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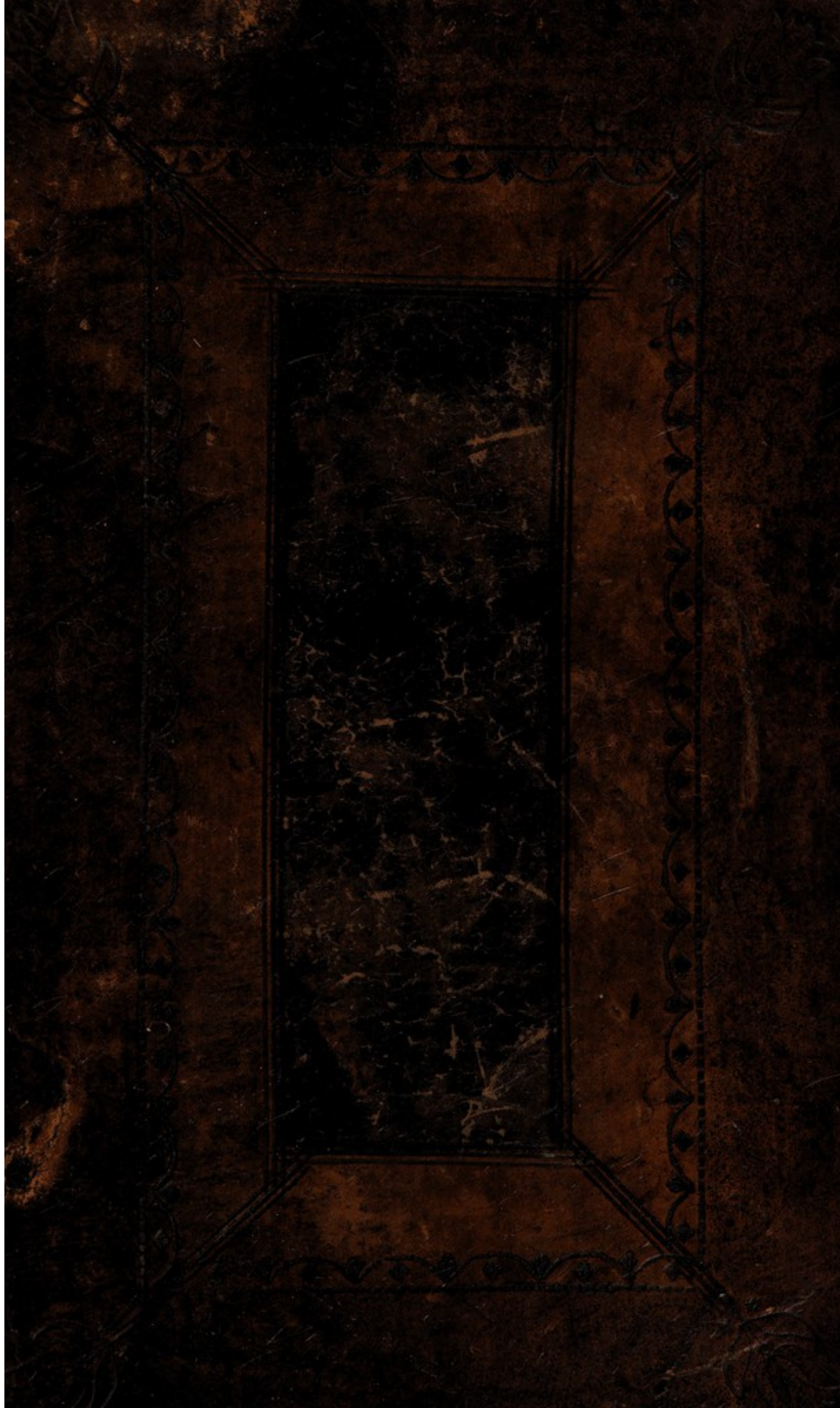
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29. II

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2. parts complete

This book is very
interesting since in
the second part Chapter
1st it describes the use
of a new invention very
closely resembling the
Käliedoscope, which
Dr. Brewster brought
forward as discovered
by himself. JH—

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NEW
IMPROVEMENTS
OF
Planting and Gardening.
BOTH
Philosophical and Practical;
Explaining the
MOTION of the SAPP
AND
GENERATION of PLANTS.

With other Discoveries never before made Publick, for the Improvement of Forest Trees, Flower Gardens, or Parterres; with a New Invention whereby more Designs of Garden-Plats may be made in an Hour, than can be found in all the Books now extant. Likewise several rare Secrets for the Improvement of Fruit-Trees, Kitchen-Gardens, and Green-House Plants.

Agite, O Adolescentes, & antequam Canicies vobis obrepāt, Stirpes jam alueritis, quæ vobis, cum insigni utilitate, delectationem etiā adferent.

Pet. Bellonius, de neglectâ Stirpium culturâ.

The Third Edition Corrected.

By RICHARD BRADLEY, Fellow of the
ROYAL SOCIETY.

LONDON: Printed for W. MEARS, at the
Lamb without Temple-Bar. MDCCXIX.

NEW
IMPROVEMENTS
OF
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With other Discoveries never before made
Proposed for the Improvement of Trees
The Art of Gardening, or the Art of
Gardening, which is now the most
useful and necessary Art, can be found in
all the Books now extant. This is the first
and best for the Improvement of the
Kitchen-Garden, and Green-House Plants.

By O. de la Roche, Esq. a Gentleman of the
Court of France, and a Member of the
Academy of Sciences, &c. &c. &c.
Translated by J. de la Roche, Esq.

The Third Edition corrected.
By RICHARD BARNARD, Fellow of the
ROYAL SOCIETY.

LONDON: Printed by W. M. at the
Lane without Temple, for J. MDCCLXIX.

To the Most High, Puissant, and Most
Noble P R I N C E,

H E N R Y,

Duke, Marquis and Earl of *Kent*, Earl
of *Harrold*, Viscount *Goodrich*, Baron
Lucas of *Crudwell*, &c. Lord-Steward
of his Majesty's Household, Constable
of *Windsor* Castle, and Lord Warden
of *Windsor* Forest, Lord Lieutenant
and *Custos Rotulorum* of the County of
Bedford, One of the Lords of His Ma-
jesty's Most Honourable Privy Council,
and Knight of the Most Noble Order of
the Garter.

My L O R D,



YOUR Grace's Gene-
rous Encouragement
of whatever may ad-
vance the Good of your Coun-
try, gave me the first Thought

The Dedication.

of inscribing these Papers to your Great Name ; and it is with Pleasure that I mention your Grace's Permission to make Use of that Patronage, which my Ambition first led me to. I am too well acquainted with your great Attainments in all Kinds of Learning, to offer any conjectural Projects, or vain Hypotheses, to so penetrating a Judgment : These Sheets are the Result of many Years Experience, the only Foundation which such accurate Philosophers as your Grace will allow for the Improvement of Natural Knowledge.

The Dedication.

ledge. It is a great Happiness, when Men of your exalted Quality, and large Fortunes, honour the Sciences, not only with your Protection, but by being Masters of them, become their Ornaments. Thus, *my Lord*, You are to our Studies in a Way of Art, what the *Sun* is to the Subject of them in a natural Way, which tho' placed at infinite Distance from the *Plants* of the *Earth*, yet by its Influence gives them Warmth, Action, Life and Beauty.

May

The Dedication.

May it please your Grace,

Instead of enumerating the several Virtues of your Illustrious House, and your Own, which the Publick know already, I beg leave to Congratulate my Country upon the Noble Spirit your Grace has always shewn in doing it the most important Services. The Men of Business, and the Men of Letter, the *State*, and the *Societies* of Learning, are equally your Debtors. For my own Part, tho' the meanest among the latter, I shall endeavour,
from

The Dedication.

from your Influence, to prosecute the Subject I have here begun, with new Vigour, humbly hoping to approve myself, what I most desire to be thought,

Y^r GRACE's

Most Obliged and most

Obedient Humble Servant,

RICHARD BRADLEY



T H E P R E F A C E.



S there is no Subject of more General Use and Advantage than the Cultivation of Land, and the Improvement of the Vegetable World; so there is none which has been treated of more largely, and fell under such a Variety of Pens of all kinds. The Publick, which is generally so good Natur'd on this Occasion as to accept and encourage any Thing that looks towards the bettering their Fortunes, has never been so much baulked in their Expectations, as in Books of Agriculture. The Reasons of which are, that some of these Writers have bestowed their Pains in Collecting from Antiquity and foreign Soils, and thought they had perform'd great Matters, by heaping together a
load

THE PREFACE.

load of Observations from Varro and Pliny, without carefully considering wherein their Experiments differ from the Genius of our Soils and Climates: Others have employ'd their Time in Copying from our old English Systems, and these have generally transcrib'd one another without the least Acknowledgment of their Thefts, or adding one single Improvement to the Knowledge of their Forefathers. And indeed, how should it happen otherwise, when the Undertakers of this Subject, have generally been either Covetous or Illiterate Gardeners and Planters; some, that if they knew any Thing New or Curious, had not the Spirit to communicate their Notions; and some that jogged on in the old beaten Track, without any Ambition to excel their Predecessors. We have now and then, it is true, a Gentleman studious and capable of obliging the World, free from the narrow Views of Self-Interest, and employing his Hours for a more diffusive Benefit than the Culture of his own private Estate or Garden; an Evelyn, a Nourse, and a Laurence have given us something equally new, and just, built upon Experiment, upon the beneficial Subject of Plantation.

But

The P R E F A C E.

But what are these, when compared to that useless Number of unimproving Authors !

Apparent rari nantes in gurgite Vasto.

For my own part, I must confess that I have been a long time waiting for a Compleat System of Agriculture, and have read many a fair promising Title, but have found nothing within but a barren Bulk of old Repetitions. This has excited me, who from a Natural Bent of Genius, even from my Childhood, have had a Passion for Gardening and Planting, to reduce all my Notions and Observations into a regular Form, and endeavour to supply this General, and so much lamented Defect of other Writers, I shall think without Vanity, that I may do my Country no inconsiderable Service, if I can excite the Nobility and Gentry of the Kingdom to early Plantations upon their Estates, which I shall prove will not only redound to their own private Profit, but the Advantage of the Nation in General. The Disuse of this Method was complained of by Mr. Evelyn, who says very justly, There is

no

The P R E F A C E.

no Part in Husbandry, which Men commonly more fail in, neglect, and have Cause to repent of, than that they did not begin Planting betimes. And indeed such Persons who have been deaf to Demonstration at the first Possession of their Estates, and are afterwards convinced of the vast Advantages to be reaped by an early Plantation, either from the Experience of their Neighbours, or themselves, must have a very pungent Retrospect upon this Occasion. Every Man is naturally willing to enjoy the Profits of the Works, (as one may call them) of his own Hands, and he therefore who begins at Fifty to be sensible that he has lost many a fair Thousand, by his neglect of improving his Estate between Twenty and his present Age, is to himself indeed a Loser, but a Warning to others to avoid that Folly.

To begin then as methodically as I can, and take in all that relates to this Subject, I shall fairly tell my Reader what he is to expect in this First Part, and I hope he will pardon me if I mix a little Natural Philosophy, such as is plain, easy, and grounded on my own Experience,

The P R E F A C E.

ance, with these Observations on Gardening and Planting.

I shall then advance (what I think) a new System of Vegetation, and endeavour to prove that the Sap of Plants and Trees Circulate much after the same manner as the Fluids do in Animal Bodies, which may be one Argument to shew the beautiful Simplicity of Nature in all her Works.

The Generation of Plants will next be consider'd, and the Manner how their Seeds are impregnated, a Discovery which I made some Years since ; this will be of great Use to all Planters, by directing them in the proper Choice of their Seeds.

The Difference of Soils will make another considerable Article, what are Natural to each Tree, and how all kinds of Soils may be mended, alter'd, or improv'd by proper Mixtures with each other ; a part of Husbandry that has, as yet, been but slightly touched upon, and yet the Whole depends chiefly upon it.

The

THE PREFACE.

The Method of Dressing Woods, and making Plantations of Timber-Trees, naturally follows; wherein I shall propose a new, easy, and Practical way of raising Woods, with very little Expence, which I hope will take off those Fears which the Generality are taught to conceive of the present great Charge of New Plantations.

*And for the further Encouragement of all Gentlemen who propose an Advantage from their Woods, I shall add an Estimate of the Profits that will arise from an Acre of Land planted with Timber and Underwood in nine Years, seventeen Years, and Twenty five Years after Planting, which I shall prove will amount to above 250*l.* beside the Timber growing.*

Having now laid my Scheme before the Publick, I have nothing more to do than to invite all Gentlemen who are Curious in this Way, to communicate their Observations upon any of these Heads, and whether they agree with, or contradict my own, I shall think myself obliged to do them Justice in my following Papers. I can only say, that this
is

The P R E F A C E.

is a Subject I have long study'd and experienc'd; and a slight or single Observation ought to be no Foundation to build a new System upon, or overthrow an old one. An Undertaking of this kind, which aims directly at the Good of others, I hope therefore will meet with little Censure, and less Discouragement.





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NEW







NEW
IMPROVEMENTS
OF
Planting and Gardening,
BOTH
Philosophical *and* Practical.

CHAP. I.

*A Parallel between Plants and Animals ; with
an Attempt to prove the Circulation of the
Sap in Vegetables.*



 Egetation, in what-ever Degree I shall treat of it, is equally depending on the Order of Nature. Whether I speak of *Trees, Shrubs, or Herbaceous Plants*, their Principles are equally the same; that is to say, they all alike draw their Nou-

B

ishment

rishment by way of their *Roots*; which Nourishment is convey'd through proper Vessels into the *Stem*, the *Branches*, *Leaves*, *Flowers* and *Fruit*.

Now that I may more easily explain by what Means every *Plant* receives and distributes its Nourishment to the several Parts of it, give me leave to draw a Parallel between *Plants* and *Animals*, that thereby the Nature of *Plants* may be the better understood.

The many curious Observations which have been made concerning the Structure of *Animal* Bodies, and what *Malpigi*us, *Dr. Grew*, and my self have remark'd in the Structure of *Vegetables*, may ascertain to us, that Life, whether it be *Vegetable* or *Animal*, must be maintain'd by a due Circulation and Distribution of Juices in the Bodies they are to support; we have all alike discover'd (with the help of *Microscopes*) the several Vessels and other Parts which compose a *Plant*; but I cannot agree in Opinion with the Authors I have mention'd, concerning the Course of the Juices thro' the Ducts and Channels which we have discover'd. It would be needless for me in this Place to relate their several Opinions, which would swell this Treatise to too great Bulk; their Works may be perused by the Curious; I shall proceed to explain, that the *Sap* circulates
in

in the Vessels of *Plants*, as the *Blood* doth in the Bodies of *Animals*.

And that this new System may be the better understood, I think it proper in this Place to give a short Description of the Vessels in *Plants*, and their Situation. First then the *Root* of a *Plant* is of a spongy Nature, ready to admit into it such humid Particles as are fitted (in the Earth, by a certain Temperature of Air) to be received into its Pores: And we may observe that the various Qualities of different *Plants* depend chiefly on the different Size of the Vessels and Pores in their *Roots*, by which they receive their several Nourishments.

Secondly, We must understand that the Wood of every *Plant* is composed of Capillary Tubes, running Parallel with each other, from the *Root* (upright) through the *Trunk*. Their Cavities are so small that they are hardly to be discern'd by the natural Eye, unless in a Piece of *Charcoal*, *Cane*, or *Oaken Board*: These Vessels renew and augment themselves every Year, as we may observe by cutting a *Tree* horizontally, which will discover to us the Latitudinal Shootings, and the Annual Additions of these Pipes, and for which Reason the *Trunks* of *Trees* increase in their Circumference. These Tubes for Distinction sake I shall call *Arterial Vessels*. For it is through these the *Sap* rises from the *Root*

in fine *Vapour* ; for their Cavities are so small, that it would be impossible they should admit any thing whose Parts were so large as those of a *Liquor*.

Thirdly, The Passages, or Pipes, by which the *Sap* returns downward, are much more open than the former, and are capable of receiving a *Liquor* into them ; these are plac'd immediately on the Outside of the *Arterial Vessels* between the *Wood* and inner *Bark*, and lead down directly to the Covering of the *Root*. They perform the Office of *Veins*, and contain the liquid *Sap* which is found in *Plants* in the Spring and Summer Months.

Fourthly, The *Bark* of a *Tree* is of a spongy Texture, and by many little Strings which pass between the *Arterial Pipes*, corresponds with the *Pith*. And,

Fifthly, The *Pith* is composed of little transparent Globes chain'd together in like manner with those Bubbles which compose the Froth of any *Liquor*.

In fine, a *Plant* is like an *Alimbeck*, which distils the Juices of the Earth ; as for Example.

The *Root* having suck'd in the Salts of the Earth, and fill'd it self with proper Juices for the Nourishment of the *Tree* ; these Juices then are set in Motion by Heat, that is, they are made to evaporate into *Steam*, as the Matter in a Still will do

do when it begins to warm; now as soon as this *Steam*, or *Vapour*, rises from the *Root*, its own Natural Quality carries it upwards to meet the Air; it enters then the Mouths of the several *Arterial Vessels* of the *Tree*, and passeth up them to the Top, with a Force answerable to the Heat that puts it in Motion; by this Means it opens (by little and little, as it can force its way) the minute Vessels which are roll'd up in the *Buds*, and explain them by degrees into *Leaves*.

But as every *Vapour* of this kind when it feels the Cold will condense and thicken into a Water, so when the *Vapour* which I mention to rise thro' the *Arterial Vessels* arrives at the extreame Parts of them (*i. e.*) the *Buds* of a *Tree*, it there meets with Cold enough to condense it into a *Liquor*, as the *Vapour* in a Still is known to do.

In this Form it returns by means of its own Weight to the *Root* down the *Vessels*, which do the Office of *Veins*, lying between the *Wood* and inner *Bark*; leaving, as it passeth by, such Parts of its Juice as the Texture of the *Bark* will receive, and requires for its Support.

It may be wonder'd at, that I have not taken more Notice of the *Pith* which has been always accounted the principal Part of a *Tree*; to which I shall only answer

at this Time, that many *Herbaceous Plants* have not any *Pith*, and that I have seen the *Trunks* of large *Trees* destitute of it, and they have yet continued to grow and to bear *Fruit*, so that the Order of *Vegetation* may be explain'd without it; and indeed was I here to take Notice of the several Particulars in *Plants*, I might swell this Treatise into a large Volume; but I am clearly of the same Opinion with him that said, μέγα βιβλίον μέγα χάρον; and therefore shall confine my self in this Work to such Relations only, as I hope may be useful.

But to proceed: The following Experiment of the most Ingenious Mr. Lawrence, which he has mention'd in his *Clergyman's Recreation*, relating to the *Jessamine*, may convince us of the Certainty of the Sap's Circulation in *Plants*. I shall give it in his own Words, "Suppose a plain *Jessamine-Tree* spreading it self into two or three *Branches* from one common *Stem* near the *Root*. Into any one of these *Branches*, in *August*, inoculate a *Bud* taken from a yellow strip'd *Jessamine*, where it is to abide all Winter, and in the Summer, when the *Tree* begins to make its Shoots, you will find here and there some *Leaves* ting'd with Yellow, even on the other *Branches* not inoculated, till

“ till by Degrees, in succeeding Years,
“ the whole *Tree*, even the very *Wood* of
“ all the tender Branches, will be most
“ beautifully strip’d and dy’d with Yellow
“ and Green intermix’d: *He adds*, that
“ tho’ the inoculated *Bud* should not shoot
“ out, or that it should live but two or
“ three Months, and after that happen to
“ die or be wounded by Accident, yet even
“ in that little Time it will have com-
“ municated its Virtue to the whole *Sap*,
“ and the *Tree* will become entirely
“ strip’d.” And this Experiment my self
and several others have made several Years
ago; which gave me the first Hint of the
Sap’s Motion, and put me upon further
Enquiry; it may, I hope, satisfy the Cu-
rious.

The Motion of the *Sap* continues in a
Plant so long as the Sun’s Warmth can keep
it in a fluid State, but is condensed or
thicken’d by a Winter’s Cold, and is there-
by changed into the Consistency of Gum,
and being thus stagnated, cannot move any
more till the Warmth of the following
Spring, or some artificial Heat rarifies it
into its former liquid State.

It then renews its former Vigour, and
pushes forth *Branches*, *Leaves*, &c. But
we must not suppose it is only the melted
Sap, that was thicken’d in the *Tree* during
the Winter, which does that Office of Ger-

mination, the *Root* has not been idle while the *Branches* have stood still, it has not lost the *Moisture* of the preceding *Autumn* to impregnate and furnish itself with proper *Salts* or *Nouriture*, from whence the *Tree* is to be maintain'd. Here is a *Supply* laid in to furnish *Food* for the *Summer*, as some industrious *Animals* lay up their *Store* to nourish themselves in the *Winter*.

In the next Place it may not be amiss to confute a common Opinion, *That the Sap returns to the Root in Winter*; for if it did so, how comes it that *Trees* which are cut down in *November* and *December* will put forth *Branches* and *Leaves* the following *Spring*, altho' they have no *Root* or *Earth* to feed th'm? This plainly shews that the *Sap* is condensed or thicken'd in the *Tree* during its *Circulative Course* by extream *Cold*, and remains in that gummy State, till the *Warmth* of the *Spring* (as I have already said) liquifies it, and by the *Vapour* which must then arise from it, the *Buds* are push'd forth, so long as there is *Matter* remaining in the *Trunk* sufficient to furnish them.

And now since it appears from what has been said, that *Plants* have a *Circulation* of *Sap*, and proper *Means* whereby to supply themselves with *Food*, let us consider

sider whether *Plants* in their several *Kinds* do not require different *Sorts of Food* one from the other, like various *Sorts of Animals* which differ in their *Dyets*.

First then, *Land Animals* may be liken'd in general to those *Plants* which are call'd *Terrene*, for that they live only upon the Earth, such as *Oaks*, *Beech*, *Elm*, &c.

Amphibious Animals, such as the *Otter*, *Beaver*, *Tortoise*, *Froggs*, &c. which live as well on the Land as in the Waters, may be compared to the *Willow*, *Aldar*, *Mints*, and such others.

The *Fish Kind*, or *Aquatick Race*, whether of the *Rivers*, or the *Sea*, are analogous to the *Water Plants*, such as *Water Lillies*, *Water Plantains*, &c. which only live in *Rivers*, or *Fresh Water*, or the *Fucus*, *Coral*, *Coraline*, &c. which are *Sea* or *Salt Water Plants*; and not any one of those will live out of its proper Element. From whence we may conclude how improper it would be to plant a *Water Lilly* in a dry sandy *Desart*, or an *Oak* at the bottom of the *Sea*, which would be just as unreasonable, as if we should propose to feed a *Dog* with *Hay*, or a *Horse* with *Fish*; however, this Rule of Nature has been so little observ'd, even by some of our greatest *Planters*, that we can hardly boast of good Success in one out of five *Plantations* that has been made.

But

But I shall beg Leave to remark yet further, That as the several *Land Animals* have their respective *Dyets*, so have the *Terrene Plants* likewise their several *Soils* from whence they draw their Nourishment; as some *Animals* feed on *Flesh*, others on *Fish*, *Roots*, *Leaves*, *Grain* or *Fruits*, so do we find that some *Plants* love *Clay*, others a *Loam*, *Sand*, or *Gravel*, &c. Nor is this all we ought to observe, we must consider likewise how beneficial to every *Plant* is a right Exposure, whether in a *Vale*, the Sides or Tops of *Hills*, exposed to the *South* or *North* Winds, whether inland, or near the Air of the *Sea*; for it is a proper *Air* that keeps a *Plant* in Health, and fits it to receive its Nourishment, and a certain Degree of *Warmth*, peculiar to each kind of *Plant*, is likewise worth our Enquiry, for it is a *Warmth* natural to each *Plant* that puts its *Juices* in their proper Motion, as the same Degree of Heat will not melt every kind of Mixture, but this may be more fully explain'd in another Place; in the mean while I shall proceed to examine, in the next Chapter, by what Means *Plants* are capable of *Generating*, and to explain the Uses of that Discovery.



C H A P. II.

Of the Generation of PLANTS.

IN the foregoing Chapter I have given my Reader such Hints as may serve to explain my *System of the Circulation of Juices in Vegetables*, and have endeavoured to show that *Plants* are somewhat analogous to *Animals*; I shall now proceed to offer another Discovery, as new as the former, and depending on it, which I conceive will be of extraordinary Use to such as raise Plantations from *Nutts*, *Mast*, or any other kind of *Seed* or *Grain*. And altho' in this Treatise I have proposed to give some Directions tending only to the Improvement of *Forest* and *Timber Trees*, yet I hope to be excus'd, if in the Explanation of this wonderful Mystery of the *Generation of Plants*, I shall be forced to introduce such kinds of *Plants* as are not to be found in *Forests*, and to make some of my Experiments in the *Orchard* or *Kitchen-Garden*.

Moses tells us in his Account of the *Creation*, That *Plants* have their *Seeds* in themselves; that is, every *Plant* contains
in

in it self Male and Female Powers ; the Text he has given us, seems to be explain'd by this Discovery, and may lead us to consider that *Plants* wanting *local Motion*, require therefore this Union of *Sexes* in themselves, by which Means they may generate without the Neighbourhood of other *Plants* ; they are in this respect like *Muscles*, or other immovable *Shell-fish*, who are *Hermaphrodites* of this kind, having their Propagation without the help of one of the same Species. I mention *Muscles* and other immovable Kinds of *Shell-Fish* as a particular kind of *Hermaphrodite*, for those which have local Motion, such as *Snails* and *Earth-Worms*, when they couple with one another, at once perform the *Male* and *Female* Act of *Generation*.

But before I proceed to explain this new System, I think my self obliged to declare that the first Hint of this Secret, was communicated to me several Years ago by a worthy Member of the *Royal Society*, *Robert Balle*, Esq; who had this Notion for above Thirty Years, that *Plants* had a Mode of *Generating* somewhat analogous to that of *Animals*. The Light which I received from this Gentleman was afterward farther explain'd by another Learned Member of that Society, Mr. *Samuel Moreland*, who in *Philos. Trans.* Numb.

Numb. 287, Anno 1703. has given us to understand how the *Dust* of the *Apices* in *Flowers* (i. e. the *Male Sperm*) is conveyed into the *Uterus* or *Vasculum Seminale* of a *Plant*, by which Means the *Seeds* therein contain'd are impregnated. I then made it my Business to search after this Truth, and have had good Fortune enough to bring it to Demonstration by several Experiments; since which, a Gentleman of *Paris* has printed something of the same Nature in the *Hist de l' Acad. de Sciences*, for the Years 1711 and 1712, which were publish'd about two Years ago.

But to come to the Point, the *Lilly* being a Flower more generally known than any other, and its Generative Parts being large and exposed, I shall from thence endeavour to explain the Method which Nature makes use of to impregnate the *Seeds* of that and every other *Plant*, and by which Means the several *Species* of *Vegetables* have been continued to the World.

The *Flower* of the *Lilly* has six *Leaves* or *Petals*, which are set on upon the Summit of the *Footstalk*, mark'd A in the first Figure, they serve to guard the Parts of Generation from the Injuries of the Weather, and as they are of no other Use
that

that I know of, so it is not necessary that I should place them in the Figure.

B is the Mouth of the *Pistillum* or Passage which leads into the *Uterus C*, in which are three *Ovarys* fill'd with little *Eggs* or *Rudiments* of *Seeds*, such as we find in the *Ovaria* of *Animals*, but these *Eggs* will decay and come to nothing, unless they are impregnated by the *Farina Fecundans* or *Male Seed* of the same *Plant*, or one of the same sort.

From *D* to *E* is a *Stamen* of the *Lilly*, through which the *Male Seed* of the *Plant* is convey'd to be perfected in the *Apex F*, where, by the *Sun's Heat*, it ripens and bursts forth in very minute *Particles* like *Dust*; some *Particles* of which *Powder* falling upon the *Orifice B*, is either convey'd from thence into the *Utricle C*, or by its magnetick *Virtue* draws the *Nourishment* with great *Force* from the other *Parts* of the *Plant* into the *Embrios* of the *Fruit*, and make them *swell*.

Now that the *Farina Fecundans*, or *Male Dust*, has a *Magnetick Virtue*, is evident, for it is that only which *Bees* gather and lodge in the *Cavities* of their hind *Legs* to make their *Wax* with; and it is well known, that *Wax*, when it is warm, will attract to it any light *Body*. But again;
if

if the Particles of this Powder should be requir'd by Nature to pass into the Ovarys of the Plants, and even into the several Eggs, or Seeds, there contained, we may easily perceive, if we split the *Pistillum* of a Flower, that Nature has provided a sufficient Passage for it into the *Uterus*.

In the first Figure I have only given a Design of one *Stamen* with its *Apex*, to prevent Mistakes in my Explanation, but the Flower of every Lilly has six of the same Figure and Use, which are placed round about the *Pistillum*, or Female Parts; so that 'tis almost impossible it should escape from receiving some of the Male Dust (or *Farina Pecundans*) falling upon it.

In this and other Flowers of the like Nature the *Pistillum* is always so placed, that the *Apices* which surround it, are either equal in Height with it, or above it, so that their Dust falls naturally upon it. And when we observe it to be longer than the *Apices*, we may then conjecture that the Fruit has begun to form it self, and has no longer Occasion of the Male Dust. And it is likewise observable, that as soon as this Work of Generation is performed, the Male Parts, together with the Leaves, or Covering, fall off, and the Pipe leading to the *Uterus* begins to shrink.

We may further remark, That the top of the *Pistillum* in every *Flower*, is either cover'd with a sort of Velvet Tunic, or emits a gummy Liquor the better to catch the *Dust* of the *Apices*.

And now as we may find in the Description I have given of the *Lilly*, that the *Uterus* is within the *Flower*; so on the other Hand the *Uterus* of a *Rose* is without the *Flower*, at the bottom of the *Petals* or *Flower-Leaves*. And likewise in *Fruit-Trees*, the *Cherrys*, *Plums*, and some others, have their *Utricles* within their *Flowers*, and the *Goosberry*, *Currant*, *Apples* and *Pears*, on the outside or bottom of their *Flowers*. But farther, altho' Nature has design'd the *Dust* of the *Apices* to fecundate the *Female Parts* contain'd in the *Flowers* of *Plants*; yet we observe that in some *Plants* the *Male* and *Female Parts* are remote from each other; as for Example, the *Gourd*, *Pumkin*, *Melon*, *Cucumbr*, and all of that Race, have *Blossoms* distinctly *Male* and *Female* upon the same *Plant*. The *Male Blossoms* may be distinguished from the others, in that they have not any *Pistil* or Rudiment of *Fruit* about them, but have only a large *Thrum* cover'd with *Dust* in their middle; the *Female Blossom* of these has a *Pistillum* within the *Petals*, or *Flower Leaves*, and the Rudiments of
their

their *Fruit* always apparent at the bottom of the *Flower* before it opens; and so in like manner all *Nut-bearing*, and, I think, *Mast-bearing Trees* have their *Catkins* or *Male Blossoms* remote from the *Female Parts*.

The *Oak* for Example, which blossoms in *May*, has its *Male Parts* distinct from the *Acorns*, we find Strings of little *fari-naceous Flowers* in great abundance, as in the Second Figure, mark'd G, remote from the Rudiments of the *Acorns* or *Fruit* mark'd H: And so likewise in the *Walnut*, *Chestnut*, *Hazel*, *Pine*, *Cypress*, and even the *Mulberry*, *Aspen*, and others. I have observ'd that some Sorts of *Willows* change their Sex every Year, by producing only *Male Blossoms* or *Katkins* one Year, and the Year following Strings of *Female Blossoms*; which if they then happen to be near enough some *Flow'ring Male*, will produce *Seeds* not much unlike those of an *Apocinum*.

When we view with a good *Microscope* the *Male Dust* of one single *Plant*, we find every Particle of it to be of the same Size and Figure, but in some Cases, it is of two Colours, as in the *Tulip*, where it is Yellow and Blue; but as *Plants* differ from one another in their Figures and Qualities, so are the Figures of their several *Dusts* greatly different from each other; a Grain of the

C Dust

Dust of Geranium Sanguineum, Maximo flore of C, B, P, is like a Bead of a Necklace with a Hole thro' it.

