THE

BRITISH GARDENER's NEW DIRECTOR,

Chiefly adapted to the CLIMATE of

The NORTHERN COUNTRIES:

DIRECTING

The NECESSARY WORKS in the KITCHEN, FRUIT, and PLEASURE GARDENS, and in the NURSERY, GREEN-HOUSE and STOVE.

With the ADDITION of a DISSERTATION on the CULTURE of FOREST-TREES.

By Sir JAMES JUSTICE, Bart. F. R. S. and one of the principal CLERKS of SESSION in Scotland.

To this EDITION are prefixed,

I. His TREATISE on *Vegetation*, with *Directions* for making *Compoſt* for the more curious FLOWERS.

II. The whole Proceſs of *Grafting*, *Pruning*, and *Inoculating*, &c. with engraved *Repreſentations* of the *Sections*.

III. Directions for planting of *Orchards*.

IV. A *Collection* of the beſt *Fruit Trees*, with their peculiar *Characters*, being ſuch as have perfected their *Fruits* in *Scotland*.

V. A *Catalogue* of ſuch *Plants* and *Roots* as are neceſſary for the *Kitchen Garden*, pointing out their *Culture*.

VI. An Alphabetical *Liſt* of *Flowers*, *Trees*, and *Flowering Shrubs*, and *American Trees*, with the *Seaſon* for ſowing, &c.

VII. A *Collection* of the moſt curious *Oriental Hyacinths*, with their *Culture*.

VIII. A *Collection* of the moſt curious *Annuals* and *Exotics*, with their *Engliſh Names* in alphabetical Order, with *References* to their *Culture*.

ILLUSTRATED with COPPER PLATES.

The FIFTH EDITION, augmented and improved.

DUBLIN:

Printed at the REQUEST and RECOMMENDATION of ſeveral GENTLEMEN of this KINGDOM,

By JOHN EXSHAW, in *Dame-ſtreet*, M.DCC.LXXI.

THE

PREFACE.

IN Compliance with the general Cuſtom which has made it neceſſary for every Author, who offers his Sentiments to the Public, to give a Reaſon why he addreſſes ſo reſpectable a Body, I ſhall in a few Words declare, that my Motives were the Love of my Country, and a Deſire of communicating to its Members, the Advantage my Travels and my Pleaſures have given me, in the particular Science I have treated of.

Our Situation not being ſo well adapted as others to the Purpoſes of Vegetation, requires the Hand of Induſtry and Experience to forward its Improvements, in both which I have been attentive: The latter has been extended to upwards of Twenty Years, in which Time, Diaries have been

carefully kept, both for a future Conſultation, and a Compariſon with the preſent; for the quick Tranſition of our Seaſons, and the abrupt Manner in which they viſit us, require every Expedient to be taken, particularly when we attempt to tranſplant into our rougher Clime, the Natives of the more mild and ſerene, which, though attended with thoſe Advantages, require Care and Art to forward them to Perfection.

As ſome, who are not ſtimulated with the ſame Motives that engaged me in this Performance, may think I have, by directing the Culture of the more common Things, departed from that Part of Gardening which ſhould be the Entertainment of a Gentleman, give me Leave to aſſure them, I have pleaſured in inſtructing the loweſt of my Countrymen, nor has it been a Work unrewarded, when to my Knowledge they ſtand in Competition with thoſe who have had more favourable Opportunities, I mean of being under Men of more extenſive Knowledge, but not in a Climate that requires ſo much Art and Induſtry to foil, owing to the Variety and Sharpneſs of the Seaſons with which we are viſited; by this, they have ſo far advantaged, as to excel in other Countries, and to be valued for their Knowledge in this Particular. Some neighbouring Places experience this unfavourable Caſt of Nature, with a Degree nearly approaching to our's; there they have been found moſt ſerviceable, and coveted for their Abilities

in

in the Culture of what may be called rare as well as common.

I would not be ſuppoſed to have ſo limited a Conception, as to think that Merit does not reſt elſewhere, this would be an ill Requital for the Kindneſs and Generoſity, with which I have been treated in the different Countries I viſited, whoſe Science has been chearfully communicated, and enabled me to tranſplant a Treaſure to my Country, and there to cultivate Things unattempted before.

I hope I ſhall be pardoned if I ſhould mention, that theſe my Labours may not be unworthy the Attention of thoſe, whoſe Countries and Clime approach in ſome Degree to Scotland, *where the Seaſons are ſharp, attended with great Moiſtures, turbulent Winds, and chilling Blaſts, from its Vicinity to the* Weſtern *and* Atlantic Oceans.

Mr. MILLER, *(of whom I muſt always retain the higheſt Senſe, both for the Knowledge I have received from his Labours, and more particularly that Friendſhip and Communicativeneſs with which he always treated me) is bleſſed with a more favourable Situation in the Progreſs of his Experiments, by enjoying the kind Influence of the Sun, (the Parent of Vegetation) in ſo high a Degree, as to have the Vine in full Ripeneſs on the natural Wall, without the Aſſiſtance of Art; and could we all experience the ſame Felicity, I need*

not have communicated my Obſervations, or my Countrymen wanted any other Tutor: But Providence in his Wiſdom has directed it otherwiſe, by which the Ingenuity of Mankind has had Variety of Employ, and the Field of Invention been ſo enlarged, as to excite their Induſtry, which otherwiſe would have been neglected.

The Compoſts I recommend have not been haſtily taken up, but from an attentive Conſultation with the beſt Floriſts, where each curious Flower enjoyed its natural Clime; and this further I have to add, that each Sort has been repeatedly uſed, and with a Succeſs that muſt pleaſe every Lover of the Art.

I have ſubjoined a Treatiſe on the Culture of ſuch Foreſt Trees as have been eſteemed the moſt valuable; in it is given the Experience of much Labour and Expence, attended with many Diſappointments, but in the End happily accompliſhed; and for the Satisfaction of Poſterity let me aſſure them, they will not hazard their Succeſs by implicitly giving up to my Directions, being the Reſult of Forty Years Experience, and of this the Woods and Plantations on my Demeſne, ſhew how far the Practice is right.

In the Courſe of theſe Directions, I may be thought to have been too minute, and even to have been guilty of ſome Repetitions, but in theſe I hope to be indulged, as it aroſe from the Manner

of

of making my Entries, and a Deſire of being intelligent to every Capacity. This in Time will have its Effect, and raiſe to us a Number of mechanical Gardeners, *ſo that Gentlemen will not be ſubject to, nor peſtered with ignorant Pretenders, who have rendered abortive Plans that might have been as happily executed, as conceived with Propriety.*

But not to treſpaſs any longer on my Reader's Patience, I ſhall beg Leave to conclude with an Obſervation of our great Maſter, That they that are Whole, need not the Phyſician.

Edinburgh, September, 1763.

N. B. The Improvements and Additions that have been made to this new Edition are ſo great, as to give it a conſiderable Advantage over any other, and are ſuch as muſt be very acceptable, not leſs from their Uſe, than the particular Pleaſure they muſt give to all Lovers of Gardening. The firſt that appears is the different Proceſſes that are neceſſary for the Preſervation and well bearing of our Fruit Trees, whether againſt the Wall or Standards, with Directions for Grafting, Inoculating, &c. aſſiſted by engraved Repreſentations of the different Sections, neceſſary to be made for the perfecting of the Work.---A large Collection of the beſt Fruit Trees, with their peculiar Characters, and ſuch as have ripened well

in Scotland.---Directions for planting of Orchards, as recommended by a French Writer, with that of grafting the Wilding on itſelf, both to improve its Growth and Fruit for Cyder.---Mr. Adam Taylor's Manner of raiſing the Melon and the Pine Apple.---A Catalogue in alphabetical Order, of ſuch Plants and Roots as are neceſſary for the Kitchen Garden, pointing out their Culture and Seaſon of ſowing or planting, &c.---The Culture of the Articles in the Kitchen Garden thrown into the ſame Order, and the Proceſs of each brought into one View.---Mr. George Voorhelm, of Haerlem, his Proceſs for the Culture of the Hyacinth, tranſlated from the French.---A Catalogue of the moſt curious Annuals and Exotics, with their Names in Engliſh, referring to that of their Culture and Botanical Names.

A TREA-

A

TREATISE

ON

VEGETATION, &c.

THE moſt natural Introduction to a work of this kind, before we enter into particulars, is to conſider the nature and qualities of Compoſts; that is, the meliorations neceſſary for different ſoils, in order to bring the various plants we intend to raiſe, to their greateſt perfection.

Earth, according to the definition of the learned *Boerhaave*, is a foſſile body, neither diſſoluble by fire, water, or air: it is inſipid, more fuſible than ſtone, ſtill friable, and uſually containing a ſhare of fatneſs in it.

Mr. *Boyle* ſays there is no ſuch thing as a ſtrictly ſimple Earth; and it doth not appear that nature, any more than art, affords an elementary Earth; thoſe even of the ſimpleſt ſorts, having been found, upon examination, to have qualities not aſcribed to pure Earth.

Earths are of many and various qualities. Some are ſimple and immutable; ſuch as Chalk, Pumice, and Rotten Stone.——— Others are compound and fatty; of which kind are the crumbly red, white, and brown coloured Earth, Fuller's Earth, and divers kinds of Medicinal Earths, ſuch as the *Terra Cretica*, *Hungarica*, *Lemnica*, *&c.* which Earths are all reſolvable into oil, a little acid ſalt, and a *Calx*, which is the baſis, or *Earth*, properly ſo called.

Sand,

Sand, is by naturaliſts, generally ranked as a ſpecies of Earth, though I think very improperly; for ſand, ſtrictly ſpeaking, is a ſort of chryſtal, divided into ſmall tranſparent pebbles, calcinable by the addition of a fixt alkaline ſalt, and becomes fuſible and convertible into glaſs.

Earth is rendered fertile by means of ſand, and becomes fit to feed and nouriſh vegetables, and vegetate; ſuch Earth, by itſelf, is liable to coaleſce into an hard coherent maſs, and, while thus embodied, and as it were glued together, will be very unfit for the nouriſhment of plants: but where hard ſands, (whoſe chryſtalline particles are indiſſoluble by water, and therefore always retain their priſtine figures) are intermixed, they keep the pores of the Earth open, and render it in ſome meaſure organical, the juices thereby being eaſily conveyed, prepared, digeſted, circulated, and at length emitted by ſtrainers and thrown off in the roots of plants.

Earth is made up of two parts; the firſt the containing part, *i. e.* the Body, Bed or Couch; the ſecond, the part contained, *viz.* the Nitrous or Sulphureous Particles, or Prolific Salts. The firſt is but a lifeleſs maſs, and is no more than the receptacle of the other, and when conſidered, ſimply abſtracted from the prolific ſalts with which it is repleniſhed, is a lifeleſs, dead, inanimate body; but when, by the co-operation of water, ſun, and air, it is put into motion, it then promotes and carries on the work of vegetation.

Vegetables are natural bodies, organically formed, but without ſenſation or ſpontaneous motion, adhering to another body in ſuch a manner as to draw from it its nouriſhment, and having power of propagating itſelf by ſeed.

By its conſiſting of veſſels and juices, it is diſtinguiſhed from a Foſſil which is dug out of the Earth; and differs from an animal by its adhering to another body, and deriving its nouriſhment therefrom.

Vegetation is the act whereby plants receive nouriſhment and grow; or rather that concourſe of acts between Vegetables and the Earth, properly compoſed by ſalts, and by the nitrous particles and effluvia of the Earth

Earth acting thereupon. As to the different veſſels of plants, proper to receive, and prepare the juices for their nouriſhment, it being foreign to my purpoſe, I ſhall not enter into a diſcuſſion thereof at this time, but return to what I firſt propoſed, *viz.* to conſider the compoſts of ground, whereby Vegetation is promoted, and the proper nouriſhing juices more eaſily conveyed into the veſſels of the Vegetables that are planted therein.

Compoſts are made up of ſeveral ſorts of ſoils, or earthy matter, mixt together, to make a manure for aſſiſting the natural Earths in the work of vegetation, by way of amendment or improvement.

Compoſts are various; and ought to be different, according to the different qualities of the ſoils they are deſigned to meliorate. As a looſe ſand requires a Compoſt of a heavy nature; ſo on the other hand, a ſoil that is heavy, clayey, or cloddy, requires a Compoſt of a more ſprightly and fiery nature, apt to divide theſe clods and clay; to animate and give freſh vigour to that lumpiſh and coherent maſs, which would otherwiſe obſtruct the act of vegetation; and to give life and full play to all the fibres of the roots of ſuch plants as grow therein. The uſe of Compoſts is to invigorate the different ſpecies of nature, whether for our pleaſure or uſe, and is no other than adapting of ſoils to theſe plants, &c. in which each have been found beſt to agree with, for their utmoſt perfection, and which, from experience we have found they moſt delight in. To the making up of theſe I ſhall at preſent confine myſelf, as, in the progreſs of this work, I ſhall have many occaſions to inform my readers of the different compoſts proper to be uſed as well for large gardens, as the different plants that are there uſually raiſed.

Directions for preparing the Compoſt for the PRIMROSE, *ſee their Culture, p.* 251.

As I intend to treat of the proper Compoſts for all the different *genera* of flowers, I ſhall begin with thoſe which make their appearance firſt in the ſpring; and ſhall inſert the reſt in their due order. The firſt conſiderable flower that makes its appearance in the ſpring, is the *Primroſe* or *Primula Veris*. Theſe are diſtinguiſhed into

two

two ſorts; the *Primula Veris*, properly ſo called, which carries but one flower upon a ſtem; and the *Polyanthos Primula Veris*, which carries many flowers upon a ſtem. The Compoſt they require to proſper in, is thus made: To two thirds of rich Garden Earth, or rather Virgin Earth, (by Virgin Earth I mean that dug from under old paſture, nine inches deep, which was never ſpaded) this, with the ſod, is to be laid up in an heap for two years to rot, with one third of fine white Sand; if this cannot be had, ſea Sand, over which the ſea flows, will do: but you are to obſerve with reſpect to ſea ſand, that you are to lay it open to the ſun and air two months before it is uſed, that its crude ſalts may be properly digeſted; which practice is proper not only in this, but in all caſes where ſand, over which the ſea flows, is made uſe of; if neither ſea Sand nor white Sand can be conveniently had, in that caſe pit Sand, or freſh river Sand may be taken. The before-mentioned proportions muſt in all caſes be ſtrictly obſerved, unleſs the ſoil is a clay. In this laſt caſe half ſand and half clay muſt be taken; and the Compoſt muſt lie twelve months, to be turned up every fortnight, to reduce and moulder the clay.

Before I proceed further in the directions for Compoſts, it may be proper to take notice of the ſeveral dungs which are to be uſed to enrich and meliorate the different heaps, to be afterwards directed. Dungs in general are deſigned to repair the decays of exhauſted or worn-out lands, and to cure their defects, which are as various as there are dungs to meliorate and reſtore them. Some lands are cold, moiſt and heavy; others again are light and dry. The nature of dungs are equally various; ſome are hot and light, as ſheeps, horſes and pigeons dung; others again are fat and cooling, ſuch as the dung of oxen, cows, and hogs. Freſh dung is never to be uſed. It ought to lie by at leaſt twelve months to rot; after which to be expoſed to the ſun; and when dry, beaten and ſifted, and made into as fine a conſiſtence as poſſible. This management of your dung is only neceſſary, when you are to mix it with the Compoſt intended for the fineſt flowers; but dung properly rotted, although you are not at the expence of beating

beating and ſifting it, will ſerve all the purpoſes of the Kitchen Garden equally well.

The effects that are to be expected upon land by dung; muſt be according to the diſtempers they are to cure; the dung of oxen, cows, and hogs, muſt be given to clean, light, dry Earths, whilſt hot and dry dungs muſt be given to meliorate cold, moiſt and heavy lands.

There are two peculiar properties in dung; the one is to produce a certain ſenſible heat, capable of producing ſome conſiderable effect; this is found in the dung of horſes and mules, which is a while moiſt when newly made; this dung when fermented we uſe for hot-beds, to produce early in the ſpring thoſe plants and fruits in perfection, which the rays of the ſun naturally produce in the ſummer: the other property of dung is to fatten the Earth, and render it more fruitful. The different operations of the different dungs are carefully to be attended to. The dry light Earth, muſt have cow dung, to cool and enrich it; and to heavy, ſour, clay land, give horſes, mules and pigeons dung, to dry, meliorate, fatten, and divide its particles. Theſe are general and certain maxims, handed down to us from former ages, and confirmed by our own experience.

I have premiſed thus much on the nature of dung, as it is one of the principal ingredients of Compoſts for the different flowers of the Spring.—I ſhall now proceed in order to the other flowers, and the ſoils moſt proper to bring them to the greateſt perfection.

The Compoſt for the AURICULA, *ſee their Culture, p.* 313, 318, *and* 323.

The ſecond flower which adorns the ſpring is the *Auricula*. The beautiful varieties which have been, and are annually produced, of theſe grand flowers, attract the eye of the moſt indifferent beholder, as well as the Floriſt. The Compoſt to be uſed for them, in which they blow beſt, is made up in the following manner: To a cartful of good freſh Virgin Earth, add two loads of well rotted and well riddled cow dung; but if your ſoil is ſtiff, cold, and clayiſh, the fourth part of it muſt be

be horſe dung; to theſe add a cartful of fine white ſand, or of rough ſand from a freſh river; after your different heaps are riddled and made fine, mix them in the preciſe proportion here mentioned, and they will be fit for uſe in ſix months, obſerving to toſs them up every fortnight, that the different matter of which your heaps conſiſt may be equally mixed; and this you are to be particularly attentive to.

Compoſt for HYACINTHS, *ſee their Culture, &c. p.* 263 272 *and* 305.

The Compoſt uſed for *Hyacinths*, to bring them to their greateſt perfection, being very different from what has hitherto been uſed, I ſhall be very particular in giving directions how it muſt be made up, which will lead me to conſider a little more fully the different ſoils which are to be met with. This noble flower may properly be called a native of *Holland*, ſince, from the ſeeds gathered from plants which grew there, there have, within theſe fifty years, been raiſed upwards of eight hundred different ſorts. To have them therefore in perfection in theſe climates, we muſt imitate the *Dutch* ſoil as near as we can.

In *Holland* their natural ſoil is ſand and moſs, or a black rich fallow. The white ſand there is naturally mixt, and makes a third part of this fallow; about two feet below this, there is a fattiſh ſubſtance always nouriſhing what is planted in it; and indeed there is no interruption of growth, nor want of a nouriſhing ſap, during the whole year, except when their ſevere froſts prevent the exertion of the ſoil to forward vegetation.

One would imagine that plants would ſuffer in ſuch ground, by being too wet below, and by the rains from above; but it is quite otherwiſe; the ſand in the ſoil above, dries up the rains which fall, whilſt the glutinous fat matter below is continually ſending up its vegetative qualities; and in caſe the heat in Summer ſhould parch what grows near the ſurface, quantities of cow dung are uſed to cool the ſandy ſurface. This dung, having this excellent quality, that, covered but with four inches

inches of any ſort of Earth, it will retain its moiſture and moiſtening qualities in the hotteſt ſummer.

To make a ſoil therefore, equal in goodneſs to this, for *Hyacinths*, *Tulips*, *Ranunculuſes*, and *Anemonies*, and to make them blow and increaſe as they do in *Holland*, is to moſt of our gardeners a thing unknown; but nothing is more certain than that we may imitate the fine *Dutch* ſoil; nay, we may have our ſoil as good as the *Dutch*; for, by carefully preparing the Compoſt in the manner preſcribed, flowers have been brought to as great perfection as ever they were in *Holland*, and as few roots, if not fewer, have been loſt in a ſeaſon, than ever in proportion were loſt in that country.

The ſoil that is compoſed of clay, (which is certain death to *Hyacinths*,) muſt be avoided, ſo that our choice muſt be of ſuch, where the leaſt of it is in the compoſition. The black rich mould, and the moſſy land, in which we abound, I ſhall give proper directions for meliorating. Having varieties of ſands, and plenty of cow dung, and theſe materials being properly mixt, by length of time may be brought to become a maſs of Earth as good for propagating *Hyacinths*, as that in *Holland*. Therefore, I proceed to give directions how the Black Earth is to be uſed, ſuch at leaſt as is the freeſt from clay, or its particles. There are two ſorts of it; one which is moſtly found in gardens, and another below the ſod of paſture lands. If you uſe the garden ſort, which has been often cropt by the gardener, take a quantity of it nine inches deep below the ſurface; ſpread it out during a winter and a ſummer, to enjoy the benefit of the ſun and air, in the beſt expoſed part of your Compoſt-yard, which ſhould be cloſely paved or flagged to prevent the liquid matter which is highly impregnated with the vegetative quality, from being loſt, as not any thing contributes ſo much to the value of your Compoſt, as the frequent turning this liquid into the heap, while under preparation: If you take your earth from paſture land, go no deeper than nine inches; take the ſod along with it; lay it out and expoſe it in the ſame manner for fifteen months before uſe; but take care that the lower part of the ſod be turned up to the ſun, ſo that the graſſy

part may be well rotted to mix with the earth; which muſt be well riddled to take out the ſtones.

The white Sand, over which the ſea flows, is very good for flowers, as it is animated with its ſaline effluvia; but this muſt be cautiouſly uſed, as it is too ſalt for immediate uſe, and would be of dangerous conſequence; and ſhould the proportion be leſſened, it would not anſwer the purpoſe of properly dividing the particles. The beſt method is, to lay it in your Compoſt-yard for two months, in which time much of its crude ſalts will evaporate, ſo as to be fit for uſe.

They have a ſand in *Holland*, which is upon the hillocks of their paſtures on the ſea ſhore, this they dig for two or three feet deep, which is fat, glutonous, and brackiſh; this they carry to their Compoſt-yards, and, after expoſing it ſome time to the ſun, they uſe it in their Compoſts. This is the very beſt Sand for all ſorts of flowers. It divides the earth and dung effectually. It is very fine in its texture; and the ſalts it contains, promote Vegetation to admiration.

Where the ſand I have recommended is not to be had, we muſt uſe pit or freſh river ſand. Pit Sand, which is very often clayiſh, muſt be put into a veſſel with water; and waſhed until the water comes off clear, which muſt be expoſed ſome time to the air and ſun before it is fit to be mixed with your Compoſt. The river or brook ſand, which has clayiſh particles often mixed with it, muſt be taken the ſame care of in waſhing and expoſing to the ſun and air, which will ſoon fit it for your Compoſt-heap; and when you have planted your roots, ſhould you obſerve that they do not vegetate nor blow as faſt and as fair, as you could wiſh, to four cartfuls of your Compoſt, when properly made up, add ten pounds of ſalt, diſſolved in water, which pour on the heap.

In the inland countries they have the advantage of moſs, or moſſy earth; which, when duly prepared, is very free, and, when enriched with proper manure, is one of the beſt ſoils for flowers, and is next in goodneſs for that purpoſe to what the *Engliſh* Floriſts call Woodpile Earth, and neareſt in quality to the *Dutch* ſoil. To make this fit for uſe, uſe the following method of preparing

paring it: before you lift it, pare off its ſurface, which is greeniſh by the growth of the plant properly called *Moſs*; but obſerve, that the place from whence you take this ground be not immerſed in water, or where water ſtands in the ſummer-time; theſe grounds are ſour, barren, and can never be mended by any culture whatever; but let the place, from whence you take your earth, be open, free, airy, and of a middling dryneſs, rich and buttery to the touch, but by no means clayiſh or ſtony; dig about twelve inches deep, and no further, and when you have got a ſufficient quantity of it, bring it to your Compoſt-yard, ſpread it out, let it enjoy the ſun and air in ſummer, and the froſts for one winter, toſſing it up at every thaw; by this means it will be meliorated and divided; and after lying twelve months in this manner, it will then be fit to incorporate with the reſt of your materials.

Of all dungs whatever, none is ſo proper for cultivating flowers as cow dung; becauſe a great deal of ſand, (one third at leaſt,) is neceſſary in moſt compoſts for flowers of the bulbous kind; and ſand being hot, it muſt have a manure to cool and fatten it; for which the dung of cows, oxen, or hogs, is the moſt proper. The method I uſe to make this dung fine and fit for the purpoſe is this: In *July*, *Auguſt* and *September*, while the cows are at graſs, and are fed with graſs in byres in the night time, take out the dung and lay it in your Compoſt-yard in ſmall heaps, where it will probably heat; but this is not to be minded. In *November* and *December*, when the froſts are coming on, lay your dung over the pavement, to the depth of ſix inches, and no more, to receive the benefit of the froſt; for one month's froſt will rot your dung more, and make it fitter for uſe than three months at any other time. When the froſts are intirely gone, lay your dung again up in heaps or ridges two or three feet thick; there to lie till the middle of *May*, when the hot weather begins to ſet in, then ſpread it thin, and beat it with a plaiſterer's lime-beater, and riddle it very fine. The groſſer particles however ought not to be flung away as they may be uſed in the Kitchen Garden to very good purpoſe.

Your dung thus dreſſed muſt then be put up into pretty large heaps, where ſhould it heat, it muſt lie until quite abated; and the winter following muſt be ſpread out, for the advantage of the froſt, and by ſummer following it will be ready to put into your Compoſt heaps.

There is another manure, which is of very great uſe to the Floriſts; particularly for the many ſalts proper for vegetation it contains, and requiring but one ſeaſon for its preparation.

The Dutch *Compoſt for* HYACINTHS.

This is much uſed by the Floriſts in *Holland*, and when I was laſt there, I obſerved a gentleman's *Hyacinths* in the higheſt perfection, which led me to enquire what Compoſt he uſed, which was no other than one third of fine white down ſand, one third of extremely well rotted cow dung, and one third of rotted *leaves of trees*. This is the manure I ſhall now treat of, and ſhew the manner of preparing it, which every Floriſt ſhould never be without.

Let the leaves of thoſe trees and buſhes which fall in the end of autumn, be gathered and laid in your Compoſt-yard; which muſt be ſpread out, over which you lay your cow dung, then a layer of leaves, and another of cow dung, and ſo alternately until your heap is raiſed to 12 or 14 inches, but no higher: the ſap and ſalts of the dung will, in one winter, intirely rot your leaves, ſo that in *April* there will not be the leaſt appearance of them.

Having thus given directions for preparing your ſand, cow dung, leaves of trees, and the kinds of different earth to be uſed, I proceed to give their proportions. To a load of what ſand you can procure, after it is prepared agreeable to the foregoing direction, take two loads of cow dung, in which the leaves of trees have been rotted, and the whole ſifted and made fine, together with one load of fine riddled and prepared earth either of the moſſy kind, or of the black earth, I before deſcribed, but by no means ſuch as have any particles of clay. This mixture ſhould be prepared in *May*, by turning

turning it up every three weeks; but ſhould it heat when in an heap, do not ſtir it until the heating is over, and ſhould you perceive any mouldineſs on opening the heap, ſpread it out for the advantage of the ſun and air, which will ſoon recover it, (obſerving always to keep your Compoſt free from weeds) then it muſt be again made up into an heap, and the *September* following put it into your *Hyacinth* beds, whoſe culture you will find treated of under their reſpective heads.

Compoſt for TULIPS, *ſee their Culture, p.* 324 *and* 335, RANUNCULUS, IRIS, *and* ANEMONIES, *ſee p.* 340.

The Compoſt for your *Hyacinths* ſhould be changed every year, which will not be attended with any loſs, as it will anſwer very well for your *Tulip* beds, adding to it a fourth more of ſand, eſpecially if you plant your *Tulips* the next year after your *Hyacinths*, obſerving to lay your compoſt in ridges for the advantage of the ſun and air, a fortnight before planting; and the following year you may plant your *Ranunculus*, *Anemonies*, and *Iris*, eſpecially that ſort well known in the *Dutch* Catalogue, by the name of *Iris Anglica Bulboſa*, of which the *Dutch* have raiſed many uncommon beauties, and this compoſt after it has anſwered the purpoſe of raiſing your moſt curious flowers, let it be again laid in the Compoſt-yard, to ſweeten and meliorate for more ordinary uſes.

Compoſt for the CARNATIONS, *ſee their Culture, p.* 424 *and* 426.

Directions for the Culture of the Kitchen Garden, *according to its Soil.*

In laying out your *Kitchen Garden*, the following inſtructions will be neceſſary to be attended to, according to the ſoils with which you engage; if your Garden is rocky or gravelly, you are to bring from a rich paſture good loamy earth, laying it in heaps from five to three feet deep. The ſoil which you take from the paſture ground, ſhould not be taken deeper than nine inches, or a foot, and to be laid in heaps for a twelvemonth to rot,

before laid on the ground. If your ſoil is clayiſh, ſtrong and ſtiff, it will be neceſſary to plow or dig it three or four times, giving it a croſs-plowing with a good deep furrow, and ſhould you be under a neceſſity of having ſome ſummer crops in the quarters, lay up their ſoil in ridges the preceding winter to be meliorated by the froſt and ſnow. The beſt manure for ſuch a ſoil is ſea-coal aſhes, the cleanſing of ſtreets, and horſe-dung; but where theſe are wanting, ſea-ſand may be uſed with great advantage, obſerving that your crops will be proportioned to your quantity of ſand, as it divides the clayey particles and the ſalt inriches the ſoil; but on the contrary ſhould your ſituation be on a hot, ſandy ſoil, not any manure more proper than the dung of cows and oxen. Marle, when ſuffered to lie a twelvemonth on the ſurface, and afterwards plowed or dug into the ſoil, will be of great ſervice. Thus I have given what knowledge I have obtained from experience, (my only guide) of the different ſoils and compoſts for the Gardener's uſe, and if properly attended to, with the other directions in the following Piece, I flatter myſelf I ſhall be remembered with eſteem, and conſidered by the Floriſt and every Lover of the Art of Gardening, as an uſeful Member of Society.

The order I would recommend for the crops of the Kitchen Garden are as follows, as it anſwers beſt in regard to time, and the ſaving of dung: Let the beds in which your Cabbages and Colliflowers were the laſt ſeaſon, be ſucceeded by the Parſnip and Carrot, as the ground will not only be well dunged but well prepared for them, and as ſoon as they are taken off, let Cellery be put down; by this management the beds will be cleared of every crop by the 20th of *March*, the ſeaſon for ſowing the ſmall ſeeds. Others, as ſoon as their Peaſe and Bean ground is cleared, plant Cabbages, Brocoli, &c. in rows, but at ſuch diſtances, as to admit rows of Peaſe and Beans to be ſown between them, by which they are much ſheltered and protected when firſt coming up, and by the time they are ready for landing, the others are removed.

In winter, let ſuch beds as are not employed, be turned up in ridges, for the advantage of the froſt, and the better to receive the influence of the atmoſphere, which will greatly fertilize your ground, and deſtroy vermin and weeds.

We

We ſhall here introduce the ſeveral Particulars relative to the Trees in the Fruit Garden, ſuch as Grafting, Budding, Inoculating, and Pruning of Standards, as well as Wall Trees, with the Manner of training them, notwithſtanding many of theſe Particulars are already treated of in the Directory; but the Advantage and Pleaſure it muſt give, to have them in the Order here preſented, will, we hope, apologize for any Thing that may be conſidered as a Repetition. The engraved Repreſentations of the Cuts, (given at the End of theſe Inſtructions,) whether of Inciſion or Amputation, and the Form of the Cion and the Stock, with the different Applications that are to be made of them, will much facilitate the Work, and render the Conception eaſy; which is one of the Improvements amongſt a Number this Edition has in Preference of any other.

APPLE-Tree. The chief care of this tree conſiſts in never ſhortening any branches unleſs wood is wanting, for the free uſe of the knife is not to be allowed; I would recommend to go over the trees three or four times in the growing ſeaſon, and to pinch off ſuch ſhoots as are irregular, training others to their places, obſerving the horizontal poſition; the diſtance I would give the branches for large fruit is ſeven inches, and for the ſmaller four or five; it is to be obſerved that the Apple produces its fruit upon ſtuds or ſpurs *, ſo that they are never to be cut off.

Apricots. Obſerve to nail their branches horizontally, diſplacing all fore-right ſhoots; this to be repeated as it is often neceſſary, but on no account ſtop any ſhoots in ſummer. At *Michaelmas*, when their growth is ſtopped, looſen all the branches from the wall, to be ſhortened in proportion to their ſtrength; a vigorous branch to eight or nine inches, a weak one to five or ſix, which are to

* Studs or Spurs are ſmall branches not exceeding ſix inches, having buds at their extremities, they proceed from the ſides of the larger branches of tree.

be replaced, and nailed in the manner before directed, for upon this care their future good depends.

In the ſecond ſummer obſerve the directions of the firſt, and never ſhorten any of the ſhoots in that ſeaſon, unleſs to furniſh branches, and this not to be done later than April. The third year's management will be nearly the ſame as the former, but only obſerve, that as they produce their bloſſom buds, not only upon the laſt year's wood, but alſo upon ſtuds or ſpurs, which are produced from two years wood, care muſt be taken of them in the ſummer management; and in your winter pruning be careful to furniſh wood for every part of your tree, carefully cutting off all luxuriant branches, or diſplacing them as ſoon as they are produced.

Cherry. Their ſhoots ſhould never be ſhortened, for the moſt of them produce their fruit buds at the extreme part, and it frequently occaſions the death of the ſhoot if they are taken off, for this tree is remarkable for its diſagreement with the knife; their branches therefore are to be laid their full length horizontally, and when there is a vacancy to be filled, in *May* ſtop ſome ſtrong adjoining branch, this will occaſion two or more ſhoots to be put out for the purpoſe: Obſerve at this ſeaſon all fore-right ſhoots, are to be pinched off, and not to remain longer, as cutting them in winter would occaſion the tree to gum, but when you are doing this, be careful not to rub off the ſtuds or ſpurs, which are produced upon the two or three years old wood, as from them much fruit may be expected.

Currants produce their fruit upon their former's year wood, and upon ſmall ſnags from the old wood, ſo that in pruning them, theſe ſnags are to be preſerved, and the young ſhoots ſhortened to their length, not ſuffering their ſhoots to lie too cloſe: Never cut their ſnags, as from them the fruit is produced.

Cions or *Grafts*, are ſhoots or buds * taken from a tree in order to propagate its ſpecies, and their value is,

* Buds or Eyes, are that ſwelling on the tree from whence proceed the young leaves or bloſſoms, the latter of which appear more ſwoln than the other, which is neceſſary to be obſerved in pruning. that

that they will always retain the property of the tree from whence they are taken, how different ſoever the ſtock (which in time will be the ſtem or trunk of the tree) may be; and this excellence is attributed to its receiving the natural juices of the Earth in a more refined ſtate, than if they were immediately in the ground, living as it were on courſe diet; and it is to be obſerved that they are to be of the former year's growth for grafting and no older, taken from branches in a healthful ſtate that have been laid horizontally; that is in ſtraight lines, every where at the ſame diſtance from the ſurface of your border, but for Inoculation, the bud of the preſent year's growth muſt be taken. See p. xxiii.

Eſpaliers, are hedges of fruit-trees, which are regularly trained up flat on lettices of wood, to incloſe the quarters of gardens. The Apple-trees moſt proper for the purpoſe are the Golden Pippin, Nonpareil, Rennette, Griſe, Aromatick Ruſſet, Pile's Ruſſet; of Pears, the ſummer and autumn fruit, for ſome of the Winter Pears ſeldom ſucceed well in *Eſpaliers*. If planted in ſoils that are ſtrong and moiſt, theſe trees ſhould be upon Quince ſtocks, but if dry, upon free ſtocks. The diſtance from each other muſt be according to the growth of the tree, which ſhould be well conſidered before planting. Pears on free ſtocks ſhould be never leſs than thirty-one feet for moderate growing trees; but the vigorous ſhooters the ſpace of forty feet ſhould be given them, eſpecially in ſtrong ſoils. The Pears I would recommend, are the *Jargonelle*, *Blanquette*, *Holland Burgamot*, *Summer Benerelier*, *Hamden's Burgamot*, *Poire du Prince*, *Autumn Burgamot*, *L'Ambrette*, *Gros Rouſſellet*, *Chaumontelle*, *Beurre du Roy*, *Le Marquis*, *Creſſane*. Obſerve that if the hard baking Pears are grafted upon Quince ſtocks, the fruit will be ſtony, but the melting Pear will be improved by it, provided they are planted in a ſtrong ſoil, but if the ſoil be dry and gravelly they will not be proper.

This is to be obſerved that when trees have been injudiciouſly planted, if the trunks are healthy and good, to dig up two or three, leaving every third or fourth in order; they may be at the diſtances before mentioned, the branches of which are to be laid horizontally, but ſuch as will not comply with this direction, I adviſe to be cut down near the ſtem, from whence new ſhoots will be

ſoon

ſoon produced, for the wall or *Eſpalier:* But ſhould the fruit not be approved of, the young branches may be budded the ſame ſummer, or grafted the following ſpring, which will come into fruit much ſooner than perhaps is expected, for one of theſe old trees thus managed, will in three years produce more fruit, than a new one will in ten, eſpecially if the ſoil be improved.

Fig-Tree. The ſeaſon for pruning this tree is in *Auguſt*, as the branches are not then in full ſap, ſo that the bleeding will be the leſs: The branches are not to be ſhortened, as the fruit is produced at the upper part of the former year's ſhoots, and cutting the branches is apt to make them decay; when the branches are too cloſe, cut out the naked branches to the bottom, leaving thoſe which are beſt furniſhed with lateral branches, at a proper diſtance from each other, which ſhould not be nearer than a foot, and ſhould they be well furniſhed with lateral branches, let them be laid four or five inches farther aſunder. Obſerve theſe trees are to be ſtripped of all autumnal Figs, and the ſooner this is done the better, and if the buds at the extremity of the ſhoots are rubbed off with the finger, it will cauſe them to put out a greater crop of fruit in the ſpring; this will enable the young ſhoots the better to reſiſt the cold; but the ſeverity of ſome ſeaſons being too great for theſe tender ſhoots, their upper parts will be killed, for a conſiderable length downwards; when this happens let the decayed part of the ſhoot be cut away: It is chiefly from the uppermoſt joints of the ſhoots the fruit is produced, therefore as many of the ſhort lateral branches ſhould be preſerved, as poſſible, not only for this purpoſe, but to furniſh the lower part of the tree with wood.

Goofeberry. In order to have their fruit in perfection you muſt uſe the knife, by ſhortening the ſtrong ſhoots to about ten inches, cutting out all irregular branches, and thinning the fruit-bearing branches; when they are too thick, obſerve always to cut behind a leaf bud, and dig the ground about them once a year, and every ſecond beſtow a little dung on them, this will greatly improve their fruit, which are not deſpicable.

Grafting, is the taking a ſhoot from one tree, to inſert into another; this by ſome is called inciſion, to diſtinguiſh

tinguiſh it from inoculation; from which it differs, by performing the operation before the ſap has riſen in a high degree; the ſhoot taken for this purpoſe is called the Cion, or Graft, the beſt are, the ſhoots of a former year, to be taken from trees in vigour, whoſe joints are compact and cloſe, and from lateral or horizontal branches, to be cut from the tree, before the buds begin to ſwell, which is generally three weeks or a month before the ſeaſon for grafting; therefore as ſoon as the Cions are cut, they ſhould be laid in the ground with the cut downwards, burying them half their length, covering their tops with dry litter, and if a ſmall joint of the former year's wood is cut off with them, they will keep the better, and if they are to be carried to a diſtance, they muſt be put in clay, or wrapped up in moſs.

For the operation, you muſt be provided with the following inſtruments; 1. A ſmall hand ſaw to cut off the heads of ſtocks, on which the Cion is to be grafted. 2. A knife with a thick back, to make clefts in the ſtocks. 3. A ſharp grafting-knife, with a flat handle ſomewhat like an ivory paper cutter, but narrower, this is to raiſe the bark from the wood, which is to be cloſed on the Cion. 4. A grafting chiſſel with a ſmall mallet. 5. Strings of baſs matting or woollen yarn, the matting if laid in water ſome time before, will make it better for uſe. 6. A quantity of compoſt to be thus prepared; take ſome ſtrong fat loam, alſo ſome ſtonehorſe dung to break into the loam, with a little tanner's hair, this will add to its binding quality, as ſalt will to its moiſture, ſo as to prevent it cracking in dry weather, theſe are to be well worked together with water, as you make mortar; and to be repeated ſeveral days: this compoſition is not to be expoſed to the froſt or drying winds, and the more it is wrought the better.

The four ways of performing this operation are as follow:

1. *Rind-grafting*, called ſhoulder-grafting, proper for large trees, and by ſome called crown-grafting, as the grafts are ſet in the form of a circle or crown; the end of *March* or the beginning of *April*, is the proper time. This method is ſeldom practiſed but on large trees, whoſe heads or a large branch are to be cut off horizontally,

and

and two or four cions, according to the ſize of them, are put in between the wood and the bark, which may be opened and raiſed as in inoculation, that is, by firſt giving the bark an upright cut, to the depth of a little more than two inches, to terminate in the horizontal juſt made, then to be raiſed on each ſide with the thin end of your budding knife, as is repreſented by figure 3 at *b*, *b*, then the cion is to be inſerted, firſt ſloping it to the length of two inches, to terminate in the bark, and to be ſet off with a ſhoulder at the thick part of the ſlope, to reſt on the ſtock, as repreſented at *a*, figure 1; over this cion the bark which was raiſed on the ſtock, is to be gently cloſed and preſſed, and thus to proceed according to the number of cions you want to graft; but when the bark will not riſe, the operation muſt be performed after the manner of Whip or Tongue grafting, as repreſented by the figures 2, 7, 8 and 10, to which we refer, having been very particular in our directions for performing it, as it is the moſt uſeful. When all is ſmoothed up, and ſecured by a ligature, the crown of the ſtock is to be well clayed, and worked ſo as to terminate in a point to carry off the rain, leaving the eyes of the cions uncovered; the difficulty of preſerving theſe grafts, though of ſome years ſtanding, has put this method out of uſe.

2. *Cleft or ſlit grafting*, called *Stock*, proper for trees from one to two inches diameter, to be performed in *March*. This grafting is practiſed on the ſtocks of trees of the ſmaller ſize, and may be uſed with ſucceſs, where the rind of the ſtock is not too thick, whereby the inner bark of the cion may be prevented joining; this ſhould be performed on ſtocks or branches more than an inch diameter, after this manner; the head of the ſtock, &c. is to be cut off with a ſlope, as at figure 11 *r*, *s*, and a ſlit made the contrary way, *(a)* in the top of the ſlope, deep enough to receive the cion, which is to be cut in the form of a wedge, as repreſented by figure 12. tapering to the length of two inches, terminating very thin; and in ſetting the cion into the ſlit of the ſtock, there muſt be great care taken to join the rind of the cion with the rind of the ſtock; this will be beſt done by an upright poſition, for by it the greateſt length will be given

for

for the rinds of the cion and ſtock to join each other, and this to be obſerved as a general rule, that, when the ſurface of the cions is of a leſs diameter than the ſurface of the ſtocks, the former are to be placed on one ſide, in order that the bark of each may meet in as many points as poſſible, for on their meeting and well uniting the ſucceſs of the operation depends; when the ſtocks are not ſtrong, it will be proper to bind them with ſtrings of baſs matting, to prevent the ſlit of the ſtock from opening; then to be clayed to prevent the admiſſion of air, leaving only the eyes of the cions above the clay for ſhooting.

3. *Whip* or *Tongue grafting*, proper for ſtocks of an inch and half diameter or leſs, which is moſt in uſe, as being moſt effectual. This is performed by taking a ſhoot of the laſt year's growth, to be cut to a length ſo as to have three or four eyes; this is called the cion, (figure 9) and is to be cut ſloping on one ſide, to the length of two inches downwards, terminating in the rind, leaving the ſurface of the cut quite ſmooth; then raiſe a tongue on the upper part of this ſurface inclining downwards, as at *q*, this is intended to fall into a catch, which is to be raiſed the contrary way on the ſtock to receive it, (ſee figures 7 *n* and 8 *o*,). The ſtock is now to be prepared, by cutting off the head, ſloping upwards, (fig. 7, *k l*,) but to ſlope no more than in common cutting; then take a ſlice off the ſide of the ſtock, in a contrary direction to the ſlope you have juſt made on the cion, to the length of it, terminating in the lower edge of the ſloping cut, (*k*, *l*,) you juſt made on the ſtock, and to a ſurface that will anſwer to that made on the cion, ſo that when they are placed on each other, they will touch in every point, and the edges of their rinds or bark exactly meet; then you are to raiſe the catch at (*n*) before-mentioned, to receive the tongue of the cion; and for the diſtance and depth, you muſt take your direction from that on the cion, that the planes may meet (as in figure 10) each other with the exactneſs juſt mentioned; this will keep them ſteady for tying with the baſs ſtrings, with which they are to be ſecured; but when the cion has a narrower ſurface than the ſtock, it is to be placed on one ſide, that the rinds may meet in as

great

great an extent as poſſible, then to be tyed and clayed, obſerving to let the bud appear.

4. *Grafting by Approach*, called *ablaction*, or *inarching:* This is to be performed when the ſtock you graft on, and the tree from which you graft, ſtand near each other, to be performed in *April*, in uſe for Jeſſamines, Oranges, and tender exotic trees, (figure 15) and thus executed: Take the branch you would inarch, and having fixed on the ſtock to which you intend to join it, pare away the rind and wood on one ſide, about two inches in length, doing the ſame with the ſtock, ſo that both may the better unite to each other, and for the better effecting this, cut a tongue, as repreſented by figure 15 at *y*, upwards in the graft, and make a ſlit in the ſtock downwards, as was directed in the Whip grafting, to admit it, to prevent their ſlipping, and when theſe are placed very exactly one on the other, they are to be ſecured with the bandage already mentioned, over which the grafting clay is to be laid, to exclude the air, thus to remain for four months, ſtaking the graft to keep it ſteady, which is quite neceſſary; after the time mentioned, the graft may be cut from the mother tree, obſerving to ſlope it off cloſe to the ſtock, the joined part to be covered again with the clay.

The next thing that is to be conſidered for the ſucceſs of this practice, is to make choice of ſuch a kind of tree as will unite and proſper after it is performed; ſo that care muſt be taken to unite ſuch only as are of the ſame genus or kind, that is, ſuch whoſe fruit and flower will agree: All nut-bearers will graft on each other, the different kinds of plum-bearing trees, amongſt which are included the *Almond*, *Peach*, *Nectarine*, *Apricot*, *&c.* as they agree in general characters, by which they are diſtinguiſhed; and as many of theſe trees will diſcharge quantities of gum when deeply cut, they had better have this operation performed, after the manner of inoculation; *Peaches* and *Nectarines* are of this ſort.

Such trees as bear cones will agree, though one ſhould annually caſt its leaves, and not the other; and ſuch trees as abound with roſin, muſt be grafted by approach, as alſo the *Laurel* on the *Cherry*, and the *Cherry* on the *Laurel*. All maſt-bearing trees will take on each other, and

and ſuch as have a ſoft wood may be performed in the common way; but ſuch as are of a firm texture and ſlow growth, by approach.

It is to this invention, we are indebted for the number of foreign trees, of the ſouthern climates; for, by budding and grafting them on more hardy ſtocks, we have, in a manner, naturalized them to our clime. Theſe cions which have been grafted on the different trees, do not become one body with them, but as it were, ſtrike root in their ſtocks, and are ſo furniſhed with fibres, as to convey to themſelves their nouriſhment, but in a ſtate more pure, than if they drew their ſupport from the earth; this accounts for the cions retaining the nature and qualities of the trees from which they are taken. To this practice it is ſaid mankind was led by a bird diſcharging the ſeed of a tree into the trunk of another, where it received a moiſture and other ſuſtenance ſuitable to its growth; it became a tree, and of a different ſpecies. This the working mind of Man improved on.

Gravel; the uſe of this for walks of gardens makes it neceſſary to give ſome directions for that purpoſe. This work is to be begun in *March*; and when the gravel is of ſuch a quality as will not bind, take to one load of ſtrong loam, two or three of gravel, to be well mixed and moiſtened for uſe: In making of a walk five feet wide, one inch is ſufficient for it to riſe in the centre, and a walk of ten feet is to riſe two inches; this will give the rain a ſufficient fall. Six or eight inches depth of gravel may do for the covering of a walk, but a foot is ſufficient, and you are to obſerve that according to the ſoil of your walk, you are to preſerve it for coating, which is generally by firſt putting down a good layer of rough ſtones. The level of the ground muſt be well conſidered, before you begin to make your walks, in order to give them that deſcent which will beſt carry off the water; and when the ſoil is remarkably wet, land drains are neceſſary. To deſtroy worms, which are very prejudicial to gravelled and graſs walks, let them be well watered, in which water walnut leaves have been ſteeped, this will force them out, ſo that you may with eaſe kill them; but the beſt proviſion againſt this evil, is firſt to lay down a good coat of lime rubbiſh; and in order

to keep your walks clear of weeds and moſs, turn them up in the winter.

Hedges. Their uſe and ornament to the garden are ſo great, that we ſhall give ſome neceſſary directions about them; for incloſures the quick is moſt frequently planted, which ſhould not be bigger than geeſe quills, to be cut down to within four or five inches of the ground when planted, and taken freſh from the nurſery, to be ſmooth, ſtreight, and well rooted; if to the hedge there is to be a ditch, I would adviſe it to be ſix feet wide at top, four and half at bottom, and three deep, then there will be a proper inclination given to the banks, to ſupport themſelves againſt froſts; if without a ditch, the quicks are to be planted in two rows, almoſt perpendicular, at a foot diſtance, in the quincunx order, (ſee fig. 17) that is, four quicks are to be ſet in the oppoſite corners of a ſquare, and one in the middle; the method of planting on ſloping banks in two rows one above the other, is by no means right, as the moiſture goes off too quickly to afford the plantation nouriſhment; I adviſe the plantations to be made with the ſets on the top of the bank, where if they are kept clear from weeds, they will grow more in one year, than thoſe on the ſides in three; when hedges come to the growth of eight and nine years they ſhould be plaſhed, that is, laid down, avoiding the extreme of laying them too low or thick; the ſeaſon for this work is in *October* and *February*.

The *Crab* and *black Thorn*, both make excellent hedges, but are to be raiſed from ſeed, and the firſt from the ſmall wild *Crab*, to be ſown early in *January*. The *Holly* makes the moſt beautiful hedge, but is ſlow in its growth, and like the laſt is beſt raiſed from ſeed, which muſt be a year gathered before it is fit for uſe, to be managed thus: The *Berries* which are to be gathered about *Chriſtmas*, are to be put into a large flower pot, mixing ſome ſand with them, then dig holes in the ground, into theſe the pots muſt be ſunk, covering them to a foot depth, where they are to remain until *October*, then the *Berries* are to be taken out and ſown where they are to ſtand, the ground being well trenched and cleared, &c. then two drills are to be made at about a foot diſtance from each other, and about two inches deep, into which the

the ſeeds are to be ſcattered pretty cloſe, to provide for failures, and by this management the hedges will come up thick at the bottom, when you may promiſe yourſelf ſucceſs, provided you are careful of them and keep them clean; this hedge, when in growth for clipping, ſhould be ſheared in *May* and *Auguſt*, but for a common fence once a year will do. If a hedge is to be made by plants of holly, let the ground be well trenched. The time for ſetting plants is in *October*, unleſs the ground is very wet; *March* then is the proper ſeaſon. Plants that have been twice removed, and from an inferior ſoil, will anſwer beſt, provided they are raiſed with a ball of earth, and protected from the froſt.

Inoculating, or *Budding*, is always performed when the trees are in full ſap; in this it differs from grafting. This is commonly practiſed upon all ſorts of ſtone fruit, in particular, ſuch as *Peaches*, *Nectarines*, *Cherries*, *Plums*, *&c.* as alſo *Oranges* and *Jeſſamines*, and is preferable to any other kind of grafting, for moſt ſort of tender fruits. You muſt be firſt provided with a budding knife in good order, the end of which terminates in the form of a paper cutter of ivory, but narrower, with which you are to raiſe the bark of the ſtock to admit the bud, and ſome baſs matting ſoaked in water to increaſe its ſtrength; then, having taken off the cuttings from the trees you would propagate, chooſe a ſmooth part of the ſtock, about five or ſix inches above the ſurface of the ground, if deſigned for dwarfs, but if for ſtandards, they ſhould be budded ſix feet above ground; (ſee fig. 3) then with your knife make an horizontal cut acroſs the rind of the ſtock (*f*), and from the middle of that cut make a ſlit downwards about two inches in length (*g*), ſo that it may be in the form of a T, not cutting ſo deep as to wound the wood of the ſtock; then take the ſhoot of the former year's growth, cut off the leaf, leaving the foot-ſtalk as repreſented in figure 6, make a croſs cut about half an inch above the eye or bud, and with your knife ſlit off the bud, with part of the wood to it, in the form of an eſcutcheon, a figure in heraldry, which will be in form as repreſented by figure 4 (*b*, the wood as it appears in the cut); this done, you muſt with your knife raiſe up that part of the wood (*b*) which was taken

with the bud, obſerving whether the eye of the bud continues to the rind or not, (for all thoſe buds which loſe their eyes in ſtripping, ſhould not be uſed) then gently raiſe the bark *b b* of figure 3 where the croſs inciſion was made at *f*, with the flat haft of your knife, ſeparating the bark from the wood, down the cut *g*, to place the bud in, to incline upwards, obſerving to lay the bark (which you juſt now raiſed) ſmooth on the ſtock, covering the cion, except where the ſhoot is to be made: Then you muſt bind them cloſely round with the baſs mat, beginning at the under part of the ſlit, and ſo proceed to the top, taking care not to bind up the eye of the bud.

N. B. When the bud (fig. 6.) is inſerted in the ſlit (*g*) of figure 3, you are to ſlide it between the wood and the bark; ſo as the point (*b*) will come down pretty low in the ſlit (*g*), and whatever of the bud remains above the horizontal cut (*f*) is to be cut off in the ſame direction, before you bind them.

