this Subject, there is often mention made of the Necessity for allowing a proper Distance to the Fruit-trees in Orchards ; particularly in *Austen*, who says, *He should choose to prescribe the planting these Trees fourteen or sixteen Yards asunder ; for both Trees and Fruits have many great Advantages, if planted a good Distance one from another.* One Advantage he mentions is, *The Sun refreshes every Tree, the Roots, Body, and Branches, with the Blossoms and Fruits ; whereby Trees bring forth more Fruits, and those fairer and better.* Another Advantage he mentions is, *That when Trees are planted at a large Distance, much Profit may be made of the Ground under and about these Trees, by cultivating Garden-stuff, commodious as well for Sale as Housekeeping ; as also, Gooseberries, Raspberries, Currans and Strawberries, may be there planted.* Again he says, *When Trees have room to*

spread, they will grow very large and great ; and the Consequences of that will be, not only Multitudes of Fruits, but also long-lasting ; and these two are no small Advantages : for, says he, Men are mistaken, when they say, The more Trees in an Orchard, the more Fruits : for one or two large Trees, which have room to spread, will bear more Fruits than six or ten (it may be) of those that grow near together, and crowd one another. Again he says, *Let Men but observe, and take Notice of some Apple-trees, that grow a great Distance from other Trees, and have room enough to spread both their Roots and Branches ; and they shall see, that one of those Trees (being come to full Growth) hath a larger Head, and more Boughs and Branches, than (it may be) four, or six, or more, of those which grow near together, altho' of the same Age.*

And Mr. *Lawson*, an antient Planter, advises to plant Apple-trees twenty Yards asunder. As the two Authors above quoted have written the best upon this Subject, and seem to have had more Experience than any of the Writers I have yet seen, I have made use of them, as Authorities to confirm what I have advanced : tho' the Fact is so obvious to every Person who will make the least Reflection, that there needs no other Proof.

When the Trees are planted, they should be staked, to prevent their being shaken or blown out of the Ground by strong Winds : but in doing of this, there should be particular Care taken, to put either Straw, Haybands, or Woollen Cloth, between the Trees and the Stakes, to prevent the Trees from being rubbed and bruised, by the shaking against the Stakes ; for if their Bark should be rubbed off, it will occasion

son such great Wounds, as not to be healed over in several Years, if they ever recover it.

If the Winter should prove very severe, it will be proper to cover the Surface of the Ground about their Roots with some Mulch, to prevent the Frost from penetrating the Ground, which will injure the young Fibres: but this Mulch should not be laid on too soon, as hath been before-mentioned, lest the Moisture should be prevented from soaking down to the Roots of the Trees; nor should it lie on too long in the Spring, for the same Reason: therefore where Persons will be at the Trouble to lay it on in frosty Weather, and remove it again after the Frost is over, that the Wet in *February* may have free Access to the Roots of the Trees; and if *March* should prove dry, with sharp North or East Winds, which often happens; it will be proper to cover the Ground again with the Mulch, to prevent the Winds from penetrating and drying the Ground; and will be of singular Service to the Trees. But I am aware, that this will be objected to by many, on account of the Trouble, which may appear to be great: but when it is considered, how much of this Business may be done by a single Person in a short time, it can have little Force; and the Benefit which the Trees will receive by this Management, will greatly recompense the Trouble and Expence.

As these Trees must be constantly fenced from Cattle, it will be the best way to keep the Land in Tillage; for by constant plowing or digging of the Ground, the Roots of the Trees will be encouraged, and they will make the more Progress in their Growth: but where this is done, whatever Crops are sown or planted,

should not be too near the Trees, lest the Nourishment should be drawn away from the Trees: and as in the plowing of the Ground there must be Care taken not to go too near the Stems of the Trees, whereby their Roots would be injured, or the Bark of their Stems rubbed off; so it will be of great Service to dig the Ground about the Trees, where the Plough doth not come, every Autumn, for five or six Years after planting; by which time their Roots will have extended themselves to a greater Distance.

It is a common Practice in many Parts of *England*, to lay the Ground down for Pasture, after the Trees are grown pretty large in their Orchards: but this is by no means adviseable; for I have frequently seen Trees of above twenty Years Growth, almost destroyed by Horses, in the Compass of one Week: and if Sheep are put into Orchards, they will constantly rub their Bodies against the Stems of the Trees, and their Grease sticking to the Bark will stint the Growth of the Trees, and in time will spoil them: therefore where-ever Orchards are planted, it will be much the better Method to keep the Ground plowed or dug annually; and such Crops put on the Ground, as will not draw too much Nourishment from the Trees.

In pruning of Orchard-trees, nothing more should be done, but to cut out all those Branches which cross each other, and, if left, would rub and tear off the Bark, as also decayed Branches; but never shorten any of their Shoots. If Suckers or Shoots from their Stems should come out, they must be intirely taken off; and when any Branches are broken by the Wind, they should be cut off, either down to the Division of

the Branch, or close to the Stem from whence it was produced: the best time for this Work is in *November*; for it should not be done in frosty Weather, nor in Spring, when the Sap begins to be in Motion.

The best Method to keep Apples for Winter-use is, to let them hang upon the Trees, until there is Danger of Frost; to gather them in dry Weather; and then lay them in large Heaps to sweat for three Weeks, or a Month: afterward look them over carefully, taking out all such as have Appearance of Decay, wiping all the sound Fruit dry; and pack them up in large Oil-jars, which have been thoroughly scalded and dry, stopping them down close, to exclude the external Air: if this is duly observed, the Fruit will keep sound a long time; and their Flesh will be plump; for when they are exposed to the Air, their Skins will shrink, and their Pulp will be soft.

MALUS ARMENIACA. *Vide Armeniaca.*

MALUS AURANTIA. *Vide Aurantia.*

MALUS LIMONIA. *Vide Limonia.*

MALUS MEDICA. *Vide Citreum.*

MALUS PERSICA. *Vide Persica.*

MALUS PUNICA. *Vide Punica.*

MAMEI, The Mammec-tree.

The Characters are;

It hath a rosaceous Flower, which consists of several Leaves placed in a circular Order; from whose Cup arises the Pointal, which afterward becomes an almost spherical fleshy Fruit, containing two or three Seeds inclosed in hard rough Shells.

There is but one Species of this Tree known; viz.

MAMEI *magno fructu, persica sapore.* *Plum. Nov. Gen. 44.* The Mammec with a large Fruit tasting like a Peach.

This Tree, in the *West-Indies*, grows to the Height of sixty or seventy Feet: the Leaves are large and stiff, and continue green all the Year: the Fruit is as large as a Man's Fist; when ripe, is of a yellowish-green Colour, and is very grateful to the Taste. It grows in great Plenty in the *Spanish West-Indies*, where the Fruit is generally sold in their Markets, and is esteemed one of the best Fruits of the County. It also grows on the Hills of *Jamaica*, and has been transplanted into most of the *Caribbee* Islands, where it thrives exceeding well.

In *England* there are some few of these Plants, which are preserved with great Care by such as are curious in cultivating Exotic Plants: but there are none of any considerable Size; so that we cannot expect to see either Fruit or Flowers for some Years. These Plants may be propagated by planting the Stones, which are often brought from the *West-Indies* (but these Stones should be very fresh, otherwise they will not grow), into Pots filled with fresh light Earth, and plunged into an Hot-bed of Tanners Bark.

In about a Month or six Weeks the Plants will begin to appear above-ground; after which they must be frequently refreshed with Water; and in hot Weather the Glasses of the Hot-bed should be raised, to let in fresh Air. In two Months the Roots of the Plants will have filled the Pots; when you should provide some Pots of a little larger Size, into which you should transplant the Plants, being careful to preserve

preserve as much Earth to their Roots as possible; then you should fill up the Pots with fresh light Earth, and plunge them into the Bark-bed again, observing to water and shade them, until they have taken Root. In this Bed they may remain till *Michaelmas*, when they must be removed into the Bark-stove, where they must be constantly kept, observing to refresh them frequently with Water, as also to clean their Leaves from the Filth they are apt to contract in the Stove; and the Spring following they should be shifted into fresh Earth; and, if they require it, into larger Pots; and must be constantly kept in the Bark-stove, and may be treated after the manner directed for the Coffee-tree.

If, when the Stones of this Fruit are brought over, they are put into the Tan-bed, under the Bottom of any of the Pots, they will sprout sooner than those which are planted in the Earth.

MANCANILLA, The Manchineel-tree.

The Characters are;

It hath Male Flowers, or Katans, which are produced at remote Distances from the Embryoes on the same Tree: the Embryo becomes a round fleshy Fruit, in which is contained a rough woody Nut, inclosing four or five flat Seeds.

The Species are;

1. **MANCANILLA pyri facie.** Plum. Nov. Gen. 50. The Manchineel with the Face of a Pear-tree.
2. **MANCANILLA aquifolii foliis.** Plum. Nov. Gen. 50. The Manchineel with Leaves like Holly.
3. **MANCANILLA lauri foliis oblongis.** Plum. Nov. Gen. 50. The Manchineel with oblong Laurel-leaves.

The Manchineel is a Native of

the *West-Indies*, where it grows on low sandy Land, or near Gullies where Water runs. The three Sorts here mentioned are distinguished by Botanists; but I believe their Difference is not remark'd by the Natives, They grow to be very large Trees, equal to the Size of an Oak, and are much esteemed for their Wood, which is sawn out into Planks, and brought over to *England*: it is used for Cabinets, Book-cases, &c. and will polish very well; is of a beautiful Grain; and will last a long time. In cutting down these Trees, they are very careful to burn out the Juice of the Bark before they begin; otherwise the Persons are in Danger of losing their Eyes by some of the Sap getting into them, which is of a milky Colour, and so very caustic, that it will raise Blisters on the Skin, and burn Holes in Linen. The Fruit of this Tree, when ripe, is of the Colour and Size of a Golden-pippin; for which many of the *Europeans* have taken it; and some, by eating thereof, lost their Lives, and others have greatly suffered: the Flesh is not much thicker than a Crown-piece, and not very disagreeable to the Taste, but will corrode the Mouth and Throat. The Leaves of these Trees also abound with a milky Juice, which is of the same Nature; so that is dangerous to be under their Drip. The Cattle in *America* never shelter themselves under them, nor will any Vegetable scarcely grow under their Shade; yet the Goats eat this Fruit, without any manifest Injury to themselves, or their Milk, which is not altered by this Food.

In *England* there are some of these Trees preserved by Persons who are curious in propagating Exotic Plants. They may be raised from Seeds, by putting the whole Apple or Nut in-

to a Pot of fresh Earth, and then plunge it into an Hot-bed of Tan-ners Bark, observing to refresh the Earth often with Water. From one of these Nuts will arise four or five Plants, which, when grown about three Inches high, may be separated, and placed each into a small Pot filled with light rich Earth, and plunged again into the Hot-bed, observing to water and shade them, until they have taken Root; after which they must be managed as was before directed for the Mammee, to which I refer the Reader, to avoid Repetition. In shifting of these Plants from one Pot into another, great Care should be had, not to break their Leaves; for then they will greatly bleed, and thereby the Plants will be weakened; and it is very dangerous to let any of the Juice fall on any tender Part of the Body; for it will raise a Blister: and if it fall on Cloth, it will make Holes therein, as bad as if *Aqua fortis* were dropp'd on it.

MANDRAGORA, Mandrake.

The *Characters* are;

The Flower consists of one Leaf, in the Shape of a Bell, and is divided at the Top into several Parts: the Pointal afterward becomes a globular soft Fruit, in which are contained many kidney-shaped Seeds.

The *Species* are;

1. MANDRAGORA *fructu rotundo*.
C. B. P. Common Mandrake, with a round Fruit.

2. MANDRAGORA *flore subcœruleo purpurascente*. C. B. P. Mandrake with a purplish-blue Flower.

These Plants are propagated by Seeds, which should be sown upon a Bed of light Earth soon after they are ripe; for, if they are kept until the Spring, they seldom succeed well; but those which are sown in Autumn will come up in the Spring,

when they should be carefully clear'd from Weeds; and, in very dry Weather, they must be refreshed with Water, which will greatly promote their Growth: in this Bed they should remain till the Latter-end of *August* (observing always to keep them clear from Weeds); at which time they should be taken up very carefully, and transplanted into the Places where they are to remain, which should be a light deep Soil; for their Roots always run downward very deep; so that, if the Soil be wet, they are often rotted in Winter; and, if it be too near the Gravel or Chalk, they seldom thrive well: but, if the Soil be good, and they are not disturbed, the Plants will grow to a large Size in a few Years, and will produce great Quantities of Flowers and Fruit, and they will abide a great many Years.

I have been informed by some Persons of Credit, that one of these Roots will remain sound above fifty Years, and be as vigorous as a young Plant. I have known some Plants near forty Years myself, which are now in great Vigour, and may continue so many Years longer, as there are no Signs of their Decay; but they should never be removed after their Roots have arriv'd to any considerable Size, which would break their lower Fibres, and so stint the Plants, as that they will not recover their former Strength in two or three Years.

As to the feigned Resemblance of an human Form, which the Roots of this Plant are said to carry, 'tis all Imposture, owing to the Cunning of Quacks and Mountebanks, who deceive the Populace, and the Ignorant, with fictitious Images shap'd from the fresh Roots of Bryony, and other Plants: and what is re-

ported as to the Manner of rooting up this Plant, by tying a Dog there-to, to prevent the certain Death of the Person who should dare to attempt it, and the Groans it emits upon the Force offer'd, &c. is all a ridiculous Fable; for I have taken up several large Roots of this Plant, some of which have been transplant-ed into other Places, but could never observe any particular Difference in this from any other deep-rooting Plant.

MANIHOT, Cassavi, or Cassada.

The Characters are;

It hath a short spreading bell-shaped Flower, consisting of one Leaf, which is cut into several Parts, whose Pointal afterward becomes a roundish Fruit, composed of three Cells, which are joined together; in each of which is contained one oblong Seed: to these Notes should be added, Male Flowers, which have no Pointal, growing round the Female, which fall off, and are never fruitful.

The Species are;

1. MANIHOT *Theweti Juca* & *Cassavi*. *J. B. Inst. R. H.* The common Cassavi, or Cassada.

2. MANIHOT *spinossissima, folio vitigineo*. *Plum. Cat.* The most prickly Cassavi, with a Chaste-tree-leaf.

3. MANIHOT *arborescens minus spinosa, floribus albis umbellatis, foliis aconiti urentibus*. *Houft.* Tree-like less-prickly Cassavi, with white Flowers growing in Umbels, and a stinging Wolfsbane-leaf.

4. MANIHOT *frutescens non spinosa, foliis glabris, & minus lacinia-tis*. *Houft.* Shrubby Cassavi without Prickles, and smooth Leaves, which are less divided.

5. MANIHOT *ulmi folio ampliore*. *Plum. Cat.* Cassavi with an ample Elm-leaf.

6. MANIHOT *ulmi folio angustiore*. *Plum. Cat.* Cassavi with a narrow Elm-leaf.

The first Sort is cultivated in all the warm Parts of *America*, where the Root is ground to Flour, after being divested of its Juice; and then is made into Cakes, which are used for Bread. Of this there are two Sorts, which are not distinguish-ed by the Botanists; one of which, *viz.* the most common, hath purplish Stalks, and the Veins of the Leaves are also of a purplish Colour; but the Stalks of the other are green, and the Leaves are of a lighter-green Colour. The last of these Sorts is not venomous, even while the Roots are fresh, and full of Juice; for the Negroes frequently dig up the Roots, and, after roast-ing them, eat them in the same manner as Potatoes, without any ill Effects. This Sort is known by the *Spaniards*, who call it *Camanioc*: but this being more light and spon-gy than the common Sort, and re-quiring a longer time to grow to Maturity, is planted by few People in *America*.

The Cassada is propagated by Cuttings, which the Inhabitants of *America* plant, at their rainy Sea-sons: these Cuttings are taken from those Plants, whose Roots are grown to Maturity, for Use: the Cuttings are generally about fifteen or six-teen Inches in Length, and are planted a Foot or fourteen Inches deep in the Ground, leaving about two or three Inches of the Cutting above the Surface. The Land in which this is planted, must be well wrought, and cleansed from the Roots of noxious Weeds; then there should be a Trench opened cross the Ground about a Foot deep, in which the Cuttings should be placed at about a Foot Distance from each other, leaving a small Part of each Cutting above the Sur-face: then the Earth should be fill-

ed into the Trench again, and gently pressed with the Feet about each Cutting, to prevent the Sun and Air from penetrating of the Ground, which would dry the Cuttings too much, and so prevent their taking Root. These Trenches should be made about three Feet asunder, that there may be room to hoe between the Rows to destroy the Weeds; which, if permitted to grow, will soon overbear the Plants, and destroy them. The Cuttings should not be planted immediately after they are taken from the old Plants, but should be laid to dry in a shady Place for two Days; for as they abound with a milky Juice, if the Part where they are cut be not healed over, they will be subject to rot, as is the Case with most milky Plants.

When the Cuttings have taken Root, they require no farther Care, but to keep them clear from Weeds; and in about eight or nine Months time the Roots will have grown to Maturity; which, in good Ground, will be as large as the Calf of a Man's Leg, but commonly as large as good Parsneps, if the Ground be tolerably good. Then the Ground must be opened about each Plant, to take up the Roots intire, and pare off their Skins; then they throw them into a Tub of Water, and wash them well; after which they rasp them on a coarse Rasp, to reduce them to a rough Flour like Sawdust; then they press out all the Juice with a Press, and afterward it is fit for Use.

In *Europe* these Plants are preserved by many Persons who are curious in collecting of rare Plants: but they will not thrive, unless they are kept in Stoves; for they are all of them very tender Plants. The second Sort is only propagated by Seeds which must be procured from the Places of

its natural Growth; for it never produces good Seeds in this Country.

The Seeds of this Sort were sent into *England* by the late Dr. *William Housfoun*, who gathered them on the Sands near *Vera Cruz*, in the *Spanish West-Indies*, where it grows in great Plenty: it was also found at *Campechy* by Mr. *Robert Millar*, Surgeon. This Kind seldom rises above eighteen Inches or two Feet high; and the Stalks, Leaves, and every Part of it, are closely beset with strong Prickles; so that it is difficult to touch them, without receiving an Injury from the Spines. At the Top of the Shoots there are some white Flowers, which are produced in an Umbel, some of which are Male, having many *Stamina* or Threads in each; but the Female Flowers rest on the Embryoes, which afterward become the Fruit.

The third Sort was also discovered by the late Dr. *William Housfoun*, near *La Vera Cruz*: this grows to the Height of twelve or fourteen Feet: the Trunk of this becomes woody, and divides at the Top into many Branches, which are beset with Leaves, in Shape like those of *Wolfsbane*: these are armed with small Spines, which sting like those of the *Nettle*. The Flowers of this Kind are white, and grow in an Umbel on the Top of the Branches, and are produced throughout the whole Year. This Sort may be propagated by Cuttings, in the same manner as the first.

The fourth Sort is somewhat like the wholesome Kind; but is not met with in any of our Settlements: this was found in the Island of *Cuba*, by the late Dr. *Housfoun*. All these Sorts have large tuberose Roots, which abide some Years; and may therefore be preserved by the Curious.

rious. When the Kinds are obtained from abroad, they must be planted in Pots filled with fresh light Earth, which is not over-rich, and plunged into the Bark-bed in the Stove; where, during the Summer-season, they should have a large Share of fresh Air admitted to them, by opening the Glasses in warm Weather; and they must be frequently refreshed with Water: but in Winter they must be kept very warm, and should be watered more sparingly, especially if the Plants die down to the Root, which the second Sort is very apt to do in Winter in this Country; at which time Moisture will rot the Roots, while they are in an unactive State.

When the Seeds of these Plants are procured from abroad, they should be sown in Pots filled with fresh light Earth, and plunged into an Hot-bed of Tanners Bark; and when the Plants are come up two Inches high, they should be transplanted into a separate Pot filled with fresh light Earth, and plunged into the Hot-bed again; being careful to shade them from the Sun, until they have taken new Root. In this Hot-bed the Plants may remain during the Summer-season; but at *Michaelmas* they must be removed into the Stove, and treated after the manner as was before directed.

The Seeds of these Plants very often prove abortive, having a fair outer Covering; but when broken, have no Germ within, so that very few of them grow: therefore it is proper to put them into Water, and take only such for sowing as sink to the Bottom of the Vessel; for all those which swim on the Surface of the Water, are bad Seeds.

MAPLE. *Vide* Acer.

MARACOCK. *Vide* Granada.

MARANTA, *Indian Arrow-root*.

The Characters are;

It hath a Flower consisting of one Leaf, which is almost funnel-shaped, opening in six Parts, three of which are alternately larger than the other: the Lower-part of the Flower-cup afterward becomes an oval-shaped Fruit, consisting of one Cell, in which is one hard rough Seed.

The Species are;

1. MARANTA *arundinacea, cannacori folio.* Plum. Nov. Gen. Reed-like *Indian Arrow-root*, with a Leaf like the *Indian Reed*.

2. MARANTA *cannacori folio, flore minimo albo.* Houst. *Indian Arrow-root*, with a Leaf like the flowering Reed, and the least white Flower.

The first Sort was discovered by Father Plumier in some of the *French Settlements in America*, who gave it the Name, in Honour to one *Bartholomew Maranta*, an antient Botanist. The Seeds of this Kind were sent to *Europe* by the late Dr. *William Houstoun*, who found the Plant growing in plenty near *La Vera Cruz in New-Spain*.

The other Sort was brought from some of the *Spanish Settlements in America*, into the Islands of *Barbados* and *Jamaica*; where it is cultivated in their Gardens as a medicinal Plant, it being a sovereign Remedy to cure the Bite of Wasps, and to extract the Poison of the *Manchineel-tree*. The *Indians* apply the Root to expel the Poison of their Arrows, which they use with great Success. They take up the Roots, and after cleansing them from Dirt, they mash them, and apply it as a Pultis to the wounded Part; which draws out the Poison, and heals the Wound. It will also stop a Gangrene, if it be applied be-

fore it is gone too far; so that it is a very valuable Plant.

These Plants, being Natives of a warm Country, are very tender; and therefore will not live in this Climate, unless they are preserved in Stoves.

They may be propagated by their creeping Roots, which should be parted in the Middle of *March*, just before they begin to push out new Leaves. These Roots should be planted in Pots filled with light rich Earth, and plunged into a moderate Hot-bed of Tanners Bark, observing now-and-then to refresh them with Water; but it must not be given to them in large Quantities; for too much Moisture will soon rot the Roots, when they are in an unactive State. When the green Leaves appear above-ground, the Plants will require more frequently to be watered. As the Plants advance in Strength, they should have a greater Share of Air; but they must constantly remain in the Stove plunged in the Tan, otherwise they will not thrive: for when the Pots are placed on Shelves in the Stove, the Moisture passes too soon from the Fibres, which generally are spread to the Sides and Bottoms of the Pots, so that the Plants do not receive much Nourishment from the Water. But where they are constantly kept in the Tanners Bark, and have proper Air and Moisture, they will thrive; so as from a small Root to fill the Pot in which it was planted, in one Summer.

About *Michaelmas* the first Sort will begin to decay, and in a short time after the Leaves will die to the Ground; but the Pots must be continued all the Winter in the Bark bed, otherwise the Roots will perish; for altho' they are in an un-

active State, yet they will not keep good very long, when taken out of the Ground; and if the Pots are taken out of the Tan, and placed in any dry Part of the Stove, the Roots often shrivel and decay; but when they are continued in the Tan, they should have but little Water given to them, when their Leaves are decayed, lest it rot them. The first Sort doth flower constantly in *July* or *August*, and will often produce ripe Seeds in *England*; but the second Sort doth not flower so constant, nor do the Flowers appear so conspicuous; being very small, and of a short Duration.

This Sort never hath produced any Seeds in *England*; nor could I ever observe any Rudiments of a Seed-vessel succeeding the Flower. The green Leaves abide on this Sort most Part of the Winter, seldom decaying till *February*; and sometimes will continue green until fresh Leaves come up, and thrust the old ones off; in which Particular there is a more remarkable Difference between the two Sorts, than can be observed in the Face of the Plants.

MARJORAM. *Vide* Majorana.

MARRUBIASTRUM, Bastard Horehound. *Vide* Cunila.

MARRUBIUM, Horehound.

The Characters are;

It is a verticillate Plant, with a Lip-flower consisting of one Leaf; whose Upper-lip (or Crest) is upright, with two Horns; but the Under-lip (or Beard) is divided into three Parts: the Pointal, which is fix'd to the Hinder-part of the Flower, is attended by four Embryoes, which become so many oblong Seeds, inclin'd in the Flower-cup.

The Species are;

I. MARRUBIUM *album vulgare*.
C. B. P. Common white Horehound.

2. MAR-

2. *MARRUBIUM album latifolium peregrinum*. C. B. P. Broad-leav'd foreign white Horehound.

3. *MARRUBIUM album angustifolium peregrinum*. C. B. P. Narrow-leav'd foreign white Horehound.

4. *MARRUBIUM alysson dictum, foliis profunde incis.* H. L. Horehound, call'd Madwort, with Leaves deeply cut in.

5. *MARRUBIUM Hispanicum supinum, foliis sericeis argenteis*. Tourn. Low Spanish Horehound, with silken silver-colour'd Leaves.

There are some other Species of this Plant, which are preserv'd in curious Botanic Gardens, for the sake of Variety: but as they are of no Use or Beauty, it would be needless to enumerate them in this Place.

The first Sort here mention'd is us'd in Medicine: this is found wild in divers Parts of *England*. The other Sorts are only kept by such as delight in Variety of Plants; for they have no great Beauty in their Flowers, nor are there any Uses to which they are applied.

They may be all propagated by sowing their Seeds in *March* upon a Bed of fresh light Earth; and when they are come up, they should be transplanted out into a dry Soil, at about eighteen Inches or two Feet asunder; where they will require no farther Culture than only to keep them clear from Weeds. But the fourth Sort is somewhat tender, and should have a warm Situation, otherwise it would be often kill'd by Frosts. This is a biennial Plant.

MARRUBIUM NIGRUM. Vide Ballote.

MARTAGON. Vide Liliium.

MARTYNIA.

This Name was given by the late Dr. *William Housloun* to this Genus

of Plants, which he discover'd in *America*, in Honour to his Friend Mr. *John Martyn*, Professor of Botany at *Cambridge*.

The Characters are;

It hath an anomalous Flower consisting of one Leaf, which is divided into two Lips: the Upper-lip is erect, and slightly cut into two Parts; but the Under-lip is cut into three Parts, the middle Segment being larger than the other two: the Flower is succeeded by a Fruit having a strong thick Covering, in which is inclosed a very hard Nut, having two sharp crooked Horns at one End; and in the Nut are included four Seeds, lodged in so many separate Cells.

The Species are;

1. *MARTYNIA annua villosa & viscosa, folio subrotundo, flore magno rubro*. Housl. Annual hairy viscous Martynia, with a roundish Leaf, and a large red Flower.

2. *MARTYNIA annua villosa & viscosa, aceris folio, flore albo, tubo longissimo*. Housl. Annual hairy viscous Martynia, with a Maple-leaf, and a white Flower, having a very long Tube.

3. *MARTYNIA foliis serratis*. Lin. Hort. Cliff. Martynia with saw-ed Leaves.

The first of these Plants was discovered by the late Dr. *William Housloun*, near *La Vera Cruz* in *New-Spain*, from whence he sent the Seeds into *England*; which succeeded very well in the Physic-garden at *Chelsea*: and in the Year 1731. several of these Plants were raised, which produced their beautiful Flowers, and perfected their Seeds; from whence several Plants were raised the succeeding Year.

The second Sort was discovered by the same curious Gentleman in the Year 1733. near *Carthagena* in *New*

New-Spain; from whence he sent dried Samples of the Plant, with some of the Seeds, to *England*; but they did not succeed.

The Seeds of the third Sort were sent from *Carthage* by Mr. *Robert Millar*, Surgeon, from which some of the Plants were raised in the Gardens of Mr. *George Clifford* of *Amsterdam*; where they have flowered; but have not produced any Seeds in *Europe*. This Sort increases greatly by its Roots, which creep underground, so as to fill the Pots in which they are planted, in one Season.

The two first Sorts, being annual Plants, are only propagated by Seed, which should be sown in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark; where (if the Earth is duly watered to promote the Vegetation of the Seed) the Plants will appear in about a Fortnight or three Weeks, and will grow pretty fast, if the Bed is warm; they should therefore be transplanted in a little time after they come up, each into a separate Pot filled with light rich Earth, and then plunged into the Hot-bed again; observing to water them well, as also to shade them from the Sun, until they have taken new Root; after which time they should have a large Share of fresh Air admitted to them in warm Weather. With this Management, the Plants will make great Progress, so as to fill the Pots with their Roots in about a Month's time; when they should be shifted into Pots, about a Foot Diameter at the Top; which should be filled with light rich Earth, and then plunged into the Hot-bed in the Bark-stove, where they should be allowed room; because they put out many Side-branches, and will grow

three Feet high or more, according to the Warmth of the Bed, and the Care which is taken to supply them constantly with Water. About the Middle of *July* the Plants will begin to shew their Flowers, which are produced in a Spike from the Top of the Plants; which, of the first Sort, are like those of the Fox-glove. As the first Spike of Flowers decays, they are succeeded by Spikes from all the Side-branches; so that the Plants continue in Flower until *Michaelmas*, or later, if the Season proves favourable: but it is only from the first Spike of Flowers that good Seeds can be expected in this Country; so that particular Care should be taken, that none of those are pulled off or destroyed; because it is very difficult to obtain good Seeds in this Country; and I believe few of those which are produced on the Side-branches in the natural Country of their Growth, are duly ripened; for I have received a great Quantity of these Seeds from abroad, which have appeared to be very good, and yet few of them have produced Plants.

The Seeds of these Plants have a strong green Covering on them; as thick as the outer Covering of an Almond; and when the Seeds are ripe, the Covering opens, and lets the Seeds fall, in the same manner as the Covering of Almonds, Walnuts, &c. In each Covering there is one hard Nut, in Shape somewhat like a Beetle, having two sharp crooked Horns at one End. This Nut contains four Embryoes; but there are seldom more than two Seeds which are perfect in any of them. However, when they are sown, the whole Nut must be planted; for it is so hard, that it is impossible to take out the Seeds without

out spoiling them ; and where there are two Plants produced from the same Nut, they are easily separated, when they are transplanted. These Seeds will continue good for some Years ; for I had saved a pretty large Quantity of them in the Year 1734. Part of which I sowed the following Year, but had not one Plant produced ; the Remainder of the Seeds I divided, and sowed some of them every succeeding Year, without any Success, until the Year 1738. when I sowed all the Seeds I had left, from which I had one Plant produced : so that if the Seeds are good, it is evident they will grow when they are four Years old. Therefore, whenever we receive good Seeds from abroad, or save any in this Country which are perfectly ripened, it will be proper to preserve some of them for a Year or two, lest a bad Season should happen, when the Plants may not perfect their Seeds ; so that if this Precaution be not taken, the Species may be lost in *Europe*.

The third Sort dies to the Root every Winter, and rises again the succeeding Spring : this must be constantly preserved in the Stove, and plunged into the Bark-bed, otherwise it will not thrive in this Country. During the Winter-season, when the Plants are decayed, they should have but little Water given to them ; for Moisture at that time will rot the Roots. In the Beginning of *March*, just before the Plants begin to shoot, is the proper Season to transplant and part the Roots ; when they should be planted into Pots of a middle Size, filled with light rich Earth, and then plunged into the Bark-bed, which should at this time be renewed with fresh Tan. When the Plants come up, they must be frequently refreshed with

Water ; but it must not be given to them in large Quantities, lest it rot their tender Roots ; and as the Warmth of the Season increases, it will be proper to admit a large Share of fresh Air, which will greatly strengthen the Plants ; but they must constantly remain in the Stove, otherwise they will not produce Flowers in this Country. The time of their Flowering is in the End of *July*, and in *August* ; but in *October* the Plants die to their Roots.

MARVEL OF PERU. *Vide* Jalapa.

MARUM, Mastich.

The Characters are ;

It is a Plant with a Lip-flower, consisting of one Leaf ; but has no Galea (or Crest), the Stamina supplying the Place of it ; but the Underlip is divided into five large Segments, the middlemost of which is hollow like a Spoon : these Flowers are produc'd single from the Wings of the Leaves : to which may be added, It has the Appearance of a Shrub, and an hot volatile Smell.

We have but one Species of this Plant at present in *England* ; which is,

MARUM *Syriacum vel Creticum*.
H. L. Syrian Mastich, vulgo.

This Plant is propagated by planting Cuttings, in any of the Summer-months, upon a Bed of fresh light Earth, observing to water and shade them, until they have taken Root ; after which they may be transplanted either into Pots or Borders of the same fresh light rich Earth : but the greatest Difficulty is, to preserve it from the Cats ; which will come from a great Distance to tear this Plant in Pieces, and from which there is scarcely any guarding it, especially near Towns and Cities, where there are many of these Animals ; unless by planting large Quantities

tities of it: for it is observable, that where there are but few of them, the Cats will not leave them until they have quite demolish'd them; whereas, when a large Quantity of the Plants are set in the same Place, they will not come near them.

Those Plants which are put into Pots, should be shelter'd in Winter; but those in the full Ground will abide the Cold of our ordinary Winters very well, provided they are planted on a warm dry Soil; and may be clipt into Pyramids or Balls; in which Figures I have seen some Plants of this Kind near three Feet high, which have endur'd the open Air several Years without any Covering.

MARUM VULGARE. *Vide* Mastichina.

MARYGOLD *Vide* Caltha.

MARYGOLD (AFRICAN). *Vide* Tagetes.

MARYGOLD (FIG). *Vide* Ficoides.

MARYGOLD (FRENCH). *Vide* Tagetes.

MASTERWORT. *Vide* Imperatoria.

MASTICHINA, Herb-mastich, or Mastich-thyme.

The Characters are;

The Leaves are like those of Thyme, but larger: the Stalks are upright and shrubby: the Cup of the Flower is long, narrow, and tubulous; but is spread open at the Top, where it is cut into five long slender Segments, and has a Woolliness over every Part of it: the Galea (or Crest) of the Flower stands upright, and is divided into two Parts: the Beard (or Lowerlip) is divided into three Segments, so that it appears somewhat like a Flower with five Leaves: the Flowers are collected into thick Whorles, and have a white Down growing upon the oblong Heads.

The Species are;

1. MASTICHINA. *Boerb. Ind.* Herb-mastich, or Mastich-thyme.

2. MASTICHINA *folio minore.* Herb-mastich with a lesser Leaf.

There seems to be another Variety of this Plant in some of the *English* Gardens, which is of humbler Growth than the common Sort: the Spikes of Flowers are also shorter and looser; but the Leaves are full as large as those of the common Sort. This I don't remember to have seen taken notice of in any of the Books of Botany, though it seems constantly to retain this Difference.

These Plants may be propagated by planting Cuttings, during any of the Summer-months, in a Bed of light rich Earth; observing to water and shade them, until they have taken Root: after which they may be transplanted into a light dry Soil, and have a warm Situation; where they will endure the Cold of our ordinary Winters very well; and produce great Quantities of Flowers in July; but seldom ripen their Seeds in this Country.

The flowering Part of this Plant is order'd as an Ingredient in Venicetreacl; for which Purpose it should be propagated in Physic-gardens. And the Plant, having an agreeable Scent, and being easily cultivated, may merit a Place in the Borders of every good Garden; where it may be reduc'd to a regular Head, and will appear very handsome.

MATRICARIA, Feverfew.

The Characters are;

It hath a fibrose Root: the Leaves are conjugated, and divided into many Segments: the Cup of the Flower is squamose, and hemispherical: the Flowers grow in an Umbel upon the Top of the Stalks, and the Rays of the Flower are, for the most part, white.

The

The Species are;

1. *MATRICARIA vulgaris sativa*.
C. B. P. Common Feverfew.

2. *MATRICARIA vulgaris vel sativa, caulibus rubentibus*. H. L. Common Feverfew, with redish Stalks.

3. *MATRICARIA vulgaris vel sativa, floribus nudis bullatis*. H. L. Common Feverfew, with naked Flowers.

4. *MATRICARIA vulgaris vel sativa, florum petalis fistulosis*. H. L. Common Feverfew, with the Petals of the Flower quilled or fistulous.

5. *MATRICARIA vulgaris vel sativa, florum petalis fistulosis & brevioribus*. H. L. Common Feverfew, with short fistulous Petals.

6. *MATRICARIA flore pleno*. C. B. P. Double-flower'd Feverfew.

7. *MATRICARIA flore pleno, petalis fistulosis*. H. L. Feverfew with double fistulous Flowers.

8. *MATRICARIA flore pleno, petalis marginalibus planis, discoidibus fistulosis*. H. L. Double Feverfew, with the Petals round the Border plain; but those in the Middle of the Flower fistulous.

9. *MATRICARIA foliis elegantissimis crispis, & petalis florum fistulosis*. Tourn. Feverfew with elegant curl'd Leaves, and the Petals of the Flowers fistulous.

The first of these Species (which is the Sort used in Medicine) is found wild upon Dunghils, and uncultivated Places, in divers Parts of England; but is cultivated in those Gardens which propagate medicinal Plants to supply the Markets. The other Sorts are preserved in curious Botanic Gardens for Variety; and the sixth, seventh, and eighth Sorts deserve a Place in the Borders of large Gardens, for the Beauty of their Flowers.

These Plants are propagated by their Seeds, which should be sown in March, upon a Bed of light Earth; and, when they are come up, they should be transplanted out into Nursery-beds, at about eight Inches asunder, where they may remain till the Middle of May; when they may be taken up, with a Ball of Earth to their Roots, and planted in the Middle of large Borders, where they will flower in July and August; and, if the Autumn be favourable, will produce ripe Seeds the same Year. But it is not adviseable to permit them to seed, which often weakens and decays the Roots; therefore, when their Flowers are past, you should cut down their Stems, which will cause them to push out fresh Heads, whereby the Roots will be maintain'd.

When the different Varieties of these Plants are intermix'd with other Plants of the same Growth, they make an handsome Appearance during their Season of Flowering; which commonly continues a full Month, or more; so they may be allowed a Place in large Gardens, where there is room for Variety. But as their Roots seldom abide more than two or three Years, fresh Plants should be raised from Seeds, to supply their Places; for although they may be propagated by parting their Roots either in Spring or Autumn, yet these seldom make so good Plants as those obtained from Seeds. But the sixth Sort seldom produces any good Seeds: therefore that must be propagated in this manner, or by planting Cuttings in the Spring or Summer Months, which will take Root, and make good Plants.

MAUDLIN. Vide Ageratum.

MAUROCENIA. The Hottentot Cherry, vulgo.

The Characters are;

The Empalement of the Flower consists of one Leaf, which is cut into five small Segments: the Flower is divided into five Parts, and expands in form of a Rose: in the Centre of the Flower is situated the Pointal, attended by five Stamina, which are erect, and longer than the Petals: the Pointal afterward turns to an oval Fruit, containing three oblong Seeds included in the Pulp.

We have but one Species of this Plant; viz.

MAUROCENIA. *Lin. Hort. Cliff.*
The large Hottentot Cherry, *vulgo.*

This Plant hath been many Years preserved in curious Gardens, and hath commonly been known by the Name of Hottentot Cherry: and as there are two other Plants which have also been received by this Name, so this hath been distinguished from them, by the Title of Major; one of the other being called Media, and the other Minor; but as neither of those two have produced Flowers in England, so it is uncertain what Genus to range the last under. The second is placed under that of Padus, by Dr. Burman; so that neither of them are of this Family.

Dr. Dillenius has exhibited the Figure of this Plant, in the *Hortus Elthamensis*, under the Title of *Frangula sempervirens, folio rigido subrotundo*: and Dr. Boerhaave, in his Catalogue of the Leyden Garden, calls it, *Cerasus Afra, folio rotundo crassissimo rigido splendente*: but Dr. Linnæus separated it from both these Genera, and gave it this Title; tho', in the last Edition of his *Genera Plantarum*, he has joined this to the *Cassine*; but in this he has been mistaken.

This is a Native of the Cape of Good Hope, from whence it was in-

troduced into the Gardens in Holland; and hath since been spread into most Parts of Europe. The Leaves of this Plant are thicker than those of any other Plant yet known; and are almost round, having very short Pedicles; so that they grow close to the Branches. These are smooth, and of a deep-green Colour: the young Shoots of the Plant are generally very red, when they first appear; but afterward change to the same Colour as the older Branches. It rarely produces any Flowers in England; but the singular Structure of the Leaves has occasioned its being preserved in the Gardens of such Persons, who are Lovers of Exotic Plants.

This Plant is too tender to live in the open Air thro' the Winter, in England; but may be preserved in a good Green-house, where it may be treated in the same manner as the Orange-tree, with which Culture this Plant will thrive very well.

It is propagated by laying down of the Branches in the Autumn, which are generally a whole Year, and sometimes longer, before they take Root. When these Branches are laid down, it will be proper to slit or tongue them at a Joint (as is practised in laying down Carnations). This will promote their putting out of Roots: but these Layers must constantly be supplied with Water, especially in the Summer-season, otherwise they will not take Root in less than two Years.

I have sometimes propagated this Plant by Cuttings; but they are a long time before they take Root; so that this is a very tedious Method: therefore that of laying down the Branches should be preferred.

MAYS, Indian Wheat.

The Title of this Genus is altered by Dr. Linnæus to *Zea*.

The Characters are;

The whole Plant hath the Appearance of a Reed: the Male Flowers are produced at remote Distances from the Fruit on the same Plant, growing, for the most part, in a Panicle upon the Top of the Stalk: the Female Flowers are produced from the Wings of the Leaves, and are surrounded by three or four Leaves, which closely adhere to the Fruit until it is ripe.

The Species are;

1. *MAYS granis aureis*. Tourn. Common Indian Wheat, with yellow Grains.

2. *MAYS granis albicantibus*. Tourn. Indian Wheat, with white Grains.

2. *MAYS granis rubris*. Tourn. Indian Wheat, with red Grains.

3. *MAYS granis violaceis*. Tourn. Indian Wheat, with violet-coloured Grains.

5. *MAYS minor, granis luteis*. Lesser Indian Wheat, with yellow Grains.

6. *MAYS minor, granis rubris*. Lesser Indian Wheat, with red Grains.

7. *MAYS minor, granis violaceis*. Lesser Indian Wheat, with violet-colour'd Grains.

There are some other Varieties in the Colour of the Grains of this Plant, which are chiefly occasion'd by the interchanging of the *Farina* of one Sort with that of another, whereby the Spikes are often of two or three different Colours, as it commonly happens when the several Colours are planted in the same Spot of Ground.

This Plant is seldom propagated in *England* but as a Curiosity in some Gardens; but in *America* it is one of their greatest Supports, and is there cultivated with great Care, in the following manner:

They dig the Ground well in the

Spring, and, after having dressed it well, they draw a Line across the whole Width of the Piece intended to be planted; then they raise little Hills of Earth at about three Feet Distance, into each of which they plant two or three good Seeds, covering them about an Inch thick with Earth: then they move the Line four Feet farther, continuing to do the same through the whole Spot of Ground, so that the Rows may be four Feet asunder, and the Hills in the Rows at three Feet Distance. Six Quarts of this Seed are generally allow'd to an Acre of Ground, which, if the Soil be good, will commonly produce fifty Bushels of Corn.

If, in the planting of this Corn, you observe to put the Grains of any one Colour in a Field by itself, and no other coloured Grain stand near it, it will produce all of the same Colour again (as hath been affirm'd by several curious Persons in that Country): but if you plant them in Rows of the different Colours alternately, they will interchange, and produce a Mixture of all the Sorts in the same Row, and frequently on one and the same Spike. Nay, it is affirm'd, that they will mix with each other at the Distance of three or four Rods, provided there be no tall Fence or Building between to intercept them.

There is nothing more observ'd in the Culture of this Plant, but only to keep it clean from Weeds, by frequent hoeing the Ground; and, when the Stems are advanced, to draw the Earth up in an Hill about each Plant; which, if done after a Shower of Rain, will greatly strengthen them, and preserve the Ground about their Roots moist a long time.

When the Corn is ripe, they cut off the Stems close to the Ground;

and

and after having gather'd off the Spikes of Corn, they spread the Stalks to harden and dry, which they afterward use for covering of Sheds, &c. for which Purpose it is very useful to the Inhabitants of the warm Parts of *America*, as also for feeding their Cattle, while green, which is what they often use, when other Fodder is scarce.

But notwithstanding this Plant at present is only cultivated as a Curiosity in *England*, yet it is probable it might be propagated with Success, and become a Piece of good Husbandry in such Places where Beans will not succeed; as particularly in light sandy Lands (where the Inhabitants are at a great Loss for hearty Fodder for their Cattle), upon which Land this Plant will succeed extremely well, and supply the Want of Beans, perhaps better than any other Plant. The small Sort is what I would recommend to be sown in *England*, which is what the Inhabitants of *North-America* cultivate; and this will perfect its Seeds in less than four Months from sowing, as I have several times experienced; and, even in some of the most unfavourable Years, it has ripen'd in full four Months from sowing.

This Sort of Corn is much cultivated in several Parts of *Germany*, where the Inhabitants use it to make Bread; as also boil and roast the Grain, making several Dishes of it: but this is not esteemed very wholesome, nor will it agree with weak Stomachs.

In *Italy*, *Turky*, and many other Countries, this Sort of Grain is cultivated in plenty; and is the Food of most of the poorer Sort of People; but especially where there is a Scarcity of Wheat and Rice: and till Rice was cultivated in *Carolina*, Mays was the Support of most

of the Inhabitants in the *British* Northern Colouies.

In cultivating this Plant in *England*, the Ground should be well plowed and dressed, and the Rows of Corn placed four or five Feet asunder, and about two Feet asunder in the Rows; so that with an Horsehoeing-plough the Ground may be often stirred, whereby the Weeds will be intirely destroyed; which if duly observed while the Plants are young, there will be no Occasion to repeat it, after they are grown up to a pretty good Height; for then the Plants will prevent the Growth of Weeds, by overshadowing the Ground.

The best time to plant these Seeds is in the Beginning of *April*, when the Weather is settled; for if it be sown too soon, the cold Nights and wet Weather often destroy the Seeds; and if it be sown too late, and the Autumn should prove bad, it would not ripen well.

The large Sort, when cultivated as a Curiosity, should be sown upon a moderate Hot-bed in the Beginning of *March*; and in the Middle of *April* they should be carefully transplanted where they are to remain; and if the Season proves favourable, the Seeds will ripen very well: but without being thus early raised, this Sort seldom perfects the Grain in this Country. This Sort will grow ten or twelve Feet high in good Ground.

MEADIA, The *American* Cowslip, *valgo*.

The Characters are;

The Empalement is of one Leaf, which is cut into five oval Sections, which are reflexed: the Flower is also of one Leaf, which is deeply cut into five Sections: these are also reflexed back to the Tube, which is cylindrical, and closely embraces the Ovary, which is attended by five short Stamina, included in the Tube:
the

the Ovary afterward becomes an oval Seed-vessel, having one Cell opening in two Parts, and containing many small Seeds.

There is but one Species of this Plant at present known; *viz.*

MEADIA. *Catesb. Hist. Carolin. App.* Meadia, or American Cowslip.

This Plant was many Years since growing in the Garden of the Bishop of London at Fulham, where it passed under the Title of *American Cowslip*; which Name I have here continued to it, though it is a very improper one, for want of a better English Name, The Plant was for several Years lost in England, and hath lately been retrieved by Mr. Peter Collinson, who procured the Seeds from Mr. John Bartram, who gathered them beyond the *Apalachian Mountains in America*; and from the Plant which flowered in Mr. Collinson's Garden, Mr. Catesby has engraven a Figure, which is published in the Appendix to his *Natural History of Carolina*, under the Title here given to it of *Meadia*, in Honour to Dr. Richard Mead F.R.S. and Physician to the King, who is a great Encourager and Patron of Arts and Sciences.

The Leaves of this Plant are smooth, and of a pale-green Colour, having several Indentures on their Edges. These grow close to the Ground in form of the Cowslip: from between the Leaves the Flower-stem arises, which usually grows about a Foot, being naked, and sustaining at the Top many Flowers growing in an Umbel, like those of the Auricula or Cowslip. These are of a purplish Colour, each hanging downward upon pretty long Footstalks. The Petals of the Flowers are reflexed backward, in form of the *Cyclamen*, or sowbread; so that

at the first Appearance they have been taken for Flowers of that. After the Flowers are past, and the Seed-vessels formed, the Footstalks are reversed, and stand erect.

This Plant is at present very rare in Europe, being in very few Gardens. It delights in a light moist Soil, and a shady Situation, but not under the Dropping of Trees. It is hardy in respect to Cold; yet, in very wet Winters, the Roots are often destroyed; which is frequently the Fate with many hardy *American* Plants, and is occasioned by the frequent Alterations of the Weather in our Climate, where hard Frosts frequently follow great Rains: which kills many Plants, that are Natives of Countries, where the Winters are much more severe than in England. The Leaves of this Plant decay in the Autumn, and fresh ones are produced in the Spring; therefore the Roots must not be disturbed; but if hard Frosts should happen, a light Covering of Tanners Bark, Straw, or Peas-haulm, should be laid over them, which will protect them from Injury.

This Plant is propagated by Seeds, which, in good Seasons, the Plants produce in England: these should be sown in the Autumn, in Pots filled with light Earth, and placed under an Hot-bed-frame, where they may be exposed to the open Air in mild Weather, and covered with the Glasses to protect them from Frost. In the Spring the Plants will come up, which, when they have obtained Strength, should be transplanted into an East Border of light Earth; in which Situation the Plants will thrive better, than if exposed to a greater Warmth, during the Summer-season: but in the Autumn some of the Roots may be transplanted to a South Border, where, the

Spring following, they will produce Flowers.

MEADOW-SAFFRON. *Vide* Colchicum.

MEDICA, Medic, or La Lucerne.

The Characters are;

It hath a papilionaceous (or Butterfly) Flower, out of whose Empalement arises the Pointal, which afterwards becomes an intorted Pod somewhat like a Ram's Horn, in which are lodged kidney-shap'd Seeds.

The Species are;

1. MEDICA major erectior, floribus purpurascens. *J. B.* Greater upright Medic, or La Lucerne, with purplish Flowers.

2. MEDICA major erectior, floribus violaceis. *Tourn.* Greater upright Medic, or La Lucerne, with violet-coloured Flowers.

3. MEDICA major erectior, floribus luteis. *Tourn.* Greater upright Medic, or La Lucerne, with yellow Flowers.

4. MEDICA major erectior, floribus ex violaceis & luteo mixtis. *Tourn.* Greater upright Medic, or La Lucerne, with violet and yellow Flowers mix'd.

These Plants do not greatly differ from each other but in the Colour of their Flowers; tho' I think that with the violet-colour'd Flower produces the largest Leaves, and strongest Shoots; and that with the yellow Flowers, the smallest Leaves, and weakest Shoots: so that the violet-colour'd flowering is the best Sort to cultivate for Fodder.

This Plant is suppos'd to have been brought originally from *Medica*, and from thence had its Name *Medica*: it is by the *Spaniards* called *Alfafa*; by the *French*, *La Lucerne*, and *Grande Trefle*; and by several Botanic Writers it is called *Fenum Burgundiacum*, i. e. *Burgun-*

dian Hay. But there is little room to doubt of this being the *Medica* of *Virgil*, *Columella*, *Palladius*, and other ancient Writers of Husbandry, who have not been wanting to extol the Goodness of this Fodder, and have given Direction for the Cultivation of it in those Countries where they liv'd.

But notwithstanding it was so much commended by the Antients, and hath been cultivated to so good Purpose by our Neighbours in *France* and *Switzerland* for many Years, it hath not as yet found Reception in our Country, in any considerable Quantity; tho' it is evident, it will succeed as well in *England* as in either of the before-mentioned Countries, being extremely hardy, and resisting the severest Cold of our Climate: nay, I have had the Seeds which have happened to be scattered upon the Ground in Autumn, come up, and endure the Cold of a severe Winter, and make very strong Plants.

About the Year 1650. the Seeds thereof were brought over from *France*, and sown in *England*: but whether for want of Skill in its Culture, whereby it did not succeed, or that the People were so fond of going on in their old beaten Road, as not to try the Experiment, whether it would succeed here, or not, was the Occasion of its being intirely neglected in *England*, I cannot say. However, I hope, before I quit this Article, to give such Directions for its Culture, as will encourage the People of *England* to make farther Trial of this valuable Plant, which grows in the greatest Heat, and also in very cold Countries, with this Difference only, that in very hot Countries, such as the *Spanish West-Indies*, &c. where it is the chief Fodder for their Cattle at this time, they

they cut it every Month; whereas in cold Countries it is seldom cut oftener than two or three times a Year. And it is very likely, that this Plant will be of great Service to the Inhabitants of *Barbados*, *Jamaica*, and the other hot Islands in the *West-Indies*, where one of the greatest things they want is Fodder for their Cattle; since, by the Account given of this Plant by *Pere Feuillée*, it thrives exceedingly in the *Spanish West-Indies*, particularly about *Lima*, where they cut it every Week, and bring it into the Market to sell, and is there the only Fodder cultivated.

It is also very common in *Languedoc*, *Provence*, and *Dauphiné*, and all over the Banks of the *Rhône*, where it produces abundantly, and may be mowed five or six times in a Year. Horses, Mules, Oxen, and other domestic Cattle, love it exceedingly; but above all when it is green, if they are permitted to feed on it, and especially the Black Cattle, which will feed very kindly upon the dried Plant; the Excess of which is, by many People, thought to be very dangerous: but it is said to be exceeding good for Milch Cattle, to promote their Quantity of Milk; and is also said to agree with Horses the best of all, tho' Sheep, Goats, and most other Cattle, will feed upon it, especially when young.

The Directions given by all those who have written of this Plant, are very imperfect, and generally such as, if practised in this Country, will be found intirely wrong; for most of them order the mixing of this Seed with Oats or Barley (as is practised for Clover); but in this way it seldom comes up well; and if it does, it will draw up so weak by growing amongst the Corn, as not

to be recovered under a whole Year, if ever it can be brought to its usual Strength again.

Others have directed it to be sown upon a low rich moist Soil, which is found to be the worst, next to a Clay, of any for this Plant; in both which the Roots will rot in Winter, and in a Year or two the whole Crop will be destroyed.

But the Soil in which this Plant is found to succeed best in this Country is, a light dry loose sandy Land, which should be well plowed and harrowed, and the Roots of all noxious Weeds, such as Couch-grass, &c. destroyed; otherwise these will overgrow the Plants while young, and prevent their Progress.

The best time to sow the Seed is about the middle of *April*, when the Weather is settled and fair; for if you sow it when the Ground is very wet, or in a rainy Season, the Seeds will burst, and come to nothing (as is often the Case with several of the leguminous Plants); therefore you should always observe to sow it in a dry Season; and if there happens some Rain in about a Week or ten Days after it is sown, the Plants will soon appear above-ground.