The *Farina* of the *Corona Solis perennis Flore & Semine Maximus. Hort. Lugd. Bat.* is a Globe set with Thorns; that of the *Ricinis Vulgaris*, C, B, P, is of the Figure of a Grain of Wheat.

And the *Acer Montanum Candidum* of C, B, P, affords a *Dust* of the Figure of a Cross; and in like manner does the *Farina* of every *Plant* differ in its *Shape* from the rest.

The Female Parts of *Generation* in *Plants* are best seen in large *Fruits*, without the Trouble of the *Microscope*; such as the *Fruit* of the *Pumpkin* or *Melon*, where with the Natural Eye we may discover the *Vessels* distinctly which make the *Tunick* or *Covering* of each *Ovary*; we may see how the *Seeds* are joyn'd to it, and by what End they receive their Nourishment. And again, between the several *Ovarys* enclos'd in that *Fruit*, we may very easily perceive the *Vagina*, or Passage through which the *Farina Fecundans* has pass'd to impregnate the *Seeds*.

It may perhaps be objected, that there are many *Flowers* which hang downwards, as the *Crown Imperial*, the *Cyclamen*, &c. and that their *Pistils* cannot receive the *Farina Fecundans* upon them; but if we observe

serve that the *Pistils* of these *Flowers* are always more prominent, or somewhat longer than the *dusty Apices* which surround them, we may easily conceive that the glutinous Matter and Velvet Covering on the Extremities of the *Pistils*, may be capable enough of receiving and holding some of the *Powder* as it falls; and whether the Intromission of the *Farina Fecundans* be requisite or not, its Lodgment on the Mouth of the *Pistillum* may, by virtue of its attractive Quality, perhaps fecundate the *Seeds* contain'd in the *Uterus*; I am sure in the Production of *Animals* there are yet greater Difficulties to encounter with; and it may be, if the *Analogy* between *Plants* and *Animals* was more enquir'd after by the Learned, they might discover many new Things which would be serviceable to the Preservation and Benefit of *Animal Bodies*, as this Knowledge will be to the Improvement of the *Vegetable World*. We find, for Example, that *Trees* are generally longer liv'd than *Animals*, some of them living to four or five Hundred Years; nay, we have some Accounts, by Tradition, of *Trees* that have liv'd above 2000 Years; the Reason I think is plain, for that, *First*, *Trees* have no Sensation (for it is my Opinion, that the *Senses* prey abundantly upon the *Juices* of the *Body* they belong to). *Secondly*,
C 2 They

They always breathe the same Air; And, *Thirdly*, they feed always upon the same simple *Diet*. And Mankind, who in the first Times is said to have lived upwards of 900 Years, is said to have fed upon a *Simple Diet*, and to have drank of the *clear Stream*; at least he had then but little Variety of Food. But I hope my Reader will pardon this Digression of mine, it may perhaps put him upon greater Discoveries.

I shall now proceed to what I call the *Demonstrative Part* of this *System*. I made my first Experiment upon the *Tulip*, which I chose rather than any other *Plant*, because it seldom misses to produce *Seed*. Several Years ago I had the *Conveniency* of a large Garden, wherein there was a considerable Bed of *Tulips* in one Part, containing about 400 Roots; in another Part of it, very remote from the former, were Twelve *Tulips* in perfect Health, at the first opening of the Twelve, which I was very careful to observe, I cautiously took out of them all their *Apices*, before the *Farina Fecundans* was ripe, or any ways appear'd; these *Tulips* being thus *castrated*, bare no Seed that Summer, while on the other hand, every one of the 400 *Plants* which I had let alone produced *Seed*.

But as a farther Demonstration that *Plants* generate after the manner I have endeavoured to account for it, I shall recommend to my Reader the following Experiment. Make choice of such a *Plant* of the *Hazel* or *Philbud*, as you find to be in a bearing State, and far distant from any other of the same Sort; this *Tree* in *January* puts forth what are commonly call'd *Catkins*, which are long *Thrums*, compos'd of very small *Flowers*, that towards the beginning of *March* are cover'd with a fine *Dust*, or *Male Seed*; 'tis then the *Blossoms* or *Female Parts* appear on the *Buds* of the same *Tree*; they are very small, and hardly to be discern'd without strict Enquiry, only offering to the View a small Cluster of *Scarlet Threads*, which are so many *Tubes* leading to the Rudiments of the *Nuts*; this happens at a windy Season of the Year, that the *Male Dust* may be more easily convey'd to the *Utricles* or *Female Blossoms* of the *Plant*. Now as soon as the *Catkins* appear, they must be carefully taken from the *Tree*, and it will produce no *Fruit* that Year, unless you have a mind to single out any particular *Blossom* of it, which may be impregnated with *Catkins* from another *Tree*, gather'd fresh every Morning for three or four Days successively, and dusted lightly over it, without bruising its tender

Fibres: And in like manner may the *Blossoms* of any other *Tree* or *Flower* be castrated, and will have the same Effect.

By this Knowledge we may alter the Property and Taste of any *Fruit*, by impregnating the one with the *Farina* of another of the same Class; as for Example, a *Codlin* with a *Pairmain*, which will occasion the *Codlin* so impregnated to last a longer Time than usual, and be of a sharper Taste; or if the *Winter Fruits* should be fecundated with the *Dust* of the *Summer Kinds*, they will decay before their usual Time; and it is from this accidental Coupling of the *Farina* of one with the other, that in an *Orchard* where there is Variety of *Apples*, even the *Fruit* gather'd from the same *Tree*, differ in their Flavour and Times of ripening, and moreover the *Seeds* of those *Apples* so generated, being changed by that Means from their Natural Qualities, will produce different kinds of *Fruits* if they are sown.

'Tis from this accidental Coupling that proceeds the Numberless Varieties of *Fruits* and *Flowers* which are rais'd every Day from *Seed*. The yellow and black *Auriculas*, which were the first we had in *England*, coupling with one another, produced *Seed* which gave us other Varieties, which again mixing their Qualities
in

in like manner, has afforded us by little and little, the numberless Variations which we see at this Day in every curious *Flower-Garden*; for I have saved the *Seeds* of near a hundred plain *Auriculas*, whose *Flowers* were of one Colour, and stood remote from others, and that *Seed* I remember to have produced no Variety; but on the other hand, where I have saved the *Seed* of such plain *Auriculas*, as have stood together, and were differing in their Colours, that *Seed* has furnish'd me with great Varieties, different from the *Mother Plants*. I believe I need not explain how the *Male Dust* of *Plants* may be convey'd by the Air from one to another, by which this *Generation* and *Production* of new *Plants* is brought about; but I shall hint by the bye, to such as plant *Orchards* for *Cyder*, that they ought to plant only one Sort of *Apple* in those *Orchards*; and that such Plantations be likewise remote from other Kinds of *Apples*, whose *Farina* would else certainly spoil the *Cyder Fruit*, by ripening some sooner and others later, which would occasion almost a continual Ferment in the *Liquor*, and never permit it to settle or grow fine.

Moreover, a Curious Person may, by this Knowledge, produce such rare Kinds of *Plants*, as have not yet been heard of, by making choice of two *Plants* for his

Purpose, as are near alike in their Parts, but chiefly in their *Flowers* or *Seed-Vessels*; for Example, the *Carnation* and *Sweet-William* are in some respects alike, the *Farina* of the one will impregnate the other, and the *Seed* so enliven'd will produce a *Plant* differing from either, as may now be seen in the Garden of the ingenious Mr *Thomas Fairchild* of *Hoxton*, a *Plant* neither *Sweet-William* nor *Carnation*, but resembling both equally, which was raised from the *Seed* of a *Carnation* that had been impregnated by the *Farina* of the *Sweet-William*. These Couplings are not unlike that of the *Mare* with the *Ass*, which produces the *Mule*, and in regard to *Generation*, are also the same with *Mules*, not being able to multiply their *Species*, no more than other Monsters generated in the same manner.

We may learn from hence, that the *Fruit* of any *Tree* may be adulterated as well by the *Farina* of one of the same Sort, which perhaps may be sickly and of a Dwarf Kind, as by the *Dust* of some other Kind near a-kin to it, and worse than it self. Now as such Couplings may be very frequent in common *Woods*, so would I recommend the Choice of *Seed*, to be made only from such *Plants*, or *Timber-Trees* as excel in Greatness or other good Qualities, and are far distant from others
of

of meaner Sorts, which might degenerate their *Seeds*, and cross our Expectations when they come to grow up ; and this is as necessary to be observed among *Vegetables*, to maintain their good Qualities in the young *Plants* they are to produce, as it is in the Breeding of *Game-Cocks*, *Spaniels*, or *Running-Horses*.

There is but one sort of *Plant* that I know of, which seems to be out of this Danger of coupling with other Sorts, and consequently of either improving or diminishing the Qualities of its *Seeds*, and that is the *Mistletoe* ; the Parts of its Flowers are indeed as apt to Generation as those of other *Plants*, but I have never seen any Variety of this *Plant*, or do I know any other nearly enough related to it to engender with it ; for whether we find it growing upon the *Oak*, *Willow*, *Lime*, or any other *Tree* whatever, the *Leaves*, *Flowers*, and *Fruit*, with its manner of *Growth*, are all alike. And since I have had Occasion to mention it in this Place, give me leave to take Notice of some Particularities belonging to it, as that it is neither to be propagated in *Earth* or *Water*, but upon *Trees* and *Plants* only. The Ancients made it a *Superplant*, peculiar to the *Oak*, and tell us, that altho' it seemingly produced *Seed*, they did not believe that that *Seed* could possibly be made

made to *vegetate*, because I suppose they have try'd it in the *Earth* without Success. But as it is so frequently found growing on other *Trees*, beside the *Oak* in our Times, I shall take occasion at once to overturn their Opinion in relation to this *Plant*, by shewing how it may be *propagated* from *Seed* upon any *Tree* whatever: About *Christmas*, when the *Berries* are ripe, they may easily be made to stick upon the smooth *Bark* of any *Tree* you have a mind to *propagate* them upon, whether it be the *Oak*, *Ash*, *Elm*, *Apple*, *Pear*, *Plum*, *Rose*, *Gooseberry*, or *Currant*, &c. The *Viscous Juice*, which encompasseth each *Seed*, will bind it fast to the Part you place it upon, and with this small Trouble you may expect young *Plants* the following Year, provided the Birds don't devour the *Seeds* you have sown, therefore a Net would do well to secure them. I have seen twenty *Plants* of *Mistletoe* growing upon as many different Sorts of *Trees* and *Shrubs* in one Garden, which were *propagated* in the same manner I have mentioned. And I believe it would be very useful in correcting the too great Vigour of some *Fruit-Trees*, and bring them to bear, by taking from them the *superabundant Juices*, which are always destructive to *Prolificity*, either in *Plants* or *Animals*.

And

And now from the Account I have given of the *Generation of Plants*, it appears that double *Flowers* seldom bear *Seed*, because the *Dust* of the *Apices* is too much crowded with the *Petals*, or *Flower-Leaves*, which for that Reason cannot easily reach the *Style* or *Pistil* of the *Flower*, which is always prominent, and above the *Petals*, in full *Flowers*. It appears likewise, that the natural Properties of *Fruits* or *Seeds* may be changed by accidental coupling with other *Plants*; and that the *Seeds* so alter'd, may rob us of our Expectations in *Planting*, by having their Principles debauch'd by the *Dust* of *distemper'd* and *degenerated Plants*. I could still add many other Remarks relating to this Discovery, and give my Reader a more ample Description of the *Generative Parts of Vegetables*, as I have observ'd them with the best *Microscopes*; but I conceive I have said enough to explain what I propos'd upon this Head, and shall therefore now proceed to offer such Experiments as I have made relating to *Soils*, and endeavour to shew how they may be mended, alter'd, and improv'd, chiefly by proper Mixtures with each other.



C H A P. III.

Of *SOILS* proper for the Nourishment of
PLANTS, and *Composts* for forwarding
 the Growth of *PLANTS*.

IF *Plants* in their several Degrees draw from the *Earth* such *Aliment* as is proper for their Subsistence, and that as the Nourishment they receive is more or less suitable to them, so they prosper accordingly; we may then reasonably infer that there is a Circulation of *Sap* in *Vegetables*, in some respect like that of the Blood in *Animals*, as I have already endeavour'd to shew in my first Chapter of this Tract. For in *Animals* it is very certain, that a *Diet* is required by them for their Subsistence, and that a *Diet* being concocted, is the Matter from whence the Blood is drawn; and that as the Blood is, so is the State of the Body, either healthful or distemper'd; then it reasonably follows, that we ought as carefully to provide wholesome and natural Nourishment for the Welfare of each respective *Plant* we design to propagate, as we usually do the proper Food or *Diet* of every *Animal* we have a mind to nourish.

nourish. The Food of *Land Animals* is of three Kinds only, *viz.* *Flesh*, *Herbs*, and *Seeds* or *Fruit*. So likewise the Food of *Terrene Plants* is of three sorts, *Sand*, *Loam*, or *Mother-Earth*, and *Clay*, in their several Degrees, and as the several Kinds of *Flesh*, the various Tribes of *Herbs*, and the many different *Fruits* have each their respective *Animals* to feed upon them, so *Sand* in its several Degrees, *Loam* of different Sorts, and *Clays* of all Kinds, have certain Proportions of *Salts* in each of them, proper for the Nourishment of every *Plant*.

Fruit or *Seeds* I esteem to be the *medium Nourishment* between *Flesh* and *Herbs*, and we find that every *Land Animal* will feed upon it, altho' their natural Food is either *Flesh* or *Grass*; as for Example, a Horse, whose proper Food is Grass, will eat Grain, and so Dogs and other Creatures who feed upon *Flesh*, will eat *Fruit*. And I am of Opinion that the *Salts* therefore in *Flesh*, *Fruit* and *Herbs*, are the same, only differing in the Proportions of their Quantities; that is, one Pound Weight of *Flesh* may perhaps contain twice as many *Salts* as the like Weight of Grain or Seed, and one Pound of *Grain* twice the Quantity of *Salts* that may be found in a Pound of *Herbs* or *Grass*. Now that all these *Salts* are proper for *Vegetation*, is evident by the common Practice of burying *Straw*,
or

or *Litter*, *Brakes*, *Hulm*, and such like, to enrich some *Soils* : Again, if *Fruits* and *Grain* be well consumed, one Load of it laid upon a Spot of Ground, will enrich it more than ten Load of Horse-Litter, or Common Dung, says Sir *Hugh Platt* from Experience, and we are very sensible of the prodigious Effect of *Carion*, *Leather*, or any Parts of *Animals* apply'd to the Roots of *Vegetables*.

So on the other Hand, in Natural Soils, what I call *Loam*, or *Mother Earth*, I suppose to be the *Medium* between *Sand* and *Clay*, that is an Earth of a certain Temperature, partaking equally of them both. And indeed all *Soils* that I know of, may be reduced under these three general Heads, viz. *Sand*, *Loam* and *Clay*; for all others, altho' they may bear different Names, are in some respect depending upon one or other of these. *Gravels*, and all the open *Soils*, till we come to the *Loam* I mention, are of the *sandy* Race; and the binding *Earths*, from *Loam* downwards, till we come to the Stiffness of Chalk it self, may be ranged with the *Clay* Kind. I find all these *Soils* are alike tending to *Vegetation*, and have their *Salts* proper for it, but in different Proportions of Quantity; that is a Peck of *Clay* has perhaps twice as much *Salts* in it as the same Quantity of *Loam*, and that Quantity of
Loam

Loam twice as many *Salts* as the same Proportion of *Sand*. Now from this Argument of mine, it may seem at first View, that *Clay* is the most proper *Soil* to forward the *Growth* of *Plants*; whereas we know that *Sand* is much more apt to produce *Plants* quicker than any other *Soil*; but give me leave to explain this Paradox: *Clay*, whose Parts are closely wrought together, will not easily give out those *Salts* contained in it; neither can the tender *Fibres* of every *Plant* make their Way thro' it, in search of their Nourishment; but if we open its Parts, by digging and breaking it into small Particles, and keep those Parts open by a Mixture of some sharp *Sand*, or other Body of the like Nature, we shall not fail to see the Effects of its Vigour.

On the other Hand, *Sand* is apt to push forward the *Plants* growing upon it early in the Spring, and even will cause them to *Germinate* near a Month sooner than the *Plants* growing upon a *Clay*; the Reason is, that the *Salts* in the *Sand* are at full Liberty to be raised and put in Motion upon the least Approach of the Sun's Warmth: But then as they are hasty in their Work, so are they soon exhaled and lost.

The *Clay* has certain *Plants* growing upon it, which are natural to it, and consequently

frequently thrive better in it than in any other *Soil*.

And the *Sand* likewise has its natural *Plants*, which delight in it, and will not equally prosper in any other *Earth*.

However, both the *Clay-Plants*, and those of the *Sand*, will grow in the *Loamy Soil* I have mention'd, because it partakes of the Qualities of *Sand* and *Clay*, as Grain doth of *Flesh* and *Herbs*, in respect to the *Food* of *Animals*.

I might here take Notice that the Word *Loam* is variously receiv'd and understood by *Planters*: Some mean by it the most common superficial *Earth* met with in *England*, without any regard to the Proportions it bears of *Sand* and *Clay*. Others would have it more inclining to *Clay* than *Sand*: However, I shall endeavour to avoid all Disputes that might arise concerning it, by once more repeating, that when I shall have Occasion to mention it, I mean only that Degree of *Earth* which equally partakes of *Sand* and *Clay*.

This *Earth* then, which I call *Loam*, may either be of a black, or yellow Colour; but let it be either the one or the other, Experience shews us that *Plants* of all Sorts will grow in it, and for the Reasons I have before mention'd, it appears to be a more beneficial *Soil* to *Plants* than any other, wherever it happens to be found.

Now

Now, as I take it, seeing that *Loam* is so happy in its Productions, that even *Plants* naturally bred in different *Soils* will thrive in it, it then seems reasonable, that if by Mixtures of *Natural Earths* one with the other, we make such a *Compost* as may nearly imitate it, we may expect far greater Success from a Mixture of that Sort (especially in *Plantations* of durable *Trees*) than from any Composition we can devise to be made with *Dungs*, or other forcing Ingredients. For it is very well worth our Remark, that *Animals*, and *Vegetables* also of all Sorts, are more lasting, as they are fed by simple and natural *Diets*, as I have hinted before. It is true, *Hot-Beds*, or any other Means of the like Nature, would indeed forward the *Growth* of *Trees* perhaps as much in one Year, as Nature of her self would do in six: Or as *Dr Agricola* of *Ratisbone* pretends by his artificial *Compost* to raise *Forest-Trees* to exceed the Height of twenty Foot in a few Days time; but we may be assured they can never last out half their Days, for we find the same in *Animals*, but particularly in *Mankind*, who by Excess of unnatural *Foods*, and invigorating *Liquors*, shortens his Life; while on the other Hand, such Men as have bare Subsistence, and are forced thro' Necessity to live upon the natural Food of their own Coun-
D try;

try, are long-liv'd ; I therefore would advise, as well from what I have said, as from the Observations and Inquiries I have made of the *Growth of Timber-Trees*, that they may not be forced by any violent Means, if we design them to last long, and improve themselves to be valuable ; neither to take them from a Nursery of rich Ground, and expose them afterwards in such *Land* where they may want the same plenty of Nourishment they have been used to ; for then they would certainly decline and deceive us. Let the Earth we design to plant them in be fresh and well open'd in its *Parts* ; and if it should be sifted, it will help the striking of young *Roots* at first Planting, and support them 'till they can gather *Strength*.

I think I need not further explain, that equal Quantities of *Sand* and *Clay* well mix'd together will afford us the desirable *Soil* we seek after, in Case the *Loam* or *Mother Earth* I mention, cannot conveniently be met with. But this has its greatest Use, when we make new *Plantations*, for we ought also to examine the Depth of the *Soil* underneath, into which our *Trees* are afterwards to push their *Roots*, and from whence they are to draw their chief Nourishment, and that may be best known from Observation ; that is by examining the most vigorous *Trees* of every

every Kind, and observing the *Qualities* and *Depths* of the *Soils* they feed from, and from such Examples, to make our *Plantations* accordingly; we shall then find that an *Oak* will never make good *Timber*, if it be *planted* or *sown* upon a shallow *Rocky Soil*, and at the same time that an *Asb* will grow there; but this I shall more fully explain in the next Chapter of *Forest Trees*.

And now seeing that some delight more in the quick *Growth* of the *Trees* they plant, than the Advantages which would accrue to their Families, from a regular and natural *Growth* of their *Plantations*, I shall mention some *Mixtures* which have been experienced to forward the *Growth* of *Trees*.

Mixture the First. If the *Soil* be stiff inclining to *Clay*, let it be well broke and open'd, of which take about five Load, add to it an equal Quantity of *Heath Turfs* burnt, let these *Ingredients* be well mixed and sifted, or skreen'd together, after they have lain for a Winter in a *Heap* or *Ridge*. This *Compost* will forward *Trees* extreamly.

Second Mixture. To four Load of stiff *Soil* broke and open'd as before, add as many Load of sharp *Sand*, to which put two Load of the *Ashes* of burnt *Furzes*, *Gorse*, *Fern*, *Weeds*, or *Wood*; let this be

well mix'd together about *September* or *October*, and be laid up in a *Ridge* 'till the *February* following, to be skreen'd or sifted for Use. *Sir William Bruce*, a Gentleman of *Scotland*, made use of the like *Mixtures* in his Garden, with the Success he desired.

Third Mixture. One Load of rotted *Wood*, such as may be found under a *Wood Pile*, or for want of that, the same Quantity of rotted *Leaves*. To either of these add a Load of burnt *Grass Turf*, two Load of *Sand*, and the like of stiff *Soil*, this Composition must be well mix'd and laid in a *Ridge* from *October* 'till *February*, and be sifted for Use. N. B. These artificial *Soils* should always be compos'd about *October*, and sifted the following Spring, just before you use them; for if you should prepare them in the Spring, the Summer's Heat would exhale their *Volatile Spirits*, and besides, *Weeds* would be apt to rob them of their Nourishment, unless they were to be made in some shady Place under *Trees*.

Fourth Mixture. Take the Quantity of a Load of *Rape Seeds*, after the *Oil* is press'd from them, which may be very easily had at the *Rape Mills* at a small Expence; add to them two Load of *Sand*, one of stiff *Soil*, and one of burnt *Heath*, or *Grass Turf*, prepared as the others, and sifted,

sifted, will greatly forward the *Growth* of any *Plant*.

Fifth Mixture. Take one Load of *Malt Grains* (after *Brewing*) add to it two Load of *Sand*, and two of *stiff Soil*, mix'd and prepared as before, it will make an incomparable *Compost* to hasten the *Growth* of *Plants*.

Sixth Mixture. *Sheeps-Dung*, with a like quantity of *Wood-Ashes*, and twice as much *Loam*, or *Mother Earth*, prepared as before, will greatly forward the *Growth* of *Herbs* and *Trees*.

Seventh Mixture. Take of *Horse-Dung* well consumed, two Load; add to it one Load of *Turf Ashes*, two Load of *Sand*, and two of *stiff Earth*, prepare this *Mixture* as before, and it will greatly forward *Germination* of *Plants*: But if *Sea-Coal Ashes* are more easily found, put them in the Place of the burnt *Turf* and then add one Load more of *stiff Earth* to the *Compost*.

And now besides the several *Compositions* which I have set down, I might add those which I have known to have been prepared with the *Soil* of *Poultry*, that feed upon *Corn* or *Grain*. I found those *Ingredients* very hot and full of *Salts*, greatly tending to *Vegetation*, and abundantly quicker in their *Operation*, than the *Soil* of *Animals*, which only feed up-

on *Herbs*; but that is no great Wonder, if it be true what Sir *Hugh Platt* says, that one Load of Grain will enrich Ground more than ten Load of common *Dung*, and also from what I know from Experience, and have mention'd in the Fourth and Fifth *Mixtures* prescrib'd in this Chapter. Now if simple *Grain* by Infusion only (if I may so term it) in the *Mixtures* or *Composts* I have directed, has a good Effect, we may easily imagine how much more powerful it will be when it has pass'd through the Bodies of *Animals*. I could say much more upon this Head, but as it is my Design to be as short as may be convenient, and purposing chiefly in this Treatise to contribute such Experiments as may tend to the Improvement of *Plantations* of *Forest-Trees*, I shall not here enlarge upon *Soils*, but leave some Particulars for another Work, and sum up this Chapter, with two or three short Remarks, first that a *Preparation* of natural *Soils* answerable to the *Loam* or *Mother Earth* I have mention'd, is certainly the best for all Sorts of *Forest Trees* to be planted or sown in, if we design them to make good Timber; and if it is rather desired that such *Trees* should grow quick, and consequently be subject to decay early, or be prejudiced by *Blights*, I have made mention of such forcing *Composts* as
will

will set them forward in their *Growth*; but in my Opinion might be better employ'd in Gardens for the Production of short-liv'd *Plants*.



C H A P. IV.

Of TIMBER-TREES *and* UNDERWOOD,
and of Dressing and Cleaning of Woods.



AS there is nothing which contributes more to the *Honour*, *Beauty*, and *Welfare* of an Estate, than timely and sufficient *Plantations* of *Timber-Trees*, so I have chose to make the *propagating* of *Timber* my present Subject, and what I have said in the former Chapters may, I hope, contribute something towards our Success in the Undertaking, which will greatly contribute to the *Welfare* of every Man of Estate, if it be rightly understood: For altho' a Gentleman may perhaps be possess'd of a plentiful Fortune, suppose of 10000*l. per Annum*, he ought certainly to consider, that in process of Time he must provide Fortunes for Children out of that Estate, proportionably to his Honour, and again, his Children

must likewise make farther Provisions out of their several Parcels for their Issue, and so on, 'till at length, in six or seven Generations, we shall find the paternal Estate cut to Pieces into so many little Shares that there will hardly remain any Idea of the plentiful Stock of their Ancestors. Now I say, it would certainly be a Token of great Wisdom, for every Gentleman of Fortune, not only to consult all proper Means how to maintain the Bulk of his Estate entire, but continue it so in his Line, wisely guarded against the Hazards of Fortune, and even the natural Consequences I mention, by timely and necessary *Plantations* upon it, which would be so many Monuments of his Wisdom, and improving Treasuries for the good of his Posterity: And besides how beneficial would such *Plantations* be in Case of extraordinary Accidents, the Profuseness of a young Heir; the Discovery of Iron or Lead Mines, where Wood is of such extraordinary Use; or for the raising a Sum of Money upon any Emergency: I may add likewise, besides the private Interest of the Proprietor, it would be of general Use, and for the Nation's Good. How happily is *England* situated for Trade, what Benefits doth she receive from her Shipping, and therefore how profitable and useful is her *Timber*, which will yet become more valu-

valuable than ever, in that so much is continually cut down, and very little Care taken to make new Plantations for future Benefit. In a Word, the present State of *Timber* in *England* is so very inconsiderable in respect to the great Use made of it, and even that which remains growing is generally so much neglected in its Culture, that I hope some Direction for its Improvement, may not be unacceptable to the World.

The *Trees* which have been commonly propagated in *England*, for *Timber*, are the *Oak*, *Ash*, *Beech*, *Elm*, *Chesnut* and *Walnut*; these are of the upper Class, and we may add to them the *Ilex* or *Evergreen Oak*.

Of the lower Rank for *Underwood*, or more indifferent Use, are the *Hazels*, *Alders*, *Willows*, and some others of less Note.

The *Oak*, like all other *Plants*, has its Varieties, which are taken Notice of by the *Botanists*. I have observ'd about five Sorts in *England*; but I shall only recommend two Kinds of them to be planted for *Timber*. The first and best, in my Opinion, is the *upright Oak*, which grows more erect than any other; and the second is the *large spreading Oak*. We have many Instances of these Kinds, that have attain'd to such prodigious Greatness of Stature, that the *Timber* alone of one Tree has been

been sold for upward of 50 *l.* The *Oak* doth not only afford us the most serviceable *Timber* for Naval Architecture, but also for other Building. Its *Bark* is useful to *Tanners*, and the *Oak* is therefore cut down about *April*, when its *Bark* will peel. The *Acorns* are excellent Food for *Hogs*. This *Tree* delights in moist Ground of a good Depth, and will prosper in the coldest *Clay*; and, as *Mr. Evelyn* says, in *Gravel* also. It is noted likewise, that some *Oaks* having been sown in Hedge-Rows, have in the Space of thirty Years born a *Stem* or *Trunk* of a Foot Diameter. I have my self seen some seedling *Oaks* of twenty Years Growth of near that Substance, which had never been removed from the Place where they were sown; and I would advise, that every Plantation of *Oaks* be set from *Acorns* on the very Spot where they are to remain, and that we are likewise careful to chuse our *Acorns* from thriving vigorous Trees, for the Reasons I have before mention'd; the Distance between them ought to be about 33 Foot, and the said Space between the *Oaks* should be inter-sown or planted for *Underwood*, as I shall direct in the following Chapter.

Of the *Asb* there are two Sorts (falsely distinguish'd by the Names of *Male* and *Female*) which most deserve our Care
in

in that they are quick Growers, and rise to a prodigious Stature; besides these there are several other Kinds which are not worth our Notice. So that we ought to be careful in the Choice of the *Keys* or *Seeds* we design to sow, I have heard of *Ash-Trees* of 40 Years Growth from the *Seed*, that have been sold for Twenty five Pounds a Piece, which have grown on Plains in light *Earth*, not very deep: And Mr. *Evelyn* tells us, that one Person planted so much of this sort of *Timber* in his Lifetime as was valued worth Fifty thousand Pounds to be bought, which he justly remarks was very good Encouragement for a small and pleasant Industry. The *Keys* of this *Tree* are sowed about *October*, or else may be laid at that time in *Sand*, S. S. S. 'till the following Spring, and then sown. The *Timber* of the *Ash* is used for Ploughs and Axel Trees, Wheel Rings, Oars, and many other Mechanick Works; and if we propagate the *Ash* for *Underwood* only, it will turn to good Account for Hoops and Hop Poles. It may be cut about *February*.

The *Beech* delights in Mountains. In *Berkshire*, on the Chalky Hills, this Tree is very prosperous, and attains a considerable Stature; its *Timber* is used about Keils of Ships, and many Implements of Husbandry; it is the most common *Fire-wood* of

of *England*, especially about *London*, where Billets are usually burnt. Among the Coal Pits near *Newcastle upon Tyne* this Wood is much used to make Cart Ways, where for many Miles the Wheels of the Coal Waggon run upon it, which saves the Expence of Horse Flesh. This Wood will remain Sound for many Years in those marshy Lands, and is much esteem'd for that use. From the Seed, which is call'd *Beech Mast*, the *French* have long since drawn a very sweet Oil for eating, and lately the same has been practis'd in *England*. This Seed is likewise good to feed *Deer*, *Hogs* and *Fowl*; it may be sown about *October*, or put in Sand like the *Ash-Keys*, 'till Spring, the better to preserve it from *Vermin*. The Timber may be cut as the former.

We have many Sorts of *Elm* frequent in *England*, among which the *Vulgar* or *Mountain Elm*, is counted the best for Timber; I shall therefore recommend this Sort to the Planter, before all others. It may be propagated from the Seed, or *Samera*, which ripens and falls from it towards the latter End of *April*, or beginning of *May*, it must then be sown in fine sifted *Earth*, or what I call *Loam* in the foregoing Chapter. This Seminary must be made in a shady Place, and water'd from time to time, as the *Earth* begins to dry ;

dry; but besides this way of raising *Elms*, we may either propagate them from *Layers*, or *Suckers*; which last must be transplanted into *Beds* of fine *Earth* about the beginning of *March*, and kept well water'd. And so naturally is the *Elm* inclined to *Vegetation*, that I have heard some affirm, by sowing only the *Chips* of it in a Piece of plow'd Ground, they have rais'd a large Quantity of these Trees, which perhaps is not impossible; for I am assured in other Cases the *Buds* and *Leaves*, nay the very *fibrous Roots* of *Plants*, have been made to *vegetate* and produce Trees; as for Example, the single *Leaves* of *Oranges* have been made to strike Root, and produce *Branches*, *Leaves*, *Flowers*, and *Fruits*, by setting them half way in the *Earth*; and Mr. Fairchild of Hoxton has done the like with *Leaves* of the *Laurustinus*; however, let us raise our *Elms* which way we will, I shall advise that they be not planted out of their first *Beds* till they have stood there two Years; and then remove them to greater Distances from each other, and let them so remain 'till you plant them out for good, at about twenty Foot distance, in *Beds* of the sifted *Loam* directed; they grow quick, give a fine Shade, and afford valuable *Timber*; and if the *Witch Elm*, or *Dutch Elm*, be grafted upon this Kind, we may expect them

to

to make *Shoots* of above eight Foot long in one Year, and produce *Leaves* of an extraordinary Bigness, but the Wood will then be not so valuable. This Tree delights in an *Earth* competently fertile, neither too dry or sandy, or too cold and spungy; nor does it require a deep *Soil*. Let it be moderately refreshed with Water after *Planting*; and to keep the *Earth* about the *Roots* more open, and ready to receive Wet, cover the *Bed* it is *planted* in with rotted *Fern*, or other such like Matter. A Year or two after *Planting* you may refresh the young *Fibres* at the Extremities of the *Roots*, with some fine sifted *Earth*, or any one of the four first *Mixtures* mentioned in the foregoing Chapter, which will make the Tree shoot prodigiously, for that they contain *Vegetative Salts* in great Abundance. The *Timber* of this Tree is very serviceable, especially where it may always lye wet, it will last a long time; it is mightily used for Pipes, Pumps, Mills, and such Parts of Ships as lye constantly under Water; in a Word, it is almost of general Use. The Time of Felling it is from *November* to *February*.