In about three weeks or a month you will perceive ſuch as have ſucceeded, by their remaining freſh and plump, when the bandage may be looſened, or nicked with a knife to give room, which, if not done in time, may force off the bud, as it will be ſwelling. The *March* following you muſt cut off the ſtock about three inches above the bud, as repreſented by the curve line at *i*, in figure 3, ſloping it, that the wet may paſs off; to this part of the ſtock it will be proper to ſecure the ſhoot which the bud made this ſummer, to prevent its being blown off; but this part of the ſtock muſt not continue longer than one year, when it is to be cut off cloſe above the bud.

The ſeaſon for inoculating is from the middle of *June* until the middle of *Auguſt*, and ſuch trees as are ready, may be known by trying whether their buds will come off well from the wood, but the moſt general rule is, when you obſerve the buds formed at the extremity of the ſame year's ſhoots, it ſhews they have finiſhed their ſpring growth.

The firſt tree that is generally inoculated is the *Apricot*, and the laſt the *Orange*; and at any time when this work is performing, cloudy weather is the beſt, (but not when

when it rains) as the juices are not then too quickly exhaled, which is occaſioned by performing it when the rays of the ſun are ſtrong; nor ſhould theſe cuttings be taken too long from the trees before uſing, that they may retain as much as poſſible their natural moiſture; ſo that when they are taken to a diſtance, a tin inſtrument is to be provided with ſockets, about ten inches long, to be filled with water, covering their tops with a lid to exclude the air, but pierced in ſome places to carry off the exhalations; in theſe the cuttings are to be ſet upright, with the cut down, carefully keeping the buds from being immerſed in the water; and it is to be obſerved, that ſome tender trees require the little wood at the extremity of the ſhoot to be preſerved, which in others is directed to be cut off.

Layers; by theſe many trees, &c. are propagated, which otherwiſe we could not have. Laying of layers is thus performed: the one year old ſhoots near the ground, are to be choſen; from them all ſide ſhoots are to be taken, and ſuch as ſtrike root with difficulty, are to have a ſlit made upwards at a joint, and in that part which is laid under the earth, or a piece of wire twiſted in the ſame part, to check the mounting ſap, which will haſten their ſtriking root; before the laying down of the layers, let the earth be well dug, and the clods broken, then the ſhoots are to be laid, five or ſix inches under the ſurface of the earth, and ſecured by pegs, leaving the end of the ſhoots, five or ſix inches above ground, in an erect poſition. The ſeaſon for laying hardy trees, that ſhed their leaves, is in *October*, but ſuch as are tender, in *March*; for *Ever-greens*, *July* or *Auguſt*; and the ſummer ſeaſon is the beſt time, for ſmall plants; to have layers from high ſtandards, they muſt have earth raiſed about them.

Nectarine: for its management, ſee *Peach*.

Northern Aſpect. This is the leaſt favourable in theſe climes, but however, it may be made a convenience, in retarding the ripening of fruits: The *Morello Cherry* for preſerving; red and white *Currants*, and ſome ſummer *Pears*, planted in this aſpect, continue long in bearing and ripening.

Nurſery, is the place ſet apart, for raiſing and propagating, of all ſorts of trees, and plants, to ſupply the garden, and other plantations.

Peaches. Theſe trees are to be equally furniſhed with bearing wood, avoiding to lay them too cloſe to each other; and it muſt be obſerved, that as they produce their fruit upon young wood, either of the preceding year, or at moſt, from two years old wood, (for after that they will not bear) the branches ſhould be ſhortened to occaſion a produce of new ſhoots every year, and in every part of the tree, obſerving always to cut behind a wood bud, as I ſhall direct more particularly; the time for this is in the months of *April*, *May* and *June*, when foreright ſhoots muſt be pinched off, (ſee *a*, fig. 18) the luxuriant branches checked by pinching, and new ſhoots produced, where wanting, by ſtopping the ſap in the neighbouring branches; the ſhoots produced this ſeaſon, will have time to ripen againſt autumn, whereas thoſe produced after *June*, will be crude and pithy, conſequently of no value.

In order to keep theſe trees in a proper ſtate, they muſt have more attendance than the ſummer and winter pruning, for you muſt go over them in the month of *May*, to pinch off all irregular ſhoots, and to train the branches to the wall, that each may have an equal advantage of ſun and air, therefore the oftener theſe trees are examined from the time they firſt begin to ſhoot until autumn, the better will be their condition for fruiting; by this much cutting is prevented in the winter, which but badly agrees with this tree, as it is of a ſoft texture, and does not ſpeedily heal of its wounds, ſo as to be out of danger, when the ſevere weather ſets in.

The diſtance the branches are to be laid againſt the wall, muſt be according to the ſize of the fruit, and depth of their leaf, as the leaves of one branch ſhould not overhang another. This obſervation will hold good in reſpect to all trees againſt walls.

The branches being trained as directed in the ſpring and ſummer, we are come now to the winter pruning, which is uſually performed in *February* or *March*, but the beſt ſeaſon is in *October*, as the wounds will then have ſufficient

ſufficient time to heal, before the froſt ſets in; and in the ſpring all the efforts made by the motion of the ſap, will not be to any unneceſſary purpoſe, as now no part of the tree is to be cut off.

October I have mentioned as the beſt time for winter pruning; in doing of which you muſt obſerve to cut behind a wood bud; this you may diſtinguiſh from the bloſſom bud which is ſhorter, rounder, and more ſwoln than the wood bud; for if the ſhoot does not terminate with a leading bud, it is apt to die down to the next. The length of the ſhoots, in a healthy ſtrong tree, ſhould be ten inches or more, but in thoſe that are weak, not more than ſix; yet in this you muſt be guided by the poſition of the leading bud, as it is better to have a ſhoot three or four inches longer or ſhorter, provided it terminates with one of theſe buds; it is abſolutely neceſſary for the future welfare of the tree, you ſhould cut out all weak ſhoots, though many bloſſom buds may appear on them.

In nailing the ſhoots to the wall keep the horizontal poſition, as repreſented by fig. 18, placing the branches at ſuch diſtances as will prevent their being overſhadowed with their leaves, as has been directed.

Peach, the moſt excellent of theſe are ſuch as have their fruit with a firm fleſh; the ſkin thin, of a deep bright red next the ſun, and of a yelloviſh caſt next the wall, and the fleſh of a yelloviſh colour, full of juice.

Pear-Trees. They generally produce their bloſſom buds on the extremity of the laſt year's ſhoots; ſo they are not to be cut off; this alſo will prevent the evil of filling the tree with too much wood. Pears likewiſe produce their fruit upon ſtuds or ſpurs, which are emitted from branches three or four years old, ſo little more is to be done with them, than in the ſummer to train their ſhoots, and to diſplace fore-right and luxuriant branches, that the fruit may be well expoſed to the ſun: the ſeaſon for this work is any time after the fruit is gathered until *March*, but the ſooner after the fruit is gathered, the better.

Plum-Trees; they not only produce their fruit upon the laſt year's wood, but alſo upon ſtuds or ſpurs of ma-

ny years growth; ſo that the ſafeſt method to be taken with theſe trees, is to lay their ſhoots horizontally (ſee fig. 18), and at ſuch a diſtance, branch from branch, as will be ſufficient for the well ripening of their fruit. When wood is wanted to fill the walls, pinch the ſhoots in *May*, and during the growing ſeaſon, pinch off all foreright ſhoots, (ſee fig. 18, *a*), and ſuch as are preſerved muſt be regularly trained; the Plum-tree will not allow the knife, on account of the quantity of gum that is emitted on ſuch occaſions.

Pruning. There is not any part of gardening of more general uſe, nor is there any wherein there are more pretenders, which muſt ever be the caſe, when men take up profeſſions from cuſtom, whoſe principles are only to be found in ſtudy, practice, and a careful purſuit of nature, in that variety for which ſhe is ſo remarkable. In the ſcience of gardening or vegetation, many think it is only requiſite to be provided with a good knife, and that a liberal uſe of it diſplays their knowledge, which ſhould be confined to rendering trees more laſting, ornamental, and fruitful, to obtain which a contrary practice is neceſſary, as will appear in our directions.

1. To contribute to the healthful ſtate of a tree all uſeleſs branches ſhould be taken off in a proper ſeaſon, that the ſap may not be uſeleſly expended.

2. To render a tree ornamental is to diſpoſe its branches according to their ſtrength and ſize, having a regard to the largeneſs of the leaf and fruit, that they may be properly diſtanced to receive the advantage of the ſun and air, by which not any confuſion will appear, conſequently they will be rendered ornamental.

3. To give a tree fruitfulneſs is to diſpoſe of her luxuriances ſo as to confine all her efforts of vegetation to the thing neceſſary, which will give a fair, well grown, and well flavoured fruit, and in ſuch abundance as is conſiſtent with her ſtrength, without exhauſting it.

Thus far have we proceeded on the general principles of this ſcience, which we will now lead into practice; but firſt make the following remark.

Some think their trees have all the neceſſary aſſiſtance given them, if during the ſummer they are kept to the wall,

wall, and in winter have the diſcipline of a *Mow-hawk*, for ſuch I call theſe amputating gardeners: But in this they are much miſtaken, as the ſpring is the ſeaſon for our attention, when their growth is vigorous: Now foreright ſhoots are to be pinched off (ſee *a* figure 18) (always obſerving never to uſe the knife when your fingers can ſupply its place) good wood is to be provided, and all uſeleſs branches to be diſplaced, whereby nature will not be employed to any uſeleſs purpoſe. Others there are who give their trees the ſummer pruning, but neglect them in *April* and *May*, when their ſhoots are produced, and only ſurvey them at midſummer, nailing up their branches, except fore-right ſhoots, which they *cut off* with other parts of the tree, and perhaps ſuch to whom the knife is death, by emitting its vitals, in bleeding ſome, and forcing others to diſcharge their gums, not diſtinguiſhing when the uſe of the knife is allowable. Thus far we have proceeded to expoſe theſe ill practices, in hopes they will be corrected, and to rouſe the gentleman and the gardener to attend to nature, whoſe purſuits we have made the principles of our ſcience; theſe are given in treating of each particular tree, ranged in alphabetical order.

Raſberry. The ſeaſon for dreſſing them is *October*, when all old wood that produced fruit the preceding ſummer, ſhould be cut down below the ſurface of the ground, and the young ſhoots of the ſame year, muſt be ſhortened to about three feet in length, and the ſpaces between the rows ſhould be well dug to encourage their growth, and a little rotten dung would add much to their vigour, and encreaſe the largeneſs of the fruit; in ſummer care muſt be taken to keep them clear of weeds, and the plantation ſhould be renewed every three or four years.

Standards. They ſhould never have their branches ſhortened, unleſs where they are very luxuriant, or grow too much on one ſide, for proportion ſhould be preſerved; but this cutting is only allowable to Pears and Apples, as the ſtone-fruit-trees would gum and decay by amputation; but when this is abſolutely neceſſary for the latter, you muſt remedy the evil by ſtopping the gum, or pinching the ſhoots in ſpring, before they obtain too

much vigour ; this will occaſion them to puſh out ſide branches, whereby the ſap will be diverted from aſcending too faſt to the leading branches; but it muſt be cautiouſly done.

In taking off decayed branches care muſt be taken to take them off at the place where they are produced, otherwiſe the infection will extend itſelf ; and ſhould the branch be large, which is neceſſary to be cut away, let the part be carefully ſmoothed, laying over the wound a plaiſter of grafting clay. Such branches as croſs each other ſhould be removed, to prevent a canker, which otherwiſe would be occaſioned by their rubbing each other ; and it muſt be obſerved in old trees, particularly the Apple, that from the trunk, young ſhoots riſe with great vigour into the head, theſe ſhould be cut away, as the admiſſion of ſun and air is quite neceſſary both for the preſervation of the tree, and the ripening of the fruit.

Strawberries. They love a gentle hazelly loam, that is moiſt, which is better for them than a light rich one, they are not to be treated with dung, as it only occaſions them to grow luxuriant. *October* is the beſt ſeaſon for planting them, for ſuch as are moved in ſpring will require watering, if the weather ſhould be dry ; the ground is uſually laid in beds of four feet broad, with paths of two feet between them, theſe ſhould have the roots of weeds well cleared out ; then let four lines be drawn in each bed at a foot diſtance, this will leave ſix inches ſpace on each ſide, between the outſide rows and the paths ; let the plants be ſet at a foot diſtance from each other in the rows, in quincunx order, (ſee fig. 17), cloſing the earth on the plants, which are to be watered, unleſs rain deſcends ; the diſtance here directed is for the wood *Strawberry*, giving thoſe of a larger growth, viz. the *Scarlet* and *Hautboy*, fifteen inches diſtance, and of theſe but three rows in a bed, the *Chili* are to have but two, and at two feet diſtance. In your choice of plants be careful that they are taken from beds that have been well attended and fruitful, the off-ſets which ſtand neareſt the mother-plant, are to be choſen for new plantations ; the wood *Strawberry* is beſt when taken into the garden

garden from its natural ſtate; the next care to be taken of your plantation, is to defend the roots from the froſt, which may be effectually done, by laying tanner's bark over the ſurface of the beds; this care muſt not be omitted with the *Chili*, otherwiſe you may loſe them: Sawduſt, or ſea-coal aſhes may be uſed, when the bark is not to be had. In ſummer you muſt keep them clear of weeds and runners, which ſhould be removed as faſt as they appear; if this direction is attended to, you may promiſe yourſelf fine large fruit; and as the old plants are the bearers, you muſt keep them clear of ſuckers, which would otherwiſe deprive them of their nouriſhment. A plantation will not hold longer than three years, therefore a proviſion ſhould be made, by planting other beds with the ſuckers that are drawn from next the mother plant, to be ſet in freſh ground.

In autumn you are again to take off what runners have been produced, with decayed leaves and weeds, digging up the paths, where the weeds are to be buried, and if ſome freſh earth is laid over the ſurface between the plants, this will much ſtrengthen them againſt the following ſpring; and after this, if ſome rotten tanner's bark is alſo made uſe of in the ſame way, it will be better.

In the ſpring following, as ſoon as the froſts are over, the ſurface of the ground is to be forked with a narrow fork, to looſen the earth, and break the clods; and in this operation the bark being worked in, will be of ſervice, eſpecially in ſtrong ground; and to have this fruit in the higheſt elegance, about the end of *March* or the beginning of *April*, I would adviſe the ſurface to be covered with moſs, which will anſwer the purpoſe not only of keeping the beds moiſt, but out of danger of having the earth waſhed into the fruit by heavy rains.

The *Chili* is found to ſucceed beſt in very ſtrong brick earth, approaching near to clay.

Stocks, is a term uſually given to trees which are to be grafted, and are either old trees, whoſe fruits are to be changed, or young ones that have been raiſed in nurſeries, which in the former muſt be on branches, and on ſuch as are young, healthy, and well ſituated, and have the

the bark ſmooth; when on walls and eſpaliers, it will be proper to give them ſix or eight grafts, but the ſize of the tree muſt determine this; for ſtandards four or ſix will be ſufficient.

When ſtocks are choſe that are young, let them be ſuch as have been raiſed from the ſeed; (theſe are called the Crab or free ſtock) and once or twice tranſplanted, which ſhould be at proper diſtances for the well growing of their wood, this will contribute to make them ſucceſsful; there are others which are raiſed from cuttings and layers of trees; obſerve that ſuckers are never to be uſed. Of the variety of ſtocks that are uſed, the following are the principal and their properties. 1. The true Crab (which we will call ſo, to diſtinguiſh it from the variety) is that which is raiſed from ſeed of the kind of which verjuice is made; it is valuable for the regularity of its growth, keeping the fruit to its natural ſize, true colour, flavour, and of a longer duration. 2. Free ſtocks, or Crabs, are ſuch as are raiſed from all kinds of ſeed promiſcuouſly taken, they are recommended for a ſtiff ſoil, and produce a larger fruit than the true Crab, but not with that firmneſs and flavour. 3. The *Dutch* Creeper, deſigned to ſtint the growth of trees, and keep them within compaſs for *Dwarfs* or *Eſpaliers*. 4. Paradiſe ſtocks, this is a tree of a very humble growth, and fitted for ſuch as are kept in pots, but is not durable. 5. *Dutch* Paradiſe ſtock, this kind comes ſoon into fruit, does not grow too luxuriant, is durable, and is recommended for *Eſpaliers*. 6. Quince, this tree bears a ſmall fruit reſembling an *Apple*, and is much recommended for ſtocks, for the ſoft melting *Pear*, on a ſtrong moiſt ſoil.

Stocks which are uſed for the particular kinds of fruit, are; for the *Peach* and *Nectarine*, ſuch as are raiſed from the ſtones of the *Muſcle* and white *Pear Plum*.—*Pears* on ſtocks raiſed from the kernels of the ſame fruit, but for the ſoft melting kind Quince ſtocks are preferable.—*Apples*, on Crabs, &c. as above.—*Cherries* on ſtocks raiſed from ſtones, of the common black, or wild honey *Cherry*; ſome of late have budded, &c. on ſtocks of the *Corniſh*, *Morello*, theſe they ſay will render the tree more fruitful,

ful, and leſs luxuriant; theſe ſtocks having the ſame effect on the *Cherry*, the Paradiſe ſtock has on the *Apple*. —*Plums* on ſtocks of any of the free growing ſort, which will anſwer for *Apricots*.—*Peaches*, the tender ſort on *Almond* ſtocks, but thoſe budded on *Apricot* ſtocks will anſwer beſt, and in a dry ſoil will hold a long time, and are not ſubject to blight. Some practiſe the following method in order to have the tender ſort of this fruit; they bud the *Plum* ſtock with the *Apricot*, or ſome free growing *Peach*, when theſe have ſtood a year, they then bud the tender *Peach* upon the ſhoots; theſe are called the double worked trees, and is the beſt expedient for the purpoſe.

AN

EXPLANATION

Of the different

ENGRAVED REPRESENTATIONS

OF

GRAFTING, BUDDING and INOCULATING,

FOR THE

Clearer Underſtanding the Manner of performing theſe Curious and Uſeful Parts of GARDENING, ſo as with Eaſe to lead them into Practice.

Rind or Shoulder Grafting, for the Manner of performing it, ſee Page xvii.

N° I. THE Cion as prepared for Shoulder-grafting, when the Stock is to have the Bark laid open as in Inoculation.—*a b*, the length of the ſloping Cut made on the Cion, to the length of two Inches.—*a*, the ſhoulder given the Cion, which is to reſt on the Stock, to prevent its deſcending deeper than neceſſary.

II. The Cion as cut for Shoulder-grafting, when the Operation is to be performed after the manner of Whip-grafting.—*c d*, the length of the Cut to be made on the Cion, which is to be about two inches.—*e*, the Tongue raiſed on the Cion, which is to fall into a Catch, raiſed for the purpoſe on the Stock; this Tongue is to have the Cut made ſloping to the Shoulder of the Cion.

Inoculation;

Inoculation; *for the Manner of performing it, ſee page* xxiii.

III. The Stock for Inoculation.—*f*, the part on which the horizontal Cut is made in the Rind.—*g*, the perpendicular Cut to the length of two inches to terminate in the horizontal Cut *f*.—*b b*, the ſides of the Bark as ſeparated and laid open by the thin end of your Budding-knife.—*i*, the Cut to be made the *March* following, at the diſtance of three inches from the Bud, to ſlope upwards on the oppoſite ſide on that you made your Inciſion, in order to carry off the rain that way, which would otherwiſe prejudice the Bud.

IV. The Cut taken off the Shoot of the one year's Growth, with the Wood in it.

V. The ſame Cut in the Figure of an Eſcutcheon, and as it appears when the Wood is taken out of it.—*a*, That part on the other ſide of the Cion, where the Bud and Leaf are ſuppoſed to be placed, from which, ſhould they come off in ſtripping, or on taking out the Wood, (*b*, in fig. 4) there will appear two ſmall holes, repreſented by the pops; in this ſtate it is not to be uſed, but if they remain the bud is to be inſerted within the Bark of the Stock raiſed at *b*, *b*, over which the Bark is to be laid in its natural State, very ſmooth.

VI. The ſide View of the ſame, ſhewing the Foot-ſtalk of the Leaf, cut down to its proper length, protecting the Bud; in this laſt appearance the Cion is ready for inſertion, which it muſt be under the Bark *b*, *b*, of No. 3 in a direction along the Cut at *g*, when whatever projects above the horizontal Cut at *f*, is to be cut off in the ſame direction, and then to be proceeded with, as directed in the Article, Inoculation.

Whip,

Whip, or Tongue-grafting; for the Manner of performing it, ſee page xix.

VII. The Stock prepared for Whip or Tongue-grafting. —*k*, the common ſloping Cut to be firſt made.—*l m*, the length of the Cut made in the ſide of the Stock, continued to two inches, to terminate in the lower part of the ſloping Cut *l*,—*n*, the Catch raiſed in the plane of the ſide Cut to receive the Tongue of the Cion.

VIII. The Cion of the Whip or Tongue-grafting taken from a ſhoot of the laſt year's growth, with three or four eyes on it.—*o*, *p*, the length of the Cut which is ſloped off to the depth of two inches, terminating in the Rind.—*o*, a ſide View of the Tongue that is to fall into the Catch, *n*, of the Stock, No. 7.

IX. Shews the flat ſide of the Slope, in its proper length. —*q*, the Tongue raiſed on the Cion, to fall into the Catch *n*, raiſed on the Stock, No. 7.

X. A Repreſentation of the Stock and Cion as laid together, and joined by the inſertion of the Tongue in the Catch at *a*, this ſecures them for binding with the Baſs Matting. For further Directions ſee the Article Whip-grafting under the general Directions for Grafting.

Cleft-Grafting, for the Manner of performing it, ſee page xviii.

XI. The Stock of the Cleft-grafting of one or two inches Diameter.—*r*, the common ſloping Cut firſt made on the Stock,—*s*, *t*, the length of the Slit made to receive the Cion, to be a little more than two inches, and made in a contrary direction to the common ſloping Cut at *r*, firſt made on the Stock.

XII. The Cion for the Cleft-grafting, cut tapering on each ſide, in the form of a wedge, to terminate very thin.--

thin.—*u*, *x*, the length of the ſloping Cut on each Side, which muſt be two inches.

XIII. The Front Repreſentation of the ſloping Cut to be made on the Cion, cut for the Cleft-grafting, which is to ſlope, to the depth of two inches.

XIV. A Repreſentation of the Cion in the Cleft-grafting, ſet into the ſtock, whoſe Rind is to meet very exactly and even with that of the Stock at *a*, for on this *the Succeſs of the Operation depends*, and when the Diameter of the Cion is leſs than that of the Stock, it is to be placed on one ſide for the purpoſe of uniting the Bark of the Cion and Stock, to as great a length, and as much as poſſible; this care is to be particularly attended to, in the Operation of grafting, for unleſs the Barks unite, there will not be any communication of the Sap, or that vivifying Liquid, that is appointed by Providence, for the ſupport of the Vegetable World.

Grafting by Approach or Ablaction, for the Manner of performing it, ſee page xx.

XV. A Repreſentation of the Cion and Stock in Grafting by Approach, laid to each other.—*y*, the Tongue and Catch inſerted into each other, as practiſed in Whip-grafting; this keeps the ſurface of the planes together and ſteady for binding with the Baſs Matting.

XVI. The ſloping Cut that is recommended to be uſed to Trees in an upright ſituation, its uſe is to give the Moiſture, whether from Rains or Dew, a quick deſcent, for by a ſtagnation they would corrupt and communicate their putrid State to the Tree, ſo as to occaſion a Canker and Mortification.

It may not be improper here to direct the Gardener, that when a ſide ſhoot, or a Limb of a Tree is to be taken off, that he leaves the wounded part, whether on a Branch, or the Trunk of the Tree, in a ſmooth ſtate with no part projecting, to prevent the evil juſt mentioned, and when the wounds are large, if they were

were beſmeared with Tar, or laid over with grafting Clay, it would contribute to the healthful State of the Tree, by not ſuffering it to diſcharge any of its juices that way, which ſhould be preſerved for its nouriſhment.

XVII. A Repreſentation of the Quincunx Manner of Planting, which is frequently directed in Gardening; it is in this order that the Peas are to be ſtaked, which are ſet as recommended in page 218, obſerving that the Center Rods, Fig. 19, *a*, *a*, be pretty well buſhed and ſtrong; and the others, at *b*, *b*, at a ſufficient diſtance, not to injure the Peas planted in the ridges repreſented by the double lines: Others as an improvement on this Practice, plant Peas and Beans alternately, obſerving ſuch a diſtance as will admit the conveniently gathering their Fruits. The Advantage that the Quincunx manner of planting gives, is, that whatever is put down in this Order, will have an equal ſhare of nouriſhment, both from the Air and Soil, as they are every way equidiſtant from each other.

XVIII. A Repreſentation of a Tree, whoſe branches are laid horizontally, and are alſo what are called lateral Branches, as proceeding from the ſide of the trunk, which are in a contrary direction, to the fore-right ſhoot at *a*, which proceeds from the front of the ſtem: Fore-right ſhoots are often numerous, and are directed to be removed, by pinching them off with your Fingers, for where theſe Inſtruments of Nature will anſwer the purpoſe, do not uſe thoſe of Art, a Knife.—*b*, the inclination to be given the Cuts in taking off branches in pruning; from this inclination the water will be carried off without affecting the wounded part.

THE

PRACTICAL INSTRUCTIONS

IN

GARDENING.

PART FIRST.

Of the Kitchen-garden, the Fruits therein, and of the Culture of Kitchen-herbs and Roots.

THE choice of a proper and convenient ſituation, is the firſt thing to be conſidered in laying out a kitchen-garden. The common, and indeed moſt eligible, ſituation, is, to have it near the ſtables and cow-houſe, for the convenience of wheeling in dung, for if it is at any great diſtance from the garden, it proves very inconvenient. All kitchen-gardens ought to be walled in. Their figures in general are either regular ſquares, or oblongs; the laſt are to be preferred, provided their length be from eaſt to weſt, for the benefit of the ripening influence of the ſun, for the fruits upon the ſouth and ſouth-eaſt walls. They ſhould not only be walled in, but plantations of firs ſhould be made at the diſtance of 200 yards from the walls, upon the north, the eaſt, and weſt ſides. For a ſmall family, two acres of ground will do; but if for a greater, it ſhould conſiſt of ſix or eight, with a large reſervoir for water in the centre, or ſouth-end, which may, if the proprietor pleaſes, be ſo large as to contain a variety of fiſh. Water for a garden is abſolutely neceſſary, and ſuch only as is ſoft and well impregnated with the ſun's rays, which conduces to vegetation: whereas that taken immediately from ſprings, acts the contrary, and in many caſes totally deſtroys the plants. The garden ſhould be well expoſed to the ſun,

and not overſhadowed with trees; nor ſhould any fruit-trees be planted in the quarters, as they in a few years cover the ground, and choak every plant under them. The eſpaliers, with which the quarters of the garden are to be ſurrounded, will produce fruit ſufficient for any family; as the more delicate grow upon the walls. If the ground ſlopes a little to the ſouth, the better; for the upper and moſt expoſed part will beſt anſwer for early crops, and the lower for the later.

One great article to be conſidered is the ſoil, which ſhould be neither too wet nor too dry, but of a middling texture; nor ſhould it be too ſtrong or ſtubborn, but of a pliable nature, eaſy to work: if the ſoil ſhould be ſtrong, it will be neceſſary to plow or dig it three or four times, to be laid in ridges, in order to have its coherent parts meliorated by the influence of the atmoſphere and winter froſts. The beſt manure for ſuch ſoil is coal-aſhes, and the cleaning of ſtreets or ditches, which have been ſome time expoſed; theſe will make it light, and fit for vegetation ſooner than any other manure whatever; and the more abundant the aſhes, the better, when the ſoil is cold. Where theſe manures are wanting, ſea-ſand, or rotten wood, are proper for improving ſtiff ſoils. On the other hand, if the ſoil is ſandy, and of a hot nature, not any manure is ſo proper as cow's dung, or marle well diſſolved, by laying it on the ſurface of the earth for twelve months, and then to be plowed or dug in, provided in that time its groſſer particles are ſufficiently pulverized. Horſe-dung will not anſwer here, as it will burn and deſtroy the crops, upon their firſt appearance. The ſoil of the garden ſhould be two and a half, or three feet deep, which depth is abſolutely neceſſary, to bring moſt eſculent plants to perfection, ſuch as Carrots, Parſnips, French Turnips, Beets, and many others, which ſend their roots to a conſiderable depth.

If you chuſe to have your walling more extenſive, you may divide your garden, with one or two walls through the middle, according to its ſize and extent. Theſe walls ſhould front the ſouth, with one or two points to the eaſt, running from caſt to weſt, the whole length

length of the garden, with an opening in the middle, the breadth of the centre walk, and the ſame at each end, the breadth of the ſide-walks. The walk in the middle ſhould be double the breadth of thoſe on the ſides; which laſt have generally a border equal to their breadth.

According to the ſituation and expoſure you make choice of for walls, the ground is to be diſpoſed of; and conſequently the walk in the middle, the croſs walks, the eſpaliers for fruit, and the borders upon which gooſeberries and currants are planted through the quarters, as they muſt all run in lines parallel to the walls.

The beſt expoſure for walls in this country, is what I have juſt recommended, for the advantage of the morning ſun; notwithſtanding it is ſaid, that by turning them the leaſt point to the eaſt, the fruit will ſuffer by blights; but, from experience, I have found more blights from a ſouth or ſouth-weſt aſpect, than I ever met with from one turned a point or two to the eaſt of due ſouth; and I am convinced, that with the benefit of the morning ſun and this expoſure, they will be better protected from the ſouth-weſt, and weſt winds, which are remarkably prejudicial to fruit in this country. In a ſituation near the eaſtern ſea-coaſts, I ſhould chuſe a due ſouth aſpect for my beſt walls, as the eaſt winds, (from the vicinity of the great Eaſtern Ocean) are really dangerous to all fruits. But in a ſituation more remote from the ſea, I ſhould make choice of the aſpect firſt recommended.

Having laid out your firſt wall, with a ſouth aſpect, inclining one or two points to the eaſt, this wall directs the poſition of the others, with which they are to form right angles. I begin with the walls, as they are the outlines of our work, and which I would have executed without any indentions or curvatures, as practiſed by ſome, under pretence of well ripening the fruit; nor do I in the leaſt approve of erecting arches in the lower parts of the wall, in order to give a greater liberty of growth to ſuch trees as are planted oppoſite to them; as ſuch fibres as go to the rear become rancid from the juices they meet with, which muſt ever be in a bad ſtate, from their being deprived by the wall of the influence of the ſun; and the conſequence of this practice is, that the fruit falls as

ſoon as it acquires its magnitude, being filled with undigeſted matter, over which (in this ſtate) the ſun has not any influence to meliorate. And as to circular or angular walls, when the wind beats on them, it is reverberated upon the trees in a colder ſtate, this retards the fruit ripening, ſo that it becomes ill-taſted. I am ſo far convinced of the ill effects of theſe experiments, that I would adviſe the building of plain walls, either of brick or ſtone, or of ſtone lined with brick, as they ſhall moſt ſuit the convenience and taſte of the proprietors.

Directions for building Walls for forcing Fruits.

THE firſt wall I would erect, is that fronting the ſouth. This I would chuſe to have for forcing Vines, which, without artificial heat, will not ripen in this country, and this I would more particularly uſe for that purpoſe, in preference to any centre wall, as the flues and ovens which are neceſſary, will not have any appearance in the garden, nor will it be incommoded by the fewel and aſhes, which ſhould be avoided, where pleaſure and taſte are the chief objects to be regarded.

In the middle of this wall a gate is to be erected, twenty feet wide, correſponding with the croſs walk, ſo that on each ſide of it there will be 150 feet of wall; and as I write for a grand deſign, this plan may be ſuited to ſmaller, in their reſpective proportions. In this deſign, 300 feet of hot walling is intended, which ſuppoſes, that 100 feet will be employed every year, whilſt the other 200 are at reſt to recruit; for continual forcing of the ſame ſpace of wall will not anſwer; as the trees would become ſickly and weak, and at length bear no fruit; but when allowed two years to reſt, they recover their former vigour, and bring plentiful crops of good fruit.

The foundation of theſe walls ſhould be four feet deep in the ground, built of good lime and ſtone, and three feet broad at bottom, to be carried to the ſame thickneſs to half a foot above the ſurface, in order to ſupport the vacuity of the flues above, otherwiſe a leſs breadth

breadth of foundation might make the flues ſettle unequally, and ſo ſpoil the deſign. At the height of half a foot above the ſurface of the ground muſt be the firſt flue, that there may be no damps, either below, or by the ſide of the flue, and that the earth in the border may not dry too much, by the flues being below the ſurface of the border; the depth of this flue ſhould be two feet and a half, the breadth one foot, to be covered with two rows of bricks 15 inches long, and of the ordinary breadth. The advantage of having two rows of bricks, is, that the iron hooks, which are to be placed within three feet of each other, and intended to ſupport the trelaces, to which the branches of the Vines muſt be fixed, are firmer when they have two ranges of bricks to hold by, than when they have but one. The trelace projects three inches from the wall, and theſe hooks muſt be fixed in the back-wall, and laid cloſe under the brick-rows that cover the flues, but not ſo as to impede the brooms in cleanſing the flues from ſoot. In the back of the flue there muſt be one brick laid neatly to the back of the wall, which being of ſtone, and the thickneſs two feet, the ſame thickneſs may be carried to the top, that it may the better caſt the heat forwards. The front of the flue is to be of the thickneſs of an ordinary brick, or four inches; and the flues are to be well laid over, both within, and without, with a particular cement, as ſhall be directed.

The ſecond flue ſhould be two feet deep; the third, one foot and a half; and the fourth, one foot; whereby theſe flues with their covers will riſe altogether to near ten feet high, and one or two feet of topping, whereon the timber ſhould be laid for the frames, with a projection ſix inches over, under which the top-glaſſes are to run, that the rain may fairly glide on their outſide. Theſe flues ſhould riſe one above another, with an inclination of three inches at the contrary ends where the ſmoke enters, for their better drawing and venting: and to be well coated with ſtrong plaiſter on the outſide, of the moſt durable kind, which is of ſtucco; as they muſt be much expoſed to the weather, when the ſtoves are not lighted. Great care is to be taken in the executing of theſe flues, both as to ſtrength and neatneſs, to confine the heat, for on the care of this execution, depends the whole proceſs. I

would alſo adviſe ſome ſmall arches to be erected in the back-wall, with holes in them to admit brooms to free the flues of ſoot, and at conve ient diſtances, which will be better than attempting it in front, leſt the trees might be thereby damaged.

Another method of erecting trelaces, is by a large one of iron, in which there are hooks fixed for the ſupport of the wooden trelace, the upright bars are to be placed at ten feet diſtance from one another, and the croſs bars to run parallel with the tops of every flue; theſe uprights are to be ſecured at the top and bottom of the wall; and the croſs bars, which contain the hooks for ſupport of the wooden trelace, muſt be ſecured to the uprights at each end of the wall, at proper diſtances. If you chuſe to make uſe of an iron trelace to ſupport that of wood, then you need have but one brick to cover the flues. I would not recommend the wooden trelace to be ſooner erected than the third year after planting of the vines, ſo that they may be faſtened to it about a year before they are forced. Nor would I erect the glaſs frames ſooner; but the flues, hooks, or the iron trelace and its hooks, muſt be executed at the time of building the walls: as alſo the ovens for the flues and their ſhades, of which I ſhall now treat.

One large oven will warm forty feet of walling, and no more; and as there are 150 feet upon each ſide of the gate, four ovens on each ſide will be neceſſary, which are to be twenty-eight inches deep, and twenty inches ſquare at bottom, but may be ſloped off on all ſides to two feet, ſo as to be twenty-ſix inches ſquare at the top, and equal in height to the entrance into the firſt flue, for the better draught of the ſmoke into the flues, to be executed of entire brick, and covered with large round ones at top, cloſely joined and cemented with hot cow's dung, yellow loam, ſtrong lime, and ſand, well mixed together. The furnace and flues muſt be very ſmoothly pleiſtered with this compoſition, for the better confinement of the ſmoke. The place to receive the aſhes muſt be one foot deep, and as wide as the bottom of the oven, to have an iron door, in a frame of the ſame, to ſhut as cloſe as poſſible; and over it, and juſt above the bars which ſupport the fewel, there muſt be a ſquare hole,

hole, about four inches wide, to let in air for the better burning of the fewel, which muſt alſo have an iron door in an iron frame, to ſhut cloſe when the fire is well lighted, which will make it laſt the longer, and the heat more moderate; and near the top of the oven muſt be the large iron door, alſo in a frame of iron, for admitting the fewel into the furnace, and this to be a foot or more ſquare, taking the ſame care in cloſing it well, as has been directed in the others.

Theſe furnaces are to be encloſed in ſhades built of ſtone and lime, covered with tyles or ſlates; their breadth eight feet, and their length to take in one or more ovens. Theſe ſhades are to be deſcended into by three ſteps, as they are not to riſe ſo high as the firſt flue by ſix inches, that deſcent therefore is neceſſary, to give ſufficient room to ſerve the fires; and obſerve that the entrance into them be at their ends.

Having finiſhed your wall, flues, &c. lay out a border of five feet wide, on the outſide of which build a wall three feet below the ſurface, and to riſe four inches above it, leaving vacancies at every eight feet, to let off water, which, if once ſtagnated, would corrupt, and be hurtful to the plants in the border. Upon this wall the caſe of timber is to be laid, whereon the ſloping glaſſes are to reſt. After theſe walls are thoroughly dry and ſeaſoned, the trench ſhould be filled (if for Vines) with ſtrong lime rubbiſh, and a ſandy chalkiſh or lime rubbiſh ſoil, a foot and a half high, to be levelled and beaten down pretty hard; and over this one foot and a half of freſh virgin ſoil, which will be a ſufficient depth for Vines: but if for Peaches, Nectarines, Apricocks, Plumbs, or Cherries, then there muſt be laid in this trench three feet of virgin earth.

Directions for planting and raiſing Vines.

I Shall now proceed to the planting and cultivating Vines until they are fit for forcing, which cannot be ſucceſsfully executed until they have been four years planted, when they will have acquired ſtrength to endure the artificial heat. It is now you are to prepare your frames, glaſſes, and high wooden trelaces, which muſt be executed of Fir well painted.

The borders muſt be prepared ſix weeks before the Vines are planted, the following ſorts of which will beſt anſwer the purpoſe.

1. The white Chaſſelas, or Royal Muſcadine. } early.
2. The black Chaſſelas, or black Muſcadine. }
3. Red Muſcadine.
4. The White Frontiniac.
5. The Red Frontiniac.
6. The Damaſk Grape.
7. The Raiſin Grape.
8. The Malmſey Grape.
9. The Red *Hamburgh* Grape.
10. The White Muſcat, or Frontiniac of *Alexandria*.
11. The Red Muſcat, or Frontiniac of *Alexandria*.
12. The Alicant red Grape.

Theſe are the beſt grapes, either for hot-walls, or in the field; but as few of our grapes arrive at any perfection without artificial heat, I would adviſe hot-walls for their perfection. Vines are propagated from layers or cuttings: the firſt method is moſt generally followed, tho' the leaſt to be approved of, except where they are planted in pots, for the better preſervation of their roots; yet I would prefer good cuttings to layers, as vine-roots do not grow ſo ſtrong and woody as other fruit-trees, but are ſoft and ſpongy, and are very apt to be injured; therefore I would give the preference to cuttings, and more ſo, if they are to come any diſtance, as they will keep good for four months.

The beſt ſeaſon to take off the cuttings is from the beginning of *November* to the end of *January*. When they arrive, let them be laid in a dry ſandy or rubbiſhy border, by a ſouth wall, (tho' not too near it) in ſome well expoſed place, covering them with earth half way up the cuttings, laying mulch or ſtraw upon them for a defence from froſt and too much wet; but in mild weather it is to be removed to give them air. It muſt be obſerved, that ſuch ſhoots only as are ſtrong and well ripened, of the laſt year's growth, ought to be taken; and theſe ſhould be cut from the old vines juſt below the place where they were produced, taking off, with the cutting,

cutting, a good knot of the two years old wood, which, if to be immediately planted, ſhould be pruned ſmooth; but if to be ſent to any diſtance, the pruning is not to be done until planting, or ten days before it; when you are to cut off the upper part of the ſhoot, ſo as to leave the cutting fourteen inches long. In making the cuttings in this manner, there can be but one taken from each ſhoot; but then this under part of the ſhoot is far better ripened, and will make a much ſtronger plant, and is far preferable to the practice of cutting the ſhoot into lengths of one foot, and planting the whole. When the cuttings are thus prepared, they may be packed with dry moſs in a box, obſerving not to ſhorten them; on their arrival, they muſt be laid in the bed as before directed, until the ſeaſon of planting, which is in the firſt or ſecond week of *April*.

Every thing being now in readineſs, and the time for planting come, eight or ten days previous to which, take the cuttings, ſmooth the knot of two years old wood, which is left at the lower end of the ſhoot, waſh them from any filth they may have contracted, and if they are dry, lay their lower parts in water for ten or twelve hours, which will diſtend their veſſels, and prepare them for ſtriking root; let holes be now opened, about ſix feet diſtance, and fourteen inches deep; ſetting in two cuttings a little ſloping, and in ſuch a manner as not to touch or croſs each other; then the earth is to be filled in, and gently preſſed down with your foot; when more earth is to be laid on, forming a hillock ſo high as to cover the cutting to the uppermoſt eye; for were more eyes to appear, they would alſo prepare to ſhoot, which would hinder the cutting from rooting; nor will more than one be of any ſervice: then lay ſome mulch or ſtraw on the ſurface of the ground, to prevent the ſun and air from drying the earth too much; and ſhould the ſpring prove very dry, they muſt have water once a-week; but be careful to keep the border clear from weeds, until the cuttings begin to ſhoot, at which time they ſhould be carefully looked over, to rub off all danglers, and to lay the main ſhoot to any part which is moſt contiguous to the great iron trelace; or if that is not yet erected, to any ſmall trelace, ſupported by the hooks in the wall;

this

this main ſhoot is to be conſtantly faſtened as it extends in length, that it may not break or hang down. If the ſummer is very hot, cover your plants from eleven in the forenoon until two.

If your cuttings have produced ſtrong ſhoots at *Michaelmas*, prune them down in dry weather to two eyes, but by no means delay this work until the ſpring, for by ſuch delay, the young ſhoots, if permitted to grow, will be apt to decay at their extremities during the winter, which is often of bad conſequence to the whole plant. Should the winter prove ſevere, lay a little mulch or haulm over their roots, to be removed in mild weather. In *April*, dig up the borders gently, ſo as not to hurt the roots of the Vines, raiſing the earth ſo high as to cover the old wood, but yet obſerve not to cover either of the eyes of the laſt year's wood; and at this time be careful to take off all ſuckers. They will now require no further care until they begin to ſhoot, when they ſhould be carefully looked over, and all ſhoots rubbed off, except the two from the two eyes of the laſt year's wood, which are to be faſtened to the wall; and ſo from this time, until the Vines have done ſhooting, they are to be attended to every three weeks, to rub off all the ſide ſhoots, and to train up the two main ſhoots to the treſace, or ſome ſmall rods fixed in iron hooks; by the end of *July*, pinch off their tops, which will ſtrengthen all the eyes and wood, obſerving to keep them clear of weeds. At *Michaelmas*, if the ſhoots of this year's growth are too ſtrong, ſhorten them to three eyes, laying the two outmoſt branches horizontally from the main ſtem, if they can bear ſuch a poſition without breaking them; and in *April* dig the borders as in the former year.

The third ſeaſon you muſt go over the Vines again, as ſoon as they begin to ſhoot, rubbing off the dangling branches and buds, which are produced at the ſides, but not at the eyes of the old wood, training the leading ſhoots, which this ſeaſon may be ſuppoſed to be two, from each ſhoot of the laſt year's wood; but if they attempt to produce two ſhoots from one eye, rub off the weakeſt; ſuch ſhoots as produce fruit this year, are not to be checked in their growth, until the beginning of *July*, when you may pinch off their tops; by which means

the

the ſhoots and their buds will be fully ripened, to ſend out good wood for the ſubſequent year, which muſt be carefully preſerved in young Vines, as there are not any ſhoots laid in on purpoſe for wood, as practiſed in the management of old vines; and again attend to the caution of weeding. As the fruit of this year (being the firſt) is of very little conſequence, I would recommend the taking it off, in order to encourage the wood, from the goodneſs and maturity of which, we are to expect a good crop, when the vines are to be forced.

The fourth year's management of vines, if not forced until the fifth, is much the ſame as the preceding. I ſhall therefore proceed to give directions for the autumnal pruning, previous to their forcing in the ſpring.

I would recommend the ſetting up the trelace in the beginning of the fourth year, that they may be trained to them one year before forcing, and by that means all the branches may be laid in proper order, for their well fruiting. Theſe trelaces may be erected ſo as to be held by hooks, which project two, or at moſt three inches from the wall, as I have already mentioned, or by the great iron trelace, which may be ſo interlaced, as to make one whole trelace. Theſe which are deſigned for Vines, ſhould have their rails eight inches one from the other, croſſing one another. The wood-work ſhould be of fir, well painted, and the whole well nailed together, to ſuſtain the frame of the whole trelace. To theſe bars of the trelace, the ſhoots are to be faſtened as they grow, with rope-yarn, or other ſoft binding, ſo that every ſhoot may have its due and regular poſition, not ſuffering any to croſs or interlace each other. When we come to force the vines, every ſhoot ſhould be pruned for fruit, and not for wood. This pruning ſhould be early in the preceding autumn, that the buds which are left on the ſhoots may receive all poſſible nouriſhment from the Vine, and be ſecured in the order they are to lye.

The glaſſes and frame ſhou'd not be placed before the Vines until the middle of *February*, of which I ſhall now give a deſcription. The frame ſhould be made fifty feet long, as there will be annually fifty feet of walling, upon each ſide of the gate, to be forced; but if you think fifty feet too great a length to force with one fire, confine yourſelf

yourſelf to forty, which one fire, without doubt, will ſufficiently warm, and which, for the firſt experiment, I think beſt, until you are acquainted with the flues, and their force of working. Theſe frames ſhould be ſo contrived as to be moved, which they muſt be every two years, as after that time, the Vines are to have one year given them to recover, before they can be forced again. Upon the low wall, in front of the border, a ſtout plate of timber ſhould be laid, to receive the ſloping glaſſes. Theſe glaſſes muſt be divided into two ranges, one above another, as they are to reach from the timber-plate fixed on the low wall in the front of the border, to almoſt the top of the high wall, they will be too heavy to move if they are longer than ſix feet, eſpecially as they are to be made of ſolid work, the better to ſuſtain the glaſs, and they ſhould be ſo contrived as to ſlide one over the other for the advantage of admitting air, which is beſt done by their having different grooves to move in; and in order the better to command them, let there be ſtops to raiſe or let them down to different diſtances, which may be contrived by having holes made in the frame that ſupports the glaſſes, to receive ſtout iron pins, by way of ſtops.

The ſloping timbers which ſupport the glaſs-frames ſhould be ſecured at bottom in the timber on the low wall, and alſo in that on the high one, by ſtrong iron cramps. Theſe timbers muſt be of fir, and very ſtout, having a good depth, that their breadth may be the narrower, in order to take up as little of the ſun as poſſible: from the top ſhould project a ſtrong board, ſix inches deep, and continued along the frames, under which the upper glaſſes are to run, to receive the rain; and care muſt be taken to have it ſo ſecured, as not to admit any air on the Vines.

The breadth of the frames for the glaſſes ſhould be three feet three inches, and to be divided into as many ſingle frames as the fifty or forty feet wall will require; the upper glaſs frames, as well as the lower, muſt be of the ſame dimenſions of breadth, and the bars which ſupport the glaſs muſt be placed length-ways; but by no means ſhould any croſs bars be uſed, as they would cauſe the moiſture on the inſides of the glaſſes to fall in drops upon

upon the borders, which is to be carefully avoided; and as at each extremity of this framing, there will be an angular ſpace from the glaſſes to the wall, theſe will admit of glazed doors, which are to be well fitted, ſo as to exclude all air, but may be opened occaſionally to admit air, particularly when the wind beats too violently on the front of the frame—And here I cannot omit to mention one particular with reſpect to Vines upon hot-walls, that they ſhould always be planted by themſelves.

You are to obſerve, that if the fires for the Vines are lighted in the ſecond week in *February*, the Vines will begin to ſhoot the latter end of *March*. The degree of heat muſt be regulated by one of Mr. *Fowler*'s or Mr. *Cole*'s botanical thermometers, wherein the ſpirit ſhould never be raiſed higher than five degrees above the point Temperate, and if it is kept to Temperate, or five degrees below it, there will be a ſufficiency of heat; for ſhould you warm the air more, it will draw the ſhoots too much, and diſappoint you of a good crop: the fires ſhould not be continued when the ſun ſhines, but only in cold cloudy days: a moderate fire made every evening, and continued till ten or eleven o'clock at night, will heat the wall and warm the air ſufficiently.

When the Vines begin to ſhoot, they muſt be often looked over, to rub off all danglers, and to faſten the new ſhoots to the trelace. When the Vines are in bloſſom, watch all opportunities to give them air, for upon the good management at this ſeaſon entirely depends your crop of grapes, and particularly obſerve to give water to the border of the hot-walls, in the afternoons, after the ſun is off the frames, with water that has ſtood within the frames 24 hours before you uſe it. It is then proper, gently to water the ground in the borders where the Vines grow, which will, eſpecially at this time, be of great ſervice to them. Theſe ſhoots ſhould be carefully handled, and laid, as near as poſſible, at equal diſtances, that they may enjoy all the benefits of ſun and air, without which they will not thrive. When the grapes are fully formed, the ſhoots ſhould be ſtopped at the ſecond or third joint above the fruit, that they may be nouriſhed, and no uſeleſs ſhoots be encouraged; which, in forced Vines, (as I ſaid before) are uſeleſs, until thoſe years wherein the Vines reſt to recover

cover themſelves; for at that time, if your Vines ſhall ſhow fruit, take it all off, for in reſting ſeaſons you are to regard the wood only.

As the weather becomes warm, there muſt be a good quantity of free air admitted to the Vines every day, which is moſt neceſſary for the ſwelling of the fruit; but at the ſame time, the glaſſes ſhould be cloſe ſhut every night, otherwiſe the cold dews will retard the growth of the fruit; but in ſome hot ſultry nights they may be quite expoſed to the weather.

Some of the bunches of thoſe grapes, after they are quite formed, will appear very thick and cloſe on the ſtalks, which, when they come to their proper ſize, would entirely prevent their ripening. It will therefore be very proper, when the fruit is young, to cut off ſome of the ſmalleſt with narrow pointed ſciſſars; by which means, what you leave will ripen equally, and appear ſightly. By the ſecond week in *July*, the Grapes will be full grown, at which time the glaſſes may be kept quite off, as the fine flavour of the fruit is owing to the portion of free air that is given them; but ſhould the ſeaſon prove cold and wet, the glaſſes muſt be laid on every night: but obſerve, that in *Auguſt* you preſerve the fruit from the night dews and morning colds, otherwiſe their ripening will be retarded. The Grapes, when ripe, will be preyed upon by the birds and waſps; the remedies for the firſt are nets and birdlime, put upon twigs faſtened to the rail; and when theſe thieves are catched by the nets or the birdlime, let the bodies of the malefactors remain hanging there, to terrify their comrades by their fate; to deſtroy the waſps, hang glaſs-vials upon the trelace, half full of honey-water, into which they will go, by the attracting ſmell of the honey, and meet their fate.

Early in *September* you may expect to have ripe fruit, eſpecially the Frontiniacs; but they ſhould not be gathered before they are quite ripe, as the deſign of forcing is to have the Grapes in perfection, rather than early.

At the time of the ripening, neglect no favourable opportunity to admit free air, for at this ſeaſon, nightly damps ariſe, which might mould the fruit; and for ſuch Grapes as do not ripen until late in *October* and *November*, it will be proper to light ſome gentle fires in the evenings,

evenings, to haſten their fruit, and prevent damps.

The year before you are to force your Vines a ſecond time, prepare a good quantity of light virgin earth, add to this a fifth part of very well rotted hot-bed dung, and ſome good lime; mix theſe well together for the ſpace of a twelve-month, for their better incorporating, to be uſed in autumn; obſerving to remove five or ſix inches of the old mould, if you ſuſpect the addition ſhould raiſe the bed too high. This is not by any means to be neglected.

Directions for the Management of Peaches and Nectarines on Hot-Walls.

THE rails of the trelace for theſe fruits are not to be above five inches diſtant from each other.

The border is to have ſome good middling ſoil, mixed with ſome yellow marle, laid in to the depth of three feet, which compoſt muſt have been prepared ten months before, and often turned and expoſed to the atmoſphere. If there be any danger of under-water or damps, let the depth of one foot of lime-rubbiſh be firſt laid down.

The kinds for this proceſs are,

1. The Violet Peach.
2. *Portugal* Peach.
3. The Nivette.
4. Pavie Royale.
5. L'Admirable.
6. Pavie rouge de Pompone, or Monſtrous Peach.
7. Catherine Peach.
8. Malacotton Peach.
9. Bloody Peach, or Sanguinole.
10. The Bellgarde.
11. The Bourdine.