But the Method I would direct for the sowing these Seeds, is as follows: After having harrowed the Ground very fine, you should make a Drill quite across the Ground about half an Inch deep, into which the Seeds should be scattered very thin; then cover them over about half an Inch thick, or somewhat more, with the Earth; then proceed to make another Drill about two Feet from the former, sowing the Seeds therein in the same manner as before, and so proceed through the whole Spot of Ground, allowing two Feet Distance between Row and Row, and scatter the Seeds very thin in the Drills.

In this manner, an Acre of Land will require about six Pounds of Seeds; for when it is sown thicker, if the Seed grows well, the Plants will be so close as to spoil each other in a Year or two, the Heads of them growing to a considerable Size, as will also the Roots, provided they have room. I have measured the Crown of one Root, which was in my Possession, eighteen Inches Diameter; from which I cut near four hundred Shoots at one time, which is an extraordinary Increase; and this upon a poor dry gravelly Soil, which had not been dung'd for many Years; but the Root was at least ten Years old; so that if this Crop be well cultivated, it will continue many Years, and be equally as good as when it was first sown: for the Roots generally run down very deep in the Ground, provided the Soil be dry; and altho' they should meet an hard Gravel a Foot below the Surface, yet their Roots would penetrate it, and make their Way downward, as I have experienced, having taken up some of them, which were above a Yard in Length, and had run above two Feet into a Rock of Gravel, which was so hard as not to be loosened without Mattocks, and Crows of Iron, and that with much Difficulty.

The Reason for directing this Seed to be sown in Rows is, that the Plants may have room to grow; and for the better stirring the Ground between them, to destroy the Weeds, and encourage the Growth of the Plants, which may be very easily effected with an Horsehoeing plough, just after the cutting the Crop each time, which will cause them to shoot again in a very little time, and be much stronger than in such Places where the Ground cannot be stirred: but you can't pretend to use a Plough

the first Season amongst it, until the Plants have taken good Roots in the Ground; therefore when they first come up, the Ground between should be hoed: and if in doing of this you cut up the Plants where they are too thick, it will cause the remaining to be much stronger. This Hoeing should be repeated two or three times while the Plants are young, according as the Weeds are produced, observing always to do it in dry Weather, that the Weeds may the better be destroyed; for if it be done in moist Weather, they will root and grow again.

With this Management, the Plants will grow to the Height of two Feet or more by the Beginning of *August*, when the Flowers will begin to appear; at which time it should be cut, observing to do it in a dry Season, and keep it often turn'd, that it may soon dry, and be carried off the Ground; for if it lie long upon the Roots, it will prevent their shooting again. After the Crop is taken off, you should stir the Ground between the Rows with an Hoe, to kill the Weeds, and loosen the Surface; which will cause the Plants to shoot again in a short time, so that by the Beginning of *September* there will be Shoots four or five Inches high; when you may turn in Sheep upon it to feed it down, for it will not be fit to cut again the same Season; nor should the Shoots be suffered to remain upon the Plants, which would decay when the frosty Weather comes on, and fall down upon the Crown of the Roots, and prevent their shooting early the succeeding Spring.

So that the best Way is to feed it until *November*; when it will have done shooting for that Season: but it should not be fed by large Cattle the first Year, because the Roots, being

being young, would be in Danger of being destroyed, either by their trampling upon them, or their pulling them out of the Ground: but Sheep will be of Service to the Roots by dunging the Ground, provided they do not eat it too close, so as to endanger the Crown of the Roots.

The Beginning of *February*, the Ground between the Roots should be again stirred with the Hoe-plough, to encourage them to shoot again; but in doing of this you should be careful not to injure the Crown of the Roots, upon which the Buds are at that time very turgid, and ready to push. With this Management, if the Soil be warm, by the Beginning of *March* the Shoots will be five or six Inches high; when, if you are in want of Fodder, you may feed it down till a Week in *April*: after which it should be suffered to grow for a Crop, which will be fit to cut the Beginning of *June*; when you should observe to get it off the Ground as soon as possible, and stir the Ground again with the Plough, which will forward the Plants shooting again; so that by the Middle or Latter-end of *July* there will be another Crop fit to cut, which must be managed as before: after which, it should be fed down again in Autumn; and as the Roots by this time will have taken deep Hold in the Ground, so there will be little Danger of hurting them, if you should turn in larger Cattle; but you must always observe not to suffer them to remain after the Roots have done shooting, lest they should eat down the Crown of the Roots below the Buds; which would considerably damage, if not destroy them.

In this manner you may continue constantly to have two Crops to cut,

and two Feedings upon this Plant: and in good Seasons there may be three Crops cut, and two Feedings; which will be a great Improvement, especially as this Plant will grow upon dry barren Soils, where Grass will come to little, and be of great Use in dry Summers, when Grass is often burnt up. And as it is an early Plant in the Spring, so it will be of great Service when Fodder falls short at that Season; when it will be fit to feed at least a Month before Grass or Clover; for I have had this Plant eight Inches by the tenth of *March*, at which time the Grass in the same Place has scarcely been one Inch high.

That the Cold will not injure this Plant, I am fully satisfied; for in the very cold Winter *Anno 1728-9*. I had some Roots of this Plant which were dug up in *October*, and laid upon the Ground in the open Air till the Beginning of *March*; when I planted them again, and they shot out very vigorously soon after; nay, even while they lay upon the Ground, they struck out Fibres from the Under-side of the Roots, and had begun to shoot green from the Crown of the Roots. But that Wet will destroy the Roots, I am fully convinced; for I sowed a little of the Seed upon a moist Spot of Ground for a Trial, which came up very well, and flourished exceedingly during the Summer-season; but in Winter, when the great Rains fell, the Roots began to rot at Bottom, and before the Spring were most of them destroyed.

The best Places to procure the Seed from, are *Switzerland*, and the Northern Parts of *France*, which succeed better with us than that which comes from a more Southern Climate: but this Seed may be saved in *England* in great Plenty; in order

to which, a small Quantity of the Plants should be suffered to grow uncut till the Seeds are ripe; when it must be cut, and laid to dry in an open Barn where the Air may freely pass through: but the Seed must be defended from the Wet; for if it be expos'd thereto, it will shoot while it remains in the Pod, whereby it will be spoil'd. When it is quite dry, it must be threshed out, and cleansed from the Husk, and preserved in a dry Place till the Season for sowing it: and this Seed sowed in *England* is much preferable to any brought from abroad, as I have several times experienced; the Plants produced from it having been much stronger than those produced from *French*, *Helvetian*, and *Turky* Seeds, which were sown at the same time, and on the same Soil and Situation.

I am inclinable to think, that the Reason of this Plant not succeeding, when it has been sown in *England*, has either been occasioned by the sowing it with Corn, with which it will by no means thrive (for tho' the Plant be very hardy when grown pretty large, yet at its first coming up, if it be incommoded by any other Plants or Weeds, it seldom does well; therefore it should always be sown by itself, and carefully cleared from Weeds until it has Strength, after which it is not easily destroyed); or perhaps People have sown it at a wrong Season, or in wet Weather, whereby the Seeds have rotted, and never come up, which hath discouraged their attempting it again: but however the Success has been, I dare aver, that if the Method of sowing and managing of this Plant, which is here laid down, be duly followed, it will be found to thrive as well as any other Sort of Fodder now cultivated in *England*, and will continue much

longer; for if the Ground be duly stirred between each Crop, and the last Crop fed, as hath been directed, the Plants will continue in Vigour twenty Years or more without renewing, provided they are not permitted to seed, which will weaken the Roots more than four times cutting it would do.

The Hay of this Plant should be kept in close Barns, it being too tender to be kept in Ricks open to the Air as other Hay; but it will remain good, if well dried before it be carried in, three Years. The People abroad reckon an Acre of this Fodder sufficient to keep three Horses all the Year round.

And I have been assured by Persons of undoubted Credit, who have cultivated this Plant, that three Acres of it have fed ten Cart-horses from the End of *April* to the Beginning of *October*, without any other Food, tho' they have been constantly worked. Indeed the best Use which can be made of this Grass is, to cut it, and give it green to the Cattle: where this hath been done daily, I have observed, that by the time the Field has been cut over, that Part which was the first cut, hath been ready to cut again; so that there has been a constant Supply in the same Field, from the Middle of *April* to the End of *October*: when the Season has continued long mild, and when the Summers have proved showery, I have known six Crops cut in one Season: but in the driest Seasons there will be always three. When the Plant begins to flower, it should then be cut; for if it stands longer, the Stalks will grow hard, and the Under-leaves will decay; so that the Cattle will not greedily devour it. Where there is a Quantity of this Grass cultivated, some of it should be cut before the Flowers appear;

appear; otherwise there will be too much to cut within a proper time.

When this is made into Hay, it will require a great deal of making; for as the Stalks are very succulent, so it must be often turned, and exposed a Fortnight before it will be fit to house; for this requires a longer time to make than St. Foin; but it is not so profitable for Hay, as to cut green for feeding of all Sorts of Cattle, but especially Horses, which are extremely fond of it; and to them it will answer the Purpose of both Hay and Corn; and they may be worked at the same time just as much as when they are fed with Corn, or dry Food.

MEDICA COCHLEATA, Snail-trefoil.

The Characters are;

These Plants differ from the former in the Fruit, which of these Kinds are shap'd like a Snail.

There are great Numbers of Sorts of this Plant, which are preserved in Botanic Gardens for Variety; but I shall in this Place only mention two or three of the most curious Sorts, which are cultivated in Gardens for the Oddness of their Fruit.

The Species are;

1. MEDICA *scutellata*. J. B. The Snail-trefoil, commonly called in the Seed-shops Snails.

2. MEDICA *orbiculata*. J. B. Flat round Snail-trefoil.

3. MEDICA *cochleata spinosa, echinis magnis, utrinque turbinatis, cum spinulis reflexis*. Raii Hist. Prickly cochleated Medic, with a large Head turbinated on every Side with reflexed Spines, commonly called Horns and Hedghog.

4. MEDICA *marina*. Lob. Icon. Sea Medic, or Snail-trefoil.

The two first Sorts are common in the *English* Gardens, their Seeds being frequently sold in the

Seed-shops in *London*; but the third Sort is pretty rare at present in *England*.

These three Sorts may be propagated by sowing their Seeds upon a warm dry Border the Beginning of *April*, observing always to do it in dry Weather; for if the Ground be very wet, or there should happen much Rain soon after they are put into the Earth, it very often bursts, and destroys the Seeds; but if some gentle Showers fall about a Week or ten Days after the Seeds are sown, it will bring up the Plants in a short time after. When they are come up, they should be carefully cleared from Weeds, and thinned out to about a Foot asunder, or more (for they must remain where they were sown, seldom succeeding when transplanted); and after this they will require no farther Care but only to keep them clear from Weeds; and in *July* they will flower, and their Fruit will ripen in a short time after. When the Plant is in full Beauty, the first Sort, at a small Distance, will appear as if it had a great Number of Snails upon it; and the third Sort, having large rough Heads, will make a very good Appearance: for which singular Oddness, a good Garden should always have a few Plants of each Sort, especially since they require very little Care to cultivate them.

When the Fruit is full-ripe, it should be gathered and laid by in a dry Place for the Seeds; for if they are permitted to remain upon the Plants, and there should Rain happen, the Seeds would sprout in the Heads, and be destroyed.

The fourth Sort is a perennial Plant, which is preserved by such Persons as are very curious in collecting great Variety of odd Plants. This may be propagated by sowing

The Seeds, as the former, or by planting Cuttings during any of the Summer months, which, if watered and shaded, will take Root in a short time; after which they must be planted in Pots fill'd with sandy Earth, and sheltered in Winter under an Hot-bed-frame, where they may have a great Share of free Air in mild Weather, and only require to be screened from hard Frost. This Plant is preserved for the beautiful Whiteness of its Leaves, which, when intermixed with other low Plants, makes a pretty Variety.

MEDICAGO, Moon-trefoil.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement arises the Pointal, which afterwards becomes a plain orbiculated Fruit, shaped somewhat like an Half-moon; in which are contained kidney shap'd Seeds.

The Species are;

1. *MEDICAGO annua, trifolii facie.* Tourn. Annual Moon-trefoil, with the Appearance of Trefoil.

2. *MEDICAGO vulnerariae facie, Hispanica.* Tourn. Spanish Moon-trefoil, with the Appearance of *Vulneraria*.

3. *MEDICAGO trifolia frutescens incana.* Tourn. Shrubby three-leav'd hoary Moon-trefoil, by many supposed to be the true *Cytisus* of *Virgil*.

The two first Sorts are annual Plants, which are preserved in Botanic Gardens for Variety, more than any singular Beauty or Use: these may be propagated by sowing their Seeds in the Beginning of *April* upon a Bed of light Earth, in the Places where they are to remain; and when they come up, they should be cleared from Weeds, and thinn'd to the Distance of a Foot asunder, after which they will require no farther Care, but only to keep them

clear from Weeds; and in *July* they will flower, and their Seeds will be perfected in *September*. The Seed-vessels of these Plants being shaped like Half-moons, is the only remarkable Difference between them and the *Medica's*.

The third Sort grows to be a strong Shrub, and will rise to the Height of five or six Feet, and may be reduced to a regular Head, when it will appear very beautiful: but it should not be cut too often, which would prevent its Flowering; for if the Shoots are permitted to grow without much Trimming, they will produce Flowers most Part of the Year, which, together with the Beauty of its silver-coloured Leaves, renders it worthy of a Place in every good Garden.

This Plant may be propagated by sowing the Seeds, either upon a moderate Hot-bed, or a warm Border of light Earth, in the Beginning of *April*; and when the Plants come up, they should be carefully cleared from Weeds; but they should remain undisturbed, if sown in the common Ground, till *September* following; but if on an Hot-bed, they should be transplanted about *Midsummer* into Pots, placing them in the Shade until they have taken Root: after which they may be removed into a Situation where they may be screened from strong Winds; in which they may abide till the Latter-end of *October*, when they must be put into a Frame, in order to shelter them from hard Frosts; for those Plants which have been brought up tenderly, will be liable to suffer by hard Frosts, especially while they are young. In *April* following these Plants may be shaken out of the Pots, and placed into the full Ground where they are designed to remain, which should be in a light Soil, and a warm Situation,

ation, in which they will endure the Cold of our ordinary Winters extremely well, and continue to produce Flowers the greatest Part of the Year.

Those also which were sown in an open Border may be transplanted in *September* following in the same manner: but in doing of this, you must be careful to take them up with a Ball of Earth to their Roots, if possible; as also to water and shade them until they have taken Root; after which they will require little more Care than to keep them clear from Weeds, and to prune their Heads once a Year, *i. e.* about the Beginning of *July*, in order to reduce them to a regular Figure: but you should never prune them early in the Spring, nor late in the Autumn; for if Frost should happen soon after they are pruned, it will destroy the tender Branches, and, many times, the whole Plant is lost thereby.

These Plants have been constantly preserved in the Green-house; supposing them very tender: but I have had large Plants of this Kind, which have remained in the open Air in a warm Situation many Years without any Cover, and have been much stronger, and flowered better, than those which were housed; tho' indeed, it will be proper to keep a Plant or two in Shelter, lest by a very severe Winter (which sometimes happens in *England*) the Plants abroad should be destroyed.

They may also be propagated by Cuttings which should be planted in *April*, upon a Bed of light Earth, and watered and shaded until they have taken Root; after which they may be exposed to the open Air; but they should remain in the same Bed till *September* following, before

they are transplanted; by which time they will have made strong Roots, and may be then removed with Safety to the Places where they are to remain, observing (as was before directed) to water and shade them until they have taken Root: after which you may train them up with stait Stems, by fastening them to Sticks, otherwise they are apt to grow crooked and irregular; and when you have got their Stems to the Height you design them, they may then be reduced to globular Heads; and, with pruning their irregular Shoots every Year, they may be kept in very good Order.

This Plant grows in great Plenty in the Kingdom of *Naples*, where the Goats feed upon it, with whose Milk the Inhabitants make great Quantities of Cheese: it also grows in the Islands of the *Archipelago*, where the *Turks* use the Wood of these Shrubs to make Handles for their Sabres; and the *Calogers* of *Patmos* make their Beds of this Wood.

This is, as hath been before observed, by many People supposed to be the *Cytisus* of *Virgil*, *Columella*, and the old Writers in Husbandry, which they mention as an extraordinary Plant, and worthy of Cultivation for Fodder; from whence several Persons have recommended it as worth our Care in *England*. But however useful this Plant may be in *Crete*, *Sicily*, *Naples*, or those warmer Countries, yet I am persuaded it will never thrive in *England*, so as to be of any real Advantage for that Purpose; for in severe Frost it is very subject to be destroyed, or at least so much damag'd as not to recover its former Verdure before the Middle or Latter-end of *May*; and the Shoots which are pro-

produced, will not bear cutting above once in a Summer, and then will not be of any considerable Length; and the Stems, growing very woody, will render the cutting of it very troublesome: so that, upon the Whole, it can never answer the Trouble and Expence in cultivating it; nor is it worth the Trial, since we have so many other Plants preferable to it; tho' in hot dry rocky Countries, where few other Plants will thrive, this may be cultivated to great Advantage, since in such Situations this Plant will live many Years, and thrive very well.

But however unfit this may be for such Uses in *England*, yet for the Beauty of its hoary Leaves, which will abide all the Year, together with its long Continuance in Flower, it deserves a Place in every good Garden, where, being inter-mixed with Shrubs of the same Growth, it makes a very agreeable Variety.

MEDLAR. *Vide* Mespilus.

MELAMPYRUM, Cow-wheat.

The Characters are;

The Leaves grow opposite by Pairs: the Flower consists of one Leaf, is of an anomalous personated Figure, and divided into two Lips; the uppermost of which has a Spur, but the under one is intire: the Fruit is round, and divided into two Cells, containing Seeds resembling Grains of Wheat.

The Species are;

1. MELAMPYRUM *luteum latifolium*. C. B. P. Yellow broad-leav'd Cow-wheat.

2. MELAMPYRUM *luteum angustifolium*. C. B. P. Narrow-leav'd yellow Cow-wheat.

3. MELAMPYRUM *coma purpurascens*. C. B. P. Cow-wheat with purple Top.

The two first Sorts are very common in Woods, and shady Places,

growing near the Foot of Trees in divers Parts of *England*, and are never cultivated in Gardens.

The third Sort is very rarely found wild in *England*, except in *Norfolk*; where, in some of the sandy Lands, it is often found wild: but in *West-Friseland* and *Flanders* it grows very plentifully among the Corn; and *Clusius* says, it spoils their Bread, making it dark; and that those who eat of it, used to be troubled with Heaviness of the Head, in the same manner as if they had eaten Darnel or Cockle: but *Mr. Ray* says, he has eaten of this Bread very often, but could never perceive, that it gave any disagreeable Taste, or that it was accounted unwholesome by the Country-people, who never endeavour to separate it from the Corn: and *Tabernæmontanus* declares, He has often eaten it without any Harm; and says, it makes a very pleasant Bread. It is a delicious Food for Cattle, particularly for fattening of Oxen and Cows: for which Purpose it may be cultivated in the same manner as hath been directed for the *Fagopyrum*, or Buck-wheat: it loves a light sandy Soil.

MELASTOMA, The American Gooseberry-tree, *vulgo*.

The Characters are;

The Empalement of the Flower is of one Leaf, swelling like a Bladder: the Flower is composed of five roundish Petals, which are inserted in the Border of the Empalement: in the Centre is situated the Pointal, attended by ten Stamina, supporting oblong Summits, which are erect: the Pointal afterward changes to a pulpy Berry, having five Cells, which are filled with small Seeds.

The Species are;

1. MELASTOMA *foliis ovato-lanceolatis crenatis, nervis quinque longitudinalibus,*

undinalibus, extimis obsoletioribus. Lin. Hort. Cliff. American Gooseberry-tree, with oval spear-shaped Leaves having five longitudinal Veins.

2. *MELASTOMA foliis ovato-lanceolatis integerrimis subtus sericeis, nervis ante apicem coeuntibus. Lin. Hort. Cliff.* American Gooseberry-tree, with whole oval spear-shaped Leaves, having three Veins which join before they reach the End of the Leaves.

3. *MELASTOMA foliis lanceolatis trinque glabris, nervis tribus ante apicem coeuntibus. Lin. Hort. Cliff.* American Gooseberry-tree, with spear-shaped Leaves, smooth on both Sides, and three Veins joining before they reach the Bottom.

4. *MELASTOMA foliis lanceolatis, nervis tribus longitudinalibus subtus glabris coloratis. Lin. Hort. Cliff.* American Gooseberry-tree, with spear-shaped Leaves, having three longitudinal Veins, and smooth on their Under-side.

5. *MELASTOMA quinquenervia varia major, capitulis sericeis villosis. Burm. Zeyl.* Greater hairy American Gooseberry-tree, with Leaves having five Veins, and the Heads covered with a silky Down.

6. *MELASTOMA foliis oblongo-acuminatis, subtus niveis, nervis quinque longitudinalibus, floribus umbellatis.* American Gooseberry-tree, with oblong oval-pointed Leaves, white on their Under-side, and three longitudinal Veins, the Flowers growing in an Umbel.

7. *MELASTOMA hirsutissima, foliis acutis, subtus aureis, nervis quinque longitudinalibus, fructu verticillato.* The most hairy American Gooseberry-tree, with pointed Leaves which are of a gold Colour on their Under-side, having five longitudinal Veins, and the Fruit growing in whorles round the Stalks.

These Plants are Natives of the warmest Parts of *America*, and some of them also grow in *India*. Most of these grow upon the Mountains in the Islands of *Jamaica*, and in the *Brazils*; but I do not find, that the Fruit are eaten by the Inhabitants of those Places.

The Title of this Genus was given by Professor *Burman* of *Amsterdam*, in the *Thesaurus Zeylanicus*: some of these Plants have been titled *Sambucus*; others *Christophoriana*: and to some of the Species Dr. *Plukenet* gave the Title of *Acidendron*: but Sir *Hans Sloane*, and Father *Plumier*, have given them the Title of *Grossularia*; from whence I have applied the *English* Name of Gooseberry to them, which is the Name by which some of them are known in *America*.

The first Sort rises about four or five Feet high; the Stem and Branches being covered with a russet Down: the Leaves are placed on the Branches by Pairs, growing opposite, upon pretty long Footstalks: these Leaves are also covered with the same russet Down, and having five Ribs or Veins running thro' the Leaves from End to End, with small transverse Ribs: the Fruit is produced at the End of the Shoots, which is a pulpy blue Berry, as large as a Nutmeg.

The second Sort grows to be a large Tree, having many crooked Branches, covered with a brown Bark: the Leaves are placed alternately on the Branches: these Leaves are smooth, intire, and above five Inches long, and two broad in the Middle, with three deep Veins running thro' them: the Upper-side of these Leaves are of a fine Green, and smooth; but the Under-side is covered with a soft white Lanugo or Down, which makes a fine Appearance,

The third Sort grows to the Height of twenty Feet, with a large Trunk, covered with a russet smooth Bark: the Leaves of this Tree are very large, of a light-green Colour on their Upper-side, but white underneath: these are placed by Pairs on the Branches, and make a beautiful Appearance when the Trees are viewed at a Distance.

The fourth Sort seldom grows more than eight or ten Feet high: the Leaves are about four Inches long, having three Veins running the whole Length: the Under-side of them are of a Gold-colour, and smooth: these are placed by Pairs on the Branches.

The fifth Sort seldom rises above four Feet high; the Stalks are angular, and covered with a russet Down: the Leaves have also the same Down growing on their Under-side: these are placed by Pairs on the Branches.

The sixth Sort grows to the Height of twenty Feet or more, with a strait Trunk: the Leaves are very large, and of a beautiful Silver-colour on their Under-side: these are placed by Pairs on the Branches: the Flowers come out at the Extremity of the Branches, in form of an Umbel: these are not larger than a small Nut, and of a bluish Colour.

The seventh Sort grows about ten or twelve Feet high; the Branches, Stem, and Leaves, being covered with a russet Lanugo or Down: these Leaves are about three Inches long, and one and an half broad; having five Veins running the Length of the Leaves: the Fruit of this is produced in Whorles round the Branches.

All these Plants are esteemed by those who are curious, for the singular Beauty of their Leaves; which make a fine Appearance, when

viewed growing on the Plants: some of these Leaves are fourteen Inches long, and upward of four Inches broad; and most of them are either white, russet, or yellow, on their Under-side; so that the different Colours of the two Sides of the Leaves make an agreeable Variety. There are many more Sorts of this Tree than I have here enumerated, which have been discovered by some curious Persons, in the *Spanish West-Indies*; from whence I have received dried Samples: but as many of them were gathered imperfect, and not well preserved, they are not very distinguishable.

There are very few of these Plants at present in any of the *European Gardens*; which may have been occasioned by the Difficulty of bringing over growing Plants from the *West-Indies*: and the Seeds, being small when they are taken out of the Pulp, soon become dry; so never succeed: the best way to obtain these Plants is, to have the intire Fruits put up in dry Sand, as soon as they are ripe, and forwarded by the soonest Conveyance to *England*: these should be immediately taken out when they arrive, and the Seeds sown in Pots of light Earth, and plunged into a moderate Hot-bed of Tanners Bark. When the Plants come up, and are fit to remove, they must be each planted into a small Pot of light Earth, and plunged into the Tan-bed; and may afterward be treated in the manner directed for the *Guanabanas*; to which I shall desire the Reader to turn, to avoid Repetition.

MELIANTHUS, Honey-flower.

The Characters are;

It hath a perennial Root, and the Appearance of a Shrub: the Leaves are like those of Eurnet: the Cup of
the

the Flower is divided into several Parts: the Flower consists of four Leaves, and is of an anomalous Figure: the Petals, or Leaves, are placed sometimes in the Shape of a Fan, and at other times are of a conical Figure: the Ovary becomes a Fruit resembling a Blaader four-corner'd, divided into four Cells, and pregnant with roundish Seeds.

The Species are;

1. *MELIANTHUS Africanus. H.L.*

The large Honey-flower, vulgarly called the Locust or Wild Honey.

2. *MELIANTHUS Africanus minor foetidus. Com. Rar.* The smaller stinking Honey-flower.

The first of these Plants is pretty common in many *English* Gardens, where it is preserved as a Curiosity. This produces large Spikes of chocolate-colour'd Flowers in *May*; in each of which is contained a large Quantity of a black sweet Liquor, from whence it is supposed to derive its Name.

This Plant was formerly preserved in Green-houses, as a tender Exotic; but if planted in a dry Soil, and a warm Situation, will endure the Cold of our ordinary Winters very well; and if, in a severe Frost, the Tops of them should be destroyed, yet the Roots will abide, and put forth again the succeeding Spring; so that there is no great Danger of losing it: and the Plants which grow in the open Air always flower much better than those which are preserved in the Green-house, as being less drawn, which always is hurtful to the Flowering of Plants, and many times prevents their producing any Flowers: for it rarely happens, that any of those Plants of this Sort, which are placed in the Green-house, flower; but they are apt to draw up tall and weak; and those Branches which produce Flowers generally

decay soon after: so that altho' the Stems become woody, yet they are not of long Duration; but the Roots spread where they have room, and send out a great Number of Stems annually: and when the Plants grow in the full Ground, all those Stems which are not injured by Frost, seldom fail to flower the Spring following; so that the surest Method to have them flower is, to cover the Shoots of these Plants in frosty Weather, to prevent their Tops being killed by the Cold.

This Plant may be propagated by taking off its Suckers or Side-shoots any time from *March* to *September*, observing to choose such as are furnished with Fibres; and after they are planted, you must water and shade them, until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds: they may also be propagated by planting Cuttings, during any of the Summer-months; which, if watered and shaded, will take Root very well, and may afterwards be transplanted where they are designed to remain.

The second Sort is less common than the former, and only to be found in some curious Collections of Plants; tho' it seems to be equally as hardy as the former. This produces smaller Spikes of Flowers; but they are much more beautiful than the former, their Flowers having a Mixture of red, green, and yellow. This flowers in *May*, and sometimes perfects its Seeds with us, by which it may be propagated; and the Plants obtained from such Seeds would be hardier than those which come from abroad, or are raised from Slips. This may be propagated in the same manner as the former, and requires much the same Culture, tho' it is commonly preserved in the Green-house:

house: but I have seen Plants of this Kind which were growing in the Garden of *Charles du Bois*, Esq; at *Mitcham* in *Surry*, under a warm Wall, which produced a greater Quantity of Flowers, and ripened their Seeds better, than any of those Plants which are preserved in the Green-house. This Sort commonly grows to a greater Height than the former, and its Branches become more woody.

MELILOTUS, Melilot.

The Characters are;

It hath a papilionaceous Flower: out of whose Empalement arises the Pointal; which afterward becomes a naked Capsule, that is not hid in the Empalement (as in Trefoil) pregnant with one or two roundish Seeds: to these Notes may be added, The Leaves grow by Threes on the Footstalks, and the Flowers are produced in a Spike.

The Species are;

1. MELILOTUS *officinarum* Germaniæ. C. B. P. Common Melilot.

2. MELILOTUS *fruticosa candida major*. Mor. Hist. Shrubby Melilot, with a white Flower.

3. MELILOTUS *major odorata violacea*. Mor. Hist. Greater sweet-scented Melilot, with a violet-colour'd Flower, commonly called Sweet Trefoil, or *Lotus Urbana*.

4. MELILOTUS *corniculis reflexis, major*. C. B. P. Greater Melilot, with reflexed Horns.

5. MELILOTUS *corniculis reflexis, minor vel repens*. C. B. P. Smaller creeping Melilot, with reflexed Horns.

6. MELILOTUS *Italica, folliculis rotundis*. C. B. P. Italian Melilot, with round Leaves.

7. MELILOTUS *angustifolia repens, folliculis rotundis*. C. B. P. Narrow-leav'd creeping Melilot, with round smaller Leaves.

8. MELILOTUS *lutea minor, floribus & folliculis minoribus, spicatum & dense dispositis*. Mor. Hist. Smaller yellow Melilot, with smaller Flowers and Pods, growing in a thick Spike.

9. MELILOTUS *Messauensis procumbens, folliculis rugosis sublongis spicis floram brevibus*. Raii Syn. Trailing Melilot of *Messina*, with rough oblong Leaves, and short Spikes of Flowers.

10. MELILOTUS *Cretica humillima humifusa, flore albo magno*. Tournef. Cor. Low Melilot of *Crete*, with a large white Flower.

11. MELILOTUS *capsulis reni similibus, in capitulum congestis*. Tournef. Melilot Trefoil.

The first Sort here mentioned is that used to make the Melilot Plaster: this is found wild in several Parts of *England*; but is generally cultivated in some Gardens near *London*, from whence the Markets are supplied with it. The second Sort is by some suppos'd to be only a Variety of the first, differing in the Colour of its Flowers: but this is a Mistake; for the whole Plant has a very different Appearance, the Leaves being narrower, the Stalks much taller, nor has it near so strong a Scent. The third Sort is sometimes used in Medicine, but is rarely cultivated, except in Botanic Gardens. This is placed in the Catalogue of Simples annexed to the *College Dispensatory*, under the Title of *Lotus urbana*, or *Lotus hortensis odora*.

These may be all cultivated by sowing their Seeds in *March* upon a Bed of light Earth; and when the Plants are come up, they should either be transplanted out, or hoed, so as to leave them eight or ten Inches asunder, especially the two first Sorts, which will abide two or three Years, and grow very large, observing

observing to keep them clear from Weeds; and in *July* following they will flower, when they may be cut for Use, which will cause them to push out new Shoots, whereby the Roots will be maintained thro' the Winter, and flower in *May*, or the Beginning of *June*, the succeeding Year. The cutting off the Shoots will maintain the Roots much longer, than if they were permitted to stand till the Seeds are ripe; so that those Roots you intend for Seeds, must not be depended on to stand a very long time.

The third Sort is an annual Plant, which may be sown as the two former; but should not be transplanted, but rather hoed out to the Distance of five or six Inches, and permitted to remain in the same Place, observing to keep them clear from Weeds; and they will flower in *June*, and their Seeds will be ripe in *August*.

The six next-mentioned Sorts are annual Plants, which grow wild in the South of *France*, and in *Italy*; from whence the Seeds of them have been procured by such Persons who are curious in Botany. These Sorts are all of them preserved in Botanic Gardens for Variety; but they are Plants of no great Beauty, nor are they used in Medicine. But if there were Trials made of some of the Kinds, I believe they might be found useful to sow for feeding of Cattle, as the last Sort here mentioned is at present in divers Parts of *Europe*, which was the Reason of my enumerating these Sorts here: for as some of the other Sorts are very hardy, and will grow on almost any Soil; therefore if they are found to be equally good with the None such, they may be better worth cultivating, because they are of much larger Growth; so consequently will produce much more Fodder on

on an Acre of Land, than that will. But as I have had no Opportunity of trying if the Cattle will eat any of them, I cannot recommend them, but by way of Trial to such Persons who are curious in making these Sorts of Improvement.

As these are annual Plants, their Seeds must be sown every Year; or if they are permitted to scatter when ripe, the Plants will come up in Autumn, and abide the Winter's Cold very well in this Country; and those Plants which come up in Autumn, will grow much larger than those which are sown in the Spring, and will more certainly produce good Seeds. Therefore those Persons who are curious to preserve their Kinds, should either sow them in Autumn soon after the Seeds are ripe, or permit them to scatter their Seeds; and the self-sown Plants may be easily transplanted where they are designed to grow; and they will require no farther Care, but to keep them clear from Weeds. They will all of them grow on almost any Soil; but they will thrive better on dry light sandy Soil, than on a stiff clayey Ground.

The seventh Sort is an abiding Plant, which rarely produces Seeds in this Country, and is propagated by parting the Roots in the Spring. This Sort is not so hardy as the others; therefore some of the Plants should be preserved in Pots, that they may be removed into Shelter in Winter; for very hard Frosts will destroy them, if they are exposed; but they must always have as much free Air as possible in mild Weather; so that if they are placed under a common Hot-bed frame in Winter, where the Glasses may be drawn off every Day in mild Weather, and only covered in hard Frost, the Plants will thrive much better than where they are placed in a Greenhouse.

house. In Summer the Plants must be frequently watered in dry Weather, and kept clear from Weeds, which is all the Culture they require.

The eleventh Sort, which is cultivated in the open Fields in several Parts of *Europe*, is an Inhabitant of this Kingdom; growing wild by the Sides of Paths, and on arable Land, in great Plenty every-where near *London*; and if the Seeds are permitted to scatter, there will be a Supply of Plants to stock the Ground; so that it often becomes a very troublesome Weed in Gardens, and is difficult to extirpate after it hath gotten Possession.

The Seeds of this Plant are sown in the Spring, either alone, or with Barley; the latter of which I should recommend; for as this is a low trailing Plant, it will not injure the Barley, which will get forward before these Plants come up; and if there doth not arise a great Crop of the Plant, yet being permitted to stand until the Barley is ripe, the Seeds of it will be ripe, and most of it scattered, by that time; and after the Corn is taken off, the Rains in Autumn will soon bring up the Plants, which will flourish all the Winter; and the Spring following will afford an early Feed for Cattle.

Where this Plant is sown by itself, it must not be fed or mow'd, until the Seeds are ripe; for as it is an annual Plant, so where it is eaten, or cut down, the Roots will perish; and if there is not a Supply of young Plants to succeed them, the Crop will be destroyed in one Season. Indeed, as these Plants begin to flower very young, and near their Roots, so, before the Seeds are formed at the Extremity of the Shoots, those produced near the Root will

be ripe and scattered, from whence young Plants will come up, and supply the Crop; which has deceived some Persons, who have thought this Plant will abide two or three Years, and produce several Crops from the same Root; which is a great Mistake, for the Root perishes annually. But as the Plants produce such Quantities of Seeds at almost every Joint of the Stalks, it is almost impossible to destroy the Crop totally, if the Plants are permitted to grow to any Size, before they are fed or cut down.

The Seeds of this Plant being smaller than Clover-seeds, a less Quantity will sow an Acre. If it is sown by itself, there should be ten Pounds allowed to an Acre; but if it is sown with Barley, six Pounds will be sufficient. When it is sown with Barley, the Barley should be first sown and harrow'd; and then the Seeds of this should be sowed, and the Land rolled, which will bury this Seed deep enough.

This Plant is frequently confounded by the Farmers, and other Persons who are ignorant in Botany, with the Hop-trefoil; the Seeds of this being often intermixed with those: there are some who are a little more curious, that distinguish this by the Name of black Seeds; yet these mix the Seeds of both together.

There is not a worse Weed in Corn-land than the common Melilot, which in some Parts of *Cambridgeshire* and *Suffolk* infests most of the Fields: and as the Seeds of this Plant are ripe by the time of Harvest, the Plant being cut with the Wheat; when that is threshed out, the Seeds of the Melilot are intermixed with the Corn; so that the Bread which is made with the Flour hath a strong Taste of
the

the Melilot, than which nothing can be more disagreeable to a Person who hath the least Taste : and yet this is the Case in whole Parishes, where the ignorant People are contented to go on eating of this Bread, rather than take Pains to destroy this Plant, which might be done in two or three Years, if they would carefully weed it out, and suffer no Plants to stand to produce Seeds.

MELISSA.

The Characters are ;

It is a verticillate Plant, with a labiated Flower, consisting of one Leaf, whose Upper-lip is roundish, upright, and divided into two ; but the Under-lip is cut into three Parts : out of the Flower-cup rises the Pointal, which is attended, as it were, with four Embryoes : these afterward turn to so many Seeds, which are roundish, and inclos'd in the Flower-cup : to these Notes may be added, The Flowers are produced from the Wings of the Leaves ; but are not whorled quite round the Stalks.

The Species are ;

1. MELISSA *hortensis*. C. B. P. Garden Balm.

2. MELISSA *hortensis, foliis ex luteo variegatis*. Garden Balm, with yellow variegated Leaves.

3. MELISSA *Romana, molliter hirsuta & graveolens*. H. R. Par. Stinking Roman Balm, with softer hairy Leaves.

There are some other Species of this Plant, which are preserved in curious Gardens for Variety : but as they are never cultivated for Use, I shall pass them by without naming.

The first of these Sorts is cultivated in Gardens for medicinal and culinary Use : this is propagated by parting the Roots, either in Spring or Autumn, or by planting the Slips at about eight or ten Inches Di-

stance, in Beds about four Feet wide, leaving a Path two Feet between the Beds, for the Conveniency of cleaning and watering them.

When they are first planted, if the Season proves dry, you must carefully water them until they have taken Root, otherwise they will be subject to decay ; but afterward they will require no farther Care, but only to keep them clear from Weeds. At *Michaelmas* these Plants should be transplanted where they are to remain, at about two Feet asunder. These Plants should be transplanted and parted every other Year, otherwise their Roots will grow so large as to injure each other, and, for want of room, will rot and decay.

The variegated Sort makes a very pretty Appearance in the Spring-season, while the Leaves are young ; but afterward their Beauty goes off : however, a few Plants of this Sort may be planted in large Borders for Variety.

The third Sort is a Plant of no great Beauty or Use ; but is preserved in several curious Gardens for Variety. This is somewhat tenderer than the other, and should have a dry Soil, and a warm Situation, otherwise it is sometimes destroyed in severe Frosts.

The two first Sorts will grow in almost any Soil or Situation ; but the striped Sort, should not have a rank Soil, which would cause it to grow vigorously, whereby the Beauty of its variegated Leaves soon goes off.

MELISSA TURCICA. Vide Dracocephalon.

MELO, Melon.

Dr. *Linnaeus* has joined the *Melo*, *Anguria*, and *Colocynthis*, with the *Cucumis*, making them only Species of the same Genus : but where the Fruit is allowed as a characteristic

Note, these cannot be joined in the same Genus.

Of these he supposes but one Species; for Instance, all the Melons are one; the Cucumbers but one; the Water-melons but one; nor the Bitter Gourd will he allow but one Species: but, from many Years Experience, I have found, that there are distinct Species of each Genus; which will constantly produce the same from Seeds: tho' I allow, that there are several accidental Varieties in each, which vary from Seed.

The Characters are;

The Flower consists of one Leaf, which is of the expanded Bell-shape, cut into several Segments, and exactly like those of the Cucumber: some of these Flowers are barren, not adhering to the Embryo: others are fruitful, growing upon the Embryo, which is afterward changed into a Fruit, for the most part of an oval Shape, smooth or wrinkled, and divided into three seminal Apartments, which seem to be cut into two Parts, and contain many oblong Seeds.

The Species are;

1. MELO *vulgaris*. C. B. P. Common Musk Melon.

2. MELO *rotundus parvus*. C. B. P. Small round Musk Melon, commonly called the Portugal or Pocket Melon.

3. MELO *reticulatus*. J. B. Netted or wrought Melon.

4. MELO *magnus, cortice virente, semine parvo*. J. B. Greater Musk Melon, with a smooth green Skin, and a small Seed.

5. MELON *Hispanicus, cortice albo intus rubente*. White Spanish Melon, vulgo.

6. MELO *cortice lævi intus virente*. The green-flesh'd Melon, vulgo.

7. MELO *cortice tuberosus*. C. B. P. The Cantaloupe Melon.

8. MELO *autumnalis, cortice aspero & strumoso, dulci pulpa, Zatta dictus*. Hort. Pis. The Zatta Melon.

9. MELO *cortice piloso*. C. B. P. Melon with an hairy Skin.

10. MELO *hybernus suavis, cortice flavo*. Hort. Pis. Winter Melon.

There are some other Varieties, which are mentioned in Botanic Books, which are not cultivated for their Fruit, but are preserved as Curiosities in Botanic Gardens; therefore I shall not enumerate them here; for of those here mentioned, there are not above three, which are worth cultivating; these are the second, the seventh, and eighth Sorts.

The second Sort was many Years known in the English Gardens, by the Name of King Charles's Pocket Melon, being a small round Fruit: it might have received that Name from that Prince having carried one in his Pocket. This came to England from Portugal; but was neglected for many Years, I suppose from the Fruit being small; for most Gardeners value this Fruit for its Size, and not for the Flavour, especially those who cultivate them for the Market; so that if a Melon is but very large, if the Flesh is not eatable, they esteem it; and this has occasioned so great Scarcity of these Fruits, which are tolerable: for it is not only in England, but most Parts of Europe, that from the great Quantity of these Fruits, which are annually raised, not one in an hundred of them are fit to eat; the generality of Gardeners coveting to save the Seeds from the largest Fruit, without any regard to their Goodness. The Seeds of this small Melon were since brought to England from Portugal, by General Dormer; there-

fore some People call the Melon by his Name.

The seventh Sort is much preferable to all other; for when this is properly managed, scarce one in an hundred of them is bad: this Sort was brought from *Armenia*, on the Confines near *Persia*, where the best Melons in the World grow; and there they are in general good, as *Dr. Tournefort* in his Travels relates: and those Melons never offend the Stomach, but agree with all Persons; and cause them to grow fat, who feed upon them: and they have the same Quality here; for Persons who cannot bear the least Piece of a common Melon on their Stomachs, can eat of these with Safety, as I have many times experienced. This Sort of Melon has been long cultivated at *Cantaleupe*, a little District about ten Leagues from *Rome*, where the Gardeners have been very long famous for producing the best Melons in *Italy*; but of late Years those Gardeners have not been careful in the Choice of their seeds, whereby they have greatly degenerated their Melons; for if their Seeds are not collected from the best Fruits, they will annually grow less delicate. The *Dutch* Gardeners are the most curious at present in the Cultivation of this fruit; which passes, all over *Holland*, by the simple Name of *Cantaleupe*, to distinguish it from all other Sorts of *Melon*: and they are so careful in preserving the Kind good, not to plant any other Sort of Melon, Cucumber, or Gourd, near these; lest, by the Impregnation of the *Farina* of those other, these should be rendered bad: and on this Particular, I am convinced from long Experience, they are right: and from the not observing this, many Persons who are Lovers

of this Fruit have gradually diminished their Goodness, without knowing the Cause; and have imputed it to the long cultivating from Seeds sowed in the same Garden; believing it absolutely necessary to procure Seeds from a distant Place frequently, to preserve them good: indeed, where a Person can securely depend on the Care and Skill of those he procures the Seeds from, it is a very good Method to exchange Seeds now-and-then: but there are so few who are exact in making choice of the Fruits from which they save the Seeds, or careful enough to do it themselves, but often depend on others to clean the Seed, that I should advise every one to do it himself; which is the sure way to have it good: for I have frequently been deceived myself, by depending on the Fidelity and Skill of others: nor could I procure any of these Seeds from *Cantaleupe*, which were good, until my much honoured Friend the *Chevalier Rathgeb* sent me plentifully of it from thence; tho' I had often been supplied with Seeds by Persons who I thought could not be deceived in their Choice, and who lived near the Place of their Growth.

The *Zatta* Melon is greatly esteemed at *Florence*, and in some other Parts of *Italy*. It is a small Fruit, rather flat than round; the two Ends being compressed: the Skin is rough, generally warted, and deeply furrowed; the Flesh of a red Colour; but seldom very thick; so that there is not much Meat in one of these Melons: but as it is generally good, a few of them may be cultivated for the sake of Variety; but the former is the Sort I would always prefer to every other.

As to all the other Sorts which are here mentioned, they are by no

means to be put in Competition with these ; for whoever has eaten of the *Cantaloupe* in Perfection, will hardly be brought to relish any other ; so that I should not have mentioned them here, but to prepare for the Reception of these ; and that it might not be imputed to a Defect in the Book.

Before I quit this Head, I beg Leave to caution all Persons against depending upon Seeds which are brought from abroad, either by those Persons who import them for Sale, or Gentlemen who frequently bring or send over these Seeds to their Friends ; for it seldom happens, that any of these prove tolerable. I have been so often deceived by these myself, as to determine never to make Trial of any of these Seeds again, unless I receive them from a Person who is skilful, and who eat of the Fruit himself, of which he saved the Seeds : for in *Italy, Spain, Portugal*, and in many Parts of *France*, the Gardeners are very careless in the Choice of all their Seeds ; but of the Melons they are remarkably so : and as for those which come from *Constantinople, Aleppo*, and other Parts of *Turky*, I have rarely seen one Melon produced from those Seeds, which was tolerable.

The Seeds of Melons should not be sown, until they are three Years old ; nor would I choose to sow them, when they are more than six : for altho' they will grow at ten or twelve Years old, yet the Fruit which are produced from those old Seeds are seldom so thick-flesh'd, as those which come from Seeds which are fresher : and it is the same of light Seeds, which swim upon Water, when they are taken out of the Pulp ; for I have made some Trials of these, and have had them grow at

three Years old : but not one of the Melons produced on these Plants was near so deep-fleshed, as those which grew upon Plants raised from heavy Seeds, taken out of the same Fruit ; tho' they grew in the same Bed, and were cultivated exactly in the same manner ; nor was their Flesh so firm, but rather inclining to be mealy : therefore I would not advise the sowing of these light Seeds, nor those which are very old.

Having thus largely treated of the Choice of the Sorts, and of the Seeds, I shall next proceed to the Method of cultivating them, in order to obtain plenty of good Fruit : the Method which I am going to prescribe, being very different from what has been constantly practised in *England*, will, I doubt not, be objected to by many ; but it is what has been practised in all the good Gardens in *Holland* and *Germany*, where the *Cantaloupe* Melon is produced in great Plenty and Perfection, and from several Years Experience I have found this to be the only Method in which these Melons can be cultivated with Success : and I am likewise convinced of its being the best way to obtain plenty of any other Sort of Melon.

It is common to hear many Persons valuing themselves upon having two or three early Melons ; which when brought to the Table, are no so good as a Turnep : and these are procured at a great Expence, and with much Trouble : and in order to have them ripe a little earlier than they would come, if suffered to grow to their full Size, the Stem upon which the Fruit grows, is commonly twisted, to prevent the Nourishment entering the Fruit whereby the Growth is checked, then the Fruit is closely covered with

the Mowings of Grass, laid of a sufficient Depth to cause a Fermentation; by which the Fruit becomes coloured: but as this unnatural Method is practised, the Fruit hath little Flesh; and that has neither Moisture, Firmness, or Flavour: so that after four Months Attendance, with a great Expence of Dung, &c. there may perhaps be three or four Brace of Melons produced, which are fitter for the Dunghil than the Table: therefore my Advice is, never to attempt to have these Fruit ripe earlier than the middle of *June*, which is generally soon enough for this Climate; and from that time to the End of *September*, they may be had in plenty, if they are skilfully managed: and when the Autumn has continued favourable, I have had them very good in the middle of *October*.

But in order to continue this Fruit so long, the Seeds must be sown at two different Seasons; or if at three, it will be still better: the first should be sown about the middle of *February*, if the Season proves forward; but if it is otherwise, it will be better to defer it till the End of that Month; for the future Success greatly depends on the raising the Plants in Strength; which cannot be so well effected, if the Weather should prove so bad, after the Plants are come up, as that a sufficient Quantity of fresh Air cannot be admitted to them; therefore it is not adviseable to be too early in sowing the Seeds.

When the Season is come, these Seeds may be sown on the Upper-side of a Cucumber-bed, where there are any; and if there are none, a proper Quantity of new Horse-dung must be provided, which must be thrown in an Heap to ferment, and turned over, that it may acquire an

equal Heat, in the same manner as hath been directed for Cucumbers; and the Plants must be raised and managed in the same manner as hath been directed for them, until they are planted where they are to remain for good: to which Article the Reader is desired to turn, to avoid Repetition.

The second Season for sowing of these Seeds is about the middle of *March*; and both these Sowings must be understood to be planted under Frames; for those which are designed for Bell or Hand-glasses, or to be covered with Oil-papers, should not be sown till about a Week in *April*; for when these are sown earlier, if the Plants are properly managed, they will grow so far, as to extend their Shoots to the Sides of the Glasses, before it will be safe to let them run out; for it often happens in this Country, that we have sharp morning Frosts in the middle of *May*; so that if the Ends of these Vines are then without the Glasses, if they are not covered with Mats, to guard them against the Frost, they will be in Danger of suffering greatly therefrom: and, on the other hand, if the Plants have spread so much as to fill the Glasses, and are not permitted to run out, they will be in equal Danger of suffering by their Confinement from the Sun, in the Day-time: therefore it is, that I should advise the putting of the Seed in rather a little later for the Glasses, than those which are to be covered with Oil papers: nor will the times here mentioned be found too late; for I have put the Seeds of *Cantaloupe* Melons into an Hot-bed the third of *May*, which were not transplanted, but remained where they were sown, and covered with oiled Paper; and from this Bed I cut a large Crop of good Fruit,

which ripened about the Middle of *August*, and continued till the End of *October*: this I only mention, to shew what has, and may be done.

But we next come to the making and preparing of the Beds, or, as the Gardeners term it, the Ridges, into which the Plants are to be put out to remain: these should always be placed in a warm Situation, where they may be defended from all cold and strong Winds; for the East and North Winds are generally very troublesome in the Spring of the Year; so that if the Place is exposed to them, it will be difficult to admit a proper Share of fresh Air to the young Plants: and if it is much exposed to the South-west Winds, which often are very boisterous in Summer and Autumn; these will turn up and displace the Vines, whereby they will suffer greatly; therefore the best Position for these Beds is, where they are open to the South, or a little inclining to the East, and sheltered at a Distance by Trees from the other Points: this Place should be inclosed with a good Reed-fence; which is better for this Purpose than any other Inclosure; because the Winds are deadened by the Reeds, and are not reverberated back again, as they are by Walls, Pales, or other close Fences: but in making the Inclosure, it should be extended to such Distance every Way from the Beds, as not to obstruct the Sun's Rays during any Part of the Day: this should have a Door wide enough to admit of Wheelbarrows passing, to carry in Dung, Earth, &c. And this should be kept locked, that no Person should be allowed to go in, but those who have Business: for ignorant Persons, having often Curiosity to look into the Beds, open the Glasses, and let the cold Air to the Plants; and frequently

leave the Glasses, in part, open; or sometimes, when they are raised by the Gardener, to admit fresh Air, the Tilts are thrown down; so that the Air is excluded: all which are very injurious to the young Plants, as is also the handling of the Fruit, after it is set; therefore none should be admitted, but when the Person who is intrusted with the Care of them is there.

The next thing is the Preparation of the Earth for these Plants; in which the *Dutch* and *German* Gardeners are very exact: the Mixture which they generally prepare is of the following Sorts; of Hazel-loam, one third Part; of the Scouring of Ditches or Ponds a third Part; and of very rotten Dung a third Part; these are mixed up at least one Year, and often two Years, before they make use of it; frequently turning it over, to incorporate their Parts, and sweeten it: but the Compost in which I find these Plants succeed best in *England*, is Two-thirds of fresh gentle Loam, and One-third of rotten Neats-dung: if these are mixed together one Year before it is wanted, so as to have the Benefit of a Winter's Frost, and Summer's Heat; observing to turn it over often, and never suffer Weeds to grow upon it; this will be found equal to any other Compost whatever.

As these Plants succeed best when they are planted young, so as soon as the Plants appear, there should be a Quantity of new Dung thrown in an Heap, proportionable to the Number of Lights intended; allowing about fifteen good Wheelbarrows full to each Light: this must be two or three times turned over, to prepare it (as hath been directed for Cucumbers), and in a Fortnight it will be fit for Use; at which time the Trench must be dug to receive the Dung, where the Bed is intend-

ed: this must be made rather wider than the Frames, and in Length proportional to the Number of Frames intended: as to the Depth, that must be according as the Soil is dry or wet; but in a dry Ground it should not be less than a Foot, or a Foot and an half, deep; for the lower these Beds are made, the better they will succeed, where there is no Danger of their suffering by Wet: in the well laying and mixing of the Dung, the same Care must be taken, as hath been advised already for Cucumbers, which in every respect must be the same for these Beds, excepting that of making Holes in the Dung, where the Plants are to be placed, which should not be practised for Melons; but the Dung laid in every Part smooth and even. When the Bed is made, the Frames should be placed over it, to keep out Wet; but there should be no Earth laid upon it, till after it has been three or four Days made, and is found of a proper Temperature of Heat: for many times these Beds will heat so violently when they are first made, as to burn the Earth, if covered with it: and when this happens, it is much the best way to take this Earth off again; for the Plants will never thrive in it.