We have two Kinds of *Chestnut* in *England*, that which bears edible *Fruit*, and the other which is call'd the *Horse-Chestnut*: The first of these Trees affords good *Timber*, and the latter is only desirable

firable for its pleasant Shade and beautiful Flowers: These *Trees* may both be raised by setting the *Nuts* about three Inches deep, in a light sandy *Soil*, towards the latter End of *February*, or beginning of *March*; but as the first only is useful, so I shall chuse to recommend it to the *Forester*. It delights in high Grounds remote from Water, which would spoil both its *Timber* and *Fruit*, and should indeed be set from the *Nut*, where it is always to remain, for it's apt to suffer greatly by removing, and spread too much in its Branches, when it loses its *Tap-root*, as all other *Tap-rooted Trees* are known to do. Its *Timber* is lasting if it be kept dry, and good for Building; and if it be planted for *Underwood*, it will afford excellent Poles and Stakes in nine Years after sowing, worth at least 10 s. per Hundred: The *Fruit* is sometimes used at our Tables, but more commonly given to *Deer* and other Cattle to fatten them. We may fell this *Tree* any time between *November* and *February*.

Among the *Botanists* there are reckon'd many sorts of *Walnuts*, two only of which I shall recommend to the *Planter*, viz. That with the soft *Shell* for the sake of the *Fruit*, and that with the black *Grain* for the Goodness of its *Timber*; they are both rais'd from the *Nuts* like the *Chestnut*, and should

should like them be sown in the Places where they are to remain. They are in great danger of Death, if they lose their *Tap-root*, but will thrive extreamly if they have Depth of Earth to strike into. The *Walnut* grows well in *Loam*, but will flourish also in *Chalk* or gravelly Soil, either on hilly Ground or in a Vale, which (I think) shews it to be a foreign Plant; for as I have observ'd, every Plant natural to *England*, has a Soil and *Exposure* peculiar to it self, and will scarce be made to grow in any other sort of Land or Situation. I have seen some *Walnut* Trees of forty Years *Growth* from the setting of the *Nuts*, that were valued at Five Pounds a Piece, and others standing by them, which were Trees planted at the same time (as the Owner himself informed me) that were not worth Thirty Shillings a Tree; and the like Observation has been made of other *Tap-rooted* Trees, but particularly the *Oak*; so great is the difference of *Growth* in downright rooted Plants, when they are set from *Acorns* or *Nuts*, and transplanted from the *Nursery*. The *Timber* is much used for Chairs, Cabinets, and Household Furniture; it is durable, and an Enemy to Worms, from its exceeding Bitterness. The *Nuts* yield abundance of Oil, and take Place among the best *Fruits* for the Table. This Tree may be cut down when

when the *Sap* is fix'd, i. e. from *November* to *February*.

The *Ilex*, or *Evergreen Oak*, is a *Plant* which produces admirable *Timber*, but is more particularly valuable for its *Knee Timber*, which is much tougher than that of our *English Oak*; it is in such Request among our *Ship-Carpenters*, that many *Ships* lading of it has been brought to *England*. The *Tree* is of quick *Growth*, and will attain to a very considerable *Height*, even to equal the tallest of the *English Oaks*, to which Perfections we may also add the Beauty of its *Leaves*, which are green all *Winter*.

That curious Gentleman *Robert Balle*, Esq; *F. R. S.* has, among other Improvements for the Good of his Country, propagated a large Parcel of these *Trees* at *Mamhead* in *Devonshire*, some of which have in about 30 Years Space, grown to a considerable Greatness of Stature. And it is to be wish'd that others would follow his Example in the Culture of this beautiful and profitable *Tree*. This Gentleman has rais'd some Thousands of them from *Acorns*, and transplanted them with Success and great Judgment; and to follow his Method, we must set the *Acorns* in *Loam* well sifted, in *Garden Pots* about *February*, and turn them out with the Earth about
E. their

their *Roots*, when they are two Years *Growth*, to transplant them afterwards at proper Distances, where they are to remain. These, like our *English Oaks*, are *Tap-rooted*, and therefore delight in deep *Soil*, they prosper in moist Land, rather on a Plain than on Hilly ground. If we consult the *Anatomy of Plants*, we ought to be very careful not to injure their *Tap-roots*, which are always answerable to the *leading Shoot* on the *Top* of the *Tree*; it is therefore reasonable to believe, that a *Plant* by losing of that *down-right Root*, is in Danger of losing also the *Top-Shoot*, which is fed from it. And altho' a *Tree* may strike fresh *Roots* after the *Amputation* of this *leading Root*, yet we may find by Experience, that the *Sap* will then push forth *Branches* in the Sides of the *Stem*, and discontinue its upright *Growth*. We may fell this *Tree* as we do the other *Oak*, for the sake of its *Bark*, the *Acorns* are good Food for *Deer*, and *Fowl*, which greatly delight in the Shelter of these *Trees*.

Having mention'd the most valuable *Trees* for *Timber*, I am in the next Place to take Notice of such others as will afford us the most valuable Crops of *Underwood*. I have already observ'd that the *Asb* and *Chestnut* may be order'd in this Manner, and bring considerable Returns to the Proprietor. The next which I shall

shall propose for this Use, is the *Hazel*, which if it be rightly managed will turn to good Account in *Coppices*. This *Plant* may be raised from the *Nuts* sown a little after they are ripe, in cold, dry, sandy Ground; but if the *Land* happens to be more inclin'd to *Clay*, plow it in *Autumn*, and let it mellow with the Frosts 'till *February* before you sow them. The Learned advise that after the *seedling Plants* are come up, they should be weeded or hough'd, so as to leave the *Plants* at three Foot distance from each other, and after three Years *Growth*, to cut them off within half a Foot of the *Ground*, by which Means they will be made to shoot forth many *Twiggs* from each *Stem*, which in nine Years time (*i. e.*) twelve from putting in *Seed*, will be fit to cut for Hop-Poles, Hoops, Fagots, and other such Uses; but if you rather chuse to use them for Hurdles, then they may be cut at five Years *Growth*. After the first cutting, you may cut again in seven or eight Years, if they like the *Ground*, for Poles and Hoops as before, and so continue to do from time to time, as you see Occasion. But these *Trees* may be likewise propagated by *Suckers*, which are frequently found growing about the *Roots* of old *Trees*, but are not very certain in their *Growth*, after transplanting, unless they are carefully water'd till they

have struck good Roots. In a Plantation of this Kind, which may be made at any time between *October* and the beginning of *March*, when the Weather is open, these *Suckers* must be set at three Foot distance, and cut down within half a Foot of the Ground about the beginning of *April* following; or they may also be propagated by laying down their *Branches* or *Twiggs* about three Inches in the Earth, which will furnish us with abundance of young *Plants* in a Year's time. This Work must be done about *October*.

The next I shall treat of is the *Willow*, an *Amphibious Plant*. There are many Sorts of it distinguish'd by the *Botanists*, which should I mention here by their several Names, I might perhaps perplex my Reader, and shall therefore only mention them as two Kinds, first the *Oziers*, which afford *Twigs* for the Basket-makers, and binding Rods, and secondly the *Tree kind*, or *Withy*.

First then the *Oziers*, which afford us *Twigg*s for *Wicker-works*, are raised by setting *Slips* of two or three Years Growth about a Foot deep in marshy or wet Ground, at two Foot distance from each other; this Work is best done about the middle of *February*, if the Weather be open; the second Year after *Planting* they
may

may have their *Tops* cut off, leaving their *Stems* about a Foot above Ground, so will they put forth *Twiggs* which must be again cut down early the *Spring* following, which *Work* being continued every *Year*, the Owner will find considerable Advantage from such *Plantations*. An Acre of Ground thus managed will turn to better *Account* than the like Parcel of *Land* sown with *Wheat* or any Grain whatever, and it may be for this Reason that some would pretend to raise vast Sums of Money by planting several thousand *Acres* in this way, as I have been informed several Gentlemen propose to do. It is certain at present *Oziers* turn to good *Account*, but I am of Opinion that if we had only as many more planted as we have now growing in *England*, the *Markets* would be over-stock'd with them, and their Price would fall. And besides, every *Ground*, as I have said before, will not produce them. In this Treatise may be found the several sorts of *Trees* for Use, the different *Lands* they require for their Welfare, and the vast Returns they would bring in, if large *Plantations* were made of the several kinds, by a discreet Planter, who knew how to allot to every *Soil* the *Tree* proper for it. But I shall proceed now to give some Directions for the propagating of the large *Withy* or

Tree kind, which will also in a few Years time, afford profitable, though not very durable *Wood*. Its Use is for *Perches*, *Rake-tales*, and such like. *Branches* of three or four Years *Growth*, about twelve Foot in length, being set near two Foot deep in the Ground in *February*, about fifteen Foot asunder, will soon make handsome *Trees*, which will bear *Lopping* every fifth Year; these love wet *Ground*, and will not be made to prosper in any other. I might add, that this, and several other sorts of *Willow* might be rais'd from *Seeds* which grow on the *Female Juli*, if we sow them in wet boggy Ground, as is practised in *France* and other Countries.

The *Alder*, more than all other *Trees* beside, delights in *Boggy Places*, and may be cultivated in the coldest wet Grounds. This *Amphibious Plant* is best raised from *Truncheons* or *Branches* about three Foot in length, setting them about *February* a Foot deep in the Ground; they thrive exceedingly on the Banks of Rivers, and will make such *Shoots* in three or four Years time, as may be then cut and sold to good Advantage for *Poles* and other Uses; it is a lasting *Wood* if it lie continually under Water, and if we believe *Jos. Bauhinus*, will, in course of time, turn to *Stone*, but if it be exposed so as to be sometimes wet and sometimes dry, it is of

no Duration. This *Plant* is also raised from *Seeds* in *Flanders*, where they make great Profit of it.

Thus have I given a short View of the several sorts of *Trees* which I would recommend to be planted for *Timber* and *Underwood*; I have endeavour'd to ascertain the several *Soils* and *Situations* proper to each of them, which I hope may be of some use, for that in the Quantity of an Acre of Ground we frequently find *Earths* of very different *Qualities*, to any of which, one or other of the *Trees* I have named may be allotted. And now as I suppose, that every Gentleman who is about to make a *Plantation*, will certainly make it upon his own *Land*, or at least on such a Parcel of Ground as will by right be continued after his Demise in his Family, it is reasonable enough to believe, that such Persons may have upon their Estates some *Timber* already growing, some *Trees* prospering, others decaying: Now I say it would surely be good Husbandry to fell such *Trees* as began to decline, either from too great Age, or too near Neighbourhood with others.

To the first, I can pretend to give no other Direction than to have them cut down at the proper *Season*; but to the second, (*i. e.*) where they grow too close together, leave the most thriving *Trees* to grow and improve themselves, and cut up

the others *Root* and *Branch*, leaving convenient distances between the *Trees* which remain standing, which ought to be only such as have their *Tops* or leading *Shoots* prosperous and in good order. Our Countryman *Lawson*, who had for above 40 Years study'd the Improvement and Management of *Woods* and *Timber-Trees*, has given us a very good Lesson concerning the *dressing* and *cleaning* of *Woods*, which being short, and much to the purpose, I shall insert in his own Words.

“ How many *Forrests* and *Woods*,
 “ wherein you shall have for one *thriving*
 “ *Tree*, four (nay sometimes twenty four)
 “ *evil thriving*, rotten and dying *Trees*,
 “ even while they live; and instead of
 “ *Trees*, thousands of *Busbes* and *Shrubs*!
 “ What *Rottenness*, what *Hollowness*, what
 “ *dead Arms*, *wither'd Tops*, *curtail'd Trunks*,
 “ what loads of *Moss*, *drooping Boughs*,
 “ and *dying Branches* shall you see every
 “ where, and those that are in this sort,
 “ are in a manner all unprofitable *Boughs*,
 “ canker'd *Arms*, crooked little and short
 “ *Boals*! What an infinite Number of
 “ *Busbes*, *Shrubs*, and *Skrags* of *Hafels*,
 “ *Thorns*, and other unprofitable *Wood*,
 “ which might be brought by dressing to
 “ become great and goodly *Trees*! Con-
 “ sider now the Cause.

“ The

“ The *lesser Wood* hath been spoiled with
 “ careles, unskilful, and untimely *Stow-*
 “ *ing*; and much also of the *great Wood*.
 “ The *greater Trees* at their first rising
 “ have fill’d and overladen themselves
 “ with a Number of *wastful Boughs* and
 “ *Suckers*, which have not only drawn the
 “ *Sap* from the *Boal*, but also have made
 “ it knotty, and themselves and the *Boal*
 “ mossy for want of *Dressing*; whereas,
 “ if in the prime of *Growth* they had been
 “ taken away close all but one *Top*, and
 “ clean by the *Bulk*, the Strength of all
 “ the *Sap* should have gone to the *Bulk*,
 “ and so he would have recover’d and co-
 “ ver’d his *Knots*, and have put forth a
 “ fair, long, and strait *Body* for *Timber*,
 “ profitable, huge, great of *Bulk*, and of
 “ infinite Last.

“ If all *Timber Trees* were such (will
 “ some say) how should we have crooked
 “ Wood for *Wheels*, *Coorbs*, &c?

“ *Answer*, Drefs all you can, and there
 “ will be enough *crooked* for those Uses.

“ More than this, in most Places they
 “ grow so thick, that neither themselves
 “ nor *Earth*, nor any thing under or near
 “ them can thrive, nor *Sun* nor *Rain* nor
 “ *Air* can come at them.

“ I see a Number of *Hags*, where out
 “ of one *Root* you shall see three or four
 “ (nay more, such is Men’s unskilful
 “ greed-

“greediness, who desiring many, have
 “none good) pretty Oaks or Asbes strait
 “and tall; because the Root at the first
 “Shoot gives Sap amain: But if One only
 “of them might be suffer’d to grow, and
 “that well and cleanly pruned all to his
 “very Top, what a Tree should we have
 “in time, and we see by those Roots con-
 “tinually and plentifully springing, not-
 “withstanding so deadly wounded, what
 “a Commodity should arise to the Owner
 “and the Commonwealth, if Wood were
 “cherish’d and orderly dress’d. The waste
 “Boughs closely and skilfully taken away,
 “would give us store of Fences and Fuel,
 “and the Bulk of the Tree in time would
 “grow of huge length and bigness.

And now from what has been said relating
 to the Cleansing, Dressing and Pruning of
 Woods, two Things naturally offer to the
 Benefit of the Proprietors: First, That the
 Profit which will accrue from the Fall of
 distemper’d and decaying Timber and Under-
 wood, will afford a Sum of Money sufficient
 to make large Plantations: And, Secondly,
 the Trees which remain standing after this
 Weeding is perform’d, will grow and pro-
 sper exceedingly, by being then at liberty
 to receive a greater quantity of Nourishment
 from the Earth, and by enjoying such a
 Proportion of Air as their Age and Strength
 will require.



C H A P. V.

The Method of Planting an Acre of Ground with TIMBER-TREES and UNDERWOOD; with the Profits which will arise from that Plantation in Nine Years, Seventeen Years, and Twenty five Years after Planting.



IF we consider the many Advantages this Nation in general has receiv'd from the *Timber* of its own *Growth*, how by its powerful Fleets (the Off spring of its Oaks) *England* has gain'd the Dominion of the Seas, and now enjoys the Benefits of an Universal Commerce; without mentioning the Advantages it affords to every particular Owner of it: It is wonderful to me, that the propagating of *Timber*, a Commodity so valuable and ornamental, should be so little encouraged now-a-days among us, when our natural *Store* is so near being consumed, that to all appearance in a few Years time, we may be forced to seek it in foreign Countries.

Now

Now, if I may be allow'd to judge in this Case, I conceive that the present Decay of our *Timber* may depend upon one or other of the following Reasons.

First, That the making *New Plantations* will be an *immediate Expence* to us:
Or,

Secondly, that we cannot hope to reap any *Profit* to our selves from such *Plantations* as might be made in our *times*; or else,

Thirdly, That many Gentlemen who are already Masters of *Woods*, receive little *Profit* from them for want of due Care and Management.

The first and last of these Objections are answer'd, I think, in the foregoing Chapter, where the Advantages of Cleaning and Dressing of *Woods* are set down; in that not only *Money* is provided thereby to answer the Expence of *New Plantations*, but also the standing *Trees* will be put into a thriving Condition.

It remains now for me to answer the other Objection, *viz.* That we cannot propose to reap any *Profit* to our selves from the *Plantations* which might be made by us. But I hope the Method which I shall herein propose, will give full Satisfaction to that Point.

For which end I would recommend that every *Plantation* which shall be made
either

either in this present Age or hereafter, may consist partly of *Forrest* or *Timber-Trees*, and partly of *Coppice* or *Underwood*.

Now the *Underwood* which I propose to be planted and intermix'd among the *Timber-Trees* or *Standards*, may be cut in eight or nine Years after Planting, and so from time to time every eighth Year will produce a very considerable Return, as will appear hereafter in a stated Account.

Secondly, The *Plants* for *Underwood*, which will encompass on every Side the young *Timber-Trees*, will not only shelter them from Blasts of Wind, which might be hurtful to them, but will also (by keeping off the circum-ambient Air) draw them into strait and tall *Trees*, 'till they can shift for themselves, and are strong enough to bear the Severity of the Weather.

But to proceed, let us make choice of such Ground to plant upon, as may not be thought proper for Corn, or at least such as will yield only a poor Crop of Grain. I suppose such Land will be worth about five Shillings *per Acre* by the Year, and by all Means let it be, if possible, near some Navigable River, for the greater Ease and Cheapness of Carriage. Now as I have before hinted, that as the Land is, so must we allot the proper *Plant* for it,

I only wish it may be deep enough to nourish the *Oak* and *Ilex*, which are *Tap-rooted Plants*, and therefore delight in deep Soil.

Supposing then we are fortunate enough to meet with an Acre of Ground proper for *Oaks*, we must first encompass it with a good Fence, and then either dig or plough the Land at a proper Season, to lie Fallow for some time, 'till the *Turf* be mellow'd and fit for our Purpose.

An Acre of Ground contains 160 Square Perch or Rods, each Rod being 16 Foot and a half. This quantity of Land must be fenced about with a Ditch six Foot wide, three Rows of *Quicksetts* planted upon the Sides of its Banks at a Foot distance from each other, and a dry Hedge on the Top.

A Labouring Man working for *one Shilling per diem*, may prepare nine Foot of the Ditch in length in one Day, and cut Stakes and Bushes, and make about five Rod of the dry Hedge in a Day, so that he may prepare the Hedge, make the Ditch, plant three Rows of *Quicksetts*, and pay the Expence of them after the Rate of *two Shillings per Hundred*, for about *three Shillings* the Perch, so will the whole Charge of making a Fence about an Acre of Land be *Seven Pounds Sixteen Shillings*, but we may fence in two Acres of Land after the

the same Rate, being 32 Perch long, and ten Perch wide, for *nine Pounds six Shillings*, for the same Reason that if *one Hundred Hurdles* will hold a *thousand Sheep*, *two Hurdles* added to them will fold *two thousand Sheep*, that is, if the Sheep Pen has 49 *Hurdles* on each Side, and *one* at each End, it just contains half the Quantity of Ground that it would do, if it had the Breadth of *two Hurdles* at the Ends. N. B. A Pole or Perch planted with three Rows of *Quicksetts* will take up about 48 *Plants*, so will there be required to plant about an Acre 2496 *Plants*.

Thus having provided a good Fence to defend our young *Plantation* from Dangers of Cattle and other Inconveniencies, the next thing to be done, is to prepare the enclosed Land for *Planting*, which may be perform'd several Ways.

Supposing the Land to be encumber'd in the worst Manner with *Busbes*, *Whinns*, or *Furze*, &c. so that a Plow cannot be used upon it, then may it be dug and clean'd for about *six Pence* the square Perch; the whole Acre, if it be dug at that rate, will come to *four Pounds*. But if the Ground should happen to be in that State that a Plough can work in it, an Acre may be plow'd for about *twelve Shillings*.

The Land being thus prepared, one *Acre* will contain forty Plants of *Oak* at 33 Foot distance, and as I have hinted before, that all *tap-rooted* Trees are endanger'd by removing, and that when they are *transplanted* they seldom come to the Perfection of those which are raised from *Seed*, and remain always in the same place; I shall therefore recommend that forty *Beds* of good Natural Soil be prepared on the *Acre* of Land at the aforesaid distance of 33 Foot from each other, and that in each *Bed* five or six *Acorns* be planted about four Inches deep in *February*, which Season I chuse rather than *Autumn*, because the over-wet of some Winters might rot the Seeds, or *Mice*, *Squirrels*, and such like Animals, might destroy them.

These forty *Beds* may be well prepared by one Man in three Days, at *one Shilling per Diem*, two hundred *Acorns* may be worth about *six Pence*, and the planting of them be worth about *six Pence* more, which makes in all *four Shillings*.

The *Acre* of Land being thus sown with *Oaks*, we may interrow the remaining part of the Ground with *Ash-Keys* which have been kept the Winter in dry Sand, these will turn to very good account for *Underwood*, and the Land is already dug or plow'd for our purpose.

One Bushel of *Ash Keys* may be worth *Two Shillings*, the Sowing them *One Shilling*, and the Harrowing the Ground after Sowing will be worth *Five Shillings* more, in all *Eight Shillings*. When the *Oaks* and *Ashes* are come up, they must be hough'd and cleans'd from Weeds. One Man may do this Work in three Days, leaving the Distance of three Foot between the *Ashes* Plants; the Expence of this weeding will be *Three Shillings*; for I rate a Man's Work at *One Shilling per Diem*, because I suppose such Plantations will only be made in those Places where Land is cheap, and consequently every thing else is valuable in Proportion.

The second Year we may draw some of the young *Oaks*, leaving a single Plant in each Bed; now it is likely that all the *Acorns* which were put into the Ground, may not come up, therefore I would advise, as the surest way to have our Expectations answered from the *Seeds* we sow, to try the Goodness of them before they are sown, which may be done by putting them in Water, and planting only those which sink quickly to the Bottom.

An Acre of Land thus fenced, dug, cleansed and planted, comes to *Twelve Pounds and Eleven Shillings*, and two Acres dressed and planted in like manner will cost *Eighteen Pounds Sixteen Shillings*.

But if the Land be clean enough to admit the Plough, then the Charge of *fencing*, *planting*, &c. of one Acre, will be *Nine Pounds three Shillings*, and the Expence of *two Acres* dress'd in the same Manner, *Twelve Pounds*.

In nine Years after this *Plantation* has been made, the *Asb Plants* will be fit to cut for *Poles* or *Hoops*, worth upon the Place *Ten Shillings per Hundred*: If the *Plants* stand at a Yard distance from each other, the *Acre* of Land will then contain about *4800 Plants*, which may be sold for *Twenty four Pounds*. The *Quickset Fence* must likewise be cut down, and will yield about ten Load of *Bushes*, we will suppose them only worth *Five Shillings per Load*; altho' near *London* they sell for four times as much.

The whole Charge of *fencing*, *digging*, and *planting* an *Acre* of Land with *Oaks* for *Timber*, and *Asb* for *Underwood*, with the Profit of the first nine Years *Growth*, may be seen in the following Account.

Account

*Account of the Nine Tears after Planting,
or First Cutting.*

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Expence of fencing, digging and sowing an Acre of Land for <i>Timber</i> and <i>Underwood</i> —	12	11	0
Interest of the aforſaid Sum for 9 Years, at 5 per Cent. —————	05	12	6
Rent of the Land for 9 Years, at 5 s. per Acre per Annum, —————	02	05	0
For cutting 4800 <i>Aſhen Poles</i> , one Man 5 Days at 5 s. per Diem, —————	00	05	0
Nine Years Expence, —————	20	13	6

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Received for 4800 <i>Aſhen Poles</i> , at 10 s. per Hundred, —————	24	00	0
Received more for 10 Load of Buſhes, at 5 s. per Load, —————	02	10	0
Nine Years Gain, —————	26	10	0
Nine Years Expence, —————	20	13	6
Neat Profit of the <i>Plantation</i> in 9 Years —	05	16	6

After this Cutting we may cut again in
eight Years time, and expect 4 or 5 Poles on
each *Aſhen Plant*.

*Account of the Seventeen Years after Planting,
or Second Cutting.*

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Rent of the Land for 8 Years, at 5 <i>s.</i> per Annum, _____	02	00	0
Expence of Cutting 19200 <i>Ashen Poles</i> , (reckoning four to each Plant) one Man 20 Days, at 1 <i>s.</i> per Diem, _____	01	00	0
Seventeen Years Expence, _____	03	00	0

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Received for 19200 <i>Ashen Poles</i> , at 10 <i>s.</i> per Hundred, _____	096	00	0
Received more for 10 Load of Bushes, at 5 <i>s.</i> per Load, _____	002	10	0
Gain'd clear of Expences by the first Cutting, _____	005	16	6
The Interest which might be gain'd on 5 <i>l.</i> 16 <i>s.</i> 6 <i>d.</i> in eight Years at 5 per Cent. is about _____	002	06	0
Seventeen Years Gain, _____	106	12	6
Seventeen Years Expence, _____	003	00	0

Neat Profit of the Plantation in 17 Years after Planting, _____ } 103 12 6

*Account of Twenty five Years after Planting,
or Third Cutting.*

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Rent for 8 Years, at 5 <i>s.</i> the <i>Acre per Annum</i> ,	02	00	0
Expence of Cutting 19200 <i>Ashen Poles</i> , one	01	00	0
Man 20 Days at 1 <i>s.</i> per <i>Diem</i> ,			
Twenty five Years Expence	03	00	0

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Receiv'd for 19200 <i>Ashen Poles</i> , at 10 <i>s.</i> per	096	00	0
Hundred,			
Receiv'd for ten Load of Bushes, at 5 <i>s.</i> per	002	10	0
Load,			
Gain'd clear of Expences by the second	103	12	6
Cutting,			
The Interest which might be gain'd on the	041	08	0
aforesaid Sum in 8 Years at 5 per Cent. —			
Twenty five Years Gain,	243	10	6
Twenty five Years Expence,	003	00	0
Neat Profit of the Plantation in 25 Years, —	240	10	6

To which we may add the Value of the forty Oaks then growing in the said Plantation, worth 10 *s.* per Tree,

In all

260 10 6

By the foregoing Account we find that an *Acre* of Land, planted as I direct, may produce the Sum of 260 *l.* 10 *s.* 6 *d.* in the space

space of *Twenty five Years*, clear of all Expenses of Planting, and Value of the Land, and the *Oaks* if they are still continued growing, will yet produce a more considerable return to the *Owner*, or his *Family* after him.

By the *Example* of this *Plantation*, others may be made with different Kinds of *Trees*; and if the Planter has due regard to the *Soils* proper to what he designs to plant, he may expect a Return for his Labour and Industry answerable to what I have mention'd in this Account, and if his Ground happens to be already *fenced* for his Purpose, and is capable of admitting a Plough upon it, he may yet reap a much more considerable Profit from his *Plantation*.

I shall now conclude this Treatise with acquainting my Reader with what he is to expect in the Second Part; I purpose in that to treat of every thing (so far as my Experience will permit) which may tend to the Improvement of the *Parterre* or *Flower-Garden*; wherein I shall first give the Explanation of a new Invention, for the more ready designing and laying out of *Garden-Plats*, by which *Instrument* it will be possible to produce more Variety of *Figures* for *Gardens* in an Hour's time, than we can find in all the printed Books now extant: I shall then give my Reader the best Methods of raising and propagating all sorts of Flowers: And lastly, endeavour
to

to prescribe such Rules for the adorning of *Gardens*, as may make them delightful in every Month of the Year. And now that this Work may be the more compleat, I desire all curious Gentlemen will communicate to me what new Experiments they have made in *Planting and Gardening*, directed to the Publisher of this First Part; which Favours I shall gratefully acknowledge, and insert in the succeeding Sheets.

F I N I S.



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T. W. A. S.



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——— *Hortos quæ Cura Colendi.*
Ornaret ——— *Virg. Georg.*

PART II.

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ROYAL SOCIETY.

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THE SECOND EDITION.

By RICHARD BRADLEY, Fellow of the
ROYAL SOCIETY.

Printed by J. KNEELAND, at the Gunpowder Square, in the City of London.



To the Right Honourable

Thomas Lord Parker,

Baron of MACKLESFIELD in the
County Palatine of *Chester*, Lord
Chief Justice of ENGLAND, and
one of His Majesty's most Ho-
nourable Privy-Council.

My Lord,



OUR Lordship ha-
ving been pleas'd to
think favourable of
my First Book upon this Sub-
ject,

DEDICATION.

ject, I have presum'd to Inscribe this Part to Y O U, not without Belief that the World will be inclined to hope better from me, when they find my Studies influenced by so Great a Patronage.

IT is not only from Your Lordship's Inclination to the Subject of these Papers, of which none can be a better Judge than Your Self, that you are not offended with any thing of this kind, but that you know a due Cultivation of these Innocent Pleasures, will both improve our Understanding, and better our Morals.

The

DEDICATION.

The Temptations to Vice are always taken off in Proportion to the Employments of those Minutes which are by many spent in Idlenefs ; and the vitious and litigious Part of Mankind, whom Your Lordship's just Awards correct, would be much lessened, if Recreations of this Nature took up more of the Time of those who have an Opportunity of spending it in Gardens.

I avoid, my Lord, speaking in the common Way of Dedicators, being certain that nothing can more offend **YOU**, than a Recital of Your own Praises. If any thing

DEDICATION.

thing in these Papers can be
but the Entertainment of one
half Hour of Your Lordship's
in Your Retirement from the
Sphere of Publick Business,
it is the utmost Ambition of,

May it please your Lordship,

Your Lordship's

most Devoted, Humble Servant,

R. BRADLEY,



PREFACE.

TH E first Part of my Book having met with a favourable Reception from the Publick, and many Persons of Quality and Honour having been pleas'd to send me their Observations on this Subject, my first Acknowledgment is due to them ; and as their Remarks are very Curious, I promise to insert them in proper Places of this Work. Information is always welcome to me, and Cavils I shall not mind, tho I have not a few from the Quarter from whence I presaged, but have had the Good Luck to have the most Objections, from the most Ignorant.

My Design in this Second Part I will propose to my Reader in the same manner as I did in the former, and give

P R E F A C E.

him a general View of what he is to expect in the ensuing Sheets.

I N the first Place, my Reader will find the Description, and Use of my Invention for the more speedy Drawing or Designing of Garden-Platts ; and I am of Opinion, that when he once understands the right Use of it, I shall have his Thanks for that Discovery.

I have then given the best Method of Propagating and Introducing all the Ornaments of a Garden, as *Evergreens, Flowering Shrubs, Perennial, and Annual Flowers, and Bulbous-rooted Plants*, with their different Heights, Beauties, and Times of Flowering. By these Means a Garden may have always something entertaining in it, while a successive Scene of Delight is kept up by a due Regard to the peculiar Seasons of each Flower.

T H E R E is one Particular which relates to this Subject that could be nowhere so well introduced as here, *i. e.*
the

P R E F A C E.

the general Irregularity and Inconsistency of dead Ornaments in Gardens. I shall only hint at a few. *Iron-Works* are often placed where there are no Prospects. We see many large *Statues* in small Gardens, and a few small ones in large Gardens. The misplacing of Ornaments in Gardens is another Fault, which is sometimes so absurd as to equal the mismanag'd Picture in *Horace*.