And the ſorts of Nectarines are:

1. Red Roman.
2. Temple's.
3. Golden.
4. Peterborough.

In

In order to manage theſe trees properly by a thermometer, it ſhould be removed from the influence of the ſun, otherwiſe the ſpirit will be too much rarified. The heat for theſe fruits muſt be kept five degrees under the point Temperate in Mr. *Fowler*'s botanical Thermometer. Theſe trees ſhould be pruned very early in autumn, of all ſmall wood, and the large branches cut ſhort; nor ſhould any fire be applied until the end of *February*; and when the fruit is ſet and viſibly ſwelling, which may be about the 20th of *May*, the glaſſes, or canvas (if you uſe that on the frames inſtead of glaſs) ſhould be removed, in order to expoſe them to the open air, for theſe fruits and ſhoots to ripen, and the ſucceeding year's buds to form. By this care your trees may be forced annually, without any injury, provided you obſerve every year previous to your forcing theſe fruits, that you lay into their borders ſome freſh virgin earth, of a good ſtrong kitchen-garden mould, which if you ſhould not have, make uſe of a little well-rotted dung, the ſpring preceding, to be dug into the borders in *June*; where the ſoil is ſandy, uſe well-rotted cows-dung; but if of a ſtiff clay, uſe well-rotted horſe-dung. This preparation may be made in *November*, by gently ſpading it in, that its ſalts may be thereby well waſhed down. For this purpoſe, frames of oiled paper, or painted canvas, will anſwer in the place of glaſs, and to this I would give the preference. About the middle or latter end of *June*, the fruit will have arrived to the largeneſs of thoſe on the common walls in *July*, when all kind of covering may be removed; in *Auguſt* or *September* you may expect fruit in great perfection.

However I may be conſidered in theſe directions, in no wiſe to have profit in view, give me leave to ſay I had it not in contemplation for myſelf; but a deſire, perhaps, of ſaving great expence to ſome, and of giving advantages to others, eſpecially ſuch as would qualify themſelves to conduct ſuch undertakings, at the expence of their betters, from whom they may have both honourable and profitable ſtations; for the labourer is worthy of his hire, and according to his ſkill he will expect to be paid: my views are for the public, and ſuch of my countrymen as have a ſpirit of advancing themſelves. And if, by ſome, my deſign may be conſidered as too extenſive,

extenſive, it muſt be remembered I command none; every one may ſuit themſelves, eſpecially when the field is extenſive.

Directions for the well-growing and fruiting of Peaches, Plums, Cherries, Nectarines, &c. on the common Wall.

AS I have finiſhed the proceſs to be purſued in order to have early Peaches, Plums, Cherries, and Nectarines, I ſhall proceed to lay down ſome rules for their management on the common wall; and this direction I would have always obſerved, viz. to plant each ſpecies ſeparate, at leaſt not different ſorts one above another; as no tree will thrive well under the droppings of another, except its own ſpecies, particularly thoſe of the Cherry-tribe: remember therefore in laying the ſtandard of this tree to the wall, that no other than the Dwarf-Cherry be planted under it.

Let the upper parts of the walls be filled with ſtandard Plums, Peaches, or Almonds, which will fruit very well in moſt ſoils, and eſpecially in a ſouth or a ſouth-eaſt aſpect; or ſtandard Apricocks, which laſt will do extremely well in a ſouth-eaſt, as well as ſouth-weſt aſpect. Of Cherries I would plant the May-duke, Holman's-duke, and two or three Morellos, and *Hertfordſhire* Cherries, to improve the taſte and ſize of their fruit, which, in this good aſpect, they will do in an extraordinary manner.

The Culture and Management of Cherries.

CHerries are a ſort of *noli me tangere* with a knife. No fruit-trees ſo ill agree with pruning as they do; therefore when it is abſolutely neceſſary, it muſt be performed carefully and ſparingly. The ſoil theſe trees delight and thrive beſt in, is a freſh free loam; they will not do upon a dry gravelly ſoil; there they will blight, blaſt, gum, and at laſt die. Theſe trees, if on walls, ſhould

be planted eighteen or twenty-four feet aſunder, and a ſtandard between each dwarf; this diſtance is ſufficient. When the dwarfs have grown up ſo as to fill the wall, the ſtandards muſt be taken away. I would chooſe to have them from the nurſeries the middle of *October*; and having cut off all their bruiſed roots and fibres, and made the trees handſome and ſightly, turning the place where they are budded to the wall; plant the ſtandards with their ſtems one foot from the wall, and their heads inclining to it, ſecuring them with liſts of cloth: The dwarfs may be planted at the ſame time, but they muſt not lie at ſuch a diſtance from the wall, five inches being fully ſufficient. During the winter, lay ſome mulch, turf, or ſtraw, about the roots of the new planted trees, to protect them from froſt. In the ſpring, if it is dry, lay turf, with the graſſy ſide downwards, on their roots; but when rain falls, uncover the roots, to receive the vernal ſhowers. They will require no other care, except keeping the borders quite clear of weeds, which borders ſhould be ten feet broad from the wall. In ſummer, all fore-right ſhoots which are produced from the beginning of *May*, to the ſixth of *June*, muſt be pinched off with your finger and thumb only, and not by any inſtrument, either to cherries, or any other ſort of wall-fruit; for ſhould it be done with the knife, the branch or bud would ſoon canker down to the main ſhoot; and ſuch ſhoots as are ſo injured, will not attempt to ſpring again that year, at leaſt not ſo ſoon as if they had been performed with the finger, from the ready healing of ſuch wounds. Should the fore-right ſhoots be ſuffered to ſtand at this ſeaſon, or until the autumnal, the winter, or vernal dreſſing, they would deprive the fruit-bearing branches of their proper nouriſhment, to ſupport good ſucceeding crops. But with reſpect to Cherry-trees, ſuch autumnal amputation makes them gum, and become good for nothing in a few years, eſpecially the Morello Cherries, which, the more they are cut, the ſooner they die; for, in order to have their fruit well taſted and large, it is neceſſary to allow them to grow unſeemly and quite rude upon a ſouth wall, without ever allowing a knife to be applied to them; and from thoſe trees thus indulged, I have had better, larger, and more

more plentiful crops, than from the niceſt dreſt trees of the ſame kind I ever ſaw. I do not, however, mean to exclude dreſſing entirely in the Morello; they too may be ſo managed, as to appear handſome, and at the ſame time to bear good crops.

Manner of planting and laying Cherry-Trees to the Wall.

THE beſt and ſureſt management, with regard to Cherries, is to lay their branches at full length horizontally to the wall, and never to pinch the extremities of their ſhoots, unleſs it be to make them ſend out ſome lateral branches to ſupply a vacancy in the wall. This work ſhould be performed only about the middle of *May*, (when the wound will ſoon heal) that the lateral branches which are produced by it, may be fully ripened and ſtrong before the winter approaches: but in doing this, I would not allow any ſort of freedom, as they produce abundance of their fruit at the extremities of their branches, and alſo upon their ſpurs, which are produced upon two or three years old wood, which you ſhould ever preſerve, if you would have a good crop; and on healthy trees they will continue fruitful for many years; but as ſoon as they begin to knot and gum, turn thick, and of a black colour, cut off the knots and ſpurs cloſe to the branch in *October*, with a well ſharpened chiſſel, leaving it very ſmooth; the ſucceeding ſpring, the old tree, if in health, will ſend out new branches.

Planting Peaches and Nectarines, and the Sorts which are to be preferred.

NEXT to Cherries, I would recommend the planting of Peaches and Nectarines, obſerving that ſuch trees as are planted on one ſide of the gate in the hot-wall, the ſame ſort ſhould be planted on the other, in order to be regular.

The Peaches I would recommend are the following:

1. The Red Nutmeg.
2. The Great French Mignion.
3. The Nobleſs.
4. The Montauban.
5. Old Newington.
6. Early Newington.
7. Double Flowered for its beautiful bloſſoms.
8. The Chancellor.
9. The Early Purple.
10. The Red Magdalene.

The Sorts of Nectarines are,

1. Elrouge.
2. Newington.
3. Fearchilds early.
4. Red Roman.

Between theſe dwarfs may be planted ſome ſtandards of Almonds and Apricots; but it will be neceſſary that the dwarfs between the Apricot ſtandards ſhould be at greater diſtances than thoſe between the Almond ſtandards, as the Apricots ſpread further; and theſe ſhould all be of the *Bruſſels* kind, they agreeing beſt with this management. The diſtance between the dwarf Peaches with the Apricot-ſtandard, (in a good holding ſoil) ſhould never be leſs than twenty-eight or thirty feet, that they may have full ſcope to ſpread, without injuring each other. This management will pleaſe ſuch as would have all their walls well employed; but where walls are but nine or ten feet high, ſtandard-trees are not to be uſed; but againſt theſe walls you may plant dwarf Peaches and Nectarines.

Management

Management of the Borders.

IF the borders, upon which thoſe trees are to be planted, ſhould prove a wet ſoil, let gravel or lime-rubbiſh be laid one foot and a half thick at bottom, to be beat down; and over it three feet of good loamy freſh paſture-ground, with its turf, which has been taken only ten inches deep below the ſurface, and which has lain twelve months, or more, to ſweeten and rot before it is uſed. The border is to be raiſed one foot and a half above the ſurface of the ground. Should your ſoil be rocky or of a gravelly nature, lay this compoſt over it, but be careful not any way to looſen the gravel. Such a ſoil is favourable to plant Figs or Vines. But for our preſent plantation, I would prefer a good loamy bottom to any ſoil, for moſt ſorts of fruits, over which I would lay the compoſts I have juſt preſcribed. The breadth of theſe borders ſhould be eight or ten feet, the broader the better, but ſhould never be deeper than three feet, that being ſufficient for the roots of moſt trees, to receive the benefit of the ſun's rays and of rain: for when they are deeper, they draw from the earth many undigeſted juices, which prevent their fruit from ripening.

Directions for Planting, and Heading the Trees.

THE beſt planting ſeaſon in middling dry ground is *October*, and then you have the choice of the nurſeries, before they are drawn and picked; but if your ſoil is wet, *February* or the beginning of *March* muſt be choſen; for at that time of the ſpring, the ground is beginning to dry by the influence of the ſun, and the young fibres of the trees will not be ſo liable to be injured, as if they had been planted in *October* or *November*, when the ſun's influence on the earth is declining, and winter faſt approaching.

If your plantation is to be made in *October*, lay in the compoſt, and make up the border in *Auguſt*; but if

not until *February*, lay the compoſt in ridges on the borders in *October*, which will be much benefitted by the winter froſts and ſnows; but obſerve always to make up the borders twenty days before planting. When you plant, trim the roots, and head the plants to four or five eyes above the bud, chooſing a dry day for that purpoſe; then with your ſpade make the holes at the deſigned diſtances, wide enough to receive their roots, (but not deeper than eight inches) obſerving to turn the bud outwards, whereby the wounded part of the tree, which was cut in the nurſery when the bud was perceived to take, will be hid, as well as the cutting made in heading. Let the ſtem be planted ſix inches from the wall, with the head inclining to it; then fill in the earth with your hands, obſerving to break the clods, and to take out the large ſtones and graſs, ſhaking the tree, the better to admit the earth, between its fibres; then gently preſs it with your foot, but not too much, leſt the young fibres ſhould be cramped in their growth, which would be attended with bad conſequences; then lay ſome ſods with the graſs downwards upon their roots, to prevent their drying; when you water them in ſummer, remove the turf, and pour it gently about the roots, and over the branches, with a watering pot, having its roſe on; laying the turf again on the roots, until the middle of *Auguſt*, when it may be removed. If you plant in *October*, the directions juſt given for *February* will anſwer, except that the heads of the trees are not to be taken off until *March*, when they muſt be faſtened to the wall, to prevent their being ſhook out of the ground by the winds. You muſt remember, when planting at this ſeaſon, to protect the roots of your young trees from the winter froſts, by laying mulch or ſtraw upon them. In *March* head your trees, but be careful when you perform this work, not to pull them out of the ground, or to diſturb their roots; to prevent which, place your foot cloſe to the ſtem of the tree, and take faſt hold of the ſtock below the bud with one hand to hold it ſteady, and with the other top the head of the tree to four eyes above the bud with a ſharp knife, inclining the ſlope towards the wall. This work ought to be performed in dry, mild weather,

weather, for if wet or froſt gets upon the wound, it will greatly injure the tree. After cutting, put ſome clay or grafting-wax upon the wounds, to prevent their bleeding. By neglecting this operation, many fine trees have been loſt. This ought regularly to be done to all your young wall-trees, immediately after you cut off their heads, and let the clay or wax continue upon the wounded parts as long as it will ſtick.

Having proceeded thus far, you muſt next take the mulch, if it is rotten, dig it into the borders, and ſtir the ground about the roots, but be careful not to injure them; afterwards turf them up, obſerving once every week to remove the ſward, and water them as has been directed. By the end of *May* or beginning of *June*, the Peach and Nectarine trees will have produced ſhoots of ſix or eight inches in length, which ſhould be laid horizontally to the wall; but if there are but two long ſhoots produced, they may be pinched at this ſeaſon, to produce lateral branches before the winter, whereby the vacancies may be filled up. Obſerve to remove all fore-right uſeleſs buds and branches with your fingers, this being the moſt proper ſeaſon for that operation. Be careful not to ſuffer any of the young branches to run up perpendicularly, which will not only render the trees unfruitful, but unſeemly. Let the branches be laid horizontally, altho' the middle part of the tree may be naked for ſome time, which, by this management, will be ſoon filled with fruit-bearing branches. This muſt be your firſt and principal care: For if this is in the leaſt neglected, it will not be an eaſy matter to form your tree.

In *October*, when you obſerve the young trees have done growing, if their ſhoots are ſtrong, prune them down to eight, but if they are weak ſhoots ſhorten them to five inches; and neglect not at this time in particular to train them horizontally; for Peach and Nectarine-trees will not bear to be ſo often cut as others, their wood being ſoft and pithy, which will make them gum and go off entirely in a few years. In the winter froſts and ſevere weather, the roots of theſe plantations are to be protected as formerly, eſpecially thoſe of the preceding *February* or *March* planting.

When the trees are ſhooting, the *May* following, neglect not to rub off all ſuch fore-right ſhoots as are ill-placed, and which will not come eaſily to the wall; and attempt not to force any, as a little time will produce a ſufficiency of thoſe that will anſwer.

At this ſeaſon, and no later, is the true ſtructure of the tree to be formed; it is now you can regulate its growth, both for appearance, and bearing. Where vacancies are likely to be in the wall, pinch off a joint or two at the top of the ſtrong branches, that lie moſt convenient, which will ſoon ſend out good lateral branches, for the purpoſe of filling them; theſe will be well formed and ripened before *October*, which is the laſt ſeaſon of pruning. By this attention, every part of the tree will be furniſhed with good fruit and bearing-wood; but obſerve never to ſtop a ſhoot, but where it is neceſſary to fill a vacancy; as frequent ſtopping the ſhoots would fill the wall with ſo much wood, that the tree would be incapable to ſupport it.

Directions for pruning Peaches and Nectarines, &c.

IT muſt be remarked that Peach and Nectarine-trees are pruned in a manner quite different from other fruit-trees, as they only bear upon one and two years old ſhoots; wherefore it is neceſſary to attend to the following particulars; *firſt*, Let every part of the tree be equally furniſhed with bearing-wood; *ſecondly*, That the branches are not laid one too cloſe to another; and *thirdly*, When wood is wanting, that the branches are not pinched later than *May*. And when performing, obſerve to leave a wood-bud immediately before the bloſſom-bud, as no fruit can be ripened without having a wood-bud at the extremity to draw the ſap, which the fruit-bud cannot; otherwiſe the fruit will fall off, as ſoon as arrived to a degree of largeneſs; the wood-bud differs from the bloſſom-bud, by being ſhorter, rounder, and more ſwollen. The length of theſe branches, upon ſtrong trees, ſhould be ten inches, and upon weak, ſix: but in this you muſt be directed by the leading wood-bud.

In

In nailing the ſhoots to the wall, they ought to be placed as equally diſtant as poſſible. Large Peaches and Nectarines ought to be ſix inches aſunder; for the ſmaller ſorts, four inches will do; and be ſure to lay them horizontally, and never in an upright poſition. The ſhoots being thus regularly trained to the wall, the fruit will be equally expoſed to the ſun and air, and will be kept in an uniform ſtate of growing. The conſequence of deferring this until *July* or *Auguſt*, is, that the fruit (at that time conſiderably advanced) muſt be much ſhaded, and afterwards not too haſtily expoſed, leſt it become tough ſkinned, ill taſted, and late in ripening.

You muſt not, upon any account, ſhorten the ſhoots after *May*, or at furtheſt the 25th of *June*, as thoſe produced after that time are weakly and good for nothing. All ſuch weak branches ſhould be cut out at *Michaelmas*, which is the beſt time for winter-pruning. By ſtrictly obſerving theſe rules, I have had better crops of Peaches and Nectarines, than my neighbours, who have had warmer and more favourable ſituations. I ſhall here remind you of my former directions, to give dung to your borders in *November* once in two years, and ſpade it one foot into the earth.—— I planted the double-flowering Peach upon walls, for the ſake of its beautiful bloſſoms, rather than for its fruit, which is often late and ill-taſted.

I found the ſame management agreed perfectly well with late Peaches, to which however I applied ſome artificial heat to bring them to perfection. The only difference was, that theſe late Peaches, when they came to be in a condition to be forced every year, were obliged to be pruned ſhorter in their branches than thoſe planted upon the common walls, as the branches of the forced Peaches are more drawn.

In order to perfect this article of pruning trees, ſo eſſential to their preſervation and fruiting, we ſhall here introduce what are given as eſtabliſhed maxims by Monſ. *Le Genre*, parſon of *Henville*.——He adviſes to prune fruit-trees from the end of *February* to the end of *March*.

His method was, to train his tree from the ſtem placed perpendicular on the wall: this was to be left

longer

longer or ſhorter, according to its own ſtrength and that of the tree. The other branches are to be ranged on each ſide, beginning to place the firſt horizontally, ſo low as within half a foot of the ſurface of the border. The other branches are to be laid on the wall, aſcending gradually without any more inclination than that the point may be placed a little higher than the lower part or but of the branch. No branches are to run acroſs each other, or to be placed too near one another. The diſtances between the branches are to be determined from their number and the vigour of the tree. In order to keep the tree full, he prunes a branch ſhort between two long ones, in both wall and dwarf-trees. This, according to him, prevents confuſion, and keeps the trees from aſcending too quickly, and extending too faſt on the ſides, which they naturally do, when all the branches are pruned of an equal length.

Great judgment is required in pruning, which muſt be adapted to the nature of each tree, ſo as to preſerve it in a fruitful and vigorous ſtate.

The great variety that is obſervable in Pear-trees, requires different methods of pruning. In particular trees the branches muſt be cut ſhort, when they are too vigorous. In ſome, the young wood muſt be cut out, to encourage the bearing of the old: in others, the old wood muſt be pruned ſhort, or cut out, when it is grown barren, and young wood encouraged to ſucceed it. In ſome kinds of trees, it is ſufficient to deſtroy ſuch branches as occaſion confuſion.

Let the gardener be cautious not to hurt the bearing wood in the center and lower parts of his trees; and theſe are beſt preſerved, by pruning ſhort the upper branches of the tree, which ought particularly to be attended to in Peach-trees; for if they are not properly kept low by pruning and rubbing off the buds, they will be ruined in ſix or ſeven years; whereas, if they are properly managed in pruning, they will laſt twenty years, or more.

Cut off all the branches, unleſs ſuch as are neceſſary to the beauty of the tree. Shorten all the luxuriant branches to ſtrengthen the branches that are weak.

Preſerve

Preſerve carefully the main ſtem, which grows perpendicular, and ſhorten it every year, ſo as ſtill to preſerve it the ſtrongeſt part of the tree, as from it the whole derives its ſupport. Shorten the lateral bearing branches, cutting immediately above a leaf-bud, ſo as to ſtrengthen their fruit-buds, and fit them for bearing. Encourage not too many bearing branches, as the fruit on ſuch trees does not come to its proper degree of perfection.

Prune Peach-trees laſt of all, at the time when you can diſtinguiſh the flower-buds; for if the tender branches are pruned too early, they are apt to ſuffer from the froſt, which will oblige you to prune them a ſecond time.

In dwarf-trees, ſhorten vigorous branches, and ſtop ſhort thoſe that are weak, in order to render then ſtronger: cut cloſe to the tree all uſeleſs branches. If the tree does not grow of the ſhape you deſire, conſtrain it, by tying it to a model, which may give it the ſhape required.

Plum and Cherry-trees cannot be kept regular as they do not agree with the knife.

Le Genre underſtood and practiſed ſummer-pruning to good purpoſe: he alſo put in practice that of pinching ſtrong ſhoots, in order to fill up empty ſpaces on the walls; and to keep the figure of dwarf-trees, by means of ſome of the good branches that this method produced.

He obſerves, that in a vigorous tree, reſtraining the growth too much by rubbing off buds, pinching, or cutting off branches, the flower-buds which ſhould be nouriſhed for producing fruit next year, are by the efforts of the ſap forced to blow; by which they are ruined, and the bearing branches much hurt.

A particular attention ought to be paid to the kind of Pear-tree which is pruned, becauſe the branches of ſome kinds do not produce bearing ſpurs ſo readily as others; ſuch are the Rouſſelet, Cuiſſe Madame, and Jargonelle. All the above kinds ſhould be frequently pinched, with a view of making them produce numerous branches to fill up the wall, &c. Peaches and Apricots muſt have their branches pinched and ſhortened for the ſame reaſons,

as

as they are apt to leave the lower part and center bare; and when they are permitted to grow with too much vigour, the quantity of wood-branches which they produce, ruins the fruit-branches, and prevents the tree from bearing.

When the trees on the walls get to the head of the wall, or dwarfs grow to too great a height, he adviſes to cut them down, and train the trees anew.

Form of a Tree well managed for bearing and to look pleaſing.

THAT the tree may look well on the wall, and bear plentifully in every part, train your loweſt branches, equally on each ſide, and at eight inches diſtance from the ſurface of the border. Let them be placed with a ſmall riſe from the horizontal, when the border is level; and the better to keep them in an agreeable form, let the extremity of the lower branch extend a little farther on the wall than the extremity of the branches that are placed immediately above them. The other branches ſhould all of them be parallel to theſe, and kept gradually a little ſhorter, as they aſcend the wall. Keep the diſtances between the branches as nearly to an equality as poſſible. Theſe general directions muſt be carefully obſerved while the tree is in a growing ſtate.

I would recommend Peaches budded on Apricot ſtocks, rather than on Plum ſtocks, the Apricot's wood being hardy, ſtrong, and compact in texture, whereas the plumb wood, is too ſoft and pithy.

Their Management when in Fruit.

WHEN your fruit is ſet, and of the bigneſs of a ſmall nut, thin them to the ſpace of five or ſix inches, fruit from fruit, which will not only give you what is valuable, but free your trees from being overcharged; which perhaps they would not recover in ſome time.

If the directions for pruning be duly attended to, there will be very few complaints of bad crops by blights, or branches dying, or bloſſoms falling off before the fruit forms, or even the fruit falling off the tree before it is ripe, all which is owing to the neglect of looking over the trees at the proper ſeaſons, whereby they are overcharged with ill-ripened branches, or with too much fruit. And here I muſt inform my readers, that it is as neceſſary to have the branches of trees well ripened, for bearing good fruit, as it is to have well ripened fruit for the palate. A well ripened branch is one produced in ſpring, whereby it will have the whole ſummer and autumn to give it ſufficient ſtrength to reſiſt the inclemency of winter, rendering its wood ſtrong, and its pipes for receiving nouriſhment of a good texture, to ſupply the young fruit, which can only be produced by pruning at the lateſt in the month of *May*.

Blights may happen to trees ill-treated, but they never will to trees managed as is here directed. A gravelly ſoil will blight fruit-trees; but this is to be avoided by making your borders as directed in page 21. They will be blighted alſo by being too deep planted, but this is to be prevented by raiſing them; or you may plant new ones in the manner directed in page 21. Unkindly froſty ſeaſons may happen to ſpoil ſome trees; but where they are well managed, and become ſtrong, they will very ſeldom ſuffer by the inclemency of the weather.

Directions

Directions for the planting and raiſing Plum-trees, with a Liſt of the Sorts moſt to be preferred for Walls.

UPON the ſides of the wall next the Peaches, I would adviſe to plant the following Plums: *viz.*

1. White Primordian.
2. Morocco.
3. Little black Damaſk.
4. Great Violet Damaſk of Tours.
5. Fotheringhame.
6. Perdrigon white.
7. Violet Perdrigon.
8. Imperial.
9. Red Diaper.
10. Green Gage, largeſt ſort.
11. Mirabelle.
12. St. Catherine.
13. The Empreſs Plum.
14. Wentworth Plum.
15. Amboyna Plum.

All theſe will alſo ripen well upon ſouth-weſt expoſures; and the white Primordian, and the ſmall early black Damaſk will ripen very well upon eſpaliers, as will moſt of the ſmall Plums; but the large Plums I would always chuſe to give walls; they ripen better there, and are in leſs hazard of being ſhook off by ſevere blaſts of wind: and although they will bear on eſpaliers, yet in this country they never do ſo well as when on walls. I cannot omit to mention, that I have always found that thoſe that are budded do better than thoſe that are grafted, and are not ſo liable to gum as the others do.

After theſe trees have been one, or at moſt two years budded, then is the proper time to take them from the nurſery, for planting againſt walls. They delight in the ſame ſoil with the Peaches, and as the manner of planting and preparing the ground for them is entirely the ſame, I ſhall not here repeat it. The diſtance between tree and tree upon a ten feet wall, ſhould never be leſs than eighteen feet, and if you would chuſe to plant ſtandard

ſtandard Plums between the dwarfs, then twenty-four feet dwarf from dwarf will be a good diſtance, and leſs will not do. But I would chuſe to have dwarfs alone, rather than ſtandards and dwarfs upon one and the ſame wall.

There are no greater miſtakes committed, than in the management and pruning of Plum-trees. Our gardeners in general think they cannot give them too much of the diſcipline of the knife, their wood being ſtrong and hardy, and the fruit eaſily obtained. But they are miſtaken; few fruit-trees, except Cherries, can endure the knife worſe: for by experience I have found, that frequent and unſkilful pruning does not only affect their branches, but their fruits alſo, by gumming of both, which ends in ſterility, and at laſt in certain death.

Plums bear their fruit upon ſpurs or curſons, and alſo upon the laſt year's wood; whereby there is no neceſſity of pruning them, as you do Peaches and Nectarines, by ſhortening their branches annually, to obtain a new ſtock of bearing wood; for their ſpurs will, if rightly managed, continue fruitful ſeveral years; nor ſhould you ſhorten their branches, but where there is a neceſſity to have a vacancy in the walls filled up; and this ſhould be done in the end of *May*, and not later. You muſt alſo at that ſeaſon rub off all fore-right and ill-placed ſhoots and buds, which, if done carefully, will ſupercede the neceſſity of too much winter-pruning, which is prejudicial to moſt ſorts of ſtone-fruit. This tree always produces a great quantity of bloſſoms at the extremities of its ſhoots, which ſhews the abſurdity of taking them off, and the unneceſſarily ſtopping theſe ſhoots, gives a multiplicity of branches, which deprives the few fruit that are upon the trees of their proper nouriſhment. Hence it is, that, in many gardens, I have ſeen a quantity of ſtrong woody large gummy plum-trees, all made barren by this knife-exerciſe. I would never therefore adviſe to pinch the extremity of the ſhoots later than *May*; and even not then, but when there is a neceſſity for it, and you want branches to fill up vacancies; and be ſure to lay in all the branches horizontally, and not too thick,

the

the largeſt leaved and fruited Plums thinner than the ſmaller ſorts. Nor ſhould you ſuffer your trees to be overcharged with fruit, but thin them in *May* with diſcretion, otherwiſe they will gum and become ill-taſted, eſpecially the Imperial *bonum magnum*, and the *Wentworth* kinds.

Theſe inſtructions obſerved, both with Plums on walls and eſpaliers, you cannot fail of good crops. I would recommend for eſpaliers the following Plums.

Plums, beſt for Eſpaliers.

1. Orleans.
2. Mirabelle.
3. Brigniole.
4. Haresflaw.
5. St. Catherine.
6. Mirabolan.
7. Queen Claudia.
8. Cheſton.
9. Late Horſe Plum.
10. Oxheart Plum.

I have already recommended the planting each ſpecies by themſelves, whether on eſpaliers or on the walls; on account of the different treatment each ſort requires, which if not followed may occaſion miſtakes.

The Planting and Management of Apricots.

I Come now to treat of Apricots. The kinds which I think ſhould be planted againſt ſouth-walls in this country, are theſe:

Upon South-walls.

One or two Maſculines, to have them early.
Tranſparent.
Turky.
Roman.

Upon

Upon South-weſt or Weſt-walls.

Maſculine.
Algiers.
Breda.
Orange.
Bruſſells.

The borders upon theſe walls may be ten feet broad, with three feet of good freſh earth, as directed for Peaches, (ſee page 21.) which, for all fruits, is depth ſufficient, and which ſhould be taken from a hazelly loam-paſture, ten inches deep, with the ſward to lie and rot for twelve months at leaſt before it is uſed. The trees beſt for planting are thoſe which are only two years old from the time of budding, and on good free-growing Plum-ſtocks; but the *Bruſſelles* I would chuſe to have budded upon the *St. Julian* Plum, as it will not take ſo well on any other ſtock, from the compactneſs of its wood; or they may alſo be budded upon ſtocks, obtained by ſowing Apricoct ſtones.

The diſtance of theſe trees from each other on walls of ten or twelve feet high, ſhould be at leaſt twenty, or twenty-five feet, for reaſons I ſhall ſhew very fully hereafter. The method of pruning them is very different from that uſed for Peach-trees. If you plant in *October*, you muſt cover their roots with rotted dung or mulch in winter, and they muſt not be headed until *March*, when you muſt cut them to four or five eyes above the bud, having planted the ſtems ſix inches from the wall, with the head inclining to it. Should the ſpring prove dry, it will be neceſſary to water them all over with a watering pot with a roſe on, which will be of great ſervice, firſt removing the mulch or dung, which after watering is to be laid on their roots to protect them from the hot ſun, or ſods with the graſs-ſide down.

As their branches are produced, they ſhould be nailed horizontally to the wall; and all fore-right and ill-placed branches entirely taken away, but do not ſtop any ſhoots which are to remain on the tree in the ſummer;

otherwiſe you will occaſion a needleſs multiplicity of branches, whoſe ſhoots cannot be perfected or ripened before winter, ſo as to withſtand its ſeverities, and therefore will never be in a good bearing ſtate.

So ſoon as you perceive your trees have done growing, un-nail the ſhoots which you laid on the wall in ſummer, and, if they are ſtrong, cut them to nine inches length; if weak, to five: whereby the lower part of the wall will be well filled the next or the year following. And I would always chooſe to have the under parts of the wall well laid in with branches, before I attempted to lay in branches above, at leaſt before I pinched them for making their lateral branches ſhoot.

The next ſummer's management will be much the ſame as the former; but be ſure in *May* to rub off all fore-right ſhoots, and nail the others cloſe to the wall horizontally; at *Michaelmas* ſhorten theſe ſhoots as was directed for the former year, the ſtrong branches to nine, the weak ones to five inches, but do not ſhorten too many of them, whereby you may over-charge your trees with ſhoots. Apricots produce their bloſſom-buds upon curſons or ſpurs, as well as upon the laſt year's ſhoots: wherefore great care ought to be taken not to injure or rub them off; but, if you want to cut off an uſeleſs or luxuriant branch, cut it out entirely, and do not keep it, in expectation that it will put out ſpurs or ſnaggs for bearing; for if it ſhould produce any, they will be woody and unfruitful.

After your Apricocts are ſet, and become as big as hazel nuts, thin them with your hands, taking care in pulling them off, not to bruiſe the ſpurs or ſmall buds, which are near the fruit. By obſerving theſe rules with diſcretion, and ſome practice, you will attain to the method of pruning trees well, which is one of the moſt material qualifications of a good gardener, and is a ſcience which has been by many authors ſo perplexed and confuſed, as to render it entirely unintelligible, and ſo much as not to be practiſed by any: but by attending to theſe few general rules, and obſerving the different growth of fruit-trees, you will become expert: for inſtance, Vines produce on wood of the ſame year's growth; Peaches

and

and Nectarines upon the former year, or at moſt two years wood; and Plums, Pears, Cherries, Apples, and Apricots, on curſons or ſpurs, of three, four, or five years growth; and for theſe I ſhall lay down ſome general rules neceſſary to be attended to.

Some general Rules neceſſary to be obſerved and recommended in regard to Pruning Vines, Peaches, Nectarines, Cherries, Pears, Plums, &c.

VINES ſhould have all dangling ſhoots ſoon taken off, and ſhould never be ſuffered to have more than one ſhoot produced from one eye, and their fruit-bearing branches topt in *July*, at the third or fourth branch above the fruit; as ſhould alſo the long branches which are left on the trees, to make them ripen well for bearing, or for puſhing good eyes for ſucceeding years, in order to obtain ſtrong bearers; and this operation ſhould be performed, whether the Vines have or have not fruit upon them. They ſhould be pruned at *Michaelmas*.

Peaches and Nectarines muſt annually have a new ſucceſſion or proviſion of branches made, as they bear only upon one or two years old wood, and no other. In *May* that proviſion is to be made, and no later, by pinching their ſtrong branches to produce new ones, and diſplacing all fore-right and uſeleſs branches or buds at that ſeaſon, obſerving to cut immediately before a wood-bud, as directed in page 24; and in *October* all uſeleſs and ſterile branches muſt be cut out.

Cherries are not to have any knife-management, except to furniſh the vacancies in walls, at *Michaelmas* or *May*; but the leſs the better; rub off all fore-right or uſeleſs ſhoots in *May*, and no later.

Pears do not agree with pruning at the extremities of their branches, which is never done but in caſe of neceſſity; they require the diſplacing of fore-right ſhoots in *May*; but they, as well as Cherries and Plums, all of which bear on curſons or ſpurs, abhor all amputations,

except to ſupply vacancies in walls, or to cut out luxuriant branches, which you can ſoon diſcover, by their being ſtrong and woody, and with very long ſpaces betwixt the eyes or buds, which laſt appearance denotes them to be woody, and conſequently not fruitful. Laſtly, all branches which are to continue on the trees, ought to be laid horizontally, whether on walls or eſpaliers, and that they be kept at a good diſtance one from another, according to the ſize of their leaves and fruit; in ſuch a manner as not to be crowded, but that both the fruit and ſhoots may have plenty of air and ſun to ripen them kindly.

Pears for Eſpaliers and Walls, with ſome Particulars relative to their grafting, training, pruning, &c.

AS to Pears, the ſummer and autumn ſorts ripen extremely well upon eſpaliers; but the winter kinds, either for baking or eating, muſt have ſouth-eaſt, ſouth, or ſouth-weſt walls; what are called late autumn Pears in *England*, will not ripen in *Scotland*, except upon walls.

All the buttery, or melting ſorts of pears, ſhould be grafted on quince ſtocks, ſuch as the

Grey and red Butter Pears.
Cuiſe Madame.
Craſane Pear.
The good Lewis Pear.
The L'Echaſſerie.
The Virgoleuſe.
The Winter Thorn.
St. Germain.
Cadilliac.
Doctor Uvedale's St. Germain.
The German Muſcat, and ſome others.

But this method of grafting upon Quince ſtocks, is only to be performed where you have a good ſtrong holding ſoil, otherwiſe they are better on free ſtocks. When you prepare the borders for planting, there ought to

to be three feet depth of good ſtrong clayiſh ſoil made for them, and they ſhould not be narrower than ten feet, as has been formerly directed for borders in which other fruits were planted. The manner of preparing them for planting, and of managing them immediately after, being the ſame as for other fruit-trees, I need not repeat it here. But the diſtance, eſpecially upon walls, which I would allow to them, tree from tree, ſhould not be leſs than twenty-five feet, on account of their long extending branches, which if you ſhorten, except upon great neceſſity, you will prevent their ever thriving or being fruitful. The firſt ſummer after they are planted, their branches muſt be trained horizontally to the walls. If they are produced too thin, you may ſhorten them at *Michaelmas*; but I would chuſe to be as ſparing of this operation as poſſible, and rather allow them to take their full ſcope at length; for probably they may (if the trees are healthful) produce lateral branches from theſe firſt year's ſhoots, abundantly to fill up the wall. If they are large fruiters, their branches ſhould never be laid in at leſs diſtance than nine inches, branch from branch. The bloſſom-buds are for the moſt part produced at the extremities of the ſhoots, as well as upon the ſpurs or curſons of the branches; therefore if you ſhorten them, you take away theſe bloſſom-buds; ſo that the longer theſe branches extend horizontally, the more bloſſomy ſpurs they will have, from which you are to expect a good crop of fruit. I have often obſerved the long branches of Pear-trees, for the firſt three or four years after their beginning to ſhow bloſſom and fruit, ſhow them at the extremities of their long horizontal branches, when they had no bloſſoms on any other part of theſe branches, which makes young gardeners think their trees will never bear good crops; but in this they are greatly miſtaken; for where theſe trees are well managed, and come to be eight or ten years old, the great hurry of the ſap, which, when young, and on the approach of the ſpring, runs to the end of their branches, by age and maturity, comes gradually, and with fertility, to be diſperſed through the intermediate ſpurs, making them all fruitful. The trees ſhould be often looked over in *May* and *June*, that all luxuriant and fore-right ſhoots may

be diſplaced as they are produced, which will occaſion very little knife-work after their fruits are gathered; and it will be neceſſary in gathering them to be careful that the buds next to the ſtalks of the Pears be preſerved, and be not rubbed off in gathering the fruit; for from theſe come the moſt bloſſom-buds for the enſuing ſeaſon. By turning up their foot-ſtalks, the fruit will eaſily come off, without harming the ſpurs, which produce fruit and bloſſoms for the enſuing year.

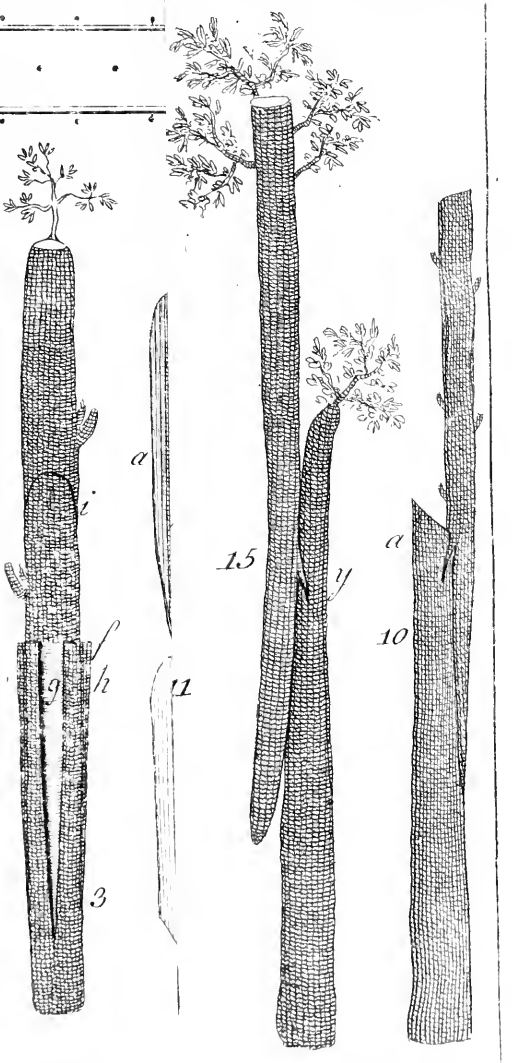
The beſt ſeaſon for pruning theſe trees, where there is occaſion, is immediately after the fruit are gathered; but as ſome of them remain late on the trees before they ripen, if froſt ſhould appear to be ſetting in for a continuance, (as happens ſometimes) it will be proper to defer pruning them until *February* or *March*.

I would alſo direct to have ſome trees of the *Cuiſſe Madame*, and of the ſummer *Bon Chretien* planted on walls, which will make them come earlier, and have larger fruit, than they have upon eſpaliers. This much will ſuffice for the culture of Pears upon walls, but obſerve to water them well in dry weather in ſummer; this will keep their fruit always in a growing ſtate, otherwiſe they very often drop their fruit in dry ſummers, or in autumn, before they are ripe.

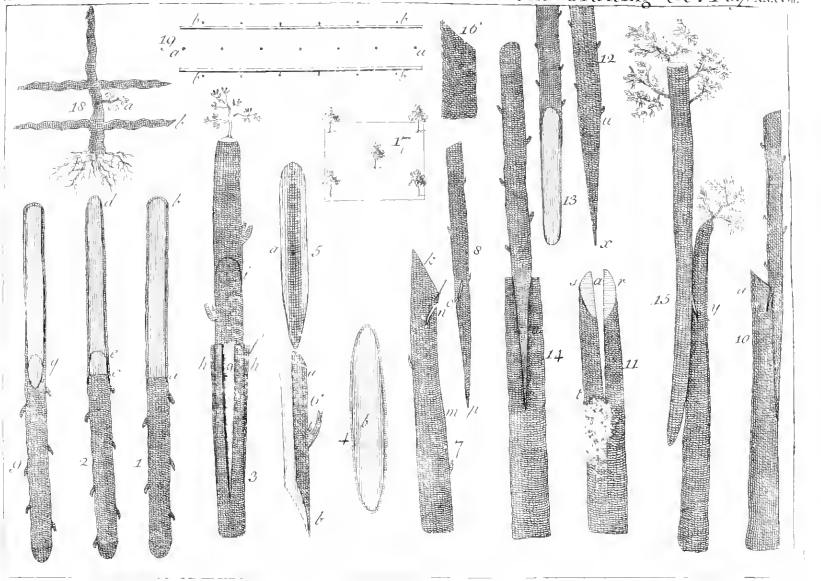
The Culture and Management of Figs.

ON the wall with which I croſs the garden, I would plant Figs; for which purpoſe it muſt be twelve feet high, built of ſtone and lime, and lined with bricks in the beſt manner, with piers of brick, and iron hooks fixed in them, at every twenty feet diſtance, jutting out from the wall ſix or eight inches, ſome ſtout double forked hooks, at eight or ten inches diſtance from the top to within two feet of the bottom of the bricks, which piers and hooks are to receive matts or reed covers, to fix over your Fig-trees in very ſevere winters, and early in the ſpring, which you muſt obſerve not to move away too ſuddenly. Between theſe piers I would have one Fig-

tree


a
i
f
g
h
3
11
15
y
a
10

SECTIONS of the different Cuts for Inoculation and Grafting &c. *Page* XXXVIII.



tree planted; and as the culture of this excellent fruit is but little underſtood, I ſhall be particular, and give my reaſons for what I advance, as it is ſomewhat different from the common and modern practice.

The beſt ſort of Figs for this country, are,

The Large White.
The Large Blue.
The Marſeilles.
The Candia.
The Roſe Fig.

They are propagated by layers, and by ſuckers; but the firſt method is preferable; for plants produced from ſuckers always produce ſuckers, and are never ſo good bearers as the layers, which make good plants in one year's time. Lay the branches in *February*, and they will be well rooted againſt that time twelve-months, when they ſhould be taken off, and planted where they are to continue for good. Only obſerve, that after your branches are layed, and begin to take root, you keep that part of them which is pegged down well covered with earth, and well watered in dry weather; and in winter well covered with peaſe-haulm, to prevent froſt from injuring the young fibres of the layers, which are then ſhooting into the ground.

The ſoil in which they proſper well, is gravel, or chalk mixed with loam; they will alſo grow in good kitchen-garden earth: But where you do not prepare a ſoil ſuitable to them, you cannot expect any tolerable crops of fruit; wherefore it is proper to make the ſoil for them in borders on the wall, two or three feet deep, and ſix or eight in breadth.

I would chooſe to plant theſe trees the beginning of *March*, and no ſooner. They ſhould be planted in the ſame poſition as is directed for moſt other fruit-trees upon walls; but they ſhould not be headed, for the fewer amputations they undergo, excepting in caſe of neceſſity, the better they thrive. The firſt year they will require ſome refreſhings with water in dry ſeaſons; and by the end of autumn I would adviſe ſome mulch to be laid about

their roots, to prevent frosts injuring their tender fibres; and by this time they will have made some side-shoots, which by *October* should be nailed horizontally, and close to the walls. The second year of their management is much the same as the first: but in *April* and *May* I would always observe to rub off all fore-right shoots, which will not lie well to the wall, at least those buds which are ill-placed; but such as are well-placed, should be allowed to continue, to fill the tree at the bottom with young wood, as that only produces fruit, and not to lay them in nearer than ten inches; for crowding these trees with bearers is as bad as having too few. At *Michaelmas* there will probably appear some small young fruit on the branches; but these I would choose to take off, for it very seldom happens that they continue, but rot by frost or storms; and if they are allowed to rot on the young branches, they often infect them, which ruins most of the young tender wood.

I own I am of opinion with those, who are not fond of pruning this tree in autumn, as it is of a soft pithy substance, and bleeds so much, that the wounds would not be effectually healed, before the winter frosts set in; and from this I have often found a branch pruned in autumn, rotted entirely by *February*. In autumn the sap is but descending or evaporating, and is not quite gone down: so that an amputation at this time must occasion great effusion of it; upon which account I recommend the end of *February*, when the sap is least in motion. I would perform at that time all my wall-prunings, and also shorten my long branches, the better to obtain new wood; and I would be very sparing of topping branches, unless there is an absolute necessity. Some modern practitioners will object to this pruning in *February*, judging, that, as the spring approaches, the trees will bleed more than at *Michaelmas*, and consequently will suffer more: to which I answer, that from experience I find the sap is in a less degree of motion in *February*; and this I discovered in *February* 1750, upon a young branch of a Fig-tree, entirely divested of its late crop of fruit, and a young branch of the same length and bigness, in *February* 1751. I weighed them both, and found that the fresh branch cut off on the 22d of *February* 1751, *O. S.* weighed a fourth part less than the branch which I cut

off

off the 29th of *September* 1750, *O. S.* Whence it appears, that there is leſs ſap flowing in theſe trees in *February*, than in *September*; the conſequence of which is plain, that there will be leſs effuſion of ſap in *February*, than in autumn; and the former has the advantage of parting with the winter froſts, whereas with the other they are on the approach.

Upon this ſouth aſpected wall, as it is built high, you can have Pears and Apricots, but not intermixed with the Figs, which ſhould be always planted by themſelves; and here and there, upon the piers amongſt them, you may have an early Vine or two, to try if they will ripen, ſuch as the White Sweet-water, and the White Chaſſelus; or if they do not ripen, there may be verjuice got from them, and Vine-leaves, which are good for ſeveral kitchen-uſes. Upon the ſide of this wall, facing the north, you may plant Morello Cherries and Currants, which will grow there very well, and produce good crops. Currant-trees planted in this northern aſpect, hold their fruit for a long time after the trees, in a more favourable aſpect, have given theirs.

Thus I have laid out the two ſouth aſpected walls of this garden, with the culture of the fruit-trees I would direct to have planted thereon.

Plantation of the South-weſt Wall, with a Collection of the Fruits beſt ſuited to the Aſpect.

I Proceed now to the ſouth-weſt aſpected wall, upon which may be planted the following fruits;

Of Peaches.

Bourdine.
Double flowered.
Red Nutmeg.
Ann Peach.
White Magdeline.
Great Mignion.
Nobleſs.
Montauban.
Early Purple.
Red Magdeline.

Cherries.

Cherries.

Morello.
Holman's-duke.
Carnation.
Bleeding-heart, } upon Corniſh Cherry-
Amber-heart, } ſtocks.
Hertfordſhire.

Apples.

Golden-pippen.
Nonpareille.
Le Reinette Griſe.

Nectarines.

Fairchilds early.
Newington.
Elrouge.
Red Roman.
Tempels.

Plums.

White Primordian.
Early black Damaſk.
Cheſton.
White Perdrigon.
Great Violette of Tours.
Fotheringham.
Perdrigon Violette.
Wentworth.
White *Bonum Magnum.*
Red ditto, or Imperial.
Queen Claudia.
Green Gage.
Drap d'Or.

Pears.

Summer Bon Chretien.
Winter ditto.
Pound Pear.

Black

Black Pear of Worceſter.
Cuiſſe Madame.
Virgoleuſe.
St. Germain.
Red and grey Beurris.
Craſſane.
Colmar.
La Beſſi de Chaumontelle.
La Manſuette.
Holland's Bergamot.

Apricots.

Maſculine.
Bruſſels.
Orange.
Turkey.
Breda.
Algiers.

A white Jeſſamine or two.
Three or four Mulberries.
Six or ten thin-ſhelled Almonds.
And ſome others as you fancy, as the ground and ſituation will ſuit.

This wall ſhould be built of ſtone and lime, and lined with bricks, as is already propoſed, ten feet high. The fruit-trees ſhould be planted by themſelves, and not intermixed; the borders ſhould be ten feet broad, and two and one half deep, made of new earth, as has already been directed, under the different articles of the ſeveral fruits; and it will be very proper at the bottom of this border to lay ſome clay, and beat it hard, ſo that the roots of the trees, when they reach to the bottom of the border, may not have liberty to enter into the clay; this beating of it hard, and cutting off from your young trees all carrot or deſcending roots, and forcing them horizontally, prevents them from going too far below the ſurface of the earth, ſo as to be deprived of the influence of the kindly rays of the ſun, or of ſhowers. I have heard of ſome perſons who have put flag-ſtones at the bottom of theſe borders, for the ſame purpoſes; but

of

of this I have had no experience. One thing I obſerved was, that when I got my fruit-trees from a nurſery, I examined how deep they had been planted there; and after trimming their roots, I planted them in ſuch a manner, as to be only one inch deeper in the ground than they were planted in the nurſery, and no more, unleſs when they have been too deep planted, in which caſe I plant them ſhallower, one foot and half being deep enough for any trees whatever.

Having thus diſpoſed of the ſouth and ſouth-weſt aſpected walls in this garden, it will next be proper to lay down ſome methods for diſpoſing of the other two walls, ſo as to make this garden pleaſant and profitable.

In order to extend this Article of Gardening, we ſhall give a Collection of the Trees of the moſt delicious, as well as the moſt uſeful Fruits, with the Particulars of their Excellencies, the Aſpect moſt favourable to them, with other Particulars neceſſary to engage our Choice or Refuſal of them.—— This Collection is taken from a Piece entitled The Fruit-Gardener, *compiled from the Practice of a Gentleman in* Scotland, *ſo that a Sameneſs of Climate is preſerved in* the Gardener's Director, *which is highly eſſential, from its Affinity and Agreement with* Ireland, *where the Practice here recommended has been found really valuable* *.

PEACHES.

No. 1. *THE Red Nutmeg*: the fruit are melting, juicy, and the taſte agreeable. The tree is hardy, and a good bearer, though the wood is weak.

No. 2. *Anne Peach*. The tree is a vigorous grower, and makes a beautiful figure, when properly pruned, and regularly trained to the wall; but, like other vigorous growing trees, is long before it comes to its bearing ſtate, unleſs aided by judicious pruning: its fruit are beautiful and delicious.

No.

* It is to be obſerved, that when the beginning of a month is mentioned, it includes from the 1ſt to the 10th day; by the middle, from the 10th to the 20th; and the end takes in what remains from the 20th to the end of the month.

No. 3. *The Minion* is a large red Peach; its ſkin is like ſattin; its fleſh is fine and melting, with a briſk ſweet juice: the ſhape is longiſh, with a furrow in the middle, and generally one ſide larger than the other; the ſtone is ſmall. The tree grows with vigour. I have found it ſubject to be killed by ſevere froſt happening late in ſpring or in ſummer.

No. 4. *The Montauban Peach* is very large, red, when expoſed to the ſun, but pale towards the wall: its pulp is free, and its juice delicious. The tree is hardy, grows regularly, ſo is eaſily trained to the wall, on which it looks handſome, and bears plentifully.

No. 5. *The Nobleſs Peach* exceeds the Montauban Peach in ſize; the pulp quits the ſtone, is melting, and the taſte excellent. The tree produces its branches in a very regular manner, is hardy and durable, and generally a good bearer.

No. 6. *The old Newington* is a Britiſh Peach originally; it is large and beautiful, the pulp is firm, and ſticks to the ſtone; its juice is briſk, and well reliſhed: the tree is hardy, and bears well.

No. 7. *The Admirable* is large and round, of a fine red colour, the pulp firm and melting, its juice briſk and ſweet, its ſtone ſmall, it comes to perfection when happily ſituated, even in bad ſeaſons. The tree is beautiful and hardy, and bears a great deal of fruit.

NECTARINES.

No. 1. *Elrouge Nectarine* is in ſhape longiſh, of a middling ſize, has a melting pulp, and vinous juice.

No. 2. *Red Roman Nectarine* is a large fruit, of a red colour all round; its ſubſtance is firm, of a yellow colour, and the taſte very agreeable.

No. 3. *Newington Nectarine* is large, of a red colour, and the pulp good. The tree is hardy, and a good bearer.

APRICOTS.

No. 1. *The Early Apricot* is ſmall, and its juice ſweet. This tree is known by the ſmallneſs of its wood and leaves.

No. 2. *The Bruſſelles* is large, its juice briſk and agreeable. The trees are commonly hardy, and for the moſt part good bearers when old.

Beſides

Beſides the above deſcribed kinds of Apricots, the large *Dutch*, *Orange*, *Turkey*, and *Roman*, may prove acceptable to ſuch as are fond of Apricots, and delight in variety of fruits.

P L U M S.

No. 1. The firſt ripe Plum is called by ſome writers the *Jean Hative*; by others, the *White Primordian:* its longiſh ſhape reſembles ſome Pears. It is of a yellowiſh colour, covered with a white powder when ripe: its pulp is tender, and the taſte not unpleaſant, by a ſmall perfume added to an acid and ſweet happily blended together: it quits the ſtone. The tree is a tolerable good bearer, but is apt to grow too thick of branches, when it is not carefully pruned. This fruit ripened on a ſouth-eaſt aſpect about the beginning of *Auguſt* 1761, as alſo 1762, and in the middle of *Auguſt* 1764.

No. 2. *Queen Claude Plum* is ſmall and round, flattened a little at each end; the ſkin is pearl-coloured, with red ſpots: its fleſh is firm, comes clear from the ſtone, and the taſte of its melting pulp is ſweet and delicious. The tree grows regularly, and bears well. The fruit were ripe on a ſouth-weſt aſpect the beginning of *September* 1761.