As soon as the Bed is found to be of a proper Warmth, the Earth should be laid upon it, which at first need not be more than two Inches thick, except in the middle of each Light, where the Plants are to be placed, where there must be raised an Hill, fifteen Inches high or more, terminating in a flat Cone: in two Days after the Earth is put on the Bed, it will be of a proper Temper to receive the Plants: then in the Evening you may transplant the Plants; but always do it when there is little Wind stirring: in taking up

of the Plants, their Roots should be carefully raised with a Trowel, so as to preserve all their Fibres; for if these are broken off, the Plants rarely take well; or if they recover, they are generally weaker, and never make so good Vines, as those which are more carefully removed; for these Plants are more nice and tender in transplanting, than those of Cucumber, especially the *Cantaleupe* Melon; which if it is not planted out, soon after the third (or what the Gardeners call the rough) Leaf is put out, they are long recovering their Vigour; so that when it happens, that the Beds cannot be ready for them in time, it will be a good Method to plant each Plant into a small Pot, while they are young; and these may be plunged into the Hot-bed, where they were raised, or into a Cucumber-bed, where there is room; so that they may be brought forward: and when the Bed is ready, these may be turned out of the Pots, with the whole Ball of Earth to their Roots; whereby they will receive no Check in removing: and this latter Method is what I should prefer to any other for the *Cantaleupe*; because there should never be more than one Plant left to grow in each Light; therefore in this Method there will be no Necessity of planting more; as there will be no Danger of their succeeding; whereas, in the common way, most People plant two or more Plants in each Light, for fear some should miscarry. When the Plants are placed on the Top of the Hills, they should be gently watered; which should be repeated two or three times in a Week; but it must be done with great Moderation; for when they receive too much Wet, they often canker at the Root; and when that happens, they never produce

good Fruit. When the Plants have established themselves well in the new Beds, they will require little more Water; but there should be a greater Quantity of Earth laid on the Bed, beginning round the Hills where the Plants grow, that their Roots may have room to strike out: and as the Earth is put in from time to time, it must be trodden or pressed down as close as possible; and it should be raised at least a Foot and an half thick upon the Dung, observing also to raise the Frames, that the Glasses may not be too near the Plants, lest the Sun should scorch them.

When the Plants have gotten four Leaves, the Top of the Plants should be pinched off with the Finger and Thumb; but not bruised, or cut with a Knife; because in either of these Cases the Wound will not so soon heal over: this Pinching is to cause the Plants to put out lateral Branches; for these are what will produce the Fruit; therefore when there are two or more of these lateral Shoots produced, they must also be pinched, to force out more; and this must be practised often, that there may be a Supply of Runners to cover the Bed: the Management of these Beds must be nearly the same as hath been directed for the Cucumbers; therefore I need not repeat it here; but shall only observe, that the Melons require a greater Share of Air than Cucumbers, and very little Water; and when it is given to them, it should be at a Distance from their Stems.

If the Plants have succeeded well, they will spread over the Bed, and reach to the Frames, in about five or six Weeks; at which time the Alleys between the Beds should be dug out; or where there is but one Bed, there should be a Trench made on each Side, of about four Feet

wide, as low as the Bottom of the Bed; and hot Dung wheeled in, to raise a Lining to the same Height as the Dung of the Bed, which should be trodden down close; and afterward covered with the same Earth as was laid upon the Bed, to the Thickness of a Foot and an half or more, treading it down as close as possible: this will add to the Width of the Bed, so much as to make it in the Whole twelve Feet broad, which is absolutely necessary; for the Roots of the Plants will extend themselves quite thro' it; and it is for want of this Precaution, that it is common to see the Vines of Melons decay, before the Fruit is well grown; for where there is no Addition made to the Width of the Bed, the Roots will have reached the Sides of the Beds by the time that the Fruit appears; and having no more room to extend themselves, their Extremities are dried by the Sun and Air; which is soon discovered by the Plants hanging their Leaves in the Heat of the Day, which is soon attended with a Decay of many of those Leaves, which are near the Stem; and the Plants from that time gradually languish; so that the Fruit cannot be supplied with Nourishment; but when ripe, will be found to have little Flesh, and that mealy and ill-flavour'd: whereas those Plants which have sufficient Breadth for their Roots to run, and the Earth laid of a proper Depth, and closely trod down, will remain in Vigour until the Frost destroys them; so that I have had a second Crop of Fruit on them, which have sometimes ripened well; but all the first were excellent, and of a larger Size than these Sorts usually grow: the Leaves of these Plants were very large, and of a strong Green; so that they were in the utmost Vigour; whereas,

whereas, in most Places where the *Cantaleupe* Melons have been raised in *England*, the Beds have been no wider than they were first made, and perhaps no more than three Inches Thickness of Earth upon them; so that the Plants have decayed many times without producing a single Fruit: and from thence People have imagined, that this Sort of Melon was too tender for this Climate, when their ill Success was intirely owing to their not understanding their Culture.

There is also another Advantage attending this Method of widening the Beds, as above directed; which is that of adding a fresh Warmth to the Beds, by the hot Dung which is buried on each Side; which will cause the Dung in the Bed to renew its Heat: and as the Plants will by this time shew their Fruit, this additional Heat will be of great Service in setting of the Fruit, especially if the Season should prove cold, as it often happens in this Country, in the Month of *May*. When the Beds are made up in the manner here directed, and the Vines have extended so far as to fill the Frames, and want more room, the Frames should be raised up with Bricks about three Inches high, to admit the Shoots of the Vines to run out from under them; for if the Plants are strong, they will extend six or seven Feet each Way from their Stems; for which Reason I caution every one to allow them room, and to put but one Plant in each Light; for when the Vines are crowded, the Fruit seldom will set well, but will drop off when they are as large as an Egg; therefore the Frames which are designed for Melons should not be made small.

There is no Part of Gardening, in which the Practitioners of this Art

differ more, than in the pruning and managing of these Plants; nor are there any Rules laid down in the several Books in which the Culture of Melons have been treated of, by which any Person can be instructed; for there is such Inconsistency in all their Directions; and what is worse, the greatest part of them are absurd; so that whoever follows them, can never hope to succeed: therefore I shall, in as few Words as possible, give such plain Directions, as I hope will be sufficient to instruct any Person who is the least conversant in these Things.

I have before advised the pinching off the Ends of the Plants as soon as they have 'a Joint, in order to get lateral Shoots, which are by the Gardeners called Runners; and when these Shoots have two or three Joints, to pinch off their Tops, to force out more Runners; because it is from these that the Fruit is to be produced; but after a sufficient Number are put out, they should not be stopped again; but wait for the Appearance of the Fruit, which will soon come out in plenty; at which time the Vines should be carefully looked over three times a Week, to observe the Fruit, and make choice of one upon each Runner; which is situated nearest the Stem; having the largest Footstalk, and that appears to be the strongest Fruit; and then pinch off all the other Fruit which may appear upon the same Runner; also pinch off the End of the Runner at the third Joint above the Fruit; and if the Runner is gently pinched at the next Joint above the Fruit, it will stop the Sap, and set the Fruit. The taking off all the other Fruit will prevent the Nourishment being drawn away from the Fruit intended to grow; which, if they were all left on the Plant,

Plant, could not supply them with sufficient Nourishment; so that when they come to be as large as the End of a Man's Thumb, they all drop off, and scarce one of them sets; which will be prevented by the Method before directed: but there are some Persons, who are so covetous of having a Number of Fruit, as not to suffer any to be taken off; whereby they generally fail in their Expectation. My allowing but one Fruit to be left upon each Runner is, because if half of these stand, there will be full as many Fruit as the Plant can nourish: for if there are more than eight upon one Plant, the Fruit will be small, and not so well nourished: indeed I have some times seen fifteen or twenty Melons upon one Plant; but these have generally been of the smaller Kinds, which do not require so much Nourishment as the *Cantaleupe's*, whose Skins are of a thick Substance; so that where a greater Number are left of them, than the Plants can well supply, their Flesh will be remarkably thin.

As I before advised the stopping, or pinching off, the Runners three Joints above the Fruit; so by this there will be fresh Runners produced a little below the Places where the others were pinched; therefore it is, that I advise the careful looking over the Vines so often, to stop these new Runners soon after they come out; as also to pull off the young Fruit which will appear; and this must be repeated as often as it is found necessary, which will be until those intended to stand are grown so large as to draw all the Nourishment which the Plants can supply; for then the Plants will begin to abate of their Vigour. These few Directions, if properly made use of, is all the Pruning which is necessary to be

given them; but at the same time when this is practised, it may be necessary to give some Water to the Plants, but at a Distance from their Stems; which will be of Service to set the Fruit, and cause it to swell; but this must be done with great Caution.

The Glasses of the Hot-bed should also be raised high, to admit a large Share of Air to the Plants, otherwise the Fruit will not set: and if the Season should prove very warm, the Glasses may be frequently drawn off, especially in an Evening, to receive the Dews, provided there is little Wind stirring; but the Glasses should not remain off the whole Night, lest the Cold should prove too great.

When the Plants have extended themselves from under the Frames, if the Weather should alter to Cold, it will be necessary to cover their Extremities every Night with Mats; for if these Shoots are injured, it will retard the Growth of the Fruit; and often proves very injurious to the Plants: and now what Water is given to the Plants, should be in the Alleys between the Beds; for as the Roots of the Vines will by this time have extended themselves thro' the Alleys, so when the Ground there is well moistened, the Plants will receive the Benefit of it: and by this Method the Stems of the Plants will be preserved dry, whereby they will continue sound: but these Waterings should not be repeated oftener than once a Week in dry warm Weather; and be sure to give as much Air as possible to the Plants, when the Season is warm.

Having given full Instructions for the Management of those Melons, which are raised under Frames, I shall next proceed to treat of those which are raised under Bell or Hand-glasses. The Plants for these
must

must be raised in the same manner as hath been already directed; and about the middle of *April*, if the Season proves forward, will be a good time to make the Beds: but if the Season is cold, it had better be deferr'd somewhat later: a sufficient Quantity of hot Dung should be provided, in proportion to the Number of Glasses; allowing eight or nine good Wheelbarrows of Dung to each Glass. If there is intended but one Bed, which is proposed to be extended in Length, the Trench should be dug out three Feet and an half wide, and the Length according to the Number of Glasses, which should not be placed nearer than five Feet to each other from Middle to Middle; for when the Plants are too near each other, the Vines will intermix, and fill the Bed so closely, as to prevent the Fruit from setting: in digging of the Trench, it should be so situated, as to allow for the Widening of the Bed three or four Feet on each Side; the Depth must be according as the Soil is dry or wet: but, as was before observed, if the Soil is so dry, as that there is no Danger of the Beds being hurt by the Wet, the lower they are made in the Ground the better: in the making of the Beds the same regard must be had to the well-mixing and laying of the Dung, as was before directed: and after the Dung is laid, there should be an Hill of Earth raised, where each Plant is to stand, one Foot and an half high: the other Part of the Bed need not as yet be covered more than four Inches thick, which will be sufficient to keep the Warmth of the Dung from evaporating: then the Glasses should be placed over the Hills, and set down close, in order to warm the Earth of the Hills, to receive the Plants; and if the Beds work

kindly, they will be in a proper Temperature to receive the Plants, in two or three Days after making; then the Plants should be removed in the same manner as was before directed: and if they are in Pots, so that there will be no Danger of their growing, there should but one Plant be put under each Glass: and if they are not in Pots, there should be two; one of which may be afterward taken away, if they both grow: these Plants must be watered and shaded every Day, until they have taken Root: and if the Nights prove cold, it will be proper to cover the Glasses with Mats, to preserve the Warmth of the Bed.

Where there are several of the Beds intended, they should be placed at eight Feet Distance from each other, that there may be a proper Space left between them, to be afterward filled up, for the Roots of the Vines to have room for extending themselves, for the Reasons before given.

When the Plants have taken good Root in the Beds, their Tops must be pinched off; and their Pruning, &c. must, from time to time, be the same as for those under the Frames: in the Day-time when the Weather is warm, the Glasses should be raised on the opposite Side to the Wind, to admit fresh Air to the Plants; for where this is not observed, they will draw up weak and sickly: therefore all possible Care should be taken, to prevent this; for if the Runners have not proper Strength, they can never supply the Fruit with Nourishment.

When the Plants are grown so long as to reach the Sides of the Glasses, if the Weather proves favourable, the Glasses must be set up on three Bricks, so as to raise them about two Inches from the Surface

of the Beds, to give room for the Vines to run out from under them: but when this is done, the Beds should be covered all over with Earth to the Depth of one Foot and an half, and trod down as close as possible: and if the Nights should prove cold, there should be a Covering of Mats put over the Beds, to prevent the Cold from injuring the tender Shoots of the Vines: but as the Vines of the *Cantaleupe* Melons are impatient of Wet, it will be necessary to arch the Beds over with Hoops, to support the Mats, that they may be ready for covering at all times when they require it; which is the only sure Method to have these Melons succeed in *England*, where the Weather is so very uncertain and variable; for I have had some Beds of these Melons in as fine Order under these Glasses as could be desired, which were totally destroyed by one Day's heavy Rain in *June*.

After the Thickness of Earth is laid upon the Beds, if the Weather should prove cold, it will be advisable to dig Trenches on each Side of the Beds, into which you should lay a sufficient Quantity of hot Dung, to make it the same Thickness with the Bed, after the manner before directed for the Frames; or if you have a sufficient Quantity of hot Dung ready, the whole Space between the Beds may be dug out, and filled up with the Dung, laying thereon the Earth a Foot and an half deep, treading it down close: this new Dung will add a fresh Warmth to the Beds, and cause the Plants to shew Fruit soon after.

The Watering of these Plants must be done with great Caution, and not given to their Stems; the pinching of the Runners must also be duly attended to; as also the pulling off

all superfluous Fruit, to encourage those which are designed to remain; and, in short, every thing before directed for those under Frames must likewise be observed for these; and the farther Care is, to cover them in all hard Rains, and cold Nights, with Mats; which if performed with Care, there will be little Danger of their miscarrying; and these Vines will remain vigorous until the Cold in Autumn destroys them.

There have been many Persons, who of late Years have raised their Melons under oiled Paper; and in many Places they have succeeded well; but where this is practised, there must be great Care taken not to keep these Coverings too close over them; for where that is done, the Vines will draw very weak, and rarely set their Fruit in any Plenty; therefore where these Coverings are proposed to be used, I should advise the bringing up of the Plants under Hand or Bell-glasses, in the manner before directed, until they are grown far enough to be let out from under the Glasses; and then, instead of the Covering with Mats, to put over the oiled Paper: and if this Covering is prudently managed, it will be the best that can be used: the best Sort of Paper for this Purpose is that which is strong, and not of too dark Colour; and it should be done over with Linseed-oil, which will dry soon. There should be a proportionable Number of the Sheets of this Paper pasted together, as will spread to the Dimensions of the Frame to which it is to be fastened; and if this is fixed to the Frame, before the Oil is rubbed over it, so much the better: but this should be done so long before they are used, as that the Oil may be thoroughly dry, and the Stench gone off, otherwise it will destroy the Plants.

There are some Persons, who make these Frames of broad Hoops, in Imitation of the Covers of Wag-gons: but as these are cumbersome to move, and there are no Conveniencies for admitting Air to the Plants, but by raising the whole Frame on one Side, I prefer those made of Pantile-laths, fram'd like a Ridge of an House; and each Slope, having Hinges, may be raised at Pleasure to admit the Air to the Plants.

The farther Management of the Melons, after their Fruit is set, is to keep pulling off all the superfluous Fruit, and to pinch off all weak Runners, which may draw away Part of the Nourishment from the Fruit; as also to turn the Fruit gently twice a Week, that each Side may have equal Benefit of the Sun and Air: for when they are suffer'd to lie with the same Side constantly to the Ground, that Side will become of a pale or whitish Colour, as if it were blanched, for want of the Advantages of the Sun and Air. The Plants will require a little Water in very dry Weather; but this should be given them in the Alleys, at a Distance from the Stems of the Plants, and not oftener than once a Week; at which times the Ground should be well soaked in the Alleys. This will encourage the Growth of Fruit, and cause the Flesh to be thick; but the great Caution which is necessary to be observed, is, not to over-water the Plants, which is a certain Injury to them: also be sure to give as much free Air as possible, at all times, when the Weather will permit; for this is absolutely necessary to render the Fruit good.

When the Fruit is fully grown, they must be duly watched to cut them at a proper time; for if they are left a few Hours too long upon the Vines, they will lose much of

their Delicacy; therefore they should be looked over at least twice every Day; and if those Fruit which are intended for the Table, are cut early in the Morning, before the Sun has warmed them, they will be much better flavour'd: but if any should require to be cut afterward, they should be put into cold Spring-water, or Ice, to cool them, before they are brought to the Table; and those cut in the Morning should be kept in the coolest Place till they are served up to the Table. The Sign of this Fruit's Maturity is, that of its beginning to crack near the Foot-stalk, and its beginning to smell, which never fail: for as these *Cantaleupe* Melons seldom change their Colour until they are too ripe, that should never be waited for.

In saving of the Seeds, I need not repeat here, that only such should be regarded, as are taken from the firmest Fruit, and those which have the highest Flavour; and if these are taken out with the Pulp intire, without displacing the Seeds, and suffered to remain in the Pulp two or three Days before it is washed out, the better; and then to preserve only the heavy Seeds, which sink in the Water.

MELOCACTUS. *Vide Cactus.*

MELOCARDUUS. *Vide Cactus.*

MELOCHIA. *Vide Corchorus.*

MELON. *Vide Melo.*

MELONGENA, Mad-apple.

The Characters are;

The Flower consists of one Leaf, shaped like a Wheel, and cut into many Segments: from the Flower-cup arises the Ovary, which becomes a fleshy Fruit, full of kidney-shap'd Seeds.

Dr. *Linnaeus* has joined this Genus of Plants with the *Lycopersicon* to his Genus of *Solanum*: but these should be separated, if we will allow the

Fruit

Fruit to be taken for a Character to the Genus.

The Species are;

1. MELONGENA *fructu oblongo violaceo*. Tourn. Mad apple with an oblong violet-colour'd Fruit.

2. MELONGENA *fructu oblongo albo*. Tourn. Mad-apple with an oblong white Fruit.

3. MELONGENA *spinosa, fructu rotundo croceo*. Tourn. Prickly Mad-apple, with a round saffron-colour'd Fruit.

4. MELONGENA *fructu rotundo, cum spinis violaceis*. Tourn. Mad-apple, with a round Fruit, and violet-colour'd Prickles.

Of late, some Persons who were ignorant of the true Name of this Plant, have given it that of the Egg-plant, from a Resemblance which some of these Fruit bear to Eggs; but this is confusing People.

There are several other Varieties of this Plant, which differ in the Size, Form, or Colour of the Fruit, or in the Shape of their Leaves; but those here mention'd are all that I have observ'd in the *English* Gardens.

These Plants are greatly cultivated in the Gardens of *Italy*, *Spain*, and *Barbary*; in which Places the Inhabitants eat the Fruit of them boil'd with fat Flesh, putting thereto some scrap'd Cheese, which they preserve in Vinegar, Honey, or salt Pickle, all Winter, to provoke a venereal Appetite: but in Summer, when the Fruit is just ripe, they usually gather them, and make them up into Puddens with several Sorts of Spices, and other Ingredients: which Dish the *Italians* are very fond of.

The *Italians* call this Fruit *Melanzana*, from the antient *Latin* Name of *Mala insana*; by which it is by many Authors stiled. The *Turks* call it *Badanjan*, and in some *English* Books it is titled *Brown Johns*;

probably from a Corruption of the *Turkish* Name. By some it has been called *Brown Jelly*, and *Baron Jelly*, from the same Corruption.

They are propagated by Seeds, which must be sown upon a moderate Hot-bed in *March*; and when the Plants come up, they must be transplanted into another Hot-bed about four Inches asunder, observing to water and shade them until they have taken Root: after which you must give them a great Share of Air when the Weather is warm, otherwise they will draw up very weak. They must also be frequently water'd, without which they will make but a very indifferent Progress: but when they are grown so strong as to fill the Frame (which will be by the middle of *May*), you must transplant them out into a rich Spot of Ground at two Feet Distance; observing to preserve as much Earth to the Roots as possible when you take them up, otherwise they are subject to miscarry. You must observe to water them plentifully until they have taken Root; after which they will require but very little Care more than to keep them clear from Weeds, and in very dry Weather to give them some Water.

About the middle of *June* the Fruit will appear; at which time, if the Weather be very dry, you must often water them; which will cause the Fruit to grow very large, and increase their Number: toward the latter End of *July* their Fruit will ripen: when you must preserve the Seeds of each Kind separate.

These Plants are only preserv'd as Curiosities in the *English* Gardens, the Fruit being never us'd in this Country, except by some *Italians* or *Spaniards*, who have been accusom'd to eat of them in their own Countries.

MELOPEPO, The Squash.

The Characters are;

It hath the whole Appearance of a Pompion or Gourd; from which this differs in its Fruit; which is roundish, fleshy, streaked, angular, and, for the most part, divided into five Partitions, inclosing flat Seeds adhering to a spongy Placenta.

The Species are;

1. MELOPEPO *compressus*. C. B. P. The common or flat Squash.

2. MELOPEPO *fructu maximo albo*. Tourn. The large white Squash, commonly call'd The white flat Pompion.

3. MELOPEPO *fructu citriforimi*. Tourn. The citron-shaped Squash.

4. MELOPEPO *verrucosus*. Tourn. The warted Squash.

5. MELOPEPO *verrucosus, fructu & semine albis*. Tourn. Warted Squash, with white Fruit and Seed.

6. MELOPEPO *flavescens, folio aspero*. Tourn. Yellowish Squash, with a rough Leaf.

There are several other Varieties of this Plant in the *West-Indies*, where they greatly abound, most of which are feminal Variations, and seldom continue long to produce the same Kinds from Seeds; at least with us they never continue three Years together the same, but vary most extraordinarily: for the Seeds sav'd from such Plants which grew upright, and did not produce Runners (as the more ordinary Sorts) the succeeding Year, were as luxuriant as any of the other Kinds; and the Fruit was of a different Shape from those which the Seeds were taken from.

These are all propagated by sowing their Seeds in *April* upon a moderate Hot-bed; and when the Plants come up, they should have a great Share of Air, otherwise they will draw up so weak, as to be good

for little: you must also gently refresh them with Water, as you shall find they require it. In *May* they must be transplanted out where they are designed to remain (which in *England* is most commonly upon old Dughills, over which the Vines will spread, and produce a great Quantity of Fruit). If you plant them in an open Spot of Ground, you should dig Holes at the Distance of 14 Feet square; into each of which you should lay 2 or 3 Wheelbarrows of hot Dung, making an Hollow in the Middle to receive the Plants, which must be fill'd with good rich Earth; then cover the Dung all over, Top and Sides, with the Earth that came out of the Hole, placing a Glass over the Middle; in which manner it should remain until the Earth in the Holes begins to warm (which is commonly in twenty-four Hours after making); when you must take the Plants up out of the Seed-bed, and plant two of them into each Hole; observing to water and shade them until they have taken Root: after which you must let them have a free Air; and when they begin to send forth their Shoots, if both Plants have taken, one of them must be pulled out; and you must take off the Glasses, and permit them to run; observing only to clear them from Weeds, and in very dry Weather to refresh them now-and-then with a little Water.

In *July* these Plants will produce a great Quantity of Fruit, which some People are very fond of: these they gather while young, and boil them with Meat instead of Turneps; but notwithstanding what some Persons have advanc'd concerning the Goodness of this Fruit, yet, from several Trials which I have made, I could not bring my Palate to relish them; for they have a very great Flatulency

Flatulency in their Taste, which is agreeable to very few Persons : but in the *West-Indies*, where there is a Scarcity of Garden Roots and Plants, these, and many other Sorts, are esteemed Delicacies.

MELONRY, or MELON-GROUND, is an Apartment in the Kitchen-garden for the Propagation of Melons.

The Spot of Ground should be open to the South-east Sun ; but shelter'd from the West, North-west, and North-east Winds, by Walls, Pales, or Hedges : it should also be upon a dry Soil ; for nothing is more injurious to these Plants than much Wet : and in the Spring it often proves very wet Weather ; when, if the Soil be very wet, there will be no making the Ridges until it is very late. You should also contrive to place it as near to the Dung as possible, which will save a great deal of Labour in wheeling the Dung ; and, if you can have a Pond of Water near it, this, in very dry Weather, will be very useful to water the Melons.

As to the Size of the Ground, that must be proportion'd to the Quantity of Ridges intended ; which you may easily calculate by allowing eleven Feet Breadth for every Ridge, and the Holes plac'd at about five Feet asunder ; but it is the best Way to allow room enough where you are not streighten'd for it.

This Ground should be inclos'd with a Reed-fence, and kept constantly lock'd up during the time that the Melons are growing ; for if they are expos'd to every Person that walks in the Garden (most of whom have a Curiosity to handle the Vines, and look after the Fruit), it will be of ill Consequence ; nothing being more injurious to these Plants than

frequent tumbling or disturbing their Leaves.

The common Practice in most Gentlemens Gardens is, to inclose a Spot of Ground either with Walls or Pales, which they constantly appropriate to this Purpose : but this is by no means a good Method ; for it rarely happens that these succeed well longer than two Years in the same Place, unless the Soil be removed, and fresh brought in, which is very expensive ; therefore the best Way is, to have a sufficient Parcel of Reeds made into Panels, which may be annually moved from Place to Place ; so that you need not continue your Ridges longer than one Year in the same Place. And if you have a Piece of Ground which is large enough to divide into four such Places, the Fence may be every Year remov'd forward till the Whole has been occupy'd ; after which you may return to the Spot where you began, which, by that time, will be as good as fresh Earth : and hereby, without much Trouble, you may remove them every Year ; for as one of the Sides will remain unremov'd every time the Fence is carried forward, the Labour will not be so great as if it were wholly remov'd to some Distance ; and these Reed-fences are much preferable to either Walls or Pales for this Purpose.

MELOTHRIA.

The Characters are ;

The Empalement of the Flower is of one Leaf, bell-shaped, and cut slightly at the Brim into five Parts ; this rests upon the Embryo : the Flower is of one Leaf, wheel-shaped, having a Tube the Length of the Empalement : in the Centre of the Flower is situated the Pointal, supporting a cylindrical Style, attended by three conical Stamina, which are inserted in the Tube of the Flower, and are extended

to the same Length: the Pointal afterward becomes an oval small Berry, having three Divisions, in which are lodged small flat Seeds.

We have but one Species of this Plant; viz.

MELOTHRIA. *Lin. Hort. Cliff.*
Small creeping Cucumber, *vulgo.*

This Plant grows wild in the Woods in *Carolina, Virginia*, and also in many of the Islands in *America*: it creeps upon the Ground, with slender Vines, having angular Leaves, somewhat resembling those of the Melon; but much smaller. These Vines strike out Roots at every Joint, which fasten themselves into the Ground, and thereby a larger Share of Nourishment is drawn to the Plants; by which means their Vines extend to a great Distance each Way, and closely cover the Ground. The Flowers are very small, in Shape like those of the Melon, and of a pale-sulphur Colour. The Fruit, in the *West-Indies*, grows to the Size of a Pea, of an oval Figure, and changes black when ripe: these are by the Inhabitants sometimes pickled when they are green.

In *England* the Fruit are much smaller, and tis so hidden by the Leaves, as to render it difficult to find them. The Plants will not grow in the open Air here, but must be sown upon an Hot-bed; and if they are permitted, will soon spread over the Surface of a large Bed; and when the Fruit is ripe, if they scatter their Seeds, the Plants will come up where the Earth happens to be used on an Hot-bed again; and if they are supplied with Water, will require no farther Care. This Plant is in some Gardens preserved for the sake of Variety; but is of no Use.

MENISPERMUM, Moonseed.

The Characters are;

It hath a rosaceous Flower, con-
Vol. II.

sisting of several small Leaves, which are placed round the Embryo in a circular Order: the Pointal, which is divided into three Parts at the Top, afterward becomes the Fruit or Berry, in which is included one flat Seed, which is, when ripe, hollowed like the Appearance of the Moon.

The Species are;

1. MENISPERMUM *Canadense scandens, bederaceo folio. Acad. Reg. Scien. 1706.* Climbing *Canady* Moonseed, with an Ivy-leaf.

2. MENISPERMUM *Canadense scandens, umblicato folio. Acad. Reg. Scien. 1706.* Climbing *Canady* Moonseed, with an umbilicated Leaf.

3. MENISPERMUM *folio bderaceo. Hort. Elth.* Ivy-leav'd Moonseed.

The first and second Sorts have been long Inhabitants of the *European* Gardens. These produce flexible woody Shoots from their Roots, which twist round whatever Plants stand near them, and will grow to the Height of ten or twelve Feet, and produce their Flowers in Autumn; but they rarely perfect their Seed in this Country.

These Plants are Natives of *Virginia*, and most of the Northern Parts of *America*, from whence they were many Years since brought into *Europe*, and were preserved in the Green-houses in Winter, as tender Plants; but of late Years they have been planted in the full Ground, where they endure the Winter's Cold extremely well without any Shelter. They may be easily propagated by the Suckers, which are produced in plenty from their Roots: these should be taken off with some Fibres adhering to them, in the Spring, before the Plants make new Shoots; and may be planted where they are designed to remain; observ-

ing to water them, if the Season should prove dry, until they have taken Root; after which time they will require no farther Care, but to keep them clear from Weeds, and to support them with Stakes, unless they are planted near Trees, round which they may fasten themselves; for if they trail on the Ground, they will not thrive.

The third Sort was brought from *Carolina* by Mr. *Catesby*. This is a Plant of humbler Growth than either of the former, seldom rising above four or five Feet high in this Country, and the Stems do not become woody: the Leaves are also much smaller than either of the other Sorts. This Plant will endure the Cold of ordinary Winters very well in the open Air, provided it is planted in a warm Soil, and a sheltered Situation. It may be propagated by Suckers from the Root, as the two former Sorts, which are also produced in as great Plenty.

The two former Sorts were by Dr. *Plukenet* ranged among the Ivies, from some Similitude in the outward Appearance of the Plants to the Ivy: so, from his Name, they were commonly called in the Gardens, Ivy with a Bind-weed-leaf.

MENTHA, Mint.

The Characters are;

It is a verticillate Plant, with a labiated Flower consisting of one Leaf, whose Upper-lip is arched, and the Under-lip is divided into three Parts; but both of them are so cut, that the Flower seems to be divided into four Parts, the two Lips scarcely appearing: these Flowers are collected into thick Whorles in some Species; but in others they grow in a Spike; each Flower having four Seeds succeeding it, which are inclos'd in the Flower-cup: to which may be added, It hath a creeping Root; and the whole Plant

has a strong aromatic or balsamic Scent.

The Species are;

1. MENTHA *angustifolia spicata*. C. B. P. Common spik'd Mint, usually call'd Spear-mint.
 2. MENTHA *spicis brevioribus & habitioribus, foliis menthae fuscae, sapore fervido piperis*. Raii Syn. Pepper-mint
 3. MENTHA *sylvestris, folio longiore*. C. B. P. Long-leav'd Horse-mint, or Mentastrum.
 4. MENTHA *arvensis verticillata hirsuta*. J. B. Water-mint with whorled Coronets, commonly call'd Water-calamint.
 5. MENTHA *aquatica seu Sisymbrium*. J. B. Water-mint.
 6. MENTHA *Sisymbrium dicta, hirsuta, glomerulis ac foliis minoribus ac rotundioribus*. Raii Syn. Orange-mint.
 7. MENTHA *spicata, folio variegato*. C. B. P. Spear-mint with a variegated Leaf.
 8. MENTHA *rotundifolia palustris, seu aquatica major, folio variegato*. Tourn. The great round-leav'd Water-mint, with a variegated Leaf.
 9. MENTHA *angustifolia spicata glabra, folio rugiflore, odore graviore*. Raii Syn. Spear-mint with a rugged Leaf, and strong Scent.
 10. MENTHA *Chalepensis angustifolia, raro florens*. Boerb. Ind. Narrow-leav'd Aleppo Mint, which rarely flowers.
- There are several other Sorts of Mint, which are preserv'd in some curious Botanic Gardens, many of which are Natives of *England*; but as they are not cultivated for Use, I shall omit them in this Place; those above-mention'd being the Sorts which are commonly propagated for Kitchen or Medicinal Uses.
- The first Sort is the most commonly cultivated in the *English* Gardens, both

both for the Use of the Kitchen and Medicine; but the second Sort is by some greatly esteem'd for its Heat, to make a simple Water: this, at present, is not very common in the Gardens; but has been found growing wild in several Parts of *England*. The third Sort is also us'd in Medicine; but is rarely cultivated in Gardens, being found in great Plenty in several Places near *London*. The fourth and fifth Sorts are very common by the Sides of the Ponds, and on moist Soils, in divers Parts of *England*; and are rarely cultivated in Gardens: these are both used in Medicine; but the Markets are supply'd with them from the Fields. The seventh and eighth Sorts are preserv'd in Gardens, for the Beauty of their variegated Leaves; as are the ninth and tenth Sorts, for their Oddness; the one having curl'd Leaves, and the other being very white; but seldom produce Flowers in *England*.

All the Sorts of Mint are easily propagated by parting the Roots in the Spring, or by planting Cuttings during any of the Summer-months; but should have a moist Soil; and after planting, if the Season should prove dry, they must be often water'd, until they have taken Root; after which, they will require no further Care but only to keep them clear from Weeds: they should be planted in Beds about four Feet wide, allowing a Path two Feet wide, to go between the Beds to water, weed, and cut the Plants. The Distance they should be set is about four or five Inches, or more, because they spread very much at their Roots; for which Reason, the Beds should not stand longer than three Years before you plant fresh; by that time the Roots will be rotted so closely, as to rot and de-

stroy each other, if permitted to stand longer. There are some People who are very fond of Mint-sallad in Winter and Spring: in order to obtain which, they take up the Roots before *Christmas*, and plant them upon a moderate Hot-bed pretty close, covering them with fine Earth about an Inch thick; and cover the Bed either with Mats, or Frames of Glass. In these Beds the Mint will come up in a Month's time, and be soon fit to cut for that Purpose.

When the Herb is cut for medicinal Use, it should be done in a very dry Season, just when it is in Flower; for if it stand longer, it will not be near so handsome, nor so well-tasted; and if it be cut when it is wet, it will change black, and be little worth: this should be hung up to dry in a shady Place, where it may remain until it be used.

If the Soil be good in which these Plants are to be set, they will afford three Crops every Spring: but after *July* they seldom prove good; therefore what Shoots are produc'd after that time, should be permitted to remain till *Michaelmas*, when you must cut them down close; and after having clear'd the Beds from Weeds, you should spread a little fine rich Earth all over them, which will greatly encourage the Roots against the succeeding Spring.

MENTHA CATARIA. *Vide* Cataria.

MENTZELIA.

The Characters are;

It hath a rose-shaped Flower, consisting of several Leaves, which are placed in a circular Order, and rest on the Flower-cup: which afterward becomes a membranaceous tubulous Fruit, containing many small Seeds.

We know but one Species of this Plant at present; *viz.*

MENTZELIA foliis & fructibus asperis.

asperis. Plum. Nov. Gen. Mentzelia with rough Leaves and Fruit.

The Name was given to this Plant by Father *Plumier*, who discovered it in the *French Settlements in America*, in Honour to Dr. *Mentzelius*, who was Physician to the Elector of *Brandenburg*; and who publish'd an Index of Plants in *Latin, Greek, and High-Dutch*.

This Plant grows plentifully in the Island of *Jamaica*, from whence the Seeds were sent to *England* by the late Dr. *William Houstoun*; which have succeeded in the Physic-garden at *Chelsea*.

It is an annual Plant, which perishes soon after the Seeds are ripe; therefore must be sown on an Hot-bed early in the Spring, that the Plants may be brought forward early in the Season; otherwise they will not produce ripe Seed in this Country. When the Plants are come up about an Inch high, they should be each transplanted into a separate Halfpeny Pot filled with light rich Earth, and plunged into an Hot-bed of *Tanners Bark*; being careful to shade them from the Sun until they have taken new Root; after which time they must be constantly watered every other Day in warm Weather, and should have fresh Air every Day admitted to them, in proportion to the Warmth of the Season, and the Heat of the Bed in which they are plunged. In about six Weeks or two Months after transplanting, if the Plants have made a good Progress, they will have filled the Pots with their Roots; when they should be shifted into larger Pots, which must be filled with light rich Earth, and then plunged into the Bark-bed in the Stove, that they may have room to grow in Height; observing, as before, to water them duly; as also to admit fresh Air to them every

Day in warm Weather: with this Management the Plants will rise to the Height of three Feet, and will produce ripe Seeds the Latter-end of *August*, or the Beginning of *September*. These Plants are closely beset all over with small crooked Spines, by which they will fasten themselves to whatever touches them so strongly, that, by a Person's going near them, they will stick to the Cloaths, and the Branches of the Plant will separate, and adhere to them, in like manner as the Seeds of *Clivers* or *Goosegrafs*.

MENYANTHES, is *Trifolium Palustre*, or *Bogbean*.

This Plant is common upon boggy Places in divers Parts of *England*; but is never cultivated in Gardens; for which Reason I shall not trouble the Reader with any farther Account of it, except the taking notice, that this Plant is at present in great Esteem; being thought an excellent Remedy for the *Rheumatism, Gout, and many other Disorders*. It is frequently called *Bogbane*, or *Marsh-trefoil*, in the Markets: and grows plentifully on Bogs in many Parts of *England*, where it is gather'd, and brought to supply the Markets.

MERCURIALIS, *Mercury*.

The Characters are;

The Leaves are crenated, and grow by Pairs opposite; the Cup of the Flower consists of one Leaf, which expands, and is cut into three Segments; these are Male and Female in different Plants: the Flowers of the Male grow in long Spikes, and consist of many Stamina and Apices, which are loaded with Farina: the Ovary of the Female Plant becomes a testiculated Fruit, having a single round Seed in each Cell.

The Species are;

1. *MERCURIALIS testiculata*, sive *mus Diofcoridis*: & *Plinii*. C. B. P.

The testiculated Mercury, vulgarly call'd The Male *French Mercury*.

2. *MERCURIALIS spicata, five femina Dioscoridis & Plinii. C. B. P.* The spiked *French Mercury*.

3. *MERCURIALIS montana testiculata. C. B. P.* Testiculated mountain Mercury, commonly called Dog's Mercury.

4. *MERCURIALIS montana spicata. C. B. P.* Spiked mountain, or Dog's Mercury.

5. *MERCURIALIS fruticosa incana mas. Boerb. Ind.* Hoary shrubby Male Mercury.

6. *MERCURIALIS fruticosa incana testiculata. Tourn.* Shrubby hoary testiculated Mercury.

The two first Sorts are annual Plants, which grow wild in divers Parts of *England*, and are rarely propagated in Gardens: the Seeds thereof, being sown, produce the two Sorts promiscuously, and are both gather'd indifferently for medicinal Use. These Seeds should be sown as soon as they are ripe, by those who would cultivate them: they will grow upon any Soil or Situation.

The third and fourth Sorts grow wild in shady Lanes, and under Hedges, in divers Parts of *England*, where they spread greatly at the Roots: these are never us'd in Medicine, being esteem'd poisonous.

The fifth and sixth Sorts are not Natives of this Country; but are preserv'd in curious Botanic Gardens for Variety; these may be propagated by sowing the Seeds soon after they are ripe, in a Bed of fresh Earth; where, if the Seeds are good, the Plants will come up the succeeding Spring, and endure the Cold of our Winters very well: but if the Plants from which the Seeds are taken, have not had some of the Male Plants growing amongst them, the Seeds will not grow, as I have several times experienc'd.

MESEMBRIANTHEMUM. Vide Ficoides.

MESPILUS, The Medlar.

The Characters are;

The Leaves are either whole, and shap'd like those of the Laurel, as in the manured Sorts; or laciniated, as in the wild Sorts: the Flower consists of five Leaves, which expand in form of a Rose: the Fruit is umbilicated, and are not eatable till they decay; and have, for the most part, five hard Seeds in each.

The Species are;

1. *MESPILUS Germanica, folio laurino non serrato, five Mespilus sylvestris. C. B. P.* The common Medlar, commonly call'd The *Nottingham Medlar*.

2. *MESPILUS folio laurino, major. C. B. P.* The large *Dutch Medlar*.

3. *MESPILUS apii folio, sylvestris spinosa, five oxyacantha. C. B. P.* The common Hawthorn.

4. *MESPILUS spinosa, five oxyacantha, flore pleno. Tourn.* The double-flowering Hawthorn.

5. *MESPILUS apii folio laciniato. C. B. P.* The Azarola, or *Neapolitan Medlar*.

6. *MESPILUS spinosa, pyri folio. H. L.* The *Pyracantha*, or *Evergreen Thorn*.

7. *MESPILUS seu spina acuta, biflora Britannica. Park. Theat.* The *Glastenbury Thorn*.

8. *MESPILUS spinosa, five oxyacantha Virginiana. H. L.* The *Cockspur*, or *Virginian Hawthorn*.

9. *MESPILUS aculeata pyrifolia denticulata splendens, fructu insigni rutilo, Virginienfis. Pluk. Phyt.* The *Virginian Medlar*, with shining Leaves, and very red Fruit; commonly called, The *Virginian Azarol*, with red Fruit.

10. *MESPILUS Virginiana, apii folio, vulgari similis major, grandioribus spinis. Pluk. Phyt. Virginian*

Hawthorn, with long strong Thorns, commonly called Maple - leav'd Haw.

11. *MESPILUS prunifolia Virginiana non spinosa, fructu nigricante. Pluk. Phyt. Virginian* Hawthorn, with a Plum-leaf, and black Fruit.

12. *MESPILUS pruni foliis, spinis longissimis fortibus, fructu rubro magno. Clayt. Flor. Virg. American* Haw, with Plum-leaves, very strong Thorns, and a large red Fruit, commonly call'd *Carolina* Haw, with very strong Spines.

13. *MESPILUS Virginiana, grossulariæ foliis, spinis longissimis rectis, fructu rotundo luteo. Virginian* Haw, with Gooseberry - leaves, very long erect Thorns, and a round yellow Fruit, commonly call'd *Lord Isley's* Haw.

14. *MESPILUS incermis, foliis obverse ovatis subtus tomentosis, pomis ovatis luteis. Smooth American* Haw, with oval Leaves, white underneath, and egg-shaped yellow Fruit, commonly called *yellow* Haw, with pear-shaped Fruit.

15. *MESPILUS apii folio laciniato, fructu ex albo lutescente minori. Hort. Cath.* The *L'Azarole*, with a small yellowish white Fruit.

16. *MESPILUS folio laurino, major, fructu præcoci sapidiori oblongo, leviori seu rariori substantia. Hort. Cath.* Smooth oblong *Medlar*, with large Laurel-leaves, called by the *Italian* Gardeners *Nespoli*.

17. *MESPILUS folio subrotundo, fructu rubro. Tourn.* The *Dwarf* *Medlar*, with red Fruit.

18. *MESPILUS folio rotundiore, fructu nigro subdulci. Tourn.* *Dwarf* *Medlar*, with black Fruit.

The first of these *Medlars* was formerly more common in the Gardens and Nurseries than at present; for since the *Dutch* *Medlar* has been introduced, it hath obtained the Pre-

ference; the Fruit of this being much larger than the old one, which has occasioned their being cultivated in greater Plenty.

The sixteenth Sort has been brought into *England* by some of the *Italian* Gardeners, who annually bring over Orange - trees and *Jasmines*: and they have sold these Trees by the common Title of *Nespoli*, which is applicable to all the Species of this Genus. - The Fruit of this Tree is rather smaller than that of the Common or *Nottingham* *Medlar*; but it hath a quicker Flavour, and is earlier ripe; so a Plant or two of them may be allowed a Place in those Gardens where there is room.

These Sorts may be propagated by budding or grafting them upon the Hawthorn, or the Pear-stock, upon either of which they will take very well; and may be afterward transplanted into the Fruit-garden, either in Standards, or trained against an *Espalier*, in both which Methods they will succeed very well; but if the larger Sort be trained on an *Espalier*, the Fruit will be much larger: but you must be careful, in pruning, not to shorten their bearing Branches; for the Fruit being, for the most part, produced at the Extremity thereof, if they are shortened, it will be cut away.

These Plants will grow upon almost any Soil; but the Fruit will be much larger upon a strong Soil, rather moist than dry; tho' upon a middling Soil they are generally best flavoured.

These Fruits are permitted to remain upon the Trees till *October*, when they will begin to fall; at which time they must be gathered, when dry, and laid by in a dry Place, until they become soft, and begin to decay, which is commonly about a
Month

Month after they are gathered, when they will be fit to be eaten; before which they are so very harsh, that it is almost impossible to eat them.

The third Sort is so very common in *England*, that it would be to little Purpose to spend much time in treating of it, since the great Use to which it is applied in *England*, is to make Fences; the manner of doing which is already described under the Article of *Fences* and *Hedges*.

These Trees, when grown large, are great Ornâments to Parks; and during the Season of their Flowering, where the Trees are in plenty, the Air is perfumed with the Fragrancy of their Flowers: and as they are much frequented by Nightingales, so their melodious Notes render those Places the most agreeable, at that time of the Year, for Retirement: but I would only mention in this Place, that there are two or three Varieties of this Plant commonly observed in the Hedges near *London*, which differ in the Size of their Leaves and Fruit: but that Sort which produces the smallest Leaves is the best worth cultivating for Hedges, because their Branches always grow close together; so that the Hedge will clip much closer, and appear more beautiful: for it is a common Observation, That the Branches of all Sorts of Trees grow in a proportionable Distance to the Size of their Leaves.

The fourth Sort is a Variety of the third, from which it differs in having fair double Flowers. This is propagated by being budded or grafted upon the common Sort, and may be trained up with regular Stems to the Height of twelve or fourteen Feet; and when planted in Wilderneses, or other Plantations of Trees, being intermixed with other

flowering Trees of the same Growth, makes a very fine Appearance during the Season of its Flowering, which is commonly most Part of *May*; the Flowers being produced in large Clusters, as in the common Sort: but are very double: this Tree is pretty common in the Nurseries near *London*.

The *L'Azarole*, or *Neapolitan* Medlar, has been introduced from *Italy*, where the Fruit is greatly esteemed. This is also propagated by budding or grafting it upon Stocks of the common Hawthorn, and should be transplanted into a moist Soil, and warm Situation, where it will produce great Quantities of Fruit annually in *England*, which are shaped like those of the common Hawthorn, but much larger; and must be preserved till they begin to decay before they are eaten, as the common Medlar.

I have observed these Trees in many Places planted against warm Walls, as supposing them too tender to produce Fruit in this Climate, without such Assistance; which is a very great Mistake: for I have seen much more Fruit upon Standard-trees than were upon those against Walls, and they ripened well, and were better tasted.

The *Pyracantha*, or Ever-green Thorn, was formerly in greater Esteem than at present: it is commonly planted against Walls or Buildings, where it affords an agreeable Prospect in Winter (especially if it has plenty of Fruit), the Fruit being, at that Season, of a beautiful red Colour, and are commonly produced in very large Clusters, which, together with its ever-green Leaves, renders it worthy of a Place in every good Garden. But in order to have Fruit upon every Part of the Tree, in which its greatest Beauty

consists, there should always be a Succession of young Branches trained in ; for the Fruit is always produced upon the second and third Years Wood ; and all those Branches which are older, never produce any : for want of rightly observing this Method, most of the Trees of this Kind seldom have any Fruit but toward their extreme Parts ; which is one Reason these Trees have been much neglected of late Years.

The Branches of this Tree are very flexible, so that it cannot be trained up to a Standard ; but must always have the Assistance of a Wall, or some other Building, to support it. It is very hardy, and will grow in almost any Soil or Situation ; but it agrees best with a dry Soil, in which it will always produce a greater Quantity of Fruit.

This may be propagated by laying down the tender Shoots, which are commonly two Years before they will be rooted enough to transplant (but, notwithstanding this, it is a more expeditious Method than to raise them from Seeds, which rarely come up until the second Year, and are but of slow Growth the two succeeding Years); then they may either be planted where they are to remain, or into a Nursery for two or three Years, where you may train them, according to the Places where they are designed to be planted : but the sooner they are planted where they are to remain, the better they will succeed. It is commonly three Years after they are planted out, before they begin to produce Fruit.

The *Glastenbury* Thorn is preserved in many Gardens as a Curiosity : this often produces some Bunches of Flowers in Winter, and afterwards flowers again at the Season with the common Sort ; but doth in no other respect differ from the common

Hawthorn : the fabulous Story of its budding on *Christmas-day* in the Morning, flowering at Noon, and decaying at Night, is now with good Reason disbelieved ; for altho' it may sometimes happen, that there may be some Bunches of Flowers open on that Day, yet, for the most part, it is later in the Year before they appear ; but this in a great measure depends on the Mildness of the Season. This Sort may be propagated by budding or grafting it upon the common Hawthorn, and should be planted in a warm Situation, which will greatly promote the Flowering in the Winter ; for if they are too much exposed to cold Winds, the Flower-buds will decay without opening, tho' in other respects the Plant is equally as hardy as the common Sort, and may be treated in the same manner.

The Cockspar Hawthorn is of larger Growth than any of the former, and is very hardy : this may be propagated by sowing the Seeds, in the same manner as the common Hawthorn ; and they commonly abide in the Ground till the second Year, as they do : therefore the most expeditious Way to increase this Plant is, to bud or graft it upon the common Hawthorn ; tho' I must confess, that the Trees thus propagated will not arrive to the Magnitude as those generally do which are propagated from Seeds : but will produce Fruit much sooner : but where a Person intends to have them in Perfection, they should always be propagated from Seeds. This Sort will grow to the Height of eighteen or twenty Feet, and may be trained up with regular Stems and Heads, and when planted amongst other Trees of the same Growth, they make an agreeable Variety ; for in the Spring, when they are in Blossom,

Blossom, they are very pleasing, the Flowers being very large, and are produced in great Bunches at the Extremity of their Branches; and in Autumn, when the Fruit is ripe, which is very large, and grows in great Clusters, they have a beautiful Appearance, and are esteemed very good Feed for Deer.

The ninth, tenth, and eleventh Sorts were brought from *Virginia* several Years since, and are preserved as Curiosities by such Persons as are Lovers of Trees. These may be propagated from Seeds, as the other Sorts, or by budding or grafting them upon the common Hawthorn; and may afterwards be transplanted into Wilderness-quarters, amongst other Trees of the same Growth, where they will afford an agreeable Variety.

The ninth Sort will grow larger than the other two, and, if raised from Seeds, will equal the Cockspur Hawthorn; and the Flowers and Fruit are full as large as those; so that it is very proper to be intermixed therewith.

The tenth and eleventh Sorts commonly grow to the Size of our common Hawthorn, with which they may be intermixed, for Variety, in Wilderness-plantations.

The tenth Sort is, by some of the Gardeners, called the Maple-leav'd Haw, from the Leaves of this Tree having some Resemblance to those of the common or lesser Maple. This Sort flowers later in the Season, than any of the other; seldom being in Beauty earlier than the Beginning of *June*, and sometimes not until the Middle of that Month: but the Bunches of Flowers being larger than any of the Sorts yet known, renders this the most valuable, from the great Appearance which it makes in Flower; and also in the

Autumn, when the Fruit is ripe; these Trees are equally beautiful; their Fruit being of a lively red-Colour, and hanging in large Bunches on every Part of the Tree.

The Fruit of the eleventh Sort is black when ripe; but these are produced thinly on the Trees, seldom more than two or three growing in each Cluster: the Leaves are shaped somewhat like those of the Plum; but are longer and narrower: this is preserved more for the sake of Variety than its Beauty.

The twelfth and fourteenth Sorts have been of late Years introduced into the *English* Gardens from *America*, and are propagated in the Nurseries near *London*. The twelfth Sort has the longest and strongest Thorns of any of the Sorts: the Leaves are like those of the Plum-tree: the Fruit is as large as those of the Cockspur-haw; but they are produced but thinly, seldom more than two or three growing together: and by the Growth of this Tree (when upon its own Stock) in *England*, it seems more inclinable to a Shrub than a Tree.

The fourteenth Sort is a larger-growing Tree, being equal to the Cockspur-haw: this hath no Spines, and the Leaves are extended in Breadth more than Length: they are of a whitish Colour on their Under-side: the Fruit is as large as those of the Cockspur-haw, but of an oval Shape, and a yellowish-green Colour: but these come singly, or by Pairs, rarely three of them growing together; so that the Trees make no great Appearance either in Flower or Fruit.

The thirteenth was many Years since growing in the Bishop of *London's* Garden at *Fulham*; but hath lately been recovered again from *America*, after having been lost for many

many Years. The Thorns of this Sort are very long and slender: the Fruit is small, and crowned with Leaves.

The fifteenth Sort has been lately introduced among us from *Italy*: this is different from the other Sorts in the Shape and Colour of the Fruit, which is flat, and of a yellowish-white Colour. This may be propagated by budding or grafting it upon the common Hawthorn, and is worthy of a Place in all curious Collections of Trees.

The seventeenth and eighteenth Sorts are of humbler Growth, seldom rising above five or six Feet high, and are proper to intermix with Shrubs of the same Growth, where, by their different woolly Leaves, together with their Flowers and Fruit, in their Seasons, they add greatly to the Variety of such Plantations: they may be easily propagated by laying down their tender Branches, which, in one Year, will be rooted sufficiently to transplant; when they may be placed where they are to remain, or planted into a Nursery, and trained up to regular Heads; by which Method they will be less liable to miscarry, than if they were placed to remain in the Wilderness immediately. They may also be grafted on the Pear or White-thorn.

The seventeenth Sort produces great Quantities of Suckers from the Roots, which may be taken off in the Spring, and transplanted into a Nursery two or three Years, until they have acquired Strength enough to transplant for good, where they are to remain; by which Method they may be greatly increased: but the Plants thus raised will be more subject to produce a great Number of Suckers from their Roots, which,

if not yearly taken off, will grow up into a Confusion, and starve the old ones.

They produce their Flowers in *April* and *May*, and their Fruits are commonly ripe in *August*: but these are of no Use, except to propagate the Species; which being a tedious Method, and the Layers taking Root so freely, renders it not worth practising; tho' it may happen, that some Varieties may be obtained this way; as is often found in many other Trees and Shrubs.

METHONICA. *Vide* Gloriosa.

MEUM, Spignel.

The Characters are;

It is an umbelliferous Plant, with very narrow Leaves: the Seeds are large, oblong, and striated: to which may be added, It hath a perennial Root.

This Plant is propagated in the Physic-gardens, for medicinal Use; but is very seldom found in other Gardens. It may be propagated by Seeds, which should be sown in Autumn, soon after they are ripe; and in the Spring the Plants will appear, when they should be carefully cleared from Weeds; and in very dry Weather must be refreshed with Water. In this Place the Plants may remain until the Autumn following, when they may be transplanted into a shady Border about a Foot asunder, where they may remain for Use. They may also be propagated by parting their Roots in Autumn, which is the most expeditious Method.

MEZEREON. *Vide* Thymelæa.

MILIUM, Millet.

The Characters are;

It hath a loose divided Panicle; and each single Flower hath a Calyx, consisting of two Leaves, which are instead of Petals, to protect the Stami-

na and Pistillum of the Flower, which afterward becomes an oval shining Seed.

The Species are;

1. MILIUM *semine luteo*. C. B. P. Yellow or common Millet.

2. MILIUM *semine albo*. C. B. P. Millet with a white Seed.

3. MILIUM *semine nigro*. C. B. P. Millet with a black Seed.

4. MILIUM *arundinaceu, sumbro-tundo semine, Sorgo nominatum*. C. B. P. Reed-like Millet, with roundish Seeds, commonly call'd Sorgo or Guiney Corn.