Delphinum Silvis appingit, *Fluctibus*
Aprum.

T H U S we view a *Neptune* in a dry *Walk*, and a *Vulcan* in the Middle of a *Fountain*.

T H E S E are so shocking to common Sense, that I think it sufficient only to take a cursory Notice of them, to make them avoided.

C O N-



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Fig. H



Fig. H



Fig I

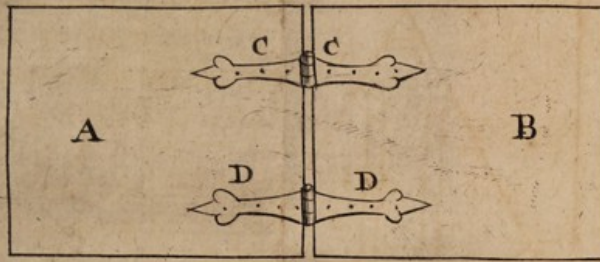


Fig II

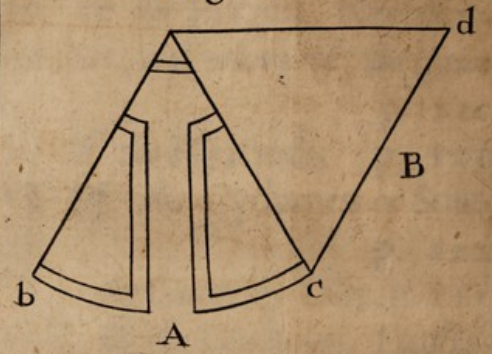
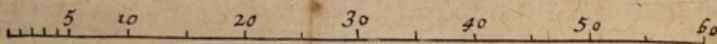


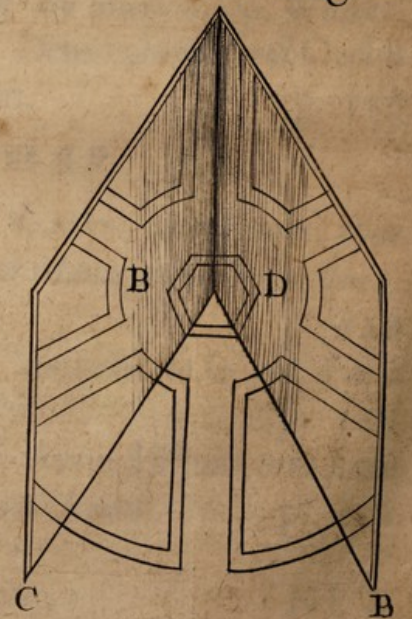
Fig III



A

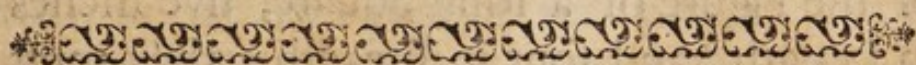


A Fig III





NEW
IMPROVEMENTS
OF
Planting and Gardening,
BOTH
Philosophical and Practical.



CHAP. I.

Description and Use of a NEW INVENTION for the more speedy Designing of GARDEN-PLATS; whereby we may produce more Variety of Figures in an Hour's Time, than are to be found in all the Books of Gardening now extant.



SINCE the Instrument I now design to treat of has afforded some Pleasure to many of my Acquaintance, I have been easily perswaded to make it publick. It is of that *Nature*, that the best Designers or

PART II.

B

Draughts

Draughts-Men may improve and help their Fancies by it, and may with more Certainty hit the Humour of those Gentlemen they are to work for, without being at the Trouble of making many Varieties of *Figures* or *Garden-Platts*, which will lose time, and cause an unnecessary Expence, which frequently discourages Gentlemen from making up their Gardens. In short, the Charge of the *Instrument* is so small, and its Use so delightful and profitable, that I doubt not its favourable Reception in the World.

BUT to proceed : We must chuse two Pieces of *Looking-glass* of equal Bigness, of the Figure of a long Square, five Inches in Length, and four in Breadth ; they must be cover'd on the Back with Paper or Silk, to prevent rubbing off the Silver, which would else be too apt to crack off by frequent Use. This Covering for the Back of the *Glasses* must be so put on, that nothing of it may appear about the Edges on the bright Side.

THE *Glasses* being thus prepared, they must be laid Face to Face, and hinged together, so that they may be made to open and shut at Pleasure, like the Leaves of a Book ; as for *Example*, the first *Figure* shows us the Back of the two *Glasses*, *A* and *B*, join'd together by Hinges *CC* and *DD*, so that they may be open'd or shut to any part

PLANTING *and* GARDENING. 3

part of a Circle; and now the *Glasses* being thus fitted for our purpose, I shall proceed to explain the Use of them.

DRAW a large Circle upon Paper, divide it into three, four, five, six, seven or eight equal Parts, which being done, we may draw in every one of the Divisions, a Figure at our Pleasure, either for *Garden-Platts* or *Fortifications*; as for *Example*, in the second *Figure* we see a Circle divided into six Parts, and upon the Division mark'd *A* is drawn part of a Design for a *Garden*. Now to see that Design entire, which is yet confused, we must place our *Glasses* upon the Paper, and open them to the sixth part of the Circle, (*i.e.*) one of them must stand upon the Line *b* to the Center, and the other must be open'd exactly to the Point *c*, so shall we discover an entire *Garden-Platt* in a Circular Form, (if we look into the *Glasses*) divided into six Parts, with as many Walks leading to the Center, where we shall find a *Bason* of an *Hexagonal Figure*.

WE may more plainly see how the *Glasses* ought to be placed upon the Design, by viewing the third *Figure*. The Line *A* where the *Glasses* join, stands immediately over the Center of the Circle. the Glas *B* stands upon the Line drawn from the Center to the Point *C*, and the Glas *D* stands upon the Line leading

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from the Center to the Point *E*; the *Glasses*
being thus placed, cannot fail to produce
the compleat *Figure* we look for; and so
whatever equal part of a Circle you mark
out, let the Line *A* stand always upon
the Center, and open your *Glasses* to the
Division you have made with your Com-
passes. If, instead of a Circle, you would
have the Figure of a *Hexagon*, draw a
straight Line with a Pen from the Point *c*
to the Point *d* in the second *Figure*, and
by placing the *Glasses* as before, you will
have the *Figure* desired.

So likewise a *Pentagon* may be perfect-
ly represented, by finding the fifth Part of
a Circle, and placing the *Glasses* upon the
Out-lines of it; and the fourth Part of a
Circle will likewise produce a Square by
means of the *Glasses*, or by the same Rule,
will give us any *Figure* of equal Sides. I
easily suppose that a curious Person by a
little Practice with these *Glasses* may make
many Improvements with them, which
perhaps I may not have yet discover'd, or
have, for Brevity sake, omitted to describe.

It next follows that I explain how, by
these *Glasses*, we may from the Figure of
a *Circle* drawn upon Paper, make an *Oval*;
and also by the same Rule represent a long
Square from a perfect *Square*. To do this,
open the *Glasses* and fix them to an exact
Square, place them over a Circle and move
them

them to and fro 'till you see the Representation of the Oval Figure you like best; and so having the Glasses fix'd, in like manner move them over a square Piece of Work 'till you find the Figure you desire of a long *Square*. In these Tryals you will meet with many Varieties of Designs. As for Instance, the fourth *Figure*, altho' it seems to contain but a confused Representation, may be varied into above 200 different Representations by moving the *Glasses* over it, which are open'd and fix'd to an exact *Square*. In a Word, from the most trifling Designs, we may by this Means produce some Thousands of good Draughts.

BUT that the fourth *Figure* may yet be more intelligible and useful, I have drawn on every Side of it a Scale divided into equal Parts, by which Means we may ascertain the just Proportion of any Design we shall meet with in it.

I have also mark'd every side of the fourth *Figure* with a Letter, as *A, B, C, D*, the better to inform my Reader of the Use of the Invention, and put him in the way to find out every Design contain'd in that *Figure*.

Example I. TURN the Side *A* to any certain Point, either to the *North*, or to the Window of your Room, and when you have open'd your *Glasses* to an exact *Square*, set one of them on the Line of

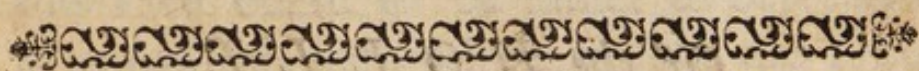
6 *New IMPROVEMENTS of*

the side *D*, and the other on the Line of the side *C*, you will then have a square *Figure* four times as big as the engrav'd Design in the Plate; but if that Representation should not be agreeable, move the *Glasses* (still open'd to a *Square*) to the Number 5, of the side *D*, so will one of them be parellel to *D*, and the other stand upon the Line of the side *C*, your first Design will then be vary'd; and so by moving your *Glasses* in like manner from Point to Point, the Draughts will differ every Variation of the *Glasses*, 'till you have discover'd at least fifty Plans differing from one another.

Example II. TURN the side mark'd *B*, of the fourth *Figure*, to the same Point where *A* was before, and by moving your *Glasses* as you did in the former Example, you will discover as great a Variety of Designs as had been observ'd in the foregoing Experiment; then turn the side *C* to the place of *B*, and managing the *Glasses* in the manner I have directed in the first Example, you may have a great Variety of different Plans, which were not in the former Tryals; and the fourth side *D* must be managed in the same Manner with the others; so that from one Plan alone, not exceeding the Bigness of a Man's Hand, we may vary the *Figure* at least two hundred times, and so consequently from five *Figures* of the like Nature, we might shew
about

about a thousand several sorts of *Garden Platts*, and if it should happen that the Reader has any Number of Plans for *Parterres* or *Wilderness* Works by him, he may by this Method alter them at his Pleasure, and produce such innumerable Varieties, that it is not possible the most able Designer could ever have contrived.

AND seeing I have given such Directions in this Chapter, as I hope may inform the Curious of the Use of this new-invented Instrument, I think it may not be improper to advertise that the Publisher of these Papers is provided with *Glasses* of several Sizes ready fitted up for the Experiment at the following Prices; the small sort at three Shillings, and the other at five Shillings.



CHAP. II.

Of EVER-GREENS, their Culture and Use in GARDENS.

I Am in this Chapter to speak of the Culture of *Ever-Greens*, and their Use in Gardens. They are so ornamental where they are rightly managed, that I think no Garden can be compleat without 'em; they make beautiful and useful Hedges, and in single *Plants*, when they have been order'd by a curious and skilful Hand,

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they are so many growing Monuments of
the Art of Gardening. But to come to
Particulars, the *Ever-Greens*, which are
commonly propagated by the Gardeners,
are *Hollys*, *Yews*, the *Laurus-tinus*, *Bay*,
Box, *Laurel*, *Philarea*, *Alaternus*, *Juni-*
per, *Piracantha*, *Ilex*, *Arbutus*, and the
Ever-Green Privet. These have every
one their proper Places in Gardens, with
respect to their several Stages of *Growth*.
Some of them may be kept in Shape and
Compass with very little Trouble, while
others are too apt to out-grow the Care
of the Gardener, let him be never so
vigilant.

S E C T. I.

Of the H O L L Y.

TO consider these singly, I shall begin
with the *Holly*, which is, in my Opi-
nion, the most beautiful of all the rest. It
will grow to a very large Tree. I have
seen *Plants* of this Kind above sixty Foot
high in the *Holly Walk* near *Frensham* in
Surry, in which Place they delight ex-
treamly; the *Soil* is dry, rather inclining
to *Sand* than *Loam*: The *Holly* is a *Tap-*
rooted Plant, and therefore does not love
transplanting, unless the Roots have been
often prun'd in the Nursery, by digging
about

about it, which a careful Gardener will frequently do, that they may rise with a Ball of Earth when they are to be removed, but yet notwithstanding all his Care, it is adviseable to plant them in Baskets so soon as they are taken up, that the Earth which riseth with the *Roots*, may not break or fall from them in the Carriage from one Place to another: The Baskets they are planted in, must be set with them in the Places where they are to remain, and will rot in a few Months, and not any ways hinder the Trees from drawing the Nourishment they require from the adjacent Earth, which should be natural Soil (without the least Mixture of *Dung*) and cannot well be too barren. The Removal of this Tree ought to be rather in *September* than towards the Spring, to save the Trouble of Watering, which oftentimes puts the Gardener to great Charge and Inconveniency. The *Berries* of this *Plant* when they are ripe should be gather'd, and after being laid to sweat for some time, may be put in *Sand* or *Earth*, *S. S. S.* till the *Autumn* following, when they may be sown in the Nursery Beds. Now as these will lie in the Ground for a long time before they begin to spring, I would advise the following Method to be made use of in order to forward their *Germination*, and thereby to gain a Year at least in their *Growth*.

Growth. I have observ'd that *Seeds* or *Berries* of this Kind which have been eaten by Fowls and pass thro' their Bodies, have began to vegetate soon afterwards; we have therefore no more to do than to contrive a Mixture which shall have in it a Heat and Moisture resembling that in the Bodies of Birds, and to lay the *Seeds* in it for a few Days before we sow them, which will answer the End we desire: For this Purpose therefore provide a Bushel of *Bran*, in which, after having mix'd your *Seeds* or *Berries*, wet the whole very well with Rain or Pond-Water, and let your *Preparation* remain for ten Days without any Disturbance in a Vessel of Wood or Stone. About three Days after the Mixture has been prepared it will begin to heat, and so continue to ferment for thirty or forty Days, if it be carefully sprinkled from time to time with warm Water as it begins to dry. The Heat of this wet *Bran* will prepare the *Berries* mix'd with it, and put them into a vegetable Posture in about a Week's time after the Ferment has began, and then may be sown in the Nursery. For this new-invented artificial Heat I am oblig'd to the incomparable Sir *Isaac Newton*, to whom every Art is greatly obliged.

THE

THE young *Stocks*, which may be thus rais'd from the *Berries*, will be fit to graft on, or be inoculated at four or five Years Growth, if they are design'd to be train'd up for Ornament of our Garden. The *Grafting* must be done in *March*, and the *Inoculating* or *Budding* in *July*; but otherwise if they should be made use of for *Standard-Trees*, or *Hedges*, let them be planted at their proper Distances while they are very young, that they may the better accustom themselves to the *Soil* they are to grow in. *Birdlime* is made of the *Bark* of this *Tree* gather'd about *Midsummer*, boil'd about twelve Hours in Spring-Water 'till the *Green Bark* separates from the others; the *Green* must then be laid in a cool Place and cover'd with *Weeds* or *Fern* for a Fortnight, or 'till it become a *Mucilage*, then beat it in a Stone Morter, 'till it be a tough Paste, and wash it well in some running Water, and then putting it in an earthen Vessel to ferment and purge it self for four or five Days, wash it for the second time, and put it into a fresh Pipkin, adding to it one third part of *Goose-grease* well clarified, encorporate them on a gentle Fire, stirring your Composition 'till it be cold, and keep it in Urine for your Use.

MR. *Evelyn* commends the *Holly* above all other *Plants* for *Hedges* and strong
Fences;

Fences; and indeed was it not for the Benefit of *Wall-Fruit*, I should prefer a thick well grown *Holly* Hedge before any Wall that could be built, the beautiful *Green* of their armed *Leaves*, and the *Vermilion* Colour of their *Berries*, afford a most agreeable Prospect in every Month of the Year, and disdain the rudest Attacks of the Weather, Cattle, &c.

HAVING now set down what I think is most material relating to the common or plain-leav'd *Holly*, I am to give some Account of the variegated sorts of *Hollies*, which are so much esteem'd by the Curious, and contribute to the Ornament of our Gardens. Of these we have about twenty different Kinds which are distinguish'd from one another by the Names of those who first discover'd them. It would be troublesome to relate them here, and would be of very little Service to my Reader, since in the whole Catalogue of them it would be impossible to discover the Beauty or Imperfections of any one among them; let it suffice that every Gentleman please himself rather by examining them in the Nurseries, of which there are so many about *London*. I shall only here take Notice that there are three sorts of *Stripes* in *Vegetables*, those whose Leaves are edged with Cream Colour, those edged with Yellow, and the bloach'd Sorts as the Gardeners call

call them : And it is a certain Rule, that whatever Plant has its *Leaves* edged about with these distemper'd Colours, will always remain variegated, without putting forth so much as one plain *green Leaf*; and on the other hand, such Plants as have their *Leaves* bloach'd, tinged or spotted in the middle, will seldom remain strip'd, if they be planted in good Ground, but, from time to time will shoot out Branches intirely Green, and at length lose all their other Colours; from whence we may observe that the Sap, when it appears discoloured only towards the middle of the *Leaf*, is not then so much distemper'd, but that it may be restor'd by wholsom Nourishment, but that when the tinged Sap has reach'd the extream Parts of the *Leaves*, so much Venom is then mix'd with it, that it is impossible to overcome it by any means, and even the *Fruit*, which is certainly fed with the most refin'd *Juices* of the Plant, is also equally corrupted with the same Poison, as its Stripes plainly signify.

ANOTHER Observation relating to strip'd Plants is, that when a Plant begins to bloach, a skilful Gardener may provoke the Poison which begins to tinge the *Leaves*, and by checking the Nourishment of the Plant, and giving it unwhol-

some

some Diet, may by degrees unvenom the whole, and produce what they call an *Edger*, i. e. a Plant whose *Leaves* are Edged with White or Yellow. Again, there is another Experiment relating to this Case which is very well worth our Notice, it was made and communicated to me by a curious Gardener, who had many Plants of the Common *Jessamine* with Edged *Leaves*, upon which he engrafted Cions of the *Spanish Jessamine*, whose *Leaves* had not been known to stripe, the Cions of the *Spanish Jessamine* upon their budding forth produced *Leaves* bloached with Yellow, and I doubt not but they may be made *Edgers* with a little more Skill; from hence it appears, that when the most subtil *Juices* of a Plant are poison'd, any Plant which shall be fed from it will be envenom'd by it. It would therefore be well to sow the Seed of *Mistletoe* upon *Edged-Leav'd* Plants, to have it with variegated *Leaves*. What relation these Observations may have to Animals, may be further consider'd by those whose Studies more immediately relate to the Health and Preservation of Animal Bodies. I shall proceed to consider the strip'd *Hollys*, with respect to their Figure and Use in Gardens; the Nature of this Plant is such, that it cannot be Pruned into those nice Figures, which others whose *Leaves* are small,

PLANTING *and* GARDENING. IS
small, have been framed to, therefore I
cannot propose any other Form than that
of a Pyramid, or a Ball or headed Plant.
The first ought to be kept taper, ending in
a sharp Point on the Top, and the headed
Plants of them should be so prun'd, that
their Heads may resemble the Cap of a
Mushroom, which Figure, in my Opinion,
is to be preferr'd before that of a *Globe*.
These Plants, if they are well train'd up,
and have their *Leaves* beautifully variega-
ted, are very Ornamental, when they are
mix'd skilfully with Plants of *Ever-greens*,
such as *Yews*, *Laurustinus*, or the like.

I have read some where of a pretty In-
vention of planting *Ever-green Hedges*
with *Columns* and *Pilasters* of variegated
Hollys set in them at certain Distances,
which must needs have a good Effect if
they are well prun'd; and I think, if
handsome Flower-Pots were placed on
their Tops, so that a healthful Branch
might go through each of them to be
train'd into *Balls* or *Pyramids*, it would
still contribute to the greater Beauty of the
Design.

SECT.

S E C T. II.

Of the YEW-TREE.

THE *Yew-Tree* is very slow of Growth; and therefore produceth tough and hard Timber; in some Parts of *Surry* we find some *Groves* of this beautiful *Ever-green*, which consist of very large *Trees*, and seem rather to be the Produce of Nature than Art; the *Roots* are apt to break into many *Fibres*, and therefore this Plant delights in light Soil, and such as is commonly stiled Barren; the coldest Mountains produce this *Tree* more readily than the richest Soils, or more gentle Exposures, so that rich Manures are to be avoided in the Culture of this Plant, the *Berries* of it after they are cleaned from their Pulp, and well dry'd, may either be laid in Sand as I have directed those of the *Holly* before they are sown, or mix'd with the Bran and Water before-mention'd, for their more speedy Germination. The *Leaves* of the *Yew* are so small, that it is possible to bring this kind of *Tree* into any Form we desire, as the famous Plants now growing in the *Physick Garden* at *Oxford*, and that in the Church-Yard at *Hillingdon* near *Uxbridge*, may certify; I have seen great Varieties of Figures very well represented in

in Plants of this sort, as Men, Beasts, Birds, Ships, and the like; but the most common Shapes which have been given it by the Gardeners, are either Conick or Pyramidal. It is of great use for Hedges, and make most agreeable Divisions in Gardens; it is customary to fence in the Quarters of Wilderness Works with these Plants, where they have a very good Effect; in a Word, there is no Difficulty in propagating this Plant, and little Hazard in the Removal of it; especially if the Roots of it are prun'd from Time to Time by digging about it, while it stands in the Nursery. Its Time of Transplanting is in *September*, or so soon as the Weather is open in the Spring Season.

S E C T. III.

Of the LAURUSTINUS.

THE *Laurus-tinus* is a Plant whose Beauty chiefly consists in the Flowers which adorn it about *Christmas*, and most of the Winter Season; it may be raised from the Berries, managed in the same manner as those of the *Holly*, but the most expeditious Way for the propagating of it, is from *Layers*, *i. e.* by laying down the youngest Branches of it in the Earth, about the Months of *September* or *October*, which will soon strike Root, and afford us

Plants fit for Use. It is a quick Grower, but very seldom makes a large *Tree*, it is often train'd up to a headed Plant, and introduced among *Hollys* and *Yews* into the Parterre. But I should rather direct that it be planted against a Wall or in Wildernesses, where it may avoid the Knife for the sake of its Flowers, which an unskilful Hand often robs it of by untimely Pruning. It is to be noted, That this Plant like all other Exoticks, is naturally inclin'd to Blossom about the Time of the Spring in its own Country. I have particularly observ'd that all Plants from the *Cape of Good-hope* make their strongest Shoots, and begin to Blossom towards the End of our Autumn, which is the Time of the Spring in that Part of *Africa* they were brought from, and so likewise all others from different Parts and Climates retain their Natural Course of Vegetation, for which reason, such Exoticks should be prun'd in our Spring Season, that they may the better dispose themselves for strong Flowering Shoots in the Winter; but more of this in another Place. *The Laurus-tinus*, altho' it is impatient of Frost, delights to grow in shady and moist Places, and flourishes well in Loam without the Help of any rich Manure, which will forward its Growth too much, and by that means make it too subject

subject to feel Frosty Weather, and also to fling away its Sap in useless Shoots, which ever spoils the Blossoming of *Trees*, for the same Reason that Excess of Vigour is a Hindrance of Prolificity.

S E C T. IV.

Of the BAY-TREE.

THE *Bay*, altho' it may be raised from *Layers*, *Suckers* or *Cuttings* yet it grows much better if it be propagated from the *Berries*; however for the greater Satisfaction of my Reader, I shall speak particularly of each way of raising this Plant. First then, if we propose to raise this Plant from *Layers*, we must bend down the tender Shoots to the Ground, and after having fasten'd them in the Earth with Hooks, cover them four or five Inches with fine Earth: This Work must be done about *October*, at which time likewise the *Suckers* may be taken from about the Body of this *Tree*, with as much Root as can be got with them, plant them in shady moist Places, in gravelly Soil, without any rich Mixture, watering them well at first Planting, as all Plants ought to be on that Occasion, chiefly to settle the Earth close about their Roots. In *October* also we may set the *Cuttings* of *Bays* in Pots of fine

Earth two or three Inches deep, and preserve them under some Shelter during the Winter; they will with that Management alone strike Root, without the Help of a Hot-Bed.

IN the next Place, if we design to raise this Plant from the *Berries*, gather them when they are full ripe, and after having spread them abroad to sweat, keep them till the *February* following in dry Sand, then sow them on a Bed of Earth fresh dug, and sift over them some fresh natural Earth, about two Inches thick. If after this Work the Weather happen to be moist, you may expect them to come up in about six Weeks after sowing; these Seedlings require Shelter with Straw or Fern for the three first Winters, after which Time they should be transplanted, least their Roots run too deep into the Earth, and by that means the Plants may receive Prejudice by removing them. I have seen *Piramids* and headed Plants of *Bays* introduced in *Parterre Works*, but I cannot advise it least they should be injured by hard Weather, which often would be apt to change their Colour, and perhaps kill them. But if by our Skill and Industry we have been Fortunate enough to train up some of this Kind of *Tree* to handsome Plants, let them be put in Pots or Cases and housed in the Winter,

ter, that their Beauty may be preserv'd. The finest Trees of this Kind that I have ever seen, either in *England* or Abroad, are now in the Gardens of the *Royal Palace* at *Kensington*, which are of very great Value: However, if it should be the Desire of any one to propagate this Kind of *Plant*, who has not the Convenience of a *Green-House* or Place of Shelter for them in the Winter, we may plant them in *Hedges* or against *Walls*; and if severe Frosts should by Chance discolour them, yet let not the Owner be discouraged; let the *Plants* so injured have their top *Branch* cut off in the Spring, and they will shoot out a-fresh.

IN *Holland* and *Flanders* I have seen the *Bay* with its *Leaves* finely variegated. Some *Plants* of it I have brought into *England*, which I have increas'd by ingrafting *Branches* of them upon our common *Bay*. But I yet have not ventur'd it to stand abroad in the Winter.

S E C T. V.

Of the *B O X-T R E E*.

THE *Box-Tree* is very easily propagated, either by *Slips*, *Layers*, or *Seeds*. It is a *Plant* very valuable for its Wood, so much used for Mathematical Instruments, Combs, and such like Works,

and the continu'd *Verdure* of its *Leaves* makes it an acceptable *Plant* to the Gardener. *Box-Hill* in *Surry* shews us the Excellencies of this *Plant*, as well from the Profit of its *Wood*, as the pleasing Shade of the *Box-Trees* growing upon it, which are some of them so large as to equal almost any other Sort of *Timber-Trees*. This *Plant* will make delightful *Hedges* in Gardens, and is, next to the *Few*, the best *Tonsile Tree* for the *Parterre*. As it is a slow Grower, and produces a small Leaf, it delights in Chalky Mountains, where it will grow much quicker than it does in our Gardens. It is on those Hills where it should be planted therefore for Profit, tho' a natural Soil in a Garden is rather to be preferr'd, if we would keep it in Shape and within Bounds: The best Time of the Year to make *Layers* or *Slips* of it is in *September*, and the *Seeds* of it may be either sown so soon as they are full ripe, or laid in *Sand* during the Winter, to be sown the Spring following: The *Seeds* of this Tree, like those of the *Holly*, may be forwarded in their *Growth* by the *Bran* and *Water*.

BESIDE the common Sort I have been speaking of, I have seen one with variegated *Leaves* which makes a very beautiful *Plant* for the *Parterre*, if it be kept in good Order.

THE *Dwarf* or *Dutch-Box* is of extraordinary Use for Edging or Bordering of Flower-Beds, or for the making of Scrawl-Work ; it will resist the most severe Weather, and remain good without renewing for above twenty Years; it is much cheaper than Border-Boards, and far more beautiful ; but above all, it is to be admired on account of the Profit it will bring to the Owner when he shall be inclined to sell it or transplant it. This Sort of *Box*, if it be earthed up every Year, may in four or five Years after Planting be taken up and parted or slip'd, and be made to plant about four times as much Ground as that which it stood upon. I cannot pretend to set down the Price of it, since there has not been any certain Standard for its Value. I have bought some at 6*d.* per Yard, and at other times have paid 8*d.* and a Shilling for the same Measure, but then we must suppose that the more we pay for it, so much the more Ground it ought to plant when it comes to be slip'd or parted.

S E C T. VI.

Of the *LAUREL*.

THE *Laurel* has been used for *Hedges*, and sometimes trained up into headed *Plants*, but is of that Quickness in its *Growth* that I cannot recommend it as a proper Companion for the other *Ever-Greens* before-mentioned. I believe, with Mr. *Evelyn*, that this sort of *Plant* would do much better to be cultivated as a Standard in *Walks* or *Avenues*, where it may have full Liberty to range without danger of the Knife. I am of Opinion this Tree will grow to a very large Size, especially when it has been grafted or budded upon *Black-Cherry Stalks*; which Experiment I have seen try'd by my curious Friend, *Robert Balle*, Esq; and has answer'd very well to the Design, and keeps its Leaves all Winter; from whence we may believe that it is not any particular Quality in the Juices of a *Plant* which causes it to be either ever Green, or otherwise, but that a continual Verdure rather proceeds from certain Vessels which convey the Juices from the *Trunk* into the *Leaves* of Trees, which are more in Number, and much stronger and tougher in *Ever-Greens*, than in such *Plants* as shed their *Leaves* in Winter.

Winter. But this Case I shall treat of more amply in another Place.

THE *Laurel* may be propagated after the same Manner as I have directed for the Raising of the *Bay*, either from the *Berries*, or by *Layers* or *Cuttings*; it loves Shade, and will thrive in (almost) every Soil; it resists the Weather, and has that Bitterness in its *Leaves* that Cattle will not readily annoy it. But Wild-Fowl, such as *Pheasants*, *Partridges*, *Wood-cocks*, *Black-birds*, and the like, delight to shelter themselves under its Cover in hard Weather, therefore it might be planted in Parks or other Places of the like Nature, for the Increase and Preservation of Game-Fowl.

S E C T. VII.

Of the PHILLYREA.

THE Nursery-Men know five Sorts of *Phillyrea* by the following Names, the *Plain Phillyrea*, the *black'd* Kind, the *true Phillyrea*, the *Dutch Silver'd-leav'd* Sort, and the *Gilded Dutch* Kind. The *first* or most common of these may be propagated from the *Berries*, order'd like those of the *Holly*, or it may with the other Sorts be raised by *Layers*, which presently take Root; it delights in a natural light *Soil*, with-

without any Mixture of rich Compost. Both this and the *bloack'd-leav'd Phillyrea* are very quick Growers, and make tollerable *Hedges* if they be well supported with strong Rails or Stakes, but without such Helps are not capable of resisting the Strength of the Winds; but the *true Phillyrea* is better able to defend it self against the Insults of Storms, and its slow *Growth* makes it a fit Companion for the best *Ever-Greens* in the *Parterre*. I have seen *Pyramid* and headed *Plants* of this Sort which have equal'd in their Beauty any other of the Garden-Race, but the *plain* and *bloack'd* Leav'd Kinds are with great Difficulty kept in any Form. The *Dutch Silver-leav'd* and *gilded* Sorts are valuable for the smallness and elegant *Variegations* of their *Leaves*, they may be easily trained into any Shape, but cannot abide the Frost, therefore are not so properly the Inhabitants of open Gardens, as of Places of Shelter. The Time of laying the tender Branches of these and all other *Phillyrea's* into the Earth, is in *September*, by which Means we may greatly increase this Kind of *Plant*.

S E C T. VIII.

Of the *ALATERNUS*.

THE *Alaternus* of the Gardeners differs from what they call *Phillyrea*, by being narrower Leav'd; and from the *Privet*, by having Notches on the Edges of its *Leaves*. Mr. *Evelin* gives us one very matereal Remark of it, *viz.* that the *Seeds* of the *Alaternus* come up in a Month's time after Sowing; he directs, it should be planted out, at two Years *Growth*, either for *Hedges*, or to be train'd up into figured *Plants*; the sudden *Germination* of the *Seeds* shews it not to be a *Phillyrea*, whose *Berries* lie a long time in the Earth before they sprout; it may be increas'd also from *Layers*, treated like those of the *Phillyrea*, and delights in the same Kind of *Soil*.

S E C T. IX.

Of the *JUNIPER*.

OF the *Juniper* we have two Kinds known to our Gardeners, the *Common*, and what they call the *Swedish Juniper*; both of them resist the most severe Frost, and for that reason, as well as
for

for their beautiful *Green*, should have their Place among other *Ever-greens* of the *Parterre*. The Smallness of their *Leaves* is such, that an ingenious Workman may train them up into any Shape, and by often Cutting or Sheering them, they will be so close, that no other *Plant* can be said to exceed them in that Respect. It delights in barren *Soil*, such as *Heaths* or *Downs*, where I have seen the common Kind grow freely and plentifully. The *Berries* should be sown about *March*, in light Ground without watering them, or giving them any rich Manure: They come up in two Months after Sowing, and may remain two Years in the *Seed-bed*, before they are transplanted, taking great Care to keep them free from Weeds. I remember to have heard of a *Juniper-Tree* above forty Foot high; and I think Mr. *Evelin* has somewhere mention'd one of that Sort which made an Arbour of eleven Foot high in ten Years time.