No. 3. *Mirabel* is a round ſmall beautiful Plum, of a whitiſh yellow colour; the ſubſtance is firm, and quits the ſtone: the pulp is ſweet and delicious. The tree makes a handſome figure on the wall, by its regular and numerous bearing branches. The fruit were ripe on a ſouth-eaſt aſpect the beginning of *September* 1761. It is generally a good bearer.

No. 4. *Blue Perdrigon Plum* is large and long, of a blue colour, and finely powdered: its pulp is firm, parts from the ſtone, and the taſte is very delicious. The tree grows regularly, and is very beautiful, but a bad bearer.

No. 5. *Royal Plum* is round, and rather larger than the Perdrigon, of a charming red colour, little powdered, and very beautiful: its taſte is exquiſitely fine. The tree produces its branches thin and irregular, and is a bad bearer.

No. 6. *Maitre Claude* is large, round, and whitiſh. Its pulp, which is firm, parts from the ſtone, and its juice

is

is brisk and sweet. The tree grows vigorously, and bears well.

No. 7. *Green-gage Plum.* The name denotes its colour, though it turns a little yellowish when ripe: it is large, round, and somewhat furrowed in the middle. Its pulp is tender and juicy, and its taste so exquisitely sweet and delicious, that nothing can exceed it. The tree grows regularly, is hardy, and bears plentifully. It may be planted in the manner formerly mentioned, and seldom fails to succeed. The fruit were ripe the middle of *September* 1761, on a south-east aspect.

No. 8. *Roch-Courbon*, or *Red Diaper-plum*, is nearly round, of a beautiful red colour, with a bluish powder over it: the flesh is free, delicate, and sweet. The tree makes long regular shoots, and is a good bearer. Its fruit were ripe, on a south-east wall, the middle of *September* 1761.

No. 9. *Apricot-Plum* is large, round, and white: its flesh is firm, sweet, and agreeable. The tree grows vigorously, and after it is some years planted on a wall, bears pretty well.

No. 10. *Brugnolle* is a large, longish plum, furrowed in the middle, of a dark violet colour. Its substance is tender, juicy, and sweet, and comes off from the stone. The tree grows vigorously, and, if properly managed, is a good bearer. It ripened on a west by north aspect the beginning of *September* 1761; the middle of *August* 1762.

No. 11. *Fotheringham* is a large, long, red, and beautiful plum: its flesh is firm, and the taste delicious. The tree thrives well, and is no bad bearer.

No. 12. *Orleans* is a large, round, green and red Plum: its flesh, which is firm, parts from the stone, and is not unpleasant, though it has a good deal of the acid. The tree is the most vigorous grower of any Plum-tree that I know. It is to be lamented that this tree is not more hardy; for it is the best bearer of any we have, both on a wall and in the open air. A frost in the month of *June* 1750, killed several trees on the wall, as well as in the open air. Its too great growth seems to dispose it for suffering by cold, for I have known it shoot five or six feet in one year.

No. 13. *Magnum Bonum*, or *White Imperial*, is a very large, beautiful, oblong Plum; yellow when ripe. Its

pulp

pulp is ſoft, ſweetiſh, and agreeable; it is excellent for preſerving. The tree produces only a few vigorous branches, with ſome ſmall ones, yet it is a conſtant and great bearer.

No. 14. *Red Magnum Bonum*, or *Imperial-plum*, is very large, of a Pear-ſhape, and dark red colour when ripe: its pulp is ſoft, not very juicy, and tolerably good. The tree produces numerous branches, full of ſpurs, and is a very great bearer.

No. 15. *Saint Catharine* is of a Pear-ſhape, yellow when ripe; and if permitted to hang on the tree till it becomes wrinkled near the ſtalk, and ſoft, its juice is rich and ſweet. This plum will keep a few days after it is taken from the tree. The tree grows regularly, is beautiful, and bears well.

No. 16. *Imperatrice* is ſhaped like the Violet-Perdrigon, of the ſame colour, but adheres cloſe to the ſtone. Its fleſh is firm, and of an excellent taſte. The tree is hardy, and no bad bearer.

Beſides theſe above deſcribed, there are many kinds of Plum-trees common in Scotland, which may be obtained by ſuckers, and thrive and bear well without any trouble, except that of planting. Such are the *White-Corn*, *Summer-Scarlet*, *Damaſcenes*, *Julians*, *Bullets*, *Horſe-Jaggs*, *Winter-Scarlet*, *&c.* and theſe kinds thrive well in hedge-rows in many places, and bear plentifully; neither are the fruit of many of them to be deſpiſed.

CHERRIES.

No. 1. *May-Cherry* would not deſerve to be named, were it not the firſt of the ſeaſon in making its appearance. The wood of the tree is ſmall, and it requires the beſt ſoil and warmeſt ſituation, as well as a very favourable aſpect, to bring it to any perfection.

No. 2. *May-Dukes* are fine large Cherries, nearly of the ſhape of a Heart-Cherry, of a dark red, or rather black colour when perfectly ripe: they are juicy, ſweet, and delicious. The tree has large leaves and ſtrong wood, grows regularly on a wall, and is a conſtant and great bearer on a ſouth or ſouth-eaſt aſpect, or even a worſe. Some of the trees ſhould be planted on every aſpect, in order to enjoy their fruit as long as poſſible; though

though thoſe that are the firſt ripe in the ſeaſon, are generally the moſt delicious. This kind neither thrives nor bears well in the open air, unleſs in warm ſituations

No. 3. *Heart-Cherries* are ſo called from a ſuppoſed reſemblance to the figure of a heart: they are of different colours, white, red, and black. The fruit are large, and, as it were, ſquared: their pulp is firm, tho' melting and juicy: the taſte is remarkably ſweet, and very pleaſant. The trees produce large, long, irregular wood-branches, and the leaves are long and narrow. They are moſt all of them but indifferent bearers, nor do they conſtantly bear well even on walls. The *Orleans*, *Lukeward*, and *Gaſcoigne*, are no other than the above Hearts, under the different names impoſed by the *French*.

No. 4. *The Bleeding-heart* is known by a drop, or tear which hangs at its end. The tree grows vigorouſly on a wall, but is a bad bearer.

No. 5. *Carnation-Cherry* is a delicate and beautiful fruit. The tree grows very vigorouſly on a wall, but is no extraordinary bearer. It ſeems to be too tender for the climate of *Scotland*; for though the fruit acquire a conſiderable ſize ſoon after they are formed, yet they ſeldom come to perfection, or acquire a proper degree of maturity.

No. 6. *Cluſter-Cherries*, the fruit which grows in bunches, as the name denotes, are but very indifferent. The tree grows regularly, makes a fine half-ſtandard, but is a bad bearer.

No. 7. *Kentiſh-Cherries* are large, round, and red, when ripe. They have much juice, which is very agreeable, having a pleaſant ſweetneſs joined to a little ſourneſs. The wood of the tree is weak, its branches numerous and regular. It makes a beautiful ſtandard, or half-ſtandard; and as its flowers are late in ſpring of appearing and opening, the fruit generally holds well. This is probably the reaſon of its being ſo generally planted preferable to the other kinds.

No. 8. *Morellos*. The beſt kinds are very large, of a black colour when ripe: the pulp is ſour, and they are agreeable to few perſons, unleſs eaten with ſugar, or preſerved. The trees grow regularly, are beautiful, and bear great quantities when planted on a north wall, or

any other aſpect. When the trees are planted as half-ſtandards, they grow thick of bearing branches, make a good figure, and bloſſom univerſally, tho' they bear but indifferently. The fruit produced in the open air are ſmall, and look poorly; but in their taſte are far ſuperior in goodneſs to the fruit that have grown on a wall.

PEARS for SUMMER.

No. 1. *Pear-Crawford*, by ſome called the *Summer-blanquette*, is of the true Pear-ſhape, a degree above the Small-pear, of a white colour: its fleſh is tender and juicy, and its taſte is agreeable. The tree is hardy, grows vigorouſly, and makes not only a fine appearance in every ſhape in the open air, but alſo bears plentifully on a wall.

No. 2. *Ladies-Lemon:* its body is round, flattened towards the eye, and ſomewhat protruded towards the ſtalk, which is inſerted. The colour of this Pear is red where it is expoſed to the ſun, and yellow on the oppoſite ſide. The fleſh is tender, and the juice ſweet, with a little perfume: it was ripe the middle of *Auguſt* 1762. The tree grows regularly, and is a good bearer.

No. 3. *Green-Pear of Pinkie* is ſmall, nearly round, though flat towards the foot-ſtalk, which is ſhort and ſtraight: the colour is green, mixed with yellow. The fleſh is ſoft and melting, and its juice has an agreeable ſweetneſs: it is generally ripe the middle or end of *Auguſt*. The tree grows tolerably large, and bears well.

No. 4. *Pear-Piper* is ſmall, oblong, though larger at the head, and protruded towards the foot-ſtalk, which is long and inſerted. The colour of this fruit is green yellow; its ſubſtance is tender, and its juice a delicious mixture of acid and ſweet, that is very pleaſant. It ripened the middle of *Auguſt* 1762. The tree grows well, and bears plentifully.

No. 5. *Wine-Pear* is ſhort, thick, and headed, flattened towards the eye, which is furrowed. Its colour is red, yellow, and green; its fleſh tender, and its juice not unpleaſant. It ripened the middle of *Auguſt* 1762. The tree produces numerous branches, which are thick placed; it is a great bearer.

No. 6. At the ſame time that I examined the above deſcribed Pears, I received a round, red, and yellow Pear, of

of a moderate size, with a short foot-stalk: its flesh was tender, acid, and sweet, and its taste not unpleasant. It was ripe the middle of *August*, and seemed to agree with the Prince's pear of Mr *Miller*, &c. The tree grows well, and bears copiously.

No 7. *Little Muscat. Pyrus sativa, fructu estivo, parvo flavescente, moschato*, TOURNEF. *Inst. Rei Herb. Petite Muscate*, QUINTINYE. This Pear is small, nearly round, of a yellow colour when ripe. Its substance is melting, and of a highly musked flavour. The tree produces little wood, and is only fit for a wall in most places of Scotland; and if it is properly pruned, it makes a fine appearance on a wall.

I shall now describe a few Pears that are contemporary in their ripening with the above kinds, and of a larger size, and some of them of superior goodness.

No. 8. *Sorrow-cow* is a large Pear, headed, and flat towards the eye, with a short foot-stalk. Its colour is red and yellow; its flesh is tender and musked. The tree thrives well, and is a good bearer as a standard.

No. 9. *Jargonelle* is a *French* Pear. (*Pyrus fructu estivo, oblongo, ferrugineo, carne tenera moschata*, TOURNEF. *Cuisse Madame*, QUINTINYE) It is large and long, of an iron colour next the sun, and of a greenish yellow colour on the opposite side. Its flesh is tender, juicy, and peculiarly delicious: it ripened the middle of *August* 1762. The tree produces long large wood-branches, in a very irregular manner, and does not bear well till it be grown old. The Jargonelle never makes a beautiful tree, either as a standard, espalier, or dwarf. It may be trained against a wall, but requires great room.

No. 10. *Ladies-Thigh* is so called from its finely tapered shape, and smooth soft skin. It is large, the pulp is tender and juicy, and of a pleasing taste, being a little musked. The tree produces small regular branches, but it does not bear well till old. When properly trained it makes a fine dwarf.

No. 11. *Large Blanquette* (*pyrus fructu estivo, albido, majore*, TOURN. *Grosse Blanquette*, QUINTINYE) is oblong, a little coloured where it was exposed to the mid-day sun, but white where it was shaded. Its flesh

is breaking and tender, ſometimes a little ſtony; its juice is ſweet and agreeable. The wood of the tree is ſmall and regular, and it makes either a beautiful ſtandard, or dwarf, but is a bad bearer.

No. 12. *Pear Sauch* is a beautiful Pear, of an oblong ſhape, big-bellied, of a yellow colour: its eye and ſtalk are protruded, its pedicle is thick, and of a middling length; its ſubſtance is viſcid, its taſte is ſomewhat ſweet and muſked, and yet it is a very indifferent Pear; it was ripe the end of *Auguſt* 1762. The tree is hardy, makes a large and beautiful ſtandard, and is a great and conſtant bearer; ſo that no other kind of Pear-tree is ſo profitable in an orchard as this is.

No. 13. *Muſk-drone Pear (fructu eſtivo, turbinato moſchato,* TOURN. *Bourdon.* QUINT.) is of a middle ſize, longiſh, and well-ſhaped: its pulp is tender, ſugared, and muſky. The tree is hardy, and grows regularly, but is generally old before it begins to bear.

No. 14. *Magdalene Pear (Magdalene,* QUINT.) is a large green Pear, in ſhape reſembling the Bergamot. Its fleſh is tender and melting, and its juice ſweet. This tree makes a beautiful appearance, whether you plant it as a ſtandard, or train it as a dwarf.

No. 15. *Red Admiral (Pyrus fructu eſtivo, globoſo, e viride purpuraſcente,* TOURNEF. *Amere roux,* QUINT.) is red coloured, inclining to purple: its figure is round, and the fruit is large: its pulp is tender and ſweet. The tree grows regularly, and bears plentifully.

No. 16. *Summer Bergamot* is of a ſhape nearly round, though rather thick towards the ſtalk. In ſize and colour it nearly reſembles the Autumn Bergamot. Its pulp is tender, and its juice ſweet. The wood of the tree is regular, and the branches groſs; but they are delicate and apt to canker.——*Tournefort* has very happily deſcribed this Pear, when he calls it *Pyrus fructu feſſilii ſaccarato.* In ſeveral places of *England*, it is called *Hambden's Bergamot.* In *Scotland* we meet with many Pears of the name of Bergamot, that vary much as to the times of ripening, and have their name from the perfume that is perceptible in the autumnal fruit.

No. 17. *Summer Good-Chriſtian. Pyrus fructu oblongo, magno partim rubro, partim albido odorato,* TOUR. *Bon Chretien*

Chretien de Eſte, QUINT. It is in ſhape long and regular; its ſmooth ſkin is of a greeniſh yellow colour where it grew in the ſhade, but ſtriped with red where it was expoſed to the ſun. Its pulp is tender and juicy, and is agreeably perfumed. The tree grows regularly, thrives well, and makes a beautiful appearance; but it is a very bad bearer.

No. 18. *Little Rouſſelet.* (*Le Rouſſelet*, QUINT.) is of a middle ſize, handſomely ſhaped, though ſomewhat long; of a greeniſh yellow when ripe, with a dark blackiſh red on the ſunny ſide. Its fleſh is tender, and its juice ſo judiciouſly perfumed, as ſufficiently diſtinguiſhes it from any other kind of Pear. The wood of the tree is weak, its ſhoots long, and its branches irregular: they are often killed in part, by the ſevere colds of ſpring in *Scotland*; yet in proper ſoils, and warm ſituations, it makes a tolerable dwarf, and an excellent ſtandard: it does well on a wall, and bears plentifully when old.

No. 19. *Scots Cornuck* is large, and headed, flat towards the eye, and tapers to the ſtalk, which is thick and ſhort, of a yellow colour where not expoſed to the ſun, but of a bright red where it was expoſed. The fleſh is tender and melting; its juice is of an agreeable ſweetneſs, which is heightened by a fine aromatic flavour: it ripened in the end of *Auguſt* 1762. The tree is hardy, vigorous, and grows regularly: it is a great bearer.

No. 20. *Grey Cornuck* differs little from the above in ſhape, taſte, or flavour; though it is eaſily diſtinguiſhed by the grey colour, as its name denotes: it is likewiſe near a fortnight later in ripening. It was ripe the beginning of *September* 1762.—The appearance of the tree would perſuade us that it is a different kind from No. 19. as its branches are ſmaller, more numerous, and the tree grows larger. The above Pear-trees were probably firſt raiſed in *Scotland*, as neither of the kinds ſeem to be contained in any of the *French* or *Engliſh* catalogues that I have peruſed. They are excellent Pears, not inferior in goodneſs to any Summer-Pears whatever. This kind is alſo an excellent bearer.

No. 21. *Longoville* is nearly round, though flattened towards the eye, and protruded towards the ſtalk, which is thick and ſhort: it is a large Pear, of an iron colour

where expoſed to the ſun, and of a yellow colour on the oppoſite ſide. Its fleſh is tender and full of juice, which is an agreeable intermixture of acidity and ſweetneſs. This Pear was ripe the beginning of *September* 1762. The tree produces many long ſmall branches, which are placed widely; and the bearing ſpurs on them are placed at a conſiderable diſtance from one another. The trees become very large; and when old, they are conſtant, though not great bearers. They are fitteſt for ſtandards, and make a fine appearance with their branchy and wide extended heads. This Pear-tree is ſaid to have been originally brought from *France*, though it is not found deſcribed in any of their catalogues.

No. 22. *Red Pear-Robert* (*Pyrus fructu turbinato, carne tenera ſaccharata*, TOURN. *Muſcat Robert*, QUINT.) is not very large; it is headed, the eye ſomewhat depreſſed; it is protruded towards the ſtalk, which is long, ſtraight, and tolerably thick; where expoſed to the ſun, it is of a crimſon colour, but ſtriped with red and yellow on the oppoſite ſide. Its fleſh is tender, ſweet, and muſked. It was ripe the beginning of *September* 1762. The tree generally grows vigorouſly, and bears well.

No. 23. *Grey Honey-Pear* is nearly round, being ſomewhat flattened towards the eye, but perfectly round towards the ſtalk, which is ſhort and thick. Its colour is a browniſh green, or ruſſet-grey; the fleſh is ſoft and ſweet: when it continues any time unconſumed after it is ripe, it turns mealy. It ripened the beginning of *September* 1762. The tree grows well, becomes very large, and bears plentifully.

No. 24. *Early Achan* is ſo called from its reſemblance to the late Achan, which is much better known in *Scotland*. Its ſhape is regular, round at the middle, with a ſmall depreſſion towards the eye: it is alſo protruded towards the ſtalk, that is ſhort and thick: its colour is a dark red and yellow: it is ſhaped like the Achan. Its fleſh is tender and ſweet, though it is but an indifferent Pear. It was ripe the beginning of *September* 1762. The tree is a moderate grower, its wood is ſtrong, and it is a great bearer.

No. 25. *Skinleſs Pear* (*Sans peau*, QUINT.) is a long-ſhaped Pear; for the greater part of a dark red colour; its

its pulp is tender and delicate, and its juice ſweet and agreeable. The tree grows regularly, and looks handſome in whatever manner you train it.

No. 26. *Hanging-Leaf* is a beautiful Pear, of a perfect round figure, were it not a little protruded towards the ſtalk, which is ſhort, and of a middling thickneſs. Its colour is red and yellow: its ſubſtance is tender and juicy; and a delicious ſweetneſs is found in its taſte. It was ripe the beginning of *September* 1762. The tree grows very large, and makes a beautiful ſtandard, but is no great bearer.

No. 27. *Scots Bergamot* is a large Pear, which would be perfectly round, were it not a little depreſſed towards the eye: its foot-ſtalk is thick and ſhort: its colour is yellow and red: its fleſh is tender and juicy; and its juice of a very agreeable ſweetneſs. The fruit were ripe the beginning of *September* 1762. The tree produces ſhort thick branches, and is a good bearer; when it is properly managed at firſt, it makes a fine round full dwarf. It will alſo do very well as a half-ſtandard, or ſtandard, and is in every ſhape hardy, and a good bearer.

PEARS FOR AUTUMN.

No. 1. *Keather* is a Pear of a middling ſize, finely rounded off to the eye, and of an oblong ſhape to the foot-ſtalk, which is generally ſomewhat protruded to one of the ſides, and is ſhort and ſmall. Its colour is moſtly yellow: its ſubſtance, though viſcid, has an agreeable juice, which is very taſteful. It ripened the middle of *September* 1764. The tree grows regularly, becomes very large, and makes a beautiful ſtandard. The Keather bears but ſeldom; however, in favourable ſeaſons, it produces very large crops.

No. 2. *French Cornuck* is a large Pear, regularly rounded off towards the eye, which is in ſome of them a little depreſſed. It is of an oblong form to the ſtalk, which is generally ſhort and ſtraight. This Pear has commonly one ſide larger and longer than the other: it is of a red, dun, and yellow colour; the fleſh is tender and full of juice, which has a pleaſant taſte. It was ripe the middle of *September* 1764. The tree both grows well and bears well. It may be trained in any ſhape you pleaſe.

No. 3. I received the following Pear under the name of *Crawford*: it is large, and bellied; rounded off to the eye, which is depreſſed; tapers off gradually till it approaches near to a ſtalk, when, after a ſmall round, it flattens towards it. The foot-ſtalk is of a moderate length, and generally ſtraight: its colour is red and yellow; its fleſh is tender, juicy, and ſweet. This is as beautiful a Pear as grows, full as large as the Jargonelle, or perhaps the Winter Good-Chriſtian. It was ripe the middle of *September* 1762. The tree produces its branches long and wide: they are of a middling ſize; it is not very beautiful, but bears well.

No. 4. *Watery Pear.* Under this name I received a kind of fruit which appears to me to be well intitled to the name of Ruſſet-Pear, from its colour: for it is of an iron-colour to the ſun, and ſomething aſh-coloured on the ſhaded ſide. It is of a middling ſize, headed, and rounded off to the eye; that is, a little protruded: it gradually diminiſhes towards the ſtalk, which is ſtraight, and of a middling length. The ſubſtance of this Pear is tender, and full of juice, which is agreeably muſked. It ripened the middle of *September* 1762. The tree grows regularly, and is a conſtant and great bearer.

No. 5. I received under the name of the *Robin*, a Pear which perhaps deſerves the name of the Muſcat Robert, as it does not greatly differ, either in ſhape, colour, or taſte, from the one of this name which is deſcribed by *Quintinye*. Its figure is very near round, though a little flattened to the eye. Its foot-ſtalk is protruded from one ſide of the Pear, and makes an acute angle with the other ſide; it is ſhort, and of a middling thickneſs. The colour of this Pear is dark red and yellow; the ſubſtance is very tender and full of juice, that is finely muſked, and of an exceedingly agreeable ſweetneſs. It ripened the middle of *September* 1762. The tree grows tolerably large, and is a good bearer.

No. 6. *The Round Pear* is ſmall, perfectly globular, with a very ſhort pedicle. It is aſh-coloured and yellow: its fleſh is tender, ſweet, and muſked. It was ripe the middle of *September* 1762. The tree, in its growth not a little reſembles the *Scots* Bergamot, only its wood is ſmaller, its branches more numerous, and it grows faſter: it is a tolerable bearer.

No.

No. 7. *The Vinous Pear* is tolerably large, and almoſt round; the one ſide is generally bigger than the other, by its forming a protuberance before ſending of the ſtalk, which is long and crooked, and placed nearly at right-angles with the little ſide. Its colour is red and yellow; its fleſh is tender and melting; and its juice, which is copious, is exalted by a vinous flavour, joined to a very agreeable mixture of ſweet and acid. The Pear was ripe the middle of *September* 1762. The tree grows moderately, and bears indifferently well.

No. 8. *Chapman-Pear* is equally rounded off; but the one ſide forms a much larger circle than the other; and this renders the pedicle of the Pear, which is placed obliquely, ſhorter on one ſide than the other. Its colour is a ſhining red and yellow; its ſubſtance is viſcid, dry, and ſweet. It ripened the middle of *September* 1762. The tree grows as well as bears tolerably well.

No. 9. *Elphin-haſt*, or *Good-Man Pear*, is a large fruit, bellied, flattened a little towards the eye: it tapers off for ſome way, and then is rounded off to its foot-ſtalk, which is ſmall and ſhort. It is of a green and yellow colour: its fleſh is hard and dry, but of a very agreeable ſweet taſte. It was ripe the end of *Sepecmber* 1762. The tree grows vigorouſly, becomes large, and bears plentifully.

No. 10. *Great Ruſſelet*. This Pear differs from the Little Ruſſelet, by being thicker and ſhorter: the ſkin is not ſo poliſhed, but more ſpotted: it is alſo later in ripening, and the juice is not ſo delicious. The tree produces a few ſtrong woody branches thinly placed, and of great length. It is entirely unlike the Little Ruſſelet, for it is juſt the reverſe. It is a bad bearer. This fruit is called in ſome places of *Scotland* the Grey Gooſe. *Quintinye* probably was not acquainted with this Pear; or perhaps he did not think it deſerved a place among his good Pears.

No. 11. *Orange-Bergamot* is of the middling ſize, nearly round, though it has its eye conſiderably depreſſed, and is protruded towards the ſtalk, which is generally long, thick, and ſtraight. Its colour is red and yellow; many of them have a furrow down the middle. Its fleſh is tender, and full of a muſked juice, which is deliciouſly ſweet.

ſweet. It was ripe the beginning of *October* 1762, on a north-weſt aſpect. The tree thrives well in every form, and is a great bearer.

No. 12. *Robine (Pyrus fructu globoſo, ſeſſile, ex albido, flaveſcente, ſaccharato, odorato*, TOURN. *Robine*, QUINT.) is of a large ſize, and of a long ſhape, often keeping nearly the ſame thickneſs from one end to the other. It is rounded off to the eye, which is a little depreſſed, particularly on one ſide; and alſo to the ſtalk, which is depreſſed in like manner as the eye: its pedicle is ſhort and thick. The colour of this fruit is a whitiſh yellow, and the ſkin is ſoft: its ſubſtance is breaking, without being hard, and its juice is ſugared, and charmingly perfumed. The fruit were ripe the beginning of *October* 1762. The above Pear agrees in ſubſtance and taſte, but differs widely in the ſhape and ſize from the *French* Pear of this name. The tree makes a beautiful dwarf, eſpalier, or ſtandard, for it grows moderately. The tree is generally old before it comes to bear.

No. 13. *French Bergamot.* I here deſcribe a Pear which grows under that name in *Scotland:* it is almoſt round, being only a little flattened towards the eye, and a little protruded towards the foot-ſtalk, which is ſhort and thick. Its colour is red and yellow: its fleſh is tender and full of juice, which is ſweet, and of a fine reliſh. It was ripe the beginning of *October* 1764. The tree produces but few wood-branches, that are rather delicate. When the tree is thriving, it bears tolerably.

No. 14. *Late Scots Cornuck* is a large fruit, of a true Pear-ſhape, being rounded off from the middle to the eye, and tapering from thence to the ſtalk, which is very ſhort, and ſometimes waved. Its colour is a bright red and yellow, and its ſkin is ſmooth and ſhining: its fleſh is tender and juicy, and its ſweet taſte is exalted with a vineus briſkneſs. It was ripe the beginning of *October* 1764. The tree thrives well, and bears plentifully. Thoſe who are ſkilful in the art of pruning, may train it into any ſhape they pleaſe.

No. 15. *Pear-Roſe* is a ſmall fruit, nearly round, with one ſide larger than the other. Its foot-ſtalk is of a moderate length and thickneſs: it is red, and of an aſh-coloured yellow. Its ſubſtance is tender and dry, and is very

very pleaſant, by an aromatic and ſweet taſte being combined. It ripened the beginning of *October* 1764. There is a Summer Pear of this name, with a long ſtalk, which is far inferior to this in goodneſs. The tree thrives well, and bears tolerably.

No. 16. *Vicar* is an oblong Pear, produced to the ſtalk, which is long and ſtraight. Its colour is yellow, red, and ſtriped: its fleſh is tender, ſweet, and muſked, but is rather too dry. This Pear ripened the middle of *October* 1762. The tree grows regularly, and has numerous branches, which are ſurrounded with very fertile ſpurs; by means of which it is a conſtant and great bearer. This tree is ſometimes deſtroyed by too intenſe heat.

No. 17. *Autumn*, or *Engliſh Bergamot (Pyrus fructu ſeſſile, ſaccharato, odorato, in ore liqueſcente*, TOURN. *La Bergamotte*, QUINT.) is a large round Pear, generally flattened a little towards the eye, and ſomewhat depreſſed to the foot ſtalk, which is ſhort and thick. It is of an iron-green and yellow colour: its fleſh is tender, and full of juice, of a delicious ſweetneſs, and an agreeable perfume. This Pear ripened the middle of *October* 1762, on a ſouth-eaſt aſpected wall. The tree is neither fit for being trained as a dwarf or eſpalier, but makes a beautiful ſtandard or wall-tree, and is a plentiful bearer.

No. 18. *Muir-fowl-egg* is a large Pear, which is nearly round, being only a little flattened towards the eye, which is ſomewhat depreſſed: but it is finely rounded off to the ſtalk, which is long, large, and generally crooked. Its colour is red, green, and yellow; its fleſh is tender and juicy: it is reckoned delicious by thoſe who are fond of much acid in Pears; for my part, I think it over-abounds in this fruit. It was ripe the middle of *October* 1762. The tree grows vigorouſly, producing many long branches, which are thinly placed in its head: they are in time covered with ſpurs, which bear copiouſly when the tree is old.

No. 19. *Gray Good-Wife* is a Pear of a middling ſize, which might be reckoned round, were not its eye a little depreſſed, and its ſhape a little protruded towards the ſtalk, which is of a moderate length and thickneſs: it is of a brown red on the one ſide, and of a greeniſh yellow

on

on the other. Its ſubſtance is ſoft and tough, yet it melts in the mouth: its juice is ſweet, with a very agreeable perfume, which is peculiar to this Pear. It was ripe the middle of *October* 1762. The tree grows vigorouſly, makes a beautiful appearance, and is a conſtant and great bearer.

No. 20. *Creſſan (Pyrus fructu ſeſſili, e viridi flaveſcente, utrumque umbilicato, in ore liqueſcente,* TOURN. *Craſane,* QUINT.) is large and ſemiglobular, flattening almoſt its crown to the eye, but nearly circular to the ſtalk, which is long, and generally ſtraight. It is of a greyiſh colour, mixed with red ſpots; when ripe, the ſkin is rough; its ſeeds are remarkably large; its fleſh is exceeding tender and ſoft; the juice is copious, ſweet, and briſk. This Pear does not agree with the deſcription that is given from *Tournefort.* It was ripe the middle of *October* 1762, on a ſouth-eaſt aſpected wall. The tree is only fit for a wall in *Scotland,* where it produces too much wood, and is but a very indifferent bearer.

No. 21. *Verte Long,* or *Long Green Pear, (Pyrus fructu odorato, in ore liqueſcente,* TOURN. *La Verte Longe,* QUINT.) is large and long, of a true Pear-ſhape, with a thick ſtalk of a middling length. It is generally of a green colour, freckled all over with ſmall ſpots: theſe ſpots are white where the ſkin is coloured by the ſun, and of a dark green where it is yellow, which colour the green acquires in ripening. Theſe Pears are of a ruſſet colour next the ſun: their pulp is melting, ſoft, and juicy, and the taſte, in ſome ſeaſons, is ſweet and agreeable; in others, it is inſipid. It ripened the middle of *October* 1762, on a ſouth-eaſt aſpected wall. The wood of the tree is ſtrong, and grows regularly. The Verte Long makes a beautiful appearance in every ſhape, and bears admirably well.

No. 22. *Pound Pear* is a very large Pear, of a ſemiglobular figure, being flattened towards the eye, which is a little depreſſed, but perfectly circular to the ſtalk, which is ſmall and ſhort. The colour of this charming Pear is red, green, and yellow; its ſubſtance is between tender and viſcid; its taſte is ſweet, and in its juice is ſomething of a very pleaſant aromatic. It was ripe the end of *October* 1762. The tree thrives vigorouſly, and bears well in warm ſituations and proper ſoils.

No.

No. 23. *Swan's-Egg Pear* is of a middling ſize, oblong and roundiſh, but a little protruded towards the ſtalk, which is ſhort and ſmall. It is of a dark green colour: the pulp is ſoft, and the juice, which is copious, is of a very agreeable ſweetneſs. It ripened the end of *October* 1762, on a ſouth-eaſt aſpected wall. The branches of the tree are apt to canker and die in part, or entirely; neither does a wall ſave it from this fate. Even when it is in a diſfigured condition, it bears tolerably on any of the branches that remain alive. How much to be lamented is it, that this tree ſhould prove ſo delicate, when we have few kinds of Pears that excel the Swan's-Egg!

No. 24. *Muſcat Fleury (Pyrus fructu globoſo, ferrugineo, carne tenera ſapidiſſima*, TOURN. *Muſcat à longue queue d'automne*, QUINT.) is a very ſmall Pear, of an almoſt globular figure, and of a dark red, or rather brown colour, with a long foot-ſtalk. Its fleſh is tender and juicy, with ſuch a delicious perfume as is to be found in no other Pear that I know of. This Pear generally ripens about the middle of *October*. The tree is not beautiful, for it produces long, naked wood-branches, that have but few bearing ſpurs on them; yet it bears a great many fruit, for they are generally placed in cluſters. It is called in ſome places of *Scotland* Pear-nut.

No. 25. *Dean Pear (Pyrus fructu turbinato, ſeſſili, flaveſcente, in ore liqueſcente*, TOURN. *Doyenne*, QUINT.) is reaſonably large, rather long than round, of a greeniſh yellow colour, which is little altered by the ſun. Its juice is ſweet, and a little muſked, but has not a very high flavour. This fruit is apt to turn dry and meally, after it is paſt its time in maturity. The tree is beautiful, and bears much fruit, eſpecially on a wall.

No. 26. *Swiſs Bergamot*. This Pear reſembles the Autumn Bergamot in ſhape and ſize, but is eaſily diſtinguiſhed from it by a fine ſtriped colour: its ſubſtance and taſte are little different from thoſe of the *Engliſh* Bergamot; but what intitles it to a place in this collection, is, that the tree is hardier, and will make a fine appearance in the open air in any ſhape that you pleaſe to form it into; and it will reward the labour of the cultivator, for it is a good bearer.

No

No. 27. *Monſieur John.* Of this are reckoned two kinds, the white and the grey. *(Pyrus fructu tuberoſo, ſeſſili, ſaccharata carne dura,* TOURN. *Le Meſſire Jean,* QUINT.) Theſe Pears are tolerably large, their ſubſtance is hard and breaking, and their juice is ſweet. It has been objected to them, that their ſubſtance is ſometimes gritty. The trees are hardy, they make a good figure in every ſhape, when properly trained, and generally bear well.

No. 28. *Marquis's Pear (Pyrus fructu tuberoſo, ſeſſili, e viridi flaveſcente, maculis nigris conſperſo, carne tenera ſaccharata,* TOURN. *La Marquis,* QUINT.) is very large and handſomely ſhaped; the head is flat, the eye is ſmall and ſunk in, the belly big, and the ſize diminiſhes gradually to the ſtalk: the ſkin is rough and yellow, with red ſpots: when ripe its fleſh is tender and fine; its juice is plenteous, and agreeably ſweet. The tree makes a good ſtandard, dwarf, or eſpalier, and is a tolerable bearer.

No. 29. *Beurre (Pyrus fructu ſuaviſſimo, in ore liqueſcente,* TOURN. *Beurre,* QUINT.) is a large Pear, of an oval ſhape, with a ſhort thick foot-ſtalk. The colours of this ſpecies are ſo various, that they have occaſioned the name of grey, red, and green, among the nurſerymen: its fleſh is fine and delicate, and its taſte exalted by a ſweet aromatic perfume. It ripened the end of *October* 1762, on a ſouth-eaſt aſpect. The wood of the tree is weak, the branches are numerous; it thrives well on a wall, though it is even there no great bearer. There are perhaps but few ſoils and ſituations in *Scotland,* in which the Beurre will thrive and bear in the open air.

PEARS FOR WINTER.

No. 1. *Brier-Buſh* is a ſmall Pear, nearly round, with a ſhort thick foot-ſtalk: when ripe, it is of a red colour where it was expoſed to the ſun, and yellow on the other ſide: its fleſh, though hard, is juicy, and of an aromatic taſteful ſweetneſs. It was ripe the beginning of *November* 1762. The wood of the tree is ſmall, the branches are numerous, the ſpurs on the branches frequent, and the tree is remarkably fruitful.

No.

No. 2. *Achan* is a large Pear, with a big belly; it turns leſs to the head, and flattens to the eye, which is a little depreſſed. It is ſomewhat protruded towards the ſtalk, which is of a middling length and thickneſs. Their colour is commonly a dark red, or very deep blackiſh green; but this varies greatly, as does alſo their ſhape, for I have ſeen them of a light green or yellow, with many depreſſions of different ſizes on their ſurfaces: but of whatever colour they are, they have this in common, that the pulp is fine, ſoft, and free, full of a richly ſugared and perfumed juice, which is of ſo excellent a reliſh, as at leaſt equals, if it does not excell any taſte that is to be met with in Pears. This Pear was ripe the beginning of *November* 1762, on a ſouth-eaſt aſpected wall. The tree produces its wood regularly. Its ſhoots are long; they become full of ſpurs, which are placed all round them, near to one another; and it is generally a great bearer when old. The Achan is hardy, and makes a beautiful figure in every ſhape, when it is properly managed, whether it make its appearance in the fruit-garden or orchard.

No. 3. *Winter-Thorn. (Pyrus fructu magno pyramidato, albido, in ore liqueſcente, ſaccharato, odorato,* TOURN. *L'Eſpine d'hyver,* QUINT.) Its ſhape is long, nearly pyramidal, prettily rounded off at each end: its ſkin looks and feels like ſattin: the colour is between green and white, or rather a ſhining yellow: its fleſh is free and tender; and its juice is a delicious mixture of ſweet and acid, joined to an admirable perfume. This Pear ripened the beginning of *November* 1762, on a ſouth-eaſt aſpected wall. The tree produces long regular branches, that are thick ſet round with bearing ſpurs; among theſe, are produced ſome few thorns, or rather ſharp-pointed branches. It makes a fine appearance on a wall, and is a good bearer.

No. 4. *Virgouleuſe (Pyrus fructu longo, e viridi flaveſcente, in ore liqueſcente, ſaccharato,* TOURN. *La Virgoule,* QUINT.) is beautiful and large, of a true Pear-ſhape, but in ſome inclining to round. The colour is green when they are gathered from the tree, but turns yellow as they ripen. The fleſh, when it comes to perfection, is tender and melting, full of a ſweet and ſharp juice, which

which is a little perfumed. The Pears of this kind that fall off too ſoon from the tree, though they become wrinkled, are excellent. But this Pear in general is apt to contract the bad ſmell and taſte of any thing in its neighbourhood; for which reaſon it ſhould be kept carefully at a diſtance from any thing offenſive in ſmell or taſte. This Pear ripened the beginning of *November* 1762, on a ſouth-weſt aſpected wall. The tree has a ſhining bark, produces plenty of ſmall regular wood-branches, and makes a beautiful appearance on a wall, when properly trained: it is no great bearer till old.

No. 5. *Cheſſery (Pyrus fructu globoſo, citriforme, flaveſcente, punctato, in ore liqueſcente, ſaccharato, odoratiſſimo,* TOURN. *La Leſchaſſerie,* QUINT.) is large and long-ſhaped like a lemon, of a yellow colour when ripe. Their ſubſtance is fine, melting, and juicy, of a highly perfumed and aromatic ſweetneſs. This Pear ripened the beginning of *November* 1762, on a ſouth-eaſt aſpected wall. The wood of the tree is weak, its branches are few, and produced at a diſtance from each other: it is no great bearer till after it has ſtood ſome years, when it bears plentifully. It is only fit for a wall in *Scotland*, to which it is eaſily trained, as it produces but few branches, and grows regularly, ſeldom producing any luxuriant branches.

No. 6. *Ambrette (Pyrus fructu globoſo, ſeſſili, ferrugineo, in ore liqueſcente, ſaccharato, odoratiſſimo,* TOURN. *L'Ambrette,* QUINT.) is nearly as large as the Winter-Thorn: it is round, and very various as to the length and thickneſs of the ſtalk. Its ſkin, which is rough, and of an iron colour when taken from the tree, becomes yellow when ripe. Its fleſh is tender, juicy, and free; and its taſte is of a delicious ſweetneſs, which is exalted by an aromatic perfume. This Pear ripened the beginning of *November* 1762, on a ſouth-eaſt aſpected wall. The tree produces few wood-branches, but many bearing ones, of which number are many of the thorns that it ſhoots out. It thrives well on a wall, as its wood is ſmall and weak: it is a conſtant and great bearer.

No. 7. *Saint Germain (Pyrus fructu longo, e viridi flaveſcente, in ore liqueſcente,* TOURN. *La Saint Germain,* QUINT.) is very large and long; they are irregularly ſhaped,

ſhaped, and very various in their figures. We have commonly found them of a green or reddiſh colour, which turns yellow as they ripen. The pulp is tender, ſometimes a little gritty; it is full of briſk pleaſing juice; the ſweetneſs of the taſte being much exalted by a little acid. It was ripe the beginning of *November* 1762, on a ſouth-eaſt aſpected wall. The tree produces many regular and beautiful branches: it makes a fine appearance in every ſhape, and is a plentiful bearer, as well in the open air, as on a wall.

No. 8. *The Round Conical Pear*, which I have named from its ſhape, being finely rounded off from its middle to the eye, and from the ſame part to the ſtalk, being perfectly conical: its foot-ſtalk is ſhort; its colour is brown and yellow; its ſeeds are very ſmall; its fleſh is viſcid, and of a ſweet taſte. It ripened the middle of *November* 1764. The tree thrives well, and bears well.

No. 9. *Round Winter-Pear* I have denominated from its ſhape, being nearly round, with a ſhort, ſmall, ſtraight foot-ſtalk. It is of a yellow colour: the ſeeds are large, and its fleſh tender, and of a very pleaſant aromatic ſweetneſs. It ripened the middle of *November* 1762. The tree thrives vigorouſly, and bears well.

No. 10. *The Oblong round Winter-Pear* is thickeſt about the middle, with its eye and ſtalk protruded beyond the circle: its foot-ſtalk is ſhort and thick: in its ſhape it very nearly reſembles the Swan's-egg: it is of a ſtraw-colour: its fleſh is tender and full of juice, which is of a delicious aromatic ſweetneſs. It ripened the beginning of *November* 1762. The tree thrives well, and produces much fruit.

No. 11. *Winter-Bergamot* in ſhape and ſize nearly reſembles the Autumn-Bergamot, but differs from it, by being much lighter in the colour, which is a greeniſh yellow. Its foot-ſtalk is ſhort and ſmall; its ſubſtance tough and viſcid, dry, and unpleaſant to the taſte. It ripened the beginning of *November* 1762. I ſhall ſay nothing of the tree, as no farmer ought to plant ſo bad a kind.

No. 12. *Colmar (Pyrus fructu tuberoſo, e viridi flaveſcente, punctato, ſaccharato*, TOURN.) is very large; its head is flat, with the eye placed pretty deep; its belly

is larger than the head: from this, the ſize diminiſhes irregularly to the ſtalk, which is ſhort and thick. The colour of the fruit is green; the ſkin is ſpotted, ſoft, and ſmooth; the fleſh is tender, and the juice ſweet and agreeable. The fruit may be eaten from the beginning of *December* to the month of *April*. The tree will ſucceed on any aſpect, though the fruit will hardly acquire the proper degree of maturity on any other than a ſouth-eaſt, or ſouth aſpect; nor will this fruit thrive well in *Scotland*, unleſs in low warm ſituations, and good ſoils. The bark of the tree is of a dark brown colour, with white ſpots.

No. 13. *Green Sugar-Pear* is rather long than round: it is flattened towards the eye, and conical to the ſtalk, which is long, and pretty thick. It is of a green colour; its fleſh is tender, and full of a very agreeable ſweet juice. It ripened *December* 2d, 1765, on a weſt-north-weſt aſpected wall. The tree produces long wood-branches, which are ſurrounded with ſpurs that bear plentifully.

No. 14. *Saint Martial* is a very large and long Pear, of a pyramidal ſhape. It is of a bright ſtraw-colour, with ſome black ſpots intermixed. The pulp is ſweet and juicy, and of a vinous taſte. The tree can only ſucceed on the beſt aſpects, even on walls; nor need we expect ripe fruit on any other than a ſouth, or ſouth-eaſt aſpect.

No. 15. *Winter Good Chriſtian (Pyrus fructu magno, pyramidato, e flavo nonnihil rubente*, TOURN. *Le Bon Chretien d'hyver*, QUINT.) is of a beautiful figure, long, and pyramidal; it is from three to four inches broad, and from five to ſix inches high; and, according to *Quintinye*, the weight is from one to two pounds. It is of a carnation colour, with a yellow ground when ripe; its fleſh is breaking, and ſometimes tender; its taſte is agreeable, having plenty of a ſweet perfumed juice. The tree grows vigorouſly, is hardy, and bears very large fine fruit on a well aſpected wall, where it can alone be planted to advantage in *Scotland*.

N. B. The Pear-trees in this catalogue were grafted on free-ſtocks.

No.

A P P L E S.

No. 1. *Teuchat-egg* is a ſmall yellow Apple, of a reddiſh hue where expoſed to the ſun: it is in ſhape not unlike a Grey Leadington; its pulp is tender and juicy, its ſmell is chearing, and its taſte pleaſant, when planted on a north wall. The fruit will continue on the tree till the month of *October*; and the longer they hang on the tree, their ſmell and taſte become better. This fruit, when produced in the open air, is commonly ripe in the beginning of *Auguſt*. The tree produces ſmall regular branches, and makes a good appearance in every ſhape; it is alſo a great bearer.—There is alſo a Winter-Apple which exactly reſembles the above, and is generally called by the name of the *Winter Teuchat-egg*. Its ſubſtance is tender, juicy, and ſweet. It was ripe the beginning of *March*, 1763. The tree grows vigorouſly, and bears well.

No. 2. *King-Apple* has little to boaſt of as to its colour; but it is pretty large, and of a good taſte for the ſeaſon.

No. 3. *Magdalene-Apple* is a fair and beautiful fruit. Its colour is yellow, and ſtriped with red: the fleſh is free and juicy, of a pleaſant ſmell, and delicious taſte. The trees of the two preceding kinds much reſemble one another; that is, the wood-branches of both are ſtrong, they grow vigorouſly, neither are they bad bearers.

No. 4. and 5. *Summer Calvilles (Malus fructu magno, dilutè rubente, et inodoro,* TOURN. *Calvilles d'Eſte,* QUINT.) are of two kinds; the one of a white colour, the other of a red. They are both of them large long fruit, ſhaped alike, and flattened at each end. The fleſh of the red is not coloured, as in the Autumn Calville. Both of them are very beautiful, and the taſte of their ſubſtance is pleaſant and agreeable. The trees are rather delicate, and apt to ſuffer from the colds in ſpring that ſo frequently happen in *Scotland*. They are tolerably good bearers.

No. 6. *Van Pippin* is a round and ſmall Apple, finely coloured with red and yellow. Its pulp is free, juicy, ſweet, and agreeable. The wood of the tree is weak, its branches are regularly placed, ſo that its figure is beautiful. It is hardy, and bears well.

No. 7. *Ozlon Pippin* is pretty large, roundiſh, and flat at each end. It is of a light yellow colour; the fleſh is firm, with a ſweet and pleaſant juice. The tree is generally vigorous, and its growth regular: it alſo bears well.

No. 8. *Rembourge (pomus prægrandis, præcox, tenerrima,* TOURN. *La Rambour,* QUINT. is a very large *French* Apple, ſtriped with red on the one ſide, but green on the other. The ſubſtance of this fruit is free, and the taſte agreeable. The tree does beſt as a ſtandard.

No. 9. and 10. *Autumn Calvilles (malus fructu magno, intensè rubente, violæ odore,* TOURN. *Les Calvilles d'Automne,* QUINT.) Theſe Apples are large and long, turning leſs towards the eye; in ſhape they exactly reſemble each other, but one of them is of a red colour all over, and the other of a white. The firſt has its ſubſtance of a red colour, even to the core. The fleſh of both is breaking, and of a pleaſant taſte, and charming flavour. Mr. *Switzer* has aſſerted, that the white is the beſt. The trees of both kinds are rather delicate in *Scotland*, yet they bear tolerably.

No. 11. *Grey Leadington* is of a middling ſize, a longiſh ſhape, that turns ſmaller towards the eye. The colour of the true kind is dark green or grey: they are often freckled; the fleſh is firm, melting, juicy, ſweet, and agreeably perfumed: the ſmell is delightful. The pippins are placed in the center, in very large cells. This Apple is truly good, ſuperior to any other Apple, if we except the Golden-pippin and Golden-rennet; nor is it excelled by either of theſe kinds. The tree is hardy, grows regularly, and bears tolerably well. It will ſucceed in every manner, whether you plant it as a ſtandard or half-ſtandard, on a wall, as a dwarf or eſpalier.

No. 12. *Carpandy (Le Courpendu,* QUINT.) is of a good ſize and fine ſhape; of a grey or dark red on one ſide, but a bright red on the other: the fleſh is delicate, its juice very ſweet, and of an agreeable flavour. When it turns wrinkled, it is good for nothing; for it loſes its flavour before it begins to be wrinkled. This name is given to a fruit in *Scotland*, which is far inferior in goodneſs to the *French* kind. The tree thrives and bears tolerably well.

No.

No. 13. *Apius's Apple (Malus fructu ſplendidè purpureo*, TOURN. *L'Api*, QUINT.) is eaſily known by a lively red colour all over its ſurface, a thin and delicate ſkin: its pulp is ſoft, its juice ſweet, and agreeably perfumed. This is a charming little Apple. The tree is beautiful, and a great bearer.

No. 14. *Golden-Rennet* juſtly merits the preference to the Grey and White Rennets, though both are good Apples. It is of a middling ſize, roundiſh, but rather long, ſomewhat flat at each end, with the eye and ſtalk a little depreſſed. Its colour, when ripe, is a dark yellow, with a little ruſſet, or very dark red on the ſunny ſide: its fleſh, though firm, is melting, its juice deliciouſly ſweet, and of a fine flavour. The wood of the tree is ſtrong, it grows regularly, and bears well.

No. 15. *Golden-Pippins* are ſmall, nearly round; ſome of them are longiſh; the eye and ſtalk are a little depreſſed. They are of a beautiful yellow colour, and ſpotted; their fleſh is firm, but melting, not very juicy: their taſte is an agreeable mixture of ſweet and ſour, joined to a rich flavour. The tree grows regularly, and where it thrives is very beautiful, but is apt to die down every ſpring in part, where the ſituation is cold. Notwithſtanding which, it is generally a good bearer: it does excellently well on a Paradiſe-ſtock, whether planted on a wall, as a dwarf or eſpalier.

No. 16. *Winter Pear-Mains (Malus fructu ſeſſili, rubro, ſaccharato, ſuaviſſimo*, TOURN. *Les Drue Permeins d'Angleterre*, QUINT.) are of a middling ſize, nearly round, only a little depreſſed towards the eye and ſtalk at each end: their coat is ruſſet-yellow when ripe, and of a red colour towards the ſun; their ſubſtance is tender; their juice of a vinous briſkneſs, joined to a very agreeable mixture of acid and ſweet. This delicious fruit was ripe the end of *October* 1762. The tree thrives well, and bears well.

No. 17. *Royal Pear-Main* exactly reſembles the above in ſhape, ſize, and colour, nor does it differ much in its qualities. It ripened the beginning of *November* 1762. This tree is delicate, and apt to ſuffer in one part or other, whenever the ſpring is cold; yet it bears well.

No. 18. *Non-Pareille* is a pretty large Apple, round, except the depreſſion of the ſtalk and eye. Its colour is a ruſſet-red towards the ſun, and a dark yellow on the other ſide: the fleſh is firm and melting; the taſte is briſk, and very pleaſant. It is in eating for ſeveral of the winter-months, and all the ſpring-months; nay, if it is carefully kept, for ſome of the ſummer-months. The tree deſerves the ſame character that has been given No. 15. when treating of the Golden-pippin.

No. 19. *Naked Apple* is a beautiful fruit, broad towards the ſtalk, which is ſomewhat depreſſed, and turns narrower to the eye, which is placed on its crown; that is, a little flattened. Its colour is yellow, its fleſh breaking and tender, and its juice very pleaſant to the taſte. It may be eaten from the beginning of *December* to the month of *May*. The tree in ſpring is late of protruding its foliage and bloſſoms, which gives it a good chance for bearing in many bad ſeaſons, when the early flowers of the other kinds have been deſtroyed by the ſeverity of the cold, (a fatality often experienced in *Ireland.*) The wood-branches of the tree are ſmall; it grows regularly, and makes a fine appearance in every ſhape in the fruit-garden. The tree is hardy, and generally bears well.

No. 20. *Salmon-Apple* is a fruit of a middling ſize, thickeſt not far from the ſtalk, to the depreſſion of which it is gradually rounded off: it turns ſmaller to the top, and flattens to the eye. It is of a bright red colour on the one ſide, which fades into a yellow on the other. The ſubſtance is breaking and tender, and the juice of a briſk and agreeable taſte. The fruit is in eating in *December*, and continues good for many months. The tree grows regularly, and is generally a good bearer.

QUINCES.

The following kinds are to be met with in the nurſeries; but as I have not ſtudied the fruit, I ſhall give the kinds and their characters from Mr. *Switzer*, who was no bad judge of fruit.

No 1. *The Portugal Apple-quince.* It is ſo called from its ſhape, and the likeneſs of the fruit to an Apple. This is the beſt of any of the Quinces, being a large yellow fruit, tender, pleaſant, and ſoon boiled.

No.

No. 2. *The Portugal Pear-quince*; it is denominated from the reſemblance in ſhape to a Pear: it is little inferior in goodneſs to the other.

No. 3. *The Barbary-quince* is good, but ſmall.

No. 4. *The Lyons-quince* is large, of a yellow colour, and good.

No. 5. *The Brunſwick-quince* is large and white, but it is inferior in goodneſs to the *Portugal* kinds.

No. 6. *The Engliſh-quince* is downy all over its ſurface, is often ſtony in its ſubſtance, and is not comparable to the other in goodneſs.

MEDLARS.

No. 1. *The Great Dutch Medlar.* Its fruit are the largeſt and beſt of any. The tree grows vigorouſly, though irregularly, and is generally a good bearer. It has no thorns on the branches.

No. 2. *Common Medlar* has thorns on the branches; the fruit, though ſmaller than the former, are good. This tree grows more regularly than the preceding, and will make either a handſome ſtandard, half-ſtandard, or dwarf.