There are some other Varieties of these Plants, which chiefly differ in the Colour of their Seeds, which will be to little Purpose to enumerate in this Place, those here mentioned being the principal Sorts which I have observed growing in England.

The three first Sorts are Varieties of each other, and only differ in the Colour of their Seeds; which Difference will arise from the same Seeds very often; but the Yellow is always preferred, tho' the White is no-way inferior to it; but the black Sort is esteem'd little worth.

These Plants were originally brought from the Eastern Countries, where they are still greatly cultivated; from whence we are furnished annually with this Grain, which is by many Persons greatly esteemed for Puddens, &c. These are seldom cultivated in England, but by way of Curiosity in small Gardens, or for feeding of Poultry, where the Seeds generally ripen very well.

They must be sown the Beginning of April upon a warm dry Soil, but not too thick, because these Plants divide into several Branches, and should have much room; and when they come up, they should be cleared from Weeds; after which they

will, in a short time, get the better of them, and prevent their future Growth. In August these Seeds will ripen, when it must be cut down, and beaten out, as is practised for other Grain: but when it begins to ripen, if it is not protected from Birds, they will soon devour it.

The Guiney Corn rises commonly to be ten or twelve Feet high, and has jointed Stalks like the Reed; upon the Tops of which the Panicles are produced, which are very large, as are also the Grains. This Sort will come up very well, if sown as the former; but seldom perfects its Seeds with us, except the Season be very warm.

MILLEFOLIUM, Yarrow, Milfoil, or Nosebleed.

There are several Sorts of this Plant, which are cultivated in Botanic Gardens for Variety; but as they are rarely propagated for Use, I shall pass them over without naming them; and only observe, that the common Sort, which grows in great Plenty upon dry Banks, in most Parts of England, is that which is ordered for medicinal Use.

MILLERIA.

The Characters are;

It hath a compound Flower, consisting of several Florets, and one Half-floret, contained in one common Flower-cup; but these Florets are barren, and the Half-floret, which is fruitful, is succeeded by one Seed, which is surrounded by the Flower-cup.

The Species are;

1. MILLERIA *annua erecta major, foliis conjugatis, floribus spicatis luteis*. Houß. Greater upright annual Milleria, with Leaves growing opposite, and yellow Flowers growing in a Spike.

2. MILLERIA *annua erecta minor, foliis parietariæ, floribus ex foliorum alis*. Houß. Lesser upright annual Millerial,

Milleria, with Pellitory-leaves, and the Flowers growing from the Wings of the Leaves.

3. MILLERIA *annua erecta ramiflor, foliis maculatis, profundius serratis.* Martyn. Cent. 1. Upright branching annual Milleria, with spotted Leaves, which are deeply sawed.

4. MILLERIA *annua erecta minor, folio parietariae longiori, floribus ex foliorum alis.* Lesser upright annual Milleria, with a longer Pellitory-leaf, and the Flowers growing from the Wings of the Leaves.

The two first Sorts were discovered by the late Dr. William Housloun at Campechy in the Year 1731. who constituted this Genus, on finding the Characters differing from all the Genus's which were before establish'd. The Seeds of both these Sorts he sent to several curious Persons in England and Holland, where they have succeeded very well.

The other two Sorts were discovered by Mr. Robert Millar, Surgeon, at Campechy in the Year 1734. from whence he sent their Seeds into England, where they have also succeeded very well. The third Sort nearly resembles the first in its Leaves, Flowers, and Growth; but branches a little more than that doth, and the Leaves are spotted with Black; the Flowers also are a little larger. The fourth Sort, which is somewhat like the second, grows taller, and doth not branch from the Bottom as the second doth; the Leaves are also much longer; but there appears no Difference in their Flowers.

The Seeds of these Plants should be sown early in the Spring, on a moderate Hot-bed; and when the Plants are come up about two Inches, they should be each transplanted into a separate Pot filled with light rich Earth, and then plunged into a mo-

derate Hot-bed of Tanners Bark, being careful to shade them from the Sun until they have taken Root, as also to water them frequently. After the Plants are rooted, they should have a large Share of free Air admitted to them, by raising of the Glasses of the Hot-bed every Day when the Weather is fair; and they must be constantly watered every Day in hot Weather; for they are very thirsty Plants. With this Management, the Plants will, in a Month after transplanting, rise to a considerable Height; therefore they should be shifted into larger Pots, and placed in the Stove, plunging them into the Bark-bed, where they may have room to grow, especially the first and third Sorts, which usually grow eight or nine Feet high, where they are well managed. But the second and fourth Sorts seldom rise above three Feet high, and do not spread their Branches very far; so these may be allowed less room.

In the Middle of July these Plants will begin to flower, and the Seeds will be ripe soon after: therefore they must be gathered as soon as they change of a dark-brown Colour, otherwise they will soon fall off, especially those of the two large Kinds, which will drop on the least Touch when they are ripe. These Plants will continue flowering till Michaelmas, or later, if the Season proves favourable; but when the Cold of the Autumn comes on, they will soon decay.

MIMOSA, The Sensitive Plant.

The Characters are;

The Flower consists of one Leaf, which is shaped like a Funnel, having many Stamina in the Centre: these Flowers are collected into a round Head: from the Bottom of the Flower rises the Pointal, which afterward becomes an oblong flat jointed Pod, which

which opens both Ways, and contains in each Partition one roundish Seed.

The Species are;

1. *MIMOSA seu frutex sensibilis*. Tourn. The common Sensitive Plant.
2. *MIMOSA humilis frutescens & spinosa, siliquis conglobatis*. Plum. Dwarf shrubby Humble Plant, having Thorns, and the Pods growing together in Bunches.
3. *MIMOSA spinis horridiuscula, & sensitiva magis*. H. R. Par. Greater Sensitive or Humble Plant, with very sharp Thorns.
4. *MIMOSA latifolia, siliquis in orbem glomeratis*. Tourn. Broad leav'd or common Humble Plant.
5. *MIMOSA spuria de Pernambuco, dicta Mimosa Italica*. Zan. The slothful Sensitive Plant, vulgo.
6. *MIMOSA herbacea procumbens & spinosa, caule quadrangulo, siliquis quadrivalvibus*. Houst. Trailing herbaceous prickly Sensitive Plant, with square Stalks, and Pods having four Cells.
7. *MIMOSA fruticosa spinosa, siliquis latis hirsutis & articulatis*. Houst. Prickly shrubby Sensitive Plant, with broad hairy jointed Pods.
8. *MIMOSA non spinosa, palustris & herbacea, procumbens, flore luteo pleno*. Houst. Smooth marsh herbaceous trailing Sensitive Plant, with full yellow Flowers.
9. *MIMOSA frutescens spinosa & hirsuta, tenuibus acaciæ foliis, siliquis articulatis*. Houst. Shrubby prickly and hairy Sensitive Plant, with narrow Leaves like the Acacia, and jointed Pods.
10. *MIMOSA humilis frutescens & spinosa, foliis acaciæ latioribus, siliquis conglobatis*. Dwarf shrubby and prickly Sensitive Plant, with broad Acacia-leaves, and Pods growing in Clusters.
11. *MIMOSA herbacea non spinosa minima repens*. Sloan. Cat. Jam. The

least creeping herbaceous Sensitive Plant, without Spines, commonly call'd Sensitive Grass.

There are some other Species of this Plant, which grow, in the warm Parts of America; but those here mention'd are what I have observed in the English Gardens.

The first Sort is commonly known by the Name of Sensitive Plant, to distinguish it from the others, which are generally call'd Humble Plants, because, upon being touch'd, the Pedicles of their Leaves fall downward; whereas the Leaves of the first Sort are only contracted upon the Touch.

These Plants are all propagated from Seeds, which must be sown upon an Hot-bed early in the Spring; and when the Plants come up, they must be transplanted into small Pots fill'd with light rich Earth, and plunged into a fresh Hot-bed, observing to water and shade them until they have taken Root: after which you must often refresh them with Water, and let them have Air in proportion to the Warmth of the Season, always observing to keep the Bed in a good Temper for Heat, as also to cover the Glasses every Night with Mats, which will greatly facilitate their Growth.

With this Management, in about a Month's time, the Plants will have greatly advanced, and their Roots will fill the Pots: therefore you must remove them into larger Pots, filling them up with the like rich Earth; then plunge them into the Hot-bed, observing to water them well until they have taken Root; and if you see the Plants inclinable to droop, when the Sun shines warm upon the Glasses, you must shade them until they have recover'd, and are able to endure the Heat.

You must also observe to give them

them a greater Share of Air, as the Season advances in Warmth; but you must never expose them to the open Air, which will not only retard their Growth, but also destroy the sensitive Quality; so that I have seen some Plants of these Kinds, which, after having been exposed to the open Air a few Days, have intirely lost their Motion.

The first of these Sorts, if duly water'd, and preserv'd in a kindly Warmth, will grow, in the Compass of one Season, to the Height of eight or nine Feet, and produce great Quantities of Flowers; but unless the Autumn proves very favourable, the Seeds seldom ripen; and the Plant, being much tenderer than the other Sorts, is rarely preserv'd thro' the Winter, tho' placed in the warmest Stoves; so that we are obliged to procure the Seeds from abroad.

There is so great an Affinity between this and the eighth Sort, that they are with Difficulty distinguish'd: but where Dr. *Houfoun* observ'd the eighth Sort, it was growing in standing Waters; and the Branches were spread flat on the Surface of the Water in such manner, as if they floated: but the Seeds of this, when sown in *Euboe*, produced Plants of erect Growth; but their Stalks were not so woody, as those of this first Species, and branch'd out more; the *Pinne* of their Leaves were not so long, and a greater Number produced on the same Footstalk; but in every other respect they are alike.

This Sort is very common in all the Islands of *America*, and I have also received the Seeds of it from *Virginia* and *Carolina*; so that it is certainly a Native of those Countries; tho' it is only found in some very warm Situations, where the Seeds ripen annually; which, fall-

ing, produce fresh Plants the following Season.

The second Sort is of much humbler Growth, seldom rising above three Feet high; but branches out very much, and is beset with Thorns: this will abide two or three Years, if preserv'd in a good Stove, and generally produces Seeds every Year; so that it is now become very common in the *Englisch* Gardens, being the easiest to preserve, and the most plentiful in feeding, of all the Sorts.

The third Sort hath very broad Leaves, and is greatly beset with sharp Thorns: this will rise to the Height of five or six Feet; but has generally very slender Branches, and is tenderer than the last-mention'd: it rarely produc'd Seeds in this Country, but may be preserv'd thro' the Winter in a good Stove.

The fourth Sort has the quickest Motion of all the Kinds at present in *England*: this is somewhat like the third in Appearance; but grows more erect, and hath fewer Spines, and the Flowers are of a different Colour. The Seeds of this Kind are frequently brought over from *Barbados*, where, by the Plenty of Seeds brought over, it seems to be the most common in that Country.

The fifth Sort is preserv'd in Botanic Gardens for Variety; but is a Plant of no great Curiosity: it hath somewhat the Appearance of the first Sort, and will grow erect to the Height of five or six Feet, and produce great Quantities of Seeds; but it having no Motion upon being touch'd, renders it less valuable than the others.

The three next-mentioned Sorts were discover'd by the late Dr. *William Houfoun*, at *La Vera Cruz*, from whence he sent their Seeds into *England*, from which many Plants were raised.

raised. The sixth Sort rises to the Height of three Feet, and hath slender square Stalks, which are strongly armed with Spines. This is a perennial Plant, which creeps at the Root; so that it may be propagated by the Suckers, which are very plentifully emitted. This hath not, as yet, produc'd many Flowers in *England*; for the Shoots generally die to the Root in Winter, and rise again the following Spring. The Leaves of this Sort do not only close, on being touch'd, but also fall downward; so that it is ranked amongst those Kinds which are commonly call'd Humble Plants.

The seventh Sort rises to the Height of six or seven Feet, and hath a woody Stem, which is strongly armed with crooked Spines. The Leaves consist of several Wings, which have very narrow *Pinnæ*: these Leaves are also beset on their Under-side with sharp crooked Spines all along the Mid-rib, so that it is troublesome to go amongst the Plants in the natural Place of their Growth. The Flowers of this Kind are of a bright-purple Colour, which are succeeded by flat hairy jointed Pods, in which are included the Seeds. This Sort grows very plentifully in moist rich Places about *La Vera Cruz*, in the *Spanish West-Indies*; as also in the *Brazils*, from whence I have receiv'd the Seeds.

This Plant hath produc'd Flowers in *England*; but hath not perfected Seed, tho' it hath liv'd over the Winter, and has grown to a large Size. The Leaves of this Sort close very soon on the Touch; but they fall downward very slowly, so that it is not ranged amongst the Humble Plants.

The eighth Sort grows plentifully in standing Waters near *La Vera Cruz*, where the Branches float on

the Water, in like manner as do the Pond-weeds in this Country; but especially one of the Sorts of *Arse-smart*, which is an amphibious Plant, when it grows in the Water: the Leaves are very broad, and lie spread on the Surface of the Water; the Branches extending themselves very wide, in the same manner as the other Pond-weeds: but when it grows on dry Ground, the Stalks grow erect, and the whole Appearance of the Plant is so much altered, as that some Botanists have describ'd it as two different Plants: so this *Mimosa* has a very different Appearance while the Ground, where it grows, is covered with Water; but where the Water dries up, and leaves the Plants while they are young, they will grow more erect; and those of them which have grown in *England*, have risen to the Height of four or five Feet; but they spread themselves on every Side, and requir'd some Support, when they were full grown. This Sort hath produc'd Flowers in *England*, but hath not perfected Seed; and, being an annual Plant, is at present lost in *Europe*. This is one of those commonly call'd Sensitive Plants; for the Leaves do not fall on being touch'd. The ninth and tenth Sorts were discover'd by Mr. *Robert Millar*, Surgeon, at *Carthagena*, from whence he sent their Seeds into *England*, which have succeeded in several Gardens of the Curious. These are both of them of the humble Kind, their Leaves falling on the slightest Touch. They will both of them live thro' the Winter, if they are placed in a very warm Stove.

The eleventh Sort is very common in *Jamaica*, where it creeps on the Ground, and emits Roots at every Joint, which strike into the Ground; and, by this means, the Plants will

spread over a large Surface, and the Stalks trail close to the Ground, never rising in Height; and by its propagating so fast, by the trailing Branches, it is prevented from flowering, which is the Case of many of the trailing Plants: I have had several of the Plants of this Kind which have extended their Branches over the Sides of the Pots in which they grew, and have rooted deeply into the Tanners Bark on the Surface of the Hot-bed; and if they had been permitted to extend their Branches so far as they seem'd naturally inclined, I believe they would in one Summer have closely covered the whole Surface of the Bed; but neither of these Plants had the least Appearance of Flower: so that in its native Place of Growth, this Sort produces very little Seed, which has occasioned its being very rare in the Gardens of Europe; for it is by much the most valuable of all the Kinds: this is very quick in its Motion; for, on drawing a Stick over the Plants, they will immediately contract, and leave the Impression for some time, till the Plants recover.

These Plants were most of them thought to be Annuals formerly, because upon the first Approach of cold Weather they were destroy'd; but since the modern Invention of Bark-stoves, most of these Sorts have been preserv'd two or three Years, and produce Seeds very well.

The Stove in which these Plants are placed in Winter, should be kept to Anana's Heat (as mark'd on the Botanical Thermometers); and during that Season they should be frequently refresh'd with Water, which must be plac'd in the Stove at least twenty-four Hours before it be us'd, that it may have nearly an equal Warmth to the Air of the Stove; but you must not give it to them in large

Quantities, which will rot their Roots, and cause them to decay: you must also observe to pick off all decayed Leaves which may appear at that Season; which, if not taken off, will harbour Insects, to the great Prejudice of the Plants.

But where there is not the Convenience of a good Stove to preserve these Plants thro' the Winter, their Seeds may be annually procur'd, and a few Plants raised, which may be kept in an Hot-bed under Glasses, where they will continue until the Cold approaches in Autumn; and, being a great Curiosity, are worthy of Care in every good Garden.

It is confidently asserted by some Persons, that the Plants of this Genus are very poisonous; and that the Indians have a secret Way of preparing the Poison, so as that the Person to whom it is given, shall languish under the Effects of it for Months or Years, and prove fatal to them: and the same Persons add, that the only Antidote to expel this Poison is the Root of the same Plant.

MINT. *Vide* Mentha.

MIRABILIS PERUVIANA. *Vide* Jalapa.

MISLETOE. *Vide* Viscum.

MITELLA, Bastard American Sanicle.

The Characters are;

It hath a perennial Root: the Cup of the Flower consists of one Leaf, and is divided into five Parts: the Flower consists of five Leaves, which expand in form of a Rose: the Ovary becomes a roundish Fruit, which terminates in a Point, gaping at the Top, in form of a Bishop's Mitre, and full of roundish Seeds.

The Species are;

1. MITELLA *Americana*, *florum petalis integris*. *Tourn. American Mitella*, whose Flower-leaves are intire.

2. MITELLA

2. MITELLA *Americana*, *forum petalis fimbriatis*. T. American Mitella, with fringed Flower-leaves.

3. MITELLA *Americana*, *flore squallide purpureo villoso*. Boerb. Ind. American Mitella, with hairy Flowers, of a dirty purple Colour.

4. MITELLA *Americana maxima tinctoria*. Inst. R. H. The Arnotto, or Anotto; and by the French called *Rocou*.

The three first Sorts are preserved in curious Botanic Gardens for Variety; but there being very little Beauty in their Flowers, they are seldom propagated in Gardens for Pleasure. They are very hardy, and will thrive in almost any Soil or Situation, and may be propagated either from Seeds, or by parting their Roots, which may be done either in Spring or Autumn, in the manner as is practised for Polyanthus's, &c. and being planted in a shady Situation, will grow very vigorously; so that, for the sake of Variety, a few Roots may be admitted in shady Borders, where few better Plants will thrive.

The fourth Sort rises to the Height of ten or twelve Feet, and hath a woody Stem, which is beset with many Branches at the Top, which are furnish'd with broad Leaves, shap'd somewhat like an Heart: from these Branches the Flowers come out in small Clusters, which consist of several Leaves, and expand in form of a Rose: these are of a pale Flesh-colour. The Flowers are succeeded by brown Pods, shap'd like a Mitre, and are echinated on the Outside in the same manner as the Chestnut; in which Pods are contained many irregular Seeds, which are of a red Colour.

The Seeds of this Plant are used in dyeing, and the *Indians* make use of this Colour to paint their Bodies,

especially when they go to War; in order, as some suppose, to prevent their discovering the Blood when they are wounded, being almost of the same Colour; so is supposed to make them courageous. But the chief Use of it is to prevent the Musketa's and Flies from annoying them. This Dye is also mix'd with Chocolate to give it a Colour.

It grows in the warmest Parts of *America*, from whence the Seeds are pretty frequently sent into *England*. These Seeds should be sown early in the Spring of the Year, in small Pots filled with light rich Earth, which should be plunged into a moderate Hot-bed of Tanners Bark. When the Plants are come up two Inches high, they should be carefully transplanted, each into a separate small Pot filled with light rich Earth, and then plunged again into the Tanners Bark, observing to shade them from the Sun, until they have taken new Root. With this Management the Plants will grow to be a Foot high by the middle of *July*, and will have filled the Pots with their Roots; therefore they should then be shaken out of the Pots, and put into Pots a little larger, and plunged again into the Hot-bed, and managed as before. These Plants may remain in the Hot-bed until toward *Michaelmas*, when the Nights begin to be cold; at which time they must be remov'd into the Stove, and plunged into the Bark-bed, where they may enjoy a good Share of Warmth in the Winter-season, otherwise they cannot be preserv'd in this Country; they must be frequently refresh'd with Water, during the Winter-season; but they should not have too much given to them each time, especially if they should cast their Leaves, which they frequently do toward the Spring.

MOLDAVICA. *Vide* Dracocephalum.

MOLLE, The Indian Molle, or Mastich-tree.

The Characters are;

It hath pinnated Leaves, like those of the Lentiscus; but are terminated by an odd Lobe: the Flower expands in the Form of a Rose; and the Fruit resembles a Grain of Pepper.

We have but one Species of this Tree in England; which is,

MOLLE. *Clus. in Monard.* The Arbor Molle, or Indian Mastich-tree.

This Tree is, by some Writers, made a Species of Lentiscus; and hath by some been titled *Lentiscus Africanus*; and by others *Lentiscus Peruvianus*: but which of those two Countries it is a Native of, I cannot determine; nor whether there is any real Distinction in the Characters of this, and the Lentiscus, having never seen either the Flowers or Fruit of this.

This was formerly more common in the European Gardens than at present, there being very few of them now to be found; most of them having been destroyed by some late severe Winters; and being difficult to propagate, has rendered it so scarce.

It may be propagated by laying down the tender Branches, which in two or three Years will take Root, when they may be taken off from the old Plants, and planted into Pots fill'd with fresh light Earth, observing to water and shade them until they have taken Root.

But as it is very difficult to make this Tree grow from Layers, so it will be necessary to slit the Branches when laid, which will facilitate their Rooting; and when you cut them off from the old Plants (which

should be done in April), if you place the Pots upon a moderate Hot-bed, it will cause them to take Root much sooner, provided you water and shade them carefully; but you must observe to let them have Air in proportion to the Warmth of the Season; and when they have taken fresh Root, you must inure them to the open Air by degrees, into which they should be removed toward the Latter-end of May, placing them in a Situation where they may be defended from violent Winds, in which they may remain until the October following, when they must be removed into the Green-house, placing them where they may have a great Share of free Air in mild Weather; for they only require to be protected from severe Cold.

This Tree will grow to the Height of seven or eight Feet, but commonly produces its Shoots very irregular, so that it is very difficult to form it to a regular Head; for which Reason it is not so much esteem'd (except by the Curious in Botany) as the Lentiscus; but for Variety it may have a Place in all curious Green-houses.

MOLLUGO.

The Characters are;

The Empalement of the Flower is cut into five Segments: the Flower is of one Leaf: the Pointal is situated in the Centre of the Flower, which is attended by three Stamina, and afterward becomes an oval Vessel, having three Cells, opening in three Parts, and filled with small kidney-shaped Seeds.

The Species are;

1. MOLLUGO *foliis quaternis obverse ovatis.* *Lin. Hort. Cliff.* This Plant was usually call'd Rupturewort, with a Chickweed-leaf.

2. MOLLUGO *foliis quinis lanceolatis*

latis inaequalibus. Flor. Leyd. This is by some call'd Five-leav'd upright African Chickweed.

3. *MOLLUGO foliis septenis linearibus. Lin. Hort. Cliff. African Chickweed,* with the Appearance of Ladies Bedstraw.

These are low annual Plants, having little Beauty; so are only preserved in Botanic Gardens for the sake of Variety: if their Seeds are permitted to scatter, the Plants will come up the following Spring: but the two last Sorts seldom thrive well in the full Ground, unless in warm Seasons: but when their Seeds scatter on an Hot-bed, or in Pots in the Stove, they will thrive fast enough.

MOLUCCA, Molucca Balm.

The Characters are;

It is a verticillate Plant, with a labiated Flower, consisting of one Leaf, whose upper Lip is hollow, like a Spoon, but the under Lip is cut into three Segments: out of the Flower-cup arises the Pointal, attended, as it were, by four Embryoes, which afterward turn to so many angular Seeds, which are inclosed in the bell-shaped Calyx.

The Species are;

1. **MOLUCCA laevis. Dod.** Smooth Molucca Balm.

2. **MOLUCCA spinosa. Dod.** Prickly Molucca Balm.

These Plants are annual, and perish after they have perfected their Seeds. They are preserved only in such Gardens where Persons are curious in the Study of Plants, as they have no great Beauty or Use. These may be propagated by sowing their Seeds in March, upon a Bed of fresh light Earth, in an open Situation, where the Plants will come up soon after; and when they are about two Inches high, they must be transplanted out, either into fresh Beds of light Earth, or in the Borders of the

Pleasure-garden, placing them at a good Distance; for their Branches will extend pretty far, if the Soil be rich; and when they have taken Root, they will require no farther Care, but only to keep them clear from Weeds, and fasten them to Sticks, to prevent their being broken by Winds when they advance; for they will grow upward of three Feet high.

In July these Plants will flower, and if the Season proves warm, their Seeds will be perfected in September; but if the Season is cold and moist, they commonly perish without producing good Seeds in this Country; for which Reason these Plants should be raised in Autumn, and preserved thro' the Winter under a common Frame, and in the Spring transplanted out, as before, when they will flower early, and produce good Seeds.

MOLY, Wild Garlick.

The Characters are;

It agrees in every respect with the Garlick, to which Genus many Botanists have joined these Plants: the Flowers are produced in an Umbel.

The Species are;

1. **MOLY latifolium liliflorum.** C. B. P. Broad-leav'd Moly of Theophrastus.

2. **MOLY latifolium Indicum.** C. B. P. Broad-leav'd Indian Moly.

3. **MOLY latifolium Hispanicum.** C. B. P. Broad-leav'd Spanish Moly, with purple Flowers.

4. **MOLY latifolium, flavo flore.** H. Eyst. Broad-leav'd yellow Moly.

5. **MOLY angustifolium umbellatum.** C. B. P. Narrow-leav'd Moly, commonly call'd Homer's or Dioscorides's Moly.

6. **MOLY angustifolium, foliis reflexis.** C. B. P. Narrow-leav'd Moly, with reflex'd Leaves, commonly call'd the Serpent Moly.

7. *MOLY moschatum, capillatæ folio.* G. B. P. The sweet Moly of *Montpelier, vulgo.*

There are some other Varieties of this Plant, which are preserv'd in curious Botanic Gardens abroad; but those here mentioned are what I have observ'd in the *English Gardens.*

They are all very hardy Plants, and may be easily multiplied by their Off-sets, which they send forth in great Plenty: the best Season to transplant them is in *August* or *September*, just after their Leaves decay; for if they are permitted to remain long after, and the Season should prove moist, they will send forth fresh Fibres, when it will be too late to remove them, unless they are taken up with Balls of Earth.

They will grow in almost any Soil or Situation; but will thrive best in a light sandy Soil, and an open Exposure.

They commonly produce their Flowers in *May* and *June*, except the sweet-scented *Montpelier* Kind, which seldom flowers till *August*; and are pretty Varieties in the large Borders of the Pleasure-garden, where, being intermix'd with other bulbous-rooted Flowers, they afford an agreeable Variety; but they should not be permitted to remain longer than two Years before they are transplanted, because they produce a great Number of Off-sets (especially *Homers's Moly*), which, if not taken from the old Roots, will starve them, and cause their Flowers to be very weak.

MOMORDICA, Male Balsam-apple.

The Characters are:

The Flower consists of one Leaf, is of the expanded bell shaped Kind, but so deeply cut, as to appear compos'd of five distinct Leaves: these Flowers

are some Male (or barren), others Female, growing upon the Top of the Embryo, which is afterward changed into a Fruit, which is fleshy, and sometimes more or less tapering, and hollow; and when ripe, usually bursts, and casts forth the Seeds with an Elasticity; which Seeds are wrapped up in a membranous Covering, and are, for the most part, indented on their Edges.

The Species are;

1. *MOMORDICA vulgaris.* Tourn. The common Male Balsam-apple.

2. *MOMORDICA Zeylanica, pampinea fronde, fructu breviori.* Tourn. Male Balsam apple of *Ceylon*, with Vine-leaves, and a longer Fruit.

3. *MOMORDICA Zeylanica, pampinea fronde, fructu longiori.* Tourn. Male Balsam-apple of *Ceylon*, with Vine-leaves, and a longer Fruit.

4. *MOMORDICA Americana, fructu reticulato sicco.* Com. Rar. Male Balsam-apple of *America*, with a dry netted Fruit.

These Plants are all annual: their Seeds must be sown on an Hot-bed the Beginning of *March*; and, when the Plants come up, they should be transplanted out into a fresh Hot-bed, after the manner of Cucumbers or Melons, putting two Plants of the same Kind under each Light, and the Plants watered and shaded until they have taken Root; after which they must be treated as Cucumbers, permitting their Branches to extend upon the Ground in the same manner, and observe to keep them clear from Weeds.

With this Management (provided you do not let them have too much Wet, or expose them too much to the open Air) they will produce their Fruit in *July*, and their Seeds will ripen in *August*, when you must observe to gather it as soon as you see the Fruit open, otherwise it will be
calt

cast abroad, and with Difficulty gathered up again.

These Plants are preserved in curious Gardens for the Oddness of their Fruit; but as they take up a great deal of room in the Hot-beds, requiring frequent Attendance, and being of little Beauty or Use, so they are not much cultivated in England, except in Botanic Gardens for Variety.

There are some Persons who put these Plants in Pots, and fasten them up to Stakes, to support the Vines from trailing on the Ground, and place the Pots in Stoves; where, when they are skilfully managed, they will produce their Fruit tolerably well: and in this way they make a better Appearance, than when the Vines spread on the Ground, like Cucumbers and Melons. The third and fourth Sorts seldom perfect their Seeds, unless they are sown early in the Spring, and brought forward by being removed into two Hot-beds: but it is the best way to put these Plants into Pots very young; for they do not transplant well when they have grown any Length: therefore they should be each planted in a small Pot, as soon as they put out the third, or rough Leaf; and when the Roots have filled these Pots, the Plants may be shaken out, preserving all the Earth about their Roots, and put into larger Pots; but still continued in the Hot-bed, until the Plants are too high to remain under the Glasses; when they may be remov'd into the Stove, and kept duly watered; as also a large Share of free Air admitted to them in warm Weather, without which the Plants will grow sickly, and produce no Fruit.

MONARDA.

The Characters are;

The Empalement of the Flower is tubulous and streaked, consisting of one Leaf, and divided at the Brim into five equal Parts: the Flower is of one Leaf, of the lip-shaped Kind; the upper Lip being erect, narrow, and intire: the Under-lip (or Beard) is broad, and cut into three Segments; the Middle being long and narrow; but the other two broad and blunt: in the Centre of the Flower is situated the square Pointal, attended by two Stamina, and four Embryoes, which after ward are so many round Seeds inclosed in the Empalement.

The Species are;

1. *MONARDA floribus capitatis, caule obtuso. Lin. Vir.* Monarda with an obtuse Stalk, and Flowers collected in an Head, commonly call'd *Ozweega Tea*.

2. *MONARDA floribus verticillatis. Lin. Hort. Cliff.* Monarda with Flowers growing in Whorles.

3. *MONARDA foliis ovato-lanceolatis, verticillis lateralibus dichotomis corymbosis, foliolis inæqualibus exceptis. Flor. Virg.* Monarda with hoary sweet-scented Leaves.

4. *MONARDA spica interrupta, involucriis longitudine verticillorum lanceolatis. Flor. Virg.* American Field Basil, with a purple-spotted Flower.

The first Sort is, by *Dr. Tournefort*, called a *Leonurus*. This was figured and described by *Cornutus*, in his Book of *Canada Plants*, by the Title of *Origanum Canadense fistulosum*. This Plant is very common in most of the Northern Parts of *America*, where the Inhabitants drink an Infusion of this Herb as Tea, and call it *Ozweega Tea*: there are some Persons in *England* who are fond of this Herb for the same Purpose, using it instead of Baum.

The first and second Sorts are beautiful Garden-plants: the first produces large Heads of fine scarlet Flowers,

Flowers, which continue long in Beauty; especially if they are placed in a moist shady Situation, where they last near two Months in Flower, in *July* and *August*. This is an abiding Plant, which propagates easily by its trailing Branche, which, lying upon the Ground, strike out Roots; so may be taken off, and transplanted: it may be also propagated by Slips, in the same manner as Mint, or by parting of the Roots. The best time to transplant them is in the Autumn, that they may be well rooted before the Frost comes on; and then there will be no Danger of their suffering by Cold, nor from the dry Weather in the Spring; so will flower strong. This Sort will abide the severest Cold, in the open Air.

The second Sort produces Flowers of a yellowish Colour, spotted with black; which, together with the purple Leaves, which embrace the Stalks just under the Whorles of Flowers, make a fine Appearance. This and the third Sorts seldom continue longer than two Years; and as they seldom produce good Seeds in *England*, so they are not so common as the first Sort in the *English* Gardens. The fourth Sort will continue many Years, and may be propagated in the same manner as the first; but as there is little Beauty in it, few Persons preserve it in their Gardens.

When the Seeds of these Plants are obtained from *America*, they should be sown upon a Bed of light Earth in Spring; and, if it is kept moist, many of the Plants will come up the first Season; but they often lie in the Ground till the Year after; so the Ground should not be disturbed.

MONBIN, The Hog Plum-tree.

The Characters are;

It hath a rose-shaped Flower, consisting of several Leaves, which are ranged in a circular Order; from whose Cup arises the Pointal, which afterward becomes an oval fleshy soft Fruit inclosing an hard Stone, in which are contained four Kernels or Seeds.

We have but one Sort of this Tree; viz.

MONBIN arbor, foliis fraxini, fructu luteo racemoso. Plum. Nov. Gen. The Hog Plum-tree, vulgo.

This Tree is a Native of the warmest Parts of *America*, where it grows in the *Savanna's*, and low marshy Places, in great Plenty. It rises to be forty or fifty Feet high, and divides into a great many crooked Branches, which are beset with winged Leaves somewhat like those of the Ash-tree. The Flowers, which appear in the Spring, are produced in large pyramidal Bunches at the Extremity of the Branches, which are of a white Colour, and are very sweet: these are succeeded by several yellow oval-shaped Plums, growing in Clusters. The Wood of this Tree, being soft, is used instead of Cork, to stop Bottles, in *America*.

This, being a very tender Tree, must be constantly kept in the Stove, otherwise it cannot be preserved in this Country. It may be propagated by Cuttings (which is the most common Method practised in *America*): but if these are to be brought into *England*, they should be planted pretty close together in Tubs of Earth, and placed in a shady Situation, until they have taken good Root, before they are put on board the Ship; and in their Passage they must be kept from salt Water: When they arrive in pretty good Health, they should be carefully taken out of the Tubs, and each planted into a separate Pot filled with light rich Earth,

Earth, and plunged into a moderate Hot-bed of Tanners Bark, observing frequently to refresh them with Water: If they come over in an hot Season, it will be proper to shade them from the Sun until they are rooted; and at that Season they will require but a very moderate Warmth in the Hot-bed; for too great Warmth would then be very injurious to them. But when they arrive late in the Year, the Bed should have a larger Share of Heat, in order to forward their Rooting, before the Winter's Cold comes on.

These Plants may also be propagated by sowing of their Stones, which should be brought over as fresh as possible. These should be sown in the Spring of the Year, in small Pots filled with light rich Earth, and then plunged into an Hot-bed of Tanners Bark; where, if the Bed is in a good Temperature for Heat, and the Pots of Earth are duly moistened, the Plants will come up in about a Month, or six Weeks, after sowing, when they should have fresh Air admitted to them every Day, in proportion to the Warmth of the Season; and they must be frequently refreshed with Water. When the Plants are fit to transplant, each Plant should be planted in a separate small Pot filled with light rich Earth, and then plunged into the Hot-bed again, where they must have a pretty large Share of fresh Air in warm Weather.

When the Plants have grown so large as to have filled the Pots with their Roots, they should be shifted into others of a larger Size, being careful not to shake the Earth from their Roots. They must then be plunged into the Hot-bed again, provided the Plants are not too tall to stand under the Glasses, without Injury to their Leaves; in which

Case they must be plunged into the Bark-bed in the Stove, where they may have room to advance in Height: but if they have room in the Hot-bed, they may remain there till about *Michaelmas*, when the Nights begin to be cold; at which time they must be removed into the Stove, and plunged into the Bark-bed in the warmest Part of the Stove. During the Winter-season they must be often refreshed with Water; but it must not be given them in large Quantities when the Season is cold, especially if they should cast their Leaves, which they frequently do toward the Spring; then they must have but little Water, until they put out new Leaves; because too much Moisture is injurious to them when they are in almost an unactive State.

This Plant has produced Fruit in *England*, which has ripened well: but as there is little Flesh upon them, they are scarce worth cultivating in *England*, for the sake of their Fruit: but those Persons who are curious in Exotic Plants, should not be without a Plant or two of this Sort, because it makes an agreeable Appearance when it is in Flower, as also in Fruit.

As the Plants obtain Strength, they may be treated a little more hardily than while young; and they will be longer lived; for when they are forced too much by Heat, they seldom continue above three or four Years: they always cast their Leaves in Winter; and those Fruits which have been produced in *England*, ripened upon the Plants after the Leaves had fallen: the Fruit, when ripe, had the Appearance of a Sweetmeat candied over.

MONTIA.

The Characters are;

It hath a funnel-shaped Flower, consisting of one Leaf, whose under

Part is tubulous; but the upper-Part is expanded, and cut into five Segments; the Fruit which succeeds the Flower, is a bicapsular flat Seed-vessel, which is surrounded on the Borders with a Plume, which expands like Rays.

We have but one Plant of this Genus; *viz.*

MONTIA arborefcens, abutili folio ferrato, fructu racemoso. Houft. Tree-like Montia, with a sawed Abutilon-leaf, and the Fruit growing in Bunches.

This Plant was discovered by the late Dr. *William Houftoun*, near *Old La Vera Cruz* in *New Spain*, who gave this Name to it in Honour to *Dr. Monti*, Professor of Botany at *Bononia*.

It grows about sixteen or eighteen Feet high, and hath a woody Stem, which divides into several Branches: these are beset with Leaves, somewhat like those of the yellow Mallow, which are five Inches long, and four broad, ending in a Point: these are sawed round the Edges, and have a Down on their Under-sides. The Flowers are of a greenish-yellow Colour, and are produced in Bunches. The Season of its Flowering is in *January*, in the native Place of its Growth; and in *Europe* it generally flowers a little earlier, commonly by the End of *November*; and the Seeds are ripe in *March*.

This Plant is propagated by Seed, which should be sown early in the Spring on an Hot-bed; and when the Plants are come up about two Inches high, they should each be transplanted into a separate small Pot filled with fresh light Earth, and plunged into a moderate Hot-bed, being careful to shade them from the Sun until they have taken Root; after which time they must have a large Share of fresh Air admitted to them

in warm Weather; and they must be duly watered. In this Hot-bed the Plants may remain till Autumn, when they must be removed into the Stove; and the first Year, while the Plants are young, it will be proper to plunge them into the Bark-bed: but the following Winters they will do very well in the dry Stove, which should be kept up to a temperate Heat. And in the Middle of the Summer they will bear to be exposed for near three Months, provided they are placed in a warm Situation. In hot Weather these Plants must be frequently watered; and as they advance in their Growth, should be shifted into larger Pots filled with fresh light Earth. With this Management the Plants will thrive very well, and in two or three Years will produce Flowers and Seeds. It may also be propagated by Cuttings, which should be planted in *July*, in Pots of rich Earth, and plunged into a very moderate Hot-bed of Tanners Bark, and in the Day-time screened from the Sun: these Cuttings will be rooted by the Beginning of *September*, when they should be each transplanted into a small Pot, and plunged again into the Hot-bed till they have taken Root; and afterward they may be treated as the old Plants.

MORINA.

The Characters are;

It hath a tubulous anomalous personated Flower, consisting of one Leaf, which is divided into two Lips: the Upper-lip is again divided into two Parts; but the Under-lip is divided into three: from the Flower-cup, which is, for the most part, bifid, arises the Pointal, fixed like a Nail in the Hind-part of the Flower: but is barren; for the Flower-cup rests on the

the Embryo; and is surrounded by another Cup as a Sheath, in which are many roundish and angular Seeds.

We have but one Sort of this Plant; viz.

MORINA Orientalis, carlinæ folio.
Tourn. Cor. Eastern Morina, with a Leaf of the Carline Thistle.

This Plant was discovered by Dr. Tournefort, in his Travels in the Levant, who gave it this Name in Honour to Dr. Morin, a Physician at Paris.

This Plant is propagated by Seed, which should be sown soon after it is ripe in the Autumn, otherwise the Plants will not come up the following Summer; for I have several times observed, where the Seeds have been sown in the Spring, they have remained in the Ground fourteen or fifteen Months before the Plants have appeared. These Seeds should be sown in the Places where the Plants are to remain, because they send forth Tap-roots, which run very deep into the Ground; and when these are broken or injured in transplanting, the Plants seldom thrive after. They may be sown in open Beds or Borders of fresh light Earth, being careful to mark the Places, that the Ground may not be disturbed; for it frequently happens, that the Seeds do not come up the first Year, when they are sown in Autumn; but when they are sown in the Spring, they never come up the same Year. The Ground where the Seeds are sown must be kept clear from Weeds; which is all that is necessary to be done until the Plants come up; when, if the Season should prove dry, it will be proper to refresh them two or three times a Week with Water: and where they come up too close together, they should be thinned so as to leave them near eighteen Inches apart: after which time they will require

no other Culture but to keep them constantly clear from Weeds; and in the Spring, just before the Plants put out new Leaves, to stir the Ground gently between them; and lay a little fresh Earth over the Surface of the Bed, to encourage the Plants.

In Autumn these Plants decay to the Ground, and send forth new Leaves the following Spring: but it will be three Years from the time of the Plants first coming up, to their Flowering; tho' after that time they will flower every Season; and the Roots will continue many Years, provided they are not disturbed. These Plants, when in Flower, make an agreeable Diversity, when mixed with other hardy flowering perennial Plants; and as they do not require much Care to cultivate them, they deserve room in every good Flower-garden.

MORUS, The Mulberry-tree.

The Characters are;

It hath large rough roundish Leaves: the Male Flowers (or Katkins, which have a Calyx consisting of four Leaves) are sometimes produced upon separate Trees, at other times at remote Distances from the Fruit on the same Tree: the Fruit is composed of several Protuberances, to each of which adhere four small Leaves: the Seeds are roundish, growing singly in each Protuberance.

The Species are;

1. *MORUS fructu nigro. C. B. P.*
The common black Mulberry.
2. *MORUS fructu albo. C. B. P.*
The white Mulberry.
3. *MORUS fructu nigro minori, foliis eleganter laciniatis. Tourn.*
The lesser black Mulberry, with Leaves neatly jagged.
4. *MORUS fructu albo minori, ex albo purpurascente. Tourn.* The small purplish-white Mulberry.

5. MORUS *Virginiana, foliis latissimis scabris, fructu rubro longiori.* *Cat. Plant. Hort.* The broad-leav'd *Virginian* Mulberry, with long red Fruit.

6. MORUS *Virginienfis arbor, lotti arboris instar ramosa, foliis amplifimis.* *Pluk. Phyt.* The large-leav'd *Virginian* Mulberry, with blackish Shoots, somewhat like those of the Lote or Nettle-tree.

The first of these Sorts is very common in most Gardens, being planted for the Delicacy of its Fruit: it may be propagated by sowing the Seeds, or by laying down the tender Branches, which in two Years will take Root, and may then be transplanted into the Places where they are to remain. Those Plants which are propagated from Seeds are commonly the most vigorous, and generally make the straightest Stems: but then there is a very great Hazard of their being fruitful; for it often happens, that such Plants are, for the most part, of the Male Kind, which produce Katkins, but seldom have much Fruit; for which Reason, those who are desirous to have fruitful Trees, should always propagate them by Layers from such Trees as produce plenty of good Fruit, or choose such as they have seen bear in the Nursery: but as the Trees thus raised are subject to have crooked unsightly Stems, there should be Care taken in the Choice of straight Shoots to make Layers; and when they are transplanted out, they should have straight Stakes fixed down by each, to which they should be fastened as the Shoot is extended, until it comes to the Height you design the Stem; then you may suffer the Branches to extend as they are inclinable; for this Tree should not be often prun'd; but only

such Branches should be cut off which shoot cross, and bruise themselves by rubbing against each other; and such as decay should also be cut off.

This Tree delights in a light Soil, not too wet, nor over-dry; and should have an open Exposure; for if it be planted too near to other Trees or Buildings, so as to be shaded thereby, the Fruit seldom ripens well; tho', if they are planted in a Situation where they may be defended from the violent West and South-west Winds, which very often blow down and destroy great Quantities of the Fruit, it will be of great Advantage; but they should always be open to the East and South-east Sun, which is of great Service in drying up the Moisture which lodges upon the Surface of their Leaves in the Night; and not only retards the Fruit, but renders it ill-tasted and watry. And as this Fruit continues late in Autumn, where the Trees are not well exposed to the Sun, the Fruit will turn mouldy upon the Trees, especially in damp Weather, or in cool Nights.

This Tree delights to grow in rich light Earth, such as are the Kitchen-gardens near *London*, where the Soil is also deep; in which Places there are some very large Trees, which have been many Years standing; and these old Trees produce a much greater Quantity of Fruit than any of the young Trees, allowing for their Proportion; and the Fruit are also larger, and better flavoured: these old Trees produce few Male Flowers; for I have constantly observed, that as the Trees advance in Age, their Number of Male Flowers decreases in proportion. I have also observed some Trees, which, while young, produced chiefly Male Flowers, after

ter twenty Years standing, have produced plenty of Fruit, and few Male Flowers.

Where these Trees are planted in a very strong or shallow Soil, they seldom make any Progress, especially where the Bottom is either Clay or Chalk; in both which Soils they grow mossy, and never make much Progress.

The Soil under these Trees should also be every Year well dug and manured; tho' there will scarce any Sort of Plants grow under them: but it is of great Advantage to the Fruit, notwithstanding what may have been said to the contrary.

The white Mulberry is commonly cultivated for its Leaves to feed Silk-worms, in *France* and *Italy*, &c. tho' the *Persians* always make use of the common black Mulberry for that Purpose: and I have been assured by a Gentleman of Honour, who hath made Trial of both Sorts of Leaves, that the Worms fed with those of the black Sort produce much better Silk than those fed with the White: but he observes, that the Leaves of the black Sort should never be given to the Worms, after they have eaten for some time of the white, lest the Worms should burst; which is often the Case, when they are thus treated.

The Trees which are designed to feed Silk-worms, should never be suffered to grow tall, but rather kept in a sort of Hedge; and instead of pulling off the Leaves singly, they should be sheared off together with their young Branches; which is much sooner done, and not so injurious to the Tree.

This white Sort may be propagated either from Seeds or Layers, as the black Mulberry, and is equally hardy: but the most expeditious Method of raising these Trees in Quan-

tity, is from the Seeds; which may be procured in plenty from the South of *France*, or *Italy*: the best way to sow these Seeds in *England* is, to make a moderate Hot-bed, which should be arched over with Hoops, and covered with Mats: upon this Bed the Seeds should be sown in the middle of *March*, and covered over with light Earth about a Quarter of an Inch deep: in very dry Weather the Bed must be frequently watered; and in the Heat of the Day shaded with Mats; and also covered in the Nights when they are cold: with this Management the Plants will come up in five or six Weeks; and as they are tender when they first appear, they must be guarded against frosty Mornings, which often happen in *May*, and destroy such tender Plants: if these Plants are watered in dry Weather, and kept clear from Weeds, they will make good Progress the first Year: but there must be Care taken of them the first Winter, especially to cover them in Autumn, when the first Frosts come, which will kill the tender Plants to the Ground, if they are not protected: the following *March* these Plants should be transplanted into the Nursery to get Strength, where they may remain two or three Years; and then should be removed where they are to continue.

There are two or three Varieties of this Tree, which differ in the Shape of their Leaves, Size and Colour of their Fruit: but as they are of no other Use than for their Leaves, the strongest-shooting and the largest-leaf'd Sort should be preferr'd.

The large-leav'd *Virginian* Sort, with long red Fruit, is at present very scarce in *England*, tho' it seems to be the common Sort, which grows spontaneously in the Woods of *America*: this may be propagated from Seeds,

Seeds, or by laying down the Branches, as the common Sort : it is very hardy, and will endure the Cold of our Winters in the open Air very well. The Leaves of this Kind are very large, and seem to be as proper for feeding of Silk-worms as those of the common Sort ; so that if ever the Project of establishing a Silk Manufactory in the *West-Indies* should be set on foot, there would be no occasion of their sending over for Mulberry-trees, as hath been by some proposed, since they will find a sufficient Quantity in all the Woods of that Country.

The large leaf'd *Virginian* Mulberry, with black Shoots, is still more uncommon than any of the former : there is a large Plant of this Kind growing in the Gardens of the Bishop of *London* at *Fulham*, which has been several Years an Inhabitant of that Garden ; but has never produced any Fruit, that I could learn ; but hath some Years a great Number of Katkins, much like those of the Hazel nut, which occasioned Mr. *Ray* to give it the Name of *Corylus* ; but it may be one of the Male Trees, which never produce Fruit, as it sometimes happens in the common Sorts of Mulberries, the Leaves being very like those of the black Mulberry, but somewhat larger and rougher.

This Tree has not been propagated yet in this Country ; for tho' it has been budded and grafted upon both the black Mulberries, yet I can't hear, that it hath succeeded upon either ; and the Tree, being pretty tall, can't be laid down, which is the most likely Method to propagate it : this is very hardy, and will endure the Cold of our Climate in the open Air very well, and is coveted as a Curiosity by such as de-

light in the Variety of Trees and Shrubs.

MOSCHATELLINA, Tuberous Moschatel.

The Characters are ;

It hath a Flower consisting of one Leaf, which is divided at the Brim into many Parts, from whose Cup arises the Pointal, fixed like a Nail in the middle of the Flower, which afterward becomes a soft succulent Berry ; in which are contained many flat Seeds.

We have but one Sort of this Plant ; viz.

MOSCHATELLINA *foliis fumaricæ bulbosæ*. *J. B.* Moschatel with Leaves like those of the bulbous Fumitory.

This Plant grows wild in shady moist Places in several Parts of *England* : it flowers the Latter-end of *March*, or the Beginning of *April* ; and the Leaves decay about the Middle of *June*, when the Roots may be taken up, and transplanted. These should have a pretty strong Soil ; and if they are planted under Thickets of Shrubs, they will thrive much better than in an open Exposure.

The Flowers are of a greenish-white Colour ; so are not very beautiful : but as the Plants will thrive under Trees, and require no Care in their Culture ; therefore they may have a Place in Gardens, for the sake of Variety.

MOSS. *Vide Mufcus.*

MOTHERWORT. *Vide Cardiaca.*

MUNTINGIA.

The Characters are ;

It hath a rose-shaped Flower, consisting of five Leaves, which are placed in a circular Order ; from whose Cup arises the Pointal, which afterward becomes a globular soft
fl. shy

fleshy umbilicated Fruit, in which are contained many small Seeds.

The Species are;

1. MUNTINGIA *folio sericeo molli, fructu majori.* Plum. Nov. Gen. Muntingia with a soft silky Leaf, and a larger Fruit.

2. MUNTINGIA *folio ulmi aspero, fructu minimo glomerato.* Plum. Nov. Gen. Muntingia with a rough Elm-leaf; and the least Fruit growing in Clusters.

3. MUNTINGIA *folio corni, fructu minore.* Plum. Nov. Gen. Muntingia with a Cornel-leaf, and a lesser Fruit.

These Plants are Natives of the Islands in *America*: the first Sort is figured and described by Sir *Hans Sloane*, in his *History of Jamaica*, by the Name of *Loti arboris folio angustiore, rubi flore, &c.* This Sort grows thirty Feet high or upward, in its native Soil; but in *England* I have not seen any of them above ten Feet high: this casts its Leaves in Winter, and will sometimes continue without Leaves a whole Year, especially if the Plants are not kept warm: the Leaves of this Sort are covered with a sort of Down on their Under-side, and have three large Ribs running longitudinally in each: the Fruit is shaped somewhat like a small Medlar; and when ripe, is of a dark-brown Colour: the Seeds of all these Sorts were sent from *Jamaica* by Mr. *Robert Millar*.

The third and fourth Sorts seldom grow more than twelve or fourteen Feet high in their native Country: but in *England* I have not seen any above half that Height: the Leaves of the second Sort resemble those of the Elm; but are extremely rough: the Flowers of this Sort are very small, and are produced in Clusters; the Fruit is about the Size of a small

Pea, at first of a yellowish green; but afterward turns black.

These do not make any great Appearance; so are seldom cultivated in Gardens, unless by some who are curious in the Study of Plants.

They may be propagated by Seeds, which should be sown in Pots filled with light rich Earth, and plunged into a moderate Hot-bed of Tanners Bark, where they should be duly watered; and in warm Weather the Glasses should be raised to admit fresh Air. These Seeds will often remain in the Ground a whole Year before the Plants will appear; in which Case the Pots must be kept constantly clear from Weeds, and should remain in the Hot-bed till after *Michaelmas*, when they may be removed into the Stove, and plunged into the Bark-bed, between other Pots of tall Plants, under which they will very well stand; and therefore may be crowded in, where Plants will not thrive. During the Winter-season the Pots should be now-and-then watered, when the Earth appears dry; and in the Beginning of *March* the Pots should be removed out of the Stove, and placed into a fresh Bark-bed under Frames, which will bring up the Plants soon after.

When the Plants are come up about two Inches high, they should be carefully taken out of the Pots, and each planted into a separate small Pot filled with light rich Earth, and then plunged into the Hot-bed again, observing to shade them from the Sun, until they have taken new Root; after which time they should be duly watered, and in warm Weather must have a large Share of fresh Air. In this Hot-bed the Plants may remain until the Autumn, when the Nights begin to be cold; at which

which time they should be removed into the Stove, and plunged into the Bark-bed. During the Winter-season these Plants must be kept warm, especially while they are young, and frequently refreshed with Water : but it must not be given to them in large Quantities at this Season, lest it rot the tender Fibres of their Roots. It will be proper to continue these Plants in the Stove all the Year ; but in warm Weather they should have a large Share of Air, and Plenty of Water : yet, as the Plants grow in Strength, they will be more hardy, and may be more exposed in Summer ; and in Winter will live in a dry Stove, if kept in a moderate Degree of Heat.

MULBERRY. *Vide* Morus.

MULLEIN. *Vide* Verbascum.

MURUCUIA.

The Characters are ;

It hath a rose-shaped Flower, consisting of several Leaves, which are placed in a circular Order ; and is inclosed in a many-leav'd Cup: the Middle of the Flower is occupied by a Tube, shaped like the Trunk of a Cone ; out of which arises the Pointal, with the Embryo on the Top, on which rest three Clubs or Nails, and under them the Stamina : the Embryo afterward becomes a fleshy oval Fruit, having one Cell, which is filled with Seeds, which are covered with an Hood or Veil.

There is but one Species of Murucua ; which is,

MURUCUIA folio lunato. *Inst.* R.H. Murucua with an horned Leaf.

This Plant is very nearly allied to the Passion-flower, and is by some Authors ranged with them ; but as it differs from them in the Structure of the Flower, having a large Trunk in the Centre of the Flower, which the Passion-flowers have not, Dr. Tournefort has separated it from

them, and applied this Name to it, which is the *American* Name given to several Sorts of Passion-flowers.