SECT. X.

Of the *PIRACANTHA*.

THE *Piracantha* has many Perfections which are not found in other *Evergreens* of the *Parterre*, and yet to my great Wonder, is very little taken Notice of about *London*, insomuch that I know not any one Nursery where it is cultivated; besides the Beauty of its *Leaves*, the Bunches of white Blossoms which it produces in *May*, are very Ornamental, and its *Coral*-like Beads, which hang upon it in Clusters all the Winter, affords us a most delightful Prospect; to all these Perfections we may add the Strength of its *Thorns*, which makes it one of the most useful *Plants* for Hedges, that I know of. I have seen some *Plants* of this Kind, train'd into *Balls* and *Pyramids* almost cover'd with the Scarlet Berries, when Nature seem'd to rest in other things; and indeed was I to make a Winter Garden, this Tree would be no small Contributor to the Ornament of it; but let us now proceed to the *Culture* of this beautiful *Plant*: It may be rais'd either from the *Berries*, or from *Layers* or *Cuttings*. The *Berries* when they are full ripe, should be order'd like those of the *Holly*, and are subject to lie as long in the Earth;

Earth; but I would advise that they be given to Fowls to eat, that by passing through their Bodies, they may the sooner come up, and be better prepared to *vegetate*. In *Devonshire*, where this Plant abounds, it has been observ'd that such Fowl as feed upon the *Berries*, scatter them over the Country, where they *vegetate* exceedingly, but are very difficult to transplant, having few *Fibres* at their Roots; therefore when they are come up and have stood a Year or two at most, they should be planted out where they are to remain. In the Removal of this, and other Trees of the like Nature, we must be careful to keep the Roots from drying before they are put again into the Ground. If we would raise these *Plants* from *Layers*, lay down only such *Branches* as are tender and of the last Shoot, which Rule must be observ'd in the laying of all *Evergreens* whatever; for the more woody *Branches* will not strike Root by any means. About *May* or *June*, we may plant *Cuttings* of the fresh tender *Twigs* in Pots of fine Earth, watering them frequently, and keeping them from the Sun'till the following Winter, at which time a warm Exposure will be helpful to them, and prepare them to make a strong Shoot in the Spring. *Plants* raised in this Manner may be transplanted with greater Ease and less Hazard, than those raised from *Seeds* or by *Layers*,

as I have experienced. The *Piracantha* delights in a dry Gravelly Soil, and will grow to be a large Tree, if rightly manag'd and kept from Dung or other rich Manure which will destroy it.

S E C T. XI.

Of the ILEX.

ALtho' I have mention'd this *Plant* in the former Part of this Work to be a valuable Tree for Timber, yet I cannot well avoid in this Place to take Notice of the great Use which might be made of it in Gardens. I have seen *Pyramid Plants* of it near Thirty Foot high, and there are *Hedges* of it now growing in *England*, of above that Height, which have been sown but a few Years since. Such Shelter would be much more preferable than the *Dutch Elm* or *Horn-beam*, for the preserving of *Orange-Trees* from the Sun, and Blasts, and might be made use of to defend our Fruit Trees from the Blights which too frequently attend the North-East Winds of the Spring: See the *Culture* of this Tree in the *First Part*: The *Cork-Tree* must be propagated after the same manner, and is much like it.

S E C T.

S E C T. XII.

Of the ARBUTUS *or* STRAWBERRY-TREE.

THE *Arbutus*, altho' an *Exotick Plant*, thrives very well in our Climate; it is a most beautiful Tree, blossoming twice a Year, and has its *Fruit* ripe in the Winter, yet notwithstanding these Excellencies, it is little sought after, perhaps as it is a Stranger, and not supposed to be hardy enough to resist our *Frosts*. I have heard of it growing plentifully in *Ireland*, and have seen very large Trees of it in some Gardens about *London*. The *Plant* indeed is not so well disposed, to be train'd up in nice-shaped *Trees*, as many others, but it makes a most agreeable *Hedge*, and is very Ornamental in *Wilderness Works*. It loves a light Gravelly Soil, and may be raised either from the *Seeds* or *Layers*. The *Fruit*, (which to all appearance, is a *Strawberry*, but rather tasting like the Pulp of a *wild Service*;) must be gather'd about *Christmas*, and laid to dry for a Month, and then bruis'd and mix'd with Sand, in order to be sown in Pots of light Earth, and cover'd about a quarter of an Inch with sifted *Mould*. This *Work* must be done in *March*. The gentle Heat of a Hot *Bed* will much help the Germination of the *Seeds*, which should be frequently

quently sprinkled with Pond Water till they come up.

THE most tender Shoots of this *Tree* may be lay'd down about *September* in fine Earth, and will strike Root in a Year's time, if they are kept moist by frequent Waterings, but will not be strong enough to transplant till the Spring following, and must then be kept in the Shade for two or three Months.

S E C T. XIII.

Of the Italian GREEN-PRIVET.

THIS *Plant* was brought from *Italy*, by Mr. *Balle*, among other Curiosities of the like Nature; its *Leaves* are not unlike those of the *Olive*; among other Names given it by the *Italians*, it is call'd the *Olivetta*. This *Plant*, altho' it is a quick Grower, makes an admirable Hedge, if it be often clipp'd; and tho' it be a Foreigner, despises the Violence of our Frosts, and maintains its Verdure all the Winter: I have not yet seen the Flowers of it, but have had many of the *Berries*, which somewhat resemble the Fruit of the *Mirtle*. We must sow the *Berries* of this *Plant* in *March* about an Inch deep in light Earth, watering them frequently 'till they come up, and transplant them from the Seed-

Bed the second Year after sowing. I suppose a hot Gravelly Soil to be the most proper for it, having planted it in that sort of Ground where it has made Shoots of four Foot long in one Summer.

Now beside the *Ever-greens* I have mention'd for *Hedges* and *figur'd Plants*, agreeable to *Parterre Works*, it may not be amiss to take Notice of such others, as I have seen propagated by the Curious for different Uses; the *Olive*, *Lentiscus* and the *Pistachio* may be planted against Walls exposed to the South Sun, and will thrive very well. I have seen perfect *Fruit* of the *Olive* in the Gardens at *Cambden-House*, *Kensington*, and in many other Places near *London*; it is a *Plant* hardy enough to maintain its self in our Climate without any Shelter, and may be propagated by laying down the young *Branches* in the Earth about *March*.

THE *Lentiscus* is a *Plant* commonly kept in *Green-Houses*, but is sometimes planted against a warm Wall without Doors; it is raised from the *Berries*, which are brought from *Italy* and other Places in the *Mediterranean Sea*. The *Pistachio* likewise is a *Plant* which will thrive well enough in our Climate, and may be either raised from the *Nuts* or *Suckers*, managed as the other *Ever-greens* I have mention'd before. This last *Tree* is commonly plant-

ed against a Wall, and in that Station I have seen it bear Fruit at the late Bishop of *London's* Gardens at *Fulham*; I have seen it also growing in the Wilderness, belonging to the Earl of *Peterborough* at *Parsons-Green*, where (altho' it bore Fruit plentifully) the Name of it was not known 'till last Year.

THE several Kinds of *Firrs* are likewise Ornamental in Wilderness Works, and are beneficial in Sylvan Plantations; there are many Kinds of them which are all raised from Seeds sown in *March*; they grow freely in any Ground, and should have their *collateral Buds* broke off while they are young and tender, by which means the *Timber* will be free from *Knots*.

IN the next Place, the *Cypress*, *Lignum Vitæ*, and *Cedar of Libanus*, with others of the like Nature, may be propagated as the former for Wilderness Works.

AND now, as I have set down the Culture of all sorts of *Ever-greens* which the Curious may desire to propagate for *Parterre* and *Wilderness Works*, I shall conclude this CHAPTER with a Word or two concerning *Grass Turfs* for *Verges* or *figured Works* in Gardens, which I think cannot be so properly introduced in any other part of my Design as in this place, seeing how much Works in Grass contribute from their beautiful *Ever-green* to

embellish a *Parterre*. The best times for laying of Grass-Plats are the Months *March* and *September*; and the best *Turfs* for that Use are such as are taken from the most barren Lands, as *Heaths* and *Commons*, where the *Sword* or *Blade* of the *Grass* is narrow and short. To lay a Grass Walk, let the Ground be well dug and level'd; then after it is trodden down, or beaten, and raked by a nice Hand, lay down your *Turfs* close together, and *role* them with a Wooden *Roler*, for five or six Mornings successively, 'till they are well press'd, and the *Turfs* begin to strike Root; by this Method a Gentleman may quickly be Master of good *Grass Walks* or other *Grass Works*, and enjoy a continued Delight from them, especially if they lie moist, and are somewhat shelter'd from the scorching Heat of the Sun, which is too apt to tarnish them. I shall now proceed to speak of such Flowering Trees and Shrubs, as are proper for the adorning of Gardens.

C H A P.



C H A P. III.

Of FLOWERING-TREES and
SHRUBS, *their Culture and Use in
Gardens.*

AS I esteem *Flowering-Trees* and *Shrubs* to be the next after *Ever-greens*, which a curious Person will be desirous of propagating in his Garden; so in the Culture of them, I shall be no less particular than I have been in the foregoing Chapter of the Management of *Ever-greens*.

I suppose no one is ignorant that the greatest part of these *Flowering-Trees* and *Shrubs*, which are at this time so well known to our Gardeners, are *Exotics*, and it is well worth our Enquiry what Climes they were at first brought from, that for the better Embelishment of our Gardens, we may still seek after many other Varieties of the like Kinds, in those Countries whose natural State of Weather most nearly resembles the Properties of our Climate.

I find that Plants of *Virginia*, and even those of the *North* Parts of *Carolina*, will bear our Frosts, if they are managed with

Judgment. The *Tulip-Tree*, for Instance, which flourishes so well in the Earl of *Peterborough's* Wilderness at *Parson's-Green*, is a *Virginia Plant*, and yet finds no difference between the Degrees of 38 and 52. In its native Country, it is an Inhabitant of the Woods, and in my Lord *Peterborough's* Garden it flourishes in a Wilderness, but I have known it planted in a much warmer, and more open Exposure, and it has perish'd; this should be always consider'd by the Gardener, to plant every *Tree* in a Wood which is natural to a Wood, and upon a Plain that which is the Native of a Plain. I might here set down the most proper Method for bringing over such curious *Plants* as grow in Foreign Countries into *England*, and might give some Rules for the Naturalizing them when they are with us; but as I have now by me some Papers purely relating to the Culture and Management of *Exotic Plants*, which I am perswaded to make publick, I must crave my Reader's Patience till I present him with all that I know relating to that Subject, and at present only give him the necessary Direction for the Management of those *Foreigners* which are already naturalized to our Country.

THE *Plants* which will make the Contents of this Chapter, as the most worthy our Care, are *Jasmines*, *Honey-Suckles*,

kles, Lilac, Syringa, Roses, Guilder-Rose, Brooms, Liburnum Mezereon, Spireas, Arbor-Judæ, Passion-Tree, Senna's and Tulip Tree.

S E C T. I.

Of the J A S M I N E.

OF the *Jasmine* there are three sorts, which bear our Frosts, known to the Gardeners, and distinguish'd among them by the Names of the *common White Jasmine*, the *Yellow Jasmine*, and the *Persian Jasmine*. The first of these is capable of resisting the most severe Weather, it is generous in its Growth, shooting sometimes more than six Foot in a Summer. It produceth its white fragrant Flowers about *June*, and continues Blossoming 'till *September*; it is propagated from *Layers* or *Cuttings* with great Facility, and will grow in any *Soil*. The Time of *Laying* the young *Shoots* of this *Plant* into the Earth is about *September*, and at that time we may likewise plant *Cuttings* of it about a Foot long, always taking Care that two *Knots* be under Ground, for it is just below the *Buds* that the *Roots* spring forth, *i. e.* from the Place where the *Leaf* of that Summer had join'd it self to the *Branch*. This *Plant*

is so delightful that I think no curious Person can be without a large Plantation of it, either to plant against *Walls* or *Trees*, or else to train up into *headed Plants*. I have seen this sort of *Jasmine* planted in Hedges of *Dutch Elm* and *Hornbeam*, curiously intermixing it self with them, and yielding a most agreeable Entertainment to the Owner, by means of its pretty *Blossoms* and their delightful *Odour*. When it is train'd into *headed Plants*, and kept in *Potts*, it serves to adorn the Chimnies in the Summer Months, and it is also of use to *engraft* the *Spanish White Jasmine* upon, or those of its own Kind with *variegated Leaves*.

THE *Yellow Jasmine* has its Leaves more shining than the former, and its Flowers not much unlike those of the *Yellow-Indian Jasmine*. I have seen but few Plants of it about *London*, altho' its Beauty is, in my Opinion, surpassing the former; it is hardy enough to endure the most severe Weather of our Climate, and may be propagated from Layers, like the other. I remember to have seen it prosper well against a *Wall* in a light sandy *Soil*, and I am apt to believe the *Indian Jasmine* might be grafted upon it, as the Smell of both their *Flowers* are so nearly the same; which seems to inform us, that the Parts and Juices of one and the other are alike, for if a Flower

contains the most refin'd *Juices* of a *Plant*, and if it is allow'd that the Odour of that Flower proceeds from certain Vapours, arising from the *Juices* contain'd in it, then it seems reasonable to believe, that when we meet with Flowers of different *Plants*, which touch the Organs of Smelling in the same manner, the *Juices* of each of them must then be alike, and the *Vessels* and *Glands* through which they have pass'd from the *Root*, must be nearly the same, either in Figure or Quality, and sometimes in both.

THE *Persian Jasmine* bears Flowers of a Purple Colour, but seldom makes a large *Plant*, it will bear the Weather, and make a pretty show in Wilderness Works, among other flowering *Shrubs*; it may be rais'd from *Layers* or *Suckers*, and loves a light *Soil*.

S E C T. II.

Of the WOOD-BIND or HONEY-SUCKLE.

THE Gardeners cultivate several kinds of *Honey-Suckles*, distinguish'd among them by the Names of the *Forward Blowers*, *Later Blowers*, *Scarlet Flower'd* and *Ever-green Honey-Suckle*; these are all of them *twining Plants*, and are rais'd from *Layers* or *Cuttings*, order'd like those of the *Jasmine* in *September* or *October*;

ber; they love Shade, and are the Natural Inhabitants of Woods, where the Neighbouring Trees serve them for their Support; some or other of them shew us their *Blossoms*, and perfume the Air with their fragrant Odours, throughout the whole Summer, and therefore it would be needless for me to advise a Gardener to provide himself with every Variety of it, which I have mention'd. The *Flowers* are in themselves Beautiful, and as the *Plant* is a quick Grower, let it be planted about Trees in Avenues, to intermix its *Blossoms* among the *Branches* of such as the *Elm*, *Oak*, and the like. Now altho' the *Honey-Suckle* is a *twining Plant* like the *Jasmine*, yet it may be train'd up into a *Standard*, and has an admirable Effect, as a *headed Plant*, in the most remote Parts of *Parterre Works*; for to plant it among *Evergreens*, in or about the Center of such a Garden, would wound the Prospect for many Months of the Year, when it was vacant of Leaves.

IF I may be allow'd to direct the Fancy of other People, I would advise that every sort of Flowering *Shrub* should be trained into *headed Plants*, and planted in Garden Pots, that when they are in *Flower* they may be set in the Borders between the *Evergreens*, and removed as soon as their *Blossom* is over, to make room for others.

S E C T. III.

Of the *L I L A C*.

OF the *Lilac* there are two sorts, commonly known to the Gardeners by that Name, viz. the *Blue* and the *White*. The Botanists indeed call the *Lilac* by the Name of *Syringa* or *Pipe-tree*, but the Gardeners give the Name of *Syringa* to another Plant; therefore as my Design here is chiefly dedicated to the Use of Gardeners, I shall call every Plant by the Name they know them by, and at the End of my Work endeavour to reconcile the *Botanist* with the *Gardener*, by an Index of Names in *Latin*, *English*, and other Languages now in Use. The *Lilac* then is a Plant which grows to a pretty large *Tree*, bearing its Bunches of *Blue*, or rather *Purple Blossoms*, like Plumes of Feathers, in *May*; I know not any Sight more agreeable than this *Tree* when it is full of *Flowers*, and altho' it is very common, is well worth our Propagating. Small Walks of these *Trees* are very pleasant, and they are no less Ornamental in the Quarters of *Wilderness Works*, especially if the *White* flowering Kind be judiciously intermix'd with them. They may be raised by *Laying* down the young *Branches* in *March*,
or

or by taking off the *Suckers*, and planting them in a light *Soil* in the same *Month*, or about *September*.

S E C T. IV.

Of the SYRINGA.

THE *Syringa* has two Qualities which were taken Notice of by that Learned and Curious Botanist the late *Bishop of London*, viz. That the *Leaves* tasted like *Green Cucumbers*, and the *Blossoms* had the Odour of *Orange-flowers*; this *Shrub* is propagated as well for *Wilderness Quarters* as for headed Plants, and is often planted in Pots to adorn Chimnies in the Summer. They produce their Bunches of fragrant white *Blossoms* in *May*, and continue *Blowing* for six Weeks. I have not yet try'd to raise them from *Seeds*, nor indeed would it be worth while, seeing how apt the *Root* is to put out *Suckers*, which may with great Ease be taken off about *March* or *September*, and transplanted. The *Syringa* will grow almost any where, and if planted in a shady Place will shoot vigorously, but being much exposed to the Sun, will produce *Flowers* in greater Abundance.

S E C T. V.

Of the ROSE-TREE and its Kinds.

WE have more Variety of *Roses* propagated by our Gardeners, than of any other Flowering *Tree* or *Shrub*; the Flowers are most delightful for their agreeable Odour and Beauty, I have seen one or other of them *Blossoming* for ten Months of the Year, without using any great Art to alter the natural Season of their *Blowing*. The Gardeners distinguish them by the following Names, first the *Cinnamon Rose*, which is the most forward Blower; the *Monthly Rose*, and the *Cluster Monthly Rose*, which if they happen to be planted against a warm Wall, will begin to blow about the latter End of *March*, or the Beginning of *April*, and continue to produce *Flowers* for almost three Months; and if after they are out of *Flower* they have the Tops of their Branches prun'd off, we may expect a second Crop of *Roses* from the same *Trees* in *Autumn*, which will continue their *Blossom* almost till *Christmas*, if the Weather be open. The next after these is the *Damask Rose*, which will begin its *Blossom* in *May*, and continue Flowering for above six Weeks. The *Rosamundi*, or *York* and *Lancaster Rose*,

Rose, with the *White*, *Red*, and *Yellow Roses*, begin their *Blossom* somewhat later than the *Damask*: And last of all, the *Centifol*, or *Province Rose*, shews us its surprizing *Flowers*; but besides the several sorts which I have here set down, there are many others which I have not yet seen. That curious and incomparable Patroness of Botany, the late *Dutchess of Beaufort*, has told me of 16 different Sorts, which her Grace cultivated in her Gardens at *Badminton*; but altho' the several sorts of *Roses* differ in their times of *Flowering*, yet are they all propagated after the same manner; they love a strong holding Ground, and delight so much in moist Places, that they will even grow in Water; they may either be raised from *Layers* or *Suckers*; the first may be *Layn* down in *September*, and the *Suckers* may be taken from the old *Roots* in that *Month*, or about *March*, and transplanted immediately, before their *Roots*, which have but few *Fibres*, grow dry; but in case Necessity obliges us to keep them out of the Ground for some time, lay their *Roots* in Water for Five or Six Hours before *Planting*. The *Rose-Tree* may be either Cultivated for the Quarters of Wilderness Works, to be planted there among other *Flowering Shrubs*, or trained up into *Standard Plants* for *Pots*.

S E C T. VI.

Of the GUILDER-ROSE.

THE *Guilder-Rose* bears its Bunches of *White Blossoms* (as big as a large Tennis-Ball in *May*. The *Plant* seldom rises very high, or is capable of being kept in any regular Form, therefore is chiefly propagated for *Wildernesses* or other wild Places; it delights in a holding Land, and may be rais'd from *Suckers* taken from about the old *Root*, either in *March* or *September*.

S E C T. VII.

The SPANISH BROOM.

THE *Spanish Broom*, altho' there is no great Beauty in its *Leaves*, yet the *Spikes of yellow Flowers* which it puts forth in *June* and *July*, makes it a *Plant* very desirable in our Gardens. It is an irregular *Plant*, by no means to be brought into any Form by the Gardener. It may be planted in *Wilderness Works*, with other flowering *Shrubs*, among which it makes a good Show. We may raise it from *Seeds* sown in *March* in Light Earth, and also by laying down the tender Branches in the same Month, and cutting them at the
Joynts

Joynts after the manner of *Carnation-Layers*; but this last way is not so certain, and more troublesome than the raising of them from *Seeds*.

I cannot forbear taking notice in this Place, of the common *English Broom*, and the *Furze-Bush*, as Plants well enough worthy our Care; the first to mix with the Shrubs of the Wilderness, and the other to be train'd into *Figur'd Plants*; these are both raised from *Seeds* sown in *March*, and will not bear transplanting after they are one Year old, without great Care. I have seen some *Plants* of the *Furze-Bush* cultivated in Gentlemen's Gardens, not any ways Inferior to the Beauties of the most valuable *Ever-greens*; it is sofile at the *Yew*, and in my Opinion, exceeds it in one respect, *i. e.* that it *Blossoms* in all Seasons of the Year; and was it not so common, I doubt not but it would be more frequently planted in our Gardens than any other *Evergreen*. If it be kept well cut, it makes most beautiful and Impenetrable Hedges.

S E C T. VIII.

Of the LABURNUM.

THE *Laburnum* is an agreeable *Shrub*, or rather a little *Tree*. I have seen it above Twenty Foot high, cover'd with
its

its beautiful Strings of Yellow Flowers in *May* and *June*; and yielding plenty of Fruit which ripens about *September*; this *Plant* resists our severest Frosts, and will grow in the most open Exposure, as well as under the Shade of large *Trees*; it is commonly planted among the other Flowering *Shrubs* of the *Wilderness*, and may be easily raised from the *Seeds* sown in *March*, and transplanted without Difficulty two Years after it is come up.

S E C T. IX.

Of the MEZEREON.

THE Gardeners know two sorts of *Mezereon*, viz. That with the *Red Flower*, and the *White Flowering Sort*: The first is common enough in every Garden, but that with the *White Flower* is rare; they are both of them *Dwarfs*, seldom rising higher than three Foot, but have two Excellencies which make them more valuable than much taller *Trees*, their *Stalks* are cloathed with the *Flowers* in *January*, and the Air is then perfum'd with their delightful *Odours*; they remain a long while in *Blossom*, and are afterwards no less beautifully adorn'd with their *Fruits*. I know no other way of propa-

80 *New IMPROVEMENTS of*
gating them, than by sowing the *Seeds* in
March, if you can save them from the De-
vouring Birds which delight in them. I
have eat some of the *Berries*, which were
not unpleasant to the Taste, but about an
Hour after I had swallow'd them, I found
an extraordinary Heat in my Throat, which
caus'd a violent burning Pain for above
Twelve Hours. It would be well enough
worth our Enquiry, Whether the *Seeds* of
all forward blowing *Plants* are not hot,
in proportion to those of the *Mezereon*?
And, Whether their extraordinary Heat is
not one means of their early *Sprouting*?
This *Plant* may well enough be intro-
duced into the *Parterre*, as it is a slow
Grower, or in *Wilderness Works*, for its
delightful *Blossoms*, but chiefly into a
Winter-Garden. A Loamy Soil is most
proper for it.

SECT. X.

Of the SPIRÆA FRUTEX.

THIS *Plant*, known to the Gardeners
by the Name of *Spiræa Frutex*,
blossoms about *August*, yielding Spikes of
Flowers of a Pink Colour; the *Shrub* sel-
dom exceeds 3 Foot in height, it is beau-
tiful in its *Flower*, and is a *Plant* which
should not be wanting in a Garden. It may
be

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be propagated from *Suckers* taken off in
March, and planted in a light *Soil*.

S E C T. XI.

Of the *ARBOR FUDÆ*.

THIS *Plant* is very common in the
most *Southern* Parts of *Europe*, but
I have receiv'd the *Seeds* of it also from
America, (I think from *Virginea*) I have
sown them in *March*, and rais'd great Num-
bers of them, and they are now common
enough in most curious Gardens. This
Plant will rise very high, even to equal a
pretty large *Tree*, but is more frequently
planted against a Wall with us, than in the
open Ground. It bears its beautiful Rose-
colour *Blossoms* in Clusters, about *March*
or *April*, even before the *Leaves* are open'd.
The late Learned Bishop of *London* eat of
the *Flowers* in his Salads, and had a very
large Plant of it against a Wall in his Gar-
den. The *Plant* is hardy enough to resist
our Frosts, and I doubt not but would do
well in *Wilderness Works*, among other
Flowering *Shrubs*. It loves a Loamy
Soil.

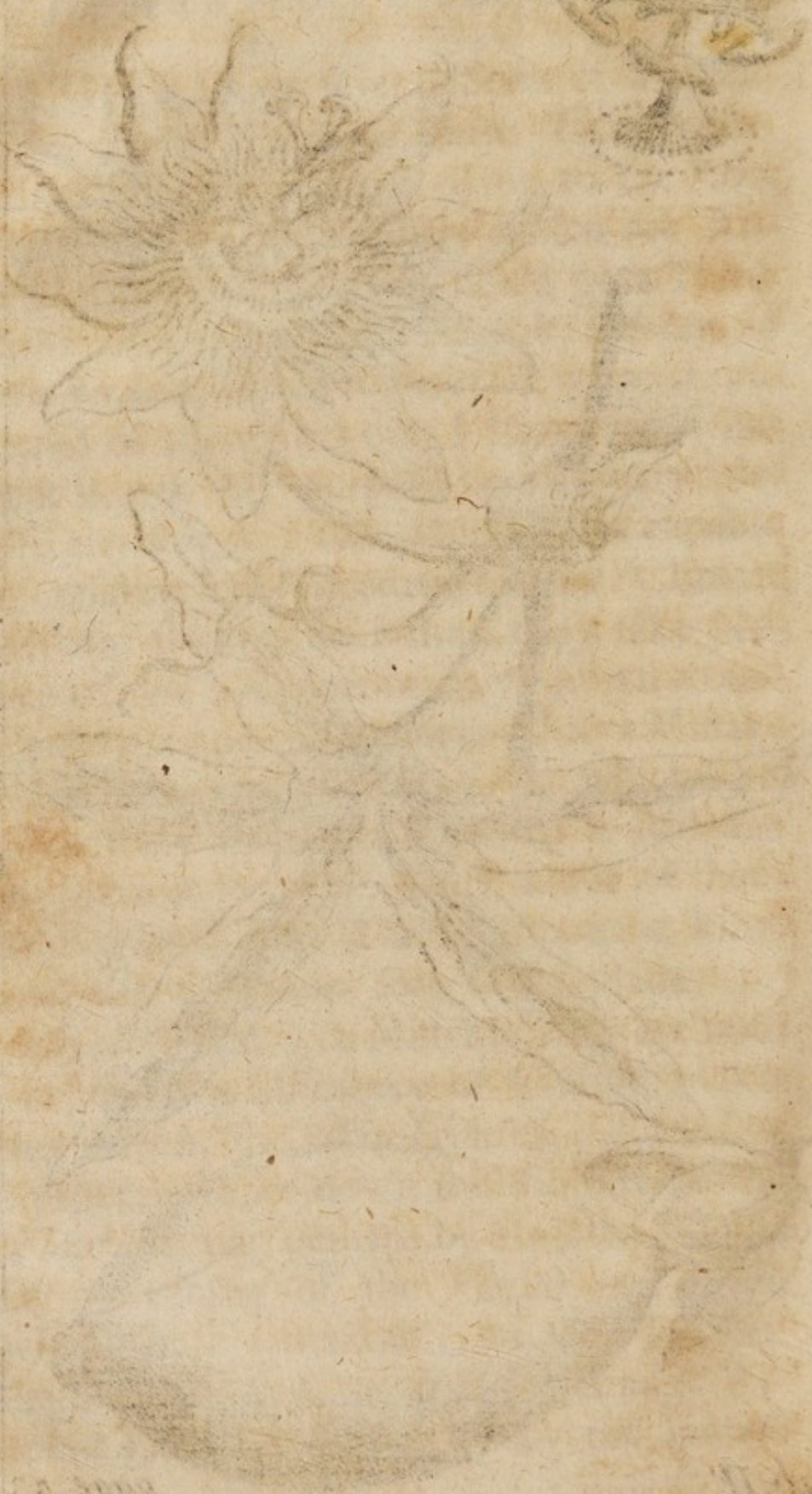
Of the MARACOC, or PASSION-TREE.

THERE are several Sorts of *Passion-Trees*, some of them *Ever-greens*, others *Perdifols*, others dying to the Root every Winter, and others which are Annual *Plants*. I have reckon'd near Thirty Sorts of them at the Physick Garden at *Amsterdam*, where were the greatest Varieties of them that ever I have seen. But as it is not my purpose here to particularise any sort of *Plant* which is not capable of resisting the Weather of our Climate without shelter, so I shall only take Notice of one sort, commonly known to our Gardeners, and endeavour to rectify a Mistake concerning the *Passion-Tree*, which I believe many are possess'd of. It is said that we have at least two hardy kinds of them in *England*, viz. The Fruit-bearing kind, and the common sort which bears no Fruit; but this is a Mistake, they are both one, but the difference of Culture makes one Barren, the other Fruitful. But before I proceed to set down the Culture of this *Plant*, it may perhaps be expected I should say something of the *Flower* and *Fruit*, which are so remarkable, as well for their singular Beauties, as for the strange Account given of the *Flower* by the *Spanish Friars*,

Passion Flower & Fruit



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Friars, upon their first Discovery of it in the *West-Indies*. The *Flower* is about four Inches over when it is full blown; it has ten white *Petals*, within which are placed round about the bottom of the *Stile* two Rows of *staminous-like* Threads, of a *purple* Colour; the *Stile*, which somewhat resembles the Pedestal of a Pillar, divides itself on the Top into Three Parts, which turn their Mouths towards the bottom of the *Flower*; they are of the Colour of *Indigo*; besides these three *Tubes*, just below that part of the *Stile* where they unite, are placed five *Stamina*, spreading themselves in a Star-like Figure, with yellow *Apices* on their Points. At the Foot-stalk of every *Flower* is a *Whirle*, or *Clasper*, and to that is join'd the *Leaf* of the *Plant*, deeply cut on the Edges. All which see in the *second Table* of this Part. It is called the *Passion-Tree*, for that, by the Contrivance of the *Friars*, who in a counterfeit Figure of it, when it was first discover'd, added some things wanting in the Natural *Flower*, they made it, as it were, an Epitome of our Saviours Passion; The Story perhaps as I have it, may not be unacceptable to my Reader. The ten *Petals*, say they, represent the ten *Apostles*, and at the same time put the Question, that there were twelve, but they answer, That *Judas* had hang'd himself, and *Peter* had deny'd

his Master : The *stamineous-like* Parts, which spread themselves on the Flower, they liken to a *Glory*, and the small *Purple Threads* which stand round the Bottom of the *Stile* is a supposed *Crown of Thorns* : The *Stile* which is in the Middle of the Flowers, serves them for the *Pillar*, to which they say, the *Jews* bound those Malefactors, whom they scourged ; and that they may not want any part of the Story, they turn the *Clasper* into a *Cord*, and the *Leaf* into a *Hand* : The three Divisions on the Top of the *Stile*, they turn into three *Nails*, and taking off one of the five *Stamina's* with its *Apex*, calls it a Hammer, and the four others remaining makes a *Cross* ; the three *Alabastries* at the Bottom of the Flower, are said to represent the *three Soldiers* who cast Lots ; and the Time between the *opening* and *shutting* up of every *Flower* being just *three* Days, is enough to compleat the Story. Thus superstitious Persons, *semper sibi somnium fingunt*. The Old Herbarists have mention'd somewhat of this Story, but I found it mightily improv'd when I was at *Bruxelles*, even beyond what I have here mention'd.