No. 3. *Neopolitan Medlar*, or *Azerole.* This kind came from *Italy* to *Britain.* The fruit looks well, and is pleaſant to ſome taſtes. The tree will thrive in the open air in warm ſituations, and makes a handſome appearance. All of the above kinds may be grafted on white Thorns, or Pear-ſtocks, and trained to any of the purpoſes that the planter ſhall incline.

GOOSEBERRIES.

No. 1. *Green-gaſkins* are the earlieſt of any. They are large and ſmooth, of a delicious ſweet taſte, and an agreeable flavour: the buſh has few prickles, and is a conſtant and good bearer.

No. 2. *Nutmeg-Gooſeberry* is large, ſhaped like a Nutmeg, of a dark red colour when ripe: the ſkin is ſmooth, and the juice is very agreeable to the taſte. The buſh has not a great deal of prickles, and is a tolerable bearer.

No. 3. *The Yellow Gooſeberry* is not ſo large as either of the above; it is round and ſmooth; when ripe, its juice is exceedingly ſweet and pleaſant. The buſh is

eaſily trained, it grows regularly, makes a beautiful appearance, and is a conſtant and great bearer.

No. 4. *White Gooſeberry* is very large and ſmooth, it is very juicy, and its taſte not unpleaſant. The buſh grows regularly, and is a good bearer.

No. 5. *The rough round red Gooſeberry* is the commoneſt of any: its juice is of a pleaſant acid taſte. The buſh grows irregular, and the branches have frequent prickles on them: it is a good bearer.

No. 6. *The ſmooth red Gooſeberry* is ſomewhat ſweeter in its taſte than the Rough-red, and the buſh is not ſo prickly, neither is it ſo good a bearer.

No. 7. *The Bottle-Gooſeberry* is a black or dark-red Berry, of a long form, ſmooth, and almoſt tranſparent. Its juice is different in taſte from that of any of the above, and is very agreeable. The buſh produces but few branches, the prickles are rare: it is a bad bearer.

No. 8. *The rough*, or rather *downy yellow Gooſeberry*, which is very late of ripening, in good ſeaſons is a tolerable fruit, but in bad is watery and ſour, or inſipid. The buſh is [illegible]ſh, has many prickles, and is a great bearer.

The beſt method of propagating any of the above kinds, is to make choice of a bearing branch with a long ſtraight ſtem; cut it off ſloping from the buſh, and thruſt in the cut end five or ſix inches into the ſoil, on a north aſpected border. This may be done any time in the end of *September*, in the month of *October*, or even till the beginning of *April*. Cover the ground about your cuttings with litter or dung; and water them next ſpring and ſummer, if the weather is very dry. Such of them as have grown vigorouſly the firſt year, may be ſafely tranſplanted in autumn. But ſuch as have thriven but indifferently, you may let ſtand another year, and then they will be provided with good roots, and ſucceed well when planted.

In training of them, keep your buſh to a ſingle ſtem, for a foot and an half, or two feet from the ſurface of the ground: leave only a few regular branches at equal diſtances on its head. If vigorous ſhoots make their appearance when the tree is young, and are ill-placed, break them off from the tree; which is eaſily done,

done, by pulling them in a direction from the branches or ſtem, where they take their riſe. If, on the contrary, they are well-placed, and can contribute to forming a well-ſhaped head, encourage them. Be ſure always to keep the heads of your buſhes ſo thin, that the branches do not cover or croſs one another. Shorten none of the branches, unleſs when they ſtraggle too far, or hang down their extremities. The manner of clipping their heads with a pair of hedge-ſciſſars, which I have ſeen put in practice, renders them too full of wood; the fruit becomes ſmall, and are gathered with difficulty; whereas, when the buſhes are trained as I have directed, they look well, bear plentifully, and the fruits are large and well taſted; and are gathered with eaſe.

The borders on which Gooſeberries are planted, ſhould be cultivated after the ſame manner as has been directed for the borders of fruit-trees; and dunging them once in two years, will make the buſhes grow vigorouſly, and render the fruit much larger.

If any planter is deſirous of raiſing new kinds of this fruit, they may be obtained by ſowing the ſeed and rearing the plants till they come to bear, when every buſh will produce a new kind of Gooſeberry; I do not ſay a good kind.

CURRANTS.

Of theſe fruits we have four different kinds, all of which deſerve to be planted, on account of their good qualities. They are the large *White Currant*, the *Red Currant*, the *Yellow Currant*, and the *Black Currant*. The Black are preferred by ſeveral perſons to the three preceding kinds, as they believe that they are more healthſome. Their juice has indeed more ſweetneſs, and leſs acidity. All of them are to be propagated, planted, and treated as Gooſeberries.

Some trees of the White may be planted on the northern aſpected border, which will retard their ripening, ſo as their fruits will hold, for a long time after, the others on more favourable aſpected borders, are gone.

RASP-

RASPBERRIES.

They are diſtinguiſhed by their colours, which are *Red*, *White*, and *Yellow*. The buſhes ſhould be planted at ſuch a diſtance from one another, that the ground may be eaſily dug, or dunged between the rows; and only a ſingle plant ſhould be permitted to ſpring up from a particular root. The buſh produces its wood in one year to the proper height, which bears fruit the next, after which it dies down near to the root; ſo that there is always in ſummer and autumn a young ſhoot of wood along with the bearing buſh. And whenever the fruit are gathered, the old ſhoot ſhould be broken off, or cut down near to the ſurface of the ground, and only one of the young ſhoots left for bearing fruit the ſucceeding year. By this management, and keeping the ground clean between the rows, the fruit will be large and good, provided the plantation is made on a north aſpect.

STRAWBERRIES.

No. 1. Is the *Red Wood-Strawberry*. The ſmall plants of this kind are to be found in great plenty in the woods, generally on dry ground, where they bear without any culture. They thrive very well when tranſplanted into the garden, and bear tolerably. They are the earlieſt ripe of any of the kinds: they grow pretty large, and become flat on the oppoſite ſides, and pointed, as they approach maturity: and when they have acquired this, they are of a dark red colour: their ſubſtance is melting, and their juice has an agreeable ſweetneſs, joined to a good deal of acidity.

No. 2. Is the *Virginian Strawberry*. They are of a light red colour when ripe, if they are expoſed to the ſun; but of a pale red or white colour, if they grow in the ſhade. Their ſhape is nearly round, except where they are joined to the foot-ſtalk: they are large and juicy, and of a fine flavour, and delicious taſte. The buſhes of this kind are eaſily known by their large, ſmooth, ſhining leaves; they are great bearers, and in ſuch general eſteem, that they are every where to be met with.

No.

No. 3. Is the *White Wood-Strawberry*. They are round, of a good flavour, and pleaſant ſharp taſte: they begin to ripen ſoon after the Virginian, and continue to yield ripe fruit until the middle of *September*, or later: when the ſeaſon is favourable, you may gather ripe fruit from them till the month of *November*. They afford but few fruit at a time, but produce many through the ſeaſon: their firſt fruit are the ſweeteſt; for as the year advances, the acid becomes more copious, and their juice more watery and inſipid.

No. 4. Is the *Polonian*, or *Haut-boy*. It is by ſome people called the *Burgundy-Strawberry*. This is a larger fruit than any that have been yet deſcribed: it is generally ſhaped like No. 1. of a purple colour when ripe: its juice is ſweet, and of a moſt delicious vinous taſte, and charming flavour. Its fruit are raiſed on a high ſtem above the rough leaves. When they approach maturity, they ſhould be tied to ſticks to ſupport them, for they turn heavy and fall down, and are either eaten or ſlimed by ſnails, or both; or they are ſpoiled by the ſoil, become mouldy, and rot.

No. 5. Is the *Chili-Strawberry*. The uncommon ſize of the fruit would recommend this Strawberry, did not the barrenneſs of the plant, and indifference of the fruit in *Scotland*, render it little eſteemed.

Strawberries ſhould have a rich good ſoil, and the buſhes be planted in rows two feet diſtance from each other: the plants may be placed at one foot diſtance in the rows: the ground ſhould be frequently laboured, and the richeſt manures, ſuch as ſheeps-dung, aſhes, &c. ſhould be laid on the ground in autumn, after the crop has been gathered, and the young plants pulled up and taken off: this ought to be dug down early the following ſpring. Let the ground be conſtantly kept free from weeds, and ſuffer only one or two buſhes to grow on the ſame ſpot, keeping them always clear from runners. If you incline to have large fine fruit, reduce thoſe that are found on the ſtems, to a ſmall number ſoon after they are ſet, and pull off late flowers whenever they appear. By this management

Hautboys

Hautboys will become very large and fine; nor is it eaſy to conceive any thing more delicious than this fruit is, where they are perfectly ripened; for in richneſs of taſte, not even Pine-apples can contend with them.

The North-aſpected Wall, with the Fruit-trees, &c. beſt ſuited to it.

THE wall I would recommend for the ſouthern incloſure of the kitchen-garden ſhould be ten feet high, to be planted with the beſt of fruits, each kinds by themſelves, and not intermixed. This wall muſt be well defended from thieviſh intruders, by a deep piece of water the whole length of the wall, or by a formidable haha, or ſunk fence: and as a farther defence, I would have my gardener's, and his ſervants' houſes here, that the fruits in ſeaſon may be preſerved by their watchful care in the night time.

On the north-ſide of this wall you may plant Currants, May-dukes, Morello Cherries, alſo ſome Dutch grafted Filberts as ſtandards, thirty feet from the wall, to ſupply all the parts of this garden with plenty of fruit-bearing trees and ſhrubs; but be ſure, when you plant out your grafted nuts on a border, let them be placed at twenty feet diſtance tree from tree; and let the border be dug up and well dunged every three years. Here alſo may be nurſeries for Thyme, Hyſſop, Lavender, perennial Marjoram, Roſemary, Sage, Winter-ſavory, and ſome other of thoſe herbs, which in a better expoſed part of the garden would be a nuiſance. Nurſeries are alſo here proper for your beſt ſorts of Currants and Gooſeberries, to ſupply deficiencies in the Currant eſpaliers, or north ſide-walls, or in the borders allotted for Gooſeberries, taking care, to avoid confuſion, to number the kinds of them exactly in your index, with written

or

or cut labels at the ends and tops of the rows of the ſeveral kinds. Here too may be planted Sorrel, Spiremint, Chives, Pepper-mint, and all other perennial herbs for the kitchen-uſe; the chief reaſon for planting theſe in this place, is, that when they are wanted early upon hot-beds, or upon more ſoutherly expoſures, they always take more kindly, and are ſooner fit for uſe.

Planting and Management of Raſpberries.

IN this part of the garden there may be a piece of ground allotted for a plantation of Raſpberries, the beſt kinds of which are the red and the white fruiting kinds. There is a ſort with late red fruit, but it is not ſuch a good bearer as the two former ſorts. I have alſo heard of a Raſpberry which bears two crops in the year, the firſt in *June*, and the other in *October*, the laſt of which is ſaid to be the beſt; ſome plants of theſe Raſpberries we have in *Scotland*.

Raſpberry plants are propagated from ſuckers, which their roots produce plentifully. When you deſign to make a full plantation of them, dig and trench your ground in *Auguſt* preceding, and turn it over again in *October*. The ſoil ſhould be a very good hazelly loam, not too wet, or of ſtiff clay, nor on the other hand light and ſandy, but of a middling conſiſtence; and I would chooſe the ground to be new. Lay it up in ridges to get the froſt in winter, which will mould it; the beginning of *March* work it again for planting, laying it as level as you can. When you take off your ſuckers from the mother-plants, take them ſingly, one by one, and not in clumps; prune their fibres, and cut down their tops to a foot and a half above the roots; but be ſure to preſerve all the under-buds which you obſerve neareſt their roots: theſe are the rudiments of new ſuckers, and ſtems for fruit.

The planting Raſps too thick is a great fault, for thereby their fruit becomes ſmall and ill taſted; for, as they

they are very free ſhooters, and multiply faſt, as they ſend from their roots many ſuckers, every one of which has two or three fruiting-branches, which would exclude the ſun and air from ripening their fruits: wherefore, plant them three feet, row from row, and three feet, plant from plant; and at the end of *September* be ſure to top their longeſt young branches, for if it is done later, the froſt will injure the wound. The old bearing-wood of the year preceding is to be cut down. Once every two years, dig the ground between the rows, and give them ſome of the oldeſt rotted dung you have; by which management their roots being kept free from too many ſuckers, the old wood cut clear out, and the young ſhoots topt to two feet above ground, you cannot fail to have good crops of fruit every year. It is proper however to make new plantations of them once every fourth year. They love a ſhaded, rather than a ſunny expoſure, (but ſhould not be planted under the drip of trees) for this reaſon I would chooſe to plant them in a ſpot of the garden which has a north-aſpect.

A Collection of Exotics, which may be planted to ſupply the uſe of the South-wall.

THOSE who do not chooſe to have any wall upon the ſouth of their kitchen-gardens, may plant clumps of exotic trees, which will ſtand abroad, and endure our ſevere winters, (of which the trees below are a catalogue) mixed with roſes; and thoſe clumps may ſeem to be the determinations of walks from the fields, beyond the haha. The exotics for ſuch clumps are theſe, viz.

All the Sorts of Dogwood Trees.

Magnolias, two Kinds.
Tulip Trees.
Taccamaha Trees.

Cedar

Cedar of Lebanon.
Ptelea, or Carolina Shrub Trefoil.
Flowering Maple.
White Beam Tree.
Button Wood, or Cephalanthus.
Saſſafras Tree.
Virginian Spindle-tree.
Piſhamin.
Venice Sumach.
Virginian Sumach.
Catalpa.
Benjamin Tree.
Striped Arbor Vitæ.
Striped Aſh.
Manna Aſh.
Flowering Aſh.
Blotched Elm.
Blotched Plane.
Arbutus.
Double flowered Thorn.
Double flowered Cherry.
Chincapin Tree.
Hickery Walnuts.
Cornell Cherry.
Iteas.
Clethra Alnifolia.
Azalia, or Winter-bloom.

The Eaſt-aſpected Wall, with the Fruits beſt ſuited to it.

AS to eaſt-aſpected walls, there are many gentlemen, who rather chooſe, inſtead of them, to have an orchard of ſtandard fruit-trees, on this ſide of the garden, to protect it from the weſterly winds, and particularly in large gardens, where there is an abundance of other walling.

If

If then it is the fancy of the proprietor to have a wall, it ſhould be ten feet high, faced with bricks, upon which Cherries may be planted, viz. the Hertfordſhire Cherry, Morellos, Holman's-duke, and Black-hearts; and many ſorts of Plums; the Orgillon Pippen-apples, &c. No ſort ſhould be intermixed with another, for the reaſons given in treating of planting trees upon the ſouth and ſouth-weſt aſpected walls; but Currants may be planted between each of them, except the Cherries.

The borders upon the wall ſhould be ten feet wide, as well for the good of the fruit-trees, as to have ſome proper kitchen crops upon them. Here you may plant ſome of the Maſculine Apricots, which, tho' they will not come ſo early, will by this expoſure be firmer in the pulp, than upon a ſouth aſpect: and here may be planted the Cuiſſe Madame Pears, which will fruit very well; and a few red Nutmeg Peaches: to all which the ſame culture will ſerve, which I mentioned, when treating of them upon the other walls.

Directions for planting an Orchard.

SUCH as would chuſe to have an orchard, may plant the trees the whole length of the garden, on the weſt-ſide, adding two hundred and fifty yards to its breadth, to give the trees ſufficient room, otherwiſe they will not thrive. There may be a deep haha to the weſt, or ſome walling to defend the trees from thieves, when their fruits are ripe, the ſame as is preſcribed to defend the ſouth part of the garden. Next the haha, I would recommend the planting of ſome quick growing foreſt-trees, Planes, Aſh, or Firs, at a good diſtance to the weſt of the orchard, and to the north, to protect the fruit-trees from winds. Fruit-trees in an orchard ſhould be planted fifty or ſixty feet from one another, and not in rows, but ſcattered elegantly up and down, to diver-

ſify

fify the view, and appear the more rural, which is more pleafing than in formal rows, where it feems as if nature had been neglected, and art had ufurped her place.

I deſign therefore to give ſome directions for this ſmall, or rather accidental orchard, which may be of great uſe in protecting the kitchen garden from deſtructive winds.

It is true, that by planting the fruit-trees at ſuch great diſtances as fifty or ſixty feet, there will be the fewer; but then it is certain that theſe few will bear better crops, and the fruit will be larger and better flavoured, than in thoſe places where the trees are planted at a leſs diſtance, and where the air is pent up, whereby ſuch plantations are ſubject to blights, thin crops, dropping off of the fruit before ripe, and having a bad taſte from rancid and bad air: all which may be avoided by planting the trees in the manner here adviſed.

You are likewiſe to conſider your ſoil; if of clay, it will be fit for Pears; if of a good loam, it will do well for Cherries and Apples, and ſome Plums, ſo you may adapt your trees to your ſoil, or to the different ſoils you find in this piece of ground: at the bottom of this plantation, you may have ſome Quinces, which, beſides being a good fruit for many family uſes, is an excellent ſtock for grafting all the ſummer and autumnal Pears on; eſpecially thoſe which are very melting. The Portugal Quince is the beſt for eating or uſing in families, which ſhould be budded or grafted upon the cuttings of the Apple-quince, as they give the beſt ſtocks.

The ground is to be plowed in *March*, and allowed one ſummer's fallow, not only to rot the ſward, but to moulder the earth; and if of a dry texture, it muſt be plowed again pretty deep in *July*, and the ſame in *September*, to be planted in *October*, ſtaking trees to prevent their wind waveing, in which ſituation they muſt be kept for five or ſix years. For the firſt two years, lay ſome ſward over the roots, to protect them from froſts in winter, the ſun and air in ſpring and ſummer; and take it for a rule always to plant young trees, for though trees raiſed from nurſeries, or other plantations, may ſooner bear crops, yet it is certain they will never hold long, or give ſuch large and ſound fruit, as young trees will produce for many years.

The Apples I would recommend for this plantation, are the Orgillon Pippen, Yellow Ledington, Golden Pippen, Grey Ledington, Fulwood, Gogar Pippen, Potteraw Apple, Ten-ſhilling Apple from *Newcaſtle*, Pearmains, Redſtreaks, Courpendues, White Janeting, Summer Queening, Strawberry-Apple, Summer red and white Calvilles, Codlings, Royal Codlings, Summer Marigold, Wheeler's Ruſſet, Monſtrous Rennet, Spice Apple, Embroidered Apple, Royal Ruſſet: and the Pears, Achans, Burgamat, Sucre Vert, Swan's Egg, Crawfurd, Golden Knap, Carnocks, Lemon Pear, Jargonnelle, Windſor, Green Chiſſel, Red Muſcadelle, Great Blanquett, Early Rouſſelette, Muſk Robin, Green Orange Pear, *Auguſt* Muſcat Pear, Roſe-water Pear, Princeſs Pear, and ſome others: Plums, the Orleans, Hairſlaws, Early red Damaſk, Horſe Plums.

Notwithſtanding what has been ſaid in regard to the ſituation laſt mentioned; that I would recommend, is weſt of the kitchen-garden, and a piece of ground allotted for the purpoſe, planted in the ſame manner as has been directed, with rows of foreſt-trees, one hundred and fifty feet diſtant from the walls, to the weſt of the kitchen-garden, which will preſerve the orchard from eaſtern blaſts; and ſome rows of the ſame on the weſt of the orchard, to preſerve it from weſt and north-weſt winds.

A Method of planting Orchards, as recommended by a French Writer; and the grafting of the Wilding on itſelf, for their coming early into Fruit, for Cyder Uſe.

UNDER this article of Planting, it may not be unneceſſary, nor unentertaining to the curious, to have laid before them what has been obſerved by others in this article of planting extenſive gardens, extracted from a foreigner. Thus proceeds the French writer:

As the hazard is great in planting from the nurſery bed, the method that I adviſe removes all theſe inconveniences, and the practical part is as little difficult and troubleſome as any other; for it is certain, that a ſtock that remains in the place where it was firſt raiſed, always

always ſucceeds better throughout all the ſtages of its vegetation, than one that has been tranſplanted. The check this laſt meets with, and the change of ſoil, have neceſſarily ſuch an effect upon it, as not only to retard its growth, but to alter its whole ſyſtem. The fact is, that the ſtem being ſuddenly deprived of the nouriſhment that keeps it alive, falls into a kind of lethargy, and remains in that ſtate, till the root has formed ſome new ſhoots, to give it a freſh ſupply of nouriſhment; and tho' it does not die, yet it is certain that the external parts of it ſuffer ſuch an alteration by the ſun and air, that they never recover, ſo as to return to their original ſtate. From whence it follows, that it never becomes ſo vigorous as before, and that, in the courſe of nature, it cannot laſt ſo long. I go ſtill further, and affirm, that whoever will make trial of the different effects of each, may perceive, that the fruit produced by trees planted in the firſt method will always loſe ſomething of their flavour. This opinion is even ſupported by the declaration of ſeveral nurſery-men, who have often aſſured me, that the fruit they have ſometimes gathered from ſtandard trees that were deſigned to be tranſplanted, was much ſuperior in flavour to any they had in their gardens; of this I was once an evidence, and not a little to my ſurpriſe. But, not to proceed on this particular, I ſhall return to ſpeak of the ſtrength and duration of trees: and to confirm my opinion, I ſhall make ſome obſervations on that head. It has been often obſerved, that a tree raiſed from the ſtone, and remaining where it was firſt planted, throws out its ſtem and head much faſter, and more regular, than one that has been tranſplanted. It is well known, that an oak removed, never makes ſo fine a tree, as that which is produced from the acorn, and remains unremoved. It is obſerved alſo, that Cherries, which grow from ſtones, ſhoot away in a very different manner from thoſe that are tranſplanted. I could reaſon from trees to plants in a garden, and mark an infinite number that thrive much better where they were firſt ſown, than when tranſplanted; ſuch for inſtances as Lettuces, Endive, Onions, all kinds of Artichokes, Pulſes, and all ſorts of roots. This is too evident to be diſputed; but it may be ſaid, that the conſti-

tutions of all plants, no more than of all trees, are alike, which I grant; but I affirm, that the general order of vegetation is always the ſame, and that Nature is much better pleaſed with her free and uninterrupted productions, than when ſhe is conſtrained and put out of her courſe. I ſhall give ſome proofs for what I have here advanced.

"An acquaintance of mine, ſome years ſince, ordered a bad piece of wood, of about ten or twelve acres, to be deſtroyed, where finding amongſt the ſmall wood, of which it was full, a great many plants of wild pears and apples, newly ſhot from kernels, he ordered ſuch to be preſerved as were fit for grafting, and in the ſpring following grafted them, ſome by ſlit, and others by rind-grafting, according to their ſize. The grafts took perfectly well, and in three years he gathered moſt excellent fruit from them; but I ſhould obſerve at the ſame time, that in clearing the ground, he had the trees grubbed up as deep as poſſible, which gave the whole a kind of trenching, which was of great advantage to the young grafted trees; ſo that in ten years they formed heads as large as a tranſplanted tree does in twenty-five; and this plantation, made by chance, became an orchard of great profit, which I have often looked over and contemplated with great aſtoniſhment.

"I have one particular more to communicate, relative to the method of making plantations, in the neighbourhood of *Paris*, for cyder. Skilful people come here annually, to take up all the wild ſtocks they can find in the nurſeries, of a proper ſize; theſe they carry home, and ſlit-graft at the end of two years, when they have taken good root. I have often met theſe people in the nurſery-grounds, and upon talking with them, they aſſured me, that the fruits, grafted upon ſtocks, that were not afterwards removed, ſucceeded much better in all reſpects, than ready grafted trees. I am quite of this opinion, without reaſoning any farther upon the cauſes; and I hope this little digreſſion is ſufficient to convince every one, that my opinion at leaſt is not founded upon groundleſs conjectures."

We ſhall here introduce what has been obſerved concerning the Wildings in our hedges, whoſe value to the cyder-

cyder-maker is not a little, as they produce that ſort, which, amongſt the lovers of that liquor, has always the preference. The ſcarcity of this kind has ever been lamented, from the variety of uſes it is of value in, particularly that of improving other cyders, and giving them ſuch ſpirit and ſtrength, as not only renders them pleaſant, but enables them to be kept a long time

The Wilding, as it ſtands in our hedges, is many years before it comes into bearing, ſo as to be of value; but ſhould we follow the method taken with our other fruit-trees, their perfection would be quickened, ſo as to be of uſe in ſeven years, whereas now it is above twenty before you can have fruit. In ſome meaſure to account for this quickneſs to maturity, which is procured by grafting, or inoculation, &c. that is the planting of one tree in another; one receives its ſupport immediately from the earth, whoſe juices after paſſing through its fibres, are communicated to the other; this improves the texture, refines the taſte of the fruit, and invigorates the tree ſo much that is inſerted in it, by inoculation or grafting, that it produces fruit much earlier than it otherwiſe would have done.

Of Eſpaliers.

HAving laid out and furniſhed the different walls of the Kitchen-garden, I ſhall proceed to direct the Eſpaliers, and the fruits to be planted upon them in this garden. It was formerly the practice to have fruit-trees planted in the quarters, and in the borders which divided them; experience has ſhewn this practice to be wrong, for by theſe trees overſhadowing the ground, the crops were deſtroyed; this inconvenience introduced into our *Britiſh* kitchen-gardens the method of planting fruit-trees upon eſpaliers.

An eſpalier is a trelace of wood ſecured in the ground, to which the branches of fruit-trees are faſtened in an horizontal poſition, and in ſuch a manner, as that the ſun and air may ripen their fruits, as well as the crops in the quarters, round which they are uſually planted, and are to run parallel with the walls of the garden, and

have the effect, to make this garden equal the beauties of the flower or pleasure-garden; for, in spring they delight us with their fine blossoms, and nothing can be more pleasing, than the noble fruits with which their branches are loaded in autumn.

It has been the practice, to have the Apples for espaliers grafted upon Paradise stocks: but this I would never advise, as such trees are not of any duration. The inducement for this practice is, that these trees take up but a small space of ground, and always grow dwarfish, which, in small quarters, where there is not sufficient space for larger, is a considerable advantage. In such small gardens it may do; but for larger, Apples grafted upon Codling, or upon the Dutch Paradise, or Bittern stocks, are to be preferred; as they will not grow so luxuriant, as Apples grafted upon Crab or Free stocks, they will bear sooner, and are much more under command. It will be necessary, that trees of an equal growth should be planted together, in order, the better to attend to the distances required by different trees; and as to the walks, I have already laid down the breadth for the larger, and with respect to the lesser, they should not be narrower than fourteen feet.

Apples, Pears, &c. the Sorts most to be preferred for Espaliers.

THE sorts of Apples best for espaliers, are, the Royal Codling, the Fulwood's Redstreak, Ledington's yellow and gray Pearmain, Courpendue's, Strawberry-Apple, Aromatic Pippen, Wheeler's Russet, Pile's Russet; and on south-east expostures, the Golden Pippen, Nonpareille, *Holland* Pippen, *French* Pippen, and Gogar Pippens. The Pears should be the summer, as the autumnal fruits, will not ripen upon our espaliers; but there are many Cherries will produce excellent fruit upon them, especially, if they are grafted or budded upon the Bird or Cornish Cherry. Here too, the Heart Cherry fruits much better, than upon walls. Pears should be planted at twenty-five feet distance, tree from tree, and for

for ſome of the largeſt ſhooters, thirty feet diſtance will be neceſſary. By allowing nature its full liberty, the whole branch puſhes out curſons or ſpurs, on which the fruits are produced; ſo that the only work neceſſary for a Pear-tree, is, to lay its branches horizontally, which will, in ſome meaſure, curb the wantonneſs of a ſtrong ſoil, and a too luxuriant tree; a method much better than pinching and ſhortening branches, as is too often the practice with ignorant people.

As ſoon as the borders are well dug, and the ground is dry, plant Apples, Pears, Plums, and Cherries, in *October*, that they may ſtrike root, before the ſeverity of the winter comes on; laying turf with the graſſy ſide downwards, or mulch, to protect their tender roots from froſts; nor ſhould it be removed before the following *Auguſt*, when it may be dug into the borders. But if this ſeaſon proves wet, you muſt delay planting until the end of *February* or *March*, obſerving to lay turf, &c. as has been juſt directed.

The eſpalier or trelace, ſhould not be erected until the third year after planting; but in the mean time, it will be proper, to fix ſmall ſtakes by the trees, to lay in their branches horizontally, as they are produced, which will ſave much trouble, when the trees are to be fixed to the eſpalier. For this purpoſe, I prefer well ſeaſoned aſh poles, whoſe ends have been well ſcorched in the fire, and pitched, by which means they will laſt a long time.

The uprights of the Eſpalier ſhould riſe ſix, ſeven, or eight feet above the ground, and at two feet diſtance, in a direct line from one another; the croſs-rails are to be nailed to them at the diſtance of ſix inches, from one another.

The branches which are laid horizontally, muſt be at ſeven inches diſtance, for the largeſt fruits, branch from branch; for the leſſer, ſix will be ſufficient. Upon the beſt expoſed part, you may plant ſome of the *Bruſſels* Apricot, which, in a good ſoil, will proſper well.

In a large garden, the quarters incloſed with the eſpalier, ſhould not be leſs than three hundred feet ſquare, and if an oblong, three hundred in length, and one hundred and fifty in breadth; in a ſmaller garden, one hundred feet ſquare, will be ſufficient; and, for theſe, chuſe ſuch trees

as have not been grafted above two years, and obſerving not to plant them above two inches deep in the ground below the graft; heading them down, at the ſame time, to four eyes above the graft, and planting trees of each kind by themſelves. In the middle of the large quarters you may plant ſmall eſpaliers for Currants, and Gooſeberries.

Currants and Gooſeberries, the Sorts moſt to be eſteemed.

THE Currants, that are to be preferred, are, the *Dutch* red and white, and the large black, for jellies; all theſe are propagated by cuttings.

The Gooſeberries are, the Great Chryſtal, the large Oblong Yellow, the Campaign or Smooth Black, the Green Gaſcoigne, the large Oval Red, and the Hairy Red: theſe are likewiſe propagated by cuttings, taken in *February* from good bearing branches, which you muſt have previouſly marked, when in fruit. Theſe cuttings muſt be taken ſeven or nine inches long, to be planted four inches deep, in a good light freſh earth, where, if they are watered, they will ſoon take root, and when they put out ſhoots, ſuffer none to grow lower than one foot and a half from the ground, to be taken off at different times; ſuch as are to be left above, muſt be ſtrong to form good heads.

From this bed they muſt be removed in *October*, for which purpoſe, prepare a nurſery-bed of the ſame ſort of earth, to be well dug and cleared of weeds, which when ready, trim the roots of your cuttings, taking away the ſide-branches, and planting them three feet, row from row, and one foot and a half, plant from plant. Here they are to remain two years, keeping them clear of weeds, digging between the rows every year, and obſerving to cut out from their heads, all ſuch branches as croſs or interlace one another, and to keep them open in the middle, that the ſun and air may have free acceſs to ripen their fruit and improve its taſte.

Theſe plants ſhould not remain more than two years in the nurſery-bed, removing them in *October*, to the borders

borders of the garden, to be planted eight feet aſunder; but if on a ſpot allotted for the purpoſe, they may be planted ten feet, row from row, and ſeven, plant from plant, trimming their roots, rubbing off all lateral branches, and pruning their longeſt to ten inches; obſerve to execute this with a knife, and not with the garden-ſhears. Be careful to thin their heads every year after their fruit is taken off, which will make them excellent; and once every two years give them a good quantity of well rotted dung; ſome train theſe trees in the form of a fan, by which means they ſpread at two ſides, are thin, when their fruit ripens well; however, on the other two ſides, they muſt be allowed twelve feet diſtance to expand in; be careful not to plant your Gooſeberries under the droppings of trees.

Currants may be planted againſt walls or low eſpaliers, and if on a ſouth-eaſt wall, they will ripen very early; if on a north, the fruit will continue good until *September*. But I would prefer their being planted on eſpaliers five feet high, and eight feet diſtance, plant from plant, in an horizontal poſition. They bear upon two years old wood, and ſnags or ſpurs; ſo that in pruning you muſt be careful to preſerve them, keeping their branches thin, and ſhortened to three or four eyes above the one year's wood. They thrive beſt upon a light dry ſoil, in an open expoſure. Every three years, theſe trees ſhould have old rotted dung put to them, to have the earth well dug about them every year, and kept clear of weeds.

Of the Conſtruction and Management of the different Kinds of Hot-beds, Pine-apple Stoves, the Melonry, &c.

I Shall begin with my winter framing for Aſparagus, Kidney-beans, Peaſe, and the earlieſt Cucumbers on Hot-beds, which I erected, by paling in a ſmall piece of ground with old ſhip plank, near the dunghill, but ſhould my practice differ from the common method, let it be remembered that I write for the northern parts of *Britain*. This incloſure I made ſencible, and had here all my

my winter framing, which was better than in the garden, where, by the conſtant wheeling of dung, and the frequent repairs to the hot-beds, the ground muſt have looked very unſeemly, and in a neat kitchen-garden this ſhould be avoided.

In ſummer, I have had Cucumbers and Melons in the kitchen-garden; but at that ſeaſon, the verdure of their beds added to the beauty of that gay ſeaſon of the year.

The planks to the north were ten feet high, deſcending gradually to ſix, to the ſouth. The extent of this ground was ſixty feet broad, and one hundred feet in length. Upon the ſouth-aſpected plank-walls, I had early fruits, under glaſſes, by the means of hot dung applied to the back of the plank.

Muſhroom-beds, Manner of conſtructing them, with Directions in what manner they are to be managed.

THE firſt beds I ſet to work, were for Muſhrooms, to furniſh the table in winter; and for theſe I made my beds the latter end of *Auguſt*, ſo that I had good Muſhrooms all the winter, except prevented by very ſevere froſts. The beds are made in the following manner.

Dig a trench three feet wide, one foot deep, and what length you pleaſe; but if your ſoil be moiſt, let your bed be erected on the ſurface; then take horſe-dung, ſhaking all the litter from it, lay it in a heap to ſweat and ferment for ten or twelve days; or ſpread it out until little or no heat remains, as a violent heat deſtroys the ſpawn of the Muſhrooms. So ſoon as you perceive the heat gone off, fill the trench with the dung, near one foot above the ſurface, on that lay ten inches of freſh light rich earth; obſerving to cover the ſides of the dung with the ſame earth you gathered from the fields with the Muſhroom-ſpawn; then take another layer of dung, lay it ten inches thick, and above that another layer of the rich light earth, of the ſame depth, laying the field-earth eight inches thick on the ſides, obſerving, to lay the

the ſtratums of earth and dung alternately, four of dung, and as many of earth, narrowing the bed as it riſes, ſo as to make it aſcend gradually in the form of a wedge, whoſe baſe is the bottom of the bed; then take ſome of the ſpawn, and plant the ſmall knobs ſix inches aſunder, and half an inch deep into the earth on the ſides. When your bed is planted, lay a covering of wheat-ſtraw, or looſe litter, to the depth of half a foot or more, to riſe to twelve inches as the cold increaſes; this is to prevent the injuries of froſt, as well as to prevent the earth from drying too faſt, and from much rain getting to the beds, as an exceſs of any of theſe are prejudicial; this covering is alſo neceſſary to confine the vapour raiſed by fermentation, which conduces to the growth of the muſhrooms.

When your bed has been made up and planted ten days, take off the litter with your hands, obſerving if your Muſhrooms come up diſcoloured, appearing black or brown, and long ſhanked, to cut them off, and riddling a little of the fine earth over them; which when they appear again, they will come up white, round, and fit for uſe: this is called purging them; this firſt bad appearance is occaſioned by too much heat in the dung, which ſhould be avoided as much as poſſible.

While they are growing, it will be neceſſary to look them over once every day, I mean in *September*, the chief ſeaſon of their growth. If you allow them to grow large, they will ſoon become unfit for uſe, rot, breed worms, and infect all the young ſpawn, or the off-ſets: to prevent this, they muſt be gathered every day; by pulling them gently out of the bed, ſo that no part of their ſtems be left behind, which would canker and rot the ſpawn. In this operation, if any of the ſpawn comes up, take it off gently, planting it again, where it will ſoon take root; obſerve another bed is to be made, towards the latter end of *September*, and not later.

There are ſome perſons who make their muſhroom-beds, entirely of ſuch dung, as I have here directed, without laying ſtratums of earth above the dung, but only covering the ſides of the dung with the earth, as above directed, three or four inches thick. This method I approve of, and have ſeen plentiful crops upon ſuch beds; but

but obſerve when this method is followed, to lay ſome dry litter or ſtraw, to the depth of four inches between the ſides of the bed, and the earth, this prevents the earth from caking or cracking into rents, which it is apt to do, from the heat and fermentation of the dung; over the ſtraw, which is entirely to cover the bed, lay ſome warm litter from the ſtable, or dung heap; this will promote the growth of the Muſhrooms; which as ſoon as it cools, is to be renewed.

If ſuch beds are duly attended, they will laſt ſeveral months, and produce great crops; and as the Muſhrooms grow for uſe, ſo will the ſpawn, which ought to be laid up in a warm dry place, until the ſeaſon for uſing it. The ſpawn will keep four months: ſo that if in *May* you break up your Muſhroom-beds, the ſpawn, or ſmall off-ſets, though no bigger than pin-heads, will keep in a warm dry place, amongſt their earth, until *September*, and even until *October* or *November*.

In very ſevere froſts, or great rains, obſerve to increaſe the ſtraw-coverings; and in great ſtorms I have ſometimes laid boards, ſuch as old doors, ſo as to reſt gently againſt the ſides of the beds, but not to bruiſe the Muſhrooms.

Muſhroom ſpawn is the ſmall off-ſets, which are found about the Muſhroom roots; and the ſmaller they are, the better, provided they are round, knobby, and white, for this is the beſt form of the *Champignion*, or true Muſhroom. Such as come up with a browniſh colour, long ſtalks, and flat heads, are bad, and are a ſort of Fungus, which may be improved, by following my directions for purging of Muſhrooms; but if they do not alter their appearance, they muſt be taken from the bed: by continuing to force Muſhrooms, you may have them good until the months of *April* or *May*. If, in *Auguſt*, *September* or *October*, or even later in winter, the beds do not produce Muſhrooms, you muſt not deſtroy them, but let them remain all winter covered with ſtraw, and probably in the month of *March*, but moſt certainly in *April*, *May*, and *June*, you will have plentiful crops.

I ſhall mention another method of raiſing Muſhrooms. About the end of *February*, lay old rotted dung in a trench

nine

nine inches deep, and ſix feet in breadth; fill up the ſame, and tread it well, over the dung lay ſome earth, taken the preceding *October*, from a paſture where Muſhrooms grow plentifully, and with it cover your dung five inches thick; tread the ſame as hard as you can, making the bed level, or very nearly ſo; keep it clear from weeds, and in *May* they will begin to appear; if they come up black, lay ſome of the Muſhroom paſture over the bed, to the thickneſs of half an inch, treading it well; this will purge the bed, and make the Muſhrooms come up of a good colour. This bed will laſt two years; Muſhrooms raiſed in beds are fitter for table-uſe, than thoſe which are gathered in the fields.

Some, in order the better to protect their beds from rain, and ſevere weather, erect over them a thatched covering raiſed on four pillars, but of ſuch a height as to give free admiſſion to the air; this will anſwer very well, and is a great ſaving of covering for the beds, and perhaps is preferable in our precarious climate.

Directions for forcing Aſparagus on Hot-beds.

I Shall now treat of forcing Aſparagus, which, by proper management, may be had for the table from the beginning of *December*, until they grow in the natural ground. In treating of this proceſs I ſhall be very particular, as I have ſeen it attempted in this country without any ſucceſs, yet I will venture to affirm, I have had as good in winter, as any Aſparagus brought to *Covent-Garden* market.

The roots which are fitteſt for forcing, are ſuch as have been raiſed in your own garden, for they may be beſt depended on. Theſe roots are to be planted out, according to the directions I ſhall give, when I treat of Aſparagus in the natural ground; the firſt year after ſowing, they ſhould have a moiſt, rich, low ground, which will give excellent roots for hot-beds, and ſhould be of four years ſtanding before they are uſed for forcing, and ſuch roots whoſe graſs has never been cut, are to be uſed,

and

and no other. This is particularly to be attended to, if you expect large Aſparagus under forcing frames.

The next thing to be provided is a good quantity of new horſe-dung, to be layed up with the litter, mixing both well together to heat, ferment, and ſweeten for eight or ten days. Then dig a trench one foot and a half deep, in breadth and length according to the dimenſions of the frames, with which you are to cover your beds; work your dung well, and lay it level to the depth of four or five feet, preſſing it even with the fork; then cover it to the depth of four inches with good rich moiſt mould, mixed with a fifth of whitiſh or yellowiſh loam; then raiſe ſmall ridges near two inches high, upon which lay your Aſparagus roots, very cloſe to one another, filling up the ſpaces between the roots, with the ſame rich earth, covering them to the depth of two inches above the tops of the buds; but at this time you are not to lay on your framing, notwithſtanding it is the practice; and the reaſon I object is, that the heat of the ſun coming through the glaſs, would hurry up the graſs before their roots had ſufficiently ſtruck to maintain them, which would make them ſmall, ill-taſted, and worſe coloured. However, the bed ſhould every evening, and in froſty days, be covered with one or two matts, and if that is not ſufficient to protect it, put a covering of dry wheat-ſtraw over all, and round the ſides of the bed, let ſome clay be laid to protect the roots of the Aſparagus. In a fortnight after the bed is ſet to work, examine it, and if you perceive the buds of the graſs above the earth, lay on two inches more; and if in ten days they puſh above this laſt covering, then lay on as much more of the ſame earth, when you are to lay on the frames with their glaſſes. It will be proper, when the roots are planted, to have two or three pieces of wood, of two feet in length, to be thruſt into the dung, by which, when drawn out, you can judge of the temperature of your bed, which is not to be neglected; for if the heat declines, you muſt give it a lining all round of new dung, firſt removing ſome of the old, which will ſoon revive its heat. Before laying on the frames let two ſtraw-ropes be made, five or ſix inches thick, and ſo long as to go round your bed, to be ſecured with

with wooden pins of two inches long, and ſo raiſed to the ſurface of the bed, as to receive the frames, which are to be covered at night with matts and ſtraw; but in the day to be removed, to admit the ſun through the glaſſes, for the better colouring of the graſs, obſerving not to open the glaſſes in froſty weather; but when the weather is mild and open, neglect not to raiſe them to give air, provided the graſs is two or three inches above the earth, and near ready for cutting; this will alſo help to give them a fine colour. In about five weeks after ſetting this bed to work, you may cut good graſs, which obſerve to cut an inch or more, below the ſurface of the bed.

A bed of three good lights will produce 900 or 1000 good Aſparagus, ſo that by this means you may have a ſucceſſion of them, until *April*. And obſerve, that whatever frames you uſe, that they are conſtructed after the manner directed in the beginning of this work, that is, where the glaſs ſlides one over another, to have a good lap, and to be left open, and no bars to be uſed, but ſuch as come from the rear to the front.

The Manner of raiſing early Cucumbers.

THE next crop I ſhall treat of, in the forcing way, is Cucumbers; and the early prickly Cucumber is the beſt to uſe for this purpoſe. I ſhall be very particular in my directions in making the beds, and in the management of the plants, in order to have fruit fit for uſe in *February*, or the beginning of *March*. I ſhould not have given myſelf the trouble to attempt ſuch early productions; but that, I had a paſſion to be equal in perfection to the more ſouthern climates of this iſland, in which I ſucceeded ſo well, as not to be excelled by any *Britiſh* gardener.

Seed of two or three years old, which has been well kept, is much better than that of the preceding year, and ſhould the ſeed be ſoft, keep it in your breeches-pocket for a month or ſix weeks; by which the ſuperabundant moiſture will be better carried off, than in any other way, and

and is eſſential to render the plants fruitful, and to ripen well. So ſoon as you perceive your ſeeds fit for ſowing, that is, when they are quite dry, and the outward coat of their veſſels entirely free from any clammy ſubſtance; then prepare your bed for them. This I did about the tenth of *November*, or at fartheſt the middle of the month, and not later; and if theſe plants are well attended, their vines will be ſtronger and more mature than thoſe which are ſown in *January*, conſequently fitter to produce good and early fruit.

For this bed you are to take from the ſtable, a large heap of horſe dung and litter, to ferment for ten or twelve days, and when the firſt violence of the heat is over, take one of your ſmalleſt frames, or, two large bell-glaſſes; lay the dung level to the depth of three feet, covering the ſame with the following compoſt; two barrows of an old Melon-bed, two of a good rich virgin-earth, and two of yellow loam and white ſand, to be well mixed and incorporated the preceding year, which it muſt be for the Melonry as well as the Cucumber bed. In the center of the glaſſes or frame, make a ſmall pit as broad as your hand, to receive the Cucumber-ſeeds, in two days after the earth is heated, obſerving to cover the whole ſurface of the dung three inches deep with this earth, and to cover the ſeeds to the depth of half an inch; in bad weather, and at night, cover the frame or glaſſes with matts and litter. In five or ſix days, if the dung is properly tempered, the plants will come up. When they appear, if the earth is dry, and they begin to ſpire, give them a very gentle watering from a bottle, which has been ſunk in the bed, to bring the water to the ſame heat with the air, in which theſe young plants live, earthing them up almoſt to their ſeed-leaves, which will wonderfully ſtrengthen their weak ſtalks. If your plants are under bells, as ſoon as you uncover them in the morning, replace the glaſſes, with dry ones, as the moiſture the glaſs collects, from the ſteam of the dung, which ſhould it fall on them, not any thing can be more injurious. If you uſe glaſs frames, let them be made the breadth and length of your hot-bed, having under them light frames covered

covered with a light-coloured bays, or very coarſe flannel, to exhale the damp, and are to be replaced with dry ones in the morning, particularly in cloſe damp weather; two ſets of theſe frames will be neceſſary to preſerve the plants from the vapours that riſe at this ſeaſon.

Your plants being now above ground, prepare another bed, with one light, in the ſame manner as the firſt, keeping it to three feet of dung, that it may retain the heat, until the plants are fit to be planted in baſkets. Cover this bed with the compoſt as before directed, to the depth of five or ſix inches, then ſet on your frame, and when you perceive that the firſt violent heat is over, prick in your plants at three inches diſtance, plant from plant, ſetting them up to their ſeed-leaves, and to be covered from the rays of the ſun, until you perceive them growing, which they will do in three days time.

When you give them water, it muſt be but a little at a time, and ſuch as has been kept in a bottle under the frame. It will be alſo neceſſary in mild weather to give them air, which you may do by reſting the lower part of the frame on a brick ſet edge-ways, placing a matt before the opening, that the air may gently tranſpire to them thro' its openings, remembering to cover the glaſs with matts and ſtraw at night, and to uſe the woollen ſhutters at night alſo, and in the day in cold damp weather. If you perceive the heat in your bed to be too violent, thruſt in three or four ſticks to the depth of two feet into the ſides of the bed, to remain for a day, leaving the holes open, until you perceive the heat abate; but if the warmth declines too much, make up the holes with freſh dung and litter to recover the heat; and ſhould it at any time ſo far decline, as not to be recovered by this expedient, the bed muſt be lined; that is, to remove ſome of the dung on the outſide to be replaced with freſh, which will effectually recover it.

In about three weeks the plants will begin to put out their rough leaves, when another bed is to be made as broad as the former, and ſo long as to receive two large lights; when you muſt provide ſome looſe wrought ozier baſkets eight inches diameter, and ſix inches deep, with two ſmall handles to each, to be ſet in the bed to

the depth of three inches in the dung, and within an inch or two of one another, filling them almoſt to the brim with the compoſt, and the ſpaces between the baſkets with good rich mould. In four or five days, the earth in the baſkets will be ready to receive the plants, to the number of ſix in each, to be planted about the hour of three o'clock in the afternoon; obſerving to water them the preceding day, about eight o'clock in the morning, in order, that the earth about their roots may be fixed to them; this will ſo protect their fibres, that their growth will not ſuffer by the frequent tranſplanting that is neceſſary; a ſcooped trowell will be the beſt thing to move them with; and when the ſun is off the bed, fix the mould to them, raiſing it to their ſeed-leaves, gently watering them, uſing your matts and woollen ſhutters, and obſerving to exclude the ſun's rays for a week after planting: you muſt likewiſe be careful to cover your dung, that projects beyond the frame with earth, to confine the ſteam, as not any thing can be more injurious to your cucumbers; in the day-time raiſe the glaſſes to give them air. In about three weeks the plants will ſhew their male bloſſoms, and begin to ſet fruit: delay not then to make a freſh hot-bed of three lights, with great care, turning the dung well, leaving no clods, and mixing the dung and litter with ſome fine coal-aſhes, which is of uſe to retain the heat long and moderate in the beds, and as ſoon as it is in good temper to receive the baſkets, draw out three of the weakeſt plants, leaving three of the moſt forward, then ſet the baſkets under the centre of each light, and in two days let them be filled with new earth, covering the glaſs at night with matts, and uſing the woollen ſhutters as before; by this renewal of heat, the fruit will ſwell in three weeks to be fit for uſe. At this time, do not neglect every opportunity to give them air and good watering, whenever they require it. The runners may be ſuffered to ſhoot at pleaſure, and never offer to pinch or top them; with this management, I have had fine large cucumbers for ſlicing, by the end of *March*.

It has been obſerved, that, notwithſtanding all the care and heat that can be given theſe early plants, they will not produce fruit of a tolerable ſize, before they drop off;

off; to remedy this I tried the following experiment with great ſucceſs: let there be in the baſkets ſome plants to ſpare, and as ſoon as you perceive the fruit ſet, the flower on its top opening, and that the fruit does not ſwell faſt, take the male bloſſom, clip off the top until you come to its eye, which ſet into the funnel of the female flower, ſo that the eye of the male and the eye of the female flowers may be cloſe joined, covering them with ſome baſs matt, ſo as to exclude all air; then cut off all other vines from the plant, and pinch that which is to ſtand to two joints above the fruit, and in two days you will perceive the fruit to ſwell faſt, when the piece of matt is to be taken off, ſtill preſerving a regularity in the heat of the bed.

When the ſeaſon comes in warm, and your plants are ſlow in putting forth fruit, uſe this expedient, pinching the vine above the fruit, and taking off all runners, except that upon which you have the fruit.

I have alſo raiſed early Melons, but did not begin this work until the end of *January*, or in the firſt ten days of *February*. I had likewiſe hot-beds for early Peas and Kidney-beans, which, in mild winters, were fit for the table in *March*, or the beginning of *April*.

Directions for raiſing Peaſe and Kidney-Beans upon Hot-Beds.

THE Peaſe which I uſe for this purpoſe, are Leadman's prolifick dwarf, and the dwarf Sugar pea. They are to be ſown near a well expoſed ſouth aſpected wall, about the twenty-fourth of *September*; ſetting the ſeeds very near the wall, as ſoon as you perceive them coming up, cover them over again to the depth of an inch; in froſt they muſt be covered with peaſe haulm, wheat ſtraw, fern, or whatever will keep out this enemy. About the latter end of *January*, the Peaſe, (if the winter has been mild) will be ſome inches above ground, when it will be proper to make a hot-bed for them, in the manner as has been directed for Cucumbers, except that in depth, the dung is to be only two feet.

When the dung is fit for uſe, make it up into a bed four feet broad, and as long as you have framing; level the ſame well, covering it with ten inches of light virgin-earth; then lay on your glaſs frames to be raiſed in the day time to carry off the ſteam; when the bed is in a moderate warmth, lift the peaſe with a ſcooped trowel, ſo as to have a ball of earth to their roots, then plant them in the bed fourteen inches row from row, and four plant from plant. Give them at this time a moderate watering, but be very ſparing of it afterwards: Obſerving to ſhade them from eleven o'clock, until the ſun is near off, giving them air in mild weather, and covering the dung with earth, which ſurrounds the outſide of the frame; to keep down its rancid ſteam ſo very prejudicial to hot beds. The frames for Peaſe ſhould be two feet high in the back, ſloping to fifteen inches in front.

I raiſed the dwarf *Batterſea* and *Canterbury* Kidney-beans in the ſame manner, with this difference, that I raiſed the beans in *December* or *January*, on a very moderate hot-bed, fixing ſmall ſticks by them for their tendrils to climb upon, which I pinched as ſoon as I perceived them to run too much to vine, and not bloſſom or fruit in proportion to their ſtrength. In moderate weather, they muſt have abundance of air given them, otherwiſe they will die away. Theſe beans I have had for the table by the 20th of *March*.

Directions for forcing Fruit on Timber-Walls, viz. *May-Duke Cherries, Gooſeberries, Maſculine Apricots, Red Nutmeg-Peaches, and Strawberries.*

HAVING gone through the proceſs of framing and hot-bed work, I ſhall proceed to direct the management of ſuch fruit, as I planted upon paled walls, which I forced with well tempered dung, laid to the rear of theſe wooden walls five feet thick at bottom, ſloping to two and a half at the top, and laid cloſe to the wall with a fork, but not preſſed down; to be covered with thatch, for the better preſerving of the heat. This I did

did about the end of *February*, when I covered my trees in front with glaſs frames, which are to reſemble thoſe laid to hot walls. As ſoon as I perceived them beginning to bud well, I gave them air, and conſiderably more than is uſual on flued walls, which is neceſſary to carry off the ſteam of the dung, ſo very prejudicial to forced crops. The dung firſt laid down will continue ſufficiently warm for five weeks, when it muſt be replaced, to keep up the heat until the fruits are near ripe, or at their full growth.