It grows in *Jamaica*, from whence the Seeds may be procured. These Seeds should be sown early in the Spring of the Year, on a moderate Hot-bed ; and when the Plants are come up, they must be transplanted each into a separate small Pot, and plunged into an Hot-bed of Tanners Bark, and then managed in the same manner as hath been directed for the tender Sorts of Passion-flowers.

MUSA, The Plantain-tree.

The Characters are ;

It is a kind of Plant with a *poly-petalous anomalous Flower* : the upper Petal is excavated or hollowed like a little Boat, and divided into three at the Summit: the *hither one is concave*, but the *inward one peltated*, or in the Form of a Crescent or Half-moon Shield, and accompanied with two little narrow-pointed Leaves: the Calyx passes into a cucumber shaped Fruit, that is soft, fleshy, covered with a Skin divided, as it were, into three Locuments, in which they appear, as it were, some Rudiments of Seeds.

The Species are ;

1. MUSA fructu cucumerino longiori. *Plum. Nov. Gen.* The Plantain-tree, *vulgo*.

2. MUSA caudice maculato, fructu recto rotundo brevioris odorato. *Sloan. Cat.* The Banana-tree, *vulgo*.

These Plants are very common in the *East* and *West-Indies*, as also in most hot Countries of the World. They are carefully cultivated by the Planters in the *West-Indies*, who plant them in low rich Ground, by the Sides of Gullies, where they produce Fruit most Parts of the Year. In *England* they are only preserved

served as Curiosities, where they must be constantly kept in a Bark-stove; for tho' they may be kept alive in another warm Stove, yet they will make very little Progress therein, and do not appear half so beautiful, their chief Ornament being the Largeness of their Leaves, which are sometimes six Feet long, and near two Feet broad: but as these Plants take up a great deal of room in the Stove, especially when they arrive to a considerable Size; so it is not convenient to keep more than one Plant of each Kind.

During the Summer-season these Plants must be plentifully watered; for the Surface of their Leaves being large, occasions a great Consumption of Moisture, by Perspiration, in hot Weather; but in the Winter they must be watered more sparingly; tho' at that Season they must be often refreshed; but Water must not be given them in such Quantities.

The Pots in which these Plants are placed should be large, in proportion to the Size of the Plants; for their Roots generally extend pretty far; and the Earth should be rich and light. The Degree of Heat with which these Plants thrive best, is much the same with the *Anana*, or Pine-apple, in which I have had many of these Plants produce their Fruit in Perfection; and they were near twenty Feet high.

The most sure Method to have these Plants fruit in *England*, is, after they have grown for some time in Pots, so as to have made good Roots, to shake them out of the Pots with the Ball of Earth to their Roots, and plant them into the Tan-bed in the Stove, observing to lay a little old Tan near their Roots, for their Fibres to strike into; and in a few Months the Roots of these Plants will extend themselves many

Feet each Way in the Bark; and these Plants will thrive a great deal faster, than those which are confined in Pots or Tubs. When the Bark-bed wants to be renewed with fresh Tan, there should be great Care taken of the Roots of these Plants, not to cut or break them, as also to leave a large Quantity of the old Tan about them; because, if the new Tan is laid too near them, it will scorch their Roots, and injure them. These Plants must be plentifully supplied with Water, otherwise they will not thrive: in Winter they should be watered every other Day, giving at least a Gallon to each Plant; but in Summer they must be watered every Day, and double the Quantity given to them each time. If the Plants push out their Flower-stems in the Spring, there will be Hopes of their perfecting their Fruit; but when they come out late in the Year, the Plants will decay before the Fruit is ripe. The Stoves in which these Plants are placed, should be at least twenty-four Feet in Height, otherwise there will not be room for their Leaves to expand; for when the Plants are in Vigour, the Leaves are often eight Feet in Length, and near three Feet broad: so that if the Stems grow to be sixteen Feet to the Division of the Leaves, and the House is not twenty-four Feet high, the Leaves will be cramped, which will retard the Growth of the Plants: besides, when the Leaves are bent against the Glass, there will be Danger of their breaking them, when they are growing vigorously; for I have had, in one Night, the Stems of such bent Leaves force thro' the Glass; and the next Morning advanced two or three Inches above the Glass.

I have seen some Branches of Fruit of the first Sort, which were upward of forty Pounds Weight, and

perfectly ripe in *England*: but this is not so good a Fruit, as to tempt any Person to be at the Expence of raising them in *England*: the second Sort is preferr'd to the first, for the Flavour of its Fruit, in all those hot Countries where these Plants abound: the Bunches of these are not near so large as those of the first Sort; nor are the single Fruit near so long: these change to a deeper yellow Colour, as they ripen; but their Taste is somewhat like that of mealy Figs. Some Persons who have resided in the *West-Indies*, having eaten some of these Fruit, which were produced in *England*, have thought them little inferior to those which grew in *America*; and I imagine, that the Inhabitants of those Countries would not esteem these Fruits so much, had they Variety of other Sorts: but, for want of better, they eat many Kinds of Fruit, which would not be valued in *Europe*, could they be obtained in Perfection.

These Plants are easily propagated, by cutting off an old Plant near the Ground, which will occasion their shooting out several young ones from the Root; which is the Manner they are propagated in the hot Countries: so that after a Spot of Ground is once planted with them, they will continue several Years; for the old Plant producing one large Bunch of Fruit from the Centre, when that is ripe, and cut off, the whole Plant decays, and several young ones spring up from the Roots, which, being produced one after another successively, afford the Inhabitants Plants of various Size and Age, which produce their Fruit successively in like manner.

It is the first of these Species which is chiefly cultivated in the *West-Indies*; that, producing a much larger Bunch of Fruit, is by the In-

habitants greatly preferr'd to the other, which is accounted a very pleasant Fruit when ripe, and is by many Persons greatly coveted by way of Dessert, being softer and more luscious to the Taste; but is not so much esteemed for Food.

These Plants rise to be fifteen or twenty Feet high in the *West-Indies*; to which Height they generally arrive in about ten Months from their first planting; soon after which they produce their Fruit, and then decay: they are of the quickest Growth of any Vegetable yet known. Sir *Hans Sloane* says, one may almost see them grow; he cut a young Tree even at the Top with a Knife, which immediately grew up discernibly; and in an Hour's time the middle Leaves, which were wrapped up within the others, were advanced above them half an Inch.

MUSCARI, Musk, or Grape Hyacinth, *vulgo*.

The Characters are;

It hath a bulbous Root: the Leaves are long and narrow: the Flower is hermaphroditical, consisting of one Leaf, and shaped like a Pitcher, and cut at Top into six Segments, which are reflexed: the Ovary becomes a triangular Fruit, divided into three Cells, which are full of round Seeds.

The Species are;

1. MUSCARI *arvense juncifolium minus caeruleum*. *Tourn.* Common lesser blue Grape-flower, or Muscary.

2. MUSCARI *arvense juncifolium exalbidum minus*. *Tourn.* Lesser whitish Grape-flower, or Muscary.

3. MUSCARI *obsoletiore flore ex purpura virente*. *Clus.* Musk Hyacinth, or Grape-flower, of a worn-out purple-greenish Colour.

4. MUSCARI *caeruleum majus*. *Tourn.* Greater blue Muscary, or Grape-flower.

5. MUSCARI

5. *MUSCARI arvense latifolium purpurascens. Tourn.* Broad-leav'd Muscary or Grape-flower, with a purplish Flower.

6. *MUSCARI panicula comosa purpuro-violacea. Boerb. Ind.* The feather'd Hyacinth, *vulgo.*

7. *MUSCARI flavo flore. Clus. Hist.* The yellow Muscary, or Grape-hyacinth; commonly called *Tibcadi*, or *Dipcady.*

8. *MUSCARI panicula cirrhosa purpurea, longiore & strictiore. Boerb. Ind. Plant.* Muscary or Grape-hyacinth, with a feather'd Top.

The first Sort is very common in most old Gardens, where, by its plentiful Increase, it is become so troublesome as to render it little esteemed; for when once these Roots have taken Possession of a Garden, they are scarcely ever eradicated afterward; the smallest Off-sets growing, altho' they are buried a Foot under the Surface of the Ground. This produces its Flowers in *April* and *May*; and if permitted to remain, will produce ripe Seeds in *June*: the Flowers of this Sort smell very like Starch.

The second Sort is less common than the first, and is preserved by such as are curious in Flowers; tho' it is a Plant of no great Beauty: this is propagated by Off-sets, as the common Hyacinth, and will thrive in almost any Soil or Situation; but best in that which is warm and dry.

The third Sort is a very despicable Flower, to Appearance; but is chiefly preserved for its uncommon Sweetness: this is also increased as the former, and produces its Flowers much about the same Season: but as this doth not increase so fast as the other, the Roots may remain three Years before they are removed.

The fourth, fifth, sixth, and eighth Sorts are also preserved in

curious Gardens for Variety; but neither of these have much Sweetness in their Flowers: these are also propagated by Off-sets, as the former; but produce their Flowers later in the Season.

The seventh Sort produces yellow Flowers, which, when they decay, change to a worn-out purplish Colour: the Flowers of this Kind are extremely sweet; and having more Beauty than either of the other Sorts, it is generally more esteemed: but this is not very common in the *English* Gardens at present.

There is another Sort of this, which has been lately raised in *Holland*, with very large orange-coloured Flowers, which have a very agreeable Scent: but this is so rare in *Holland*, as that the Gardeners give two Guineas for a Root of it; so that until the Price of these Roots is greatly lower'd, we can't expect to see this Sort in *England*; there being few Persons here, who care to give such Prices for Flowers.

The proper Season for taking up the Roots of these Flowers is in *July*, when their Leaves are decayed; at which time they should be spread upon Mats, in a dry Place, for a Fortnight, until their Bulbs be dry'd, when they may be laid up, each Sort by itself, until the Beginning of *October*, which is the Season for planting most of those bulbous-rooted Flowers; and the various Sorts of these may then be intermixed amongst other Flowers of the same Growth; where, in the Season of their Flowering, they afford an agreeable Variety. These Roots should never be permitted to remain longer than two Years unremoved, unless the third and seventh Sorts; for they multiply so fast, that the Number of their Off-sets would greatly weaken the blowing Roots,

and cause their Flowers to be very small; and the first Sort, which increases so plentifully, would fill the Borders with Off-sets, so as not to be clear'd out again.

MUSCIPULA. *Vide* Lychnis.

MUSCUS, Moss.

These, tho' formerly supposed to be only Excrecencies produced from the Earth, Trees, &c. yet are no less perfect Plants than those of greater Magnitude, having Roots, Branches, Flowers, and Seeds; but cannot be propagated from the latter by any Art.

MUSHROOMS are, by many Persons, supposed to be produced from the Putrefaction of the Dung, Earth, &c. in which they are found; but notwithstanding this Notion is pretty generally received amongst the unthinking Part of Mankind, yet, by the curious Naturalists, they are esteemed perfect Plants; tho' their Flowers and Seeds have not, as yet, been discovered. But since they may, and are annually propagated by the Gardeners near *London*, and are (the esculent Sort of them) greatly esteemed by most curious Palates, I shall briefly set down the Method practised by the Gardeners who cultivate them for Sale.

But, first, it will not be improper to give a short Description of the true eatable Kind, since there are several unwholsome Sorts, which have been, by unskilful Persons, gathered for the Table.

The true Champignon, or Mushroom, appears at first of a roundish Form, like a Button; the Upper-part of which, as also the Stalk, is very white; but being opened, the Under-part is of a livid Flesh-colour; but the fleshy Part, when broken, is very white: when these are suffered to remain undisturbed, they will grow to a large Size, and explicate themselves almost to a Flat-

ness, and the red Part underneath will change to a dark Colour.

In order to cultivate them, if you have no Beds in your own, or in neighbouring Gardens, which produce them, you should look abroad in rich Pastures, during the Months of *August* and *September*, until you find them (that being the Season when they are produced); then you should open the Ground about the Roots of the Mushrooms, where you will find the Earth, very often, full of small white Knobs, which are the Off-sets, or young Mushrooms: these should be carefully gathered, preserving them in Lumps with the Earth about them: but as this Spawn cannot be found in the Pasture, except at the Season when the Mushrooms are naturally produced, you may probably find some in old Dunghils, especially where there has been much Litter amongst it, and the Wet hath not penetrated it to rot it; as likewise, by searching old Hot-beds, it may be often found; for this Spawn hath the Appearance of a white Mould, shooting out in long Strings, by which it may be easily known, where-ever it is met with; or this may be procured by mixing some long Dung from the Stable, which has not been thrown on an Heap to ferment; which being mixed with strong Earth, and put under Cover to prevent Wet getting to it, the more the Air is excluded from it, the sooner the Spawn will appear: but this must not be laid so close together, as to heat; for that will destroy the Spawn: in about two Months after, the Spawn will appear, especially if the Heap is closely covered with old Thatch, or such Litter as hath lain long abroad, so as not to ferment; then the Beds may be prepared to receive the Spawn: these Beds should be
made

made of Dung, in which there is good Store of Litter; but this should not be thrown on an Heap to ferment: that Dung which hath lain spread abroad for a Month or longer, is best: these Beds should be made on dry Ground, and the Dung laid upon the Surface: the Width of these Beds at Bottom should be about two Feet and an half, the Length in proportion to the Quantity of Mushrooms desired: then lay the Dung about a Foot thick, covering it about four Inches with strong Earth: upon this lay more Dung, about ten Inches thick; then another Layer of Earth; still drawing in the Sides of the Bed, so as to form it like the Ridge of an House; which may be done by three Layers of Dung, and as many of Earth. When the Bed is finished, it should be covered with Litter, or old Thatch, to keep out Wet, as also to prevent its drying: in this Situation it may remain eight or ten Days; by which time the Bed will be in a proper Temperature of Warmth to receive the Spawn; for there should be only a moderate Warmth in it, great Heat destroying the Spawn, as will also Wet; therefore when the Spawn is found, it should always be kept dry until it is used; for the drier it is, the better it will take in the Bed: for I had a Parcel of this Spawn, which had lain near the Oven of a Stove upward of four Months, and was become so dry, as that I despaired of its Success; but I never have yet seen any which produced so soon, nor in so great Quantity, as this.

The Bed being in a proper Temperature for the Spawn, the Covering of Litter should be taken off, and the Sides of the Bed smoothed; then a Covering of light rich Earth, about an Inch thick, should be laid

all over the Bed; but this should not be wet: upon this the Spawn should be thrust, laying the Lumps two or three Inches asunder: then gently cover this with the same light Earth, above half an Inch thick; and put the Covering of Litter over the Bed, laying it so thick as to keep out Wet, and prevent the Bed from drying: when these Beds are made in the Spring or Autumn, as the Weather is in those Seasons temperate, so the Spawn will then take much sooner, and the Mushrooms will appear perhaps in a Month after making: but those Beds which are made in Summer, when the Season is hot, or in Winter, when the Weather is cold, are much longer before they produce.

The great Skill in managing of these Beds is, that of keeping them in a proper Temperature of Moisture, never suffering them to receive too much Wet: during the Summer-season, the Beds may be uncovered to receive gentle Showers of Rain at proper times; and in long dry Seasons the Beds should be now and then gently watered; but by no means suffer much Wet to come to them: during the Winter-season they must be kept as dry as possible; and so closely covered, as to keep out Cold: in frosty or very cold Weather, if some warm Litter, shaken out of a Dung-heap, is laid on, it will promote the Growth of the Mushrooms: but this must not be laid next the Bed; but a Covering of dry Litter between the Bed and this warm Litter: and as often as the Litter is found to decay, it should be renewed with fresh: and as the Cold increases, the Covering should be laid so much thicker. If these Things are observed, there may be plenty of Mushrooms obtained all the Year: and these produced in

Beds are much better for the Table than any of those which are gathered in the Fields.

A Bed thus manag'd, if the Spawn takes kindly, will continue good for several Months, and produce great Quantities of Mushrooms; from these Beds, when they are destroy'd, you should take the Spawn for a fresh Supply, which may be laid up in a dry Place until the proper Season of using it; which should not be sooner than five or six Weeks, that the Spawn may have time to dry before it is put into the Bed, otherwise it will not succeed well.

Sometimes it happens, that Beds thus made do not produce any Mushrooms till they have lain five or six Months; so that these Beds should not be destroyed, though they should not at first answer Expectation; for I have frequently known these to have produced great Quantities of Mushrooms afterwards, and have continued a long time in Perfection.

MUSTARD. *Vide Sinapi.*

MYAGRUM, Gold of Pleasure.

The Characters are;

It hath a Flower consisting of four Leaves, which are placed in form of a Cross, out of whose Cup arises the Pointal, which afterward becomes a turbinated Fruit, having one Cell, in which is included one oblong Seed, and two empty Cells at the Point.

The Species are;

1. MYAGRUM *monospermum latifolium*. C. B. P. Broad-leav'd one-grain'd Gold of Pleasure.

2. MYAGRUM *monospermum minus*. C. B. P. Lesser one-grained Gold of Pleasure.

3. MYAGRUM *capitulis rotundis*. J. B. Round-podded Gold of Pleasure.

These are all of them annual Plants, which perish soon after their Seeds are ripe. They grow wild in

the Corn-fields in several Parts of Europe; where, if the Seeds are permitted to scatter, the Plants will come up, and thrive better than those which are sown with Care; so that the best way to continue these Species is, to let the Seeds fall in Autumn, or to sow them soon after they are ripe; for when they are sown in the Spring, they very often miscarry. When the Plants are come up, they should be clear'd from Weeds; and where they are too close together, they should be thinned so as to leave them about eight or ten Inches asunder, which is all the Culture they require.

The Oil of these Seeds is much used in Germany, where the Inhabitants sow large Fields with the Seed. This Oil is frequently used in Medicine; but the poor People eat the Oil in Sallads and Sauces, and the Rich use the Oil for their Lamps; but in England it is very rarely used either way.

MYOSOTIS, Mouse-ear Chickweed.

The Characters are;

It hath the whole Appearance of Chickweed; but the Flower is larger; and the Seed-vessel is shap'd like an Ox's Horn, gapeing at the Top, and full of small round Seeds.

The Species are;

1. MYOSOTIS *Hispanica segetum*. Tourn. Spanish Corn Mouse-ear Chickweed.

2. MYOSOTIS *Alpina latifolia*. Tourn. Broad-leav'd Mouse-ear Chickweed of the Alps.

3. MYOSOTIS *Orientalis perfoliata, folio lychnidis*. Cor. Inst. Eastern Thorough-wax Mouse-ear Chickweed, with a Campion-leaf.

There are several other Varieties of this Plant, which are preserved in curious Botanic Gardens; but as they are of little Beauty or Use, I shall

shall omit mentioning them in this Place. These may be propagated by sowing their Seeds in *March*, upon a Bed of fresh light Earth, in an open Situation, where they may remain to flower and seed; being careful to clear them from Weeds, as also to pull up the Plants, where they come up too thick; but they do not succeed well, if transplanted; therefore should always remain where they are sown.

MYOSURUS, Mouse-tail.

This Plant is very near akin to the *Ranunculus*, in which Genus it is ranged by some Botanists; the Flowers are extremely small, and are succeeded by long slender Spikes of Seeds, resembling the Tail of a Mouse, from whence it had the Name. It grows wild upon moist Grounds in divers Parts of *England*, where it flowers the Latter-end of *April*; and the Seeds ripen in a Month after, when the Plants decay, being annual. It is never cultivated in Gardens; so I shall not trouble the Reader with any farther Account of it.

MYRICA, The Candleberry Myrtle, *vulgo*; or Gale, or Sweet Willow; by some, *Myrtus Brabantica*, or *Dutch Myrtle*.

The Characters are;

These are Male and Female in different Plants: the Male Plants produce oblong loose scaly Katkins: in each of the Scales is produced one moon-shaped Flower, having no Petals, in each of which there are four or six Stamina: the Female Flowers have no Stamina, but an oval Pointal, supporting two Styles: the Pointal afterward changes to a Berry, in which is included one roundish Seed.

The Species are;

1. MYRICA *foliis lanceolatis, fructu sicco*. *Lin. Flor. Mas & fœmina*.

The Gale, Sweet Willow, or *Dutch Myrtle*, Male and Female.

2. MYRICA *foliis lanceolatis, fructu baccato*. *Lin. Hort. Cliff. Mas & fœmina*. Candleberry Myrtle with intire Leaves, Male and Female.

3. MYRICA *foliis lanceolatis utrinque acuminatis serratis; mas & fœmina*. Candleberry Myrtle with pointed sawed Leaves, Male and Female.

4. MYRICA *foliis oblongis alternatim sinuatis*. *Lin. Hort. Cliff. Mas & fœmina*. Candleberry Myrtle with Spleenwort-leaves, Male and Female.

5. MYRICA *foliis oblongis opposite sinuatis*. *Lin. Hort. Cliff. African*. Candleberry-tree, with oblong sinuated Leaves, commonly called *African Bay* with Oak-leaves.

The first Sort grows plentifully upon Bogs in many Parts of *England*, where it rises with many Stems from the Root, and sometimes grows upward of four Feet high. This Sort creeps very much at the Root, when it grows upon a moist boggy Soil, whereby it soon spreads over a large Tract of Ground, and forms a close Thicket; but it is with great Difficulty maintain'd in Gardens, especially if the Soil is dry; for in such Places it will scarce live thro' one Summer, unless it be frequently watered. Where this Shrub grows in plenty, it is so fragrant (especially after a Shower of Rain) as to perfume the Air to a great Distance, during the Spring and Summer, when they have their Leaves; for in Winter they cast their Leaves; though in mild Seasons they often retain them till *Christmas*, or later. The Wood of these Shrubs, being burnt, emits a fragrant Ordour, equal to that of the Myrtle-tree; as do the Leaves when bruised. There

have been some Persons who have gathered the Leaves of these Shrubs, and used them as Tea; which perhaps may have occasioned a late Author to suppose it was the true *China* Tea, tho' that is a Plant very different in all its Characters from this. The young Branches of this Shrub, being cut off with their Leaves, were formerly used to be put into Wardrobes to keep away Moths from woolen Cloaths; as also to give the Cloaths an agreeable Scent. In some Countries this is called Gole, in others Gaule, or Gale.

Where this Shrub is designed to be remov'd into a Garden, the Plants should be carefully taken up in the Autumn, preserving the Roots as intire as possible; and if they can be taken up with a Ball of Earth to them, there will be a greater Certainty of their growing. These should be planted in a low swampy Ground, where, if they are once establish'd, they will spread and multiply greatly, by their spreading Roots; but especially where the Soil is soft and moory. In the Bogs where these Shrubs naturally grow, and form Thickets, there are commonly plenty of Woodcocks in their Season.

The second, third, and fourth Sorts are Natives of the Northern Parts of *America*; growing plentifully in moist Ground, and by the Sides of Brooks and Rivalets. The second Sort was brought from *Virginia* to *England*, and hath been long an Inhabitant of some curious Gardens; where these Plants have sometimes grown to the Height of five or six Feet. This produces its Branches very irregular, and without any Order; the Leaves are oblong, and for the most part intire, having few or no Notches on their Edges. These are produced alternately on the

Branches. This Sort will grow to the Height of seven Feet in *England*; but in *America* it often grows twelve Feet high. The Flowers or Katkins are produced in Clusters, close to the Branches, at the Setting on of the Leaves, like small Bunches of Currans. These Berries have an unctuous Substance surrounding the Seeds, which is collected for the making of Candies in the following manner:

In the Winter-seasons, when the Berries are ripe, a Man with his Family will remove from his Habitation to some little Island or Sandbank near the Sea, where these Trees chiefly abound, taking with him Kettles to boil the Berries in. He builds an Hut with Palmetto-leaves, for the Shelter of himself and Family while they stay, which is generally about a Month. The Man cuts down the Trees, while the Children strip off the Berries into a Pottage-pot; and having put Water to them, they boil them till the Oil floats; which is skimm'd off into another Vessel: this is repeated till there remains no more Oil. This, when cold, hardens to the Consistence of Wax, and is of a dirty-green Colour. They afterwards boil it again, and clarify it in brass Kettles; which gives it a transparent Greenness; then they make this into Candles, which burn a long time, tho' they do not give a clear Light; but are esteem'd for the grateful Scent they emit: and in order to have a clearer Light, the Inhabitants add a Fourth-part of Tallow to this Wax.

The third Sort was discover'd by Mr. *Catesby* in *Carolina*, from whence he sent the Seeds to *England*. Of this there hath been since a great Number of Seeds sent from several Parts of *America*, where it also grows; so that there are more Plants of this Sort in the Gardens, than of the

the former. This usually grows about three Feet high.

The fourth Sort was discovered by Mr. Clayton in *Virginia*, growing in *Lancaster County*, near a River: the Leaves of this Sort are deeply sinuated, somewhat like those of the Spleenwort; and it is narrower than either of the former Sorts. This is but of humble Growth, seldom rising above three or four Feet high. All these three Sorts produce Berries, from whence the Wax is taken without Distinction. These are propagated by Seeds, which are procured from *America*; and as they do not arrive in *England* till the Spring, so being at that Season put into the Ground, the Plants seldom appear till the Year after: therefore the best Method is, to sow the Seeds in Pots, or Tubs of Earth, placing them in a Situation where they may receive the morning Sun till Ten or Eleven o' Clock; observing in dry Weather to moisten the Earth, as also to keep them clear from Weeds. In this Place they may remain till *October*, when they should be removed into a warmer Situation for the Winter-season; and if the Frost should be severe, it will be proper to cover the Earth with Straw or Peas-haulm to keep out the Frost; and about the Beginning of *March* the Pots should be placed on a moderate Hot-bed, which will bring up the Plants in a short time after. All these Sorts delight in a moist Soil, and will endure the severest Cold of our Climate.

The fifth Sort is a Native of the *Cape of Good Hope*, and was brought from thence into the Gardens in *Holland*, where it hath been long an Inhabitant; and was called *Laurus Africana minor, quercus folio*: but, having produced Flowers, it appears to belong to this Genus. This Sort grows to the Height of six or seven

Feet, with strong woody Stems; and the Plants are generally formed into regular Heads by the *Dutch Gardeners*, who are extremely fond of training all their Plants into the Figures of Balls or Pyramids.

This Sort is too tender to live through the Winter in the open Air in *England*; therefore the Plants are kept in Pots, and placed in the Green-house in the Winter; where being treated in the same manner as the Orange-tree, they will thrive extremely well. It is propagated by laying down of the Branches; but these are frequently two Years before they take Root, so that the Plants are not very common in the Gardens. This retains its Leaves through the Winter.

MYRRHIS, Sweet Cicely.

The Characters are;

It is an umbelliferous Plant, with a rose-shaped Flower, consisting of several unequal Petals or Flower-leaves, that are placed circularly, and rest upon the Empalement; which turns to a Fruit, composed of two Seeds, resembling a Bird's Bill, channelled and gibbous on one Side, but plain on the other.

The Species are;

1. MYRRHIS *magno semine longo sulcato*. *J. B.* Sweet Cicely, or Great sweet Chervil, and by some call'd Candy Carrot.

2. MYRRHIS *annua, semine striato villoso incano*. *M. Umb.* Annual sweet Cicely, with hairy striated Seeds, by some call'd Candy Carrot.

3. MYRRHIS *Orientalis, folio angustiori, peucedani semine villoso*. *Boerb. Ind.* Eastern sweet Cicely, with a narrow Sulphurwort-leaf, and hairy Seeds, or The true Candy Carrot.

There are many more Sorts of this Plant preserved in the Gardens of such as are curious in Botany; but as they are Plants of little

Use or Beauty, I thought it not necessary to enumerate them in this Place.

The first-mentioned is an abiding Plant, which is sometimes used in Medicine: this may be propagated by sowing the Seeds in February upon a Bed of light rich Earth, in a shady Situation; and when the Plants come up, they should be transplanted out into the like rich Earth, in a moist shady Situation, at about two Feet asunder; for they spread very wide, and take up much room (especially if they are permitted to remain 2 or 3 Years unremov'd): after the Plants have taken Root, they will require no farther Care, but to keep them clear from Weeds; and they will endure several Years, and produce great Quantities of Seeds; by which, as also by parting the old Roots, they may be greatly increased. If the Seeds of this Sort are permitted to scatter, they will fill the Ground about the Plants with young ones, so as to become troublesome Weeds.

The Seeds of the second Sort are most commonly sold in the Shops for those of the *Daucus Creticus*; but it is the third Sort which is generally accounted the true *Daucus Creticus*; the Seeds of which are us'd in some of the capital Medicines of the Shops.

These may be propagated by sowing their Seeds in the Spring upon a Border of light Earth expos'd to the morning Sun, in which the Plants will rise in about six Weeks after; when they may be transplanted out into Beds of light Earth, observing to water and shade them until they have taken Root; after which they will require no farther Care, but only to keep them clear from Weeds. The Summer following these Plants will produce Flowers and Seeds;

soon after which, the second Sort will decay; but the third will sometimes abide two or three Years, and produce Seeds annually.

MYRTUS, The Myrtle.

The Characters are;

The Flower consists of several Leaves dispos'd in a circular Order, which expand in form of a Rose: upon the Top of the Footstalk is the Ovary, which has a short star-like Cup, divided at the Top into five Parts, and expanded: the Ovary becomes an oblong umbilicated Fruit, divided into three Cells, which are full of kidney-shap'd Seeds.

The Species are;

1. MYRTUS *communis Italica.* C. B. P. Common Myrtle, with pretty large Leaves.
2. MYRTUS *latifolia Romana.* C. B. P. Common broad-leav'd Myrtle.
3. MYRTUS *minor vulgaris.* C. B. P. Thymē-leav'd Myrtle; *vulgo.*
4. MYRTUS *folio buxi.* Schuyll. Boerb. Ind. Box-leav'd Myrtle, *vulgo.*
5. MYRTUS *foliis minimis & mucronatis.* C. B. P. Rosemary-leav'd Myrtle, *vulgo.*
6. MYRTUS *flore pleno.* Corn. Double-flowering Myrtle, *vulgo.*
7. MYRTUS *foliis odore nucis moschatae, cauliculis rubentibus, vulgo odore citri.* Schuyll. Boerb. Ind. The Nutmeg Myrtle, *vulgo.*
8. MYRTUS *Bætica angustifolia.* Clus. Narrow-leav'd Spanish Myrtle, commonly call'd The upright Myrtle.
9. MYRTUS *balsamica, foliis mali granatae.* H. L. The Pomgranate-leav'd Myrtle.
10. MYRTUS *latifolia Bætica secunda, vel foliis laurinis confertim nascentibus.* C. B. P. The Orange-leav'd Myrtle, *vulgo.*

11. MYR-

11. MYRTUS *minor, foliis ex albo variegatis.* The strip'd thyme-leav'd Myrtle, *vulgo.*

12. MYRTUS *foliis odore nucis moschatæ, cauliculis rubentibus, foliis ex luteo variegatis* The strip'd Nutmeg Myrtle, *vulgo.*

13. MYRTUS *foliis mucronatis, ex albo & viridi variegatis, flosculis rubro-candidis.* Boerb. Ind. The strip'd thyme-leav'd Myrtle, *vulgo.*

14. MYRTUS *latifolia Romana. foliis ex luteo variegatis.* The broad-leav'd Myrtle, with strip'd Leaves.

There are some other Varieties of these Plants, which are preserved in the Gardens of the Curious; but those here mention'd are what I have observ'd in the Gardens near London.

These Plants may be all propagated from Cuttings; the best Season for which is in July, when you should make choice of some of the straitest and most vigorous young Shoots, which should be about six or eight Inches long; and the Leaves on the lower Part must be stripp'd off about two Inches high, and the Part twisted which is to be placed in the Ground: then having fill'd a Parcel of Pots (in proportion to the Quantity of Cuttings design'd) with light rich Earth, you should plant the Cuttings therein at about two Inches Distance from each other; observing to close the Earth fast about them, and give them some Water to settle it to the Cuttings; then place the Pots under a common Hot-bed-frame, plunging them either into some old Dung, or Tanners Bark, which will prevent the Earth from drying too fast: but you must carefully shade them with Mats in the Heat of the Day, and give them Air in proportion to the Warmth of the Season; not

forgetting to water them every two or three Days, as you shall find the Earth in the Pots require it. With this Management, in about a Month's time, the Cuttings will be rooted, and begin to shoot: when you must inure them to the open Air by degrees, into which they should be removed toward the Latter-end of August, placing them in a Situation where they may be sheltered from cold Winds; in which Place they may remain till October, when the Pots should be removed into the Green-house; but should be plac'd in the coolest Part thereof, that they may have Air given to them whenever the Weather is mild; for they require only to be protected from severe Cold, except the orange-leav'd and the strip'd Nutmeg Myrtles; which are somewhat tenderer than the rest, and should have a warmer Situation.

During the Winter-season they must be frequently water'd; and, if any decay'd Leaves appear, they should be constantly pick'd off, as also the Pots kept clear from Weeds; which, if permitted to grow, will soon overspread the young Plants, and destroy them.

The March following these Plants should be taken out of the Pots very carefully, preserving a Ball of Earth to the Roots of each of them; and every one should be placed into a separate small Pot fill'd with light rich Earth, observing to water them well to settle the Earth to their Roots, and place them in the shady Part of the Green-house until they have taken Root; after which they should be inured to the open Air, and in May they must be expos'd to the open Air; observing to place them near Hedges, where they may be defended from strong Winds.

During

During the Summer-season they will require to be plentifully water'd, especially being in such small Pots, which in that Season soon dry: therefore you should observe to place them where they should receive the morning Sun; for when they are too much expos'd to the Sun in the Heat of the Day, the Moisture contain'd in the Earth of these small Pots will soon be exhal'd, and the Plants greatly retarded in their Growth thereby.

In *August* following you should examine your Pots, to see if the Roots of the Plants have not made Way out through the Hole in the Bottom of the Pots; which if you observe, you must then shift them into Pots a Size bigger, filling them up with the like rich Earth; and observe to trim the Roots, which were matted to the Side of the Pots, as also to loosen the Earth from the Outside of the Ball with your Hands: some of which should be taken off, that the Roots may the easier find Passage into the fresh Earth: then you must water them well, and place the Pots in a Situation where they may be defended from strong Winds: and at this time you may trim the Plants, in order to reduce them to a regular Figure; and if they are inclinable to make crooked Stems, you should thrust down a slender strait Stick close by them, to which their Stems should be fasten'd, so as to bring them upright.

If Care be taken to train them thus while they are young, the Stems afterward, when they have acquired Strength, will continue strait without any Support; and their Branches may be prun'd, so as to form either Balls or Pyramids; which for such Plants as are preserv'd in the Green-house, and require to be kept in small Compaſs, is the best Method

to have them handsome: but then these shear'd Plants will not produce any Flowers; for which Reason that Sort with double Flowers should not be clipp'd, because the chief Beauty of that consists in its Flowers: but it will be necessary to suffer a Plant or two of each Kind to grow rude, for the Use of their Branches in Nofegays, &c. for it will greatly deface those which have been constantly shear'd to cut off their Branches.

As these Plants advance in Stature, so they should annually be remov'd into larger Pots, according to the Size of their Roots; but you must be careful not to put them into Pots too large, which will cause them to shoot weak and straggling, and many times prove the Destruction of them; therefore when they are taken out of the former Pots, the Earth about their Roots should be par'd off, and that within side the Ball must be gently loosen'd, that the Roots may not be too closely confin'd; and then place them into the same Pots again, provided they are not too small; filling up the Sides and Bottom of them with fresh rich Earth, and giving them plenty of Water to settle the Earth to their Roots, which should be frequently repeated; for they require to be often water'd both in Winter and Summer; but in hot Weather they must have it in plenty.

The best Season for shifting these Plants is either in *April* or *August*; for if it be done much sooner in the Spring, the Plants are then in a slow-growing State, and so not capable to strike out fresh Roots again very soon; and if it be done later in Autumn, the cold Weather coming on will prevent their taking Root: nor is it adviseable in the great Heat of Summer, because they will require to

be very often water'd, and also to be plac'd in the Shade, otherwise they will be liable to droop for a considerable time: and that being the Season when these Plants should be plac'd amongst other Exotics to adorn the several Parts of the Garden, these Plants, being then remov'd, should not be expos'd until they have taken Root again; which at that time (if the Season be hot and dry) will be three Weeks, or a Month.

In *October*, when the Nights begin to be frosty, you should remove the Plants into the Green-house; but if the Weather proves favourable in Autumn (as it often happens), they may remain abroad until the Beginning of *November*; for if they are carry'd into the Green-house too soon, and the Autumn should prove warm, they will make fresh Shoots at that Season; which will be weak, and often grow mouldy in Winter, if the Weather should be so severe as to require the Windows to be kept closely shut, whereby they will be greatly defac'd; for which Reason they should always be kept as long abroad as the Season will permit, and remov'd out again in the Spring before they shoot out; and during the Winter-season that they are in the Green house they should have as much free Air as possible when the Weather is mild.

The two first-mention'd Sorts I have seen planted abroad in warm Situations, and upon a dry Soil; where they have endured the Cold of our Winters for several Years very well, with only being cover'd in very hard Frosts with two or three Mats, and the Surface of the Ground about their Roots cover'd with a little Mulch to prevent the Frost from entering the Ground: but in *Cornwall* and *Devonshire*, where the

Winters are more favourable than in most other Parts of *England*, there are large Hedges of Myrtle which have been planted several Years, and are very thriving and vigorous, some of which are upward of six Feet high; and I believe, if the double-flowering Kind was planted abroad, it would endure the Cold as well as any of the other Sorts, it being a Native of the Southern Parts of *France*. This, and the orange-leav'd Kind, are the most difficult to take Root from Cuttings; but if they are planted toward the Latter-end of *July*, making choice of only such Shoots as are tender, and the Pots plung'd into an old Bed of Tanners Bark, which has lost most of its Heat, and the Glasses shaded every Day, they will take Root extremely well, as I have more than once experienced. The orange-leav'd Sort, and those with variegated Leaves, are somewhat tenderer than the ordinary Sorts, and should be hous'd a little sooner in Autumn, and plac'd farther from the Windows of the Green-house.

MYRTUS BRABANTICA. *Vide Gale.*

MYXA. *Vide Cordia.*



N A

NAPELLUS. *Vide Aconitum.*

NAPUS, The Navew, or *French Turneps*.

The Characters are;

It agrees in most respects with the Turnep; but hath a lesser Root, and somewhat warmer to the Taste.

The

The Species are ;

1. NAPUS *fativa, radice alba.*
C. B. P. Garden Navew, with a white Root.
2. NAPUS *fativa, radice nigra.*
C. B. P. Garden Navew, with a black Root.
3. NAPUS *sylvestris.* C. B. P. Wild Navew.

The two first Species of this Plant are cultivated in France, Italy, and Germany, in great Abundance; in which Places they are much preferr'd to common Turneps, being accounted a more delicious Food; but in England they have not yet so much obtain'd, being only cultivated by some curious Persons, and are but rarely brought to the Markets.

These Plants may be cultivated by sowing their Seeds in June, July, and August, after the same manner as is practis'd for common Turneps; and when the Plants are come up, they should be hoed in the like manner to destroy the Weeds, and cut up the Plants where they come up too thick; with this Difference only; viz. that these may be left closer together than common Turneps; for neither their Leaves nor their Roots grow near so large. The Plants, being thus clear'd from Weeds, and cut up where they are too thick, will require no farther Care until they are fit for Use; which (if the Season proves favourable) will be in about two Months after they are sown; when they must be drawn up, and treated as common Turneps. The wild Sort is pretty common upon dry Banks in most Parts of England, where it flowers early in the Spring: but is never cultivated in Gardens; but in the Isle of Ely it is very much cultivated, it being the Coleseed, from which they draw an Oil: the Seeds of this Kind are

us'd in Medicine; and by most preferr'd to those of the Garden Sort.

NARCISSO-LEUCOIUM. Vide Galanthus.

NARCISSUS, The Daffodil.

The Characters are ;

It hath a Lily-flower, consisting of one Leaf, which is bell-shaped, and cut into six Segments, which incircle its Middle like a Crown; but the Empalement, which commonly rises out of a membranous Vagina, turns to an oblong or roundish Fruit, which is triangular, and gapes in three Parts, is divided into three Cells, and full of roundish Seeds.

The Species are ;

1. NARCISSUS *sylvestris pallidus, calyce luteo.* C. B. P. Wild English Daffodil.

2. NARCISSUS *medio luteus vulgaris.* Park. Common pale Daffodil, or Primrose Peerless.

3. NARCISSUS *major totus luteus, calyce prælongo.* C. B. P. Great yellow Spanish Daffodil, with a long Cup.

4. NARCISSUS *latifolius omnium maximus, amplo calyce flavo, sive Nonpareille.* Park. Par. The Great Nonpareil, or Nonfuch Daffodil.

5. NARCISSUS *parvus totus luteus.* C. B. P. Small yellow Spanish Daffodil.

6. NARCISSUS *luteus, florum petalis reflexis.* C. B. P. Yellow Daffodil, with the Leaves of its Flowers turning back.

7. NARCISSUS *multiplex totus flavus.* C. B. P. Common yellow Daffodil, with a double Flower.

8. NARCISSUS *incomparabilis, flore pleno; partim flavo, partim croceo.* H. R. Par. The incomparable double Daffodil, with the Flower-leaves partly yellow, and partly of a Saffron-colour.

9. *NARCISSUS latifolius, flore plenissimo, petalis majoribus candidis, minoribus aureis interpolatis.* Boerb. Ind. Nonsuch Daffodil, with a very double Flower, whose larger Leaves are white, but the lesser Leaves (which are intermix'd) of a Gold-colour.

10. *NARCISSUS latifolius, flore plenissimo, petalis majoribus pallidis, minoribus flavis interpolatis.* Boerb. Ind. Nonsuch Daffodil, with a very double Flower, whose Leaves are of a pale Colour, which are intermix'd with smaller Leaves of a yellow Colour.

11. *NARCISSUS latifolius, flore plenissimo, petalis partim flavis, partim viridibus interpolatis.* Broad-leav'd Daffodil, with a very double Flower, whose Leaves are some yellow, and others green, intermix'd, commonly call'd *Tradescant's* Daffodil.

12. *NARCISSUS Anglicus, flore pleno.* The double *English* Daffodil.

13. *NARCISSUS latifolius, sulphureus vel albus, brevi calyce.* C. B. P. Broad-leav'd Daffodil, with a brimstone-colour'd Flower, having a short Cup.

14. *NARCISSUS latifolius sulphureus, calycis brevis aurei ora fimbriata.* Boer. Ind. Alt. Broad-leav'd brimstone-colour'd Daffodil, with a short gold-colour'd Cup fring'd about the Edge.

15. *NARCISSUS medio purpureus.* Hort. Eyst. Single Daffodil, with a white Flower, and a purple Middle.

16. *NARCISSUS maximus pallidus, foliis incanis.* C. B. P. Greater pale-colour'd Daffodil.

17. *NARCISSUS albus multiplex.* Park. Par. The double white Daffodil, or *Narcissus*.

18. *NARCISSUS albus, circulo croceo.* C. B. P. The white Daffodil,

with the Rim of the Cup of a Saffron-colour.

19. *NARCISSUS Narbonensis, fruce medio luteus, serotinus major.* Park. Par. The great late-flowering Daffodil.

20. *NARCISSUS Orientalis albus, calyce luteo, campanulae similis maximus.* C. B. P. The *Bossalman's* *Narcissus*, vulgo.

21. *NARCISSUS Orientalis albus, calyce luteo, medius.* C. B. P. Oriental white Daffodil, with a yellow Cup.

22. *NARCISSUS luteus polyanthos Lusitanicus.* C. B. P. Yellow *Portugal* Daffodil, with many Flowers.

23. *NARCISSUS Orientalis albus minor, calyce sulphureo pallido amplo.* Boerb. Ind. Lesser white Oriental many-flower'd Daffodil, with an ample pale brimstone-colour'd Cup.

24. *NARCISSUS pallidus medio aureus.* C. B. P. Pale Daffodil, with a golden Cup, commonly call'd *Le Soleil d'Or*.

25. *NARCISSUS Orientalis albus, calyce luteo, minor.* C. B. P. Lesser white Oriental Daffodil, with a yellow Cup.

26. *NARCISSUS Orientalis albus, calyce stellato.* C. B. P. Oriental white Daffodil, with a starry Cup.

27. *NARCISSUS Orientalis lacteus maximus, calyce pallido amplo.* Boerb. Ind. Largest oriental white Daffodil, with an ample pale Cup, commonly call'd, *The Czar of Muscovy*.

28. *NARCISSUS Orientalis maximus lacteus, calyce pallido parvo.* Boerb. Ind. Greatest white Oriental *Narcissus*, with a small pale-colour'd Cup.

29. *NARCISSUS Orientalis major polyanthos totus albus.* H. Eyst. Great Oriental *Narcissus*, with many white Flowers upon a Stalk.

30. *NARCISSUS Orientalis medius polyanthos totus albus.* H. Eyst. Middle

dle Oriental *Narcissus*, with many white Flowers upon a Stalk.

31. *NARCISSUS Orientalis minor polyanthos totus albus*. *H. Eyst.* Lesser Oriental *Narcissus*, with many white Flowers upon a Stalk.

32. *NARCISSUS juncifolius, oblongo calyce, luteus major*. *C. B. P.* Single yellow Jonquil, with a large oblong Cup.

33. *NARCISSUS juncifolius luteus minor*. *C. B. P.* Lesser single yellow Jonquil.

34. *NARCISSUS juncifolius, flore pleno*. *Clus. Cur. Post.* Double yellow Jonquil.

35. *NARCISSUS juncifolius, petalis angustissimis, calyce maximo tubam referente*. *Boerb. Ind.* Rush-leav'd Daffodil, with very narrow Petals, and a large tubulous Cup, commonly call'd The Hoop-petticoat.

36. *NARCISSUS juncifolius, flore pallidiore, calyce flavo*. *C. B. P.* Rush-leav'd Daffodil, with a paler Flower, and yellow Cup.

37. *NARCISSUS Constantinopolitanus polyanthos major, melino pleno flore*. *H. R. Par.* Greater many-flower'd Daffodil of *Constantinople*, with double yellow Flowers.

38. *NARCISSUS Cyprius luteus polyanthos, flore pleno*. *Lob. Adv.* Many-flower'd Daffodil of *Cyprus*, with double yellow Flowers, commonly call'd The *Cyprus Narcissus*.

39. *NARCISSUS Orientalis polyanthos, pleno flore, petalis exterioribus albis, interioribus luteis, odoratissimus*. *Cleric.* Sweet-scented *Eastern* Daffodil, with many double Flowers, whose outer Leaves are white, and the inner Leaves yellow.

40. *NARCISSUS niveus, calyce flavo, odoris fragrantissimi*. *C. B. P.* Snow-white Daffodil, with a yellow Cup, and a fragrant Odour.

41. *NARCISSUS Orientalis polyanthos, floribus odoris fragrantissimi*.

Cler. Many-flower'd *Eastern* Daffodil, with snow-white Flowers, and a very fragrant Odour.

42. *NARCISSUS Orientalis polyanthos major, flore flavescente stellato*. Greater many-flower'd *Eastern* Daffodil, with a yellowish starry Flower.

43. *NARCISSUS Orientalis polyanthos major, flore aureo, calyce flavescente stellato*. Greater many-flower'd *Eastern* Daffodil, with a golden Flower, having a pale-yellow starry Cup.

44. *NARCISSUS albus, flore minore, jasmini odore*. *C. B. P.* White Daffodil, with a smaller Flower, smelling like Jasmine.

45. *NARCISSUS Orientalis polyanthos albus odoratus, calyce stellato*. *Eastern* many-flower'd Daffodil, with white sweet scented Flowers, having a starry Cup.

46. *NARCISSUS Americanus angustifolius, croci flore*. *Houft.* Narrow-leav'd *American* Daffodil, with a saffron-colour'd Flower.

There are several other Varieties of these Flowers, which are annually brought over from *Holland* and *France*; where they are very industrious in raising these and most other bulbous-rooted Flowers from Seeds, whereby they continually procure some new Varieties, which recompense them for their Trouble and Expence: but in *England* there are very few Persons who have Patience to propagate any of these Flowers that way, it being commonly five Years before they can expect to see the Fruits of their Labour: however, after the first five Years are past, if there be Seeds sown every Year, there will be annually a Succession of Flowers to shew themselves; so that there will be a continual Expectation; which will take off the Tedioufness, which, during the first five Years, might be very trouble-

troublesome to some Persons; and the annual Production of new Flowers corresponding to the annual Sowing, it will be as if the Product arose soon after.

The not practising this Method has occasion'd our sending abroad annually for great Quantities of Flower-roots, which have been kept up to an high Price, on account of the great Demand for them in *England*; whereas if we were as industrious to propagate them as our Neighbours, we might soon vie with them, if not outdo them, in most Sorts of Flowers; as may be easily seen, by the vast Variety of Carnations, Auricula's, Ranunculus's, &c. which are what have been produc'd from Seeds in *England*, and exceed every thing in those Kinds of any Part of *Europe*.

I shall therefore first lay down the Method of propagating these Flowers from Seeds; and afterwards proceed to the necessary Directions for increasing them from Off-sets; with the manner of treating the Roots, to produce strong Flowers.

You must be very careful, in saving your Seeds, to gather none but from such Flowers as have good Properties, and particularly from such only as have many Flowers upon a Stalk, that flower tall, and have beautiful Cups to their Flowers; from such you may expect to have good Flowers produc'd: but if you sow ordinary Seed, it is only putting yourself to Trouble and Expence to no purpose; since from such Seeds there can be no Hopes of procuring any valuable Flowers.

Having provided yourself with good Seeds, you must procure either some shallow Cases, or flat Pans, made on purpose for the raising of Seedlings, which should have Holes

in their Bottoms, to let the Moisture pass off; these must be fill'd with fresh light sandy Earth about the Beginning of *August* (that being the Season for sowing the Seeds of most bulbous-rooted Flowers), which must be levell'd very even; then sow the Seeds thereon pretty thick, covering them over with fine-sifted light Earth about half an Inch thick, and place the Cases or Pans in a Situation where they may have only the morning Sun till about Ten o'Clock, where they should remain until the Beginning of *October*, when they must be remov'd into a warmer Situation, placing them upon Bricks, that the Air may freely pass under the Cases, which will preserve them from being too moist.

They should also be expos'd to the full Sun, but screen'd from the North and East Winds; and if the Frost should be severe, they must be cover'd, otherwise they will be destroy'd; in this Place they may remain until the Beginning of *April*, by which time the Plants will be up, when you must carefully clear them from Weeds; and if the Season should prove dry, they must be frequently water'd: the Cases should also now be remov'd into their former shady Situation; for the Heat of the noon-day Sun will be too great for the young Plants.

The latter End of *June*, when the Leaves of the Plants are decay'd, you should take off the upper Surface of the Earth in the Cases (which, by that time, will have contracted a Mossiness; and, if suffered to remain, will greatly injure the young Roots), observing not to take it so deep as to touch the Roots; then sift some fresh light Earth over the Surface, about half an Inch thick; which will greatly strengthen the
Roots:

Roots: the same should also be repeated in *October*, when the Cases are mov'd into the Sun.

During the Summer-season, if the Weather should prove very wet, and the Earth in the Cases appear very moist, you must remove them into the Sun till the Earth be dry again; for if the Roots receive much Wet, during the time they are unactive, it very often rots them; therefore you must never give them any Water after their Leaves are decay'd, but only place them in the Shade, as was before directed.

Thus you should manage them the two first Seasons, till their Leaves are decay'd the second Summer after sowing, when you should carefully take up the Roots: which may be done by sifting the Earth in the Cases with a fine Sieve, whereby the Roots will be easily separated from the Earth; then, having prepared a Bed or two of good fresh light Earth, in proportion to the Quantity of your Roots, you should plant them therein, at about three Inches Distance every Way, and about three Inches deep in the Ground.

These Beds should be rais'd above the Level of the Ground, in proportion to the Moisture of the Soil; which if dry, three Inches will be enough: but, if it be wet, they must be rais'd six or eight Inches high, and laid a little rounding, to shoot off the Wet.

If these Beds are made in the End of *July*, which is the best time to transplant the Roots, the Weeds will soon appear very thick: therefore you should gently hoe the Surface of the Ground, to destroy them; being very careful not to cut so deep as to touch any of the Roots; and this should be repeated as often as may be found necessary, by the Growth of the Weeds, observing always to

do it in dry Weather, that they may be effectually destroy'd: and toward the Latter-end of *October*, after having intirely cleared the Beds from Weeds, you should sift a little rich light Earth over them, about an Inch thick; the Goodness of which will be wash'd down to the Roots by the Winter's Rain, which will greatly encourage their Shooting in the Spring.

If the Cold should be very severe in Winter, you should cover the Beds with Peas-haulm, or some such light Covering, to prevent the Frost from penetrating the Ground to the Roots, which might greatly injure them while they are so young.

In the Spring, when the Plants begin to appear above-ground, you must gently stir the Surface of the Ground, clearing it from Weeds, &c. in doing of which, you should be very careful not to injure the Plants: and, if the Season should prove dry, you should now-and-then gently refresh them with Water, which will strengthen the Roots.

When their Leaves are decay'd, you should clear the Beds from Weeds, and sift a little Earth over them (as was before directed); which must also be repeated in *October*, in like manner: but the Roots should not remain longer in these Beds than two Years; by which time their Roots will have grown so large as to require more room; therefore they should be taken up as soon as their Leaves are decay'd, and planted into fresh Beds; which should be dug deep, and a little very rotten Dung buried in the Bottom, for the Fibres of the Roots to strike into. Then the Roots should be planted at six Inches Distance, and the same Depth in the Ground. In the Autumn, before the Frost comes on, if some rotten Tan is laid over the Beds,

Beds, it will keep out the Frost, and greatly encourage the Roots; and, if the Winter should prove severe, it will be proper to lay a greater Thickness of Tan over the Beds, and also in the Alleys, to keep out Frost, or to cover them over with Straw or Peas-haulm, otherwise they may be all destroyed by the Cold. In the Spring these Coverings should be remov'd, as soon as the Danger of hard Frosts is over, and the Beds must be kept clean from Weeds the following Summer: at *Michaelmas* they should have some fresh Earth laid over the Beds, and covered again with Tan: and so every Year continu'd till the Roots flower, when you should mark all such as promise well, which should be taken up as soon as their Leaves decay, and in Autumn planted at a greater Distance in new-prepar'd Beds: but those which do not flower, or those you do not greatly esteem, should be permitted to remain in the same Bed; therefore, in taking up those Roots which you mark'd, you must be careful not to disturb the Roots of those left, and also to level the Earth again, and sift some fresh Earth over the Beds (as before) to encourage the small Roots; for it often happens, in the Seedlings of these Flowers, that at their first time of blowing, their Flowers do seldom appear half so beautiful as they do the second or third Year: for which Reason none of them should be rejected until they have flower'd two or three times, that so you may be assured of their Worth.

Thus having laid down Directions for the sowing and managing these Roots, until they are strong enough to flower; I shall proceed to give some Instructions for planting and managing the Roots afterwards, so as to cause them to produce large fair Flowers.