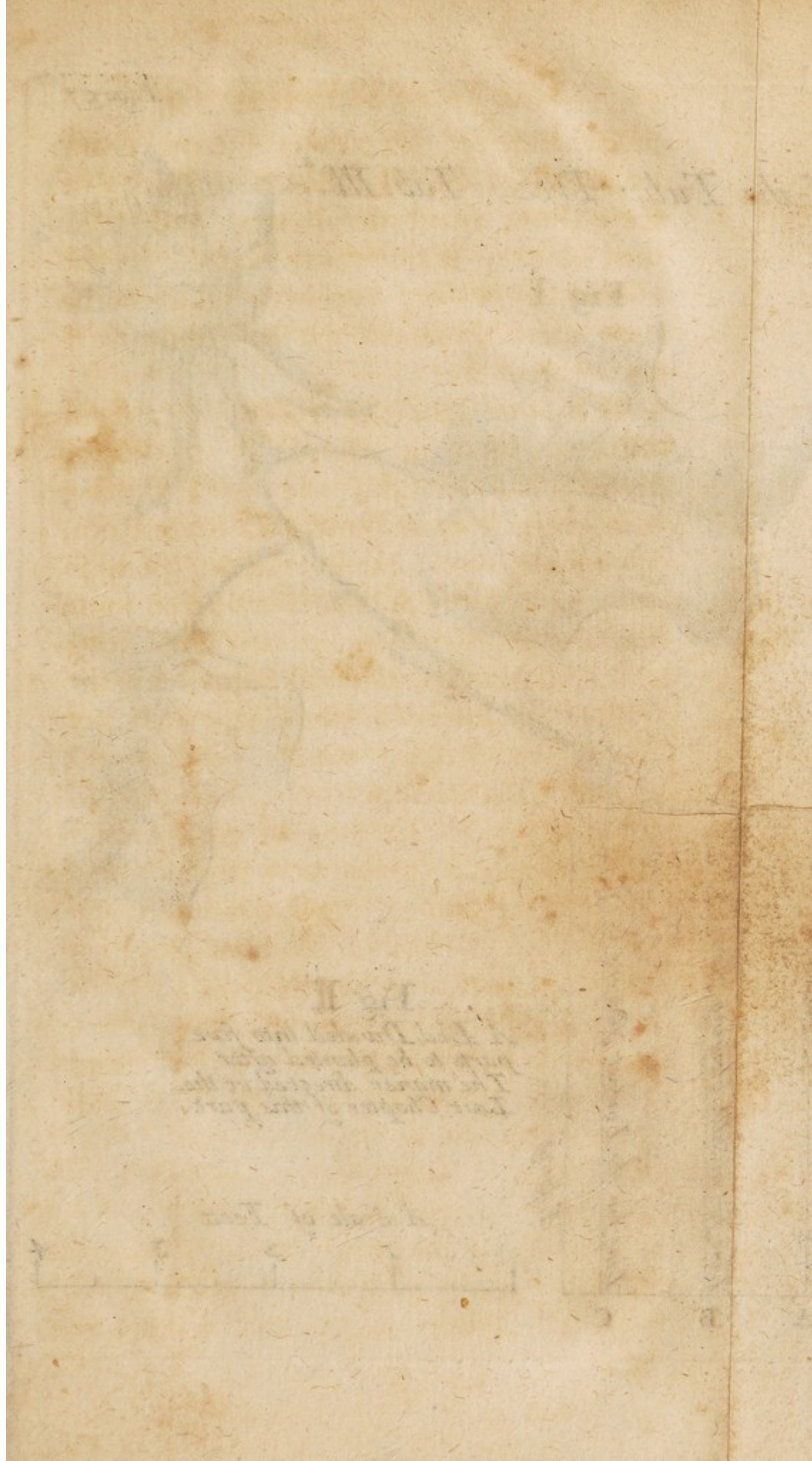
BUT to proceed to the Culture of this *Plant* ; that it may bear Fruit, we must plant it in very moist and cool Places where

where it may be continually fed with Water; this I had from the Curious Mr. *Adam Holt*, Gardener to the late Bishop of *London*, who shew'd me a Letter from the *West-Indies*, from whence I learnt it was an Inhabitant of *Swampy* Places. I have since that time seen a Tree of this sort with above three Hundred ripe Fruits upon it, at Mr. *Green's*, a very Curious Nursery-Man at *Brentford*, which was planted in Cow-Dung, and had from time to time the Place about it renewed with the same cooling Soil. The Fruit were shaped like Lemons, and of the same Colour; they were fill'd with a beautiful red Pulp and Seeds, like the Fruit of the Pomgrenate, and were not disagreeable to the Taste. But the largest Fruit of this *Plant*, which I have yet seen, was sent some time since to the *Royal Society*, by a Gentleman, I think living somewhere in the *West* part of *England*, with an Account of his Method of raising them. He had a large *Tree* against one side of his House, which happening to grow over a Drain that went from his Kitchen, and lay so shallow, that the *Roots* of his *Passion-Tree* found their Way into it, the *Tree* then began to produce Fruit.

FROM these Observations I was inform'd of the most proper way to Cultivate this *Plant* for the Production of its

Fruit, and the Directions I have given to several of my Friends to lay Plenty of Cow-Dung about the Roots, and even then to keep it frequently water'd in the Flowering Season, has been sufficient to shew them Fruit enough to satisfy their Curiosity.

WE may raise this *Plant* either from the Seeds sown in *March*, or by Layers in the same Month; and every Cutting of it about *May* or *June* will strike Root, if they be planted in fine Earth. It is so quick in its Growth, that I have seen some Branches of it about eighteen Foot long in one Summer, and is so hardy, that the most severe Frosts of our Clime will not destroy the Roots, altho' perhaps the *Plant*, to all Appearance, has perish'd above Ground. In the last great Frost I began to despair of two very large *Plants*, which stood abroad, and were even cut down to the Ground, without Hope of Recovery; but the *May* following, from the Fibres only which remain'd, there sprung up above Fifty small *Plants* from each Root.



The Flower of the Tulip Tree. Tab: III.^d

Fig I

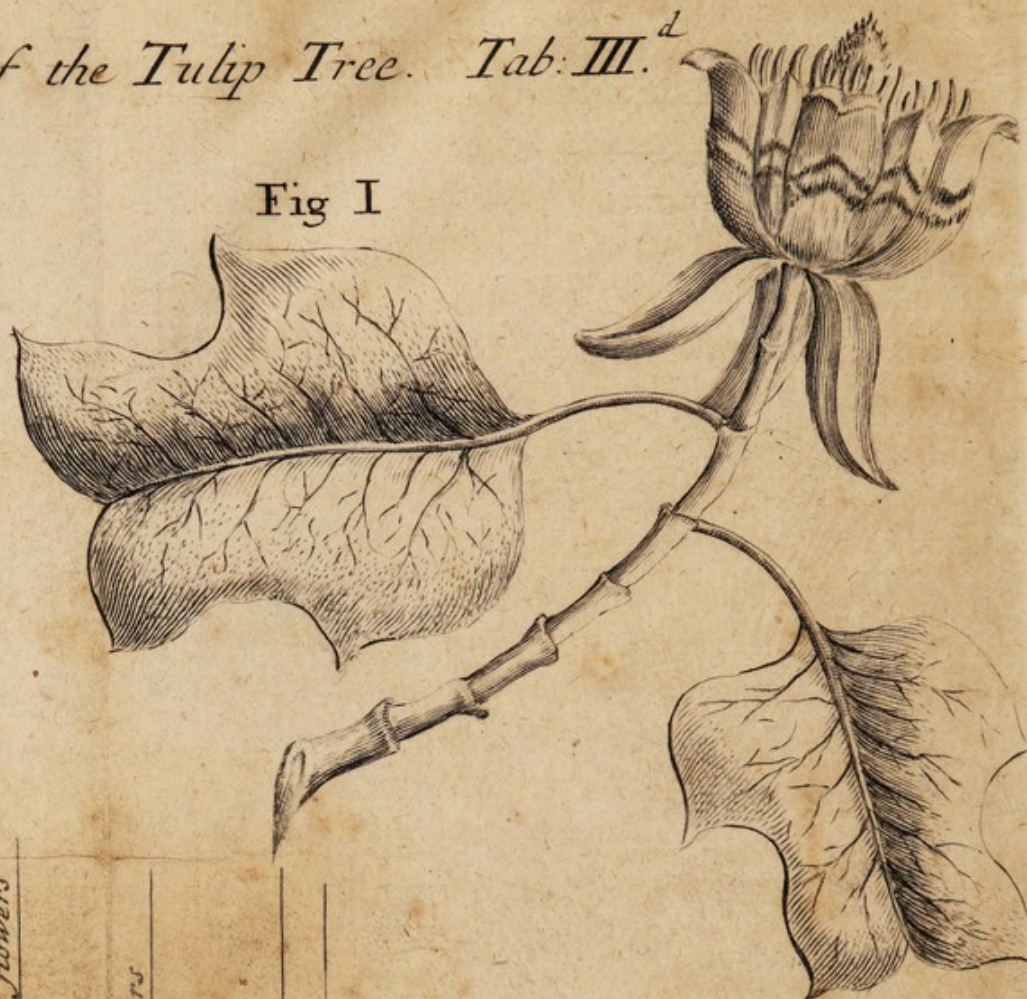
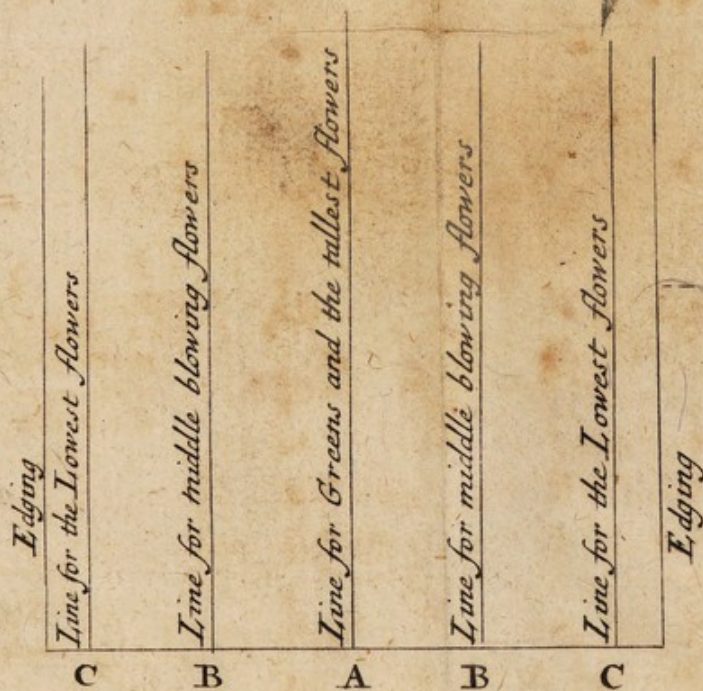
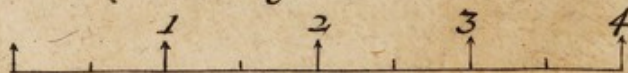


Fig II

A Bed Divided into five parts to be planted after The manner directed in the Last Chapter of this part.



A Scale of Feet



S E C T. XIII.

Of the SENNA.

THERE are several Kinds of *Senna*, distinguish'd by various Names among the Gardeners, but there are only two Sorts of them which are commonly known, and made use of, *viz.* the *Scopion Senna*, the *Bladder Senna*; the first is, in my Opinion the most beautiful and deserving of our Care, the *Blossoms* shewing themselves as well in Autumn as in the Spring Season; they both make pretty *Shrubs* for Wilderness Works, and may be propagated for that Use, either by sowing the *Seeds* towards the latter End of *March*, or by *Laying* down the tender Twigs in the Earth in *April* or *May*, which soon strike *Root*, and may be transplanted without Difficulty. They love a *Loamy Earth*, and grow well in the *Shade*.

S E C T. XIV.

Of the TULIP-TREE.

I Have already said something of this *Tree* at the Beginning of this Chapter, especially concerning that now growing at my Lord *Peterborough's*. It is a *Plant* of the Wood, and will not prosper Abroad
in

in a more open Exposure, which I repeat, because it is seldom that our Gardeners regard that Nicety in the Culture of *New Plants*. The *Tulip Tree* should be set among such such *Trees* as are design'd for Groves, it will rise to as great Height as any of our *Timber-Trees*. Its *Leaves* are somewhat like those of the *Maple*, and its Flowers, which begin to open in *July*, are only found at the Extremities of the Branches. They have some small Resemblance of a *Tulip*, but not enough, I think, to give the Name to the *Tree*. The *Petals* are of a Yellow Colour, somewhat variegated with Vermilion; the Fruit, which succeeds them, is like the *Cones* of the *Fir-Tree*, but does not come to Perfection in *England*; however as we frequently receive good Seeds of it from *Virginia* and *Carolina*, I shall give my Reader an experienc'd Method of raising them, for it is very difficult to propagate them from Layers. The Ingenious Mr. *Adam Holt*, having receiv'd some of the *Cones* of the *Tulip Tree* from *Virginia*, sow'd the Seeds of them in Pots about *August*, and set them under Shelter all the Winter, the Spring following they came up without the Help of a Hot-Bed. This time of sowing the Seeds is necessary to be observ'd, for I have often try'd them in the Spring, but could not raise them at that Season. The
young

young *Plants* may be transplanted into single Pots at two Years Growth, and must have Shelter in the Winter for the first nine Years at least, 'till they have Strength enough to resist the Severity of our Frost; they may then be planted in the natural Ground, as I have directed, but rather in a sandy Soil than any other.

S E C T. XV.

Of the P O M G R E N A T E.

WE know two Sorts of this *Plant*, viz. That with the single Flower, and the Double Blossom Kind; they are both hardy enough to withstand the Severities of our Winters, and are propagated by laying down the young Shoots in *March*. The Blossoms of each of them are of a most beautiful Scarlet Colour, the single ones setting frequently for Fruit, and sometimes ripening with us. I have seen some headed *Plants* of each Sort, but I rather advise them to be planted in Hedges or Wilderness Works; where they may be in less Danger of the *Knife* or *Sheers*. Some have made *Arbours* of them, which have been extreamly pleasant. These *Plants* love a light Soil, and may be transplanted either in the Spring or Autumn Season.

S E C T. XVI.

Of the ALTHEA-FRUTEX.

WE find two Sorts of this *Plant* (commonly) in the Gardens, differing from each other in the Colour of their Flowers, the one White, and the other Purple; they may be propagated from Layers in *September*, or Suckers taken from about the Roots at that time, and likewise from the Seeds sown in *March*, and are used chiefly in Wilderness Works. The Blossoms appear in *August* in great Numbers, and afford a delightful Prospect; they will grow in any Soil with little Trouble to the Gardener.

S E C T. XVII.

Of the Double-blossom'd Virgin's-bower, the Maxechitl or Scarlet Jasmine, Perwinkle, and French Willow.

THE first of these, *i. e.* the *Virgin's-bower*, may be raised from Layers in *September*, and some say from Cuttings likewise; the Flowers are of a Violet Colour, and appear in great Numbers, almost covering the *Plant*; it loves a light Soil, and as it is of a twining Nature, must be supported with Stakes. It may either be planted against a Wall, or set among

among the other flowering Inhabitants of the Wilderness.

THE *Maxechnl*, or *Scarlet Jasmine*, is by some Gardeners call'd the *Trumpet Flower*; it is also a twining *Plant* like the former, and may be raised either from *Layers* or *Cuttings* in *September*; the *Flowers*, which it produces in Abundance about *May* or *June*, are rather of an *Orange Colour* than a *Scarlet*; it is commonly planted against *Walls*, tho' I am apt to believe it might maintain it self in *Wilderness Works*, or more open *Places*. This also loves a light *Soil*, and frequent *Waterings* in the *Summer Season*.

THERE are several sorts of *Perwinkle* cultivated by the Gardeners; it is a creeping *Plant*, easily striking *Root*, if it be laid in the *Earth* about *March*, or will grow of *Cuttings* planted in *September*. Its pretty *Blue Flowers* makes an agreeable Show in the *Summer*; this *Plant* indeed hardly deserves the Name of a *Shrub*, but as it is not strictly of the *Herbaceous Race*, I take the Liberty to speak of it in this Chapter, and because, when it is ty'd up to *Stakes*, it may very well be reckon'd a fit Companion for *Flowering Shrubs*; this, with the rest, may be planted in *Wilderness Works*, and in *Pots* (for the Ornament of *Parterres*) to prevent the too great Increase of its *Suckers*, which would be apt to over-run the

the Borders. It delights in moist Ground and Shade.

THE *French Willow* is also one of the Dwarfs of this Chapter, and is rather a greater Increaser than the former, producing incredible Numbers of *Suckers* about the *Root*, which may be taken off and transplanted, either in the *Spring* or *Autumn* Seasons; if we plant it in *Wilderness Works*, it will soon over-spread the Ground, but if it be desired in the *Parterre* for the sake of its pretty Pink-colour *Flowers*, the *Roots* must be confin'd in *Pots*.

THUS I think I have mentioned every sort of *Flowering Shrub* and *Tree* known to the Gardeners, and have given such Directions for their *Culture* and Management in Gardens, as I have my self experienced. I might indeed have added to them the *Berberry* and *Almond*, which produce such agreeable *Flowers*; but as those *Trees* are chiefly celebrated for the *Fruits* they bear, so I shall not take any further Notice of them 'till I speak of *Fruits* in general. I shall conclude this Chapter with taking Notice once more that every one of the *Flowering Shrubs* I have mentioned. may be cultivated in *Garden-Pots*, and so placed from time to time, as they *blossom*, in the Borders; by which Method a Gardener may change the Face of his *Parterre* every Week, and supply it constantly with fresh Beauties.



C H A P. IV.
Of PERENNIAL FLOWERS,
the tallest Blowers.

I Intend in this Chapter to speak of such *Flowers* as remain for many Years in the Ground, *Growing, Blossoming, and Increasing*; and as they are most of them such as will rise to a considerable Height, and therefore the most proper to be planted in the Middle of Borders, and chiefly in large Gardens. I shall set down, as near as I can remember, their several Heights, and recommend that they be planted in Places proportionable to their several Altitudes, that if it is possible, one may not find such intollerable Mistakes as are frequently committed in many Places, of planting Dwarfs in the midst of a Border, and some of the most Gigantick Kinds of *Flowers* for *Edgings*; but that in the Planting a Border or Bed of *Flowers*, we may judiciously mix the several Sorts, so as to have not only some of them in *Blossom* every Month of the Year, but that they may be so disposed as to appear gradually

one above the other, and add Beauty to each other by their Variety of Colours; for which end I shall to add a Figure of a Bed of Earth four Foot wide, divided in the Manner I propose, and set down the proper *Flowers* allotted for each Division of it, when I have mentioned the several Sorts, and their Culture.

S E C T. I.

Of the HOLTHOCKS.

THIS *Plant*, as it is always rais'd from *Seeds*, so are the *Flowers* commonly different from each other. I have seen about ten several Sorts of them in one Garden, which if the System of the *Generation* of *Plants* be true, may happen from accidental Coupling of one with the other; their *Flowers* are commonly double, and so cannot perhaps be very easily impregnated with other *Farina* than their own, otherwise we might have had many more Varieties of them; however as they are, they neither want Beauty nor Stature, seldom bearing their Flower Stems less than six Foot high from the Ground, which are commonly garnish'd with their Rose-like *Blossoms* above half their Height. Their *Seeds* are sown in *March* in the natural *Earth*; and tho' they do not lie long in the Ground before they come up, yet they produce no *Flowers* 'till the

the second Year: They may be transplanted about *September* or *March*, and will begin to Flower in *July* or *August*; they require a rich Earth, and frequent Waterings in the Summer, to make them large. These remain good several Years, and may, for their Duration as well as their Magnitude, take Place among the Flowering Shrubs in Wilderness Works, or be planted in Lines in Avenues of Trees, where Cattle cannot come to destroy them; sometimes in the most remote or open Parts of large Gardens, where their *Red, White, Purple* or *Black* Flowers afford a beautiful Prospect. They die to the Ground every Winter, and shoot out again the following Spring: They are also increas'd by parting their Roots in *March*, but the Plants propagated that way, are not so strong to Flower as the Seedlings.

S E C T. II.

Of the PERENNIAL SUN-FLOWER.

THIS *Plant* blossoms about the same time with the former, and will bear its *Flower Stems* near six Foot high, if it be encouraged with rich Earth, and well water'd in the Summer Months. The Yellow *Flowers* which it produces resembling so many *Stars*, are very delightful,

but are not so large as those of the *Annual Kind*. It may be propagated from *Seed* sown in *March*, or *Slips* of the *Root* taken off at that time, and transplanted. The Summer *Shoots* of this *Plant*, like those of the former, always perish at the Approach of *Winter*, and are succeeded by others in the following *Spring*. It will grow in the *Shade* and almost any *Soil*, and is even capable of resisting the *Smoak* of *London*; where it is often cultivated in *Pots*. It may be planted as a *Companion* with the *Hollyhock*.

S E C T. III.

Of the ASTERS or STARWORTS.

THE curious Botanists reckon about twenty Sorts of *Starworts*, and I think I have seen the Figures of about fifteen different Kinds of them. Their several Names and Descriptions would be tedious to my Reader: And since they are all propagated after the same manner, the mentioning only of two Sorts, which I esteem to be preferable to the rest, may suffice for the Instruction of any Planter.

THAT Sort which is the tallest of the Two which I shall recommend; is known to the Gardeners by the Name of the *October Flower*, it bears its *Purple* Flowers about *October*, upon *Stalks* of about four Foot from

from the Ground, and is not inferior in its Beauty to any Flower of the Spring. I cannot forbear taking Notice in this place, that the Flowers of the Autumn Season are inclining to the darker Degrees of Colour; this and other *Asters*, which blow late, produce *Purple Blossoms*, the *Saffron Crocus* has Purple Flowers, and the Autumn *Cyclamen* is tending to that Colour; *Stock July-Flowers*, which Blossom about the End of the Year, are all inclining to Purple; and the *Colchicums* likewise, which are Autumn-blowing Flowers, are stain'd with the same Colour. I think it would be well worth the Enquiry of the Curious, whether this Purple which reigns in the Autumn among Flowers, does not proceed from the Quality of the Earth at that time, whose purest Juices are then exhausted. But to return to the Culture of this *Aster* or *October-Flower*, it is so apt to increase in its Roots, that without it be confin'd in Pots, either as I have directed for the foregoing *Plants*, or as a most Curious and Learned Gentleman in the Art of Gardening, *Samuel Reynardson*, Esq; of *Hillingdon*, has been used to plant it (in Pots without Bottoms) it will quickly overrun the Ground; every *Slip* taken from the Root in *March* will grow in any Soil or Exposure, and make a good Show that Year. It is a fit Companion for the tallest Flowers.

THE *Italian Starwort* is the other Sort which I would recommend to the Gardener, it produces its Purple Flowers in *August* and *September* upon Stalks of about two Foot high, this may be managed like the former ; but as it is of a lower Stature, should be planted in lesser Gardens, and smaller Works than the other.

S E C T. IV.

Of the Everlasting P E A.

THIS *Plant* is likewise *Perennial*, and may very well be placed among the tallest *Plants*; it is raised from Seeds sown in *March*, but does not Blossom 'till the second Year after sowing. The *Flowers* which are of a *Peach-bloom* Colour continue Blowing for above two Months. Doctor *Grew* tells us, that the Blossoms of this *Plant*, if they are steep'd some time in Spirits of Wine will produce a fine liquid *Blue* Colour, equal to that of *Ultra Marine*. The *Plant* will hardly bear Transplanting, without great Care to put it immediately in the Earth; the proper Season for it is *March*, or as soon as the *Haulm* is wither'd. As it is *Carot-rooted* it delights in sandy Soil, and should be planted either near a Tree or some Hedge where it may have Support ;

it

it will grow about eight Foot high, if it be tied to a Stake.

S E C T. V.

*Of the CAMPANULA PIRAMIDALIS
and CANTERBURY BELLS.*

OF the *Campanula Piramidalis* there are two Sorts, one bearing *Blue*, the other *White* Flowers, upon Stalks which are sometimes near six Foot high. Both these Kinds have been chiefly cultivated in Pots for the adorning of Chimneys in the Summer Months, but they will grow very well in the natural Ground, if the Slips about the Roots are parted in *March*. They delight in sandy Soil, and are very proper Ornaments for the middle Row of Flowers in large Borders; they Blossom in *July* and *August*.

THE *Canterbury-Bells* have Blossoms of a deeper Blue than those of the *Campanula Piramidalis*; the Flower-stems are commonly about three Foot high, so that this *Plant* is proper for the Middle of Borders in large Gardens; it is raised from Seeds sown in *March*, but does not Blossom till the second Year after Sowing; the Time of removing the seedling *Plants* is either in *August*, or the *March* after they are come up.

S E C T. VI.

Of the PRIMROSE-TREE.

THE *Primrose-Tree*, so call'd by the Gardeners because the Blossoms are somewhat like those of the common *Primrose* in Smell, Shape, and Colour; the Flower-stems will sometimes rise near three Foot high, and produces Flowers in *June*, the Seed is ripe about *August*, and must be sown in the Natural Ground in *March*, towards the latter End of the Month. The seedling *Plants* will not Blossom 'till the second Year, therefore should be sown in a Nursery, and the young *Plants* removed to proper Places the *August* after they are come up. This *Plant* also is proper for the Middle of Borders in large Gardens, and will grow in any Soil.

S E C T. VII.

Of the LILTS and MARTAGONS.

ALTHO' the *Lilly* and *Martagon* are properly bulbous rooted *Plants*, yet for their Extraordinary Stature above all other Bulbs that I know, I shall place 'em among the Giants of this Chapter; and besides, as their Roots flourish the better for remaining constantly in the Ground, I think they may well enough take place
among

among the *Plants* I am now describing. The *Lillys* are what I shall first examine, of which there are many Kinds, viz. the *Common White Lilly*, the *Double-Blossom'd White Lilly*, the *Strip'd Lilly*, the *Orange Lilly*, and that Kind which produces *Bulbs* upon its Flower Stalks. These *Lillys* are all of them propagated after the same manner, by parting their *Roots* when the *Leaves* are vacant about *July* or in *August*; they all of them blow about the same time, in *May* and *June*, upon Flower Stems of three Foot high, or thereabouts, and equally delight in open *sandy Soil*; they are very proper *Plants* for the Middle of Borders in great Gardens, or to be planted under Hedges in long Walks, except the *strip'd White Lilly*, which is yet Rariety enough to deserve a Place in the nicest, and even the smallest Garden: But of these separately.

FIRST, the *White Lillys*, whether with single or double Flowers, have no other Difference than in the Make of their Blossoms; that with *single Flowers* is in my Opinion preferable to the other which is call'd the *Double Blossom*; the *first* has large perfect *Flowers* in good Quantities, and the *other* mis-shapen *Blossoms* without any other Desert than their Novelty. What is call'd the *strip'd White Lilly*, differs only from the Common Sort with single

Blossoms, in having its *Leaves* curiously *Edged* with a *Cream Colour* ; it is so beautiful in the Winter, that few of the gayest *Plants* exceed it.

THE *Orange-Lilly*, so call'd from the Colour of its Flowers, is very Ornamental in Gardens, and a very proper Companion for the *White Lilly*, and makes an agreeable Mixture with it ; and the other, which bears its *Bulbs* on the Flower-stalks, is very desirable for its beautiful Red Flowers, as well as for its singular way of producing its Increase. It would be well worth our Enquiry, from whence these *Bulbs* have their rise, whether they do not proceed from *Female Blossoms* impregnated by the *farina* of the *Flowers* ; I own it is a Case which I have not yet duly consider'd, but I hope I shall be able to give a better Account of it, when I have examin'd it more strictly ; and I could wish every curious Reader would communicate his Observations upon Cases of this kind, directed for me at Mr. *Mear's* the Publisher of these Papers, that by a mutual Correspondence of Curious Men, many Mysteries in Planting might perhaps be discover'd and brought to light for the Profit and Pleasure of Mankind, which is the chief End I aim at in these Papers.

THE *Martagons*, called by some Gardeners *Turks Turbants*, or *Curl'd Lillies*, differ from the *Lillies* I have already mentioned in the Frame and Order of their *Flowers*; the *Blossoms* of the *Martagons* hang downward, and have their *Petals* or *Flower-leaves* curl'd or turn'd up, which the *Lillies* have not; but the *Roots*, *Flower-stems* and *Leaves* are not unlike those of the *Lilly*; and in respect to their Culture are ordered in the same Manner, and love a light sandy *Soil*. They most of them blow about two Foot high, except the *Virginian Martagon*, which is commonly three Foot in its Flower-stem; their *Flowers* are of several Colours, some *Yellow*, others *Scarlet* and variously spotted, but the *Virginian* Kind far exceeds all the others for its beautiful *Flowers*, and is found but in few Places. They are all of them proper for *Parterres*.

S E C T. VIII.

Of the FOXGLOVE.

THE curious Gardeners cultivate three sorts of *Foxgloves*; the first or tallest sort they call *Iron-colour'd Foxglove*, the other two are distinguish'd likewise by the Colours of their *Flowers*, viz. the *Purple* and the *White*; they are all of them rais'd from *Seeds* sown in *March*, but do
not

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not *Blossom* 'till the second Year after *sowing*, the *Flowers* commonly appear in *May* and *June*. The first blows about four or five Foot high, the other two about three Foot. These *Plants* delight in the Shade, and thrive well in a Loamy Soil.

S E C T. IX.

Of MULLEINS and MOTH-MULLEINS.

TH E S E Kinds of *Plants* are very rampant, and therefore very proper Companions for the others of this Chapter, few of them *Blossoming* lower than four Foot, but some six Foot high, they are all raised from *Seeds* sown in *Autumn*; or if Conveniency will not permit at that time, *March* will serve; they delight in sandy Soil, and shady Places; and altho' they are most of them wild *Plants*, yet the beautiful Spikes of *Flowers* which they produce in the Summer, renders them worthy our Regard. There are many Kinds of them bearing *Flowers* of different Colours, some *White*, others *Yellow*, *Red*, *Brown*, *Purple*, *Black* and *Green*, so that I see no reason why they should not be cultivated among other tall *Plants* in large Gardens. They *Blossom* the second Year after *Sowing*.

S E C T. X.

Of the ACANTHUS.

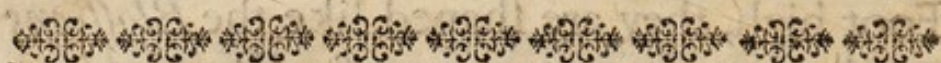
THIS *Plant* is very rarely found in the Gardens about *London*, and I do not remember to have seen it in above four Gardens in *England*, notwithstanding its Curiosity and easie Culture. The *Flowers* appear in *June* upon Stalks of above two Foot high, they are shaped like the *Blossoms* of the *Foxglove*, and are of a *Peach-bloom* Colour; the Leaves of the *Plant* also are not without their Beauties, full of Thorns as any *Thistle*, and prettily variegated. The *Seeds* must be sown in *March*, but will not *Blossom* until the 2d or 3d Year; they love a sandy *Soil*, and Shade.

S E C T. XI.

Of the WHITE HELLEBORE.

THERE are two Kinds of the *White Hellebore*, one with *Redish Black Flowers*, and the other with *Greenish Flowers*; the first *blossoms* in *May*, and the other the following Month; the *Leaves*, *Roots* and *Stature* of both Kinds, are much alike; both having curl'd plated *Leaves*, and *blossoming* about four Foot high. The *Leaves* are of themselves a pretty Ornament, and the large Spikes of their *Flowers* are

are surprizingly beautiful for their odd Colours ; they both die to the *Root* in *Winter*, and are propagated from Off-sets parted in *March*, and planted in a rich light *Soil*. These *Plants* are proper for large Gardens, and with them I shall conclude this Chapter, and proceed to treat of such *Flowers* as are less rampant, and take up less room in Gardens.



C H A P. V.

Of Middle-siz'd Perennial Flowers.

IN this Chapter I shall mention such *Perennial Flowers* as are of middle Stature, and less Rampant than the former, and consequently are proper Inhabitants for smaller Gardens ; the first I shall treat of is the *Valerian*, and its Kinds.

S E C T. I.

Of the VALERIAN.