Upon the front borders you may have Strawberries, and ſome monthly Roſes: the Strawberries ſhould be planted the firſt week in *Auguſt*, keeping them free from runners, that they may turn ſtocky, and become fit for bearing before you apply the dung; theſe frames ſhould have a door at each end to admit the air to the plants and trees, when the glaſſes cannot be raiſed, eſpecially when the trees are in bloſſom; I have alſo planted Strawberries in pots and baſkets, and placed them on hot-beds until they ripened, as directed for early cucumbers. Obſerve that your trees for theſe timber walls, be pruned two months at leaſt before you lay in your dung, according to the directions laid down in treating of flued walls.

Of the Culture of Muſk-Melons.

OF the variety of Melon ſeeds, which are imported is that of the *Perſian* Melon, a fruit far inferior to the *Cantaleupe*, the *Genoa*, or the *Languedoc*; the *Cantaleupe* undoubtedly is preferable to any other, and ſo much prized for its excellency, that in *Italy* it is called *Melone degli Santi*, or *Melon of the Saints*. Gardeners ſhould be very careful to preſerve the beſt ſorts of Melons, keeping their ſeeds ſeparately, noting the year they were ſaved; which is particularly neceſſary. The beſt are to be had from *Languedoc*, by the *Bourdeaux* Merchants. This ſeed ſhould be four years old before it is ſown; for by that time all the ſuperabundant Fluid, with which they are filled, will be evaporated; and one plant will give more fruit, than you can get from ſix, whoſe

feeds have been faved but one, or even two years The method of making the hot-beds, and the manner of raiſing them from feed, being much the ſame with that uſed for Cucumbers, I need not repeat it here. Before the latter end of *February*, I ſowed my Melon crop, as the feed-beds will then work well; and as the ſun begins to have a kindly influence, you can give air in mild weather to the young plants, which is of great uſe to them. The frames in which theſe plants are raiſed may be about two feet ſquare, and when the Melon-plants are fifteen days old, it will be proper to make another bed of the ſame dimenſions; and as ſoon as it is in a good temper, (which you may be ſatisfied of, by thruſting your finger into the earth with which the bed is covered) prick them out at three inches diſtance, plant from plant, obſerving, as they ſpire, to add earth to their long ſhanks, which will ſtrengthen them much, and make them ſoon put out their rough leaf. The beſt compoſt for Melons is thus made: take two loads of well-rotted old cows dung, two of freſh virgin-earth, and two of yellow fat marle, mix all together, and let them lie one year at leaſt before you uſe them; in winter let it be ſpread to receive the benefit of the froſt and atmoſphere; which, when to be uſed, muſt be riddled fine, breaking the clods of marle, as they are apt to cake. Obſerve, when you tranſplant Melons, to ſhade them from the ſun, until you perceive they have ſtruck root, giving them moderate waterings; and in bright ſun-ſhine, cover the glaſſes with matts, giving them air in the day only. The beſt time to give them water, is about ſeven in the morning, from bottles which ſtand in the frames one day before it is uſed, that the water may be of the ſame temperature with the air in the beds, which the plants feed upon. In this bed they may continue until they ſhew one, or at moſt two leaves, but no longer. When the following directions muſt be carefully attended to, to have high-flavoured, large and well-taſted Melons, eſpecially the *Cantaleupe* ſort, without which, they can never be obtained in this country. Experience of many years taught me this, and I can ſafely recommend it, as the only method to have thoſe fruits in perfection.

fecton. As foon as you are provided with four frames and glaffes, of about one foot fquare; lay out a piece of ground in your Melonry of twelve feet fquare, well expofed to the morning and noon fun; at the corners of this bed, you are to fet your fmall frames, which as foon as the Melon plants have filled, they are to be taken away, to give place to a double frame of twelve feet fquare, to have glaffes in front and rear, fhelving like the roof of an houfe, but every other way conftructed like the common frames.

When the four beds are made up, and covered with the fmall frames, and in good temper to receive the plants, make a hill in the middle of each, in the form of a flat cone, of eighteen inches high, of the compoft directed; upon which plant two young plants, and no more, (if of the *Cantaleupe* Melon, one plant will do, as it is not to be removed) obferving to fhade, water, and cover them at night, as has been before directed. And here I muft give a very neceffary precaution to Melon-men: When you have made the four fmall beds, cover them with the frames for two or three days, and as foon as the exceffive heat of the dung is over, lay on your compoft, otherwife it will be rendered ufelefs. Be careful to give them air in mild weather, and to wipe off the fteam from the glaffes in the morning. In two weeks after tranfplanting, they will fhew their third joint, the top of which you muft pinch off with your fingers, to provoke the plants to fend out lateral branches, which we call vines or runners; and if they have but two vines, pinch their tops; but if you perceive a plant too viny, take off two or more of the fmalleft vines to the very ftalk of the plant; three weeks after this, you will obferve the vines will have grown to the root of the hills, on which the Melons were planted, at which time you are to lay your vines regular, making ready your double frames for ufe; and as your fmall beds were made above the furface that divides the fmall frames, take away the earth in the fpaces between thefe frames, and fill all with new dung to the very tops of the fmall frames, taking care that this new dung has been well [illegible] as that for [illegible]; then, after it has been well levelled, and

made as high as the dung in the ſmall beds, cover this new dung with the preſcribed compoſt earth, eighteen inches deep; on this depth of earth depends very much the ſucceſs of your crops, as ſuch as have no more than ſix, eight, or ten inches of ſoil to grow in, have decayed and died away. In a temperate evening, having taken off your ſmall frames, and ordered the vines, laying two or three inches of freſh compoſt earth under them, pulling out all weeds, taking out all uſeleſs leaves, or ſmall uſeleſs runners, and giving them a gentle watering at the extremities of the vines, but not near the ſtems of the plants, then lay your new double frames over them; next morning wipe the glaſſes clean, raiſe them up if it is a good day, but ſhade the plants for one whole week after, that their leaves may not flag by this addition of heat, and alteration of air, until they are uſed to it for ſome days. To this method of managing Melons, in giving them a new heat, I was obliged to have recourſe, particularly when the plants begin to ſhew male, or what ſome erroneouſly call falſe bloſſoms, which you muſt not take away, for, from experience, it is certain, that thoſe flowers are the male bloſſoms, which impregnate the female, and which in Melons and Cucumbers always grow upon one end of the young fruit: when you obſerve the young fruit and their bloſſoms appearing, and that many of them turn yellow, or fall off, then is the preciſe time to [illegible] in this cold climate of ours, without which you cannot expect to have good Melons. If you obſerve any of the beds decline in heat, remove ſome of the old dung all round the bed, to be replaced with ſome freſh dung and litter, to recover the heat, and bring your plants forward.

That I may be underſtood when I write of double frames, I ſhall obſerve, that they riſe in the ridge two feet, ſloping to eight inches, and in every other reſpect are made like the common frames, and ſo large as to contain the whole ſpace of ground within them whereon ſtood the four ſmall frames I have juſt mentioned, and that in ſuch a manner, as that the plants which were in them, will be in the centre of each of theſe glaſſes: it is called double, becauſe it has glaſſes both to the ſouth and

and north, whereby the plants have double fun, double air, and double the heat by reflection, than what they had in your common fingle frames.

Your fruit, by the addition of heat and air, will foon fet beyond the danger of miſcarrying; but there are ſome neceſſary directions to be obſerved at this critical period, which if neglected, may ſuffer theſe plants to ſet their fruit too freely, particularly the *Cantaleupe* kind. I have adviſed pinching the ends of the plants, when they have got a third good joint, in order to obtain vines or runners; and when theſe runners have three or four joints, to pinch off their tops to force out more runners: but if the vines puſh out others upon this laſt pinching, pinch no more, for they will now ſhew fruit, at which time they ought carefully to be looked to. Make choice of one good, or at moſt two fruits on each runner, ſituated neareſt the ſtem of the plant, and ſuch as have large pedicles or foot ſtalks; taking away all the others, that appear upon the runner, pinching off the end of the runner at the third joint above the fruit; this will ſtop the ſap in the runner, and make the fruit ſet immediately, beyond the hazard of going off, as is frequently the caſe, when the vines are over charged with fruit. I never allowed theſe plants to have more than ſix or eight fruit upon one plant. This pinching of the main fruit-runners, will encourage good working plants (as the gardeners call them) to ſend out ſmall runners, which muſt be pinched off when they appear, with their young fruit: this work muſt be carefully done, and the vines looked over, until the fruit left on the plants turn ſo large, as to draw all the ſap of the plants to them. Lay tiles or blue ſcaillie ſtones below your fruit; for if you ſuffer them to lie on the earth, they will rot; and as they ſwell, turn them to the ſun, to ripen equally. Some find fault for directing them, to forbear pruning the vines of Melons; but experience has taught me, that ſuch unmerciful knife-management, is good for nothing, but to bring forward a confuſion of vines, ſo that the plants have been deſtroyed. It is ſufficiently early to uſe this knife-diſcipline, when your fruit is paſt danger of going off, and even then to uſe it with caution.

There

There is a method to ſet Melons, which are not apt to keep their fruit, which ſucceeds better than any I know of, eſpecially with the early fruit, *viz.* Whenever you perceive fruit appearing, and that it opens its female bloſſoms (which are upon the fruit) and that it does not ſwell to your wiſh, take a male bloſſom, and cutting off its petals above the eye, thruſt it into the female bloſſom, cloſe to the fruit, and tie both together inſtantly, that no air may get in to prevent their uniting; then pinch the top of the vine whereon the fruit is, two joints above the fruit, and cut off the runners from that vine, but take off no more vines from the plant, unleſs it has more than three or four; if you keep up the heat, your fruit will viſibly ſwell in three days, when you muſt cut off the baſs-tying. This is a method for ſetting Melons, which never failed. Obſerve to fix the eye of the male flower, cloſe to the female, when you ſet it in.

If the vines of your Melon plants, over-run the length and breadth of your large frames, lift up the frames, and let them reſt upon bricks four inches high, ſuffering the vines to run out at pleaſure, taking care always to peg them down with forked ſticks, to prevent their being broke with wind. Obſerve that what water you now give them, be at their extremities, and not near the ſtems of the plants; which they ſhould never have at this ſeaſon, except in very hot and dry weather. If you are to eat your Melons at home, let them be high in flavour, and the ſtalk ſeeming ready to part from the fruit, and to be cut in the morning, with no more than two inches of vine. If the fruit is to be ſent ſome diſtance, let it be cut three days before it is ripe, cutting a foot of vine with it. By this method of cultivating Melons, I have had great plenty, and very good fruit. Melons under bells or oiled paper, will never do in *Scotland*.

My firſt crop of Melons was over by the middle of *July*; when the vines were ſtill freſh, healthy, and preparing to ſet out new runners, flowers, and fruit, I then ſet about to try an experiment to obtain a ſecond good crop, in which I ſucceeded every year. For this purpoſe I took up all the vines, light by light, laid three inches of my new

new compoſt upon their roots, and over the bed; and after taking off their rotted leaves, I laid them down again in the ſame order, giving them a good watering or two; in warm days raiſed the glaſſes, and in cold nights covered them with matts; and by the end of *Auguſt* I had two pair of good Melons out of danger in each light; theſe, in the month of *September*, and even until the middle of *October*, ſwelled well, and many of them were near as large as the firſt; but the ſun failed in giving them ripeneſs and flavour. To remedy this, I cut the fruit about the fifteenth of *October*, with three feet of vine to them, and twiſting it, I put them into pots filled with good mould, plunging them into the tan-bed in the ſtove, which was kept only to a moderate heat, here the vines ſoon took root, and the Melons ripened to great perfection, in taſte, flavour, and juice, until the middle of *December*. I laid the Melon fruit, in the tan-bed, upon bricks to keep them dry; and when this ſecond crop was forming, I did not prune much, but was careful, that, at this ſeaſon, the fruit ſhould not be too much encumbered with leaves, gently watering them until I found the fruit was of a conſiderable ſize; obſerving to cover the glaſſes well at night, which effectually preſerved the fruit from the froſts, that in *September* and *October*, happen in this country.

I have the ſeed of a Melon, which I ſow the firſt week in *April*; it is very curious, as it never ſets its fruit until three months after it has been ſown, notwithſtanding all the neceſſary heat and care that is applied to it; and then it ſwells, becomes very large, and continues green and very hard in the ſkin, and ſeems to part with its pedicle about the middle of *October*, ſtill continuing green and hard. I had it from Monſieur *Kathgeb*, the Imperial Reſident at *London*, who informed me that it was the Melon they uſed in *Italy* in winter. When they part from their pedicle, they are hung up in a cool room free from froſt, one by one in nets, and ten days before they are uſed, they are brought into the kitchen, or a room where a good fire is kept; there they ripen during the whole winter; when the ſkin becomes thin, turns to a lemon yellow, and emits a very poignant odour,

odour, and taſtes extremely pleaſant. I made this experiment upon ſix of them, and they eat vaſtly well, and their ſeed came up the year following in great plenty, and fruited well.

Directions for raiſing Cucumbers under Bell-Gloſſes

I Never uſed frames to Cucumbers, except the earlieſt ſorts, for theſe continued to give me fruit until the plants fruited, which I raiſed under bell or hand-glaſſes, in the following manner.

About the 15th or 20th of *April*, I dug holes in the Melonry, in ſtraight lines, four feet ſquare, one foot deep below the ſurface of the earth, and ſix feet from one another; theſe holes I filled with horſe-dung, prepared in the ſame manner as has been directed for hot-beds, working it well, and laying one foot more of dung above the ſurface of the earth; I then covered them with the Melon compoſt, to the depth of twelve inches, and upon every one of theſe holes, I put two bell glaſſes: in three or four days, when I perceived the heat in good temper for ſowing, I put under every glaſs ſix or ſeven ſeeds, which in a few days appeared above ground. I took care to cover their ſtalks, with the compoſt-earth as they ſpired, ſhading the glaſſes in the evenings with matts, and giving them as much water as was requiſite; in a few weeks the plants grew ſtrong, and were preparing to run; which, when I perceived, I took out three of the weakeſt, leaving four under the bells; but before I drew them, I filled up the ſpaces between the holes with good hot dung, and working it well, and covering it over with twelve inches of good compoſt; there I planted my Cucumbers which I drew out, taking care to water and ſhade them, and matt them at night, until I perceived they were again growing. So ſoon as the plants under the bells, and theſe juſt tranſplanted, put out runners, I pegged them down, and as their runners grew longer, I lowered them, raiſing the bells, to allow the plants to run from under them; and when

when they had run ſo far as to go off the ridge, I laid new compoſt to the ſides of it, ſo as to increaſe it in length one foot or more, that the vines might run, and their roots have full liberty. By theſe means I had great crops: for, it is obſervable, that, as far as the vines of Cucumbers and Melons run above ground, ſo far do their roots run below; and if their roots are cramped for want of good earth, they ſtunt, and come to nothing; whereas, when you feed their roots with good freſh rich earth to run into, you will always have fine, and plentiful crops, both for ſlicing and pickling. There are ſome perſons who ſow their Cucumbers amongſt their Colliflower-plants, ſometimes in baſons, and others do it upon hills of earth made up with lime. This method will do in good ſeaſons, in well ſheltered ſandy ſoils, provided they have the morning and forenoon ſun; but the method I have preſcribed, in regard to bells, is the ſureſt and beſt, to have good Cucumbers.

A late Writer (Mr. Adam Taylor) *having lately laid his Proceſs of raiſing Melons before the Public, we ſhall introduce it here, beginning with his Preparation of the Seed, having already pointed out ſuch Fruits as beſt anſwer our Climates.*

Mr. Adam Taylor's *Directions for raiſing of Melons.*

WHEN the ſeed is taken from the fruit, it ſhould be laid in the ſun and well dried; after which it ſhould be put into a phial, and cloſe corked, and then ſet in a place which is expoſed to the ſun. Thus the watery part will be ſoon dried up, and they will be as good as if they had been kept elſewhere in paper for two or three years. Many perſons take another, and not improper method, drying the watery parts from the ſeeds, by hanging them near a fire for three or four weeks. Others carry them in their pockets for ſome time before they ſow them. Either of theſe ways will do tolerably well,

well, and anſwer the intent of making new ſeed as fit for ſowing as the old. The ſeeds, having the watery part thus dried up, will produce more fruit than otherwiſe they would; and not ſubject to that luxuriancy, which is the uſual conſequence of undried ſeeds.

Our next care muſt be, to give directions for providing a proper dung-bed, wherein the ſeeds are to be depoſited for the firſt crop.

In the month of *January*, let the gardener provide himſelf with a quantity of new horſe-dung, proportioned to the number of plants which he intends to raiſe. This dung ſhould be thrown up in a heap.

This direction is given upon a ſuppoſition that old horſe-dung, which is much preferable, is not to be had. And this new dung will be the better for having a large quantity of ſtraw or litter amongſt it. A load of this is ſufficient for a hot-bed with one light. It ſhould be ſuffered to lie for a week, and come to its proper heat, before you make your bed.

The dung being now in order, lay your light upon the plain ſurface of the ground, (for there muſt be no trench) and draw a line all round, cloſe to the outſide of the frame. Then mark another line at the diſtance of eight inches every way from the former. This laſt is to be the exact compaſs of your dung-bed. Let the longeſt part of the litter be ſpread firſt upon the ground; ſtill obſerve this rule as you riſe, till you have ſcarce any thing but clean dung left for the top. Thus raiſe it to the height of about four feet ſix inches, that, when ſettled, it may be nearly three feet thick. It will then be of courſe eight inches wider than the outſide of the frame. Let the top of the bed on the inſide of the frame be covered with cow-dung about two inches thick. This will preſerve the mould from being burned by the violent heat of the dung, which often happens, and when it does, it proves very deſtructive to the plants.

When the bed is thus far prepared, put on the frame, and cover it with the lights. It may be uſeful to thruſt a ſtick into it, which, being now and then pulled out, will ſhew the condition of the bed. However, in a week's time, or leſs, the vehemence of

of the heat will be pretty well over; when the bed muſt be covered with freſh light earth, taking care that it be not too wet when it is laid on. Let this be diſpoſed ſmooth and even all over the top of the bed, and about ſix inches thick. Give it a little air now and then, to let off the ſteam.

When the earth is become warm by the heat of the bed, then is the time to put in your ſeeds, covering them about half an inch deep.

When the ſeeds are up, and the leaf is fully expanded, and the rough leaf begins to make its appearance, which will be in about ſeven or eight days after ſowing, you ſhould then be provided with another quantity of dung, in order to make a ſecond bed for the reception of theſe plants. This dung ſhould be well mixed together, and thrown up in a heap, as the former, and ſuffered to lie ſo for ſix or ſeven days, till the rank heat of it ſhall have paſſed off. If it ſhould be dry, and full of long litter, throw a few pails of water over it; which will cauſe it to ferment, and keep it from burning. This ſecond bed muſt be made of the ſame thickneſs as the firſt, and of a length proportioned to the number of plants which it is intended to contain. The ſurface of it muſt be covered over with cow-dung, as was before directed for the ſeed-bed. Then put on the frame and lights; and in two days after the bed is made, cover it with old tan, or light earth, about eight inches thick.

On the next day the bed will be fit for the reception of the plants, if the dung has been properly worked up.

When the plants in the ſeed-bed have one ſmall rough leaf, it will then be proper to take them out with care, and place them in pots about ſeven inches wide and five inches deep, filled with good rich earth, placing two plants in each pot, after having ſecured the holes at the bottom. Then plunge them up to the rim in the new bed. But obſerve, if the weather ſhould be ſo clear, that the ſun ſhine warm, then they muſt be ſhaded till they have taken freſh root. And, if the mould ſhould appear dry, it will be proper to give them a little water, but ſparingly at this ſeaſon. It will be alſo neceſſary to cover them with mat or ſtraw, that they may

not

not be chilled at nights, and to give them air in proportion to the heat of the bed in the day-time, when the weather will admit of it, that the ſteam may paſs off, and the plants gather ſtrength. For the natural conſequence of too cloſe confinement is, that the plants will be drawn up weak, and the leaves turn yellow.

If the heat of this laſt bed ſhould abate, and the weather prove ſevere, a freſh lining of horſe dung muſt be added. But be careful to prevent the ſteam of it from getting into the bed, which would be extremely hurtful to the plants. This is to be done, by laying a ſmall quantity of earth upon the margin of the bed on the outſide of the frame, by which the ſteam will be reſtrained from paſſing under the bottom of it. This method of keeping up the heat by lining the bed occaſionally, is much better than to be frequently moving the plants into new beds. And if ſome hay or ſtraw be laid cloſely and neatly round, and almoſt even with the top of the frame, for the purpoſe of ſhooting off the wet, it will be found to be no inconſiderable improvement.

As ſoon as the plants have fully expanded their two firſt rough leaves, and are forming the third, it will be proper to cut off the extreme part with a ſharp knife. This is called ſtopping them. Then lay ſome dry mould, by way of plaiſter, on the wounded part, to heal it. The center of the plants being thus cut off, they will ſoon put forth runners. When theſe begin to appear, you ſhould be provided with a quantity of dung proportioned to the number of lights you intend to work, allowing fifteen barrows of dung to each light.

In chuſing your dung on this occaſion, your care is requiſite, that it be neither too long nor too ſhort. The firſt will heat too violently, and afterwards loſe its heat too ſoon; and the laſt will be apt to ſettle too cloſe, by which the fermentation will be ſoon ſtopped. The uſeful therefore lays between both, and a medium muſt be obſerved. Be ſure to mix it well together in a heap, as before directed. And when you ſee that the plants in the nurſery frame have produced runners four or five inches long, then make your third bed; in which they are to be planted to produce their fruit. If you obſerve

any

any ſmall weak leaves near the ſtem, or any very weak runners, take them away.

If the plants are managed according to the directions here given, they will be fit to be planted out for fruiting in about ſix weeks after ſowing. But in your proceeding, you muſt with forecaſt make the neceſſary allowance for the time of the dung's working, and the beds coming to a proper heat; that the plants may not, when they are arrived at this pitch, wait for the bed. If the ſoil where you make your bed be very dry, you may now dig a trench about twelve or fourteen inches deep, anſwering to the length and breadth of your frame; otherwiſe it is always beſt to make it on the plain ſurface of the ground. You are to make this bed two feet wider than the frame, mixing the long and ſhort dung well together, that it may heat regularly. Let the back part be raiſed half a foot higher than the front. This will give the glaſs a greater ſlope to the ſun, and the plants will receive the benefit of it. This bed muſt alſo be covered with cow-dung, as was directed for the others, and afterwards with mould, about three inches thick, all over the ſurface.

Three days after the bed is made, you are to put about three pecks of good earth under the centre of each light, raiſing it into a ſort of an hillock, with a deſcent ſlope around. Then put on the lights, tilting each light with a notched ſtick, that the ſteam of the bed may paſs off. In about two days the earth will be entirely warm. Then carefully turn the plants out of the pots, having firſt watered them, that the earth may not fall from the roots, and put two plants on each hillock; without diſturbing the ball of earth which is about their roots. If the mould ſhould appear dry, give them a little water; but not till you have taken off the chill from it, by ſetting it on the dung a few hours before it is wanted for uſe. Neither let it be too warm: For that would prove as hurtful to the plants as the contrary quality. If the ſun ſhould ſhine out, ſhade them till they have taken freſh root. But if the weather prove cold and foggy while the plants are young, tilt up the lights according to the heat of the bed; and hang a mat gently over that part of the light which is

tilted, that the plants may at the ſame time receive a moderate ſhare of air, and the ſteam paſs off without injury. For if the cold air is too freely admitted at this ſeaſon, it will frequently deſtroy the plants: And if the lights are kept too cloſe and the ſteam confined, the danger will be equal. For the plants will imbibe an infected air, and ſoon ſhew their ſickneſs by the yellowneſs of their appearance.

As the runners advance, obſerve to diſpoſe them with regularity, that they may not croſs or be entangled one with another. And as they proceed in length, encourage the roots by adding ſome freſh earth around the hillock on which the plants are placed. But in doing this, be very careful not to bruiſe the runners, or bury any of their leaves. Let the gardener obſerve particularly, not to lay this freſh earth ſo high as the top or ſummit of the hillock or eminence before mentioned, by two inches or thereabout, that the main ſtem may be kept dry; otherwiſe being watered, would ſoak to this principal part, and cauſe it to rot. And let it be underſtood, that this mould is not to be laid on all at once, but at different times, as occaſion may require. This will greatly encourage the fibres, and promote the growth of the plants, and will ſufficiently recompenſe the gardener for his trouble, who is deſirous of having his Melons excellent and of rich flavour.

When the young fruits begin to appear upon the runners, forbear to water them till they are grown to the ſize of a walnut, unleſs the mould ſhould be very dry indeed; and then let them have it but ſparingly. For a little too much water at this time when the fruit is ſetting, will cauſe the branches to ſhoot with luxuriancy, and the young Melons will be apt to drop off. For the deſtruction of the fruit is generally owing to the exuberant quantity of ſap which the branches contain.

At the firſt appearance of the young fruit, you will perceive abundance of male bloſſoms. I have ſeen many unexperienced perſons pick off theſe, to the manifeſt prejudice of the crop. For theſe falſe bloſſoms (as they are too commonly called) are abſolutely neceſſary for the impregnation of the ovary of the fruitful plants.

And

And when the female is deprived of the farina of the male bloſſoms, which is as neceſſary to the generation of plants, as the ſeed of animals is to the propagation of their reſpective ſpecies, your expectation muſt fail of courſe.

When the bloſſoms are all over, and the fruit advances in magnitude, lay a piece of glaſs or tyle under each Melon, to keep it from the earth. And if the weather ſhould prove mild give them a good watering. This will cauſe them to ſwell apace. And freſh air ſhould be admitted at all opportunities when the weather is fine.

Should you find the heat of the bed to abate and decline, add a freſh lining of new dung, as before directed. And it may be requiſite to repeat this two or three times. For the fruit will be ſurpriſingly forwarded in a little time by keeping up a proper warmth. And when it is about three parts grown, turn it every four or five days, that each part may receive equally the benefit of the ſun. And remember, that when it is full grown, it muſt not be watered; for that would conſiderably retard its ripening, and in a great meaſure rob it of the richneſs of its flavour.

Many eminent gardeners have a cuſtom (and by no means a bad one) of placing the fruit when it is full grown upon bricks. This has ſome good effects: For it raiſes them above the leaves, whereby they are fully expoſed to the ſun and air, and the ſtems are ſecured from rotting.

When the Melon begins to turn yellow, and to crack at the part which is affixed to the ſtalk, and to diffuſe a fine ſmell, it is then ripe and fit for cutting. For if it be ſuffered to remain on the vine a day or two after theſe appearances, it will loſe much of its flavour. Let it be cut in the morning before the ſun ſhines upon it, and kept in a cool place, till it is wanted for the Table.

This is the whole management for your firſt crops of Melons, from the ſowing of the ſeed to the maturity of the fruit. And your obſervance of the rules laid down for it, will ſufficiently compenſate your attention to them. But it is neceſſary that I ſhould give ſome further directions for raiſing the late crops.

The place where theſe plants are to be raiſed, ſhould be well expoſed to the ſun, and encloſed with reed hedges, mud walls or pales, to break off the violence of the wind. And the frames wherein the plants are to produce their fruit, ſhould be larger than thoſe which are made uſe of for the raiſing of Cucumbers. The ſize of a two-light Melon-frame, ſhould be ſeven feet and an half long, and four feet and an half wide; and a three-light one in proportion. The beſt compoſt for your plant is the following, viz. Take one load of loamy earth from under the turf of a good paſture, half that quantity of good old cow-dung, and three wheel-barrows full of rotten dung from the old Cucumber or Melon beds. Mix theſe well together by ſtirring, and then throw the whole up in a ridge to receive the air. This ſhould be prepared three or four months before it is uſed. The large clods ſhould be well broken, but it muſt not be ſcreened or ſifted. If Cucumbers are to be raiſed in the ſame ground, it will be neceſſary to make a diviſion with a reed hedge, mud wall, &c. running north and ſouth: For they are apt to degenerate, when raiſed together. Nor, for either purpoſe, ſhould you tread or beat the beds cloſe; but let them ſettle of themſelves. For this will prolong the fermentation of them, and they will be the leſs ſubject to burn. I have found by experience, that the mixing of coal aſhes with the dung will prevent the free penetration of the air, and frequently ruin the beſt crops. The frequent ſtopping of the Runners will alſo occaſion a great number of weak ſhoots, a ſtrange confuſion of Vine, and the ſmall fruit will turn yellow and drop off. They ſhould not be ſtopped, or cut, till the fruit is as big as an egg. Then ſtop them two joints beyond the fruit.

For the convenience of watering the plants, without wetting the leaves or fruit, place a garden-pot, with a ſmall hole at the bottom, among the leaves, and at ſome diſtance from the principal ſtem. Put a little hay or graſs at the bottom of it, that the water may not paſs through too freely to waſh the mould from the roots: Remove the pot diſcretionally to any part of the bed which may require water. For this is abundantly bet-

ter

ter than making a drill, as is the common practice, around the inside of the bed.

Some perſons raiſe their principal crop of Melons under bell or hand-glaſſes, and oiled paper: For which the following particular directions are neceſſary.

About the third or fourth of *March*, prepare the dung as before directed for the plants raiſed under lights. Sow your ſeed about the twelfth of the ſame month. And when they have one ſmall rough leaf, plunge them in ſmall pots in a freſh bed; where they are to remain till the beginning of *April*. Then the dung muſt be got in readineſs by mixing and preparing it, as before directed, in a heap to ferment; and the ground muſt be got ready, where the ridges are to be made, by ſtraining a line, and digging a trench three feet wide and ſix inches deep, and leaving a ſpace of ſeven feet between each trench. The length muſt of courſe be proportioned to the number of glaſſes, which you intend to have in each row; which muſt be full ſix feet apart. Then wheel your dung into the trench, allowing eight barrows of dung to each hole.

Your dung-bed being made ſtraight on the ſides and level on the top, it muſt be covered with cow-dung two inches thick: Then ſpread two inches of good mould all over the bed. Now put the glaſſes upon the proper ſpots, where the plants are to be placed, that they may draw up the heat. The next day take about a buſhel of earth at a time from the compoſt, (made as before directed for the early crops) and lay it on thoſe ſpots fourteen inches thick. Into this the plants are to be removed about three days afterwards.

In about three days, therefore, water the plants in the pots, that the earth may cling to the roots. Then turn them out gently and plant them under the glaſſes, where they are to remain for fruiting. Be ſure to keep them watered, and ſhaded from the ſun, till they have taken freſh root. After this, care muſt be taken to give them freſh air in the heat of the day. This will prevent the leaves from being ſcorched. And, as the plants advance in growth, the bed muſt be earthed up with the mould between the ridges, mixed with ſome of the com-

poſt, till it is almoſt as high as the little hills whereon the plants grow.

In the beginning of *May*, if the heat of the ridges or beds abate, and the nights continue cold, take the mould from the ſides of the beds as deep as the bottom of the dung, then add a freſh lining of new horſe-dung, and cover it again with the mould taken from the ſides.

As the plants encreaſe in growth ſo as to puſh againſt the ſides of the glaſs, get ſome reed or moſs, and lay it all over the ſurface of the bed, for the vines to run upon, and to preſerve the earth from drying too faſt.

When the plants are grown ſo large that they cannot be contained under the bell or hand-glaſſes, they ſhould then be covered with paper frames made full five feet and an half wide. And on taking off the glaſſes, ſee that the branches lay regularly, and without being entangled with each other, before you put on the frames.

When the beds are thus covered with the oiled paper frames, the paths between them ſhould be filled up with mould as high as the beds.

For the convenience of watering theſe plants, a deep drill ſhould be drawn with a hoe, cloſe to the outſide of the frames; and when they require water, pour it into theſe drills, that the fibres may have the benefit of it, without your wetting the leaves or branches.

Cover them in cold nights, heavy rains, and bluſtering winds; that the frames may not be blown off, or the branches diſplaced. But when the weather is mild, moderate air will be very ſerviceable to them, and then the frames are to be tilted with a forked ſtick.

With reſpect to other articles, theſe differ not from thoſe which are raiſed under lights. It would therefore be ſuperfluous, to trouble the reader with a repetition of them.

The Culture and Management of Tub roſes.

I SHALL now treat of the culture of Tuberoſes, which I own is againſt the rule I laid down at the beginning of this work, which was to write of nothing but fruits, or of kitchen-garden plants; but as theſe roots are planted in hot beds made of dung, and not in the ſtove-work, I judged it would be very acceptable to have ſome directions given for their culture.

Theſe roots are annually brought from *Genoa*. I made my plantations of Tuberoſes at two ſeaſons, *viz.* the firſt in *April*, and the other in *May*. As ſoon as my roots arrived, I prepared a hot-bed in the ſame manner as for Cucumbers, covering it with a frame two feet and an half deep at the back, ſloping to one foot in front, and covered the dung with eight inches of good rich light earth, the ſame as I uſed for hyacinths; taking from the roots all their old ſkins and withered fibres, and all their off-ſets, I planted them in this earth two roots very near one another, in ſuch a manner, as that the top of the bulbs were but juſt covered; for if they are planted deeper, they often fail. Between theſe roots planted by pairs, I left a ſpace of eight inches, that when they were fit to be potted, they might be lifted with a good ball of earth to each pair, as I potted each pair in a two-penny pot. I do not approve of planting them into pots, to be ſet in the hot-bed, as the ſides of the pot cramp and ſtunt their fibres, whereby they do not flower ſo well, as when they are planted in the earth, where their fibres run at pleaſure, and form well, which makes them bloſſom ſtrong.

As ſoon as they made their appearance, I gave them a little water; when they ſhewed their flower ſtems, I gave it in greater plenty, and took care not to force them ſo much, as to hurry up their flower ſtalks, ſo as to grow too ſlender. I gave them air in mild weather by taking off the glaſſes, which I laid on again at night, and in very bad weather. When their flower ſtems were a foot and a half high, I gently tied them to ſlender ſticks, to prevent their being broke, and as ſoon as they touched the glaſſes, I took them off, fixing hoops in

their place, to be covered with matts. As ſoon as I perceived the bells of the flower well ſeen, and that they had opened the tunicle or thin ſkin which covers them, I watered the plants and earth, when I lifted two roots together, planting them with a clump of earth into two penny pots filled with the ſame ſort of earth off the bed, ſetting the earth well about the roots: when ſome were placed in the green-houſe, and others in the bed-chamber, which they agreeably perfumed; and when their bloſſoms expanded, I kept their pots moiſt for their more perfectly flowering, taking every opportunity of giving them ſun.

Of late years the double flowering Tuberoſe has been raiſed from the ſeed, by Monſieur *Le Cour*, at *Leyden*: to this gentleman the curious are much indebted for his many improvements in gardening, on exoticks, and upon our indigenous plants. This great curioſity he kept with the ſame aſſiduity, as the late duke of *Tuſcany* did the great double-bloſſomed *Arabian* jeſſamine at *Piſa*, where centinels always attended, that cuttings (by which it can be propagated) might not be taken away.

However, monſ. *Le Cour* is now become more communicative of this his favourite flower, by which means it has reached *Edinburgh*. Its culture is the ſame as that for the ſingle, (which I think for ſmell is preferable) except with this difference, that I pot the double at firſt planting, ſetting them in a very moderate tan-bed. Their off-ſets, from which flowers are only to be produced, I planted in *March* in the ſame compoſt I uſed for hyacinths, ſetting them in a gentle bed of tan-bark; in *June* I removed the glaſs-covers, and in their place erected hoops covered with matts; in *September* or *October*, when their leaves were quite down, I took them up, preſerving them in a dry warm place, until *March* or *April* the ſeaſon for planting. As ſoon as their flowers open the tunicle upon the head of the ſtems, put them into a green-houſe, or in a chamber that is well expoſed to the ſun, where they will expand their bloſſoms with ſurpriſing beauty and vigour.

*The Deſcription of the Pine-apple, or Ananas Stoves, and the Culture of theſe Plants to bring them to Fruit.**

HAVING already laid down the neceſſary directions for making hot-beds for the kitchen-garden uſe, as well to have their produce early, as in perfection; I ſhall now proceed to give my directions for erecting the Ananas or

---

* *The culture of the Pine-apple, and the management of the Stove, being conſidered the moſt capital things in Gardening, we ſhall, in order to give every thing neceſſary for the inſtruction of young practitioners, introduce ſuch directions as have been given by* Philip Miller, *Eſq; of whom our author makes moſt honourable mention; and with them, the plans of ſuch ſtoves as are in general uſe.*

Stoves are contrivances for the preſerving tender exotick plants, which will not live in theſe northern countries, without artificial warmth in winter. Theſe are built in different methods, according to the ingenuity of the artiſt, or the different purpoſes for which they are intended, but in *England* they are at preſent reducible to two or three.

The firſt is called a dry ſtove, being ſo contrived, that the flues through which the fruit paſſes, are either carried under the pavement of the floor, or elſe are erected in the back part of the houſe, over each other, and are returned ſix or eight times the whole length of the ſtove, according to the height. In theſe ſtoves the plants are placed on ſhelves of boards laid on a ſcaffold, riſing above each other like the ſeats in a theatre, for the greater advantage of their ſtanding in ſight, and enjoying an equal ſhare of light and air. In theſe ſtoves are commonly placed the tender ſorts of Aloes, Cereuſes, Euphorbiums, Tithymals, and other ſucculent plants, which are impatient of moiſture in winter, and require for the moſt part to be kept in a ſeparate ſtove, and not placed among trees, or herbaceous plants, which perſpire freely, and thereby often cauſe a damp air in the houſe, which

or Pine-apple ſtoves, with the culture of that excellent fruit: Previous to this it will be requiſite to attend to the following particulars; 1*mo*, To give ſuch a warmth to the air in the houſe, as to raiſe Mr. *Fowler*'s, or Mr. *Coles*'s

---

which is imbibed by the ſucculent plants, to their no ſmall prejudice. Theſe ſtoves may be regulated by a thermometer, ſo as not to over-heat them, nor to let the plants ſuffer by cold; in order to which, all ſuch plants as require nearly the ſame degree of heat, ſhould be placed by themſelves in a ſeparate houſe, for if in the ſame ſtove there are plants placed of many different countries, which require as many different heats, by making the houſe warm enough for ſome plants, others by having too much heat, are drawn and ſpoiled.

The other ſort of ſtoves are commonly called bark ſtoves, to diſtinguiſh them from the dry ſtoves already mentioned. Theſe have a large pit, nearly the length of the houſe, three feet deep, and ſix or ſeven wide, according to the breadth of the houſe, which pit is filled with tanners' bark to make a hot-bed, and in this bed the pots of the moſt tender exotick trees, and herbaceous plants, are plunged. The heat of this bed being moderate, the roots of the plants are always kept in action, and the moiſture, detained by the bark, keeps the fibres of their roots in a ductile ſtate, which, in a dry ſtove, where they are placed upon ſhelves, are ſubject to dry too faſt, to the great injury of the plants. In theſe ſtoves, if they are rightly contrived, may be preſerved the moſt tender exotick trees and plants, which, before the uſe of the bark was introduced, were thought impoſſible to be kept in *England*; but, as there is ſome ſkill required in the ſtructure of theſe ſtoves, I ſhall not only deſcribe them as intelligibly as poſſible, but alſo annex plans of them, by which it is hoped every curious perſon will be capable of directing his workmen in their ſtructure.

The dimenſion of theſe ſtoves ſhould be proportioned to the number of plants intended to be preſerved, or the particular fancy of the owner; but their length ſhould not

Cole's botanical thermometers to the Anana's heat, or to five or ten degrees above that point, and to keep to the ſame, which depends on the right ſtructure of the fire-place; for which purpoſe I would adviſe the uſe

---

not exceed forty feet, unleſs there are two fire-places, and in that caſe it will be proper to make a partition of glaſs in the middle, and to have two tan-pits, that there may be two different degrees of heat for plants from different countries (for the reaſons before given, in the account of dry ſtoves,) and were I to erect a range of ſtoves, they ſhould be all built in one, and only divided with glaſs partitions, at leaſt the half way toward the front, which will be of great advantage to the plants, becauſe they may have the air in each diviſion ſhifted by ſliding the glaſſes of the partitions, or by opening the glaſs door, which ſhould be made between each diviſion for the more eaſy paſſage from one to the other.

Theſe ſtoves ſhould be raiſed above the level of the ground, in proportion to the dryneſs of the place; for if they are built on a moiſt ſituation, the whole ſhould be placed on the top of the ground, ſo that the brick-work in front muſt be raiſed three feet above the ſurface, which is the depth of the bark-bed, whereby none of the bark will be in danger of lying in water; but, if the ſoil be dry, the brick-work in front need not be more than one foot above ground, and the pit may be ſunk two feet below the ſurface. Upon the top of this brick-work in front muſt be laid the plate of timber, into which the wood-work of the frame is to be mortiſed; this ſhould be of ſound oak, without ſap, the dimenſion ten inches wide, and ſix deep, and the upright timbers in front muſt be placed four feet aſunder, or ſomewhat more, which is the proportion of the width of the glaſs doors or ſaſhes; theſe ſhould be about ſix feet and a half, or ſeven feet long, and placed upright; their dimenſions ſhould be nine inches by ſix, of yellow fir; but from the top of theſe ſhould be ſloping glaſſes, which ſhould reach within three feet of the back of the ſtove, where there ſhould be a ſtrong crown piece of timber placed,

uſe of a furnace invented by Mr. *James Scot* at *Turnham Green* near *London*, charged three-pence *per* pound; to which muſt be fitted a wrought iron door, hooks, and a latch, to be fixed in the oven, which muſt be ſuited

---

placed, in which there ſhould be a groove made for the glaſſes to ſlide into; the dimenſion of the ſloping timbers ſhould be ten inches by nine, of yellow fir, and the crown plate one foot by nine or ten inches, of the ſame timber. The wall in the back part of the ſtove ſhould be at leaſt thirteen inches thick, but eighteen or twenty-two inches, which is two bricks and a half, will do better, for the greater thickneſs there is in the back-wall, the more heat will be thrown to the front, whereby the air of the ſtove will be better warmed, and the building will be ſo much ſtronger, for to this back-wall the flues, through which the ſmoke is to paſs, muſt be joined. This back-wall ſhould be carried up about ſixteen feet high, or more for tall ſtoves, that they may be of a proper height to ſupport the timbers of the back-roof, which covers the ſhed behind the ſtove. This roof is faſtened into the crown-piece before-mentioned, which in tall ſtoves ſhould be about thirty feet above the ſurface of the tan-bed, which will give a ſufficient declivity to the ſloping glaſſes to carry off the wet, and be of a reaſonable height for containing many tall plants. The back-roof may be flated, covered with lead, or tiled, according to the fancy of the owner, but the manner of the outſide building is better expreſſed by the annexed plan, than is poſſible to be deſcribed in words.

In the front of the houſe, before the tan-bed, there ſhould be a walk, about two feet wide, for the conveniency of walking; next to which the bark-pit muſt be placed, which ſhould be in width proportionable to the breadth of the houſe. If the houſe is fourteen feet wide, which is a due proportion, the pit may be eight feet wide, and behind the pit ſhould be a walk two feet wide, to paſs, in order to water the plants, *&c.* then there will be two feet left next the back-wall, to erect the flues, which muſt be all raiſed above the level

ed to the largeneſs of the ſtove: It will be requiſite to build the oven within the ſtove, but in ſuch a manner, that there may be two or three feet between any part of it and the tan-pit; for if there is not ſuch a ſpace,

---

level of the bark-bed. Theſe flues ought to be one foot wide in the clear, that they may not be too ſoon ſtopped with the ſoot, as alſo for the more conveniently cleaning them; the lower flue, into which the ſmoke firſt enters from the fire, ſhould be two feet deep in the clear; this ſhould be covered with broad tiles, which ſhould be a foot and a half ſquare, that they may be wide enough to extend over the wall in front of the flues, and to take ſufficient hold of the back-wall; over this the ſecond flue muſt be returned back again, which may be eighteen inches deep, and covered on the top as before, and ſo in like manner the flues may be returned over each other ſix or eight times, that the heat may be ſpent before the ſmoke paſſes off. The thickneſs of the wall in front of theſe flues need not be more than four inches, but it muſt be well jointed with mortar, and pargitered within ſide, to prevent the ſmoke from getting into the houſe; and the outſide ſhould be faced with mortar, and covered with a coarſe cloth, to keep the mortar from cracking, as is practiſed in ſetting coppers. If this be carefully done, there will be no danger of the ſmoke entering the houſe, which cannot be too carefully guarded againſt, for there is nothing more injurious to plants, than ſmoke, which will cauſe them to drop their leaves, and, if it continue long in the houſe, will entirely deſtroy them.

The fire-place muſt be made at one end, where there is but one; but, if the ſtove is ſo long as to require two, they ſhould be placed at each end of the ſhed, which muſt be made the length of the ſtove, that the fires and the back of the flues may not ſuffer from the outer air, for it will be impoſſible to make the fire burn equally, where the wind has full liberty to enter, and it will be troubleſome to attend the fire in wet weather, where it is expoſed to the rain.

The

ſpace, the bark would be too much dried, and conſequently it would not ferment properly. The oven which is to be ſet in the ſtove, is to be ſecured by two trelaces from its ſides, fixed with brick, and over the oven

---

The contrivance of the furnace muſt be according to the fuel which is deſigned to be burnt, but as turf is the cheapeſt firing for ſtoves, where it can be had, many prefer it, becauſe it laſts longer than any other ſort of fuel, and ſo requires leſs attendance, I ſhall deſcribe a proper ſort of furnace for that purpoſe.

The whole of this furnace ſhould be erected within the houſe, which will be a great addition to the heat, and the front-wall on the outſide of the fire-place, next the ſhed, ſhould be three bricks thick, the better to prevent the heat from coming out that way. The door of the furnace, where the fuel is put in, muſt be as ſmall as conveniently may be, to admit the fuel; and this door ſhould be placed near the upper part of the furnace, and made to ſhut as cloſe as poſſible, ſo that there may but little of the heat paſs off through it. This furnace ſhould be about twenty inches deep, and ſixteen inches ſquare at bottom, but may be ſloped off on every ſide, ſo as to be two feet ſquare at the top; and under this furnace ſhould be a place for the aſhes to fall into, about a foot deep, and as wide as the bottom of the furnace; this ſhould alſo have an iron door, to ſhut as cloſe as poſſible; but juſt over the aſh-hole, above the bars which ſupport the fuel, ſhould be a ſquare hole about four or ſix inches wide, to let in the air to make the fire burn; this muſt alſo have an iron frame, and a door to ſhut cloſe when the fire is perfectly lighted, which will make the fuel laſt longer, and the heat will be more moderate.

The top of this furnace ſhould be nearly equal to the top of the bark-bed, that the loweſt flue may be above the fire, ſo that there may be a greater draught for the ſmoke, and the furnace ſhould be arched over with bricks. The beſt materials for this purpoſe are what the bricklayers call *Windſor* bricks, which ſhould be laid

in

oven is to be laid a large caſt-iron plate, over which you may raiſe a brick arch, covered with ſome broad tiles, two feet every way, cemented together with good mortar, and ſome pan-cratch laid on the tiles, whereupon you

---

in loam of the ſame kind as that the bricks are made with, and this, when burnt by fire, will cement the whole together, and become like one brick, but you ſhould be very careful, where-ever the fire is placed, that it be not too near the bark-bed; for the heat of the fire will, by its long continuance, dry the bark, ſo that it will loſe its virtue, and be in danger of taking fire; to prevent which, it will be the beſt method to continue a hollow between the brick-work of the fire and that of the pit, about eight inches wide, which will effectually prevent any damage ariſing from the heat of the fire; nor ſhould there be any wood-work placed near the flues, or the fire-place, becauſe the continual heat of the ſtove may, in time, dry it ſo much, as to cauſe it to take fire, which ought to be very carefully guarded againſt.

The entrance into this ſtove ſhould be either from a green-houſe, the dry ſtove, or elſe through the ſhed where the fire is made, becauſe in cold weather the front glaſſes muſt not be opened. The inſide of the houſe ſhould be clean white-waſhed, becauſe the whiter the back part of the houſe is, the better it will reflect the light, which is of great conſequence to plants, eſpecially in winter, when the ſtove is obliged to be ſhut up cloſe.

Over the top ſliding glaſſes there ſhould be either wooden ſhutters, or tarpawlins fixed in frames, to cover them in bad weather, to prevent the wet from getting through the glaſſes, and to ſecure them from being broken by ſtorms and hail, and theſe outer coverings will be very ſerviceable to keep out the froſt, and if in very ſevere cold there is a tarpawlin hung before the upright glaſſes in the front, it will be of great ſervice to the ſtove, and much leſs fire will preſerve a heat in the houſe.

In

you may ſet the *Melo-cactus*, and the *Echinomelo-cactus* plants. There are ſome who build a flue in the fronts of their ſtoves, near the glaſſes; this practice is wrong, as this flue dries the bark ſo much, as to ſtop all fermentation

---

In the warmeſt of theſe houſes or diviſions ſhould be placed the moſt tender exotic trees and plants; a liſt of which followeth:

Acajou, or Caſhew,
Ahouai,
Allegator Pear,
Allſpice, or Pimento,
Arrow Root,
Bananas,
Baſtard Cedar of *Barbadoes*,
Baſtard Locuſt of *Barbadoes*,
Bully Tree,
Button Wood of *Barbadoes*,
Cabbage Tree,
Cocoa Tree,
Calibaſh Tree,
Caſſada,
Cedar Tree of *Barbadoes*,
Cherry Tree of *Barbadoes*,
Cocoa Nut Tree,
Cortex Winteranus,
Cuſtard Apple,
Date Tree,
Dumb Cane,
Fiddle Wood,
Fig Tree, the Arched *Indian*,
Flower Fence of *Barbadoes*,
Fuſtick Tree,
Ginger,
Guiacum,
Logwood,
Macaw Tree,
Mamee Tree,
Mancinel Tree,

Mimoſa,

mentation from whence the heat proceeds; beſides, there is not the leaſt occaſion for this flue, as thoſe in the rear are ſufficient to warm the air above the tan-pits, which is all that is required. 2*do*, Obſerve that the

---

Mimoſa, or Senſitive Plants,
Nickar Tree, or Bonduc,
Palm Trees of ſeveral ſorts,
Papaw Tree,
Plantane Tree,
Plum Tree of *Jamaica*,
Hog Plum,
Sapotilla Tree,
Santa Maria,
Sour Sop,
Sugar Apple,
Sweet Sop,
Tamarind Tree,
Tulip Flower, or Whitewood.

Theſe, with moſt other ſorts of trees, ſhrubs, and herbaceous plants, which are natives of very warm countries, ſhould be plunged in the bark-bed for the reaſons already aſſigned, and over the flues may be a conveniency made to ſet the Melon-thiſtle, the tender ſorts of Cereuſes, and Euphorbiums, with other very tender ſucculent plants, which require to be kept dry in winter.

As in this ſtove are placed the plants of the hotteſt parts of the *Eaſt* and *Weſt-Indies*; the heat ſhould be kept up equal to that marked *Ananа* upon the botanical thermometers, and ſhould never be ſuffered to be above eight or ten degrees cooler at moſt, nor ſhould the ſpirit be raiſed above ten degrees higher in the thermometer during the winter ſeaſon, both which extremes will be equally injurious to the plants.

But in order to judge more exactly of the temper of the air in the ſtove, the thermometer ſhould be hung at a good diſtance from the fire, and the tube ſhould not be expoſed to the ſun, but, on the contrary, as much in

the firſt flue muſt be higher than the bark-pit, No. 6. by ſix inches at leaſt, to be built two feet and a half high, and ten inches broad, ſo as a foot-tyle may cover it; the ſecond flue, No. 3. may be two feet three inches;

ſhade as poſſible, becauſe, whenever the ſun ſhines upon the ball of the thermometer, but one ſingle hour, it will raiſe the liquor in the tube conſiderably, when perhaps the air of the houſe is not near ſo warm, which many times deceives thoſe who are not aware of this.

In the management of the plants placed in the bark-bed, there muſt be particular regard had to the temper of the bark, and the air of the houſe, that neither be too violent; as alſo to water them frequently, but ſparingly, in cold weather, becauſe when they are in continual warmth, which will cauſe them to perſpire freely, if they have not a proper ſupply to anſwer their diſcharge, their leaves will decay, and ſoon fall off.

The other ſort of ſtove, commonly called the dry ſtove, as was before ſaid, may be either built with upright and ſloping glaſſes at the top, in the ſame manner, and after the ſame model of the bark-ſtove, which is the moſt convenient; or elſe the front glaſſes, which ſhould run from the floor of the cieling, may be laid ſloping, to an angle of forty-five degrees, the better to admit the rays of the ſun in ſpring and autumn. The latter method has been chiefly followed by moſt perſons who have built theſe ſorts of ſtoves, but were I to have the contrivance of a ſtove of this kind, I would have it built after the model of the bark-ſtove, with upright glaſſes in front, and ſloping glaſſes over them, becauſe this will more eaſily admit the ſun at all the different ſeaſons, for in ſummer, when the ſun is high, the top-glaſſes will admit the rays to ſhine almoſt all over the houſe, and in winter, when the ſun is low, the front glaſſes will admit its rays; whereas, when the glaſſes are laid to any declivity in one direction, the rays of the ſun will not fall directly thereon above a fortnight in autumn, and about the ſame time in ſpring, and during the other parts of the year they will fall obliquely thereon, and in ſummer,

inches; and thoſe marked No. 4. two feet in height, aſcending gradually with the riſe of one foot, to the higheſt flues, No. 4. for the better drawing of the ſmoke: 3*tio*, The depth of both the tan-beds muſt be four feet. 4*to*,

---

mer, when the ſun is high, the rays will not reach above five or ſix feet from the glaſſes. Beſides, the plants, placed toward the back part of the houſe, will not thrive in the ſummer ſeaſon, for want of air, whereas, when there are ſloping glaſſes at the top, which run within four feet of the back of the houſe, theſe, by being drawn down in hot weather, will let in perpendicular air to all the plants; and of how much ſervice this is to all ſorts of plants, every one who has had opportunity of obſerving the growth of plants in a ſtove, will eaſily judge; for when plants are placed under cover of a cieling, they always turn towards the air and light, and thereby grow crooked; and if in order to preſerve them ſtrait, they are turned every week, they will nevertheleſs grow weak, and look pale and ſickly; for which reaſons, I am ſure, whoever has made trial of both ſorts of ſtoves, will readily join with me to recommend the model of the bark-ſtove for every purpoſe.