All the Sorts of *Narcissus* which produce many Flowers upon a Stalk, should have a Situation defended from cold and strong Winds, otherwise they will be subject to be injured by the Cold in Winter, and their Stems broken down when in Flower: for, notwithstanding their Stalks are generally pretty strong, yet the Number of Flowers upon each renders their Heads weighty, especially after Rain, which lodges in the Flowers, and, if succeeded by strong Winds, very often destroys their Beauty, if they are expos'd thereto; so that a Border under an Hedge, which is open to the South-east, is preferable to any other Position for these Flowers.

The morning Sun rising upon them will dry off the Moisture which had lodged upon them the preceding Night, and cause them to expand fairer than when they are planted in a shady Situation; and if they are too much expos'd to the afternoon Sun, they will be hurry'd out of their Beauty very soon; and the strong Winds usually coming from the West and South-west Points, they will be expos'd to the Fury of them, which frequently is very injurious to them. But you should not plant them under a Wall, or any other close Fence; for that will reflect the Heat too greatly upon the Flowers, and also draw them up with weak Stems, so that they will not flower so strong, nor continue so long in Beauty.

Having made choice of a proper Situation, you must then proceed to prepare the Earth necessary to plant them in; for if the natural Soil of the Place be very strong, or poor, it will be proper to make the Border of new Earth, removing the former Soil away about three Feet deep. The best Earth for these

Flowers is a fresh light hazel Loam, mix'd up with a little very rotten Neats-dung: this should be well mix'd together, and often turn'd over, in order to sweeten it: then, having remov'd away the old Earth to the fore-mention'd Depth, you should put a Laying of rotten Dung, or Tan, in the Bottom, about six or eight Inches thick, upon which you must lay some of the prepar'd Earth about eighteen or twenty Inches thick, making it exactly level; then, having mark'd out by Line the exact Distances at which the Roots are to be planted (which should not be less than six or eight Inches square), you must place the Roots accordingly, observing to set them upright; then you must cover them over with the before-mention'd Earth about eight Inches deep, being very careful, in doing of it, not to displace the Roots: when this is done, you must make the Surface of the Border even, and make up the Side strait, which will appear handsome.

The best time for planting these Roots is toward the End of *August*; for if they are kept too long out of the Ground, it will cause their Flowers to be very weak. You should also observe the Nature of the Soil where they are planted, and whether the Situation be wet or dry, according to which you should adapt the fresh Earth, and order the Beds; for, if the Soil be very strong, and the Situation moist, you should then make choice of a light Earth, and raise the Beds six or eight Inches, or a Foot, above the Level of the Ground, otherwise the Roots will be in Danger of perishing by too much Wet: but if the Situation be dry, and the Soil naturally light, you should then allow the Earth to be a little stronger; and the Beds should not be rais'd above three Inches high: for if they

are made too high, the Roots will suffer very much, if the Spring should prove dry, nor would the Flowers be near so fair. As also, in very severe Winters, those Beds which are rais'd much above the Level of the Ground, will be more expos'd to the Cold than those which are lower, unless the Alleys are fill'd up with rotten Tan, or Litter.

During the Summer, the only Culture these Flowers require is, to keep them free from Weeds; and when their Leaves are intirely decay'd, they should be raked off, and the Beds made clean: but by no means cut off their green Leaves sooner, as is by some practis'd; for that greatly weakens the Roots.

Toward the middle of *October*, if the Weeds have grown upon the Beds, you should, in a dry Day, gently hoe the Surface of the Ground, to destroy them, observing to rake it over-smooth again; and, before the Frosts come on, the Beds should be cover'd over two Inches thick with rotten Tan, to keep out the Frost; after which, they will require no farther Care till the Spring, when their Leaves will appear above-ground; at which time you should gently stir the Surface of the Earth with a small Trowel, being very careful not to injure the Leaves of the Plants, and rake it smooth with your Hands, clearing off all Weeds. &c. which, if suffer'd to remain at that Season, will soon grow so fast, as to appear unsightly, and will exhaust the Nourishment from the Earth. With this Management these Roots will flower very strong, some of which will appear in *March*, and the others in *April*; which, if suffer'd to remain, will continue in Beauty a full Month, and are, at that Season, very great Ornaments to a Flower-garden.

After the Flowers are past, and the Leaves decay'd, you should stir the Surface of the Ground, to prevent the Weeds from growing; and if at the same time you lay a little very rotten Dung over the Surface of the Beds, the Rain will wash down the Salts thereof, which will greatly encourage the Roots the succeeding Year.

During the Summer-season they will require no farther Care, but to keep them clear from Weeds, till *October*, when the Surface of the Beds should be again stirr'd, raking off all Weeds, &c. and laying some good fresh Earth over the Beds about an Inch deep, which will compensate the Loss sustain'd by Weeding, &c. and in the Spring you must manage as was directed for the preceding Year.

These Roots should not be transplanted oftener than every third Year; because the first Year after removing they never flower so strong as they do the second and third; nor will the Roots increase so fast, when they are often transplanted: but if you let them remain longer than three Years unremov'd, the Number of Off-sets, which by that time will be produc'd, will weaken the large Bulbs, and cause them to produce very slender Flowers: therefore, at the time of transplanting them, all the small Off-sets should be taken off, and planted in a Nursery-bed by themselves; but the large Bulbs may be planted again for Flowering. If you plant them in the same Bed where they grew before, you must take out all the Earth two Feet deep, and fill up again with fresh, in the manner before directed, which will be equal to removing them into another Place: this is the constant Practice of the Gardeners in *Holland*, who have but little room to

change their Roots; therefore they every Year remove the Earth of their Beds, and put in fresh; so that the same Place is constantly occupi'd by the like Flowers.

The fifteenth Sort is pretty common in many of the Gardens near *London*: this produces only one single white Flower on the Top of the Stalk, which turns on one Side, and has a purple Rim to the Cup in the Middle: it flowers the Latter-end of *April*, and the Beginning of *May*; and is very hardy.

The Eastern Sorts, having been lately introduced into the *English* Gardens, are not at present very common: but as they are all very hardy Plants, and multiply pretty fast by Off-sets, in few Years they will be in as great Plenty as any of the other Kinds.

The thirty-seventh, thirty-eighth, thirty-ninth, and fortieth Sorts are extremely worth cultivating in every good Garden, for the sake of their beautiful sweet-smelling Flowers, which continue from the Beginning of *March* to the End of *April*, unless the Season proves very hot. The forty-fourth Sort often produces twenty Flowers on each Stalk, which are of a snow-white Colour, and smell exceeding sweet.

The thirty-seventh Sort produces very double Flowers, which are larger than those of the *Jonquil*, and a great Number of them upon each Stalk; the outer Petals of the Flower are white, and the middle are a Mixture of white and orange Petals, which make a fine Appearance; and the Flower having a most agreeable Scent, renders them the most valuable of all the Kinds. This is the first Sort which flowers in the Spring. Oftentimes it is in full Flower by the middle of *February*, when the Season is mild; and the

green Leaves always appear in *December*. Therefore the Roots of this Sort should not be kept longer out of the Ground than the Beginning of *September*. These should also be planted in a warm Situation; and, in hard Frost, cover'd with Mats, or Peas-haulm: otherwise the Flower-buds, which lie just under the Surface of the Ground, will be destroyed: so that, in such Places where this Care hath not been taken, they have not produced any Flowers for several Years; which some ignorant Persons have imputed to the Roots being bad.

The forty-fifth Sort was discover'd by the late Dr. *William Houstoun* at *La Vera Cruz*, where it grew in great Plenty. This hath Leaves like those of the *Jonquil*, and there is but one Flower produced on each Stalk. It is propagated by Off-sets from the Roots, in the same manner as the common *Narcissus*; but is very tender; therefore must be preserv'd in the Stove, and treated after the same manner as the tender Kinds of *Amaryllis*, otherwise it will not thrive in this Country.

The common Sorts of *Daffodil* are generally planted in large Borders of the Pleasure-garden; where being intermix'd with other bulbous-rooted Flowers, they afford an agreeable Variety in their Seasons of Flowering. These Roots are very hardy, and will thrive in almost any Soil or Situation; which renders them very proper for rural Gardens, where, being planted under the Shade of Trees, they will endure several Years without transplanting, and produce annually, in the Spring, great Quantities of Flowers, which afford an agreeable Prospect.

The *Jonquils* should be planted in Beds, or Borders, separate from

other Roots; because these require to be transplanted at least every other Year, otherwise their Roots are apt to grow long and slender, and seldom flower well after; which is also the Case, if they are continued many Years in the same Soil: wherefore the Roots should be often removed from one Part of the Garden to another, or, at least, the Earth should be often renew'd; which is the most probable Method to preserve these Flowers in Perfection.

The Soil in which these Flowers succeed best, is an hazel Loam, neither too light, nor over-stiff; it must be fresh, and free from Roots of Trees, or noxious Weeds; but should not be dung'd: for it is very remarkable, that where the Ground is made rich, they seldom continue good very long, but are subject to shoot downwards, and form long slender Roots.

These Flowers are greatly esteem'd by many People for their strong sweet Scent; though there are very few Ladies that can bear the Smell of them: so powerful is it, that, many times, it overcomes their Spirits, especially if confin'd in a Room: for which Reason they should never be planted too close to an Habitation, lest they become offensive; nor should the Flowers be placed in such Rooms where Company are entertain'd.

NASTURTIIUM, Cress.

The Characters are;

The Flower consists of four Leaves, which are placed in form of a Cross: the Pointal, which rises from the Centre of the Flower-cup, becomes a roundish smooth Fruit, which is divided into Cells, by the intermediate Partition, obliquely placed, with respect to the Valves, and furnish'd with Seeds, which are generally smooth: to which may be added, The Leaves are cut

cut into many Parts, by which Cress is distinguished from *Thlaspi*, or Treacle-mustard.

The Species are;

1. *NASTURTIUM hortense vulgatum*. C. B. P. Common Garden-cress.

2. *NASTURTIUM hortense crispum*. C. B. P. Curl'd Garden-cress.

3. *NASTURTIUM hortense latifolium*. C. B. P. Broad-leav'd Garden-cress.

4. *NASTURTIUM sylvestre, capulis cristatis*. Tourn. Swine's-cress, or Warded Bucks-horn.

The first Sort is commonly cultivated in Gardens as a Sallad-herb; and is chiefly esteem'd in the Winter and Spring, it being one of the warm Kind. During the Winter-season, it must be sown upon a gentle Hot-bed, and cover'd with either Mats or Glasses, to preserve it from great Rains or Frost, both of which are equally destructive at that Season: in the Spring it may be sown in warm Borders, where, if it be defended from cold Winds, it will thrive very well: but if you would continue it in Summer, you must sow it upon shady Borders, and repeat sowing every third Day; otherwise it will be too large for Use; for at that Season it grows very fast.

The broad-leav'd and curl'd Sorts are preserv'd in some Gardens for Curiosity-sake, and to garnish Dishes; but the common Sort is equally as good for Use. These should be sown somewhat thinner than the common Sort, and, when the Plants come up, they should be drawn out, so as to leave the remaining ones half an Inch asunder, whereby they will have room to expand their Leaves, in which their Difference from the common Sorts consists.

In order to preserve these Varieties distinct, you must carefully se-

parate all such Plants as appear inclin'd to degenerate from their Kinds, leaving only such of the broad-leav'd Kind as have very fair broad Leaves; and so of the curl'd Sort, only such as have their Leaves very much curl'd; being very careful not to intermix them together. When the Seeds are ripe, the Plants should be drawn up, and spread upon a Cloth two or three Days to dry; after which the Seeds should be beaten out, and preserv'd in a dry Place for Use.

NASTURTIUM INDICUM.

Vide Acriviola.

NECTARINE.

This Fruit should have been plac'd under the Article of *Peaches*, to which it properly belongs, differing from them in nothing more than in having a smooth Rind, and the Flesh being firmer. These the *French* distinguish by the Name of *Brugnon*, as they do those Peaches which adhere to the Stone, by the Name of *Pavies*, retaining the Name of *Pesche* to such only as part from the Stone: but since the Writers in Gardening have distinguished this Fruit by the Name of *Nectarine* from the *Peaches*, so I shall follow their Example, lest, by endeavouring to rectify their Mistakes, I should render myself less intelligible to the Reader. I shall therefore mention the several Sorts of this Fruit which have come to my Knowledge:

1. *Fairchild's* Early Nectarine. This is one of the earliest ripe Nectarines we have: it is a small round Fruit, about the Size of the Nutmeg Peach, of a beautiful red Colour, and well-flavoured: it ripens the Middle of *July*.

2. *Elrage* Nectarine: the Tree has sawed Leaves: the Flowers are small: it is a middle-siz'd Fruit, of a dark-red or purple Colour next

the Sun; but of a pale-yellow or greenish Colour toward the Wall; it parts from the Stone, and has a soft melting Juice: this ripens in the End of *July*.

3. *Newington* Nectarine: the Tree has sawed Leaves: the Flowers are large and open: it is a fair large Fruit (when planted on a good Soil) of a beautiful red Colour next the Sun: but of a bright yellow towards the Wall: it has an excellent rich Juice: the Pulp adheres closely to the Stone, where it is of a deep red Colour: this ripens the Beginning of *August*, and is the best flavoured of all the Sorts.

4. *Scarlet* Nectarine is somewhat less than the last, of a fine red or scarlet Colour next the Sun; but loses itself in paler red toward the Wall: this ripens in the End of *July*.

5. *Brugnon* or *Italian* Nectarine has smooth Leaves: the Flowers are small: it is a fair large Fruit of a deep-red Colour next the Sun; but of a soft-yellow toward the Wall: the Pulp is firm, of a rich Flavour, and closely adheres to the Stone, where it is very red: this ripens in the Middle of *August*.

6. *Roman* Red Nectarine has smooth Leaves, and large Flowers: it is a large fair Fruit, of a deep-red or purple Colour toward the Sun; but has a yellowish Cast next the Wall: the Flesh is firm, of an excellent Flavour, closely adhering to the Stone, where it is very red: this ripens in the Middle of *August*.

7. *Murry* Nectarine is a middle-siz'd Fruit, of a dirty red Colour on the Side next the Sun; but of a yellowish green towards the Wall: the Pulp is tolerably well flavoured: this ripens the Middle of *August*.

8. *Golden* Nectarine is a fair handsome Fruit, of a soft-red Colour

next the Sun; but of a bright-yellow next the Wall: the Pulp is very yellow, of a rich Flavour; and closely adheres to the Stone, where it is of a faint-red Colour: this ripens the Beginning of *September*.

9. *Temple's* Nectarine is a middle-siz'd Fruit, of a soft-red Colour next the Sun; but of a yellowish-green toward the Wall: the Pulp is melting, of a white Colour toward the Stone, from which it parts, and has a fine poignant Flavour: this ripens in the Middle of *September*.

10. *Peterborough* or *Late-green* Nectarine is a middle-siz'd Fruit, of a pale-green Colour on the Outside next the Sun; but of a whitish-green toward the Wall: the Flesh is firm, and, in a good Season, well-flavoured: this ripens at the End of *September*.

There are some Persons who pretend to have more Sorts than I have here set down; but I much doubt whether they are different from those here mention'd, there being so near Resemblance between the Fruits of this Kind, that it requires a very close Attention to distinguish them well, especially if the Trees grow in different Soils and Aspects; which many times alters the same Fruit so much as hardly to be distinguish'd by Persons who are very conversant with them: therefore, in order to be thoroughly acquainted with their Differences, it is necessary to consider the Shape and Size of their Leaves, the Size of their Flowers, their Manner of shooting, &c. which is many times very helpful in knowing of these Fruits.

The Culture of this Fruit differing in nothing from that of the Peach, I shall forbear mentioning any thing on that Head in this Place, to avoid Repetition; but refer the Reader

der to the Article *Perfica*, where there is an ample Account of their *Planting, Pruning, &c.*

NEPETA: *Vide* Cataria.

NERIUM, The Oleander, or Rose-bay.

The Characters are ;

The Flowers are monopetalous and funnel-shap'd, divided into five Segments at the Top : out of the Flower-cup arises the Pointal, which becomes a taper Fruit, or Pod, divided into two Cells by an intermediate Partition, and filled with flat Seeds, which have Down adhering to them.

The Species are ;

1. NERIUM *floribus rubescentibus*. C. B. P. Oleander with red Flowers.

2. NERIUM *floribus albis*. C. B. P. Oleander with white Flowers.

3. NERIUM *Indicum angustifolium, floribus odoratis simplicibus*, H. L. Narrow-leav'd Indian Oleander, with single sweet scented Flowers.

4. NERIUM *Indicum latifolium, floribus odoratis plenis*. H. L. Broad-leav'd Indian Oleander, with double sweet-scented Flowers.

5. NERIUM *Indicum, flore variegato odorato pleno*. H. Amst. Indian Oleander, with double sweet-scented variegated Flowers, commonly call'd South-Sea Rose.

6. NERIUM *floribus ex albo & roseo variegatis*. Tourn. Cor. Oleander, or Rose-bay, with a white Flower strip'd with Red.

7. NERIUM *Indicum latifolium, flore rubro majore*. Broad-leav'd Indian Oleander, with a larger red Flower.

The first and second Sorts are very common in the *English* Gardens, where they are preserv'd in Pots or Tubs, and placed amongst Myrtles, Oranges, &c. in the Green-house : they are pretty hardy Plants, and only require to be sheltered from hard

Frost ; for in moderate Winters I have known them stand abroad in warm Borders ; but in hard Frosts they are often destroy'd, if expos'd thereto.

These may be placed in Winter in an ordinary Green-house among Bays, &c. which require a great Share of free Air, and only want Protection from hard Frosts ; where they will thrive better than if plac'd in a warmer House, or kept too close in Winter. They are propagated from Suckers, which they send forth from their Roots in great Plenty, or by laying down their tender Branches, which will take Root in one Year : the time for laying them down is in the Beginning of *April* ; and the Year following the Layers should be taken off, when they should be planted into Pots filled with fresh rich Earth, observing to place them in the Shade, until they have taken Root ; after which they may be expos'd with Myrtles, Geraniums, &c. in some Place where they may be sheltered from strong Winds. During the Summer-season they must be plentifully watered, otherwise they will make but poor Progress, and produce very few Flowers ; but if they are constantly supplied with Water ; they will make a fine Appearance during the Months of *July* and *August*, when they will be covered with Flowers. In Winter they must be frequently refreshed with Water, but it should not be given them in large Quantities at that Season.

The third, fourth, fifth, and seventh Sorts are tenderer than the others ; therefore require a warmer Situation in Winter ; nor must they be expos'd to the open Air in Summer ; for if they are placed abroad, their Flowers will not open ; so that in Winter they should be placed in a warm Green-house, and in Summer they

they should be removed into an airy Glass-case, where they may be defended from the Cold of the Nights; but in the Day-time they should have a large Share of free Air, observing to give them plenty of Water, which will cause them to produce their Flowers large, and in great Quantities. These Plants are Natives of the *Spanish West-Indies*, from whence they were brought into the *English Colonies in America*, where they were planted for the Beauty of their Flowers; but since the Inhabitants have found they destroy their Cattle which have browsed on the Plants, they usually root them out near their Settlements.

These Sorts also flower in *July* and *August*, when they make a beautiful Appearance; for they produce their Flowers in very large Bunches; and the Flowers of the fourth and fifth Sorts are very large and double, and the Smell of them very much resembles that of White-thorn, which makes them deserving of a Place in every good Green-house.

These Plants may be propagated from Suckers or Layers, as the two former; but they do not produce Suckers in so great Plenty as those in this Country. They all grow naturally on the Sides of Rivers, and moist Places; so that they may have plenty of Water.

The sixth Sort was discovered by *Dr. Tournefort* in the *Levant*. This is very rare at present in *Europe*; but is as hardy as the common Sort, and may be propagated in the same manner.

The third Sort produces flesh-coloured Flowers, of the same Size and Shape as those of the common Sort; but have a very musky Scent, so that they perfume the House in which they are placed, when they are in Flower. The Flowers of this

Kind will not open fair, if they are exposed in the open Air; so that they should be placed in a Stove or Glass-case in Summer, with the two double Kinds, and the seventh Kind; where they will make a beautiful Appearance, and continue a long time in Flower.

All the Sorts should be shifted every Spring, about the Beginning of *April*; when the Suckers, or Layers, which are rooted, must be taken off, and planted into Pots fill'd with light rich Earth. The Roots of the old Plants must be trimmed, and as much of the Earth taken from their Roots, as may be done without Injury to the Plants, and the Pots fill'd with fresh rich Earth, which will encourage the Plants to produce a great Number of Flowers.

NICOTIANA, Tobacco.

The Characters are;

The Flower consists of one Leaf, is funnel-shaped, and divided at the Top into five deep Segments, which expand like a Star: the Ovary becomes an oblong or roundish membranaceous Fruit, which is divided into two Cells by an intermediate Partition, and is fill'd with small roundish Seeds.

The Species are;

1. *NICOTIANA major latifolia*. C. B. P. The greater broad-leav'd Tobacco.

2. *NICOTIANA major angustifolia*. C. B. P. The greater narrow-leav'd Tobacco.

3. *NICOTIANA major angustifolia perennis*. *Jussieu*. The greater narrow-leav'd perennial Tobacco.

4. *NICOTIANA minor*. C. B. P. The lesser or common *English Tobacco*.

5. *NICOTIANA minor, foliis rugosioribus amplioribus*. *Vaill*. Lesser Tobacco, with larger and rougher Leaves.

6. *NICOTIANA major latifolia, floribus*

floribus albis, vasculo brevi. Martyn. Cent. 1. Greater broad-leav'd Tobacco, with white Flowers, and a short Seed-vessel.

7. *NICOTIANA humilis, primulae veris folio. Houst.* Dwarf Tobacco, with a Primrose-leaf.

8. *NICOTIANA minor, folio cordiformi, tubo floris praelongo. Feuillée.* Smaller Tobacco, with an heart-shaped Leaf, and a Flower with a longer Tube.

The first Sort is known by the Planters in *America* under the Title of *Oronoko*; of which there seem to be two different Kinds, varying in the Largeness and Texture of their Leaves, some having very broad, rough, roundish Leaves; and others are narrower, smoother, and terminate in a Point: but neither of these Sorts are esteem'd by the *American* Planters, because the Produce of this, tho' it is much greater than the narrow-leav'd Sort, yet it is not near so much esteem'd by the *English*. This Sort is commonly cultivated in *Germany*, about *Hanover* and *Strasburgh*; and is somewhat hardier than the narrow-leav'd Sorts; which renders it preferable to that for cultivating in Northern Climates.

This Plant is ordered by the College of Physicians for medicinal Use, and is what should be made use of for the *Unguentum Nicotianæ* (or Ointment of Tobacco); tho' many times the lesser or *English* Tobacco is brought to Market for that Purpose.

The narrow-leav'd Sort is commonly call'd the sweet-scented Tobacco, from its having a much more agreeable Scent, when smok'd, than the broad-leav'd Sort: the Smoke of which is very offensive to most Persons who have not been accusom'd to it. This Sort is cultivated in great Plenty in *Virginia*, *Cuba*, *Bra-*

zil, and several other Parts of *America*: from whence it is brought to most Parts of *Europe*, but especially to *England*, it being prohibited to be cultivated in this Country, lest his Majesty's Revenues should be thereby lessened: but as a small Quantity is permitted to be cultivated for medicinal Use, I shall briefly set down the Method how it may be propagated, so as to have fair large Leaves for that Purpose.

The Seeds of this Plant must be sown upon a moderate Hot-bed in *March*; and when the Plants are come up, they should be transplanted into a new Hot-bed of a moderate Warmth, about four Inches under each Way, observing to water and shade them until they have taken Root: after which you must let them have Air in proportion to the Warmth of the Season, otherwise they will draw up very weak, and be thereby less capable of enduring the open Air: you must also observe to water them frequently; but while they are very young, they should not have too great Quantities of Water; tho' when they are pretty strong, they will require to have it often, and in plenty.

In this Bed the Plants should remain until the Beginning of *May*; by which time (if they have succeeded well) they will touch each other: therefore they should be enured to the open Air gradually: after which they must be taken up carefully, preserving a large Ball of Earth to each Root, and planted into a rich light Soil, in Rows four Feet asunder, and the Plants three Feet Distance in the Rows, observing to water them until they have taken Root; after which they will require no farther Care (but only to keep them clear from Weeds) until the Plants begin to shew their Flower-stems; at which time

time you should cut off the Tops of them, that their Leaves may be the better nourished, whereby they will be rendered larger, and of a thicker Substance. In *August* they will be full-grown, when they should be cut for Use; for if they are permitted to stand longer, their Underleaves will begin to decay.

The perennial Sort was brought from the *French Settlements* in the *West-Indies* into the Royal Garden at *Paris*, where it is cultivated in small Quantities, for making Snuff. The Seeds of this Kind I received from *Monsieur de Jussieu*, Demonstrator of the Plants in the Royal Garden: it has succeeded very well in the Physic-garden, and abides the Winter in a common Green-house without artificial Heat.

The two smaller Sorts of Tobacco are preserved in Botanic Gardens for Variety; but are seldom propagated for Use. The first Sort is found growing upon Dunghills in divers Parts of *England*. These are both very hardy, and may be propagated by sowing their Seeds in *March*, upon a Bed of light Earth, where they will come up, and may be transplanted into any Part of the Garden.

The first of these Sorts is the most common in *England*, and is generally raised by the Gardeners near *London*, who supply the Markets with Pots of Plants to adorn Balconies and Shop-windows in the City. This Sort, when raised early in the Spring, and planted in a rich Soil, will grow to the Height of ten or twelve Feet, provided the Plants are duly watered in dry Weather.

The sixth Sort of Tobacco was found growing wild in the Island of *Tobago*, by *Mr. Robert Millar*, Surgeon, who sent the Seeds into *Europe*, which have succeeded in several cu-

rious Gardens. This Sort produces broader and rounder Leaves than the common Sort, which are less veined, and very glutinous. The Plants usually grow about five Feet high, and the Flowers of this are white, in which it differs from all the other Sorts.

Both these Sorts are as hardy as the common broad-leav'd Kind, and are propagated in the same manner as hath been directed for that.

The seventh Sort was discovered by the late *Dr. William Housfoun*, at *La Vera Cruz*; from whence he sent the Seeds, and dried Samples of the Plant. This Sort is very different from all the other Kinds in the manner of its Growth; for the Leaves of this Plant grow in Tufts near the Ground. Out of the Middle of these Leaves, arises the Flower-stem, which is naked, having no Leaves upon it, to the Height of eighteen Inches, or a little more, and divides into many small Branches, on which stand the Flowers on short Footstalks, which are of a greenish-yellow Colour.

The eighth Sort was discovered by *Father Feuillée* in the *Spanish West-Indies*. This Sort commonly grows between three or four Feet high, and divides into several small Branches: the Leaves of this Sort are shaped like an Heart, and the Flowers are of a greenish-yellow Colour.

These two Sorts, being somewhat tenderer than the former, should be sown early in the Spring on an Hot-bed; and when the Plants come up, they should be transplanted on another moderate Hot-bed; where they must be duly watered, and should have a large Share of free Air in warm Weather; and when the Plants have obtained a good Share of Strength, they should be transplanted into separate Pots, and plunged into a moderate Hot-bed to bring

bring them forward : about the middle of *June* some of the Plants may be shaken out of the Pots, and planted into rich Earth ; but it will be proper to keep two Plants of each Kind in Pots, which may be placed in the Stove (in case the Season should prove bad), that they may ripen their Seeds, so that the Species may be preserved.

NIGELLA, Fenel-flower, or Devil in a Bush.

The Characters are ;

The Flower-cup consists of five Leaves, which expand in the Form of a Star, and branch out into many other small narrow Leaves : the Flower consists of many Leaves placed orbicularly, and expand in form of a Rose, having many short Stamina surrounding the Ovary on the Centre of the Flower ; which Ovary becomes a membranaceous Fruit, consisting of several Cells, which are furnished with Horns on the Top, and are full of Seeds.

The Species are ;

1. **NIGELLA arvensis cornuta**. C. B. P. Wild horned Fenel-flower.
2. **NIGELLA latifolia, flore majore simplici cœruleo**. C. B. P. Broad-leav'd Fenel-flower, with a large single blue Flower.
3. **NIGELLA angustifolia, flore majore simplici cœruleo**. C. B. P. Narrow-leav'd Fenel-flower, with a large single blue Flower.
4. **NIGELLA angustifolia, flore majore simplici albo**. C. B. P. Narrow-leav'd Fenel-flower, with a large single white Flower.
5. **NIGELLA flore majore pleno cœruleo**. C. B. P. Double blue Nigella, or Fenel-flower.
6. **NIGELLA flore minore simplici candido**. C. B. P. Fenel-flower with a small white single Flower.
7. **NIGELLA flore minore, pleno &**

albo. C. B. P. Fenel-flower with a small double white Flower.

8. **NIGELLA Orientalis, flore flavo, semine alato plano**. Tourn. Cor. Oriental Fenel-flower, with a yellow Flower, and a flat wing'd Seed.

9. **NIGELLA Cretica latifolia odorata**. Park. Theat. Broad-leav'd sweet-scented Candy Fenel-flower.

There are some other Varieties of this Plant, which are preserv'd in some curious Botanic Gardens ; but those here mention'd are what I have observ'd cultivated in the *English* Gardens at present.

All these Plants may be propagated by sowing their Seeds upon a Bed of light Earth, where they are to remain (for they seldom succeed well, if transplanted) : therefore, in order to have them intermix'd amongst other annual Flowers, in the Borders of the Flower-garden, the Seeds should be sown in Patches at proper Distances ; and when the Plants come up, you must pull up those which grow too close, leaving but three or four of them in each Patch, observing also to keep them clear from Weeds ; which is all the Culture they require. In *July* they will produce their Flowers, and their Seeds will ripen in *August*, when they should be gather'd and dried ; then rub out each Sort separately, and preserve them in a dry Place,

The Season for sowing these Seeds is in *March* ; but if you sow some of them in *August*, soon after they are ripe, upon a dry Soil, and in a warm Situation, they will abide in Winter, and flower strong the succeeding Year : by which Method they may be continued in Beauty most Part of the Summer.

The fifth Sort is that which is most commonly cultivated in *England* ;

land; the Seeds of which are sold in the Seed-shops: but the other Sorts deserve to be preserv'd as much as that; for the various Sorts, when rightly intermix'd, will afford an agreeable Variety. They are all annual Plants, which perish soon after they have perfected their Seeds; which, if permitted to scatter upon the Borders, will come up without any farther Care. The Plants commonly grow about a Foot high, and, if they have a good Soil, will send forth many Branches, each of which terminates in a Flower.

NIGELLASTRUM. *Vide* Lychnis Segetum major.

NIGHTSHADE. *Vide* Solanum.

NIL. *Vide* Anil.

NISSOLIA, Crimson Grass-vetch, *vulgo*.

The Characters are;

It hath a papilionaceous Flower, like the Lathyrus, to which this Plant agrees in every respect, excepting the Leaves, which in this are produced singly, and are not terminated by Claspers.

The Species are;

1. NISSOLIA *vulgaris*. *Tourn.* Common Crimson Grass-vetch.

2. NISSOLIA *Orientalis*, *flore purpureo*. *Tourn.* *Cor.* Eastern Grass-vetch, with a purple Flower.

3. NISSOLIA *Americana procumbens*, *folio rotundo*, *flore luteo*. *American* trailing Vetch, with a round Leaf, and a yellow Flower.

The first Sort is found wild in several Parts of *England*, growing commonly by the Sides of Foot-paths; but is not very common near *London*: I have gathered it in a Field just before you come to *Putney common*, on the Left-hand Side of the Road, under the Hedge which parts the Field from the Road.

This Plant may be cultivated by

sowing the Seeds in *August*, soon after they are ripe, on any Soil, or in any Situation; where they will rise soon after, and endure the Cold of our Climate very well, and flower early the succeeding Spring; but if you sow the Seeds in the Spring, the Plants commonly decay before they come to flower, as I have several times experienced: therefore you need only to let the Seeds fall upon the Ground when they are ripe, and they will grow without further Trouble, but only to keep them clear from Weeds.

The Flowers of this Plant are smaller than those of the Sweet-pea; but are much the same in Shape, and of a fine scarlet Colour: so that being intermix'd in large Borders amongst these and other annual Plants, it makes a pretty Variety, and deserves a Place in every good Garden.

The second Sort was discovered by *Dr. Tournefort* in the *Levant*: this is an hardy Plant, and may be sown in the full Ground, and treated as the common Sort; but the third Sort is more tender. This was discover'd by the late *Dr. Williams Houstoun*, near *La Vera Cruz*. The Seeds of this Plant should be sown on a moderate Hot-bed, early in the Spring; and, when the Plants are come up, they should be frequently refresh'd with Water; and in warm Weather the Glasses of the Hot-bed should be raised a little every Day, to admit fresh Air to the Plants, which will cause them to grow strong; and in about a Month's time they will be fit to transplant; when they should be taken up carefully, and each planted into a small Pot fill'd with light Earth, and then plunged into a moderate Hot-bed of *Tanners Bark*; observing to shade them from the Sun in the Heat of the Day, until

until they have taken new Root : after which time they should have a large Share of Air in warm Weather, and be frequently refresh'd with Water. The Plants may remain in the Hot-bed until Autumn, when the Cold begins to come on : at which time they should be remov'd into the Stove, and plunged into the Bark-bed ; where, if they are carefully managed, they will live through the Winter, and flower early the following Summer, so will perfect their Seeds.

NOLI ME TANGERE. *Vide* Balsamina Mas.

NONSUCH, or FLOWER of **BRISTOL.** *Vide* Lychnis.

NUMMULARIA, Money-wort, or Herb Two-pence.

This Plant grows wild in shady moist Places in divers Parts of *England* : but as it is seldom preserved in Gardens, I shall say nothing of its Culture in this Place.

NURSERY, or Nursery-garden, is a Piece of Land set apart for the raising and propagating of all Sorts of Trees and Plants, to supply the Garden, and other Plantations. Of this Sort, there are a great Number in the different Parts of this Kingdom ; but particularly in the Neighbourhood of *London*, which are occupied by the Gardeners, whose Business it is to raise Trees, Plants, and Flowers, for Sale : and in many of these there is at present a much greater Variety of Trees and Plants cultivated, than can be found in any other Part of *Europe*. In *France*, their Nurseries (which are but few, when compared with those in *England*) are chiefly confined to the Propagation of Fruit-trees ; from whence they have the Appellation of *Pepinier*. For there is scarce any of those Gardens, where a Person can be supplied either with Ever-

greens, Flowering-shrubs, or Forest-trees. And in *Holland*, their Nurseries are principally for Flowers : some few of them indeed propagate tender Exotic Plants. But those Nurseries in the Neighbourhood of *London* do, several of them, include all these ; and from hence most of the curious Persons abroad are supplied with Furniture for their Gardens. But I do not propose, in this Place, to treat of these extensive Nurseries, or to give a Description of them ; therefore shall confine myself to treat of such Nurseries only as are absolutely necessary for all Lovers of Planting to have upon the Spot, where they design to make their Plantation. For if these are large, the Expence of carrying a great Number of Trees, if the Distance is great, will be no small Article, beside the Hazard of their growing ; which, when Plants have been train'd up in good Land, and remov'd to an indifferent one, is very great. Therefore it is of the utmost Consequence to every Planter, to begin by making of a Nursery. But in this Article I must beg Leave to observe, that a Nursery should not be fix'd to any one particular Spot : I mean by this, that it would be wrong to continue the raising of Trees any Number of Years upon the same Spot of Ground ; because hereby the Ground will be so much exhausted by the Trees, as to render it unfit for the same Purpose. Therefore all good Nursery-gardeners do shift and change their Land, from time to time ; for when they have drawn off the Trees from a Spot of Ground, they either plant Kitchen-herbs, or other things, upon the Ground for a Year or two ; by which time, as also by dunging and trenching of the Land, it is recover'd, and made fit to receive other

other Trees. But this they are obliged to from Necessity, being confined to the same Land; which is not the Case with those Gentlemen, who have a large Extent of Ground in the Country. Therefore all such Persons I would advise to make Nurseries upon the Ground which is intended for Planting, where a sufficient Number of the Trees may be left standing, after the others have been drawn out, to plant in other Places; which, for all large-growing Trees, but particularly such as are cultivated for Timber, will be found by much the most advantageous Method; for all those Trees which come up from the Seed, or which are transplanted very young into the Places where they are design'd to remain, will make a much greater Progress, and become larger Trees, than any of those which are transplanted at a greater Age. Therefore the Nurseries should be thinned early, by removing all those Trees which are intended for other Plantations, while they are young; because hereby the Expence and Trouble of staking, watering, &c. will be saved, and the Trees will succeed much better. But in expos'd Situations, where there are Nurseries made, it will be necessary to permit the Trees to stand much longer; that, by growing close together, they may shelter each other, and draw themselves up: and these should be thinned gradually, as the Trees advance; for, by taking away too many at first, the Cold will check the Growth of the remaining Trees. But then those Trees which are taken out from these Nurseries, after a certain Age, should not be depended on for Planting; and it will be Prudence rather to consign them for Fuel, than by attempting to remove them large; whereby, in endeavouring to get them

up with good Roots, the Roots of the standing Trees will be often much injur'd.

What has been here propos'd, must be understood for all large Plantations in Parks, Woods, &c. but those Nurseries which are only intended for the raising of Evergreens, Flowering-shrubs, or Plants which are design'd to embellish Gardens, may be confin'd to one Spot; because a small Compass of Ground will be sufficient for this Purpose. Two or three Acres of Land employ'd this way, will be sufficient for the most extensive Designs; and one Acre will be full enough for those of moderate Extent. And such a Spot of Ground may be always employed for sowing the Seeds of foreign Trees and Plants; as also for raising many Sorts of biennial and perennial Flowers, to transplant into the Borders of the Pleasure-garden; and for raising many Kinds of bulbous-rooted Flowers from Seeds; whereby a Variety of new Sorts may be obtain'd annually, which will recompense for the Trouble and Expence; and will moreover be an agreeable Diversion to all those Persons who delight in the Amusements of Gardening.

Such a Nursery as this should be conveniently situated for Water; for where that is wanting, there must be an Expence attending the Carriage of Water in dry Weather. It should also be as near the House as it can with Conveniency be admitted, in order to render it easy to visit at all Times of the Year; because it is absolutely necessary, that it should be under the Inspection of the Master; for, unless he delights in it, there will be little Hopes of Success. The Soil of this Nursery should also be good, and not too heavy and stiff; for such Land will be very improper for sowing

ing most Sorts of Seeds; because, as this will detain the Moisture in the Spring and Winter, so the Seeds of most tender Things, especially of Flowers, will rot in the Ground, if sown early. Therefore where Persons are confined to such Land, there should be a good Quantity of Sand, Ashes, and other light Manures, buried, in order to separate the Parts, and pulverize the Ground; and if it is thrown up in Ridges, to receive the Frost in Winter, it will be of great Use to it; as will also the frequent forking or stirring of the Ground, both before and after it is planted.

The many Advantages which attend the having such a Nursery, are so obvious to every Person who has turn'd his Thoughts in the least to this Subject, that it is needless for me to mention them here: and therefore I shall only beg Leave to repeat here what I have so frequently recommended; which is, the carefully keeping the Ground always clean from Weeds: for if these are permitted to grow, they will rob the young Trees of their Nourishment. Another principal Business is, to dig the Ground between the young Plants at least once every Year, to loosen it for the Roots to strike out: but, if the Ground is stiff, it will be better to be repeated twice a Year; viz. in *October* and *March*; which will greatly promote the Growth of the Plants, and prepare their Roots for transplanting.

But as there may be some Persons who may have the Curiosity to raise their own Fruit-trees, I shall next treat of the proper Method to make a Nursery of these Trees.

In the doing of which you must observe the following Rules:

1. That the Soil in which you make the Nursery be not better than

that where the Trees are to be planted out for good: the not observing this, is the Reason that Trees are often at a Stand, or make but little Progress for three or four Years, after they come from the Nursery; as it commonly happens to such Trees as are raised near *London*, and carried into the Northern Parts of *England*; where being planted in a poor Soil, and a much colder Situation, the Trees seldom succeed well: therefore it is by far the better Method (when you have obtained the Sorts you would propagate) to raise a Nursery of the several Sorts of Stocks proper for the various Kinds of Fruit, upon which you may bud or graft them; and those Trees which are thus raised upon the Soil, and in the same Degree of Warmth, where they are to be planted, will succeed much better than those brought from a greater Distance, and from a richer Soil.

2. This Ground ought to be fresh, and not such as has been already worn out by Trees, or other large-growing Plants; for in such Soil your Stocks will not make any Progress.

3. It ought not to be too wet, nor over-dry, but rather of a middling Nature: though, of the two Extremes, dry is to be prefer'd; because in such Soils (though the Trees do not make so great a Progress as in moist, yet) they are generally sounder, and more disposed to Fruitfulness.

4. You must also observe to inclose it, that Cattle and Vermin may not come in; for these will make great Havock with young Trees, especially in Winter, when the Ground is cover'd with Snow, that they have little other Food which they can come at. Some of the most mischievous of these Animals are Hares and

and Rabbits, which are great Destroyers of young Trees at that Season, by eating off all their Bark; therefore you must carefully guard your Nursery against these Enemies.

The Ground, being inclosed, should be carefully trenched about eighteen Inches or two Feet deep, provided it will allow it: this should be done in *August*, that it may be ready to receive young Stocks at the Season for Planting, which is commonly at the Beginning of *October*. In trenching of the Ground, you must be very careful to cleanse it from the Roots of all noxious Weeds; such as Couch-grass, Docks, &c. which, if left in the Ground, will get in among the Roots of the Trees, so as not to be gotten out afterwards; and will spread, and overrun the Ground, to the great Prejudice of your young Stocks.

After having dug the Ground, and the Season being come for Planting, you must level down the Trenches as equal as possible; and then lay out the Ground into Quarters, proportionable to the Size thereof; and those Quarters may be laid out in Beds, for the sowing of Seeds, or the Stones of Fruit.

The best Sort of Stocks for Peaches, Nectarines, &c. are such as are raised from the Stones of the Musclem and white Pear-plum; but you should never plant Suckers of these (which is what some People practise); for these seldom make so good Stocks, nor are ever well-rooted Plants: besides, they are very subject to produce great Quantities of Suckers from their Roots, which are very troublesome in the Borders or Walks of a Garden, and greatly injure the Tree; so that you should annually, or at least every other Year, sow a

few Stones of each, that you may never be at a Loss for Stocks.

For Pears, you should have such Stocks as have been raised from the Kernels of the Fruit where Perry hath been made; or else preserve the Seeds of some Sorts of Summer Pears, which generally shoot strong and vigorous, as the Cuisse Madame, Windfor, &c. but, when this is intended, the Fruit should be suffered to hang upon the Trees till they drop, and afterward permitted to rot; then take out the Kernels, and put them in Sand, being careful to keep them from Vermin, as also to place them where they may not be too damp, which will cause them to grow mouldy. These you should sow for Stocks early in the Spring, upon a Bed of good fresh light Earth; where they will come up in about six Weeks, and, if kept clear from Weeds, will be strong enough to transplant out the *October* following. But for many Sorts of Summer and Autumn Pears, Quince Stocks are preferable to Free (*i. e.* Pear) Stocks. These are generally used for all the Sorts of soft-melting Pears; but they are not so good for the breaking Pears, being apt to render those Fruits which are grafted upon them stony. These are very often propagated from Suckers, which are generally produced in Plenty from the Roots of old Trees: but those are not near so good as such as are propagated from Cuttings or Layers, which have always much better Roots, and are not so subject to produce Suckers as the other; which is a very desirable Quality, since these Suckers do not only rob the Trees of Part of their Nourishment, but are very troublesome in a Garden.

Apples are grafted or budded upon

On Stocks raised from Seeds which come from the Cyder-press, or upon Crab-stocks; the latter of which are esteemed for their Durableness, especially for large Standard-trees. These should be raised from Seeds, as the Pear-stock; and must be treated in the same manner: For those procured from Suckers, &c. are not near so good; but for small Gardens, the Paradise-stock hath been for some Years past greatly esteem'd; it being of very humble Growth, causeth the Fruit-trees grafted or budded thereon to bear very soon, and they may be kept in small Compass: but these are only proper for very small Gardens, or by way of Curiosity; since the Trees thus raised are but of short Duration, and seldom arise to any Size to produce Fruit in Quantities, unless the Graft or Bud be buried in Planting; so that they put forth Roots; and then they will be equal to Trees grafted upon Free-stocks, since they receive but small Advantage from the Stock.

For Cherries, you should make use of Stocks raised from the Stones, of the common Black, or the wild Honey-cherry; both of which are strong free Growers, and produce the cleanest Stocks.

For Plums, you may use the Stones of most free-growing Sorts; which will also do very well for Apricots, these being not so difficult to take as Peaches or Nectarines; but (as I said before) these should not be raised from Suckers, for the Reason there assigned, but rather from Stones.

There are some Persons who recommend the Almond-stock for several Sorts of tender Peaches, upon which they will take much better than upon Plum-stocks: but these being tender in their Roots, and apt to

shoot early in the Spring, and being of short Duration, are by many People rejected: but such tender Sorts of Peaches which will not take upon Plum-stocks, should be budded upon Apricots, upon which they will take very well; and all Sorts of Peaches which are planted upon dry Soils, will continue much longer, and not be so subject to Blight, if they are upon Apricots: for it is observed, that upon such Soils where Peaches seldom do well, Apricots will thrive exceedingly; which may be owing to the Strength and Compactness of the Vessels in the Apricots, which render it more capable of assimilating or drawing its Nourishment from the Plum-stock, which in dry Soils seldom afford it in great Plenty to the Bud; and the Peach-tree, being of a loose spongy Nature, is not so capable to draw its Nourishment therefrom; which occasions that Weakness which is commonly observed in those Trees when planted on a dry Soil; therefore it is the common Practice of the Nursery-gardeners, to bud the Plum-stocks either with Apricots, or some free-growing Peach; and after these have grown a Year, they bud the tender Sorts of Peaches upon these Shoots; by which Method many Sorts succeed well, which in the common way will not thrive, or scarce keep alive; and these the Gardeners term double-work'd Peaches.

Some People of late have budded and grafted Cherries upon Stocks of *Cornish*, and others the Morella Cherry, which, they say, will render the Trees more fruitful, and less luxuriant in Growth, so that they may be kept in less Compass; these Stocks having the same Effect upon Cherries, as the Paradise-stock hath upon Apples.

Having provided yourself with young Stocks of all these different Sorts, which should be raised in the Seminary the preceding Year, you should proceed to transplanting of them in *October* (as before directed) into the Nursery. The Distance at which they should be planted, if designed for Standards, should be three Feet and an half, or four Feet, Row from Row, and a Foot and an half distant in the Rows; but if for Dwarfs, three Feet Row from Row, and one Foot in the Rows, will be a sufficient Distance.

In taking these Stocks out of the Seed-beds, you must raise the Ground with a Spade, in order to preserve the Roots as intire as possible; then with your Knife you should prune off all the very small Fibres; and if there are any which have a Tendency to root down-right, such Roots should be shortened: then having thus prepared the Plants, you should draw a Line across the Ground intended to be planted, and with your Spade open a Trench thereby exactly strait, into which you should place them at the Distance before-mention'd, setting them exactly upright; and then put the Earth in close to them, filling up the Trench, and with your Foot press the Earth gently to the Roots of them; observing not to displace them so as to make the Rows crooked, which will render them unsightly. These Plants should by no means be headed, or pruned at Top, which will weaken them, and cause them to produce lateral Branches, and thereby spoil them.

If the Winter should prove very cold, it will be of great Service to your young Stocks, to lay some Mulch upon the Surface of the Ground near their Roots, which will prevent the Frost from penetrating

the Ground so as to hurt the tender Fibres which were produced after planting: but you should be careful not to let it lie too thick near the Stems of the Plants, nor remain too long, lest the Moisture should be prevented from penetrating to the Roots of the Plants; which it often does, where there is not due Care taken to remove it away as soon as the Frost is over.

In the Summer-season, you must always observe to hoe and destroy the Weeds; which, if permitted to remain in the Nursery, will greatly weaken and retard the Growth of your Stocks: and, the succeeding Years, you should observe to dig up the Ground every Spring between the Rows; which will loosen it so, as that the Fibres may easily strike out on each Side, and the Weeds will be thereby destroyed: you should also observe, where any of the Stocks have shot out lateral Branches, to prune them off, that they may be encouraged to grow upright and smooth.

The second Year after planting, such of the Stocks as are designed for Dwarf-trees, will be fit to bud; but those which are designed for Standards, should be suffer'd to grow five or six Feet high before they are budded or grafted. The manner of Budding and Grafting being fully described under their respective Heads, I shall not repeat them in this Place; nor need I say any thing more of treating these Trees after budding, that being also treated of under the several Articles of Fruits: I shall only add, that those Stocks which were budded in the Summer, and have failed, may be grafted the following Spring; but Peaches and Nectarines never take well from Grafts; these should therefore be always budded.

The Ground you intend for the Flower-nursery, should be well situated to the Sun; but defended from strong Winds by Plantations of Trees, or Buildings; and the Soil should be light and dry, which must always be observed, especially for bulbous-rooted Flowers, which are designed to be planted therein: the Particulars of which are exhibited under the several Articles of Flowers.

In this Nursery should be planted the Off-sets of all your bulbous-rooted Flowers, where they are to remain until they become blowing Roots; when they should be removed into the Pleasure-garden, and planted either in Beds or Borders, according to the Goodness of the Flowers, or the Management which they require.

You may also, in this Ground, raise the several Sorts of bulbous-rooted Flowers from Seed, by which means new Varieties may be obtained; but most People are discouraged from setting about this Work, from the Length of Time before the Seedlings will come to flower: however, after a Person hath once begun, and constantly continued sowing every Year, after the Parcel first sown has flower'd, the regular Succession of them coming annually to flower, will not render this Method so tedious as it at first appear'd.

The seedling *Auricula's*, *Polyanthus's*, *Ranunculus's*, *Anemonies*, *Carnations*, &c. should be raised in this Nursery, where they should be preserved until they have flower'd; when you should mark all such as are worthy of being transplanted into the Flower-garden; which should be done in their proper Seasons: for it is not so well to have all these seedling Flowers exposed to public View in the Flower-garden;

because it always happens, that there are great Numbers of ordinary Flowers produced amongst them, which will make but an indifferent Appearance in the Pleasure-garden.

NUX AVELLANA. *Vide Corylus.*

NUX JUGLANS. *Vide Juglans.*

NUX VESICARIA. *Vide Staphylodendron.*

NYMPHÆA, The Water-lily.

The Characters are;

The Flower consists of several Leaves, which expand in form of a Rose: out of the Flower-cup arises the Pointal, which afterward becomes an almost globular Fruit consisting of many Cells fill'd with Seeds, which are for the most part oblong.

The Species are;

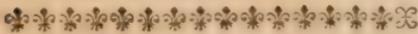
1. **NYMPHÆA alba major.** C. B. P. The great white Water-lily.
2. **NYMPHÆA lutea major.** C. B. P. The great yellow Water-lily.
3. **NYMPHÆA lutea minor,** *flore fimbriato.* J. B. The lesser yellow Water-lily, with a fringed Flower.

There are some other Species of this Plant, all of which are Natives of deep-standing Waters, and therefore not to be cultivated in any other Places.

The best Method to propagate these Plants is, to procure some of their Seed-vessels just as they are ripe, and ready to open: these should be thrown into Canals, or large Ditches of standing Water, where the Seeds will sink to the Bottom; and the following Spring the Plants will appear floating upon the Surface of the Water, and in *June* and *July* will produce their beautiful large Flowers. When they are once fix'd to the Place, they will multiply exceedingly, so as to cover

the whole Surface of the Water in a few Years.

In some small Gardens I have seen these Plants cultivated in large Troughs of Water, where they have flourish'd very well, and have annually produced great Quantities of Flowers: but as the Expence of these Troughs is pretty great (their Insides requiring to be lined with Lead, to preserve them), so there are few People who care to be at that Charge.



O A

OAK. *Vide Quercus.*

OBELISCOTHECA. *Vide Rudbeckia.*

OCHRUS, Winged Pea.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, which after-ward becomes a Pod, for the most part round and cylindrical, filled with roundish-Seeds: to these Notes must be added, That the Leaves are sometimes simple, and sometimes conjugated, ending in Tendrils.

The Species are;

1. **OCHRUS folio integro, capreolos emittente, semine subluteo.** C. B. P. Ochrus or winged Pea, with an intire Leaf, sending forth Tendrils, and a yellowish Seed.

2. **OCHRUS folio integro, capreolas emittente, semine pullo.** C. B. P. Ochrus or winged Pea, with an intire Leaf. sending forth Tendrils, and a brown Seed.

3. **OCHRUS folio integro, capreolos emittente, semine atro.** C. B. P. Ochrus or winged Pea, with an intire Leaf, sending forth Tendrils, and a black Seed.

4. **OCHRUS folio diviso in capreolos abeunte.** *Inst. R. H.* Ochrus or winged Pea, with a divided Leaf ending in Tendrils.

5. **OCHRUS Americanus tomentosus, floribus luteis.** *Plum.* Woolly Ochrus or winged Pea of America, with yellow Flowers.

The three first Sorts are accidental Varieties, which differ in the Colour of their Flowers and Seeds; but in every other respect are the same, so that they may be deemed only seminal Variations. They are annual Plants, which must be sown in the Spring of the Year, on an open Border or Bed of light fresh Earth; allowing the same Distance, as is usual for the middle Sort of Peas. The better Way is to sow them in Drills, about two Feet asunder; and when the Plants are come up, the Earth should be drawn to them, in the same manner as is practised for Peas: and when the Plants begin to rise in Height, there should be some Sticks put down by them, to which they will fasten their Tendrils, whereby they will be supported from trailing on the Ground; for want of which, in bad Seasons, they do not ripen their Seeds kindly. The Ground between the Rows should always be kept clean from Weeds, which, if permitted to grow, will soon overbear the Plants, and destroy them. About the Middle of June the Plants will flower, and their Seeds will ripen the Beginning of August.

These Plants grow wild in Lombardy, and in some Parts of Spain; but in England they are preserved in the Gardens of some Persons who are curious in Botany, for the sake of Variety. The Seeds of these have been eaten in times when there has been a Scarcity of other Provision, by the poor Inhabitants where they naturally grow; but they are bitter,

bitter, and hard of Digestion, and do not afford good Nourishment.

The fourth Sort was discovered by Dr. *Tournefort* in the *Levant*, from whence he sent the Seed to the Royal Garden at *Paris*, where it flourished, and has since been distributed to several Persons who are curious in collecting of Plants. This is as hardy as the common Sort; so may be sown and treated after the same manner.