THERE are three *Plants* known to the Gardeners by the Name of *Valerian*, and distinguish'd from one another as follows, *Dodineus's* or *Red Valerian*, *Garden* or *White Valerian*, and the *Greek Valerian* ; all these blossom about the same time

time of the Year, in *May* and *June*, and may be raised from *Seeds* sown in *March*. The first, *i. e.* the *Red Valerian*, is of less Duration than the other two, it *blossoms* about two Foot high, bearing great Quantities of small *Red Flowers*: I have not try'd whether it is increas'd by parting the *Roots*, but have propagated many *Plants* of the other Kinds that way in *March*. The *Garden Valerian* blossoms about the Height of the former, bearing Tufts of *White Flowers*, and has this Quality which is found in the first, that the *Root* when it is broken, yields an agreeable Odour. The third Sort, or *Greek Valerian*, blossoms about a Foot high, bearing pale *Blue Flowers* in Bunches on the Top of its Flower Stems. This is a fibrous-rooted *Plant*, very easily increas'd by Slips. I have seen this sort with variegated Leaves common enough in several Gardens.

S E C T. II.

Of the Perennial Cyanus, or Blue-bottle.

THIS *Plant* is either raised from *Seeds*, or propagated from *Slips* taken from the *Root* in *March*; the *Flowers* are admired chiefly for their fair *Blue Colour*, which is the most rare of any other in the Flowers of *Plants*; the Flower-Stalks are commonly about two Foot high, *blossom-*
ing

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ing in May and June; and frequently in
Autumn; this Plant loves a light natural
Soil, and an open Exposure.

S E C T. III.

Of the MONKS-HOOD, or Blue HELMET-
FLOWER.

THIS *Flower* is very common in the
Gardens remote from *London*, but
in those near the City it is rarely found;
the *Flowers* are of a deep *Blue*, and of a
surprizing Make; they appear upon Stalks
of about two Foot high in *May* and *June*,
and are so poisonous, that I have heard
the eating only 6 or 7 of the *Blossoms* in
a Salad, has kill'd a Gentleman in *France*,
who was not apprised of their evil Quality;
it is said that where they grow wild, no
Cattle will touch them; and that the sort
of Insect natural to this *Plant*, is an Anti-
dote against the Biting of all venomous
Creatures; we may propagate this *Flower*
by parting the *Roots* in *March*. It De-
lights in a Loamy *Soil*, and Shade.

S E C T. IV.

Of the ROSE-CAMPION.

THERE are three sorts of *Rose-Cam-*
pion cultivated in our Gardens, the
Red and *White-flowering* Kinds, and the
Red

Red Double-Blossom, they all of them blow about a Foot and half high in *June* and *July*; the first two sorts are raised from Seeds sown in *March*, or from *Slips* taken from the Root at that time; and the Double-Blossom Kind, which produces no Seed, is only propagated by *Slips* in the same Month; this last is a desirable *Plant* for the Extraordinary Colour of its Flowers, which is the most dazling Red I had ever seen. A Loamy Soil and open Exposure is the most proper for them.

S E C T. V.

Of the Double-flower'd R O C K E T.

TH E Gardeners know two sorts of *Double Rockets*, the *White Flowering* sort, and that with the *Flesh-Colour* Flowers; they both blow in *May* upon Stalks of about a Foot and half high; the *White Flowering* Kind is more esteem'd than the other, and more commonly found in Gardens, these are propagated from *Slips* taken from about the Root, and planted in *March* in Loamy Soil, they delight in an open Exposure.

S E C T. VI.

Of BACHELORS-BUTTONS.

THE Flower call'd by the Gardeners the *Bachelors-Buttons*, is of two Kinds, I mean only such as are cultivated in Gardens, for there are other sorts of them which grow wild, and bear only ragged single Flowers, and are not thought worthy our Care. These double Flowering Kind are only different from each other in the Colour of their Flowers, the one Red and the other White; the first is common enough in most Gardens, but the White is more rarely found; they produce their Blossoms in *June* and *July*, upon Stalks of two Foot high. These *Plants* love Shade and a Loamy Soil, and are propagated by parting the Roots in *March*.

S E C T. VII.

Of the SCARLET-LYCHNIS.

THE *Scarlet-Lychnis* is a *Plant* so beautiful, that it cannot well be wanting in our Gardens; the *Single-flowering* sort, as well as the *Double Kind*, are both very delightful to the Eye, they bear their *Trusses* of *Scarlet Flowers* upon Stalks somewhat more than two Foot high in *June* and *July*, and are so much esteem'd, especially

especially the *double Sort*, that Gardeners usually cultivate them in Pots for the nicest Quarters of their Gardens, or to set in Chimnies in the Summer; this *double Kind* is increas'd by flipping the Root in *March*, and that with the *single Flower* may be propagated after the same Manner, or rais'd in that Month from Seeds, which I think blossom the first Year: They love an open Exposure, and a light natural Soil.

S E C T. VIII.

Of the SWEET-WILLIAM.

OF this Plant there are two sorts with *single* Flowers, and a *double* Kind, commonly cultivated in Gardens; the *single* ones differ only in the Colour of their Flowers, the one has *Trusses* of Blossoms variegated with Red and White; and the other, Clusters of Flowers of a deep Crimson Colour. These two bear their Blossoms in *June* and *July*, upon Stalks of two Foot high; and the *double flowering* Kind produces its beautiful red Flowers in the same Months upon shorter Stems. The first two Kinds, *viz.* those with the *single* Flowers, may be rais'd from Seeds sown in *March*, and will blossom the second Year; but the *double Sort* is only propagated from Slips taken near the Root about *March* or *April*, and planted in a

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Loamy Earth, which they delight in. The
others may be also encreas'd after the same
manner, or may be laid down in the
Earth like *Carnation* Layers.

S E C T. IX.

*Of the CARNATION or JULY-FLOWER,
Vulg. GILLYFLOWER, and PINKS,
their several Kinds.*

THIS admirable Flower is of all others
the most delightful, as well for the
agreeable Scent as for its beautiful Co-
lours; the Varieties of it are hardly to be
number'd, every Year producing new
sorts of it from Seeds. The Gardeners di-
vide it into Five Classes, which they di-
stinguish by the Names of *Picketees*, *painted
Ladies*, *Beazarts*, *Flakes* and *Flames*: The
Flowers of the *Picketees* are always of a
white Ground *spotted*, or *pounced* (as they
call it) with *Red* or *Purple*: The *painted
Ladies* have their *Petals* tinged, on the
upper side, either with *Red* or *Purple*, and
the under side of their Flower-leaves is plain
White; the Flowers of the *Beazarts* are
strip'd, or variegated with four distinct Co-
lours; the *Flakes* are of two Colours only,
and those always strip'd; and the *Flames*
have a red Ground always strip'd with black
or very dark Colours. Each of these *Tribes*
is very numerous, but the *Picketees* chief-
ly,

ly, of which I have seen above one Hundred different sorts in one Garden, every one distinguish'd by the *Name* or *Title* of some Person of *Note* or *Quality*. The *Florists* likewise mark the Properties of these Flowers by the Shape of their *Flower Pods*; that Race of them which blow without bursting, are call'd *long podded* Flowers; and the other, whose *Petals* cannot contain themselves within the Bounds of the *Chalix*, are call'd *round podded* Flowers. I have measur'd the Blossoms of some of the last Kinds above four Inches over, but have heard of some that were larger. These Flowers are not of any certain Height, some of them blowing near four Foot, and others not two Foot high, and the Times of their Flowering is also as uncertain as their Stature, some of them beginning their Blossoms in *June*, others not till near *August*; but this happens from the different Seasons of sowing the Seed; those which are put into the Ground about *March* will blow sooner than those sown in *May*; altho' they do not blossom till the second Year; however, the Height of their *Bloom* is about the Middle of *June*, as it is then the *Florists* have their grand Assembly, to shew their Varieties and name their new Curiosities. These Flowers are propagated either from Seeds or Layers, and as they are so particularly admir'd, by all

Lovers of a Garden, I shall be the more exact in the Method of their Culture: First then, to begin with their *Seeds* and Manner of sowing them; my Reader may remember that in the second Chapter of my first Part, concerning the Generation of Plants, I have endeavour'd to explain how the *Dust* of one Flower will impregnate and enliven the *Seeds* of another; and that from that accidental Coupling, the *Seeds* are so chang'd as to produce Plants with Blossoms varying from those of the Mother-Plant. I have likewise shewn why double Flowers seldom bear *Seed*, which I conjecture is because the *Male Parts* in them are either not perfect, or else are confin'd from Action by the Multiplicity of the *Petals*. This Consideration leads me to advise the Curious Florists to plant of every good sort of his double Carnations in Beds on a Line in the Middle, and on each Side of them to set at least two Rows of single ones of choice Colours, and among them some Plants of *Sweet-William*, and of the *China* or *Indian Pinks*, which have such Varieties of odd Colours in them, as I shall mention hereafter. The *China Pinks* and the *Sweet-Williams*, bearing single Flowers, as well as the single Carnations, may have Opportunities of communicating their *Farina* into the Cells of the double ones, and set their

their Seeds, which if they do, we shall not only gather a larger Quantity than we could otherwise expect, but likewise be assur'd of great Varieties from them. If we have good Fortune enough to find the *Seed-Vessels* begin to swell, we must guard them carefully against two Evils, *Earwigs* and *Wet*; the first may be destroy'd by hanging Hoggs-Hoofs, the Bowls of Tobacco-Pipes, or Lobsters-Claws, on the Tops of the Sticks which support the Flowers, and killing the Vermin, which will lodge in them, every Morning. And to preserve the swelling *Fruit* from rotting by too much *Wet*, shelter the Flowers with little Basons or Trenchers, which will likewise serve to keep off the too great Heat of the Sun, which would hinder their Growth. With this Care you may expect to find the *Seeds* ready to gather towards the latter end of *September*; this Work must be done when the Weather is dry, if possible, least after all our Pains they grow mouldy and decay. Gather the Seeds with the Stalks they grow upon, and let them remain in that State expos'd to the Sun through a Glass for a Month or two, without opening any of the *Husks* or *Seed-Vessels* till the Time they are to be sown, which according to my Opinion is best done in *April* in the following Compost.

TAKE two Load of Sandy Loam (as the Gardeners call it) or of my Medium Soil, to which add one Load of well consumed Melon Earth; sift these well together, and let your Heap lie for a time to mellow, then sift it a second time, either to sow the Carnation Seeds in, or to plant your *Layers* or *Roots* of them upon. Having fill'd your Pots with this Earth and smooth'd it on the top, sprinkle on your *Seeds*, and covering them half an Inch with the same Compost, press it gently with a Board, and let them stand exposed to the Weather, the Seed will be up in about three Weeks and the young *Plants* big enough to transplant into Beds the *July* following, they must be set about ten Inches distant from one another, and shaded from the Sun with Matts for about three Weeks, uncovering them every Evening for the Benefit of the refreshing Dews. The second Year after sowing you may expect many Varieties from the seedling Plants, and 'tis in this, the great Pleasure of Gardening consists. Whatever Rarities you find in this Nursery, must be *laid* down so soon as possible, by cutting half thro' a *Joynt*, and splitting the *Internode* upwards half way to the other *Joynt* above it; then must the wounded part be buried in the Earth, and fasten'd down with a Hook of Wood, till it strikes Root, and can shift for itself, which

which will be in two Months time, if the Earth be light. But as the time of laying down the *Layers* of the Seedlings is uncertain, in that we cannot know which are deserving of that Trouble, therefore I shall take notice, that the most proper Season for this Work, is in *July*, so soon as the *Layers* are big enough for that Operation, that they may get *Roots* betimes to be taken from their Stocks, and transplanted early in the Autumn, where they are to remain all Winter. Tho' some rather chuse to leave them on the Old Roots till *March*, before they transplant them: but that I cannot approve of, because I have Experienc'd, that the Removal of these *Flowers* in the Spring, often endangers them, and makes them blow late and weak; whereas, on the contrary, if when we take of the *Layers* in Autumn, we then *Plant* them either in the Pots or Borders where they are to blow, we are certain of their Blossoming somewhat earlier, and much stronger, and besides, their *Increase* or *Layers*, will be in a fit Condition to lay down betimes. However, whether we *Plant* out these *Flowers* in Autumn or in the Spring, it will be necessary to acquaint the Planter that they should be shaded or defended from the Sun for a Fortnight after planting, and during the Winter should always be

nigh some place of Shelter in case of severe Frosts. It remains now for me to say something of the *Blowing* of a *Flower* as it is practised by the most Ingenious *Florists*; about *April*, when the Flower-Stems begin to put forth, (or *Spindle*, as the Gardeners term it) we must place by each Flower a straight Stick of about four Foot long, and tie the *Spindles* to it as they shoot. So soon as the *Flower-buds* appear, leave only one of the largest upon each Flower-stem to *blossom*, about ten Days before the *Flowers* open themselves, the *round podded* Kinds will begin to crack their Husks on one side, then must the careful Gardener with a fine Needle split or open the Husk on the opposite side to the Natural Fraction, and about three or four Days before the compleat opening of the Flower, must cut off with a pair of sharp Scizzars, the Points on the Top of the Flower-Pod, and supply the Vacancies, or the Openings on each side of the Husk with two small Pieces of Velom, or Oil-cloth, which he may easily slip in between the *Flower-Leaves*, and the Inside of the *Husk*, so will the *Blossom* display its Parts equally on all Sides, and be of a regular Figure; but besides this Care, it is a common Practice, and with very good Reason, when the *Blossom* begins to shew its Colours, to shade it from

from the extream Heat of the Sun, either with a Trencher-like Board, or some other Device of the like Nature fasten'd to the Stick that supports it; *for Flowers as well as Fruits grow larger in the Shade, and ripen and decay soonest in the Sun.* Thus I have done my best Endeavour to inform the Curious Gardener of the most proper Method for Increasing and Improving of this Flower; but am obliged, before I conclude this Section, to mention the several sorts of *Pinks* proper for Gardens, which are of the same Family with the *Carnation*.

THE *Pinks* most commonly cultivated in Gardens are the *Red Double-Pink*, the *White Double-Pink*, the *Double-Pheasant Eye-Pink*, the *Dwarf Double-Mountain-Pink*, and the *China-Pink*; besides the common single ones rais'd from Seed sown in *Drills* or *Lines* about *March*. The first Three of these blow about a Foot and half high, and altho' they have been frequently used for Edgings in Gardens, yet I shall take the Freedom to direct them rather for the Inside of Borders, where they should be planted in Spots, they are too apt to grow irregular in Edgings. The *Dwarf Mountain-Pink* indeed, as it is a slow Grower, and is seldom above eight Inches high, may well enough be placed on the out-sides of Garden-beds; but

but that sort is now rarely found. These four Kinds of *Pinks* are all raised from *Slips* planted in *August*, or very early in the Spring. The *China-Pink* is admirable for its strange Variety of odd Colours, and its surprizing Variegations in the Middle of its *Flowers*; this Sort is yet a Novelty with us, and to be met with only in some curious Gardens; it is rais'd from Seeds sown in *March*, and *blossoms* the first Year about a Foot high, and will resist the Frosts of our Climate, if the Flower-stems are cut down as soon as the *Blossom* is over.

S E C T. X.

Of the WALL-FLOWERS.

I Have seen five Sorts of *Wall-Flowers* cultivated by the Gardeners, which are very well deserving Place among the most delightful Flowers for their pleasant Odour and lasting Blossoms; the most common sort of them is that with the *Double Yellow Flower*, and the more rare Kinds are the *Double Yellow* with variegated *Leaves*, the *Double White*, the *Bloody Wall-Flower*, whose Flowers are Yellow tinged with red, and a new sort with *large single Flowers* variegated with Yellow and Brown; all which Blossom about the same Season of the Year, and about two Foot high from the Ground,
and

and may be raised from *Slips* planted in shady Places, either in *March*, *April*, *May* or *June*: But the last sort may be more easily propagated from Seeds sown in *March*. The Seed-Vessels of this and other single Kinds of it, as well as their Flowers, are so like those of the *Stock July-Flowers*, that I am of Opinion they might be made to impregnate each other's Seeds if they were planted nigh enough together, and from such Coupling, perhaps, might be produced a *Stock July-Flower* with Yellow Blossoms. It is what I design to try, myself, as well as many other Couplings of the like Nature; and altho' the Seed of such a neutral *Plant* would not be made to grow, the Species may be continued and increas'd by planting *Slips* or *Cuttings* of it, as is common in the Culture of *Double-Stocks*. These *Wall-Flowers* delight in sandy Soil, or to grow among Rubbish.

S E C T. XI.

Of STOCK JULY-FLOWERS, *Vulg.*
GILLY-FLOWERS.

THERE are *Shrubs* like the former, commonly about two Foot high, some sorts of them blossoming almost all the Year. The single Kinds of them are all rais'd from Seeds sown in *March*, and will come up, and be fit to transplant the
Autumn

Autumn following, but do rarely blow till the second Year, unless they be raised in Hot Beds, or are of the Annual kind, as they call it. Among the Seedlings, we often find *Plants* with double Flowers, which should be carefully transplanted into Pots for the Ornament of the nicest Places in the Garden, or to adorn Chimneys in the Summer. The double Kinds may be increas'd by *Slips* or *Cuttings*, planted in *May*, *June* or *July*; but it is not worth while to propagate the single ones, after any other manner, than from their Seeds. There are five sorts of them, besides the *Dwarf* kind, or *Annual-Stock* for Edgings. The *White Flowering* kind, that with the *Purple-Flower*, the *strip'd* sort, the large *Red Brompton Stock*, and that Sort which Blossoms the first Year; of all which the *Brompton* kind is esteem'd to be the best: The Scent of their Flowers is very grateful, and the several Colours of their Blossoms, if they are well mixt, are extremely Beautiful. They love a light Natural dry Soil, and are apt to perish by too much wet in the Winter, therefore it is advisable to sow a Young Nursery of them about *August* to blow early the next Year, if the great *Plants* drop off as they did every where in the severe Frost of the last Year.

I cannot any where, so properly as in this Place, take Notice of an Observation which an Ingenious Gentleman has communicated to me concerning the Seeds of *Plants*, and particularly of those of the *Stock July-Flower*; he says that he once bought some *Stock-Seed* of a Gardener near *London*, which he sow'd in his Garden in *Oxfordshire*, and brought him great store of double Flowers, and some few single ones of an extraordinary Colour and Bigness, which were so much admired by the Gardeners round about him, that he was continually solicited for some of the Seed. He saved a large Quantity, and supply'd several curious Persons with it. What he gave away maintain'd for the first time of sowing, its first Excellence, but what he sow'd in his own Garden lost its good Qualities. In short, he was now become a Supplicant to those he had set up, and from the Seeds they had saved, he had the Pleasure of raising many *Double-Flowers*, while those who had saved the Seeds, complain'd of their ill Luck, and were apt to say, that if they had not gather'd them with their own Hands, they should have believed they had been imposed upon; at last, they all agreed mutually to Exchange the Seeds of this and other Flowers annually, and every one had good Success. This Story, I think, plainly shews

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shews how much the Change of Air and
Soil contributes to improve some particular
Vegetables.

THE Annual Stock for Edgings will be
more properly introduced in the Chapter
relating to other Annuals.

S E C T. XII.

Of the French HONT-SUCKLE.

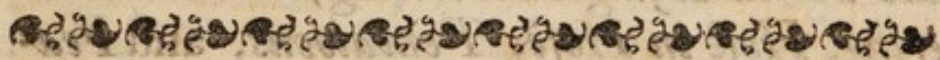
THIS *Plant* bears Spikes of *Purple-Flowers*, much like those of the *Lupines* in their Figure and Manner of Growth; it Blossoms above a Foot high, and makes an agreeable Show. It is raised from Seeds sown in *March* or *April*, in the Natural Ground, which should be light, and lie exposed to the *Sun*; the seedling *Plants* will not Blossom till the second Year, and sometimes not till the third, especially if the Ground be overmoist. 'Tis a hardy *Plant*, and will live several Years.

S E C T. XIII.

Of the FLOSCARDINALIS.

I Have seen and Cultivated only two
sorts of the *Cardinal Flower* in *Eng-land*; the one blows almost three Foot high, with slender Stalks, and most Beautiful Flowers of a ruby Colour; the other blossoms about two Foot high, and bears pale
Blue

Blue-Flowers; the Seeds of both these kinds are brought from *Carolina*, and I think from *Virginea* likewise; they must be sown in Hot-Beds about *March* in sifted light Earth, the Seeds are so small that they must be but thinly cover'd with Mold, otherwise they will not come up, and the same Rule must be observ'd in the sowing all manner of Seeds, to cover them with Earth in Proportion to their Bigness. These *Plants* begin their Blossom about the latter End of *July*, and continue Flowering above two Months; they are commonly Cultivated in Pots, as well to give them some little Shelter in the most severe Frosts, as to place them in proper places for Ornament in Houses, but I am satisfied they will grow in open Borders, and thrive very well in such Places. In *April* they may be increas'd by parting their Roots, and should be planted in places expos'd to the *Sun*.



C H A P. VI.

Of the Lowest kinds of Perennial Flowers.

THE *Plants* which I shall treat of in this Chapter are such as are of the smallest Kinds, and therefore the most proper for the outsides of Borders or Garden-Beds,

Beds, and to be cultivated in small Gardens; the first I shall make mention of is the *Primrose*, and *Cowslip*, which are by the Gardeners both included in the Name of *Polyanthos*, tho' without Reason; for the *Primrose* bears only one Flower upon a Stalk, but the *Cowslip* indeed answers to the Name by bearing *many Flowers* upon a Stem; but Difficulties of this Nature I hope to set to rights some other time in a *Botanical Nomenclator*. In the mean while I shall treat the Gardener in his own Language.

S E C T. I.

Of the POLYANTHOS.

THIS sort of *Plant* is generally divided by the Gardeners into two Classes, *viz.* the *Primrose* Kind, and the *Cowslips*. These are again distinguished by the Terms of *single Flowering*, *double Flowering*, *Hose in Hose*, *Pentaloons*, and *Feathers*. The *single Flowering* sorts I need not explain, but take Notice only that their Colours are chiefly *White*, *Yellow*, *Red*, *Purple*, and sometimes *Violet Colour*, and frequently variegated in their *Flowers*. The *double Kinds* are not above four in Number that I know of, the *Double Primrose*, the *Double Paper White Primrose*, the *Double Red Primrose*, and *Double Cowslip*;

Cowslip; the *Blossoms* of which are full of *Petals*.

THE *Hose in hose* Kind has its Blossoms one in another, without Cases. The *Pentaloons* have Green Leaves about their Blossoms, which are sometimes variegated with the same Colours of the Flowers they encompass; and the *Feathers*, which seem by Nature to be at first design'd for *Hose in hose*, have their Blossoms so split and curl'd, that they somewhat resemble Bunches of Feathers. Of these there are many Varieties which are multiply'd every Year by sowing their Seeds; the Curious in this way sow them in *February*, upon a Place prepar'd with Earth taken out of decay'd Willows, often refreshing the new sown spot with Water, and keeping it shaded from the Sun all *April* and *May*, till the young Plants are above Ground. The Seedlings so rais'd, will be fit to transplant into Beds the *July* or *August* after they are sown, the Soil should be somewhat binding, and their Exposure to the Morning Sun; so will they be prepar'd to Blossom the *March* and *April* following. These Plants may be likewise propagated by parting their Roots in *August*, which is a much better Season for that Work than the *Spring*, altho' it may be done at that Time even when they are in flower. I have observ'd that such

98 *New IMPROVEMENTS of*
Polyanthos's as I have cultivated, began to
lose the Beauty of their Colours, if I
let them stand two Years without part-
ing, and even then would decline; so
that I advise every one who covets this
Plant in Perfection, to sow them every
Year, and transplant frequently. The *Prim-
rose* Kind of these, blossom close to the
Ground; and the *Cowslips*, about six
Inches high; both Sorts may be planted
near the Edges of Borders, and near
Houses, for the sake of their pretty
Smell.

BUT to leave the Garden a little, I must
recommend to my Reader the Planting of
some of the common sorts, that grow in
the Woods, in some of the most *Rural*
Places about his House; for I think nothing
can be more delightful than to see great
Numbers of these Flowers, accompany'd
with *Violets*, growing under Hedges,
Avenues of Trees, and Wilderness Works.

S E C T. II. *Of the AURICULA.*

THIS Flower above all other has been
the Pride of the Gardeners, and was
so much in Esteem some few Years ago,
that I have known one Root of it sold for
Twenty Guineas; but that was indeed
when they began first to appear in our
Climates.

Climates. The Art of raising them were discover'd and became familiar, and the foolish Vanity of diminishing a Fortune for a Set of Flowers was then lay'd aside; and now the Collections which were before without Price, may be purchas'd upon reasonable Terms. These *Flowers* are indeed very delightful, as well for their surprising Varieties, as the Fragrancy of their Smell; they blossom in *April*, and are in the height of their Bloom about the 20th of that Month; they blow commonly about six Inches high. The numerous Varieties of these Flowers are all distinguish'd by the Names and Titles of Great Men; and I have often thought of a pleasant Expression of a Friend of mine concerning these Flowers and their Extravagant Prices, *That the Auricula's increas'd so fast, and the Great or Wise Men decreas'd so fast, that in a short time this Tribe of Plants would want Men of Note to take their Names from.* But if it is possible for us to admire the Beauties of this Flower, when we may raise them with little Trouble and a Moderate Expence, my Reader may supply himself with them by following the Directions I shall here lay down for their Culture; and that he may be a right Judge of what are good among them when they come to blow, I shall present him with a Table of their

several good Qualities requir'd by the skillful Florists. A good *Auricula* ought to have the following Excellencies; *First*, That the *Flower-stem* be strong and substantial; *Secondly*, The *Foot-Stalks* of the *Flowers* must be short, and capable of supporting the *Blossoms* upright; *Thirdly*, That the *Pipe* or *Neck* of each *Flower* be short; *Fourthly*, That the *Flowers* be large and of a regular form; *Fifthly*, Their *Colours* should be bright and well mixt, *Sixthly*, That the *Eye* be large, round and of a good *White*; and *Lastly*, That the *Flowers* spread themselves flat, and be no ways inclinable to *Cup*,

WITH these Perfections we may account an *Auricula* to be good, and from such only we ought to save Seeds for sowing and propagating others, if we hope for Success; and as a help to our design let us consult the Chapter relating to the Generation of *Plants*, and improve the Variety by placing such *Flowers* as are of the most different Colours together whilst they are in *blossom*; that so the *Seed-Vessels* of the one may receive the *Dust* of the other, and by that means give us an agreeable Mixture of Colours in those *Plants* we raise from Seed; and it would be well worth our Enquiry, whether the Seeds thus Impregnated partake more of the Shape or of the Colours of the

the *Flowers* of the Mother *Plant*; to be certain of which, the *Plant* you make Tryal of must be castrated of its *Apices*, before they are ripe or burst open.

THE Seeds of this *Flower* should be gather'd so soon as the Flower-stem is Yellow, and the Seed Vessels come to their full growth: in the saving and preserving of these Seeds, as well as all others, I would advise, that the whole *Truss* or *Bunch* of Seed Vessels be gather'd with the Flower-stem, and remain upon it till the Time of sowing; for certainly nothing contributes more to the strength and Vigour of Plants to be rais'd from Seeds than a right Method of preserving such Seeds till the time of sowing, and what can better instruct us in that Method than Nature it self. Here I suppose some People will find fault with my Advice, and be apt to say, that if the *Stems* of the *Auricula's* with their Seed Vessels had remain'd upon the *Plant*, the Seeds would have fallen to the Ground, as soon as they had been ripe, and where is then my Argument that Nature would keep them cas'd all the Winter, as I propose to do from her Example.

To these I answer, that the *Seeds* of *Vegetables* are like the *Eggs* of *Fowls*, which after they are Perfected in the *Matrices* of either, will only keep good a

certain time before they ought to be *Set* or be put into a proper Posture for hatching; the Seeds which fall to the Ground are nourish'd by the Earth they fall upon, till the proper Ferment begins for their *Vegetation*. And if they are kept in their Cells till a proper Season for sowing, it is very reasonable to believe they will find there a natural Nourishment; since it is known, that they were perfected from the same *Juices* in the same *Cells*, and that were they to lie dry in a Chamber for six Months, without either Earth or their own natural Nourishment to feed from, they must certainly lose their Strength, altho' perhaps they may not entirely decay, But to proceed, the *Seeds* of the *Auricula* should be gather'd in a dry Morning as I have directed, and laid upon Sheets of Paper in such places where three Hours Sun may pass over them every Day for near a Month, till they are out of danger of growing mouldy, then may they be laid by in a dry Place, till the first Week in *February*, at which time the *Seeds* may be *clean'd* out and sown in the following manner.

PREPARE a Box of *Oak* or *Deal* four Foot long, two Foot wide, and six Inches deep, with holes in the bottom six Inches distant from one another. In this Box lay two inches thick of *Cinders* of *Sea Coal*, and

over

over them spread some fine sandy Loam the depth of three Inches, over which sift some Earth taken out of hollow *Willow Trees*, till the Box is full, and then sow the Seeds on the top without any Covering of Earth, only pressing them into the *Mold* with a Piece of flat Board to settle them below the Edges of the Box, that in Watering the light Seeds may not float over the Brims; this Seminary must be continually refresh'd with Water, so that it never be dry, for without a constant Moisture the *Seeds* will not come up. It is necessary to cover the whole with a Net to prevent the Birds from destroying the *Seeds*; and likewise to acquaint the Gardener, that from the time of sowing to the beginning of *April*, the Box should be so placed as to receive the Heat of the Sun, but after that time should be removed into some shady Place, lest the young seedling *Plants* be scorch'd and wither'd away. But if it should so happen thro' the Neglect of Watering, that the Seeds do not come up the first Year, let the *Case* be preserv'd till the Year following, and there will certainly be a good Crop, as I have often experienced.

THE Seedlings will be strong enough to transplant the *July* or *August* after they appear above Ground, they should then be planted about four Inches

distant from one another, in Beds of light Earth well sifted, where if possible they may only enjoy the Morning Sun, and it will be necessary to shade them even from that Warmth for a Fortnight after Planting. The *April* afterward, you may expect some of them will begin to shew themselves, and then as they answer the good Qualities I have mention'd, transplant them into Pots fill'd with any one of the following Soils.

First, To half a Load of Sea-Sand, add one Load of Loamy Soil, and one Load of Melon Earth, let all these be well mix'd and sifted together.

Second Earth, TAKE one Load of sandy Loam, to which add the like Quantity of Melon Earth, mix and sift them together.

Third Earth, TAKE of rotted Wood, or the Bottom of a Wood-pile, one Load, to which add the same Quantity of Loam, and half a Load of Melon Earth prepared as the other Earths.

I have already hinted, in the first Part, but I shall once more take Notice, that all mix'd Soils or Composts should lie some time for the several Parts to incorporate with one another before they are used. The three sorts I have here set down have been made use of by several Gardeners with Success; I shall not pretend to say which

which is the best, for I have seen *Auricula's* blow well in each of them, therefore shall leave my Reader to please himself. I think there remains little more for me to say, concerning this *Flower*, than to take Notice of the Method commonly used in the Blowing them, which is thus. Set your Pots upon Shelves, one above another, in such a Part of the Garden where the Morning Sun may only come at them, and as these *Flowers* are commonly cover'd with a sort of *Dust* which contributes in great Measure to make them Beautiful, some Covering must be provided for their Shelter against Rains which are apt to wash it away, and destroy their Colours. The Season for parting their Roots are either when they are in *Flower*, or about St. James's Tide, but the latter is judg'd to be the best. And now I shall conclude this Section of the *Auricula's*, with a Word or two of Advice to the Curious Florist, that he observe to keep them from much Wet in the Winter, often taking away their rotted *Leaves*, and that he does not let the first Week in *January* pass (if the Weather will permit) without taking the decay'd Earth from about the Roots of his *Flowers*, and filling up the Pots with fresh, from his Heap of prepared Soil. By which Means his *Plants* will be strong against their Flowering Season.

S E C T. III.

Of the BLACK-HELLEBORE *or* CHRISTMAS-
FLOWER.

OF these *Plants* there are reckon'd three Sorts among the Gardeners, which are all *Dwarfs*, and very proper for small Gardens, seldom Blossoming above half a Foot from the Ground; the most forward Blower of them is the *Black-Hellebore* with the *White Flower*, which begins to Blossom about *Christmas*, and continues till *February*: The second Sort is that with a *Green Flower* Blossoming about the same Time; and the third Sort has a small cut Leaf almost like *Fennel*, and bears a *Yellow Flower* in *May*; all these are propagated by parting the Roots in *September*, and delight in a sandy Soil and Shade. I have indeed taken off their Off-sets, and planted them when they were in Flower; but Autumn is much better. As yet, I have not seen any ripe Seeds of these *Plants*; but I suppose it was for want of examining them at due Season; if they bear any, as I am pretty well assured they do, the proper Season of sowing them is so soon as they are ripe. Every one of these sorts is so rare, that they are hardly

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hardly to be met with, unless at Mr. *Fairchild's* at *Hoxton*.