As to the farther contrivance of this ſtove, it will be neceſſary to obſerve the temper of the place, whether the ſituation be dry or wet; if it be dry, then the floor need not be raiſed above two feet above the level of the ground, but if it be wet, it will be proper to raiſe it three feet, eſpecially if theſe flues are to be carried under the floor; for when they are erected cloſe upon the ſurface of the ground, theſe will raiſe a damp, which will prevent the flues drawing ſo well as when they are more elevated. The furnace of this ſtove muſt be placed at one end of the houſe, according to the directions before given. This muſt be made according to the fuel intended to burn, which, if for coals or wood, may be made according to the common method for coppers, but only much larger, becauſe, as the fire is to be continued in the night chiefly, if there is not room to contain a proper quantity of fuel, it will occaſion much trouble

4*to*, Not any croſs-bars are to be uſed in the glaſs-frames, as they interrupt the ſteam or water collected in the ſtove from running off the inſide of the glaſs roof, ſo that

---

in attending the fire in the night, which ſhould be avoided as much as poſſible; becauſe whenever the trouble is made very great or difficult, and the perſon, who is intruſted with the care of it, has not a very great affection for the thing, and is withal not very careful, there will be great hazard of the fire being neglected, which in a little time may be of dangerous conſequence to the plants; but, if the fuel intended be turf, then the contrivance of the furnace may be the ſame as for the bark-ſtove already mentioned. The flues of this ſtove, if they are carried under the pavement, may be turned after the manner of *Fig.* I. in the plate, which will cauſe them to draw better than if ſtrait, and by this method of diſpoſing them, they may be ſo much turned as to reach from the back to the front of the houſe.

The depth of them ſhould not be leſs than eighteen inches, and the width nearly equal, which will prevent their being choaked up with ſoot, as is often the caſe when the flues are made too ſmall. The ſpaces between the flues ſhould be filled up either with dry brick rubbiſh, lime, or ſand, from which there will little moiſture ariſe, and the flues ſhould be cloſely plaiſtered with loam, both within and without, and the upper part of them covered with a coarſe cloth under the floor, to prevent the ſmoke from getting into the houſe.

When the flue is carried from the furnace to the end of the houſe, it may be returned in the back above the floor twice in ſtrait lines, which may be contrived to appear like a ſtep or two, by which means the ſmoke will be continued in the houſe until all its heat is ſpent, which will conſequently warm the air of the houſe the better, and the chimneys, through which the ſmoke is to paſs off, may be either at both ends or in the middle, carried up in the thickneſs of the brick work of the flues, ſo as not to appear in ſight

that the ſteam drops upon the plants, which is of moſt pernicious conſequence. 5*to*, The ſhed to incloſe the fronts of the ovens ſhould have the doors in the ends, and

---

ſight in the houſe. The flues ſhould be firſt covered with broad tiles, and then a bed of ſand laid over them, about two inches thick, upon which the plain tiles ſhould be laid, to correſpond with the reſt of the floor. This thickneſs of cover will be full enough to prevent the too ſudden riſe of the heat from the flues.

But if the furnace is placed under the floor, the thickneſs of the ſand between the brick arch that covers it, and the floor, ſhould not be leſs than four or ſix inches; ſo that the bottom of the furnace ſhould be ſunk the lower; and if from the fire-place to the end of the houſe, the flues are laid a little riſing, it will cauſe them to draw the better; but this riſe muſt be allowed in the placing them lower under the floor next the fire, becauſe the floor muſt be laid perfectly level, otherwiſe it will appear unſightly.

In this ſtove there ſhould be a ſtand or ſcaffold erected for placing ſhelves above each other, in the manner of *Fig.* II. in the plate, that the plants may be diſpoſed above each other, ſo as to make a handſome appearance in the houſe; but theſe ſhelves ſhould be made moveable, ſo as to be raiſed or ſunk, according to the various heights of the plants; otherwiſe it will be very troubleſome to raiſe or ſink every particular plant, according to their heights, or every year as they advance in their growth.

In placing the feet of this ſtand, you muſt be careful not to ſet them too near the fire, nor directly upon the top of the flue, eſpecially that end next the fire, leſt, by the conſtant heat of the tiles, the wood ſhould take fire, which cannot be too much guarded againſt; ſince ſuch an accident would probably deſtroy all the plants, if the houſe eſcaped being burnt. This ſtand or ſcaffold ſhould be placed in the middle of the houſe, leaving a paſſage about two feet and a half in the front,

and not in the rear; for, in order to cover the upper range of glaſſes with their wooden covers, it may be neceſſary to uſe a ladder, which otherwiſe might obſtruct their opening. *6to*, I thought it quite adviſeable to have

---

and another of the ſame width in the back, for the more conveniently paſſing round the plants to water them, and that the air may freely circulate about them. In diſpoſing the plants, the talleſt ſhould be placed backward, and the ſmalleſt in front; ſo that there will not be occaſion for more than five or ſix ſhelves in height at moſt; but the ſcaffold ſhould be ſo contrived, that there may be two or three ſhelves in breadth laid upon every riſe, whenever there may be occaſion for it, which will ſave a deal of trouble in diſpoſing of the plants.

In the erection of theſe ſtoves, it will be of great ſervice to join them all together with only glaſs partitions between them, as was before obſerved; and where ſeveral of theſe ſtoves and green-houſes are required in one garden, then it will be very proper to have the green-houſe in the middle, and the ſtoves at each end, or carried on in one ſtrait front.

By this contrivance in the ſtructure of theſe houſes, a perſon may paſs from one to the other of them, without going into the open air; which, beſides the pleaſure to the owner, is alſo of great uſe, becauſe there will be no occaſion of making a back-way into each of them, which otherwiſe muſt be, ſince the front glaſſes of the ſtove ſhould not be opened in cold weather, if it can poſſibly be avoided on any account, otherwiſe the cold air ruſhing in, will greatly prejudice the very tender plants.

But beſides the ſtoves here deſcribed, and the green-houſe, it will be very neceſſary to have a glaſs-caſe or two, where-ever there are great collections of plants. Theſe may be built exactly in the manner already deſcribed for the ſtoves, with upright glaſſes in front, and ſloping glaſſes over the top of them, which ſhould run within four feet of the back of the houſe. The height, depth,

have ſmall front windows to this ſtove, to admit air by them, when it cannot be done by raiſing the upper glaſſes. If your ſoil is wet, the whole of the ſtove ſhould be built above ground; but, on the contrary, if you

---

depth, and other dimenſions, ſhould be conformable to that of the ſtoves, which will make a regularity in the building. Theſe may be placed at the end of the range on each hand beyond the ſtoves; and if there be a flue carried round each of theſe, with an oven to make a fire in very cold weather, it will ſave a great deal of trouble, and prevent the froſt from ever entering the houſe, be the winter ever ſo ſevere; but the upper glaſſes of theſe houſes ſhould have either ſhutters of wood, or tarpawlins in frames, to cover them in froſty weather; and if there is a contrivance to cover the upright glaſſes in froſt, either with mats, ſhutters, or tarpawlins, it will be of great uſe in winter, otherwiſe the flue muſt be uſed when the froſt comes on, which ſhould not be done but upon extraordinary occaſions, becauſe the deſign of theſe houſes is, to keep ſuch plants as require only to be preſerved from froſt, and need no additional warmth; but at the ſame time, require more air than can conveniently be given them in a green-houſe. In one of theſe houſes may be placed all the ſorts of Ficoides, *African* Sedums, Cotyledons, and other ſucculent plants from the *Cape of Good Hope*. In the other may be placed the ſeveral kinds of Arctotis, Oſteoſpermum, Royena, Lotus, and other woody or herbaceous plants from the ſame country, or any other in the ſame latitude.

Thus, by contriving the green-houſe in the middle, and one ſtove and a glaſs-caſe at each end, there will be a conveniency to keep plants from all the different parts of the world, which can be no otherwiſe maintained but by placing them in different degrees of heat, according to the places of their native growth.

The ſtoves before deſcribed are ſuch as are uſually built to maintain exotic plants, which will not live in *England*,

you have a dry ſoil, the front of the ſtove may riſe two feet above the ſurface, and have upright windows in both ends. The full expence for erecting and compleating this ſtove, will be near forty-eight pounds, and the annual charge for repairs about five.

There

---

unleſs they enjoy a temperature of air, approaching to that of the ſeveral countries from whence they are brought; therefore, whoever is inclinable to preſerve a large collection of plants from different countries, muſt contrive to have two or three of theſe ſtoves, each of which ſhould be kept in a different temperature of warmth; and the plants ſhould be alſo adapted to the ſeveral degrees of heat, as they ſhall require to preſerve them; and as the far greater number of ſtoves, which have been erected in *England*, are deſigned for the culture of the Ananas only, ſo I ſhall add a deſcription and plans of two ſorts of ſtoves, of the leaſt expence in building, for this purpoſe; ſo that whoever is inclinable to erect a ſtove for ripening the Ananas, may, by attending to the plans and deſcriptions, direct the building and contriving ſuch ſtoves as they are deſirous to have, or according to the number of fruit propoſed to be ripened annually.

The firſt ſort of ſtove is that which is deſigned for the the plants which produce the fruit the ſame year; for as the plants do not generally fruit, until the ſecond year from their being taken from the old plants, whether they are ſuckers taken from the ſide of the plant, or crowns taken from the fruit, if they fruit the ſucceeding year, the fruit will be ſmall; therefore, when they are properly managed, they will not produce their fruit until the ſecond year: by which time they will have obtained ſtrength to produce large fruit, in which their greateſt value conſiſts; for although there are ſeveral varieties of this fruit, which differ in degrees of goodneſs, as in moſt other fruits; yet they may all of them be improved in their ſize, without diminiſhing their excellencies in taſte; though I know there are ſome perſons of a contrary opinion, and who believe, that the

ſmall

There are ſome who ſet thoſe plants in glazed frames, made three feet high at the back, ſloping to one and a half in front, and ſix feet wide, with which they cover a tan-pit of three feet deep, built on all ſides with a ſtone wall, and paved at bottom, obſerving that one

---

ſmall fruit are always better flavoured than the large; but from long experience I can aſſert, that the larger and better nouriſhed this fruit is, the higher will be its flavour, ſuppoſing the ſorts are the ſame; therefore every perſon, who cultivates this fruit, ſhould endeavour to have it improved to the greateſt perfection; in order to which it will be proper to have a ſmall ſtove, in which the young plants may be placed, to bring them forward for fruiting; and the following autumn they ſhould be removed into the larger ſtove for ripening:—But I ſhall return to the deſcription of the larger ſtove. The length of this muſt be proportionable to the quantity of fruit deſired in one ſeaſon; for as to their width, that ſhould not be much varied; the tan-bed ſhould never be narrower than ſix, nor ſhould it be more than ſeven feet wide; for, when it is more, there will be difficulty in reaching thoſe plants which are in the middle of the bed, to water or clean them, and if there is room enough on each ſide of the bed for a walk, a foot and a half broad, it will be ſufficient for perſons to water and do every thing which is neceſſary to the plants; and as theſe places are not deſigned for walking in, ſo it is to no purpoſe to have broad walks, which will take up too much ſpace; and the fires muſt be larger, in proportion to the ſpace of the houſe; otherwiſe the air cannot be kept in a proper temperature of warmth. If the ſtove is made thirty-ſix feet long in the clear, then the tan-bed may be made thirty-three feet long, and a walk left at each end a foot and a half wide; which will be ſufficient to walk round the bed, to water and attend the plants; and ſuch a tan-bed will contain eighty fruiting plants very well, if the bed is ſeven feet wide; and this ſtove may be very well warmed with one fire; but if the ſtove is much larger, there muſt be two fire-places contrived,

one

one foot is to be ſunk under the ſurface, and the other two above it. Others have theſe beds with a brick wall at the back, in which there are three flues and a furnace below, to warm the air in winter; and here they nurſe the young crowns, and youngeſt off-ſets in winter, laying over

---

one at each end, otherwiſe the air of the houſe cannot be kept in a proper temperature of heat. The quantity of fuel which will be wanting for a ſtove of thirty-ſix feet long in the clear, is about three chaldron and a half of coals, or in ſuch proportion for any other ſort of fuel; when coals can be had reaſonable, it is the beſt kind of fuel; and the pit or *Scotch* coal is preferable to the *Newcaſtle* coal, becauſe the latter is very ſubject to melt or run into clinkers, when the oven is very hot, which the pit-coal never does, but always burns away with a white aſh, making but little ſoot; ſo that the flues will not require to be ſo often cleaned, as when the other coal is uſed. The next beſt fuel for ſtoves is peat, where it can be procured good, but the ſcent of this fuel is diſagreeable to many people. There are ſome perſons who burn wood in their ſtoves, but this fuel requires much greater attendance than any other, therefore is not very proper for this purpoſe; but in the building of the ſtoves, the ovens muſt be contrived for the ſort of fuel, which is to be uſed in them; but theſe will be afterward deſcribed, and the places where they ſhould be ſituated, are delineated in the plan.

The ſtoves deſigned for ripening the fruit of the Ananas, ſhould have upright glaſſes in their front, which ſhould be high enough to admit a perſon to walk upright under them on the walk in the front of the houſe; or, where this cannot be admitted, the front walk may be ſunk one foot lower than that on the back of the tan-bed, ſo that the ſurface of the bed will be a foot above the walk, which will be rather an advantage, as the plants will be ſo much nearer the glaſs; and a perſon may, with great eaſe, water and attend the plants, when they are thus raiſed above the walk; therefore, when a ſtove is ſo ſituated, as that the raiſing of it high above ground, might be attended with inconvenience, the walks

over the glaſſes a tarpawlin or thin board covers, where you ſhould have the thermometer regulated by Mr. *Miller*'s of *Chelſea*. The frame of the laſt conſtruction I would recommend, as they ſerve both winter and ſummer uſe. And it is very neceſſary to have theſe frames at

---

walks quite round the tan-bed may be ſunk a foot or eighteen inches below the top of the bed; which will admit of the ſtove being built ſo much lower; for if there is height for a perſon to walk under the glaſſes, it will be as much as is required; but as the flues, when returned four times againſt the back-wall, will riſe near ſeven feet, ſo the bottom of the lower flue ſhould be on the ſame level with the walk, to admit room enough for the whole under the roof. Over the upright glaſſes there muſt be a range of ſloping glaſſes, which muſt run to join the roof; which ſhould come ſo far from the back-wall, as to cover the flues, and the walk behind the tan-pit: for if the ſloping glaſſes are of length ſufficient to reach nearly over the bed, the plants will require no more light; therefore theſe glaſſes ſhould not be longer than is abſolutely neceſſary, which will render them more manageable; but the annexed plan will render this more intelligible than any written deſcription can do.

The other ſort of ſtove, which is deſigned for raiſing of young plants, until they are of a proper ſize to produce fruit, need not be built ſo high as the former; therefore there will not be wanting any upright glaſſes in the front; but the frames may be made in one ſlope, as in the annexed plan: indeed, of late years, many perſons have made tan-beds, with two flues running through the back-wall, to warm the air in winter; and theſe beds have been covered with glaſſes, made in the ſame manner as thoſe for common hot-beds, but larger; theſe were contrived to ſave expence, and in many caſes have anſwered the intention, but to theſe there are ſeveral objections. 1. That of having no paſſage into them; ſo that the glaſſes muſt be taken off, when the plants want water, &c. 2. The damps very often riſe in the winter ſeaſon,

at work, as well as the ſtoves, where there are much fruit. The expence of erecting ſuch a frame, or ſmall ſtove, will be about ſixteen pounds, and the annual charge three. In theſe frames you may ripen three dozen of fruit every year.

I would

ſeaſon, when the glaſſes are cloſely ſhut, which often proves very injurious to the plants. 3. There is danger of the tan taking fire, where there is not great care taken that it doth not lie near the flues; ſo that although the ſmall ſtoves here propoſed require more expence in the building, yet, being greatly preferable to thoſe pits, and the after-expence being the ſame, they will be found ſo much more convenient, as to render them more general, where the fruit is cultivated.

Where there is no danger of the wet ſettling about the tan in winter, the bark-pit may be ſunk two feet deep in the ground, and raiſed one foot above the ſurface; the only walk which is neceſſary in theſe ſtoves, is that on the back of the tan-bed, which may be on a level with the ſurface of the ground, ſo that the tan-bed will be more than one foot above the walk, and the flues beginning from the level of the walk, there will be room to return them three times; which will warm the air much more, with the ſame fire, than when they are carried but twice the length of the ſtove.

But in wet land, the tan-bed ſhould be wholly raiſed above the level of the ground, in order to preſerve the tan from being chilled by moiſture; and in ſuch places the walk on the back ſhould be raiſed near two feet above the level of the ground; becauſe the tan-bed ſhould not riſe much more than one foot above the walk; for if it is higher, it will be more difficult to reach the plants when they require water; the brick wall of the pit, on the ſide next the walk, need not be more than four inches thick, ſo far as riſes above the walk; but below that, it ſhould be nine inches thick. The reaſon for reducing the wall above, is to gain room for the walk, which would otherwiſe be too much contracted; and if there is a kirb of oak laid on the top

of

I would recommend this ſmall ſtove for the plants, when firſt brought in, in preference to the larger, as the air in them is ſooner heated, and more eaſily admitted; theſe ſtoves are alſo of ſingular uſe, to bring forward the crowns and young plants, and prepare them

---

of the four-inch wall, it will ſecure the bricks from being diſplaced, and ſufficiently ſtrengthen the wall; which being but one foot above the walk, will not be in any danger of falling; and on this kirb there may be two or three upright iron bars, fixed with claws, to ſupport the crown-piece of timber, which will ſecure it from hanging in the middle, which in a great length is very often the caſe, where there are no ſupports laid under it; there may be more of theſe bars, according to the length of the ſtove; but if they are about ten feet aſunder, it will be near enough. If theſe iron bars are one inch ſquare, they will be ſtrong enough to anſwer the deſign.

But as it is hoped that the annexed plan of this ſmall ſtove will convey a clear idea of the whole contrivance; this will render it unneceſſary to add any farther deſcription here:

An Explanation of the Plate which repreſents the two ſorts of Frames with oiled Paper for covering Melons.

THE firſt of theſe frames is contrived like the covers of waggons; it has a frame of wood at the baſe, to which are faſtened broad hoops, which are bent over circularly, as is repreſented in fig. 1. The width of this frame ſhould be from five to ſix feet, for leſs than five feet will not be ſufficient to cover the bed, and if they are more than ſix feet broad, they will be too heavy and troubleſome to move. *a* Shews the ſection of the width; *b* the frame of wood at the baſe; *c* the arch of hoops; and *d* a ſmall ſlip of wood which is faſtened to the under ſide of the hoops, to keep them in their proper poſition.

The diſtance between each hoop ſhould not be more than one foot, and there ſhould be two rows of ſtrong

pick-

them for the larger or fruiting ſtove; and where a great quantity of fruit is wanted, there may be one of theſe frames at each end of the larger, for a more regular appearance. A plan of this ſtove and nurſery-bed is given in the copper-plate. The back wall of theſe ſtoves ſhould be

---

packthread or rope-yarn on each ſide of the arch, running from hoop to hoop, at the places marked *e. e. e. e.* to keep the oiled paper from ſinking down with wet. The length of each frame ſhould not be much more than ten feet, which will be ſufficient length for covering three plants, that being about the ſize of a three-light frame; for if they are longer, they will be heavy and troubleſome to move; therefore there ſhould be as many of theſe frames made, as may be neceſſary for covering the quantity of plants deſired. Fig. 2. repreſents two lengths of theſe frames joined; *G.* ſhews the profile of the frame; and *H.* repreſents the paper turned back, that it may be ſeen how it is laid over the frame.

Fig. 3. repreſents the other ſort of frame, which is contrived like the roof of a houſe; *a* ſhews a ſection of the baſe; *b b* the two ſlopes; *c* one of the ſides which is contrived to be raiſed at any time to admit air to the plants; *d* ſhews the place where this ſhuts down; and *e* the prop which ſupports it. If in the making of theſe frames every other light is made with hinges, ſo as to be raiſed, and on the oppoſite ſide they are contrived to riſe alternately, it will be a very good method; for then air may be given at the ſide contrary to the wind, and in very warm weather, when the plants require a large ſhare of air, they may all be raiſed on both ſides, which will convey a thorough air to the whole bed Fig. 4. ſhews the plane of theſe frames, and fig. 5. the ſame erected; *g* repreſents the profile of it, and *f* the covering of paper. This ſort of frame may be made of pantile laths, or of ſlips of deal of like dimenſions, becauſe they ſhould not be too heavy; but the baſe of the frame to which they are faſtened, ſhould be more ſubſtantial. Some perſons, who have made trial of both, recommend

be two feet thick, and the flues thus disposed of; the first flue to be two feet high, and nine inches broad; the second, one foot nine inches high, the breadth the same; the third, fourteen inches high, and the same breadth; to be covered with brick four inches thick; and

---

mend the latter for the convenience of giving air to the plants, for there is no other contrivance in the first sort for admitting the air, but by raising the whole frame on one side in proportion to the quantity of air intended to be admitted, and when the season is warm, they generally raise those frames on both sides, and permit the plants to run from under them.

When these frames are made, if they are well painted over with the following composition, it will greatly preserve them, viz. to every six pounds of melted pitch, add half a pint of lintseed oil, and a pound of brick dust; these should be well mixed together, and used warm; when this dries, it becomes a hard cement, so that no moisture can penetrate through it, and is the best sort of pigment for all timber exposed to the weather, I have ever seen used; so that where the colour is not offensive to the sight, it should be preferred to every other.

When the frames are thoroughly dry, the paper should be pasted on to the frames. The best sort of paper for this purpose, is what they call *Dutch* wraper, this is strong, and, when oiled, becomes very pellucid, and admits the rays of light through it extremely well. After the paste is well dried, the paper should be oiled over on the outside, which, if well done with lintseed-oil, will be sufficient, for the oil will soak quite through the paper, so there will be no necessity for oiling both sides, nor for doing it over more than once. The oil should be dry before the frames are exposed to the wet, otherwise the paper will tear. In the pasting of the paper on the frames, there should be care taken to stretch it very smooth, and also to paste it to all the ribs of the frames, and also to the packthreads, to prevent the wind from raising the paper, which would soon tear it, when it became loose.

The

and ſhould the top flue be ſuppoſed to come too near the timber of the frame, the wall may be raiſed a foot or two.

The

The deſcription juſt given, together with the annexed plan, it is hoped, will be ſufficient inſtructions for any one who is deſirous of making theſe covers, and what has been before mentioned under the article *Melon*, will be directions enough for the uſe of them, ſo that I ſhall only add one caution, which may be neceſſary to repeat here, which is, not to keep theſe covers too cloſe down upon the plants, leſt it draw them too weak, ſo that air ſhould always be admitted to the plants at all times, in proportion to the warmth of the ſeaſon.

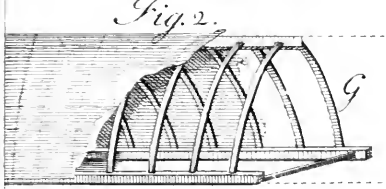
Theſe covers of oiled paper are not only uſeful for covering of Melons, but are the beſt things to cover cuttings of exotic plants, when planted, that can be contrived; and are alſo capable of being uſed for many other purpoſes.

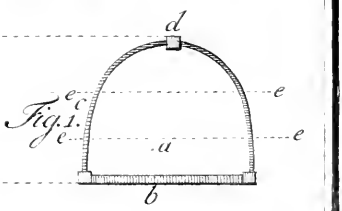
The paper will ſeldom laſt longer than one ſeaſon, ſo it will require a new covering every ſpring, but if the frames are well made, and when they are out of uſe, laid up in ſhelter from the wet, they will laſt ſeveral years, eſpecially if there is a band of ſtraw laid round the Melons, upon which the frame may ſtand, ſo they will not reſt upon the ground, and the ſtraw bands will prevent the damp from riſing ſo as to rot them. Theſe ſtraw bands are ſuch as are recommended for the hot-beds of Aſparagus in winter.

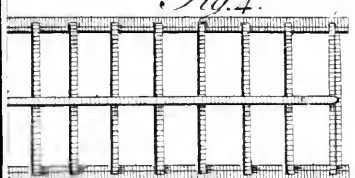
Mr. Miller's *Directions for raiſing the Ananа, or Pine-Apple.*

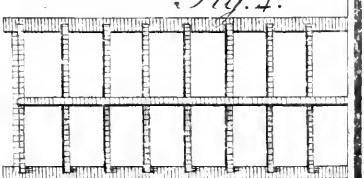
Theſe plants are propagated by planting the crowns which grow on the fruit, or the ſuckers which are produced either from the plants, or under the fruit; either of which I have found to be equally good; although by ſome

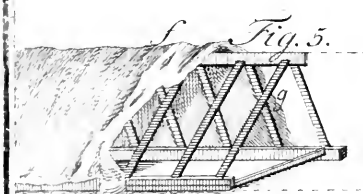
Two Sorts of Frames with oyled Paper for Covering Melons.

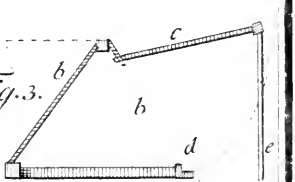


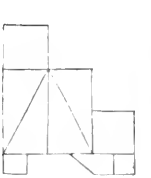








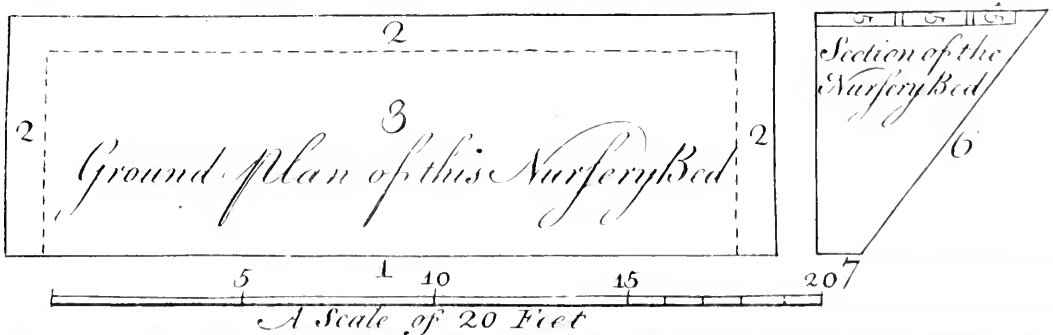




PLAN of the Nursery Bed for the Crowns & Suckers of the Pine Apples.

1 the length of the Stove within Walls 20 feet.—2 the walks at the Back and two Ends one foot each in breadth.—3 the Tann Pit 18 feet long 5 broad and three feet deep.—4 the height of the Back Wall 6 feet.—5 three flues.—6 Slope Glasses about eight feet long.—7 the front Glasses two feet high.

NB: the furnace as in the other Stove but it must be inverted into the Shade which covers it.



The compoſt, which you are to prepare ſome months before, is to conſiſt of two thirds of good loamy kitchen-garden mould, and if of a yellow rich loam, the better, one third of old rotted cows dung, and when the latter is

---

ſome perſons the crown is thought preferable to the ſuckers, as ſuppoſing it will produce fruit ſooner which is certainly a miſtake; for by conſtant experience I find the ſuckers (if equally ſtrong) will fruit as ſoon, and produce as large fruit, as the crowns.

The ſuckers and crowns muſt be laid to dry in a warm place, for four or five days, or more, (according to the moiſture of the part which adhered to the old plant or fruit); for, if they are immediately planted, they will rot. The certain rule of judging when they are fit to plant, is by obſerving if the bottom is healed over, and become hard; for if the ſuckers are drawn off carefully from the old plants, they will have an hard ſkin over the lower part; ſo need not lie ſo long as thoſe which by accident may have been broken. But whenever a crown is taken from the fruit, or the ſuckers from old plants, they ſhould be immediately diveſted of their bottom-leaves, ſo high as to allow depth for their planting; ſo that they may be thoroughly dry and healed in every part, leſt, when they receive heat and moiſture, they ſhould periſh, which often happens when this method is not purſued. If theſe ſuckers or crowns are taken off late in the autumn, or during the winter, or early in the ſpring, they ſhould be laid in a dry place in the ſtove, for a fortnight or three weeks before they are planted; but in the ſummer-ſeaſon they will be fit for planting in three or four days.

As to the earth in which theſe ſhould be planted; if you have a rich good kitchen-garden mould, not too heavy, ſo as to detain the moiſture too long, nor over-light and ſandy, it will be very proper for them without any mixture: but where this is wanting, you ſhould procure ſome freſh earth from a good paſture; which ſhould be mixed with about a third part of rotten neats-dung, or the dung of an old Melon or Cucumber-bed, which

is not to be had, take the bottom of a well rotted Melon or Cucumber-bed; to every eight barrows of this put one of ſea-ſand; but ſhould your loam be of a ſandy texture, add thereto a third of fat marle: this compoſt

---

is well conſumed. Theſe ſhould be mixed ſix or eight months at leaſt before they are uſed; but if it be a year, it will be the better; and ſhould be often turned, that their parts may be the better united, as alſo the clods well broken. This earth ſhould not be ſcreened very fine; for if you only clear it of the great ſtones, it will be better for the plants than when it is made too fine. You ſhould always avoid mixing any ſand with the earth, unleſs it be extremely ſtiff; and then it will be neceſſary to have it mixed at leaſt ſix months or a year before it is uſed; and it muſt be frequently turned, that the ſand may be incorporated in the earth, ſo as to divide its parts: but you ſhould not put more than a ſixth part of ſand; for too much ſand is very injurious to theſe plants.

In the ſummer-ſeaſon, when the weather is warm, theſe plants muſt be frequently watered; but you ſhould not give them large quantities at a time: you muſt alſo be very careful, that the moiſture is not detained in the pots, by the holes being ſtopped; for that will ſoon deſtroy the plants. If the ſeaſon is warm, they ſhould be watered every other day; but in a cold ſeaſon, twice a week will be often enough: and during the ſummer-ſeaſon, you ſhould once a week water them gently all over their leaves; which will waſh the filth from off them, and thereby greatly promote the growth of the plants.

There are ſome perſons who frequently ſhift theſe plants from pot to pot: but this is by no means to be practiſed by thoſe who propoſe to have large well-flavoured fruit; for unleſs the pots be filled with the roots, by the time the plants begin to ſhew their fruit, they commonly produce ſmall fruit, which have generally large crowns on them: ſo that the plants will not require to be new-potted oftener than twice in a ſeaſon: the firſt time ſhould be about the end of *April*, when the

poſt ſucceeded ſo well, that it produced much larger fruit than any other, which induced me ever after to uſe a good deal of marle for theſe plants: the colour of the marle ſhould be white, or of a yellowiſh caſt, well dug,

---

the ſuckers and crowns of the former year's fruit (which remained all the winter in thoſe pots in which they were firſt planted) ſhould be ſhifted into larger pots; *i. e.* thoſe which were in halfpenny or three-farthing pots, ſhould be put into penny, or, at moſt, three-halfpenny pots, according to the ſize of the plants; for you muſt be very careful not to over-pot them, nothing being more prejudicial to theſe plants. The ſecond time for ſhifting of them is, toward the latter end of *Auguſt*, or the beginning of *September*, when you ſhould ſhift thoſe plants which are of a proper ſize for fruiting the following ſpring, into two-penny pots, which are full large enough for any of theſe plants. At each of theſe times of ſhifting the plants, the bark-bed ſhould be ſtirred up, and ſome new bark added, to raiſe the bed up to the height it was at firſt made; and when the pots are plunged again into the bark-bed, the plants ſhould be watered gently all over their leaves, to waſh off the filth, and to ſettle the earth to the roots of the plants. If the bark-bed be well ſtirred, and a quantity of good freſh bark added to the bed, at this latter ſhifting, it will be of great ſervice to the plants; and they may remain in the tan until the beginning of *November*, or ſometimes later, according to the mildneſs of the ſeaſon; and will not require any fire before that time. During the winter-ſeaſon, theſe plants will not require to be watered oftener than every third or fourth day, according as you find the earth in the pots to dry: nor ſhould you give them too much at each time; for it is much better to give them a little water often, than to over-water them, eſpecially at that ſeaſon.

You muſt obſerve never to ſhift thoſe plants which ſhew their fruit, into other pots; for if they are removed after the fruit appears, it will ſtop the growth, and thereby cauſe the fruit to be ſmaller, and retard its ri-

dug, and manured one year before uſing. Where the kitchen-garden mould is not to be had, take virgin earth ten inches deep below the ſward, and no lower, leaving it with the ſward, let them rot one year, and when fit for

---

pening; ſo that many times it will be *October* or *November* before the fruit is ripe: therefore you ſhould be very careful to keep the plants in a vigorous growing ſtate, from the firſt appearance of the fruit, becauſe upon this depend the goodneſs and ſize of the fruit; for if they receive a check after this, the fruit is generally ſmall and ill-taſted.

When you have cut off the fruit from the plants, whoſe kind you are deſirous to propagate, you ſhould trim the leaves, and plunge the pots into a moderate hot-bed, obſerving to refreſh them frequently with water, which will cauſe them to put out ſuckers in plenty; ſo that a perſon may ſoon be ſupplied with plants enough of any of the kinds, who will but obſerve to keep the plants in health.

There is not any thing which can happen to theſe plants of a more dangerous nature, than to have them attacked by ſmall white inſects, which appear at firſt like a white mildew, but ſoon after have the appearance of lice: theſe attack both root and leaves at the ſame time; and, if they are not ſoon deſtroyed, will ſpread over a whole ſtove in a ſhort time; and in a few weeks will entirely ſtop the growth of the plants, by ſucking out the nutritious juice, ſo that the leaves will appear yellow and ſickly, and have generally a great number of yellow tranſparent ſpots all over them. Theſe inſects, after they are fully grown, appear like bugs; and adhere ſo cloſely to the leaves, as not to be eaſily waſhed off, and ſeem as if they had no life in them. They were originally brought from *America* upon the plants which were imported from thence, and I believe they are the ſame inſects which have deſtroyed the ſugar-canes of late years in ſome of the *Leeward-Iſlands*. Since they have been in *England*, they have ſpread greatly in ſuch ſtoves, where there has not been more than ordinary

for uſe, take one third of the well rotted dung, but ſhould the ground be ſtiff, uſe ſand in the ſame proportion, and a fourth part marle; but if your mould is free, you need not uſe any ſand: Incorporate your dung and earth

---

nary care taken to deſtroy them. They have alſo attacked the Orange-trees in many gardens near *London*, and have done them incredible damage; but I do not find they will endure the cold of our climate in winter, ſo that they are never found on ſuch plants as live in the open air. The only method I have yet been able to diſcover for deſtroying theſe inſects, is, by waſhing the leaves, branches, and ſtems, of ſuch branches as they attack, frequently with water, in which there has been a ſtrong infuſion of Tobacco-ſtalks, which I find will deſtroy the inſects, and not prejudice the plants. But this method cannot be practiſed on the *Ananas* plants, becauſe the inſects will faſten themſelves ſo low between the leaves, that it is impoſſible to come at them with a ſponge to waſh them off; ſo that if all thoſe which appear to the ſight were cleared off, they will ſoon be ſucceeded by a freſh ſupply from below; and the roots will be alſo equally infeſted at the ſame time. Therefore, where-ever theſe inſects appear on the plants, the ſafeſt method will be, to take the plants out of the pots, and clear the earth from the roots; then prepare a large tub, which ſhould be filled with water, in which there has been a ſtrong infuſion of tobacco-ſtalks; into this tub you ſhould put the plants, placing ſome ſticks croſs the tub, to keep the plants immerſed in the water. In this water they ſhould remain twenty-four hours; then take them out, and with a ſponge waſh off all the inſects from the leaves and roots, which may be eaſily effected when the inſects are killed by the infuſion; then cut off all the ſmall fibres of roots, and dip the plants into a tub of fair water, waſhing them therein, which is the moſt effectual way to clear them from the inſects. Then you ſhould pot them in freſh earth, and having ſtirred up the bark-bed, and added ſome new tan

earth ſix months at leaſt before you uſe them: this compoſt is to lie in an airy part of the garden, and the beſt expoſed to the ſun, which, after the three firſt months, muſt be turned over every fortnight, to imbibe the nitrous particles of the air.

I pro-

---

to give a freſh heat to the bed, the pots ſhould be plunged again, obſerving to water them all over the leaves (as was before directed) and this ſhould be frequently repeated during the ſummer-ſeaſon; for I obſerve theſe inſects always multiply much faſter where the plants are kept dry, than in ſuch places where the plants are duly watered, and kept in a growing ſtate. And the ſame is alſo obſerved in *America*; for it is in long droughts that the inſects make ſuch deſtruction of the ſugar-canes. And in thoſe iſlands where they have had ſeveral very dry ſeaſons of late, they have increaſed to ſuch a degree, as to deſtroy the greateſt part of the canes in the iſlands, rendering them not only unfit for ſugar, but ſo poiſon the juice of the plant, as to diſqualify it for making rum; ſo that many planters have been ruined by theſe inſects.

As theſe inſects are frequently brought over from *America* on the *Ananas* plants, which come from thence; thoſe perſons who procure theſe plants from thence, ſhould look carefully over them when they receive them, to ſee they have none of theſe inſects on them; for if they have, they will ſoon be propagated over all the plants in the ſtoves where theſe are placed: therefore, whenever they are obſerved, the plants ſhould be ſoaked (as was before directed) before they are planted into pots.

It was formerly the common practice of moſt perſons, who cultivated this fruit in *Europe*, to build dry ſtoves, in which they kept their plants in winter, placing the pots on ſcaffolds (after the manner in which orange-trees are placed in a green-houſe), and in the ſummer to keep them in hot-beds of tanners bark under frames: but this is found by late experience a bad method; for the glaſſes lying ſo near over the plants, there is not a ſufficient

I proceed now to the culture of the Ananas or Pine-apple, the beſt kinds of which are:

1mo, *Pyramidal Pine-apple, with a yellow Fleſh, or, Ananas aculeatus fructu pyramidato, carne aurea. Plumer. Ind. Occid. hiſt. plant.*

2do,

ſufficient quantity of air in the bed to nouriſh the fruit, and give it that vinous flavour which good fruit always abounds with; and when the glaſſes are cloſely ſhut down in the night, the vapours which ariſe from the fermentation of the tan, and the perſpiration of the plants, are cloſely pent in, and being condenſed againſt the glaſſes, fall in water on the plants.

Therefore, to remedy this inconvenience, it is now the practice of thoſe perſons who are deſirous to propagate this fruit, to erect low ſtoves, with pits therein for the hot-bed, in the manner hereafter deſcribed: theſe are built in different ways, according to the fancy of the contriver. Some perſons build them with upright glaſſes in front, about four feet high, and ſloping glaſſes over theſe, which riſe about ſix feet high, ſo that there is juſt height enough for perſons to walk upright on the back-ſide of the bark-bed. Others make but one ſlope of glaſſes, from the top of the ſtove, down to the plate, which lies about ſix or eight inches above the bark pit, in the front of this ſtove; ſo that in this ſtove there is no walk made in the front between the bark-pit and the glaſſes; but the inconveniency of watering the plants, as alſo of coming near thoſe plants which are placed in the front of the ſtove, to clean them, has, in ſome meaſure, brought them into diſeſteem; ſo that few perſons do now build them, though the expence is much leſs than of the other kind of ſtoves One of theſe ſtoves, about twenty-five feet long in the clear, with the pit for the tan reaching from end to end, and ſix feet and an half wide, will contain about an hundred plants; ſo that whoever is deſirous to have this fruit, may eaſily proportion their ſtove to the quantity of fruit which they are willing to have.

2do, *Olive-coloured Pine-apple, or, Ananas fructu ovato ex luteo virescente, carne lutea. Plum. hist.*

3tio, *The green Pine-apple, or, Ananas aculeatus fructu pyramidali ex viridi flavescente, or King-Pine.*

When

But it will be alſo neceſſary to have a bark-pit under a deep frame, in order to raiſe the young plants; for in this bed you ſhould plunge the ſuckers, when they are taken from the old plants, as alſo the crowns which come from the fruit; ſo that this frame will be as a nurſery to raiſe the young plants to ſupply the ſtove: but theſe plants ſhould not remain in theſe frames longer than till the beginning of *November*, unleſs the frame have flues in it to warm the air (in the manner before deſcribed), which are very uſeful, as nurſeries, to keep the young plants till they are of a proper ſize to produce fruit; ſo that you may keep theſe cooler than the ſtove; which may be every autumn filled only with bearing plants, whereby a much greater quantity of fruit may be annually produced, than can be where young and old plants muſt be crouded into the ſame ſtove: but where there are no conveniencies of this kind, the young plants, about the middle or latter end of *October*, muſt be removed into the ſtove, and being ſmall, may be crouded in amongſt the larger plants; for ſince they will not grow much during the winter-ſeaſon, they may be placed very cloſe together. The beginning of *March* you muſt remove theſe plants out into the hot-bed again, which ſhould be prepared a fortnight before, that the tan may have acquired a proper heat: but you ſhould be careful that the tan be not too hot; for that might ſcald the fibres of the plants, if they are ſuddenly plunged therein. Therefore if you find the bark too hot, you ſhould not plunge the pots above two or three inches into the tan, letting them remain ſo until the heat of the tan is a little abated, when you ſhould plunge the pots down to their rims in the bed. If the nights ſhould continue cold after theſe plants are removed into the bed, you muſt carefully cover the glaſſes with mats; otherwiſe

When your ſtove has been well aired and made ready, as well as your compoſt, to receive your pines, they are to be brought in in *June*; as at that ſeaſon theſe plants will not receive any injury from cold, and if brought by ſea,

---

therwiſe by coming out of a warm ſtove, they may receive a ſudden check, which will greatly retard their growth, which muſt be carefully avoided, becauſe the ſooner the plants are ſet growing in the ſpring, the more time they will have to gain ſtrength, in order to produce large fruit the following ſeaſon.

You ſhould not plunge the pots too cloſe together in this frame; but allow them a proper diſtance, that the lower part of the plants may encreaſe in bulk; for it is on this that the magnitude of the fruit depends; becauſe when the plants are placed too cloſe, they draw up very tall, but do not obtain ſtrength; ſo that when they are taken out of the bed, the leaves are not able to ſupport themſelves; but all the outward long leaves will fall away, leaving the ſmaller middle leaves naked; and this ſometimes will cauſe them to rot in the centre. You muſt alſo obſerve, when the ſun is very warm, to raiſe the glaſſes of the hot-bed with ſtones, in order to let out the ſteam of the bed, and to admit freſh air; for one neglect of this kind, in a very hot day, may deſtroy all the plants, or at leaſt ſo ſcald them, that they will not get over it in many months. It will be alſo very proper, in extreme hot weather, to ſhade the glaſſes in the middle of the day with mats; for the glaſſes, lying ſo near to the leaves of the plants, will occaſion a prodigious heat at ſuch times.

During the ſummer-ſeaſon, the plants muſt be frequently watered; and in hot weather, they muſt have free air admitted to them every day, from ten o'clock till four; for, if they are kept too cloſe, or too dry, they will receive a check in their growth, when the inſects will immediately ſpread over them; for there are generally ſome of theſe inſects on all the plants, which do not much injure the plants, while they are in a growing ſtate; but whenever they are unhealthy, the

inſects

ſea, they had better be put between the decks, for their better protection.

The number of plants neceſſary to furniſh the ſtove, with their different ages, are as follow, viz.

Six

---

inſects multiply greatly, and contribute to their decay. There are ſome perſons who regulate the heat of their ſtoves by thermometers in ſummer; but at that ſeaſon this is unneceſſary; for the outward air in hot weather is frequently greater than the *Ananas* heat marked on the thermometers; ſo that the heat of the ſtoves at that ſeaſon will be much greater. The uſe of the thermometer is only in winter, during the time the fires are continued; by which it is eaſy to judge when to encreaſe or diminiſh the fires; for, at that ſeaſon, the ſtoves ſhould not be kept to a greater warmth than five or ſix diviſions above *Ananas*, nor ſuffered to be more than as many diviſions below it. In winter the plants muſt have leſs water, but they will require to have it repeated at leaſt twice a week: when the plants are placed in the tan for the winter-ſeaſon (which ſhould be about the beginning of *October*), the tan-bed ſhould be renewed, adding two-thirds of new tan, to one-third of the old. If this be well mixed, and the new tan is good, the bed will maintain a proper degree of warmth till *February*, at which time it will be proper to ſtir up the bed, and add a load or two of new tan, ſo as to raiſe the bed as much as it ſunk ſince the autumn; this will give a freſh heat to the bed, and keep the plants growing; and, as the fruits will now begin to appear, it will be abſolutely neceſſary to keep the plants in a growing ſtate, otherwiſe the fruit will not be large; for if they receive any check at this time, it will greatly injure them.

In *April* it will be proper to ſtir up the tan again, and if the bed has ſunk ſince the laſt ſtirring, it will be proper to add ſome freſh tan to it: this will renew the warmth of the bed, and forward the fruit. At this time it will be proper to ſhift the young plants, which are deſigned to produce fruit the following year: the tan-bed into

Six dozen of large plants, which will come into fruit the year after you receive them.

Six dozen for fruiting the ſecond year.

One hundred ſmall crowns and ſuckers: theſe laſt to be taken in *Auguſt*.

---

into which theſe are plunged muſt be renewed, in order to forward the plants, that they may have ſtrength enough by autumn, to produce good fruit; for in this is the principal care required.

Thoſe plants which ſhew their fruit early in *February*, will ripen about *June*; ſome ſorts are at leaſt a month or five weeks longer in ripening their fruit than others, from the time of the appearance of the fruit: but the ſeaſon in which the fruit is in greateſt perfection, is from the beginning of *May* to the end of *September*, though in *March*, *April*, and *October*, I have frequently eaten this fruit in pretty good perfection; but then the plants have been in perfect health, otherwiſe they ſeldom are well flavoured.

The method of judging when the fruit is ripe, is by the ſmell, and from obſervation; for as the ſeveral ſorts differ from each other in the colour of their fruit, that will not be any direction when to cut them, nor ſhould they remain ſo long as to become ſoft to the touch before they are cut; for then they become flat and dead, as they do alſo when they are cut long before they are eaten: therefore the ſureſt way to have this fruit in perfection, is to cut it the ſame day it is eaten; but it muſt be early in the morning, before the ſun has heated the fruit, obſerving to cut the ſtalk as long to the fruit as poſſible, and lay it in a cool, but dry place, preſerving the ſtalk and crown to it, until it is eaten.

That ſort with green fruit, if ſuffered to ripen well, is of an olive-colour; but there are ſome perſons who cut them before they are ripe, when they are not fit to be eaten, for no other reaſon, but to have them green: and although many perſons have much recommended this ſort for its excellent flavour, yet I think the ſugar-loaf ſort is to be preferred to it.

This

This number will be ſufficient to furniſh your ſtove to give annually one hundred good fruit.

On the arrival of your plants in *June*, as has already been mentioned, unpot them, taking away moſt of the earth from about their roots, and ſuch fibres as you find injured or any way decayed; then with your compoſt, plant them into pots of the ſame ſize in which they arrived, obſerving to cut off the extremities of all ſuch leaves as are withered or injured, but no other, upon any account; watering them, to ſettle the earth about them; then ſet them in the tan, which ſhould you find too hot, put them but half-pot deep, and in a fortnight after, you may ſink them to their brims, gently watering them three times a week, with ſuch water as has been kept in the ſtove for twenty-four hours, that it may have the ſame conſiſtency of heat, as the air in the ſtove, and never to uſe any other water than ſuch as has undergone ſome preparation, either for the ſtove, greenhouſe, or hot-bed; and obſerve that water taken from a pond that is well expoſed to the ſun is the beſt, provided not fed with hard ſpring, which is a great enemy to vegetation: ſhade your plants for a month in hot ſunſhine, until you perceive them growing. On ſunſhiny days the glaſſes ſhould be raiſed to give them air, when they may be watered all over their leaves, to cleanſe them from any filth; obſerving that the water does not ſettle for any time in the tube at their hearts, which if it does, will injure them very much.

About the end of *Auguſt* it will be proper to look for the biggeſt plants, I mean ſuch from which you expect fruit the ſucceeding year; and if they have filled the pots into which they were planted on their arrival, it will be now neceſſary to remove them into larger, (two-penny ones, at leaſt) having firſt obſerved, that their roots, and the earth about them, are wholeſome and good; if otherwiſe, take ſuch earth and ſuch roots away, and give them new earth, of the compoſt already directed. Stir up the bark in the bed, and add ſome freſh to it, this will renew the heat when they are to be ſet into it again, there to remain until *Michaelmas*, giving water, air, and ſhading for three weeks after this tranſplanting, as has been directed.

My

My intention in tranſplanting the fruiting plants at this ſeaſon is, that they may fill their pots by *Michaelmas*, when they are put into the ſtove for fruiting; ſo that when they come into the ſtove in this ſtate, the new heat will occaſion them to ſhew their fruit by the beginning of *January*, to ripen in *June* and *July*, which are far preferable to the later fruit. As for the ſmall plants which are not to fruit until the ſecond year, I would not chuſe to unpot them until *Michaelmas*; for were they to have larger pots given them earlier, it might occaſion them to ſhew fruit too ſoon, and out of ſeaſon; to prevent which is a moſt material part of the management of them: therefore keep your plants always in a growing ſtate, not to be ſtopped by too much cold, or too much heat, otherwiſe they will ſhew untimely fruit.

A fortnight before *Michaelmas*, provide a good quantity of new tan, laying it in heaps, and as ſoon as the water has ran off, put it into the pit, raiſing the ſame a foot higher than the walk about it; I mean, the bark-pit of No. 5. where you are to ſet your largeſt fruiting plants. And here you may try an experiment which ſucceeded very well with me.

When I brought theſe plants into the ſtove, I took twelve of them, and watering them well the night before, raiſed them out of the pots, with their earth, and made pits in the tan, (which was in a good temperature) one foot and a half diameter, and a foot deep; in theſe I ſet my plants, at thirty inches diſtance every way, filling up the vacancies with the ſame ſort of earth, and covered the ſurface with a little old tan, that it might not dry too ſoon. Theſe plants were ſet in one end of the pit, where the tan was raiſed near two feet higher than in any other part of the pit; the plants in the pots were ſet at the diſtance of five feet from them, that they might not be diſturbed, when it ſhould be neceſſary to renew the tan in *March*, for the other pines. Theſe Pines in the free tan, I obſerved, fruited ſooner than thoſe in the pots, were ſooner ripe, and their fruit larger, and better flavoured. About *Chriſtmas*, *January*, *February*, and *March*, the air of the houſe ſhould be kept up to five degrees above the Ana-

nas

nas heat, watering the plants gently and often, to encourage their fruit to ſwell, this in a particular manner is to be attended to when they are in bloſſom; as then a good heat, and a plenty of water, ſwells the fruit to a deſirable ſize. By the beginning of *March*, renew the tan in the pits where the fruiters are in pots, but never unpot any plants after they have ſhewn their fruit, otherwiſe it will be ſmall, and late in ripening; be very obſervant to keep up a good heat, and to give plenty of water, on the firſt appearance of fruit, as this not only gives them ſize, but flavour too. By the beginning of *March* I would ſet all the young plants, and tranſplant thoſe which are not to fruit into the ſummer brick frames, firſt trimming their roots, earthing, and new potting them, and giving new tan to the bed: ſhould this be delayed longer than the firſt week in *March*, they will very probably ſly up into ſmall ſtunted fruit: this method of tranſplanting them, and at this ſeaſon, is the beſt expedient yet known to prevent theſe untimely productions, together with ſhading, giving due air, and gently watering them: Nor would I encourage the cutting off many of their leaves, though bruiſed or otherwiſe hurt, for the plants cannot be expected to thrive, that are deprived of the means of perſpiration and reſpiration, of which uſe the leaves are to them; beſides, much cutting occaſions much bleeding, which weakens the Pines. But ſhould it be found neceſſary to take off ſome old or bruiſed leaves with your knife, ſplit them, when they will come off very eaſily. Obſerve when their leaves are of a florid green colour on the inſide, and of a good aſh-colour on the outſide, the leaves well expanded, not drawn in, or hanging down, they are then in good health. I have already recommended a botanical thermometer, which ſhould be placed at a diſtance from the fire, and when the ſpirit keeps up to the height you deſire, and kept from the ſun's rays, then it is certain that the heat works well in the furnace and the flues. Obſerve in warm weather, that the thermometer is to be removed from the ſtove, and placed in a cool place, otherwiſe the ſpirit will burſt thetube.

As ſoon as you perceive your Pines ſpotting on their leaves,

leaves, remove the ſpecks with a pin, on the old plants you will obſerve a ſmall inſect, which you muſt alſo take away; but ſhould they be numerous, waſh the plants with a ſponge and an infuſion of tobacco-ſtalks; this will quite deſtroy the vermin, without injuring the plants, which, if not timely prevented, might ruin the ſtove; but ſhould this not have the deſired effect, you muſt take the plants out of the pots, clearing them of their earth, ſteep them in the infuſion for twenty-four hours, then they are to be cleaned with a ſponge, their fibres ſhortened, and rinſed in fair water, when they are to be repoted in new compoſt, give them new bark, ſhade them, and give them gentle waterings, and they will recover in a few weeks. Thoſe plants which are planted out of the pots into the kept in them. When the fruit is in bloſſom, you muſt tan, do not require ſo much water as thoſe do which are be ſure to keep a good heat in the ſtove, and at night to cover the glaſſes with thin broad covers, which ſhould be ſo contrived as to ſlide in grooves over them: If the heat of the bark declines, add ſome new tan to the fruiters in the pots, and if the ſame happens to the plants in the tan, take away the old tan carefully with your hand, until you come at their roots, but not to diſturb them, filling up the place with new; this new bark will bring them on to ripen kindly.