The fifth Sort was discovered by Father *Plumier* in *America*, and since by the late Dr. *William Houstoun* at *Campechy*. The Seeds of this Sort must be sown on an Hot-bed early in the Spring; and when the Plants come up, they should be transplanted each into a separate Pot, and plunged into a moderate Hot-bed, where they should have a large Share of free Air in warm Weather, and must be frequently refresh'd with Water. About the Beginning of *July* these Plants will flower, and their Seeds will ripen in Autumn.

OCULUS CHRISTI. Vide *Horminum sylvestre*.

OCYMUM, Basil.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose Crest (or Upper-lip) is upright, roundish, notched, and larger than the Beard (or Lower lip), which is generally curled, or gently cut: out of the Flower-cup arises the Pointal, attended by four Embryoes, which after-ward become so many Seeds inclosed in an Husk, which was before the Flower-cup: this Husk is divided into two Lips; the upper one growing upright, and is split into two; but the under one is cut into several Parts.

The Species are;

1. OCYMUM *vulgatius*. C. B. P. Common Basil.

2. OCYMUM *vulgatius*, foliis ex nigro virescentibus, flore albo. H. R. P. Common Basil, with dark-green Leaves, and white Flowers.

3. OCYMUM *minus angustifolium*, foliis serratis. C. B. P. Lesser Basil, with narrow serrated Leaves.

4. OCYMUM *minus angustifolium*, foliis bullatis H. R. P. Lesser narrow-leav'd Basil, with warted Leaves.

5. OCYMUM *minimum*. C. B. P. The least Basil, commonly called Bush-basil.

6. OCYMUM *minimum*, foliis ex purpura nigricantibus. H. R. P. The least Basil, with dark-purple Leaves.

7. OCYMUM *citri odore*. C. B. P. Basil with a Citron-scent.

8. OCYMUM *latifolium maculatum vel crispum*. C. B. P. Broad-leav'd Basil, with curled spotted Leaves.

9. OCYMUM *foliorum fimbriis ad endiviam accedentibus, maximum*. H. L. The greatest Basil, with Leaves fringed like Endive.

10. OCYMUM *foliis fimbriatis viridibus*. C. B. P. Basil with fringed green Leaves.

11. OCYMUM *caryophyllatum maximum*. C. B. P. The greatest Basil, smelling like Cloves.

12. OCYMUM *anisi odore*. C. B. P. Basil smelling like Anise.

13. OCYMUM *minus angustifolium, foliis serratis*. C. B. P. The smaller narrow-leav'd Basil, with sawed Leaves.

14. OCYMUM *tricolor*. H. R. Par. Three-coloured Basil.

15. OCYMUM *nigrum majus, acuto rutæ odore*. H. L. Greater black Basil, with the quick Smell of Rue.

16. OCYMUM *Campechianum odoratissimum*. Houst. The most sweet-smelling Basil of *Campechy*.

17. *Ocimum Zeylanicum perenne frutescens, folio calaminthæ nonnihil simili.* Boerb. Ind. Alt. Shrubby perennial Basil of Ceylon, with a Leaf not unlike Calamint.

These Plants, being annual, are propagated from Seeds, which should be sown in *March*, upon a moderate Hot-bed: and when the Plants are come up, they should be transplanted into another moderate Hot-bed, observing to water and shade them until they have taken Root; after which they should have plenty of Air in mild Weather, otherwise they will draw up very weak: you must also water them frequently, for they love Moisture. In *May* they should be taken up with a Ball of Earth to their Roots, and transplanted either into Pots or Borders, observing to shade them until they have taken Root; after which they will require no farther Care, but to clear them from Weeds, and refresh them with Water in dry Weather. Though these Plants are only propagated from Seeds, yet, if you have any particular Sort which may arise from Seeds, which you are desirous to increase, you may take off Cuttings any time in *May*, and plant them on a moderate Hot-bed, observing to water and shade them for about ten Days; in which time they will take Root, and in three Weeks time will be fit to remove either into Pots or Borders, with the seedling Plants. In *August* these Plants will perfect their Seeds; when those Sorts which appear the most distinct, should have their Seeds preserved separate, for sowing the following Spring.

The first is what the College of Physicians have prescribed for medicinal Use; and this also is used in the Kitchen; but the fifth Sort is most esteemed for its Beauty and Scent,

by those who cultivate them to adorn their Gardens.

The Seeds of these Plants are usually brought from the South of *France* or *Italy*, every Spring; because they seldom ripen their Seeds in this Country, in the open Air. But whoever is curious to preserve the Seeds of any of the Varieties, should place them into an airy Glass-case or Stove, in the Autumn, when the Weather begins to be cold or wet; and by supplying them with Water, and letting them have free Air every Day in mild Weather, they will perfect their Seeds very well in this Country.

The sixteenth Sort is more tender than any of the other. This was discovered growing wild at *Campechy*, by the late Dr. *William Houstoun*, who sent the Seeds to *England*. This should be sown on an Hot-bed early in the Spring; and when the Plants are come up, they should be transplanted on another very temperate Hot-bed, to bring them forward; and when they have obtained Strength, they should be each transplanted into a separate Pot, and placed either in the Stove, or on a moderate Hot-bed, where they may have a large Share of Air in warm Weather; but by being sheltered from the Cold and Wet, the Plants will perfect their Seeds very well in *England*.

The seventeenth Sort grows to be shrubby, and, if placed in a moderate Warmth in Winter, may be preserved two or three Years; but this will ripen its Seeds the first Year, if the Plants are brought forward in the Spring; but if this should fail, the Plants may be placed in the Stove, where they may be kept through the Winter; and the following Season they will perfect their Seeds. In the Summer the Plants should

should be placed in the open Air, in a shelter'd Situation; and in warm Weather they should have plenty of Water.

OENANTHE, Water Dropwort.

The Characters are;

It is an umbelliferous Plant, whose Flower consists of many heart-shap'd Leaves, which expand in form of a Rose: the Ovary is fix'd to the Top of the Empalement, which turns to a Fruit compos'd of two oblong Seeds, that are gibbous, and streak'd on one Side, and plain on the other; ending, as it were, in some Prickles, the middlemost of which is stronger than the rest.

The Species are;

1. **OENANTHE cicutæ facie Lobelli**. Park. Theat. Hemlock Dropwort.

2. **OENANTHE aquatica**. C. B. P. Water Dropwort.

There are several other Species of this Plant, some of which are Natives of England; but as they are not useful, nor of any Beauty, I shall omit enumerating them in this Place.

The first of those here mention'd is very common by the Sides of the Thames on each Side London, as also by the Sides of large Ditches and Rivers in divers Parts of England: this Plant commonly grows four or five Feet high with strong-jointed Stalks; which, being broken, emit a yellowish fetid Juice: the Leaves are somewhat like those of the common Hemlock, but are of a lighter-green Colour: the Roots divide into four or five large taper ones, which, when separated, have some Resemblance to Parsneps; for which some ignorant Persons have taken and boil'd them, whereby themselves and Family have been poison'd.

The poisonous Quality of this Plant hath led some Persons to believe it is the *Cicuta* of the Antients: but, according to *Wepfer*, the *Sium alterum olusatris facie* of *Lobel* is what the Antients call'd *Cicuta*; as may be seen at larger in *Wepfer's* Book *De Cicuta*.

The second Sort is very common in moist Soils, and by the Sides of Rivers, in divers Parts of England: this is not suppos'd to be near so strong as the first, but is of a poisonous Quality.

All the Sorts of these Plants naturally grow in moist Places; so that whoever hath a mind to cultivate them, should sow their Seeds soon after they are ripe in Autumn, upon a moist Soil; where they will come up, and thrive exceedingly the following Summer, and require no farther Care but to clear them from Weeds.

OLDENLANDIA.

The Characters are;

It hath a rose-shaped Flower, consisting of one Leaf, which is divided into four Parts almost to the Bottom, and rests on the Empalement: which Empalement afterward becomes an almost globular Fruit, having two Cells, which contain many small Seeds.

We have but one Species of this Plant; which is,

OLDENLANDIA humilis hyssopifolia. Plum. Nov. Gen. Dwarf Oldenlandia, with an Hyssop-leaf.

This Plant was discovered in America by Father Plumier, who gave this Name to it in Honour to Henry Bernard Oldenland, a German, who was a Disciple of Dr. Herman at Leyden, and was a very curious Botanist.

The Seeds of this Plant were sent into England by Mr. Robert Millar,

who gathered them in *Jamaica*. It is a low annual Plant, which seldom rises above three or four Inches high, and divides into many Branches, which spread near the Ground. These Branches are furnished with long narrow Leaves, which are placed by Pairs opposite to each other. From the Wings of the Leaves arises the Flower-stalk, which grows about an Inch, or a little more, in Length, and divides into three or four smaller Footstalks: on the Top of each of these, stands one small white Flower.

The Seeds of this Plant should be sown early in the Spring, on an Hot-bed; and when the Plants are come up, they should be transplanted on another Hot-bed, or into small Pots, and plunged into a moderate Hot-bed of Tanners Bark, observing to water and shade them until they have taken Root; after which time, they must have a large Share of free Air in warm Weather, and must be frequently refreshed with Water. With this Management the Plants will flower in *June*, and their Seeds will ripen soon after; so that the Seeds must be gathered from time to time as they ripen; for as the Branches grow larger, so there will be fresh Flowers produced until Autumn, when the Plants will perish: but if the Seeds are permitted to scatter in the Pots, the Plants will soon appear; which will live through the Winter, provided they are placed in the Stove; so will flower early the following Spring.

OLEA, The Olive.

The Characters are;

The Leaves are, for the most part, oblong and ever-green: the Flower consists of one Leaf; the lower Part of which is hollow'd, but the upper Part is divided into four Parts: the Ovary, which is fix'd in the Centre of

the Flower-cup, becomes an oval, soft, pulpy Fruit, abounding with a fat Liqueur, inclosing an hard rough Stone.

The Species are;

1. OLEA sativa, C. B. P. The manur'd Olive.

2. OLEA Africana, folio longo lato, supra atro-viridi splendente, infra pallide viridi. Boerb. Ind. African Olive, with a broad long Leaf, of a shining dark-green Colour on the Upper-side, but of a paler Green underneath.

3. OLEA Africana, folio buxi crasso atro viridi lucido, cortice albo scabro. Boerb. Ind. The African box-leav'd Olive.

4. OLEA minor Lucensis, fructu odorato. Tourn. The Luca Olive.

5. OLEA fructu majori, carne crassa. Tourn. Olive with a large Fruit, having a thicker Pulp.

These five Sorts are preserv'd in the Gardens of the Curious, where they are planted either in Pots or Cases, and remov'd into the Greenhouse in the Winters with Oranges, Myrtles, &c. but they are most of them hardy enough to endure the Cold of our ordinary Winters in the open Air, provided they are planted upon a dry Soil, and in a warm Situation; though in severe Winters they are often demolish'd, or at least lose their Heads, or are kill'd to the Surface; but this is what they are liable to in the South Parts of *France*, in which Country these Trees abound; and yet in very sharp Winters are most of them destroy'd. There was a Parcel of these Trees growing in the Gardens of *Camdenhouse*, near *Kensington*, a few Years since, which were seven or eight Feet high; and in some good Seasons produced very good Fruit: these were planted against a South Wall; but were permitted to grow up rude without

without pruning, or fastening to the Wall (which they do by no means care for); and during the time they were below the Top of the Wall, they throve very well; but after their Heads were gotten above the Wall, the North Winds did usually greatly prejudice them every Winter; and I believe the hard Winter [1739.] did intirely demolish them.

These Plants may be propagated by laying down their tender Branches (in the manner practis'd for other Trees), which should remain undisturb'd two Years; in which time they will have taken Root, and may then be taken off from the old Plants, and transplanted either into Pots fill'd with fresh light Earth, or into the open Ground in a warm Situation. The best Season for transplanting them is the Beginning of *April*; when you should, if possible, take the Opportunity of a moist Season; and those which are planted in Pots, should be placed in a shady Part of the Green-house until they have taken Root; but those planted in the Ground should have Mulch laid about their Roots, to prevent the Earth from drying too fast, and now-and-then refresh'd with Water; but you must by no means let them have too much Moisture, which will rot the tender Fibres of their Roots, and destroy the Trees. When the Plants have taken fresh Root, those in the Pots may be expos'd to the open Air, with other hardy Exotics; with which they should be hous'd in Winter, and treated as Myrtles, and other less tender Trees and Shrubs; but those in the open Air will require no farther Care until the Winter following, when you should mulch the Ground about their Roots, to prevent the Frost from penetrating deep into it: and if it should prove very severe, you should cover them

with Mats, which will defend them from being injur'd thereby; but you must be cautious not to let the Mats continue over them after the Frost is past, lest by keeping them too close, their Leaves and tender Branches should grow mouldy for want of free Air, which will be of as bad Consequence to the Trees, as if they had been expos'd to the Frost, and many times worse; for it seldom happens, if they have taken much of this Mould, or have been long cover'd, so that it has enter'd the Bark, that they are ever recoverable again; whereas it often happens, that the Frost only destroys the tender Shoots; but the Body, and larger Branches, remaining unhurt, put out again the succeeding Spring,

These Trees are generally brought over from *Italy* every Spring, by the Persons who bring over the Oranges, Jasmynes, &c. from whom they may be procur'd pretty reasonable; which is a better Method than to raise them from Layers in this Country, that being too tedious; and those which are thus brought over, have many times very large Stems, to which Size young Plants in this Country would not arrive in ten or twelve Years Growth. When you first procure these Stems, you should (after having soak'd their Roots twenty-four Hours in Water, and clean'd them from the Filth they have contracted in their Passage) plant them in Pots fill'd with fresh light sandy Earth, and plunge them into a moderate Hot-bed; observing to screen them from the Violence of the Sun in the Heat of the Day, and also to refresh them with Water, as you shall find the Earth in the Pots dry. In this Situation they will begin to shoot in a Month or six Weeks after; when you should let them have Air in proportion to the Warmth of the

the

the Season: and after they have made pretty good Shoots, you should enure them to the open Air by degrees; into which they should be removed, placing them in a Situation where they may be defended from strong Winds: in this Place they should remain till *October* following; when they must be removed into the Green-house, as was before directed. Having thus managed these Plants until they have acquir'd strong Roots, and made tolerable good Heads, you may draw them out of the Pots, preserving the Earth to their Roots, and plant them in the open Air in a warm Situation, where you must manage them as was before directed for the young ones; and these will in two or three Years produce Fruit, provided they do well. The *Luca* and *Box-leav'd Olives* are the hardiest; for which Reason they should be preferr'd to plant in the open Air; but the first Sort will grow to be the largest Trees.

OMPHALODES, *Venus Navelwort*.

The Characters are;

The Flower consists of one Leaf, which expands in a circular Order, and is cut into several Segments: the Pointal, which rises in the Middle of the Flower, becomes a Fruit, compos'd of four hollow umbilicated Capsules, somewhat resembling a Basket; in each of which is contained one almost flat Seed adhering to the Placenta, which is pyramidal and four-cornered.

The Species are;

1. OMPHALODES *Lusitanica*, *lini folio*. *Tourn.* *Venus Navelwort*, vulgar.

2. OMPHALODES *Lusitanica elatior*, *cynoglossi folio*. *Tourn.* Taller *Portugal Navelwort*, with an *Hound's-tongue-leaf*.

3. OMPHALODES *pumila verna*, *symphyti folio*. *Tourn.* Low vernal *Venus Navelwort*, with a *Comfry-leaf*, or *Lesser Borage*.

The first of these Plants hath been a long time in the *English Gardens*. The Seeds of this Kind are sold in the *London Shops*, as a Dwarf annual Flower, to be us'd for Edgings; for which Purpose it is by no means proper; for it often happens, that not a tenth Part of the Seeds grow, tho' they were saved with all possible Care; so that the Plants will be very thin, and in Patches; but, however, it is a pretty Ornament to the Borders of the *Pleasure-garden*, if sown in Patches, as hath been directed for the Dwarf *Lychnis*, and other annual Plants of the same Ground; amongst which this Plant makes a pretty Variety. The Seeds of it should be sown in *Autumn*, soon after they are ripe; at which Season they will come up very well; whereas those sown in the *Spring* seldom succeed: and the Plants will abide the Cold of our ordinary Winters, and will flower early the succeeding *Spring*, from which Plants you will have good Seeds in *July*; but those sown in the *Spring* very often fail of ripening Seeds.

The second Sort is only in some curious *Botanic Gardens* at present, tho' it is equally as hardy as the first, and must be treated in the same manner. This grows taller, and hath broader Leaves, than the first, in which respects the only Difference between them consists.

The third Sort is an abiding Plant, and multiplies very fast by its trailing Branches, which take Root at their Joints as they lie upon the Ground, and may be taken off, and transplanted to make new Plants.

These

These require a moist Soil, and a shady Situation, where they will thrive exceedingly, and produce great Quantities of pretty blue Flowers early in the Spring, for which it is chiefly valued.

ONAGRA, Tree-primrose, *vulgo*.

The Characters are;

It hath a Rose-flower, consisting generally of four Leaves, placed orbicularly, and resting on the Empalement; out of whose Upper-part, which is fistulous, rises the Pointal, the Under-part turning to a Fruit which is cylindrical, gaping in four Parts, and divided into four Cells, filled with Seeds, which are generally covered, and adhere to the Placenta.

The Species are;

1. ONAGRA *latifolia*. *Inst. R. H.* Broad-leav'd Tree-primrose.

2. ONAGRA *latifolia*, *flore dilutiore*. *Inst. R. H.* Broad-leav'd Tree-primrose, with paler-yellow Flowers.

3. ONAGRA *latifolia*, *floribus amplis*. *Inst. R. H.* Broad-leav'd Tree-primrose, with ample Flowers.

4. ONAGRA *angustifolia*. *Inst. R. H.* Narrow-leav'd Tree-primrose.

5. ONAGRA *angustifolia*, *caule rubro*, *flore minori*. *Inst. R. H.* Narrow-leav'd Tree-primrose, with red Stalks, and a smaller Flower.

6. ONAGRA *Americana*, *folio betonicae*, *fructu hispido*. *Plum. Cat.* American Tree-primrose, with a Betony-leaf, and a prickly Fruit.

7. ONAGRA *laurifolia*, *flore amplo pentapetalo*. *Feuillee*. Bay-leav'd Tree-primrose, with a large five-leav'd Flower.

8. ONAGRA *hyssopifolia*, *flore amplo violaceo*. *Feuillee*. Hyssop-leav'd Tree-primrose, with a large violet-colour'd Flower.

9. ONAGRA *linariae folio*, *magnae flore purpureo*. *Feuillee*. Tree-prim-

rose with a Toad-flax-leaf, and a large purple Flower.

10. ONAGRA *salicis angustodentatoque folio*, *vulgo Mitbon*. *Feuillee* Tree-primrose with narrow indented Willow-leaves, commonly called Mitbon.

The first Sort is very common in most *English* Gardens, where, when it has been suffered to scatter its Seeds, it will come up and flourish without any Care; and many times becomes a troublesome Weed: this will thrive in the Smoke of London; so that it is a very proper Plant to adorn the City Gardens; for it continues in Flower from the Beginning of June until August; and sometimes in cold Seasons till near *Michaelmas*. The Flowers of this Plant do not open in the Middle of the Day, when the Weather is warm; but in the Evening, after the Sun is gone off, they open, and continue so until the Sun comes on them the next Day; in cloudy Weather the Flowers will continue open all Day, or when the Plants grow in the Shade. This Manner of the Flower opening in the Evening, has occasioned the Name of Night-primrose; by which some People call it. The four next-mentioned are equally hardy, and will grow in almost any Soil or Situation. The Seeds of these Plants may be sown in *March*, in an open Situation; and when the Plants come up, they should be kept clean from Weeds; and where they come up too close, some of them should be pulled up, to allow room for the others to grow. In this Place the Plants may remain till *Michaelmas*, when they should be transplanted where they are to remain for Flowering. These Plants produce a great Quantity of Seed, which, if permitted to scatter, will sufficiently stock the Garden with Plants; but
the

the old Plants rarely continue after they have seeded.

Tho' these Plants will bear transplanting pretty well, if it be done at *Michaelmas*; yet it is the better Way to sow the Seeds, where the Plants are designed to remain for Flowering; because they generally have a downright Root, which is often cut or broken by transplanting; and then the Plants never thrive so well, nor continue so long in Flower, as those which remain undisturbed.

The other six Sorts are more tender: these should be raised on an Hot-bed, and managed as hath been directed for the *Amaranthus*: by which Method good Seeds may be obtained, and the Kinds preserved.

The seventh Sort was found in the Plains of *Lima*, by Father *Feuillee*: this Sort was also found near *Panama* by Mr. *Robert Millar*, Surgeon, who sent the Seeds to *England*. The eighth and eleventh Sorts were found by Father *Feuillee* in *Chily*: the tenth Sort he found by the River of *Plate*. This grows about a Foot high, and produces large purple Flowers. The eighth Sort grows taller, and produces large violet-colour'd Flowers, which renders them more valuable than the other Sorts.

ONIONS. *Vide Cepa.*

ONOBRYCHIS, Cock's-head, or Saint-foin.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, which afterward becomes a crested Pod, which is sometimes rough, and full of Seeds, shaped like a Kidney: to which may be added, The Flowers grow in a thick Spike.

The Species are;

1. ONOBRYCHIS *foliis viciae, fructu echinato, major, floribus dilute rubentibus.* C. B. P. Greater Cock's-

head, with Vetch-leaves, rough Fruit, and pale-red Flowers.

2. ONOBRYCHIS *foliis viciae, fructu echinato, major, floribus eleganter rubentibus.* C. B. P. Greater Cock's-head, with Vetch-leaves, rough Fruit, and beautiful red Flowers.

3. ONOBRYCHIS *fructu echinato, minor.* C. B. P. Smaller Cock's-head, with rough Fruit, or Medic-vetchling.

The two first are Varieties which only differ in the Colour of their Flowers, the same Seeds often producing both Sorts, tho' sowed from one Plant. As there is also another Variety with a white Flower, which doth come from the same Seed, they may pass for one Plant.

This is an abiding Plant, which, if sown upon a dry, gravelly, or chalky Soil, will continue eighteen or twenty Years: but if it be sown upon a deep, light, moist Soil, the Roots will run down into the Ground; and in the Winter-season the Moisture will rot them; so that the Plants seldom lasts above two Years in such Places.

This is esteemed one of the best Sorts of Fodder for most Cattle, and is a great Improvement to shallow chalky Hills, upon which it succeeds better than in any other Soil, and will continue many Years; and the Roots of this Plant, when plowed in, greatly enrich the Ground.

The best Season for sowing of this Seed is in the Beginning or Middle of *April*, according as the Season is early or late, observing always to do it in dry Weather; otherwise the Seeds will be apt to burst with Moisture, and never come up. These Seeds being large, there will require a great Quantity to sow an Acre: the common Allowance for this Work is four Bushels; but I would not

not advise above three at most : and if this Seed were sown in Rows, in the manner directed for the *Medica*, it would be a great Improvement to the Plants ; for when they have room enough, they are very subject to branch out on every Side, and become very strong ; so that when they are in Rows, that the Ground between them can be stirr'd with an Hoe-plough, it will cause them to shoot much stronger than when they grow so close, that there can be no Culture bestowed on them.

I have taken up Roots of this kind, where they have grown singly, and kept clear from Weeds, whose Shoots have spread near two Feet wide, and were much stronger than those which grew nearer together upon the same Soil.

There are some Persons who recommend the sowing Oats or Barley with this Seed : but that is a very bad Method ; for what is gain'd from the Crop of Corn, will be doubly lost in the Saint-foin : and this generally holds true in most Sorts of Grass-seeds ; for the Corn, growing over it, doth so weaken the Crop beneath, that it scarcely recovers its Strength in two Years time after.

The Ground in which this Seed is sown, should be well plowed, and made very fine : and if you sow it in Rows, the Drills should be made eighteen Inches asunder, and about an Inch deep ; in which the Seeds should be sown indifferently thick ; for if the Plants come up too close, it will be very easy to hoe them out, so as to leave the remaining ones six or eight Inches asunder ; for the Ground should be hoed, after the Plants are come up, to destroy the Weeds ; which, if suffered to grow, would soon overbear the young Plants, and destroy them ; but when they have obtained Strength, they

will prevent the Weeds from growing up amongst them.

The first Year after sowing, you should by no means feed it down ; for the Crown of the Roots being then young and tender, the Cattle would eat it so low, as intirely to destroy the Roots ; and if large Cattle were let in upon it, they would trample it down so much as to prevent its shooting again : therefore the first Year it should be mowed, which should be done when it is in Flower, being careful to turn it often, that it may the sooner dry, and be removed ; for while it continues upon the Ground, it greatly retards the Roots from shooting again.

The time when this Crop will be fit to cut the first Year, is toward the Latter-end of *July*, or the Beginning of *August*. After this is clear'd off, the Roots will soon shoot again ; and by the End of *September*, provided the Season be favourable, there will be a fine Crop fit for feeding : at which time, or soon after, you may turn in Sheep, which will, in eating down the Grass, enrich the Ground with their Dung, whereby the Roots will be greatly strengthened ; but you should not suffer them to remain too long upon it, lest, as I before observed, they should eat it down too low, which would destroy the Roots ; nor should they ever be suffered to remain upon it longer than the middle of *March* ; after which time it should be let grow for a Crop, which will be fit to cut the Latter-end of *May* ; and if you do not feed it, there will be a second Crop by the End of *July* following ; so that you may have two Crops every Year, besides the Advantage of-feeding it down in Winter and Spring : and if you observe to stir the Ground betwixt the Rows after every Cutting, as was directed for the

the *Medica*, it will be of great Service to the Roots, and occasion the Shoots to be much stronger than if wholly neglected, as is the common Practice.

This Sort of Hay is excellently good for Horses, and is esteemed one of the best Sorts of Food for most Cattle, especially in the Spring, there being no Danger attending it, as there is in Clover, and some other Sorts of Fodder: it breeds abundance of Milk; and the Butter that is made of it is very good.

And altho' it is common in many Parts of *England*, yet a few Plants of the deep-red flower'd Sort, when disposed in large Borders of the Pleasure-garden, afford an agreeable Variety: the Flowers, which are of a beautiful red Colour, being collected into a long Spike, and continuing a long time in Beauty, make a very pretty Mixture amongst other Flowers in the Borders of large Gardens, where there is room; and the Roots will abide several Years without renewing, requiring very little Culture, being extreme hardy, in respect to Heat or Cold, provided they are planted upon a dry Soil.

The third Sort is annual; nor are the Flowers so beautiful as those of the former Sort, for which Reason it is seldom cultivated, except in Botanic Gardens, for Variety. This may be sown in the Beginning of *April*, upon a fresh light Soil, where the Plants will come up in *May*; and will require no farther Care but to clear them from Weeds: the Seeds will ripen in *August*, when they should be gathered, and preserved for sowing the succeeding Spring.

OPHIOGLOSSUM, Adders-tongue.

The Characters are;

It hath no visible Flower; but the Seeds are produced on a Spike, which

resemble a Serpent's Tongue: which Seed is contained in many longitudinal Cells, which open, and cast forth the Seeds when ripe.

The Species are;

1. OPHIOGLOSSUM *vulgatum*. C. B. P. The common Adders-tongue.

2. OPHIOGLOSSUM *anguloso folio*. C. B. P. Adders-tongue with an angular Leaf.

3. OPHIOGLOSSUM *minus, subrotundo folio*. C. B. P. Lesser Adders-tongue, with a roundish Leaf.

4. OPHIOGLOSSUM *bilingue majus, folio acuto*. Mentz. Pug. Greater Adders-tongue, with a pointed Leaf, and a double Tongue.

5. OPHIOGLOSSUM *bilingue medium, folio obtuso*. Mentz. Pug. Middle Adders-tongue, with a blunt Leaf, and a double Tongue.

6. OPHIOGLOSSUM *bilingue minimum*. Mentz. Pug. The least Adders-tongue, with a double Spike or Tongue.

7. OPHIOGLOSSUM *palmatum*. Plum. Handed Adders-tongue.

8. OPHIOGLOSSUM *cordiforme & reticulatum*. Plum. Heart-shaped and netted Adders-tongue.

The first Sort grows wild in moist Meadows in several Parts of *England*. This is directed to be used in Medicine, by the College of Physicians, in their Dispensatory; but is seldom to be found in Gardens, being very difficult to transplant; and will not live long where the Grass doth not grow about it. The best Method to have it succeed is, to dig up the Plants about the Beginning of *April*, with large Balls of Earth to them, being careful to dig so deep as to get below their Roots; then plant these with the Turf about them, in a moist shady Place, where they will grow pretty well, and may continue for some Years.

The second and third Sorts grow wild

wild in *Germany*, and on the *Alps*; but are not to be found in *England*.

The fourth, fifth, and sixth Sorts are also Varieties which have been found in some Parts of *Europe*; but it is not certain whether they are distinct Species, or only Variations from the common Sort.

These are all as hardy as the common Sort; therefore, whenever they are found, may be transplanted, and treated in the same manner.

The seventh and eighth Sorts were discovered by Father *Plumier* in *America*. These grow in moist swampy Places in *Jamaica*, and several other Places in the warmer Parts of *America*; but are difficult to remove so as to have them grow in other Countries.

OPHRIS, Tway-blade.

The Characters are;

It hath a polypetalous anomalous Flower, consisting of six dissimilar Leaves; of which the five upper ones are so disposed, as to represent, in some measure, an Helmet; the under one being headed, and shaped like a Man: the Empalement becomes a Fruit, perforated with three Windows; to which adhere Valves, pregnant with very small Seeds like Dust.

The Species are;

1. OPHRIS *bifolia*. C. B. P. Common Tway-blade.
2. OPHRIS *bifolia bulbosa*. C. B. P. Bulbous-rooted Tway-blade.
3. OPHRIS *palustris*, radice repente. *Inst. R. H.* Marsh Tway-blade, with a creeping Root.
4. OPHRIS *minima*. C. B. P. The least Tway-blade.

The first Sort is pretty common in moist Meadows, and in shady moist Woods, in divers Parts of *England*: it flowers the Latter end of *May*, and in the Beginning of *June*. This Plant may be transplanted into Gardens, if the Roots are taken up with

a Ball of Earth, soon after the Leaves decay. These must be planted in a moist shady Border, where, if they are not disturbed, they will remain many Years, and require no other Care but to keep them clear from Weeds.

The second Sort doth not grow wild in *England*; but is frequently found in *Germany*, and on the *Alps*: this may be transplanted and managed as the former Sort.

The third Sort grows plentifully in several of the Northern Counties of *England*; and the fourth Sort grows in *Cambridgeshire*, in *Hertfordshire*, and *Kent*. These two Sorts delight in cold moist Places; but are with great Difficulty preserved in Gardens.

OPULUS, The Gelder Rose.

The Characters are;

The Leaves are like those of the Maple-tree: the Flowers consist of one Leaf, which expands in a circular Rose-form, and is divided at the Top into five Parts: these are collected, for the most part, in form of an Umbel; the largest of which grow on the Outside, and are barren: but those in the Middle are fruitful, producing red Berries; in each of which is contained one flat heart-shaped Seed.

The Species are;

1. OPULUS *Ruelli*. Marsh Elder, or Gelder Rose, with flat Flowers.
2. OPULUS *flore globoso*. *Tourn.* The Gelder, or Gelderland Rose.
3. OPULUS *flore globoso, folio variegato*. The Gelder Rose, with striped Leaves.

The first of these Plants is very common in moist Woods in divers Parts of *England*; but is seldom cultivated in Gardens; tho' if the Soil be moist, in which this Tree is planted, it will afford a very agreeable Prospect, both in the Season when it is in Flower, and also in the

Autumn,

Autumn, when the Fruit is ripe, which generally grows in large Clusters, and is of a beautiful red Colour; so that where a Wilderness or other Plantation of flowering Trees is designed, and the Ground is moist, this and the next are two of the most proper Trees for such Purposes; these thriving much better, and will produce their Flowers larger, and in greater Quantities, than when they are placed in a dry Situation.

The second Sort is very common in old Gardens in most Parts of *England*: this produces only barren Flowers, which, being all very large, are produced in a globular Form; so that, at a Distance, they resemble a Snow-ball; whence the People in some Countries give it the Name of Snow-ball-tree. This Difference was at first accidental, as is the Case of all double Flowers, which commonly arise from Seeds: and tho' these are not productive of Fruit, yet, for the sake of their Flowers, they are much more esteemed than the single Sort by the Gardeners.

The striped Sort is also an Accident, occasioned by an Obstruction of the Juices, as is the Case of all variegated Plants. This is preserved as a Curiosity by such as are Lovers of striped Trees and Plants; but must not be planted in a rich Soil, which would cause them to grow vigorously, whereby they would be in Danger of becoming plain again.

All these Sorts may be propagated either from Suckers, or by laying down their Branches, which will take Root in a Year's time; when they may be taken off from the old Plants, and transplanted either into a Nursery, where they may be trained up for two or three Years, or plac'd where they may remain for good. The best time to remove

these Trees is at *Michaelmas*, as soon as their Leaves begin to decay, that they may be well rooted before the Drought of the next Spring comes on, which is often destructive to such as have been newly transplanted, if they are not carefully attended with Water.

They are extreme hardy, and will endure the severest Cold of our most Northern Situations, and are only impatient of great Heat and Drought, so that they are very proper to plant in very cold Soils, and Places which are greatly expos'd to the North Winds, where few other Shrubs will thrive so well. They will grow to the Height of twelve or fourteen Feet, and, if reduced to regular Heads, are very ornamental during the Season of Flowering: and their Flowers are very proper to intermix with Peonies, and other large Flowers, for Basons and Flower-pots to adorn Halls and Chimneys. Their Season of Flowering is in *May*, tho' their Flowers sometimes continue in Beauty a great Part of *June*, especially if the Weather prove cool and moist.

OPUNTIA, The Indian Fig.

The Characters are;

The Flower consists of many Leaves, which expand in form of a Rose, having a great Number of Stamina in the Centre, which grow upon the Top of the Ovary; the Ovary afterward becomes a fleshy umbilicated Fruit, with a soft Pulp, inclosing many Seeds; which are, for the most part, angular.

The Species are;

1. OPUNTIA *vulgo herbariorum*.
J. B. The common Indian Fig of the Botanists.

2. OPUNTIA *minima, folio subrotundo*. Tourn. Least Indian Fig; with roundish Leaves.

3. OPUNTIA *folio oblongo, media*.
Tourn. Middle Indian Fig, with an oblong

oblong Leaf, commonly called the Cochineal Fig-tree.

4. *OPUNTIA folio minori, rotundiori, & compressiori.* Tourn. Indian Fig, with a smaller, rounder, and flatter Leaf.

5. *OPUNTIA major, validissimis spinis munita.* Tourn. The greater Indian Fig, armed with very strong Prickles.

6. *OPUNTIA maxima, folio spinoso, latissimo & longissimo.* Tourn. The largest Indian Fig, with a very broad and long prickly Leaf.

7. *OPUNTIA folio spinoso, longissimo, & angusto.* Tourn. Indian Fig, with a very long narrow prickly Leaf.

8. *OPUNTIA latifolia, crassiori folio, spinis albis numerosis armato.* Boerb. Ind. Indian Fig, with a broad thick Leaf armed with many white Spines.

9. *OPUNTIA Curassavica minima.* H. Beaur. The smallest Indian Fig from Curacoa, commonly called the Pin-pillow.

10. *OPUNTIA Americana, arbor excelsa, foliis reticulatis, flore flavescente.* Plum. American Indian Fig, which grows to be a tall Tree, with netted Leaves, and a yellowish Flower.

11. *OPUNTIA folio plano glabro scolopendriæ.* Boerb. Ind. Indian Fig, with a plain smooth Leaf, like Spleenwort.

12. *OPUNTIA maxima, folio oblongo rotundo majore, spinulis obtusis mollibus & innocentibus obsito, flore striis rubris variegato.* Sloan. Cat. The greatest Indian Fig, with greater oblong roundish Leaves; and small soft blunt Spines, with a Flower striped with Red.

13. *OPUNTIA major spinosa caulescens, flore minore rubro clauso, fructu parvo coctineo.* Houst. Greater stalky and prickly Indian Fig, with a smaller

red Flower, which doth not expand, and a small scarlet Fruit.

14. *OPUNTIA caulescens, foliis amplissimis tenuibus compressis, spinis longissimis, confertissimis, gracilibus, & albicantibus armatis.* Houst. Stalky Indian Fig, with large narrow compressed Leaves, which are closely armed with very long slender white Spines.

The first of these Plants hath been a long time in England, and is the most common Sort in Europe: this Mr. Ray, and Dr. Robinson, observed growing wild in the Kingdom of Naples, by the Sides of the Highways, on the Sides of the Mountains, and among Rocks in great abundance; but in these Northern Parts of Europe it is generally preserved in the Green houses, with other Exotic Plants; tho' I have planted it under a warm Wall in a very dry Soil, where it has continued for several Years, and endured the severest of our Cold without any Cover; and has produced a greater Quantity of Flowers and Fruit than those which were housed: so that the Cold is not so great an Enemy to this Plant as Wet, which, if suffered to lie long upon it, or given in too large Quantities to the Root, will destroy it in a short time.

The other Sorts are much tenderer, being all of them Natives of the warm Parts of the West-Indies. These are some of them so tender as not to be preserved without the Assistance of a Stove; especially the ninth, tenth, eleventh, twelfth, thirteenth, and fourteenth Sorts, in any tolerable Degree of Health; for if they have not some additional Warmth to the Air of the House in Winter, their Stems will shrivel, and look yellowish and withered.

The thirteenth Sort grows to be very large, having thick woody

Stems: this grows plentifully on the Hills, and by the Sides of the Roads, in the Island of *Jamaica*.

The fourteenth Sort was observed in great Plenty near the Head of *Kings-son* Harbour in *Jamaica*, by the late *Dr. Housloun*; but he never could see either Fruit or Flower on the Plants. This is by some Persons called *Robinson Cruso's Coat*; but for what Reason I cannot imagine.

These Plants may all be propagated by cutting off their Branches at the Joints, during any of the Summer-months; which should be laid in a warm dry Place for a Fortnight, that the wounded Part may be healed over, otherwise they will rot with the Moisture which they imbibe at that Part; as is the Case with most other succulent Plants. The Soil in which these Plants must be planted, should be composed after the following manner; *viz.* One-third of fresh light Earth from a Pasture; a third Part Sea-sand; and the other Part should be one half rotten Tan, and the other half Lime-rubbish: these should be well mixed, and laid in an Heap three or four Months before it be used, observing to turn it over at least once a Month, that the several Parts may be well united: then you should pass it thro' a rough Screen, in order to separate the largest Stones and Clods; but by no means sift it too fine, which is a very common Fault: then you should reserve some of the smaller Stones and Rubbish to lay at the Bottom of the Pots, in order to keep an open Passage for the Moisture to drain off; which is what must be observed for all succulent Plants; for if the Moisture be detained in the Pots, it will rot their Roots, and destroy the Plants.

When you plant any of the Branches of these Plants, you should

plunge the Pots into a moderate Hot-bed, which will greatly facilitate their taking Root: you should also refresh them now-and-then with a little Water; but be very careful not to let them have too much, or be too often watered, especially before they are rooted. When the Plants begin to shoot, you must give them a large Share of Air, by raising the Glasses, otherwise their Shoots will draw up so weak, as not to be able to support themselves; and after they have taken strong Root, you should enure them to the Air by degrees, and then remove them into the Stove where they should remain, placing them near the Glasses, which should always be opened in warm Weather: so that they may have the Advantage of a free Air, and yet be protected from Wet and Cold.

During the Summer-season these Plants will require to be often refreshed with Water; but it must not be given to them in large Quantities, lest it rot them; and in Winter this should be proportion'd to the Warmth of the Stove; for if the Air be kept very warm, they will require to be often refreshed, otherwise their Branches will shrink; but if the House be kept in a moderate Degree of Warmth, they should have very little; for Moisture at that Season will rot them very soon.

The Heat in which these Plants thrive best, is the temperate Point, as mark'd on Botanical Thermometers; for if they are kept too warm in Winter, it causes their Shoots to be very tender, and thereby very liable to Decay, if not duly attended. Those Sorts which are inclinable to grow upright, should have their Branches supported with Stakes; otherwise their Weight is so great, that it will break them down.

These Plants are by most People exposed

exposed to the open Air in the Summer-season; but they thrive much better, if they are continued in the Stoves, provided the Glasses be kept open, so that they may have free Air; for when they are set abroad, the great Rains which generally fall in Summer, together with the unsettled Temper of the Air in our Climate, does greatly diminish their Beauty, by retarding their Growth; and sometimes in wet Summers they are so replete with Moisture as to rot in the succeeding Winter; nor will those Plants which are set abroad (I mean the tender Sorts) produce their Flowers and Fruit in such Plenty as those which are constantly preserved in the House.

The twelfth Sort is supposed to be the Plant upon which the Cochineal-fly breeds: these deposit their Eggs in the Centre of the Flowers, upon the Crown of the Ovary; and when they are hatch'd, the young Insects feed upon the Fruit, which is of a deep-red Colour within; and if eaten by Men, colours their Urine as red as Blood; which has often frightened Strangers who have eaten of the Fruit, when they have thought it was real Blood they voided; tho' no ill Effects attend it.

The ninth and eleventh Sorts are less common than the others, and are rarely seen but in very curious Gardens: these are the tenderest of them all, and should be placed in a warm Part of the Stove in Winter; but must have very little Water given them at that Season; and in Summer must always be kept in the House: for they will not bear the open Air in the Heat of Summer, which is seldom very regular in this Country.

ORANGE. *Vide* Aurantium.

ORCHARD. In planting of an Orchard, great Care should be had

of the Nature of the Soil, that such Sorts of Fruit as are adapted to grow upon the Ground intended to be planted, may be chosen, otherwise there can be little Hopes of their succeeding; and it is for want of rightly observing this Method, that we see in many Countries Orchards planted which never arrive to any tolerable Degree of Perfection, their Trees starving; and their Bodies are either covered with Moss, or the Bark cracks and divides; both which are evident Signs of the Weakness of the Trees; whereas, if instead of Apples the Orchard had been planted with Pears, Cherries, or any other Sort of Fruit to which the Soil had been adapted, the Trees might have grown very well, and produced great Quantities of Fruit.

As to the Position of the Orchard (if you are at full Liberty to choose), a rising Ground, open to the South-east, is to be prefer'd: but I would by no means advise to plant upon the Side of an Hill, where the Declivity is very great; for in such Places the great Rains commonly wash down the better Part of the Ground, whereby the Trees would be deprived of proper Nourishment: but where the Rise is gentle, it is of great Advantage to the Trees by admitting the Sun and Air between them better than it can upon an intire Level; which is an exceeding Benefit to the Fruit, by dissipating Fogs, and drying up the Damps, which, when detained amongst the Trees, mix with the Air, and render it rancid: if it be defended from the West, North, and East Winds, it will also render the Situation still more advantageous; for it is chiefly from those Quarters that Fruit-trees receive the greatest Injury: therefore, if the Place be not naturally defended from these by rising Hills (which is
always

always to be preferr'd, then you should plant large-growing Timber-trees at some Distance from the Orchard, to answer this Purpose.

You should also have a great regard to the Distance of planting the Trees, which is what few People have rightly consider'd; for if you plant them too close, they will be liable to Blights; and the Air being hereby pent in amongst them, will cause the Fruit to be ill-tasted, having a great Quantity of damp Vapours from the Perspiration of the Trees, and the Exhalations from the Earth, mix'd with it, which will be imbibed by the Fruit, and renders their Juices crude and unwholsome.

Wherefore I can't but recommend the Method which has been lately practis'd by some particular Gentlemen with very good Success; and that is, to plant the Trees fourscore Feet asunder, but not in regular Rows. The Ground between the Trees they plow and sow with Wheat, and other Crops, in the same manner as if it were clear from Trees; and they observe their Crops to be full as good as those quite exposed, except just under each Tree, when they are grown large, and afford a great Shade; and by thus plowing and tilling the Ground, the Trees are rendered more vigorous and healthy, scarcely ever having any Moss, or other Marks of Poverty, and will abide much longer, and produce better Fruit.

If the Ground in which you intend to plant an Orchard has been Pasture for some Years, then you should plow in the Green-sward the Spring before you plant the Trees: and if you will permit it to lie a Summer fallow, it will greatly mend it, provided you stir it two or three times, to rot the Sward of Grass, and prevent Weeds growing thereon.

At *Michaelmas* you should plow it pretty deep, in order to make it loose for the Roots of the Trees, which should be planted thereon in *October*, provided the Soil be dry; but if it be moist, the Beginning of *March* will be a better Season.

When you have finished planting the Trees, you should provide some Stakes to support them, otherwise the Wind will blow them out of the Ground; which will do them much Injury, especially after they have been planted some time; for the Ground at that Season being warm, and for the most part moist, the Trees will very soon push out a great Number of young Fibres; which, if broken off by their being displaced, will greatly retard the Growth of them.

In the Spring following, if the Season should prove dry, you should cut a Quantity of green Turf, which must be laid upon the Surface of the Ground about their Roots, turning the Grass downward; which will prevent the Sun and Wind from drying the Ground, whereby a great Expence of Watering will be saved: and after the first Year they will be out of Danger, provided they have taken well.

Whenever you plow the Ground betwixt these Trees, you must be careful not to go too deep amongst their Roots, lest you should cut them off, which would greatly damage the Trees: but if you do it cautiously, the stirring of the Surface of the Ground will be of great Benefit to them; tho' you should observe never to sow too near the Trees, nor suffer any great-rooting Weeds to grow about them, which would exhaust the Goodness of the Soil, and starve them.

The Soil of your Orchard should also be mended once in two or three
Years

Years with Dung, or other Manure, which will also be absolutely necessary for the Crops sown between: so that where Persons are not inclinable to help their Orchards, where the Expence of Manure is pretty great; yet, as there is a Crop expected from the Ground besides the Fruit, they will the more readily be at the Charge upon that Account.

In making choice of Trees for an Orchard, you should always observe to procure them from a Soil nearly akin to that where they are to be planted, or rather poorer; for if you have them from a very rich Soil, and that wherein you plant them is but indifferent, they will not thrive well, especially for four or five Years after planting: so that 'tis a very wrong Practice to make the Nursery, where young Trees are raised, very rich, when the Trees are designed for a middling or poor Soil. The Trees should also be young and thriving; for whatever some Persons may advise to the contrary, yet it has always been observ'd, that tho' large Trees may grow, and produce Fruit, after being remov'd, they never make so good Trees, nor are so long-liv'd, as those which are planted while young.

These Trees, after they are planted out, will require no other Pruning but only to cut out dead Branches, or such as cross each other, so as to render their Heads confus'd and unsightly: the too often pruning them, or shortening their Branches, is very injurious; especially to Cherries and Stone-fruit, which will gum prodigiously, and decay in such Places where they are cut: and the Apples and Pears, which are not of so nice a Nature, will produce a greater Quantity of lateral Branches, which will fill the Heads of the Trees with weak Shoots whenever

their Branches are thus shorten'd; and many times the Fruit is hereby cut off, which, on many Sorts of Fruit-trees, is first produc'd at the Extremity of their Shoots.

ORCHIS, Satyrion, or Foolstones.

The Characters are;

It hath an anomalous Flower, consisting of six dissimilar Leaves, the five uppermost of which are so dispos'd as to imitate in some manner an Helmet; the under one being of many Shapes, headed for the most part, and tail'd, sometimes representing a naked Man, sometimes a Butterfly, a Drone, a Pigeon, an Ape, a Lizard, a Parrot, a Fly, and other Things: but the Empalement afterward becomes a Fruit divided into three Cells, in which are contained many small Seeds: to these Notes should be added, The Flowers are collected into a Spike; and the Roots are fleshy, sometimes roundish and double like Testicles, sometimes flat, and in a manner shap'd like an Hand.

The Species are;

1. ORCHIS morio mas, foliis maculatis. C. B. P. The Male Foolstones.
2. ORCHIS morio fœmina. Park. Theat. The Female Foolstones.
3. ORCHIS barbata fatida. J.B. The Lizard-flower, or Great Goatstones.
4. ORCHIS Pannonica. 4. Clusf. Hist. Little purple-flowered Orchis.
5. ORCHIS obscure purpurea odorata. Tourn. Sweet-smelling dark-purple Orchis.
6. ORCHIS purpurea, spica congesta pyramidalis. Raii Syn. Purple late-flowering Orchis.
7. ORCHIS odorata moschata, sive Monorchis. C. B. P. The yellow-sweet or Musk Orchis.

8. *ORCHIS spiralis alba odorata*. *J. B.* Triple Ladies Traces.

9. *ORCHIS latifolia, biante cucul-
lo, major. Tourn.* The Man Or-
chis.

10. *ORCHIS anthropophora Orca-
des. Col. Ec.* Man Orchis, with a
ferrugineous, and sometimes a green
Colour.

11. *ORCHIS myodes, galea & alis
herbidis. J. B.* The common Fly
Orchis.

12. *ORCHIS myodes major. Park.
Theat.* The greater Fly Orchis.

13. *ORCHIS fusciflora, galea &
alis purpurascens. J. B.* The
common Humble-bee Satyrion, or
Bee-flower.

14. *ORCHIS five Testiculus Sphe-
godis, bifuto flore. J. B.* Humble-
bee Satyrion, with green Wings.

15. *ORCHIS hermaphroditica bifol-
lia. J. B.* Butterfly Satyrion.

16. *ORCHIS alba bifolia minor,
calcaris oblongo. C. B. P.* The lesser
Butterfly Satyrion.

17. *ORCHIS palmata pratensis la-
tifolia, longis calcaribus. C. B. P.*
The Male handed Orchis, or Male
Satyrion Royal.

18. *ORCHIS palmata pratensis
maculata. C. B. P.* The Female
handed Orchis, or Female Satyrion
Royal.

19. *ORCHIS palmata minor, cal-
caribus oblongis. C. B. P.* Red-
handed Orchis, with long Spurs.

20. *ORCHIS palmata minor, flore
luteo viridi. Raii Syn.* Handed Or-
chis, with a greenish Flower, by
some call'd the Frog Orchis.

All these Sorts of Orchis grow
wild in several Parts of *England*; but,
for the extreme Oddness and Beauty
of their Flowers, deserve a Place in
every good Garden: and the Reason
for their not being cultivated in Gar-
dens proceeds from their Difficulty
to be transplanted: tho' this, I be-

lieve, may be easily overcome, where
a Person has an Opportunity of
marking their Roots in their time of
Flowering, and letting them remain,
until their Leaves are decay'd, when
they may be transplanted with Safe-
ty: for it is the same with most
Sorts of bulbous or fleshy-rooted
Plants, which, if transplanted before
their Leaves decay, seldom live, not-
withstanding you preserve a large
Ball of Earth about them: for the
extreme Parts of their Fibres extend
to a great Depth in the Ground,
from whence they receive their
Nourishment; which if broken or
damag'd by taking up their Roots,
they seldom thrive after; for tho'
they may sometimes remain alive a
Year or two, yet they grow weaker,
until they quite decay; which is also
the Case with Tulips, Fritillaria's,
and other bulbous Roots, when re-
moved, after they have made Shoots:
so that whoever would cultivate
them, should search them out in their
Season of Flowering, and mark them;
and, when their Leaves are decay'd,
the Roots should be taken up, and
planted in a Soil and Situation as
nearly resembling that wherein they
naturally grow, as possible, other-
wise they will not thrive: so that
they cannot be placed all in the same
Bed; for some are only found upon
chalky Hills, others in moist Mea-
dows, and some in shady Woods, or
under Trees: but if their Soil and
Situation be adapted to their vari-
ous Sorts, they will thrive, and con-
tinue several Years, and, during their
Season of Flowering, will afford as
great Varieties as any Flowers
which are at present cultivated.

The first Sort flowers in *April*,
and is very common in Pastures, and
bushy Places, in most Parts of *Eng-
land*.

The second Sort flowers in *May*: this is common in Pastures almost every-where.

The third Sort is more rare than the former: this is found in a Lane near *Dartford* in *Kent*, and is one of the largest of all the Kinds: it flowers at the Latter-end of *May*.

The fourth Sort grows upon dry barren Hills, particularly between *Northfleet* and *Gravesend*: this flowers at the Latter-end of *April*.

The fifth Sort is found in great Plenty in *Westmorland*; but particularly in the Meadows, upon both the Banks of *Eden*, throughout several Parishes: it flowers in *May*.

The sixth Sort grows upon dry, barren, or chalky Hills in divers Parts of *England*: this flowers in *June*.

The seventh Sort grows upon chalky Hills, but is very rare; it is particularly found upon the Hills near *Cawsham* in *Berkshire*, and upon *Gogmagog Hills* in *Cambridgeshire*: it flowers in *May*.

The eighth Sort flowers in *August*: this grows upon dry stony Places, as also in moist Pastures in the North Parts of *England*.

The ninth Sort grows upon *Cawsham Hills*, as also upon the dry Banks on the Road-side between *Greenbith* and *Northfleet* in *Kent*; and flowers in *May*.

The tenth Sort is found about *Northfleet* with the former; and flowers about the same time; as do also the eleventh and twelfth.

The thirteenth Sort flowers in *June*: this grows upon dry Places in many Parts of *England*, as doth the fourteenth Sort, which flowers in *April*.

The fifteenth and sixteenth Sorts grow in shady Places in divers Parts of *England*: they both flower in *May*.

The seventeenth and eighteenth Sorts grow in moist Places very plentifully; the first flowering in *May*, the other in *June*.

The nineteenth Sort grows in moist Pastures; and flowers in *June*.

The twentieth Sort grows in dry Pastures; and flowers in *May*.

Thus having mentioned the several Places of Growth, and the Times of these Plants Flowering, it will be no very difficult Task for a Person to search them out; which if it happens to be in a Place where the Roots may be marked, and taken up after their Leaves are decayed (as I said before), there will be little Hazard of their succeeding: but if you are oblig'd to take them up in Flower, you must be very careful to preserve as much Earth as possible to their Roots, otherwise there can be little Hopes of their living. Nor should they be kept out of the Ground longer than till you can conveniently get them home; for if the Air dries the Earth about them, they will shrink, and be good for nothing; and if the Earth be watered, the Roots of such as grow upon dry Soils will rot and perish; therefore you should be very careful in this Particular.

OREOSELINUM, Mountain Parsley.

The Characters are;

It hath a rose-shaped umbellated Flower, consisting of several Leaves, placed in a circular Order, resting on the Empalement, which after-ward becomes a Fruit composed of two Seeds, which are oval, plain, large streak'd, and bordered, and sometimes cast off their Cover: to these Notes must be added, That the Leaves are like Parsley.

The Species are;

1. OREOSELINUM *apii folio, majus*. Inst. R. H. Greater Mountain

tain Parsley, with a Parsley-leaf.

2. *OREOSELINUM aptii folio, minus.* *Inst. R. H.* Smaller Mountain Parsley, with a Parsley-leaf.