S E C T. IV.

Of the GENTIANELLA.

THIS *Plant* is one of the lowest Race;
I have seen but one sort Cultivated
in our *English* Gardens, altho' there are
many Varieties of it frequently found in
the *Dutch* Collections, and those of Neigh-
bouring Countries; the *Flowers* of that
Kind which is known to us, almost touch
the Ground, but are, notwithstanding their
Humility, as great an Ornament to a Gar-
den as any Flower I ever saw; their *Blos-
soms* open in *April*, and also frequently
appear in *November* and *December* if the
Weather be open; their admirable *Blue*
Colour is hardly to be imitated by *ultra*
Marine it self. This *Plant* delights in a
sandy Soil; where it will put forth many
Slips, which may be either parted from the
Root in *March*, or *August*.

S E C T. V.

Of the HEPATICA.

THE *Hepatica* is of several Kinds, viz.
that with the single *White* Flower,
the single and double *Peach Colour'd*
Flowers, and the single and double *Blue*
Flowering

Flowering-kinds; those with the single Flowers begin their Blossom in *January*, if the Weather be open, and the double Flowering sorts *blow* a Month later; they are encreas'd by parting their Roots either in *April* or *September*, and will only thrive in a light sandy Soil.

S E C T. VI.

Of the VIOLET.

THERE are several sorts of *Violets* commonly Cultivated in Gardens; the most common of them are the single *Blue* and *White* Kinds, the more rare are the double *Blue*, the double *White*, and that sort with *Variegated Leaves*; all these Kinds blow in *March*, and besides their Beauty, perfume the Air with a most delightful Odour. The sorts with double *Flowers* Blossom also in *Autumn*, if their Roots are strong. These *Plants* may be increas'd by transplanting their *Runners*, which will of themselves take Root at every Joint without any Art.

THE proper Season for this Work is either in *February* or *September*, but the last is the best. These should be planted among *Primroses* and *Cowslips* under Hedges, and the most rural Places of the Garden, or near the Edges of Garden-Beds;

Beds; they delight in binding Soil and shady Places.

S E C T. VII.

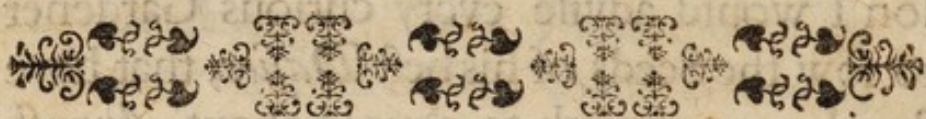
Of the D A S I E S.

THE *Dasy* is one of the smallest *Plants* that grows, its Flowers blowing about three Inches from the Ground. The sorts commonly known and cultivated in Gardens are, the *Double Red*, the *Double White*, the *Double Red and White*, the *Coxcomb* or *Rainbow Dasy*, and the *Hen* and *Chicken Dasy*; the last of these has little *Stalks* of *Flowers* growing out of the main Blossoms; besides these, I have seen near fifty different sorts which were rais'd from Seed in one Year by Mr. *Fairchild* at *Hoxton*, which I suppose were produced from the Coupling of the *Mother Plants* one with another; for which Reason I would advise every curious Gardener to sow the Seeds of his best *Dasies*, that have stood near enough to couple about *August*, or early in the Spring, that he may furnish himself with Varieties. These *Plants* are encreas'd by parting their Roots either in the *Spring* or *Autumn* Seasons, and love a binding Soil. They make pretty Edgings for *Flower-Beds*.

Of THRIFT or SEA-GILLYFLOWER.

I Have had three sorts of *Thrift*; the *Common*, the *Scarlet-Flowering* Sort, and that with the *White Flower*. These are only proper for Edging of large Borders in long Walks, or the most rude Parts of Gardens; they Blossom in *May*, and continue a long time in *Flower*. We may propagate them from *Slips* in *August* or *March*, they love a strong Soil. *N.B.* The *Sea-Pinks* make good Edgings for long Walks, and may be propagated after the same manner as the former.

I have now given my Reader an Account of all the *Perennial Plants*, which I think are worthy of our Care in Gardens; and shall now proceed to give proper Directions for the Culture of the next degree of *Hortulan Plants* with *Bulbous Roots*.



C H A P. VII.

Of BULBOUS or ONION-rooted Plants.

ALTHO' a BULB is properly such a Root as is round and succulent, made of many *Tunics* wrapt over each other, like the Root of an *Onion*; yet according

according to the Gardeners I shall comprehend under the Title of *Bulbous-rooted Plants*, the *Anemonies* and *Ranuncula's*, tho' their Roots differ from the Shape I have describ'd a *Bulb* to be of. I design in this Chapter to speak first of those *Bulbs* or *dry Roots* (as they are call'd by some) which are commonly taken out of the Ground every Year as soon as their *Stalks* are decay'd.

S E C T. I.

Of the TULIP.

THE *Tulip* wants nothing (in my Opinion) but a grateful Scent to make it the finest Flower in the World; there are infinite Varieties of it vastly different from each other, which display their Beauties, and eclipse the Glories of all other *Plants* of the Garden; these Ornaments of Nature are as kind as they are beautiful, some or other of them Blossoming from *March* to the latter end of *May*. They are divided into two *Classes*, viz. the *Præcoce Tulips*, or early Blowers, and the *Serotine* or later Blowers; and these may be distinguish'd by their *double* and *single Flowers*. Again with respect to their Colours and Stature, they have other Denominations, as *Bagats*, which are the tallest Blowers, commonly *Purple* and *White Marbled*;
Secondly,

Secondly, Agates, which grow shorter than the former, whose Flowers are vein'd with two Colours; and *Thirdly, Beazarts*, which have four Colours, tending to *Yellow* and *Reds* of several sorts. The Varieties of these kinds are severally distinguish'd by the Names of Cities, or such like Characters. The good Qualities of *Tulips*, which the Gardeners generally approve of, are the Beauties of their *Colours*, the strength and Height of their *Flowerstems*, and that their Flowers be of the shape of an *Egg* without sharp Points on the top of their *Petals*, but above all their Novelty.

I have often wonder'd at the Extravagant Prices, which has been, and even at this day is given for these Flowers in *Holland* and *Flanders*, when every Year produces so many new Varieties; there are indeed the best in those Countries that I have ever seen, but I believe if we in *England* took the right way for their Management, we might soon boast of our good Success, and propagate great Numbers of them at a very Cheap Rate. For this end I shall set down some Tryals I have already made, and offer some reasonable Conjectures, which may yet farther contribute to their Improvement.

THE Method of raising them from Seeds is what I shall first offer to my Reader.
The

The *Flower-stem* being left remaining upon the Root will perfect their Seeds about *July*, which will be fit to gather when the *Seed-Vessels* begin to *crack* or burst open. They should then be cut close to the Ground in a dry Day, and laid in some dry Place till *September*, which is the most proper Season for sowing them, and the following Spring they will come up, if they are kept under shelter. The first Year their Roots will be no bigger than *Wheat-Corns*, but after their second appearance above Ground they may be taken from the *Pot* or *Case* they were sown in, and sow'd or sprinkled over a Bed of Natural sandy Soil well sifted, where the thickness of half an Inch of the same Earth should be spread over them; thus may they remain without any other Culture, than adding half an Inch of Earth for their covering every Year till they begin to blow, which will be in five or six Years after sowing. But let no Man be discourag'd at the length of time they lie in the Ground without Flowering, the *Plant* will answer his Expectation; let him sow every Year, and he will gain new Varieties successively, when his first Seminary begins to blow. I have known many fine *Tulips* rais'd by this means, but have once heard of a large Bed of *Seedlings*, which were only of plane Colours without Variegati-

ons, but that might happen from the Qualities of these Flowers which the Seeds were saved from. But however, if by chance our young Nursery should prove all of them plain Flowers, we are not yet without hopes, the Plainness of their Colours I suppose to proceed from a Strength of Nature, as we are sure the Variegations of all Flowers are the Effects of Weakness and want of Nourishment; for whoever has cultivated those sorts of *Tulips* which are call'd *Breeders* must know they are of plain Colours, and are always large tall blowing *Flowers*; 'tis from those *Breeders* are commonly produc'd the *Flowers* of the greatest Value for their Stripes sake; now and then one of hem breaking (as they term it) into beautiful Mixtures of Colour or Variegations. This Alteration of *Tulips* is reckon'd by the Gardeners to be the Effect of Chance; but I believe the two following Observations will explain the Mystery. Near *Bruxeles*, a Man is famous for a little Spot of Ground, in which by some strange Virtue (as is reported) these *Breeding Tulips* change themselves into fine variegated *Flowers*, insomuch that their Roots are brought thither from several parts, to be Educated and brought up for the nicest Collections, and Money given for their standing. In that place it is rare if three in five do not break

break into Stripes, the first Year after they are planted; but this Alteration I think may be accounted for, by examining the Soil, which is nothing but common Rubbish sifted; or at most there is not one twentieth part of it Natural Soil.

It is very plain that a Soil of this Nature must Impoverish the Roots that are set in it, and consequently the *Flowers* must some way or other shew the Distemper of the Roots from whence they spring. And to continue the Variegations of *Tulips*, they are taken out of the Ground every Year as soon as they have done blowing; for if they were always to remain in the Earth, they would in time become plain Flowers. But *Secondly*, the other Observation I have made concerning the striping of these *Flowers* was in a Gentleman's Garden near *London*, who planted a Bed of *Breeding Tulips*, and the following Year, when they came to Blow, he found a fine strip'd *Tulip* at each Corner of the Bed, and none of the others were any ways alter'd; this I suppose happen'd from four large *Piramid Yews*, which then grew at the several Corners of the Bed, and had exhausted the Natural Strength of the Soil about 'em. I shall therefore recommend these Observations to the serious Consideration of every ingenious *Florist*. And now supposing that

by these or any other means a Gentleman is stock'd with a good Collection of Rarities of this Sort, I shall proceed to acquaint him of the proper Method of planting and cultivating them; and first of the Soil.

IN *Holland*, where I have seen the finest Collections of this sort of *Flower*, the Soil is naturally *Sandy*, as near as I can judge, about two parts in three of *Sea-Sand* to one of common black Earth; in this Soil I have seen of the *Bagett* kind of *Tulips* blossom above three Foot high, and the other Sorts in proportion. The Curious in that Country always observe two things in planting their *Tulips*; the first is, to Plant all the forward Blowers in a Bed together, and when they Plant the late *Flowering* kinds, they place the tallest Sorts in the middle Line of the Bed, and of each side of them set two rows of the shortest Blowers; the Season for putting in these Roots is from the last Week in *August* to the end of *September* if the Weather be fair, and after that they need no Shelter till *March* that the Flower Buds appear, and then they ought to be defended from Blights with Matts or painted Cloth strain'd upon Hoops, which *Covering* serves also for sheltering the *Flowers* when they are blown, from Rain and the scorching Heat of the Sun, either of which would quickly spoil the
 Blof-

Blossoms. These Roots are always taken out of the Ground, as soon as their *Flower-stems* begin to decay, and being well dry'd are laid up in Paper, till the planting Season returns.

N. B. The best *Bagett-breeders* are call'd *Bagett Primo's*, and are sold in *Holland* now for five Pounds *per Hundred*. These *Flowers* are increas'd from Off-sets which grow about the Roots.

S E C T. II.

Of the RANUNCULUS.

THE *Ranunculus*, next to the *Tulip* is desirable for its Beautiful *Flowers*; there are many Varieties of it brought from *Turkey* every Year, so that the Names of every Sort now known in *England* would rather be troublesome than instructive to my Reader. The best way will be for him to take a View of the several curious Collections of them in the Gardens about *London*, when they are in Flower; however that he may be the better apprised of what I design to treat of in this Section, I shall describe some few sorts of them. The *Ranunculus* bears its Blossom in *April* and *May* upon Stalks about six or eight Inches high; the *double Flowering* kinds are crowded with *Petals* after the manner of the *Province-rose*

Flowers, and some of them as large; the Colours of those *Ranunculus's* I have seen are deep *Scarlets* vein'd with *Green* and *Gold* Colours, *Yellow* tip'd with *Red*, *White* spotted with *Red*, *Orange* Colours, plain *White*, *Yellow* with *Black*, and one sort of a *Peach* bloom Colour; which yet I have only seen at Mr. *Blind's* at *Barns* in *Surry*. The single kinds blow somewhat taller than the others, and are commonly Variegated with pleasant Colours; all these are increas'd by Off-sets found about the Roots when they are taken up, and may likewise be propagated from *Seeds* saved from the single Kinds and Semi-doubles; but as they rarely ripen in *England*, we have hitherto been beholding to the *French* for them, The proper Seasons for sowing the *Seeds* of this *Plant* is the latter end of *August*, and the Soil which they most delight in is *rotted Leaves*, or such Soil as may be taken from the Surface of the Earth in Woods or Groves of long standing.

TANNERS-BARK, or the bottom of a *Wood-pile*, are likewise very proper Earths for these *Flowers*, if they are well sifted and mix'd with one third part of Natural Soil. These *Plants* are somewhat tender and require some Shelter in the Winter; especially if they have began to spring before the Frosts. The Seedling *Plants* come

come up the Spring after they are sown, and blossom the second Year; when they are out of *Flower*, and the *Stalks* and *Leaves* are decay'd, their Roots should be taken out of the Ground, and being well dry'd in the Sun must be preserv'd in dry Sand till the latter End of *September*, which is the best time for re-planting them, if the Ground be not over wet.

S E C T. III.

Of ANEMONIES.

OF this Kind of *Plant* there are many Varieties, as well with *single* as with *double Flowers*. Their Colours are chiefly *Reds*, *Blues*, and *Purples*; their Blossoms, which are seldom above five or six Inches from the Ground, open themselves about *April*, and if the Roots are suffer'd to remain in the Earth, they will again repeat their *Flowers* in *September*, and continue blowing the greatest part of the Winter; but it is seldom that the Gardeners will leave any of their choice *Anemony* Roots in the Earth, after their Spring Blossom is over, lest they decay by too much Wet, which is frequent enough in our Climate in the Summer Season. The Roots of these *Plants* should be taken out of the Ground, and preserv'd and replant-

ed, like those of the *Ranunculus*, with this Difference only, that *Anemone* Roots should be increas'd by breaking the *Knots* assunder, which are about the Bigness of a small Button, and Planting them after they have laid two or three Days in the Sun. These *Flowers* love a sandy Soil without any Mixture; chiefly such as is found about *Batersea* in *Surry*; where they blow very large. The Seeds of the *single* Kinds ripen about the latter end of *May*, and should be carefully gather'd as soon as they begin to *crack* or show their *Down*, otherwise the least Wind will carry them away. From them we may raise innumerable Varieties, if they are sown in *February*, and lightly cover'd with Earth. They blow the second Year after sowing.

S E C T. IV.

Of the JONQUIL, NARCISSUS POLY-ANTHOS, and others of the same Tribe.

THE *Jonquil* is a *Flower* generally admir'd for its delightful *Scent*; the *double* Kind blossoms in *April*, and that with the *single Flower* somewhat sooner; the *Roots*, which are *Bulbous* like those of the *Tulip*, love a light sandy Soil and an open Exposure; they should be taken
out

out of the Ground and replanted like other *Bulbs*; and in like manner should be order'd the *Narcissus Polyanthos*, whose sweet *scented Flowers* are not less desirable than *Jonquils*. These, with all other Kinds of *Narcissus*, are propagated from *Off-sets* of their *Roots*. Next to those I have mention'd in this Section, the *double White* and *double Yellow Narcissus* are worthy our Esteem; and even the common *Daffodil* is to be admir'd for its pretty Ornament in rural Parts of the Garden. All these Blossom in the Spring about a Foot high.

S E C T. V.

Of the HYACINTH.

THERE are many Kinds of *Hyacinth*, some with *single Blue Flowers*, and others with *single White Flowers*, and with *double Flowers* of both those Colours; the *Grape Hyacinth* and *Starry Hyacinth* have also their Varieties, all which, as well as the *Hyacinth* of *Peru*, will bear the Severity of our Frosts; all of them, except the last, blow early in the Spring, and are most of them well scented; they are increas'd from *Off-sets* of the *Roots* planted in *September* in Beds of sandy Soil, the *Flower-*
ing.

122 *New IMPROVEMENTS of*
ing-stems of these *Plants*, are seldom more
than half a Foot high from the Ground.

S E C T. VI.

Of the CYCLAMEN or SOW-BREAD.

I Have seen near thirty sorts of this
Flower in the *Amsterdam Gardens*, but
in *England* we have not above four sorts,
viz. the *Spring*, *Autumn*, and *Winter*
blowing Kinds, with *Pink-colour'd Flowers*,
and the *Sweet-scented White-flowering*
Kind. The last is somewhat tender, and
rarely found in our Gardens; but the
other sorts, which are hardy enough to
stand abroad all the Year, are pretty com-
mon. These are rather *Turnep-rooted*
Plants than *Bulbs*, and are only propa-
gated from *Seeds* sown as soon as they are
ripe, which indeed are more like *Roots*
than *Seeds*. These *Plants* are Beautiful
as well in the Variegations of their *Leaves*
as the delightful Colour of their *Flowers*;
they love a light Soil, and can only be
transplanted with safety about *Midsummer*
when their *Leaves* are decay'd; their Blos-
soms seldom rise above four Inches from
the Ground; and we may lay it down as
a Rule, that all *Bulbs* may be safely trans-
planted when their *Leaves* and *Flowers* are
decay'd.

S E C T.

S E C T. VII.

Of the GUERNSEY-LILLY.

THE *Guernsey-Lilly* has hardly its equal for Beauty, among the Flowering Race; and yet it is rarely found in our Gardens, which may be perhaps for want of a right Knowledge of its Culture. Mr. *Fairchild* of *Hoxton* has this *Plant* Flowering with him every *Autumn*, even from *Off-sets* taken from the great *Roots*; the *Blossoms* are large, and not unlike those of the *Lilly* in their Make; seemingly powder'd with Gold-Dust upon their *Rose-colour'd Petals*. The most proper Soil for this *Plant* is two third Parts of Sea Sand to one of Natural Soil, or a light sandy Earth mix'd with an equal Quantity of Rubbish. It will bear the Hardships of our Winters, if it be planted in either of the foregoing Soils under a warm Wall; but chiefly, if it be kept dry. The *Flower-stems* of this *Plant* are commonly about a Foot high.

S E C T. VIII.

Of the GLADIOLUS, FRITILLARIES, and IRIS.

THE *Gladiolus* or *Corn-flag* blossoms in *May* upon *Stalks* of almost two Foot high; the Flowers are of a *Rose Colour*, and last about six Weeks; the last time to transplant them, is when their *Stalks* are

are decay'd. The *Fritillaries* are of several kinds, Blossoming in *April*; their Flowers are chequer'd with two or three Colours, sometimes *White* and *Red*, others are *Green*, and *Brown* or *Yellow* and *Black*; they are curious *Plants*, and at this time of great Value in *Holland*, where vast Varieties have been lately raised from Seeds, and are very proper (like other *Bulb*) for *Parterres*. The *Iris* is likewise a numerous Tribe, some sorts of them blossoming in *April*, others in *May* and *June*; their *Flowers* are of several Colours, and their Figures different; they are all of them pretty Ornaments for Gardens, and may be increas'd by *Off-sets* taken from their Roots when their *Stalks* are decay'd. These, like other *Bulbs*, love a light Soil.

S E C T. IX.

Of the COLCHICUM, and CROCUS.

THE *Colchicum* has a Root somewhat like the *Bulb* of a *Tulip*, but its Flower resembles that of a *Crocus*; there are many Kinds of *Colchicums*; those with single *White*, and *Pink-colour'd Flowers*, some with double *Pink-colour'd Blossoms*, and another Kind with *Flowers* chequer'd with *Pink Colour* and *White*: All these Blossom in *August* and *September*, about
four

four Inches above Ground; they delight in sandy Soil, and will only bear transplanting about *Midsummer*, when the *Roots* are entirely at rest. The *Saffron Crocus* blows at the same time with the *Colchicums*, bearing *Purple Flowers* of the same Height and Bigness; this *Plant* is of great use (as well as Beauty) for the sake of its *Pistillum*, which is the *Saffron* us'd in *Medicine*. I have often wonder'd that this *Plant* is not more commonly Cultivated in our Gardens, seeing how Valuable a Comodity it produces; besides the Pleasure of its Blossoms at a Season when very few Flowers appear. This is one of the last kind Offices of the departing Summer and should be taken notice of. The *Leaves* appear so soon as the Flower is past, and remain all Winter, which in the Spring should be ty'd together in Knots to help the Increase of the *Roots*, which will be fit to remove or transplant about *Midsummer*. This *Plant* chiefly delights in Chalky Ground, but will prosper also in a sandy Soil. The way of preparing the *Saffron* for use should have been inserted in this Place, but at present I have only an imperfect Account of it; and therefore shall defer it till some curious Person in that Art has been pleas'd to communicate to me a more exact Receipt for its Management than

than what I have now by me, which I shall gratefully acknowledge. The several Kinds of *Crocus* which blossom in the Spring are the common *Yellow* and *Black strip'd*, the *Yellow Dutch*, the early and later *Purples*, and the *White* sort; all these Blossom about *February* and *March*, and make the best Flowering Edgings of the Spring; the *Roots* may be taken out of the Ground in *June* and re-planted with other *Bulbs*. They are increas'd by *Offsets*, and love a light Soil.

S E C T. X.

Of the SNOW-DROP, WINTER-ACONITE, DENS-CANINUS and ORCHIS, or SATYRION.

THE *Snow-drop*, altho' it is a common Flower, should not be wanting in *Parterres*; it is so fit a Companion for the *Crocus*, as well in respect to its Height as Time of Flowering, that it has been customary to Plant them together; their Culture likewise is the same, so that one Trouble of the Gardener will serve for the Propagation of both; as likewise of the *Winter Aconite*, which is also one of the first Leaders of the Spring, beginning to display its pretty *Yellow Blossoms* about the first Week in *January*; the *Roots*
of

of this sort of *Aconite* are not so regular in their Shape as the *Bulbs* of the *Crocus* nor so mis-shapen as the *Roots* of *Ane- monies*, they are so small 'tis hard to find them when the Leaf is decay'd. This Kind of *Aconite* will soon over-run the Ground where it is planted, as well by shedding its Seeds as from *Off-sets*, which its *Roots* freely put forth; the Flowers of it are never more than three or four Inches above Ground. The *Dens-caninus*, or *Dogs-tooth'd Violet*, is another *Dwarf* like the former, it produces its Blossoms in *March* of a *White Colour* somewhat tinged with *Purple* like the Blossoms of the *Spanish Jessamine*; this *Plant* must be propagated like the others I have mention'd in this Section, and like them loves a sandy Soil. The *Orchis* has many Varieties which may be found in every Herbal, I shall mention only three or four sorts which are commonly Cultivated by the Curious, such is the *Bee-flower*, the *Fly-flower*, the *Lizard-flower*, and a more common sort found in Meadows with *Purple Flowers*; these should all be removed with Balls of Earth about their *Roots*, just when their *Flower-stems* begin to appear above Ground; they Blossom about half a Foot high in *May*.

I shall now conclude this Chapter of *Bul- bous-rooted Plants*, with acquainting my Reader,

Reader, as a certain Rule which he ought to observe, That *Bulbs* are taken out of the Ground every Year, only for the Preservation of the Variegations of their Blossoms, but such as are not admir'd on account of their Stripes should be left standing in the Earth at least three Years, for the Benefit of their Increase; and also that the most safe Time of removing *Bulbous Roots* is when the *Leaves* are decay'd.



C H A P. VIII.

*Of ANNUAL-FLOWERS, and
PLANTS, their Culture and Manage-
ment in Gardens.*

THE *Plants* which I shall treat of in this Chapter are of that Nature, that the Method of Culture proper for one or two of them will be sufficient to inform my Reader of the right way of managing all those which may be comprehended under the Denomination of *Annuals*: In short, the Curious Planter has no more to do, than provide a Hot-bed about *February* or *March*, for the Seeds of the most tender Kinds of *Annuals*, and to prepare the Soil of his Natural Garden

den Beds for the Interring the Seeds of the most hardy sorts about the middle of *March*, and that he may with more ease be inform'd of the several kinds which are now commonly used for the Beautifying of Gardens, I shall give him an Account in two separate Sections or Tables, of their *Names, Stature, particular Beauties, and times of Flowering.*

S E C T. I.

Of *ANNUALS* to be rais'd in a *Hot-Bed.*

THE *African Marygold* has a large *double Yellow Flower*, blowing above two Foot high, in *May, June, July, August* and *September*,

II. The *French Marygold* has a smaller Flower than the former, *Yellow* intermix'd with *Red* near two Foot high, Blossoming from *May* to *September*,

III. *Sweet Sultan*, three sorts, with *White, Yellow* and *Purple Flowers*, they smell like Musk, and Blossom two Foot high, from *June* to *September*.

IV. *Capsicum Indicum* or *Guiny Pepper*, with long and round *Scarlet Fruit*, for which it is only admired, begins to make a handsome Show in Gardens about *July*, and lasts till *September*; this *Plant* is about

a Foot and half high. The common People in *Italy* Pulverise the *Yellow Seeds* contain'd within the *Pods* of this *Plant*, and use it instead of *Pepper*, and the late Bishop of *London* frequently eat of it in the same way.

V. *Marvel of Peru*, two sorts, one with *Red* and *Yellow Flowers*, the other *Purple* and *White*, these blow from *July* to *September* two Foot high.

VI. *Amaranthus* of several kinds but the best of them are the *Tricolour* and *Cockscomb*; the first is only Beautiful in its *Leaves* which are Variegated with *Scarlet*, *Yellow* and *Green*; the second is admir'd for its *Scarlet Flowers* like *Cocks-combs*. These are Ornamental *Plants* from *July* to *September*, growing about two Foot high.

VII. *Convolvulus*, three kinds, the *Major* with a *Purple Flower*, the *Minor* a *Blue Flower* Variegated with *Yellow* and *White*, and the *Scarlet Flowering* kind; these blow from *June* till *August*, and creep upon the Ground.

VIII. *Female Balsam's*, three sorts, the *Rose Colour*, the *Purple* and the *White* kinds; these blossom about a Foot and half high, from *June* till *September*.

IX. *Belvidere* or *Pyramid-Bush*, a pretty *Green* without *Flowers*, about two Foot high.

X. *Bush*

X. *Bush Basil*, a small *Shrub*, about a Foot high, with *sweet Scented Leaves*.

XI. *Nasturtium Indicum*, or *Indian Cresses*, two sorts, one large the other small, has *Flowers Variegated with Yellow and Scarlet*, they run upon the Ground, and blow from *May till September*.

XII. THE *Sensitive Plants*, two sorts, one of which is call'd the *Humble Plant* because the *Leaves* of it fall down to the Ground upon the approach of a Man's Hand, and the *Sensitive Plant* curls up its *Leaves* by touching it; these two must be constantly kept under Glasses all the Summer.

I must beg the Reader's Pardon if I introduce the *Tuberoſe* among the *Annuals* of the Hot-Bed, which every one knows to be a bulbous Plant of *Italy*, but as it is *Annual* with us I hope to be excus'd; the *Roots* of it must be planted in the Hot-bed with the other *Plants* of this Section, and must be kept from Water till the *Leaves* begin to put forth. In *July* and *August*; their *Flowers* appear upon *Stems* of three Foot high, which afford a most agreeable Scent.

FOR the more particular Management of the *Plants* I have here mention'd, my Reader must take notice, that when the *Seeds* are come up, the young *Plants*

should be transplanted at four Inches distance from each other, and should not quit the Hot bed till the second Week in *May*; they will then bear the Air of our Climate, if they have by degrees been used to it.

S E C T. II.
Of ANNUAL PLANTS to be sown in the
Natural Ground.

THE Seeds of those Flowers I shall treat of in this Section must be sown in the Natural Earth in *March*, on the very Places where they are to blow, whether for Standard *Plants*, or in Spots, or for Edgings.

The *Annual Sun-flower* blossoms from *June* till *August*, with large *Yellow* Blossoms upon *Stems* of six Foot high.

II. The *Larks-heel* should be sown in Spots, it blows with several Colours upon *Stems* of three Foot high, from *June* till *August* or *September*.

III. *Flos-Adonis*, sown in Spots, blows a Foot high in *June* and *July*, with small *Crimson* Flowers.

IV. *Nigilla Romana* blossoms in the same Month with the former, it bears a *Blue* Flower, about a Foot and half high.

V. *Garden*

V. *Garden Poppys* should be sown in Spots, their Colours are various, and their Flowers very beautiful, but not lasting; they appear in *May* and *June* upon *Stalks* about two Foot from the Ground.

VI. The *Dutch Poppy*; this does not blow so high as the former, its Flowers are *Red* and *White* strip'd, blossoming from *June* till *August*.

VII. *Cyanus*, or *Annual Bottles*, are of several Colours, blossoming in *June* and *July* upon *Stalks* of a Foot and half high.

VIII. *Lupines*, three sorts, the great *Blue*, small *Blue* and *Yellow* Flowering Kind; all these blossom in *May* and *June*; the first about two Foot high, and the others little more than half that Height; the *Yellow* have a pleasant Scent.

IX. *Scarlet-beans* are twining *Plants*, bearing Knots of *Scarlet Flowers* from *May* till *September*.

X. *Everlasting Flowers* sown in Spots blossom about a Foot and half high in *June*, *July* and *August*, their Flowers will remain fresh for many Years after they are gather'd, and are dy'd of several Colours by curious Persons for Flower-Pots in the Winter.

XI. *Wing'd*

III XI. *Wing'd Peas*, sown in Drills for Edgings, have pretty *Crimson* Blossoms, blowing about six Inches high in *May* and *June*.

XII. *Annual Stocks* for Edgings, or sown in Spots, blossom in *May* and *June*, bearing their Flowers of a *Pink* Colour, about six Inches high.

XIII. *Venus Looking-Glass* is proper for Edgings, or to be sown in Spots; it blossoms the same Height, and at the same Time with the former, bearing Flowers of a *Violet* Colour.

XIV. *Venus Navelwort* has *white* Flowers, is a pretty *Dwarf Plant* fit for Edgings or Spots, and blossoms also with the foregoing *Plant*.

XV. *Candy Tufts* are of two sorts, one with *White*, the other with *Red* Flowers; they are both proper for Spots, or Edgings, and flower with the former.

XVI. *Hearts-ease*, or *Viola tricolor*, has its Flower variegated with *Purple*, *Yellow* and *Red*, it is a *Dwarf* like the last, and makes pretty Edgings. This also blossoms in *May* and *June*.

I have now no more to do than to remark, that all the *Annuals* I have mention'd in this Section will blow sooner or later as their Seeds are put into the Ground, and I would advise the Curious to sow some

some of their Seeds in every one of the Summer Months, if they would have them succeed one another in Flowering; but the *Dwarf* kinds especially.

I shall here give him a Design of a Garden-bed divided into five Part, * the Middle Line A is proper for the tallest *Plants* mention'd in this Treatise, the Lines B B for the Middle *Plants*, and those mark'd C C for the Lowest; in all which Divisions of the Bed, he should contrive to allott one third Part for *Per-annual Plants*, one third for *Bulbous-rooted Plants*, and the like Proportion for *Annals*, considering at the same time what Months in the Year each *Plant* will blossom in, and assort them in such manner that all do not Flower together, or at one time, but that an agreeable Mixture of Flowers may continually be found in the Garden, succeeding one another so long as the Season will permit, and this he may easily perform by the Assistance of these Papers.

SUBJECTS of this Nature cannot be more easily divided than in the Method I have followed, and in the next and last Part I propose to treat of the Improve-
ments

* Fig. II. of the third Plate.

ments of *Fruit-Trees*, *Kitchen-Gardens*,
and *Green-house Plants*, all which I shall
advance something New upon, and must
repeat the same Desire I have before done
to the *Curious*, to Communicate the Ob-
servations that fall in their way upon the
particular Parts of *Planting* and *Garden-*
ing.

F I N I S.