3. *OREOSELINUM pratense, cicuta folio.* *Inst. R. H.* Meadow Mountain Parsley, with an Hemlock-leaf.

4. *OREOSELINUM Orientale, sefelcos M. filiensis folio.* *Tourn. Cor.* Eastern Mountain Parsley, with a Leaf like the Hartwort of *Marseilles*.

The first and second Sorts grow in the mountainous Pastures and Vineyards on the *Rhine* in *Germany*; as also on the Hills in the Neighbourhood of *Geneva*.

The third Sort grows in the Meadows, and low Pastures, in several Parts of *Germany*; but particularly in the *Palatinate*.

The fourth Sort was discovered by *Dr. Tournefort* in the *Levant*, from whence he sent the Seeds to the Royal Garden at *Paris*.

The Seeds and Roots of the two first Sorts are commonly used in Medicine by the Physicians of *Germany*; but are never prescribed in *England*. They are esteemed cleansing and opening, and very good for the Stone and Gravel. From some Species of this Genus, *Dr. Boerhaave* conjectures that some of the Gums of *Asia* and *Africa* are produced; as the *Ammoniac*, *Sagapenum*, *Opopanax*, and *Galbanum*.

These Plants are propagated by Seeds, which should be sown in Autumn, as soon as possible after they are ripe; for if they are kept out of the Ground until the Spring, they seldom grow. These Seeds should be sown in the Places where they are designed to remain; for as they have downright caroty Roots, they do not well bear transplanting. They

require a moist light Soil, and thrive best in a shady Situation. The best Method is, to sow the Seeds in Drills, which should be made about eighteen Inches asunder, and about half an Inch deep. In the Spring, when the Plants come up, they should be carefully cleared of Weeds; and where the Plants are too close, they should be thinned, leaving them about six or seven Inches apart, that they may have room to grow; but the first Sort should be allowed a greater Share of room, because it grows very large, often rising to the Height of six or seven Feet, and spreads its Leaves near two Feet each Way.

In two Years after the Seeds are sown, the Plants (if they have thriven well) will be strong enough to produce their Flower-stems, when they will begin to shoot up in *April*, and their Flowers appear in *June*; but their Seeds will not ripen till the End of *August* or *September*. These Plants will continue some Years, and will annually produce Seeds; so that the Ground should be carefully dug between the Plants every Spring, and constantly kept clean from Weeds, which is all the Culture the Plants will require.

ORIGANUM, Origany, or Bastard Marjoram,

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose upper Lip is erect, roundish, and divided into two; but the under Lip is cut into three Segments: out of the Flower-cup arises the Pointal, attended, as it were, by four Embryoes, which afterward become so many roundish Seeds, inclosed in the Flower-cup: to which should be added, The Flowers grow in scaly Spikes, somewhat resembling those of the Marjoram.

The Species are;

1. *ORIGANUM vulgare spontaneum.*
7. B. Wild Marjoram.
2. *ORIGANUM onites. C. B. P.*
Pot Marjoram.
3. *ORIGANUM Heracleoticum, Cu-
zila gallinacea Plinii. C. B. P.*
Winter sweet Marjoram, *vulgo.*
4. *ORIGANUM sylvestre humile.*
C. B. P. Dwarf wild Origany.
5. *ORIGANUM sylvestre, foliis
variegatis. Hort. Ed.* Wild Mar-
joram with variegated Leave,.

6. *ORIGANUM Orientale, folio
brunellæ glauco, flore albo. Vaill.*
Oriental wild Marjoram, with a Self-
heal-leaf, and white Flowers.

The first Sort here mentioned grows wild upon dry chalky Hills, and on gravelly Soils, in divers Parts of *England*; and is gathered by the People who supply the Markets with medicinal Herbs; so that it is rarely cultivated in Gardens.

The second Sort was formerly more cultivated than at present: this was us'd as a Pot-herb for Soups, &c. but of late Years it has been almost neglected: it is said to grow wild in some Parts of *England*.

The third Sort has the Appearance of common sweet Marjoram; and, having a sweet Smell, is cultivated in many Gardens near *London*, and brought to the Markets to supply the Want of sweet Marjoram early in the Season before the Marjoram (which is an annual Plant) can be procured; and is us'd by the People who make up Nose-gays.

The fourth and fifth Sorts are preferred as Varieties by some People, who use the fourth, many times, as a Pot-herb, instead of the second.

The sixth Sort was brought from the *Lewant*; but is hardy enough to endure the severest Cold of our Climate in the open Air, provided it be planted upon a dry Soil.

These Plants may be all propagated by sowing their Seeds in the manner directed for Marjoram, and the Plants should be treated in the same way: therefore I shall forbear repeating it in this Place: they may also be propagated by parting their Roots, or planting Cuttings, in the Spring, which, if watered and shaded, will take Root in a few Days, and multiply exceedingly.

Their Roots will abide several Years, and require no further Culture but to keep them clear from Weeds, and transplant them every Year, otherwise they will grow so large as to rot in the Middle for want of Air.

ORNITHOGALUM, Star of Bethlehem.

The Characters are;

It hath a Lily-flower, compos'd of six Petals or Leaves, ranged circularly, whose Centre is possess'd by the Pointal, which afterward turns to a roundish Fruit, which is divided into three Cells, and fill'd with roundish Seeds: to which must be added, It hath a bulbous or tuberose Root, in which it differs from Spiderwort.

The Species are;

1. *ORNITHOGALUM angustifolium majus, floribus ex albo viriscentibus.*
C. B. P. Spiked Star of *Bethlehem*, with a greenish Flower.
2. *ORNITHOGALUM umbellatum medium angustifolium. C. B. P.* Common Star of *Bethlehem*, with an umbellated Flower.
3. *ORNITHOGALUM luteum. C. B. P.* Yellow Star of *Bethlehem*.
4. *ORNITHOGALUM majus spicatum, flore albo. C. B. P.* The great white Star of *Bethlehem*.
5. *ORNITHOGALUM spicatum, flore viridi-lactescente. C. B. P.* Spiked Star of *Bethlehem*, with a whitish-green Flower.

6. ORNITHOGALUM *luteum sive pallidum majus*. C. B. P. Great yellow, or pale Star of *Bethlehem*.

7. ORNITHOGALUM *Neapolitanum*. J. B. Star of *Naples*, *vulgo*.

8. ORNITHOGALUM *angustifolium spicatum maximum*. C. B. P. The greatest narrow-leav'd spiked Star of *Bethlehem*.

9. ORNITHOGALUM *spicatum seu emosum, flore lacteo*. C. B. P. Spiked or branchy Star of *Bethlehem*, with a milk-white Flower.

10. ORNITHOGALUM *majus spicatum alterum*. C. B. P. Another great spiked Star of *Bethlehem*, commonly called the Star of *Constantinople*.

11. ORNITHOGALUM *spicatum album*. C. B. P. White spiked Star of *Bethlehem*.

12. ORNITHOGALUM *luteum, magno flore*. C. B. P. Yellow Star of *Bethlehem*, with a large Flower.

13. ORNITHOGALUM *Lusitanicum, capillaceo folio, luteum*. Inst. R. H. Yellow Portuguese Star of *Bethlehem*, with a capillaceous Leaf.

14. ORNITHOGALUM *spicatum unifolium, flore caeruleo odorato*. Vir. Lusit. Spiked Star of *Bethlehem*, with one Leaf, and a sweet-smelling blue Flower.

15. ORNITHOGALUM *umbellatum maximum*. C. B. P. The greatest umbellated Star of *Bethlehem*, commonly call'd the Star of *Alexandria*.

16. ORNITHOGALUM *umbellatum album medium latifolium*. C. B. P. White middle broad-leav'd umbellated Star of *Bethlehem*.

17. ORNITHOGALUM *album minus*. C. B. P. Smaller white Star of *Bethlehem*.

18. ORNITHOGALUM *umbellatum, foliulis ex albo subcaeruleis*. C. B. P. Umbellated Star of *Bethlehem*, with whitish-blue Flowers.

19. ORNITHOGALUM *Oriente villosum, flore-luteo magno*. Tourn. Cor. Eastern hairy Star of *Bethlehem*, with a large yellow Flower.

20. ORNITHOGALUM *Samium villosum umbellatum album*. Tourn. Cor. Hairy white umbellated Star of *Bethlehem* of *Samos*.

21. ORNITHOGALUM *Lusitanicum unifolium humile, folio ovato acuminato, floribus spicatis caeruleis*. Low Portuguese Star-flower, with one oval pointed Leaf, and blue Flowers growing in a Spike.

22. ORNITHOGALUM *Africanum, luteum odoratum, foliis cepacis, radice tuberosa*. H. L. Yellow sweet-smelling African Star of *Bethlehem*, with Onion-leaves, and a tuberose Root.

23. ORNITHOGALUM *Virginianum luteum, foliis gramineis hirsutis*. Petiver. Gaz. Yellow *Virginian* Star-flower, with hairy Grass-leaves.

24. ORNITHOGALUM *Africanum, plantaginis roseae folio, radice tuberosa*. Com. Hort. Amst. African Star-flower, with a Rose-plantain-leaf, and a tuberose Root.

The eighteen Sorts which are first-mentioned, are very hardy; most of these grow wild in *Spain* and *Portugal*: the three first grow in several Places in the North of *England*, in Meadows and Woods: these increase very fast by Off-sets, especially the second and seventh Sorts, so as often to become troublesome Weeds in such Gardens where they are planted. The seventh Sort comes early to flower in the Spring: the Flowers are large, of a dirty-white Colour, striped with green; so it makes but an indifferent Appearance; and the Seed-vessels soon after swelling to a large Size, become so heavy, as to weigh down the Stalks, and lay them prostrate on the Ground; at which

which time they are very unfightly; therefore these are not proper Ornaments for the Flower-garden: but as they will thrive in Woods, and under Trees, a few of them may be allowed a Place in any shady Wood-walks, or other abject Part of the Garden, for the sake of Variety.

The fourteenth Sort produces blue Flowers somewhat like those of the small starry Hyacinth; and flowers much about the same Season, *viz.* the Latter-end of *February*, or the Beginning of *March*: the Flowers of this do not rise above four or five Inches high; so the Roots of this should be planted with others of the same Growth, near the Edges of the Borders, where they may remain three Years undisturbed.

These Plants are propagated by Off-sets, which their Roots do commonly produce in great Plenty. The best time to transplant their Roots is in *July* or *August*, when their Leaves are decay'd; for if they are remov'd late in Autumn, their Fibres will be shot out, when they will be very apt to suffer, if disturb'd. They should have a light sandy Soil; but it must not be over-dung'd, which would cause their Roots to decay. They may be intermix'd with other bulbous-rooted Flowers in the Borders of the Pleasure-garden, where they will afford an agreeable Variety, and continue in Flower a long time. Their Roots need not be transplanted oftener than every other Year; for if they are taken up every Year, they will not increase so fast; but when they are suffered to remain too long unremoved, they will have so many Off-sets about them as to weaken their blowing Roots. These may also be propagated from Seeds, which should be sown and managed as most other bulbous-rooted Flowers, and will produce

their Flowers in three or four Years after sowing.

The fifteenth Sort here mentioned is very common in many Gardens near *London*; but it rarely produces any Flowers. This multiplies very fast by Off-sets, so as in few Years to stock a whole Garden. The Leaves and Bulbs of this Plant are very like those of the Hyacinth of *Peru*; so that many Persons have taken it for one of that Kind. These Roots have been brought over from *Italy* in great Plenty of late Years, by the Persons who import Orange-trees; but I have not yet heard, that any of them have produced Flowers in *England*.

The nineteenth and twentieth Sorts are, as yet, very rare in *England*: these grow in the *Archipelago*; and I have been informed by a very curious Gentleman, that they grow in great Plenty in the Island of *Zant*, from whence their Roots may be easily obtained, by the Ships that bring over the Currans. The best Method to bring them over, would be to have the Roots taken out of the Ground, soon after their Flower-stems and Leaves decay, and dry them in a shady Place: then they may be hung up in the Ship, in Nets (as is practised for Onions), to prevent their rotting by Moisture, and to secure them from Vermin: and if they are four Months or longer out of the Ground, they will do very well, provided the Roots are sound.

The Roots of the twenty-first Sort were sent from *Portugal*, by *Robert More*, Esq; who found them growing there wild, in the Year 1747. These produced their Flowers the next Season after they were planted in *England*; and have continued so to do every Year, about the Latter-end of *April*, or the Beginning of *May*.

The bulbous Root of this Flower is about the Size of those of the common Snow-drop, and is in Shape very like them. Each of these produces one oval Leaf, in Shape like that of the Adder's-tongue, having no Footstalk, but grows close to the Ground. On the Side of the Leaf arises the Flower-stem, which seldom is more than two Inches high: these sustain the Flowers, which grow upon short Footstalks, in form of a Spike: they are of a bright blue Colour; resembling those of the early blue starry Hyacinth, but are smaller. These fall away, without producing any Seeds in *England*; nor do the Bulbs send out Off-sets, so that the Plant is yet pretty rare in the Gardens. Although the Flowers of this Plant are so small as to make but little Appearance in the Garden, yet those who are curious in collecting all the Variety of bulbous-rooted Flowers, esteem it for the Difference there is in the Leaf and Flower from the other Species of this Genus.

The Roots are hardy, and may be treated in the same manner as those of the other Species of this Genus; but they should not be removed oftener than every third Year. The time for taking up of the Roots is soon after the Leaves are decayed; and they should be planted again pretty early in the Autumn. They seem to thrive best in a loose loamy Soil, which is not much dunged.

The twenty-second Sort was formerly more common in the *English* Gardens, than at present. This Kind is more tender than either of the former; so should be planted in Pots filled with fresh light Earth; and in Winter must be placed in an airy Glass-case, amongst Sedums, Ficoides's,

and such other pretty hardy succulent Plants, which require a large Share of Air in mild Weather; and in Summer they may be removed out of the House, and placed in a warm-sheltered Situation; observing never to give these Plants much Water when they are not in a growing State, lest it rot their Roots; but when they are growing freely, they must be frequently refreshed with Water. These Roots should be transplanted every Year: the best time to perform this Work is soon after their Flower-stems are decayed, when the Roots will be in the most inactive State. When this is done the Off-sets should be carefully taken off, and each transplanted into a separate small Pot filled with light fresh Earth, and may be treated as the old Roots.

The twenty-third Sort is a Native of *America*, not only of the Continent; but also of the Islands there: Mr. *Banister* found it growing wild in *Virginia*, and sent it to Mr. *Petiver*; and Mr. *Roy* has published it in the Catalogue of Plants made by Mr. *Banister* in *Virginia*: and Mr. *Catesby* since found it growing in *Carolina*; and has exhibited a Figure of it in his History of that Country: but I have, by Accident, had this Plant come up in the Earth which has come from *Jamaica* and *Antigua*, in which other Plants were sent over, by which it appears to be common in both those Islands.

This is a very humble Plant, never rising above six Inches high: the Leaves are shaped like those of the smallest Cypress-grass, being triangular, long, and hairy: the Flowers are produced on slender Footstalks arising from the Root, being naked; and on the Top are produced two or three small yellow Flowers.

If this Plant is kept in the Stove, it will continue flowering great Part of the Year, and will also produce good Seeds: but if it is exposed in the open Air, it will not flower, but in *July* and *August*; and these never produce Seeds, altho' the Roots will live abroad, if they are planted in a warm Situation: this Sort loves Warmth and Moisture.

The twenty-fourth Sort is a Native of the *Cape of Good Hope*, from whence it was first brought to some curious Gardens in *Holland*, and some Years since was in several of the *English* Gardens; but was lost for some Years, and hath been lately retrieved. This hath a large tuberosous Root, in Shape like the *Cyclamen*: the Leaves are produced in Clusters upon single Footstalks from the Root, and spread on the Surface of the Ground, as do those of the *Cyclamen*: the Flowers grow in a long Spike upon a naked Stem arising from the Root, having slender long Footstalks: these are small, of a greenish Colour at first, but afterward change white: there is no great Beauty in the Flowers of this Plant; but as the Leaves come out in the Autumn, and remain green all the Winter, it makes an agreeable Variety amongst other Exotic Plants, during that Season. This requires no other Culture but to plant the Roots in fresh light Earth in Pots; and in Winter they must be placed in a Green-house, or an airy Glass-case, with *Ficoides*, and other Plants of the same Country: where, if they are protected from Frost, they will require no artificial Warmth. In Summer they must be expos'd with other Exotic Plants; but after the Leaves decay, the Roots should not have too much Wet, lest it rot them.

ORNITHOPODIUM, Bird's-foot.

The Characters are;

It hath a papilionaceous Flower; out of whose Empalement rises the Pointal, which afterward becomes an hooked jointed Pod, for the most part waved, containing in each Joint one roundish Seed: to which must be added, That several Pods grow together in such a manner as to resemble the Foot of a Bird.

The Species are;

1. ORNITHOPODIUM *radice tuberculis nodosa*. C. B. P. Bird's-foot with a knobbed Root.
2. ORNITHOPODIUM *majus*. C. B. P. The greater Bird's-foot.
3. ORNITHOPODIUM *scorpioides, siliqua compressa*. T. Caterpillar Bird's-foot, with a flat Pod.
4. ORNITHOPODIUM *portulacæ folio*. Tourn. Bird's-foot with a Purslane-leaf.

These Plants are propagated by sowing their Seeds in the Spring upon a Bed of fresh light Earth, where they are to remain (for they seldom do well when they are transplanted); and, when the Plants come up, they must be carefully cleared from Weeds; and where they are too close, some of the Plants should be pulled out, so as to leave the remaining ones about ten Inches asunder. In *June* these Plants will flower, and the Seeds will ripen in *August*. There is no great Beauty in them; but, for the Variety of their jointed Pods, they are preserv'd by some curious Persons in their Pleasure-gardens; where, if their Seeds are sown in Patches in the Borders, each Sort distinctly by itself, and the Plants thinn'd, leaving only two at each Patch, they will require no farther Care; and will add to the Variety, especially where the Snail and Caterpillar

terpillar Plants are preserved, which are very proper to intermix with them. They are all annual Plants, which perish soon after their Seeds are ripe.

OROBUS, Bitter-vetch.

The Characters are;

It hath a papilionaceous Flower, consisting of the Standard, the Keel, and the Wings; out of whose Empalement rises the Pointal wrapt up in the Membrane, which afterward becomes a round Pod, full of oval-shap'd Seeds: to which must be added, That two Leaves joined together grow upon a Rib that ends in a Point.

The Species are;

1. OROBUS *sylvaticus purpureus vernus*. C. B. P. Vernal purple Wood Bitter-vetch.

2. OROBUS *sylvaticus nostras*. Raii Syn. English Wood Bitter-vetch.

3. OROBUS *sylvaticus, foliis oblongis glabris*. Tourn. Wood or Heath Peas.

4. OROBUS *sylvaticus, foliis vicæ*. C. B. P. Wood Orobis, with Vetch-leaves.

5. OROBUS *latifolius repens, siliqua parva*. Boerb. Ind. Broad-leav'd creeping Orobis, with a small Pod, commonly call'd Venetian Vetch.

6. OROBUS *sylvestris angustifolius, asphodeli radice*. C. B. P. Narrow-leav'd wild Bitter-vetch, with an Asphodel-root.

7. OROBUS *sylvaticus, foliis nervosis*. Inst. R. H. Wild or Wood Bitter-vetch, with Leaves full of Nerves.

8. OROBUS *Creticus latifolius incanus*. Inst. R. H. Broad-leav'd hoary Bitter-vetch of Candy.

9. OROBUS *Orientalis latifolius villosus, flore croceo*. Tourn. Cor. Broad-leav'd hairy Eastern Bitter-vetch, with a saffron-coloured Flower.

10. OROBUS *Americanus, fructu coccineo, nigra maculo notato*. Inst. R. H. American Bitter-vetch, with scarlet Fruit, mark'd with a black Spot, commonly call'd wild Liquorice by the Inhabitants of America.

11. OROBUS *Americanus erectus, foliorum pinnis angustis, & subtus incanis, siliquis glabris*. Houst. Upright American Bitter-vetch, with narrow Leaves, which are hoary underneath, and smooth Pods.

12. OROBUS *Americanus latifolius argenteus, flore purpureo*. Houst. Broad-leav'd silvery American Bitter-vetch, with a purple Flower.

13. OROBUS *Americanus procumbens & hirsutus, flore purpureo*. Houst. Trailing hairy American Bitter-vetch, with a purple Flower.

14. OROBUS *Americanus procumbens minimus angustifolius, flore coccineo*. Houst. The least narrow-leav'd trailing Bitter-vetch of America, with a scarlet Flower.

The first of these Plants was brought from Germany, where it grows in the Forests in great Plenty, as also about Geneva; but it is hardy enough to endure the Cold of our Climate in the open Air, provided it be planted in a dry Soil. This may be propagated either from Seeds, or by parting the Roots in the Spring. If you sow the Seeds, you should observe to put them pretty early into the Ground before the dry Weather comes on, otherwise the Seeds will not come up: as you should also transplant the Roots just before they begin to shoot, or else their Flowers will be very weak. The Roots of this Plant will abide many Years, and spring up fresh every Year, and in April produce fine Spikes of purple pea-bloom Flowers, which are succeeded by strait black Pods two Inches long, contain-

containing several roundish bitter Seeds.

The second and third Sorts grow wild in Woods, and shady Places, in divers Parts of *England*; where, during their Season of Flowering, they make an handsome Appearance; and when transplanted under Shrubs in a Garden, they will thrive extremely well, and produce great Quantities of Flowers every Spring.

These were formerly recommended by Dr. *Lister* to be sown for Fodder, as a great Improvement; but I believe them not very proper for that Purpose, since they seldom thrive well when expos'd to the Sun, nor will they ever rise to any considerable Height, their Branches trailing upon the Ground, unless they are supported; so that in a wet Season they would be apt to rot.

The fourth Sort rises to be two or three Feet high, and hath strong upright Stalks; upon which, in *May*, are produced great Quantities of purple Flowers, which are succeeded by long strait Pods, containing oblong bitter Seeds. The Root of this Plant will abide many Years, the Stalks decaying in Winter; but will spring up again the succeeding Year: it delights in a dry fresh Soil, and deserves a Place in large Borders under the Shade of Trees, where it will thrive well, and make an handsome Appearance.

The fifth Sort was formerly preserv'd in the Green-house as a tender Plant; but will endure the Cold of our Climate very well, if planted in a dry Soil; and those Roots which are planted in the full Ground, will produce much stronger Flowers than those preserved in Pots. This Plant flowers in *April*; but seldom produces good Seeds in this Country.

These Plants may all be propaga-

ted either from Seeds, or by parting of their Roots, in the manner directed for the first Sort; and if rightly dispos'd in the Borders of a Garden, afford an agreeable Variety: and since they are hardy, requiring but little Culture, they deserve a Place in every good Garden.

The four Sorts next-mentioned are very hardy Plants: these may be propagated by sowing of their Seeds in the Spring, on a Border of fresh Earth, expos'd only to the morning Sun; and when the Plants come up, they should be carefully cleared from Weeds, and thinned where they are too close. The *Michaelmas* following they should be taken up, and transplanted where they are designed to remain; which should be in a shady Place, or under Trees in Wilderness-quarters, where these Plants will thrive exceeding well; and, when they flower in the Spring, will make an agreeable Variety in such Places where better Plants will not live, which renders them worthy of a Place in large Gardens.

The tenth Sort is very common in the warmest Parts of *America*, *Asia*, and *Africa*. The Seeds of this Sort are frequently brought to *England* from the *West-Indies*, for their Beauty; being round and hard, of a bright scarlet Colour, with a black Eye, and are somewhat less than Peas. These Seeds are by the Inhabitants of the Countries, where they naturally grow, strung, and worn about their Necks for Ornament. And the Leaves of the Plant are sometimes used instead of Liquorice, being esteemed good for the dry Gripes.

This Plant twists itself round whatever Trees or Shrubs grow near it, and will rise to the Height of ten or twelve Feet, and will continue fe-

seraf

veral Years. The Flowers are produced on slender Footstalks, growing in a close Spike or Bunch, which are shaped like those of the Kidney-bean, and are of a pale-purple Colour: these are succeeded by short thick Pods, in which are contained the Seeds.

The eleventh Sort was discovered by the late Dr. *Houftoun* in *Jamaica*; as were also the three following Sorts discovered by the same Gentleman; at *La Vera Cruz* in the *Spanish West-Indies*. These five last mentioned Sorts, being Natives of warm Countries, are very tender; so must be preserved in Stoves, otherwise they will not live in *England*. These are propagated by Seeds, which should be sown early in the Spring, in small Pots fill'd with light rich Earth, and plunged into an Hot-bed of Tanners Bark, observing frequently to moisten the Earth, otherwise the Seeds will not grow (especially those of the tenth Sort, which are very hard, and will sometimes remain a whole Season in the Ground, where they are kept dry). When the Plants come up, they should be carefully taken out of the Pots, and each transplanted into separate small Pots filled with rich Earth, and then plunged again into the Tan-bed, observing to shade them until they have taken Root; after which time they should have fresh Air admitted to them every Day in warm Weather, and must be frequently watered. With this Management the Plants will make a great Progress, and in a few Weeks those of the tenth Sort will reach the Glasses of the Hot-bed, unless the Frame be very high; so these should then be taken out, and plunged into the Bark-bed in the Stove, where they may have room to grow. These Plants should be supported by Sticks,

or placed near a Trellace, to which they should be fastened, otherwise they will trail about whatever Plants grow near them.

The other Sorts, being of humbler Growth, may be kept in the Hot-bed until *Michaelmas*, when the Nights begin to be cold; at which time they should be removed into the Stove, and plunged into the Bark-bed, where they must be treated as other tender Exotic Plants; by which Method they may be preserved thro' the Winter, and the following Summer they will produce Flowers. These Plants are perennial, so that if they should not perfect their Seeds, the Plants may be maintained for several Years.

ORYZA, Rice.

The Characters are;

It hath its Grains dispos'd into a Panicle, which are almost of an oval Figure, and are covered with a thick Husk, somewhat like Barley.

There is but one Species of this Plant; viz.

ORYZA. *Matth.* Rice.

This Grain is greatly cultivated in most of the Eastern Countries; where it is the chief Support of the Inhabitants; and great Quantities of it are brought into *England*, and other *European* Countries, every Year, where it is in great Esteem for Puddens, &c. it being too tender to be produc'd in these Northern Countries, without the Assistance of artificial Heat: but from some Seeds which were formerly sent to *South-Carolina*, there have been great Quantities produced; and it is found to succeed equally as well there as in its native Country, which is a very great Improvement to our *American* Settlements.

This Plant grows upon moist Soils, where the Ground can be flow'd over with Water, after it is
come

come up: so that whoever would cultivate it in *England* for Curiosity, should sow the Seeds upon an Hot-bed; and when the Plants are come up, they should be transplanted into Pots fill'd with rich light Earth, and plac'd into Pans of Water, which should be plunged into an Hot-bed; and as the Water wastes, so it must, from time to time, be renewed again; in *July* these Plants may be set abroad in a warm Situation, still preserving the Water in the Pans, otherwise they will not thrive; and toward the Latter-end of *August* they will produce their Grain, which will ripen tolerably well, provided the Autumn proves favourable.

OSIER. *Vide* Salix.

OSMUNDA, The Osmund Royal, or flowering Fern.

This is one of the Kinds of Fern which is distinguish'd from the other Sorts, by its producing Flowers on the Top of the Pedicle of the Leaves; whereas the others, for the most part, produce them on the Back of their Leaves.

There is but one Kind of this Plant, which grows wild in *England*; but there are several Sorts of them which grow in *America*: but as they are seldom kept in Gardens, I shall not enumerate their Species.

The common Sort grows on Bogs in several Parts of *England*; therefore whoever hath an Inclination to transplant it into Gardens, should place it in a moist shady Situation, otherwise it will not thrive.

OSTEOSPERMUM, Hard-seeded Chrysanthemum.

The Characters are;

The Flower hath an hemispherical Empalement, which is single, and cut into many Segments: the Flower is composed of several Hermaphrodite Flowers in the Disk, which are tubulous, and cut at the Brim into five

Parts: these are surrounded by several Female Flowers, which are radiated, each having a long narrow Tongue, which is quinquefid: the Hermaphrodite Flowers have each five slender short Stamina; these are barren: the Female Flowers have each a globular Pointal, which afterward becomes one single hard Seed.

The Species are;

1. OSTEOSPERMUM *foliis oppositis palmatis. Hort. Cliff.* Hard seeded Chrysanthemum, with handed Leaves growing opposite.

2. OSTEOSPERMUM *foliis ovalibus obsolete serratis. Lin. Hort. Cliff.* Hard-seeded Chrysanthemum, with oval Leaves, which are slightly saw'd.

3. OSTEOSPERMUM *foliis lanceolatis acute serratis, petiolis decurrentibus.* Hard seeded Chrysanthemum, with spear-shap'd Leaves, which are cut into sharp Segments, and a wing'd Footstalk.

4. OSTEOSPERMUM *spinis ramosis. Lin. Hort. Cliff.* Hard-seeded Chrysanthemum, with branching Spines.

This Genus of Plants was, by Dr. *Tournefort*, intituled *Chrysanthemoides*, from its Affinity to the *Chrysanthemum*; and, by Dr. *Boerhaave*, *Chrysanthemoides Osteospermum*. Both of which, being compound Names, have been rejected by Dr. *Linnaeus*, who has given the Title of *Osteospermum* to it.

The first Sort is a Native of *America*, growing in *Virginia* and *Carolina*, in low moist Ground. This Sort dies to the Root every Autumn, and rises again the following Spring; and when growing on a moist rich Soil, the Shoots will rise to the Height of five or six Feet, and are garnish'd with very large Leaves, placed by Pairs opposite, which are shaped somewhat like those of the

Plane-tree ; from whence it hath been by some Authors intituled *Crysanthemum platani folio*. The Flowers are produced at the Extremity of the Shoots, which are shap'd like those of the Sun-flower ; but being small, do not make much Appearance. This Sort never produces any Seeds in *England* ; so can only be propagated by parting of the Roots : but this should not be done oftener than every third Year. The best Season for this, and for transplanting of the Roots, is in *October*, soon after the Shoots decay. These Roots should be planted in light rich Earth, and should have a moist Situation, where they will thrive extremely well : but in dry Ground, if they are not duly water'd in dry Weather, they will make no Progress, and frequently decay in hot Weather. It will endure the Winter's Cold very well in the open Air.

If the Seeds of this Plant are procured from *America*, they should be sown on a Bed of rich Earth ; and in dry Weather they should be water'd. These Seeds generally remain in the Ground a whole Year, before the Plants appear. When the Plants come up, they should be treated in the same manner as hath been directed for the old Plants.

The second, third, and fourth Sorts are Natives of the Country about the *Cape of Good Hope*, in *Africa*. The second Sort grows to the Height of six or eight Feet, and becomes woody in the Stem. The Leaves of this Sort are of an oval Figure, slightly indented on the Edges, and are cover'd with a white Meal. This Plant seldom flowers in *England*.

The third Sort grows like the second ; but the Leaves are more pointed, of a green Colour, and

deeply saw'd on the Edges : the Footstalks of the Leaves are border'd, and the Leaves are deeply vein'd. This produces Tufts of yellow Flowers at the Extremity of the Shoots : it flowers in the Winter and Spring.

The fourth Sort is a low shrubby Plant, which seldom rises above three Feet high, and divides into many Branches : the Ends of the Shoots are beset with green Spines ; which branch out from the Leaves, which are very clammy, especially in warm Weather. The Leaves are long and narrow, and set on without any Order. The Flowers are produc'd single, at the Ends of the Shoots, which are yellow, and appear in *July* and *August*.

These three Sorts are too tender to live in the open Air in *England* ; so are placed in the Green-house in *October*, and may be treated in the same manner as Myrtles ; and other hardy Green-house Plants, which require a large Share of Air in mild Weather : and in the Beginning of *May* the Plants may be remov'd into the open Air, and placed in a shelter'd Situation during the Summer-season. The second and third Sorts must have Plenty of Water, being very thirsty Plants ; but the fourth Sort must have it given but moderately in Winter.

These Plants are propagated by Cuttings, which may be planted in any of the Summer-months, upon a Bed of light Earth, and should be water'd and shaded until they have taken Root. These may remain in the Beds till they have gotten very good Roots ; when they must be taken up, and planted in Pots ; for if they are suffer'd to stand long, they will make strong vigorous Shoots, and will be difficult to transplant afterward ; especially the second

cond and third Sorts; but there is not so much Danger of the fourth, which is not so vigorous, nor so easy in taking Root, as the other. During the Summer - season the Pots should be frequently remov'd, to prevent the Plants from rooting through the Holes in the Bottom of the Pots, into the Ground, which they are very apt to do when they continue long undisturbed, and then they shoot very luxuriantly; and, on their being remov'd, these Shoots, and sometimes the whole Plants, will decay.

OSYRIS, Poets Casia.

The Characters are;

It is Male and Female in different Plants: the Empalement of the Flower is of one Leaf, which is divided into three acute Segments: the Flower hath no Petals; but those on the Male Plants have three short Stamina; and those on the Female have a roundish Pointal, which afterward changes to a single globular Berry, having one Seed.

We have but one Species of this Plant; viz.

OSYRIS frutescens baccifera. C. B. P. Shrubby berry-bearing Poets Casia: and by some, Red - berried shrubby Casia.

This is a very low Shrub, seldom rising above two Feet high, having lignous Branches, which are garnish'd with long narrow Leaves, of a bright Colour: the Flowers appear in June, which are of a yellowish Colour; and are succeeded by Berries, which at first are green, and afterward turn to a bright-red Colour, somewhat like those of Asparagus.

This Plant grows wild in the South of France, in Spain, and some Parts of Italy, by the Side of Roads, as also between the Rocks; but is with great Difficulty transplanted into Gardens; nor does it thrive af-

ter being removed: so that the only Method to obtain this Plant is, to sow the Berries where they are to remain. These Berries commonly remain a Year in the Ground before the Plants appear, and sometimes they will lie two or three Years: so that the Ground should not be disturbed under three Years, if the Plants do not come up sooner. These Seeds must be procur'd from the Places where the Plants naturally grow; for those which have been brought into Gardens never produce any, and it is with great Difficulty they are preserv'd alive.

OTHONNA, African Rag-wort.

The Characters are;

It hath a compound Flower, consisting of many Florets and Half-florets, inclosed in one common Empalement: the Florets are Hermaphrodite; these are tubulous, and indented at the Brim: the Half-florets are Female; these are stretched out on one Side with a narrow Segment, like a Tongue, beyond the Empalement: the Hermaphrodite Flowers have each five small Stamina: the Female Flowers have an oblong Pointal, which afterward turns to a single oblong Seed crowned with a Down.

The Species are;

1. OTHONNA foliis infimis lanceolatis integerrimis, superioribus sinuato-dentatis. Lin. Hort. Cliff. Shrubby African Ragwort, with an Hartshorn-leaf.

2. OTHONNA foliis lanceolatis integerrimis. Lin. Hort. Cliff. Shrubby African Ragwort, with intire succulent Leaves.

3. OTHONNA foliis pinnatifidis, laciniis linearibus parallelis. Lin. Hort. Cliff. Shrubby African Ragwort, with Leaves like umbelliferous Wormwood.

4. OTHONNA foliis multifidis linearibus. Flor. Leyd. Shrubby Afri-

can Ragwort, with Samphire-leaves.

These Plants are rang'd in the Genus of Ragwort by most of the Writers on Botany, till Dr. *Boerhaave*, in his Index of the *Leyden Garden*, separated them into a distinct Genus, under the Title of *Doria*: but Dr. *Linnaeus* has since separated these Species from the others, and applied this Title of *Othonna* to them.

They are all of them Natives of the Country near the *Cape of Good Hope*; so will not live through the Winter in *England*: therefore they are planted in Pots, and placed in the Green-house in the Winter. They are shrubby Plants, which grow about three or four Feet high in this Country; but in the native Place of their Growth, they rise much higher. These grow very easily from Cuttings; which will take Root very soon, if planted in a shady Border, during any of the Summer-months; and when they have made good Roots, they should be taken up, and potted; because if they are suffer'd to stand long in the Border, their Roots will extend to a great Distance, and they will make vigorous Shoots, so that they cannot be transplanted after with any Safety. In all other respects these must be treated in the same manner, as hath been directed for *Osteospermum*.

As there is little Beauty in the Flowers of these Plants, so they are not generally esteem'd: but, where there is room in the Green-house, if a Plant or two of each Kind are preserv'd there, they will add to the Variety, by their different-shaped Leaves, which they retain the whole Year, but especially the third Sort.

OX-EYE. *Vide* Bupthalmum.

OXYACANTHA. *Vide* Berberis.

OXYS, Wood-forrel.

The Characters are;

It hath a bell-shaped Flower consisting of one Leaf, having its Brim wide expanded, and cut into several Divisions: the Pointal, which rises from the Flower-cup, becomes an oblong, membranaceous Fruit, divided into five seminal Cells, opening outward from the Base to the Top, and inclosing Seeds which start from their Lodges, by reason of the elastic Force of the Membrane which involvesthem.

The Species are;

1. OXYS flore albo. *Tourn.* Common Wood-forrel, with a white Flower.

2. OXYS flore purpurascente. *Tourn.* Wood-forrel with a purplish Flower.

3. OXYS lutea. *J. B.* Wood-forrel with a yellow Flower.

4. OXYS lutea Americana erectior. *Tourn.* Upright yellow Wood-forrel of America.

5. OXYS bulbosa Africana rotundifolia, caulibus & floribus purpureis amplis. *Hort. Amst.* Round-leav'd African Wood-forrel, with large purple Flowers.

6. OXYS bulbosa Æthiopica minor, folio cordato, flore ex albedo purpurascente. *Hort. Amst.* Ethiopian Wood-forrel with an heart-shaped Leaf, and a purplish-white Flower.

7. OXYS Americana, flore rubro, fibrosa radice. *Inst. R. H.* American Wood-forrel, with a red Flower, and a fibrose Root.

8. OXYS lutea frutescens Americana, trifolii bituminosi facie. *Plum. Cat.* Yellow shrubby American Wood-forrel, with the Face of stinking Trefoil.

9. OXYS purpurea Virginiana, radice squamata. *Inst. R. H.* Purple Wood-forrel of Virginia, with a scaly Root.

10. OXYS bulbosa Africana rotundifolia, caulibus virentibus, floribus amplis purpureis. *Breyn. Cent.* Bulbous-rooted African Wood-forrel,

rel, with round Leaves, green Stalks, and large purple Flowers.

11. *Oxys lutea annua, floribus dentatis.* Feuillé. *Obs.* Yellow annual Wood-forrel, with indented Flowers.

12. *Oxys roseo flore, erectior, vulgo Cullè.* Feuillée. *Obs.* Upright Wood-forrel, with a rose-colour'd Flower, vulgarly call'd Cullè.

13. *Oxys amplissimo flore.* Feuillée. *Obs.* Wood-forrel with the largest yellow Flower.

14. *Oxys luteo flore, radice crassissima.* Feuillée. *Obs.* Wood-forrel with yellow Flowers, and a very thick Root.

The first Sort grows wild in Woods, and other shady Places, in divers Parts of *England*; and flowers in *April* and *May*. This is the Sort which is directed by the College of Physicians of *London* to be used in Medicine; but the Markets are generally supplied with the fourth Sort, which is not near so good, having very little Taste: but the People who cultivate medicinal Plants for the Market, have propagated this Plant in their Gardens, because it grows tall, and branches out greatly; so that they can readily gather and tie it up in Bunches for Sale; whereas the true Sort grows close to the Ground, and each Leaf rises with a Footstalk from the Root, which renders it troublesome to gather in Quantities; but those who use it in Medicine should be careful to have the true Sort: the Time for which is always in the Spring; whereas the other Kind is never brought to Market till the Middle of Summer.

The second Sort is a Variety of the first, differing only in the Colour of the Flower. This is found wild in the North of *England*, and is preserv'd as a Variety by those Persons who are curious in Botany: but

there is no Difference in the Taste of this from the common Sort. These two Sorts are abiding Plants, and multiply greatly by their creeping Roots, as also by Seeds. They should be planted in a moist shady Border, either early in the Spring, or at *Michaelmas*, that they may be rooted before the Frost comes on. When the Plants are once establish'd in the Border, they will scatter their Seeds, and increase greatly. This common Wood-forrel is a much more grateful Acid in Sallads, than the common Sorrel; for which Purpose a Border of it should not be wanting in the Kitchen-garden.

The third Sort is an abiding Plant, and increases greatly by its trailing Branches, which put out Roots at every Joint; as also by its Seeds, which are cast abroad, when ripe, by the Elasticity of the Vessels in which they are contained, which renders it difficult to save the Seeds: for when they are ripe, on the first Touch, the Pods burst, and throw out the Seeds. This is tender, and must be shelter'd under a Frame in Winter, otherwise it will not abide the Frosts, when they are very severe.

The fourth Sort is an annual Plant. This was originally brought from *North-America*; but wherever it is introduced, and permitted to scatter its Seeds, it will maintain itself without any further Care, it being a very hardy Plant; and is now become more common than our own Sort in the *London* Markets.

The fifth and sixth Sorts are preserv'd in some curious Gardens for Variety. The fifth Sort produces large purple Flowers, which make a very pretty Appearance, and continue in Beauty a long time during the Winter-season, which renders it worthy of a Place in every Colle-

tion of Plants. The sixth Sort hath not much Beauty in its Flowers; but is planted in curious Gardens for Variety. These two Sorts have bulbous Roots, which increase pretty fast (especially the sixth), by which they are easily propagated. These must be planted in Pots fill'd with fresh light Earth: and in Winter they should be placed under a common Hot-bed-frame, where they should have as much free Air as possible in mild Weather; but they must be shelter'd from Frost, otherwise they will not live in this Country. In Summer they must be expos'd in a shady Situation, and in dry Weather must be often refreshed with Water; but when their Leaves are decay'd, it should be given sparingly.

The seventh, ninth, and tenth Sorts may be treated in the same manner as the former: these are preserv'd in curious Gardens for the sake of Variety.

The eighth Sort was discover'd by Father Plumier in some of the French Settlements in America: it was also found by the late Dr. Houstoun near *La Vera Cruz*; where it was growing in great Plenty. This Sort rises to the Height of two Feet or more, and becomes a small Shrub; but it hath very little Acidity in the Leaves. This is tenderer than either of the former Sorts: wherefore it should be kept warmer in Winter, otherwise it will not live in this Country.

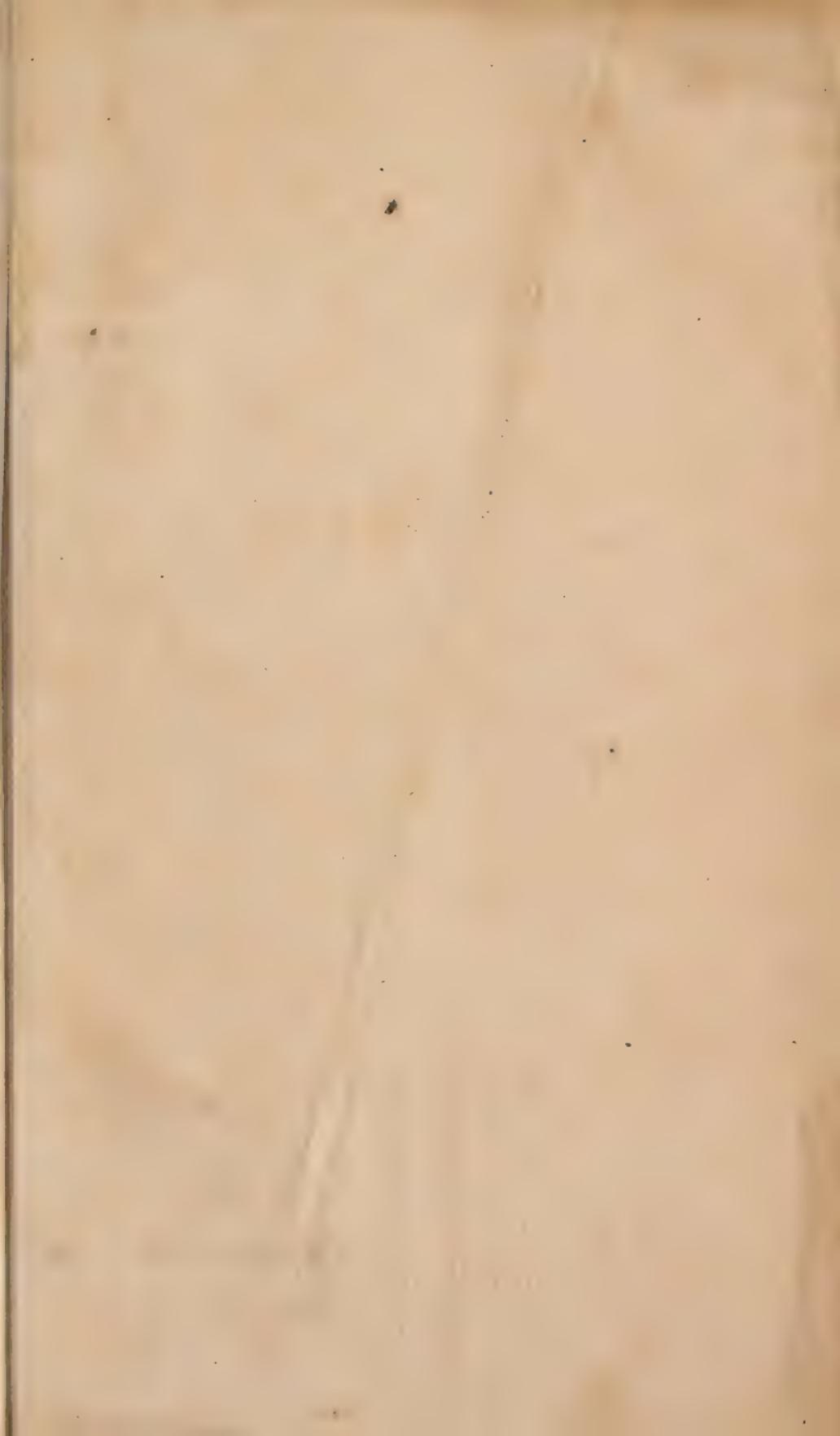
The eleventh Sort is an annual Plant, which is cultivated in all the Gardens of *Lima* and *Peru* in the *Spanish West-Indies*, for its grateful acid Taste; it being much used by the Inhabitants of those Places in all their Sawces. This Sort grows larger than the common upright *American* Kind: the Flowers are yellow, edged with purple.

The twelfth Sort grows plentifully in *Ghili*, in the *Spanish West-Indies*. It hath beautiful rose-colour'd Flowers, and grows about the same Height as the common upright *American* Sort.

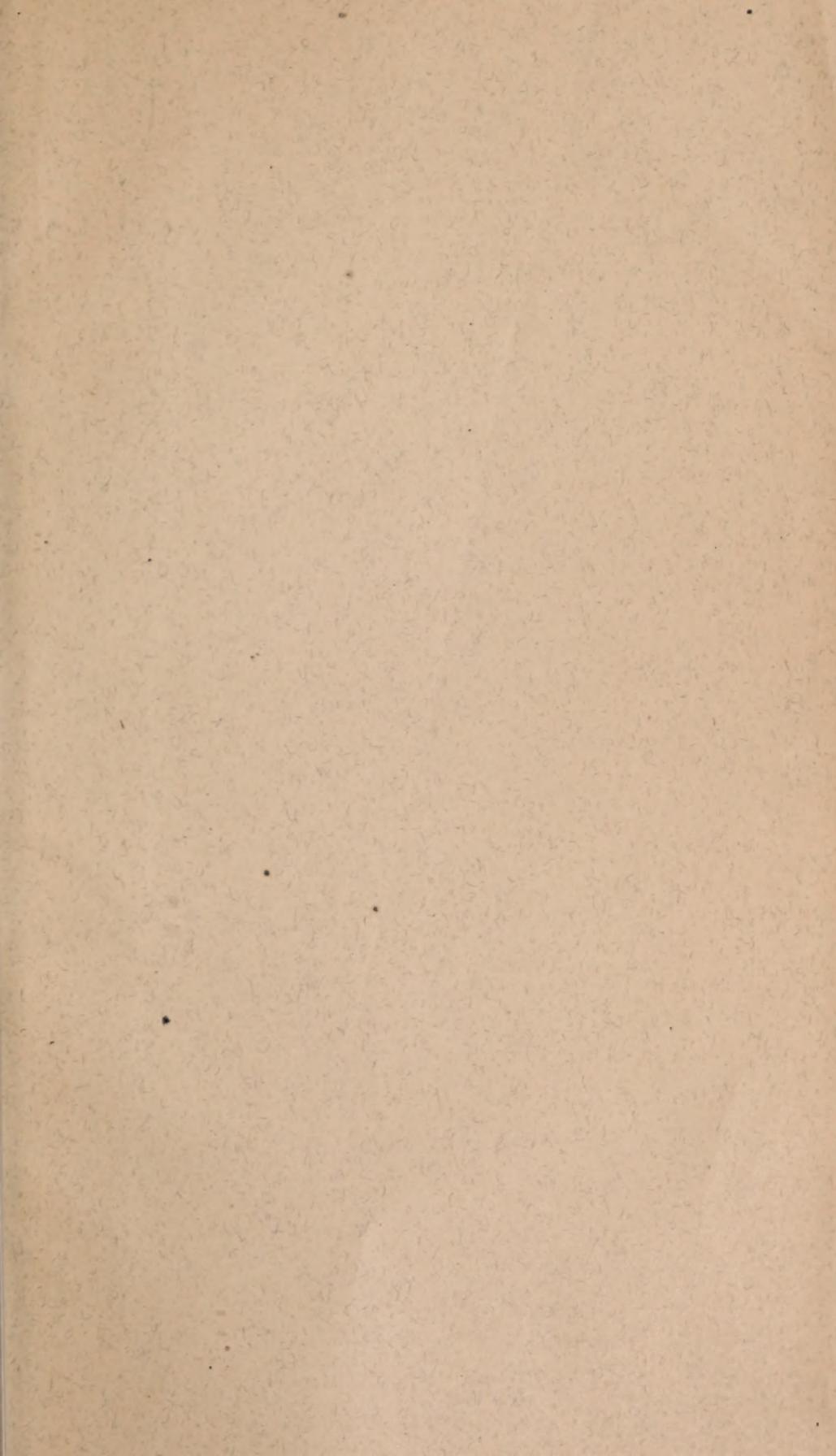
The thirteenth Sort seldom rises above two Inches high, and doth not branch as do the former Kinds; this hath very large yellow Flowers: it grows plentifully on the Borders of the River of *Plate*.

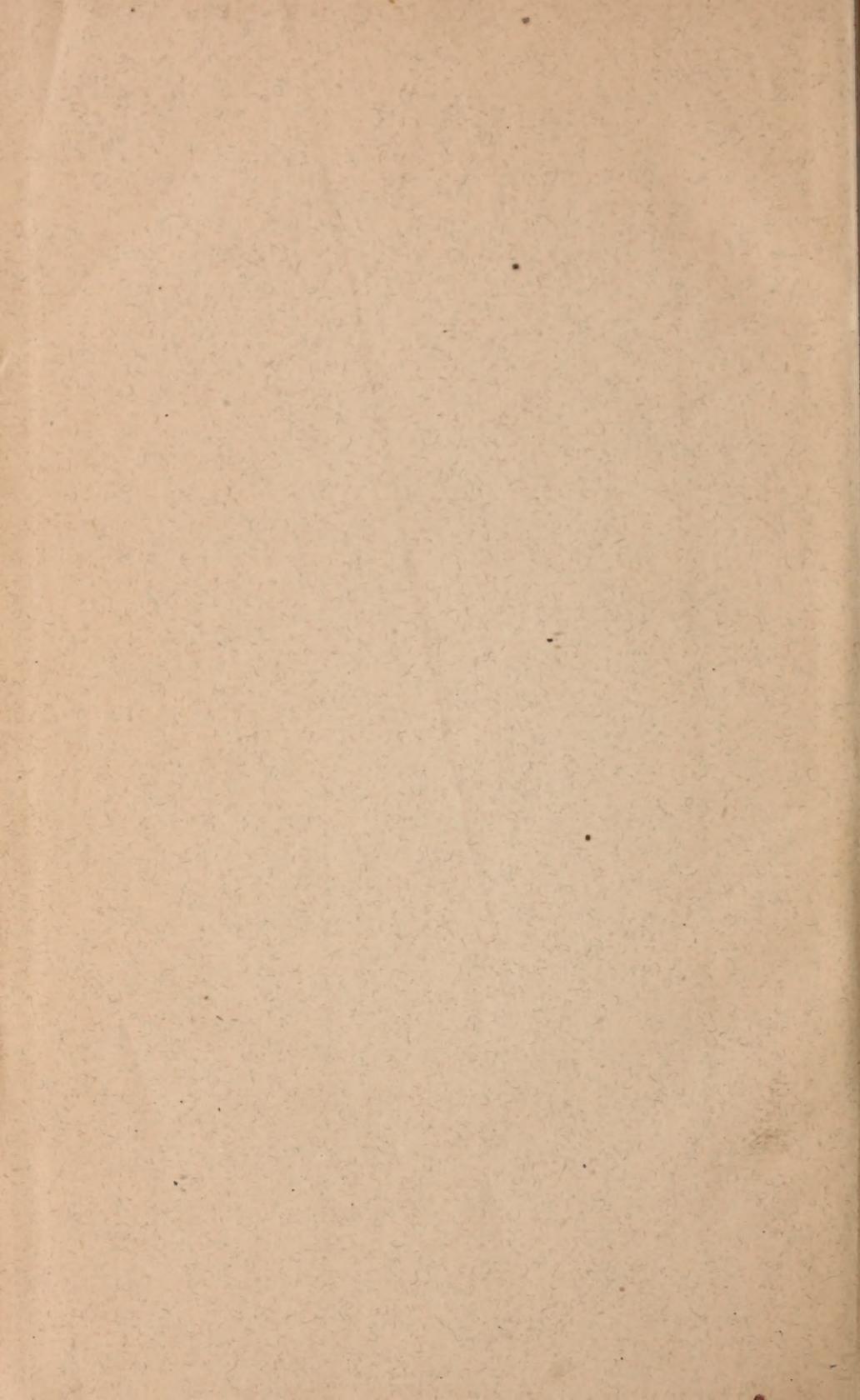
The fourteenth Sort hath very large thick Roots, out of which come up the Leaves, which are of a bright-green Colour on their Upper-side, and of a violet Colour underneath. This grows on all the Mountains of *Peru*.

All these Sorts, being Natives of warm Countries, are somewhat tenderer than those before-mentioned; for which Reason they must be placed in a warm Green-house in Winter: but in Summer they may be expos'd to the open Air; and must be plentifully watered in dry Weather. All these Plants will produce Seeds in this Country, by which they may be propagated.









New York Botanical Garden Library

SB45 .M6 1754 v.2 gen

Miller, Philip/The gardeners dictionary



3 5185 00056 6008