From an accident I diſcovered, that ſetting the plant in the free bark, with its ball of earth, gave the ripeſt and beſt flavoured fruits; but this is not to be done, until the plant firſt ſhews its fruit: therefore it has ever ſince been my practice, when I obſerved my largeſt plants fruiting, I made up a new tan-bed for them, and when in a good temperature, I took them out of their pots, watering them the evening before, that the earth ſhould adhere to their fibres, and planted them in the tan; where, managing them with care, they anſwered my fondeſt expectations.

At this ſeaſon give your fruitling plants a good watering over their leaves; nor is there any danger of the water's ſettling in their hearts, as the ſpace is filled with the fruit, which in young plants is an empty tube, reaching to their hearts. As ſoon as the fruit comes faſt forward, and ſwelling, there will appear many ſuckers below the fruit,

fruit, and amongſt the leaves: theſe are not to be taken off, until they are turned knobby at bottom; and are not to be planted, until their wounds, occaſioned by taking them off from the mother plants, are not only healed, but perfectly dry; otherwiſe they will rot.

By this good management, your Pines will be ripe by the end of *June*, or in *July*, which you will perceive by the fruits turning yellow, and emitting a fine ſcent, and the knobs of the fruit yielding to the preſſure of the finger. Beſide theſe ſigns of ripeneſs, that of their emitting a ſtrong and poignant ſmell is not the leaſt. Theſe ſigns are particularly to be attended to, for ſhould the fruit become too ripe, they turn moſt inſipidly ſweet, and have no more taſte than a ſweet Lemon. The fruit are to be cut about eight in the forenoon, with four inches of ſtalk to them; and when they are to be eaten, hold the fruit or its ſtalk in one hand, then with the other twiſt off the crown, when it will come off like a ball out of a ſocket, which is to be returned to the gardener; the fruit is to be ſliced upon a plate, leaving the rind on, for the better preſerving the juice, not ſuffering one ſlice to lie on another, as their rich juice would make them ſtick together. When theſe fruits are to be ſent any diſtance, they ſhould be cut a day or two before they are quite ripe, with a good part of the ſtalk, and leaving the crown on, to be well covered in paper, and ſecured in a box for carriage.

As ſoon as the crowns and ſuckers are ſufficiently dry, and ready for planting, take halfpenny or farthing pots, according to the ſize of the bottom of the plants, covering the holes of the pots with concave oyſter-ſhells, that the water may paſs off, and not ſtagnate; plant them in theſe pots filled with the compoſt directed for the old plants, water them gently, preſſing the earth to their roots, then ſink their pots in the tan-beds up to their brims, ſhading them from hot ſunſhine, obſerving to continue to give them air and gentle waterings, until you perceive them growing, when you may admit the ſun, air, and water, in the ſame manner as directed for the old plants. If they have filled the pots they were at firſt planted in by *Michaelmas*, or the beginning of *September*, I would then take them

them out, and plant them in penny pots, and renew the tan in the frame; here they may continue until the beginning of *November*, to be afterwards brought into the ſtove, and placed in pit, No. 6. or continued in the flued frame all winter; but be ſure to take all the crown plants of laſt year out of the ſtove by the firſt of *March*; when you are to trim their roots, to give them larger ſized pots and new tan; this will in ſome meaſure prevent them from flying up into untimely and ſtunted fruit, this will not thoroughly effect it unleſs every opportunity is taken of admitting freſh air, when you may promiſe yourſelf fine fruit the ſucceeding year. About the beginning of *July* will be the moſt fit ſeaſon to take into your care ſuch plants as are to fruit the enſuing ſeaſon. Such plants as you have taken good fruit from, and are deſirous to propagate their ſuckers, re-pot them, and ſink them into new tan; and if you chooſe ſuckers from old fruiting plants that are in pots, earth them anew.

The fuel beſt ſuited to theſe ſtoves are coal and peat, as wood fires are too haſty and violent. Thoſe plants which were vigorous in their fruit at their firſt appearance, I took from them the bottom of their pots, when I gave them new tan in *March* or *April*, preſerving the ſides of the pots as much as was in my power. By this method I had their fruit very large, as well as when I planted them in the tan, as already directed.

That the ſtove may have ſome other curious plants beſides the Pines, I would propoſe that the top of the ſecond flue ſhould have an edging of bricks built upon both ſides of its upper part, one brick thick, and two deep, but not to be covered; but between theſe bricks, which muſt be ſet edge-ways, lay in four inches of ſand, which will become very hot, ſo that the ſand will be like what chymiſts call a *Balneum Mariæ*. The uſe of this ſand is to receive pots, in which are planted the *Weſt* and *Eaſt-Indian* Melon-thiſtles, the firſt called botanically *Melocactus*, or *Cactus*, and the other *Echinomelocactus*; their varieties, with their flowers and fruit, will make a moſt beautiful and ſingular appearance.

I would alſo have erected in the ſtove, over the fire-place, a ſhelf of boards, and ſo large, as to hold three or four pots of the Torch-thiſtle, called, *Cereus*

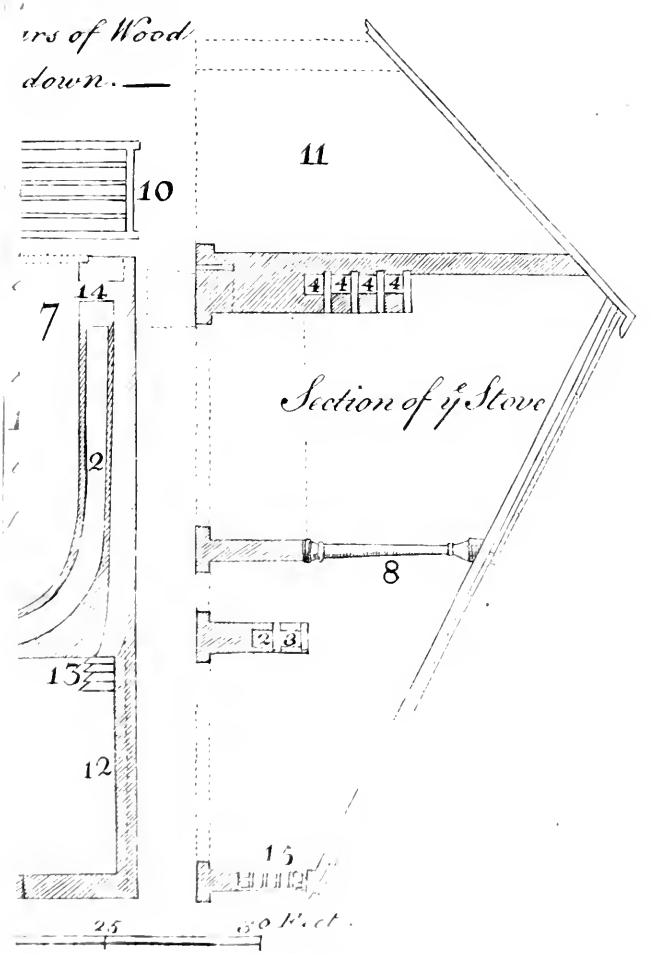
minor ſcandens trigonus articulatus, fructu ſuaviſſimo, leſſer three-cornered Torch-thiſtle, with a moſt delicious fruit, commonly called in *Barbadoes*, *The true prickly Pear*, which fruit being as large as a Bergamot Pear, is as fine as the Pine-apple, of which I ripened three in one year. Upon the other end of the ſtove may be a ſhelf of the ſame dimenſions, for holding pots of another ſort of Torch-thiſtles, called, The *Cereus minor ſcandens polygonus articulatus*, or leſſer many-cornered Torch-thiſtle, it produces a large odoriferous flower, which opens about ſeven in the evening, and is quite gone by eight o'clock the next morning. The flowers of this plant, for odour and largeneſs, ſurpaſs any flower yet known.

Theſe Torch-thiſtles ſhoot out very long branches, which run along the walls and cielings of the ſtoves, upon which, if you lay ſome rough lime plaiſter, they will, like ivy, faſten their roots into, and proſper the better for it; both theſe and all the kinds of Melon-thiſtles thrive beſt when they are planted in pretty coarſe ſand, gravel, and lime-rubbiſh, to be ſparingly watered, except in very hot weather. The Cereuſes are propagated by cuttings, which ſhould be allowed to wither for fourteen days before they are planted, and may then with their pots be ſunk into a good tan-bed, to haſten their rooting; this work ſhould be performed in *June*, that they may make good ſhoots before winter.

The Melon-thiſtle is propagated by ſeeds, (eſpecially the *Echinomelocactus)* or ſuckers, when the caps of the *Melocactuſes* muſt be pinched, in order to ſend them out, which are to be planted in the ſame ſoil as the Cereuſes or Torch-thiſtles. It is certain, that no plant amongſt the vegetable tribe, hath ſuch a ſtrange and odd appearance, and which more merits an uncommon regard from the curious gardener

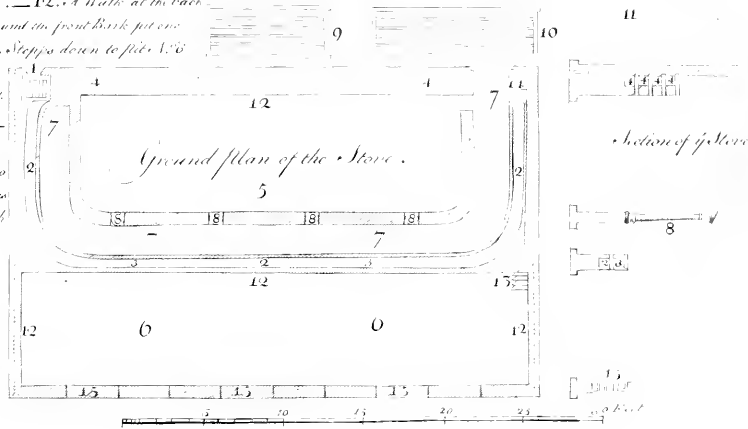
Mr.

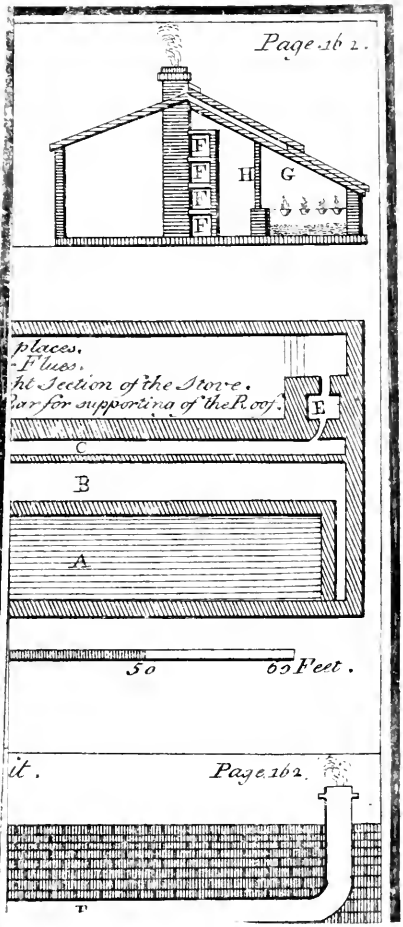
n the back
_6. Bark
rs of Wood
down.—



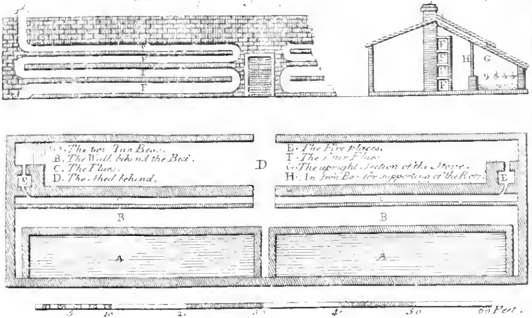
Explanation.

1. Fire place and Ash hole. — 2 First Flue. — 3. Second Flue. — 4. Flue in the back after the Second has past over the fire Place. — 5. Bark Pit for fruiting Plants. — 6. Bark [illegible] young Plants or other Crops — 7. Walk through the Stove. — 8. Small Pillars of Wood [illegible] the Roof — 9. Upper Lights to meet. — 10. Lower Lights to slide up and down. — [illegible] at discretion. — 12. A Walk at the back [illegible] Bark bed and round the front Bark pit one [illegible] in breadth. — 13. Stepps down to Pits Nº 6 and the Walk. — 14. Pipe [illegible] into the Walk [illegible] the bed Nº 6. — 15. Windows all along front of the Stove two [illegible] high and as broad as [illegible] Glasses, which [illegible]

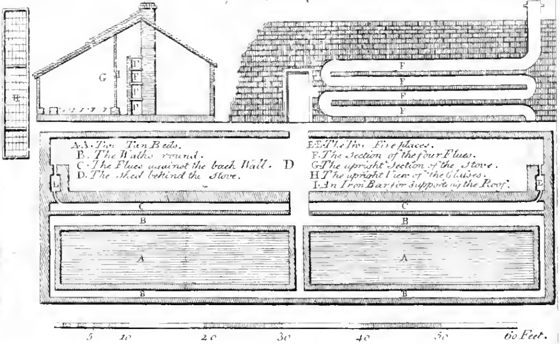



Page 162.
F
F
F
F
H
G
places.
-Flues.
ht Section of the Stove.
Bar for supporting of the Roof.
E
C
B
A
50
60 Feet.
it.
Page 162.
D

The Stove for the youn



The Stove for ripening the Fruit.



Mr. Adam Taylor *having lately publiſhed a Treatiſe on the rearing of the Pine-apple in Frames, by the help of Dung only, we ſhall introduce it here; not ſo much from a Deſire to give Variety, as that he aſſerts the Fruit is in much higher Perfection than from the Stove. — We ſhall take up this Writer immediately with his firſt Directions, having already deſcribed the Fruits, and pointed out the Kinds that ſuit beſt to our Clime.*

BEfore I proceed to the neceſſary management of the plants, it may be proper to treat of the conſtruction of our new frame, which very much reſembles that which Sir *James Juſtice* directs for ripening fruits by the help of dung only, in incloſures of glazed frames, and ſtrong boards.

Firſt, ſink the ground for your foundation eighteen inches, thirteen feet ſix inches in length, and ſeven feet ſix inches wide, to be paved with brick or ſtone, and incloſed with a nine-inch wall, three feet and a half high, or a wooden frame of the ſame height; obſerving that the front of your frame is to face the ſouth. A glazed frame two feet ſix inches high, made in ſaſhes, for ſliding backward and forward, is to be ſet upon the brick-work in front, for the readier giving air and water to the plants; the ends alſo are to be glazed, and to open for the ſame purpoſe, and to have a riſe from the front to the back, of one foot ſix inches. The back part of the frame is to be of deal board an inch thick, to riſe four feet above the brick-work, the whole to be covered with glazed ſaſhes like the ſtove-frame, and conſtructed in the ſame manner, to carry off the ſteam. This glazed roof is to be occaſionally covered with a ſail-cloth faſtened on a roll, for the convenience of letting down and taking up.

Notwithſtanding I have directed the pit to be enclofed with brick-work, I would recommend its being of entire wood-work, that is, boards nailed to two upright poſts, as this would give an opportunity of keeping up the heat, by a lining of horſe-dung being laid againſt the back of the frame, to be raiſed or lowered according to the heat required.

For the better perfecting of this operation, I would recommend another pit to be prepared, of twenty feet in length, and ſix in breadth; to be ſeparated in the middle with boards, ſo that when the heat of one pit is going off, the other may be made ready.

This frame will be neceſſary to receive your plants from the firſt, when the heat fails; and in one end of the double frame you may raiſe your crowns and ſuckers for the fruiting frame: this contrivance will render the work eaſy, and will be more certain than raiſing the crowns or ſuckers in the Cucumber or Melon frames.

This reſiduary pit then, being full twelve feet in length, and ſix feet in breadth, will hold thirty-two fruiting plants, (that is) four rows, and eight in a row; and may be made larger or ſmaller, according to the number of fruiting plants which you intend to have.

Having ſaid as much as is neceſſary, concerning the repoſitories adapted to your fruiting plants, it will be proper to give ſome directions for preparing the pit which is deſtined to receive them.

Firſt, provide yourſelf with ſuch a quantity of dung, as will be ſufficient to fill your pit within fourteen inches of the top of the brick-work, when ſettled. But this dung, before it is put into the pit, ſhould be well worked together, in the ſame manner as is practiſed for your Cucumber-beds, when it will heat more kindly and with more regularity, than when it is thrown in without mixing. This done, provide a ſufficient quantity of tanner's bark to plunge your pots in. But if your ſituation is ſuch, that tanner's bark cannot conveniently be had, you muſt get ſaw-duſt in the place of it, which anſwers the ſame purpoſe: but then its heat will abate much

much ſooner than the other. I have for many years brought Pine-apples to perfection with horſe-dung only, but then I have been obliged to ſhift them oftener, than when tan was uſed. I have alſo made uſe of tan for the pit, and horſe-dung for the lining on the outſide of the back part of my fruiting frame, with admirable ſucceſs, the fruit being vaſtly ſuperior, both for flavour and magnitude, to thoſe which are raiſed by the ſtove.

Thoſe who are newly beginning to raiſe a pinery with ſmall plants, crowns or ſuckers, have no need of any other direction, nor can they raiſe them to perfection any way ſo well as by the method juſt directed. But when they have crowns and ſuckers to ſucceed the firſt, it will be neceſſary to have another frame, conſtructed in the following manner.

The crowns and ſuckers are two years before they perfect their fruit; therefore they will annually require ſeveral freſh beds of dung, covered with tan, to ſhift the pots into. This frame then ſhould be ſix feet wide. The length muſt be in proportion to the fruiting-frame, and made in the ſame manner as thoſe for Cucumbers, but ſtronger. It muſt riſe three feet and ſix inches in the back, and two feet ſix inches in the front, to be covered with lights to ſlide, as has been already directed, and to be well ſituated in reſpect to the ſun, whoſe influence may be much aſſiſted by a front glaſs, to riſe fifteen inches. This frame, which is intended for raiſing the ſuckers, crowns, *&c.* may be contrived of two or three lengths, according to the number of plants which you intend to place in it.

The tan which ferments beſt is that of a moderate ſize, which is uſually wet, when firſt brought into the garden, therefore muſt be thinly ſpread to dry for a day or two, when the cakes are to be ſeparated, and the whole caſt in a heap under cover to ferment.

But if the plants are to be reared by horſe-dung only, it muſt not be put into the pit wet; particularly in the winter, when it might occaſion a conſiderable damp, which would be detrimental to the plants.

Having now directed every thing neceſſary in regard to the pit, except the compoſt, the following is that I recommend, of which you ſhould have a proviſion for years, as age much improves it.

Take one load of mould from under the turf of a good paſture, to which, ſhould it be very light, add a fourth of good yellow loam: but, if it is ſufficiently loamy, mix with it two or three buſhels of ſea-ſand. Then take a fourth of dung from a cow-yard; but, if not to be had, take the ſame quantity of good rotten dung from an old Cucumber or Melon-bed. Mix theſe well together, turning the whole three or four times, that it may thoroughly imbibe the air. Let all the large clods be well broken, but not ſifted or ſcreened, as is the practice with ſome.

The particular next to be conſidered in this article, is, the preparation of the crowns and ſuckers for planting, which has already been given ſo fully by Sir *James Juſtice*, and Mr. *Miller*, in pages 148, and 159, that we ſhall not repeat it here, but proceed to the care of the Pine in theſe new frames.

The crowns and ſuckers are to be planted in ſmall pots of a halfpenny a-piece: but if any of them are larger than common, they will require pots ſomewhat larger; which, being filled with the compoſt, previouſly place an oyſter-ſhell over the hole at the bottom of each pot, that the water paſs off freely; for without this precaution the plants would rot. They muſt not be planted too deep, leſt the earth ſhould get between their leaves, which would be detrimental to them: neither ſhould they be planted too ſhallow; as they would be liable to be diſplaced by watering; ſo that diſcretion muſt be your guide.

The plants being potted, they muſt be plunged up to the rim in the bed of your nurſery-frame, obſerving that the heat is moderate. The inſtrument for this purpoſe ſhould be a crooked fork fixed in a ſhort handle. The pots ſhould be arranged according to their heights, placing the ſmalleſt in front; for, in this poſition, the whole will the more eaſily receive the benefit of the ſun. You ſhould then give them a gentle watering, and,

and, if the weather be very hot, ſhade them in the heat of the day, until they are firmly rooted; this ſhading will be very neceſſary, ſo long as the weather continues very warm; otherwiſe the heat of the ſun thro' the glaſſes would ſcorch the leaves of the plants, and burn the mould, ſo as to deprive it of its vegetative quality. When they have ſtruck root, they ſhould have air given them every day, which is to be encreaſed, when the days are warm, and the wind gentle. For if they are kept too cloſe, and drawn up weak, they will ſuffer greatly in the winter. The plants in this frame will require but little watering in the winter, but when the froſty weather ſets in, and the heat of your bed abates, it will then be neceſſary to add a lining of horſe-dung, in the ſame manner that you renew the heat in your Cucumber-beds.

With this management, two good beds will be ſufficient to carry you through the winter, obſerving to cover the outſide linings with ſtraw or fern, for the better retention of the heat in the dung. This will alſo prevent the froſt from penetrating your frame, if raiſed ſufficiently high. It is alſo requiſite to have mats, or ſome other covering, to hinder the froſt from getting through your lights; and if a great ſteam ſhould riſe from the bed, it will be neceſſary to give them a little air, by tilting up the lights a little.

The greateſt care that theſe plants require, is, to be preſerved from froſt, and too much wet in winter. Above all things, be not too forward in promoting their growth at this ſeaſon, as not any thing can be more prejudicial than their ſhooting too faſt; for ſhould they appear with long leaves, and white at the heart, (the conſequences of a forward growth in winter,) it is over with them, as they will never acquire the ſize or flavour they ſhould have.

Be careful then not to make your beds too ſtrong from the middle of *September* to the middle of *March*. For it is no matter how little the plants grow during the winter, it is ſufficient they are preſerved from rotting, and of a good colour.

In *March* they are to be more particularly attended to, from the great changeableneſs of the weather in this

month, which is frequently ſevere, ſo as to require all your art to protect your plants from cold, and ſometimes from too hot a ſun, they muſt be gradually admitted both to air and warmth.

About the beginning of *April* (a few days ſooner or later, as the ſeaſon may permit) it will be proper to ſhift your young plants into ſomewhat larger pots, obſerving the ſame precaution reſpecting the oyſter-ſhells, as before. Your pots and mould being ready, turn out the young plants gently, and be careful to keep the earth around their roots. Then put a little freſh mould into the bottom of the pot, and, having placed your plant upon it, fill up all the hollow parts with the ſame. While you are about this work, examine their roots very particularly, and, if any ſeem periſhed, the old mould muſt be cleared away, and the decayed part cut off. All decayed leaves muſt be ſtripped off, (not cut) at the ſame time. This will make room for the new fibres to ſtrike freely, and obſerve that the freſh earth, with which you fill the pots, be not too wet. The plants being thus ſhifted, you ſhould have a freſh bed ready to receive them, made with dung and covered with tan, as before directed. In this bed, place the plants in order, the talleſt at the back part of the frame, and the loweſt in front.

As ſoon as the plants receive the benefit of the heat of this new bed, and the weather is mild, it will be proper to water them all over the tops. This will waſh away the filth, ſettle the earth to the plants, and greatly promote their growth. Continue to cover them lightly at nights, and to give them air in the day-time, when the weather permits. For it is with theſe, as with the animal world: if they are too cloſely confined, they will become tender and feeble, and the leſs capable of producing fruit in perfection. In the ſpace of three or four weeks the heat of this bed will be conſiderably abated. It muſt then be renewed by a lining of freſh dung. For though it does not ſignify how little your plants grow in the winter, ſo they do but ſtir at all, yet it muſt be a principal part of your care to encourage and forward the growth of them, from the month of

April

April or *September*; which is their natural growing ſeaſon; and as warm ſhowers are not uncommon in the months of *April* and *May*, the glaſſes may be taken quite off, that the plants may have the benefit of them; only be careful to do this with diſcretion, for they are not to be too much indulged in this, unleſs the heat of your bed be ſtrong. As ſoon as the ſhower is over, put on the lights again, ſhutting them cloſe; remembering always to let them be ſhaded after every watering, more eſpecially if the ſun ſhould ſhine warm, as this will occaſion a fine dew to appear upon the leaves of the plants, which will be very ſerviceable to them.

The water that is given them occaſionally from *September* to *June*, muſt be in the morning, and ſparingly; and during the hot months of *June*, *July*, and *Auguſt*, in the evenings; that the heat of the ſun may have no opportunity of drying them before they ſhall have received the intended benefit of the watering. The water made uſe of on theſe occaſions ſhould be ſoft; and rain-water, which is the ſofteſt, ſhould be preſerved for this purpoſe: and have a degree of warmth given it, proportioned to the air within the frame, to be ſprinkled from a fine-noſed pot.

About the middle of *July*, is the proper ſeaſon for ſhifting your ſucceſſion plants again into pots of a larger ſize. In the execution of this work, after you have turned out your plants, it will be neceſſary to take off ſome of the outſide mould, and trim the outſide roots. I would be underſtood to mean thoſe roots only, which have reached the ſides of the pot. Put ſome freſh mould at the bottom of the new pot, to raiſe your plant to the proper height, then fill the pot with the earth, which you have prepared for that purpoſe. Theſe pots are then to be plunged into your freſh bed of dung covered with tan. Be ſure to let them have plenty of room, to give them ſometimes gentle refreſhments of water, and to let them have a due proportion of freſh air. This will make your plants ſtrong, and diſpoſe them to produce good fruit the following year. But if they are kept too cloſe at this ſeaſon, they will be drawn up weak, and ſometimes there

there will be danger of their being driven unſeaſonably into fruit in the winter.

Towards the end of *Auguſt*, when the nights begin to be cold, the glaſſes muſt be ſhut down cloſe. But then it will be neceſſary to let them have ſome air in the day time, when proper opportunities ſhall offer. And be particularly careful not to let them have too much water at this time.

About the end of *September* your ſucceſſion plants will be nearly full grown. It will be then expedient for you with all diligence to get ready the pit in the fruiting-frame for their reception. If for this purpoſe you make uſe of dung covered with tan, it muſt be put into the pit a few days before you plunge your pots into it; but if you intend to fill it entirely with tan, it muſt be put in a full week before you venture your plants in it. In that time the bed will have obtained the due degree of heat by fermentation, and will be rendered fit for the reception of them. In plunging theſe plants, be ſtill adviſed to place them with order and regularity, which will greatly add to the beauty of them when they come to be ripe. As ſoon as the bed ſhall have imparted a proper warmth to the mould in the pots, your next buſineſs will be to water them lightly over their leaves, which will be a conſiderable refreſhment to them, and ſettle the mould to their roots.

If this bed be made entirely of tan, the plants may remain in it till the middle of *February*; but if it be compoſed of dung covered with tan, they will require another freſh bed about the middle of *December*. Then to have the two pits with the moveable frame in readineſs, will be very convenient for re-plunging your pots without their receiving any check.

You muſt be careful to cover the frame with a ſail-cloth during the winter ſeaſon, as you have already been directed. Another caution, laid before you in the beginning of this treatiſe, is, that as ſoon as you perceive that the heat of the dung or tan is abated, you begin to line the back part of the frame on the outſide with dung. This lining muſt be laid three or four feet wide at the bottom, and made ſloping to the top, that

that the wet may paſs off well without ſoaking into the frame. Neither ſhould it be raiſed to its full height at firſt, but by little at a time, as the froſts encreaſe, until it comes to be as high as the back part of the frame itſelf. By thus adding freſh dung to the former, at convenient diſtances of time, as the ſeverity of the weather may require, it will maintain its heat much longer than if the whole quantity was to be heaped up at once, and will ſtrike a nouriſhing heat through the back part of the frame. This is much preferable to the heat which is communicated by fire, and the plants thus managed require leſs water during the winter ſeaſon, than thoſe which are raiſed by means of the ſtove.

For the better convenience of watering the plants in this frame, you ſhould be furniſhed with a tin pipe about five feet in length. By means of this you will be enabled to reach the pots which are placed at the back part of the frame, without breaking or injuring the leaves of thoſe which ſtand in front. The large end of this pipe ſhould be three inches and a half in diameter, and half an inch at the ſmall end, which ſhould be turned in the ſame manner as the bole of a common tobacco pipe, that the water may gradually run upon them. This pipe is preferable for uſe in the winter ſeaſon to any watering-pot that can be made for the purpoſe.

Having by theſe directions preſerved your plants to the middle of *February*, they ſhould now be ſhifted into pots, about nine inches deep, and ten inches in diameter. This is the proper ſize of the pots in which they ſhould be planted to produce fruit. But obſerve that, at this time of ſhifting them, no mould muſt be taken off, nor muſt any of the roots be diſturbed at all, but they muſt immediately be ſet in with care, filling the pots with freſh mould, as before directed.

If your bed be made entirely of tan, you ſhould now add a little freſh tan to it, mixing the old and the new well together, before you plunge your pots in it. But if the pit be filled with dung, the ſpare pit muſt be prepared to receive them, as is before directed; and

and the lining muſt be taken from the back part of the frame: and when the pots are plunged, you muſt move the frame over them again, and then begin to make a freſh lining at the back part, agreeable to the directions juſt given.

If theſe plants are carefully managed in this manner, during the winter, they will begin to ſhew their fruit about the middle of *March*. And if any of them ſhould happen to ſhew fruit earlier, they muſt not be ſhifted after the firſt appearance of it. For this cannot be done without checking them greatly; the natural conſequence of which will be, that the fruit will be long in ripening, and at laſt ſmall, and but indifferently flavoured.

When the fruit appears in the hearts of theſe plants, you ſhould be careful not to water them over the leaves, more eſpecially when they are in bloom. For it will prevent ſeveral of their tubercles from ſwelling: and this will render the fruit unſightly. But when the bloſſoms are gone off, you may without danger venture to water them all over. As the fruit advances in magnitude, be ſure to keep a good heat, by applying freſh dung to the back part of the frame. Let this be your principal regard; for the beauty, ſize, and exquiſite flavour of the Pine-apple chiefly depend upon the freedom of its growth after the fruit appears. Encourage this therefore by frequent refreſhments of water, and by giving them air as often as the weather will permit.

You will eaſily perceive when the fruit is ripe, by the beautiful yellowneſs of its colour, and the grateful perfume of its effluvia. It ſhould be cut in the morning before the ſun ſhines upon it, and laid in a cool place. The ſuckers ſhould now be taken off, if they appear brown at the bottom, and the leaves trimmed off from the mother plant, which ſhould be plunged into a moderate hot-bed. If you are careful to refreſh theſe frequently with water, they will produce more ſuckers; ſo that you may very ſoon have plenty of them, if you are diſpoſed to preſerve the old ſtools. Some perſons indeed raiſe objections againſt theſe ſuckers that are produced near the roots, and call them contemptuouſly *underground*

ground ſuckers. But I have experienced them to be as good, and have produced as fine fruit from them, as from any other plants.

Towards the end of *September* your fruiting-frame will be almoſt clear. Therefore, if you made uſe of tan only for the pit, it ſhould now be ſcreened, that the ſmaller parts of it may be ſeparated from the greater. thoſe however have both of them their reſpective uſes. The larger ſhould be ſpread of an equal thickneſs all over the pit. You ſhould then have a ſufficient quantity of new tan to raiſe the bed with to its proper height, mixing them well together. This, with the lining, will maintain a moderate heat for five or ſix months. The ſmaller parts will be ſerviceable to cover the dung-beds with, wherein you are to raiſe your ſucceſſion plants.

Having gone through the whole proceſs of the Pine-apple, from the management of the crowns and ſuckers to the ripening of the fruit; it remains that proper notice be taken of the white inſects which are found about the Pine, and which are always injurious, if but a little neglected, and frequently deſtructive to the plants: but as their extirpation has been ſufficiently directed by Sir *James Juſtice*, as well as Mr. *Miller*, it will be unneceſſary to give any more on this head.

Directions for making Plantations of Strawberries.

THE only ſorts of Strawberries worth cultivating in this country, are, The *Virginian* or Scarlet, the Globe Hautboy, and the Greeniſh White or Pine-apple Strawberry, ſo called from the reſemblance it has to the taſte of the Pine-apple. The culture of theſe is generally the ſame. Whenever you deſign to make plantations of them, let the ſoil be a good freſh loam, to be very well trenched in *Auguſt*, and laid up in ridges in winter, to be meliorated by the ſnow and froſt, turning it over the ſpring following. Should the ground be in good heart, do not dung

dung it, as that would encourage the plants to ſend out too many ſuckers and runners, to have good fruit. So ſoon as the plants have done fruiting, from which you are to take your off-ſets, lay out your ground in beds five feet broad, with alleys one foot and a half, in order to have free acceſs to dreſs the beds and plants, obſerving to take no other than ſingle heads from the mothers (for runners will only multiply themſelves). The *Virginian* kind are to be planted fourteen inches diſtant every way, the Hautboys two feet, and the Pine-ſtrawberry at near the ſame diſtance: they are to be ſet in pits, and well watered (if dry weather) and kept moderately ſo, until you perceive they have ſtruck root: keep them clear from weeds. By the beginning of *October* they will have made good roots, and will ſhew well this ſeaſon; clean them again from weeds and runners, laying up the earth in the alleys, two inches deep, where it is to lie a fortnight, and then to be ſpread with a ſpade between the plants, and at the ſame time cut off their long-ſhanked leaves; this is called winter-dreſſing. In *April* clear them again of all weeds and runners, and dreſs the beds. When they are in bloom, if the ſeaſon is dry, water them plentifully, to make them ſet their fruit well, otherwiſe they will not; and be ſure at this ſeaſon to take off all runners, by which means you will have good crops.—— Theſe beds are to be removed every three years: and if the ground is dry when you water the Hautboy, obſerve to lay ſome wheat-ſtraw between the plants, to receive the bunches of fruit; this will keep the fruit dry, and the ground moiſt, which, whilſt the plants are in bloom, and for ſome time after, will be of great ſervice to them.

A Ca-

A Catalogue in Alphabetical Order, of ſuch Plants and Roots as are neceſſary for the Kitchen-Garden, pointing out the Seaſons for planting or ſowing them, with other Particulars: In the ſame Order will be found the Directions for the Management of thoſe moſt in Uſe (diſmembered of every Thing tedious and unneceſſary) and other Things worthy to be attended to, for having the Crops not only early, but in high Perfection.

ANGELICA, ſeed, in *March*, on a rich ſoil, to be tranſplanted, open to the ſun.

Aniſe, ſeed, in *March*, rich ſoil, warm and ſhady.

Artichoaks, off-ſets, in *March*, on ground well prepared the preceding *October*.

Aſparagus, *Dutch*, ſeed, in *April* or *May*, produced from plants that had never been cut.

———, *Graveſend*, the ſame.

Balm, *Common*, ſeed and ſlips, planted in *March*.

——, *of Gilead*, ſeed, in pots on hot-beds, in *March* and *June*, tranſplanted into a good rich ſoil.

Baſil, *Buſh*, ſeed, *April* or *May*, on hot-beds, to be tranſplanted.

——, *Sweet*, the ſame.

Beans, *early Liſbon*, ſeed, *October* and *February*, full in the ſun, a rich ſoil.

——, *early Mazagan*, ſeed, *October* and *November*, the ſame.

——, *green Genoa*, ſeed, *April* and *May*, the ſame.

——, *long podded*, ſeed, *April*, the ſame.

——, *nonpareil*, ſeed, *April*, the ſame.

——, *Toaker*, ſeed, *March* and *April*, the ſame.

——, *white bloſſomed*, ſeed, *April*, the ſame.

——, *Windſor*, ſeed, *March* to the middle of *June*, the ſame.

——, *ſcarlet kidney* ſeed, *April* and *May*.

——, *Batterſea kidney*, the ſame.

——, *black kidney*, the ſame.

——, *Canterbury kidney*, the ſame.

——, *early white dwarf kidney*, ſeed, in *January*, on a hot-bed; *April* and *May*, open ground.

——, *large white Dutch kidney*, ſeed, *April* and *May*.

Beans,

Beans, Oriental kidney, the ſame.

——, *ſpeckled kidney,* the ſame.

——, *ſcarlet kidney,* the ſame, in dry weather, and in a drill made on the top of the ridge, to preſerve them from moiſture.

Beets, green, ſeed, *March,* on a moiſt ſoil, well dug.

——, *white,* the ſame.

——, *Red,* ſeed, *March* and *April,* and when up ſix inches, to be cut cloſe to the ground and covered.

Boor-cole, ſeed, middle of *February,* to be tranſplanted when they ſhew fine leaves.

Brocoli, Neapolitan, ſeed, beginning of *February,* a wall-border, eaſt aſpect, to be tranſplanted when they ſhew fine leaves.

———, *Purple,* the ſame.

———, *Turnip,* the ſame.

———, *White,* the ſame.

Cabbage, Alnwick, ſeed, *Auguſt* or the end of *February,* autumnal ſowing of Cabbages is preferable, and when ſix leaved, to be tranſplanted into beds, at five inches diſtance.

———, *early white Dutch,* the ſame.

———, *large Scots,* the ſame.

———, *Batterſea,* ſeed, end of *July,* on open ground, to be tranſplanted in the ſame ſoil at four inches diſtance, and again tranſplanted in *September.*

———, *early York,* the ſame.

———, *ſugar-loaf,* the ſame.

———, *early May,* ſeed, *July* and *Auguſt.*

———, *large Engliſh,* ſeed, *Auguſt* and *September.*

———, *early ſmall Ruſſia,* ſeed, *February.*

———, *red Dutch,* ſeed, *Auguſt* and *February.*

Caraway, ſeed, *April.*

Cardoons, ſeed, *March,* on good light earth, to be tranſplanted when in fine leaves, fit for blanching about the 20th of *Auguſt.*

Carduus benedictus, ſeed, *April.*

Carrot, early horn, ſeed, firſt crop *February,* walled border, a light ſoil.

——, *large orange,* ſeed, ſummer crop 10th *March,* winter, middle *July,* light ſoil.

Celery,

Celery, } ſeed, early, middle of *February*, moderate
Celeriac, } hot-bed, tranſplant when they have five or ſix leaves; next in *March*, until the middle of *April*, in open ground, and in *October*, to be tranſplanted in *March*, and again in *May*.

Celery, Italian, ſeed, *March* and *April*.

Chervil, ſweet, ſeed, autumn, immediately after ſeeding, in a moiſt, ſhady ſpot.

Chives, parting their roots, planted in *Auguſt*, light rich ſoil.

Clary, ſeed, *March*, in an eaſt aſpect, to be tranſplanted in *June*.

Cole, ſea, ſeed, *July* and *Auguſt*, or immediately when the ſeeds are ripe.

Coleworts, curled, ſeed, *March* and *April*.

———, *variegated*, the ſame.

Collyflower, Engliſh, ſeed, for the early, on old Cucumber or Melon-beds, 20th *Auguſt*, tranſplant when well leaved, in freſh, but not very rich earth, about *October* tranſplant into light earth.—— Plants that have been preſerved under frames to be planted in open ground in *March*, *February* on moderate hot-beds to come in in *Auguſt*, and *September* on the natural ground; on natural ground in *May*, to come in in *November*.

———, *Italian*, the ſame.

Columbine, ſeed, *April* and *Auguſt*.

Coriander, ſeed, *March* and *April*, in a warm free place, five inches diſtance.

Creſs, broad leaved, ſeed, if deſired early, upon a moderate hot-bed in *February*; in ſpring on beds well expoſed to the ſun, in drills; for winter, in *Auguſt*.

——, *common*, the ſame.

——, *curled*, the ſame.

——, *Indian*, ſeed, early, middle of *February*, moderate hot-bed, tranſplant when five or ſix leaves: common crop in *March* and till middle of *April*, in open ground; and in *October*, to be tranſplanted in *March*, and again in *May*.

Cucumber, early prickly, ſeed, *November*, *December*, *January*, *February*, and *March*, on an hot-bed.

Cucumber, long green, ſeed, *March*, on an hot-bed.
———, *ſhort green*, ſeed, *February*, on an hot-bed.
———, *white Turky*, ſeed, *May*, on an hot-bed.
———, *green Turky*, ſeed, *March*, on an hot-bed.
Cummin, ſeed, *April*.
Dill, ſeed, *March*, to be hoed to 10 inches diſtance.
Endive, broad leaved curled, ſeed, between 20th *June* and 12th *Auguſt*, in good ground, when they ſhew five or ſix leaves to be tranſplanted into well dug ground, at fourteen inches diſtance, to be blanched.
———, *curled*, the ſame.
Eſcallion, ſee *Chives*.
Fennel, common, ſeed, as ſoon as the ſeed is ripe, to be tranſplanted in the ſpring.
———, *Italian*, or *Finochia*, ſeed, beginning of *April*, in drills, ſix inches ſeed from ſeed, on rich light ſoil.
Fenugreek, ſeed, *March*.
Garlick, ſeparating the roots, *July* and *Auguſt*, light rich ſoil.
Gourd, ſeed, *March*, on a hot-bed.
Hyſſop, ſlips and ſeed, middle of *March*, any place.
Kail, Kilmaurs, ſeed, *April*.
——, *Ruſſia curled*, ſeed, *March*.
——, *ſmall*, ſeed, *April*.
Leek, French, ſeed, *April* and *July*, the largeſt planted in rich light earth.
——, *London*, the ſame.
Lettuce, brown Dutch, ſeed, *July* and *Auguſt*.
———, *cabbage*, ſeed, *February*, *March*, *July* and *Aug*.
———, *capuchin*, ſeed, *Auguſt*.
———, *green Egyptian*, ſeed, *Auguſt*.
———, *ice*, ſeed, *March*, *April*, *July* and *Auguſt*, laſt ſown to be tranſplanted in *September*.
———, *Imperial*, ſeed, *April* and *July*.
———, *lamb*, ſeed, *July*, *Auguſt* and *September*.
———, *French*, ſeed, *April*.
———, *Sileſia*, the ſame.
———, *white Cos*, or *Verſailles*, ſeed, *April* and *July*.
Marjoram, ſweet and *pot*, ſeed, *April*, on a moderate hot-bed, to be tranſplanted in *June*.

Marygold,

Marygold, common, ſeed, *March*.
Melons, Cantalupe, ſeed, *March*, in a hot-bed.
———, *red Turky*, the ſame.
———, *green ditto, with others*, ſeed, *February* and *March*.
Muſtard, white, ſeed, every month for ſallad.
———, *brown*, ſeed, *March*.
Onion, Engliſh, ſeed, *March*, on a free moiſt ſoil.
——, *Flanders*, the ſame.
——, *red Spaniſh*, the ſame.
——, *Portugal*, ſeed, beginning of *March* and *Auguſt*, in rich ground, dug in *September* or *October*, and laid in ridges.
——, *ſilver-ſkin*, the ſame.
——, *Straſburgh*, ſeed, middle of *July*, for winter ſallads, to be well covered.
——, *Welſh*, ſeed, *July*, hold good in the ground five or ſix years
Parſley, common, ſeed, middle of *February*, on thin open ground.
———, *curled*, the ſame; if deſired large, to be left at ſix inches diſtance.
———, *Dutch*, the ſame; roots good from *Auguſt* to *March*.
———, *Hamburgh*, the ſame.
Parſnip, Dutch ſwelling, ſeed, *March* and *April*, in a free ſoil, well ſituated, rich and well dunged.
———, *Engliſh*, the ſame.
Peaſe, Barn's hotſpur, ſeed, *April*.
——, *common haſting*, ſeed, *March* and *April*.
——, *crooked ſugar*, the ſame.
——, *crown*, or *roſe*, ſeed, *March*.
——, *Dutch haſting*, ſeed, *February*.
——, *great Dutch Admiral*, ſeed, the ſame.
——, *dwarf marrow-fat*, ſeed, *April* and *May*, on very lean ſoil, at a good diſtance row from row and pea from pea.
——, *dwarf ſugar*, ſeed, *April* and *May*.
——, *early Charlton hotſpur*, ſeed, *October*, *November*, *January* and *February*.
——, *early Heſſian hotſpur*, ſeed, the ſame.
——, *Eſſex Reading*, ſeed, *March*.

Peaſe, *green rouncival*, ſeed, *March* and *April*.
——, *grey rouncival*, the ſame.
——, *large marow-fat*, *January* to *June*.
——, *Egg*, ſeed, is a fine large one, and requires good room, is a great bearer, and holds long, from *January* to *June*.
——, *large ſugar*, the ſame.
——, *Leadman's early dwarf*, ſeed, *October* and *November* for hot-beds.
——, *long dwarf*, ſeed, *March* and *April*.
——, *maple hotſpur*, ſeed, *April*.
——, *maſter hotſpur*, ſeed, *March*.
——, *Nonpareil*, the ſame.
——, *Ormot's hotſpur*, ſeed, *February*.
——, *ſhort dwarf*, ſeed, end of *May*.
——, *Spaniſh moretto*, ſeed, *February* and *March*, to have good room, one inch pea from pea.
——, *Turky hotſpur*, ſeed, *March*.
——, *white rouncival*, ſeed, *March* and *April*.
——, *Flanders hotſpur*, ſeed, *March*.
Pompion, ſeed, *February*, hot-bed.
Poppy, *white*, ſeed, *April*.
Purſlain, *golden*, ſeed, early, in *March*, hot-bed, tranſplant end of *May*, in a rich bed, open ground half a foot plant from plant. Common crops in *May*, firſt watering the bed, and covering the ſeed.
——, *green*, the ſame.
Radiſh, *black Spaniſh*, ſeed, *July* and *Auguſt*, to be taken up in *November*, to be preſerved in ſand.
——, *early London ſhort-topt*, ſeed, for early crops on a border; and from *March* to the beginning of *April*, every fortnight on beds; and in *Auguſt*, for *September* and *October* eating.
——, *early ſalmon*, the ſame.
——, *Sandwich*, the ſame.
——, *Turnip*, ſeed, *February* and *March* only.
——, *white Spaniſh*, ſeed, *July* and *Auguſt*, for uſe in *October*, all in well trenched ground.
Rockambole, ſeed, *September*.
Roſemary, ſeed, *May*, in pots on hot bed, and from ſlips in *May*.

Salſafy,

Salſafy, ſeed, the middle of *March*, by dropping three ſeeds in one hole, at eight inches diſtance, to be covered, fit for uſe in *October*, ; ſuch as remain in the ground until the following *April* or *May* may be uſed as Aſparagus.

Savory, *ſummer*, ſeed, *April*.

——, *winter*, ſeed, *May*.

Savoys, *green*, ſeed, *March*, *Auguſt* and *September*.

——, *yellow*, the ſame.

Scallion, parting roots, ſpring and *Auguſt*, but the latter for their coming in in ſpring.

Scorzonera, ſeed, *March* and *April*.

Shallott, ſmalleſt ſingle cloves with good bottoms, middle of *Auguſt*, to be taken up the *July* following.

Skirret, ſeed, in *March*, on a moiſt rich ſoil, well dreſſed the *October* before; they may remain in the ground.

Sorrell, *candy*, ſeed, *Auguſt*.

——, *French*, the ſame.

Spinage, *round Dutch*, ſeed, every fortnight from the end of *February* to the middle of *May*.

———, *mountain*, the ſame.

———, *ſmooth French*, the ſame.

———, *prickly* or *winter*, ſeed, from the 20th of *July* to the 12th of *Auguſt*, in drills.

Succory, ſeed, *April*.

Thyme, ſeed, in ſpring, upon a lean border.

Turnip, *early white garden*, ſeed, *February*, *March*, and *April*; ſecond crop, *July* and *Auguſt*.

——, *French long-rooted*, ſeed, *May*.

——, *green-topt field*, ſeed, *June* and *July*.

——, *large white field*, the ſame.

——, *Muſcovy*, ſeed, *April* and *July*.

——, *red-topt field*, ſeed, *June* and *July*.

——, *yellow*, ſeed, *April* and *July*.

——, *Pruſſian*, ſeed, *May*.

N. B. Turnips are always the ſweeteſt that are raiſed on virgin earth, and hoed to a good diſtance.

Directions for the Culture of the Plants and Roots in the Kitchen Garden, in an Alphabetical Series, pointing out the Soil, Aſpect, and Treatment neceſſary for their Perfection.

APPIUM.

SEE PARSLEY.

ARTICHOKES.

THE Artichoke I would recommend is the red, for its high flavour, and the largeneſs of the bottoms. —My practice varying much from the common in raiſing this article, I ſhall be very particular in my directions.

By my method fruit may be continued from *June* (or even from *May*, in ſome ſeaſons) until *October*; but this cannot be done but by annual plantations, executed in the following manner. In *October* lay out a ſpot of ground ſufficiently large, according to the number of plants you deſign to plant, to be at four feet, row from row, and three feet, plant from plant: trench the ground very well, and in *November* lay over it a good quantity of well rotted dung; mix all well together, rendering it very fine, by breaking the clods, ſo as to give free liberty to the fibres of the plants, when you are to ridge it, ſo to remain until about the middle of *March*, when the ground is to be well dug for planting; you are now to take the beſt off-ſets from your Artichokes, and thoſe only which have fibres, are well formed and ſtocky; theſe you may diſtinguiſh by removing the earth from about

about the old plants, and with your finger feel for ſuch off-ſets as can be eaſily taken off, without wounding them or the mother-plants; obſerving not to take ſuch ſuckers as have fruited, for their roots are ſticky, and will not produce ſuch large fruit as younger ſuckers, I mean ſuch, whoſe roots cut criſp and tender.

If your ſuckers are brought from a diſtant garden, or have been ſome time taken off, I would recommend their roots to be waſhed, and before planting to lie ſix hours in water; this will refreſh them, expand their veſſels and fibres near their roots, and prepare them for ſoon ſtriking root. Plant them at the diſtances above ſpecified, that is, four feet row from row, and three feet plant from plant, watering them well until you perceive them growing: between their rows you may have a crop of ſpinage and radiſhes, or a few colly-flowers, but no other kind of crops. About *Auguſt* and *September* they will give you good fruit, which, when you cut, be ſure at the ſame time to cut down their ſtalks, to within one inch of the ground; this greatly ſtrengthens the plant, and prepares it for early fruiting the enſuing ſeaſon: and in order to ſtrengthen the young plants, I have cut them down after their fruit has appeared a little time; this enables them to give a fine crop the following ſeaſon: in this manner in particular I treat all weak plants, which is a certain way of recovering them.

About the twenty-fifth of *October*, I cut down my Artichokes to within ſix or eight inches of the earth, and dig the ſurface of my ground, laying it up to the plants, in the manner you do when you trench ground; and if you apprehend the ſoil is not ſufficiently rich, you may lay the dung of your oldeſt and beſt rotted hot-bed in the bottom of the trench, but upon no account any new dung or litter: this landing of your Artichokes will defend them from winter froſts. In the ſpring let the old dung be dug into the ground, which will ſo ſtrengthen the plants, that you may depend upon good crops. I alſo tried an experiment with my Artichokes, which I cannot omit, and with which I had moſt extraordinary ſucceſs. In *June* and in *July* I gathered a good quantity of ſea-rack, mixed it with freſh earth, about a fourth

part of old dung, and a ſmall quantity of unſlaked lime; theſe were laid in an heap, to be turned every fortnight or three weeks, to ferment, mix, and rot, ſo as to be fit to land up the plants about the latter end of *October*, the ſpring following I dug this compoſt into the earth, whereby I had extraordinary fruit, with very large bottoms. Obſerve never to dung Artichoke-land but once in three years, but to lay very rich land to them every winter.

When you ſmooth your ground in *March*, between theſe plants, it will be proper to remove the earth from about their roots with a ſpade, and with your hand take off all the off-ſets or eyes, leaving no more than two good ones for fruit; and ſhould any more afterwards appear, take them up; obſerving never to allow more than one fruit upon a ſtalk, and when you cut your fruit, cut down the ſtalk almoſt cloſe to the ground, as before directed. This was my practice in the culture of Artichokes, by which I excelled Shou'd your Artichokes prove weak in the ſpring, hill them up with rich earth, and they will recover.

ASPARAGUS.

WHEN you have provided yourſelf with ſeed, which ſhould never be taken, but from plants that have never been cut, and have been marked for their ſuperior excellence; lay out a ſpot of rich, light garden-earth, into beds five feet broad, with an alley of one foot and a half. Take the ſeed the day before you ſow it, and put it into a veſſel with water, when what are good will ſink to the bottom, and what are huſky and empty will ſwim, which are to be thrown away; then take your line, make five or ſix rows in this bed, and therein drop your ſeeds, three by three, at half an inch diſtance, covering them with an inch and a half of earth; keep them quite clear from weeds during the ſummer, and if *April* and *May* prove very dry, give them a little water. In *October*, when you perceive their ſtraw or haulm turn yellow, cut it down, and laying two inches of

of earth from the alleys on them, cover the ſame in *November* with three inches of well rotted old dung, to prevent the froſt from injuring the crowns of the young plants.

At this ſeaſon, in a well expoſed part of the garden, trench a ſpot of freſh, light earth, two ſpades and one ſhovel deep, and ridge it up to receive the benefit of the winter ſnows and froſt: provide yourſelf at the ſame time with a good quantity of old well rotted dung, which, if it is not ſo well rotted as you could wiſh, one winter will perform that work, provided it is well ſpread and wrought in that ſeaſon, which is the moſt proper for rotting all ſorts of manure.

About the tenth of *March*, open your ground again, and at the bottom of each trench, wherein you are to plant the roots, lay in a good quantity of this well rotted dung, ſo that it may be ſeven inches deep below the ſurface of the earth, over which lay the earth that came out of the trench, five inches thick above the dung, leveling it very well, then lift your young plants from the bed wherein they were ſown; firſt opening a large drill fit for holding them, and laying it high in the middle; upon this hill plant your Aſparagus roots at fourteen inches diſtance, plant from plant, and cover them over with two or three inches of this good earth. The plants are to be raiſed with an Aſparagus-fork, which is beter than a ſpade, as being not ſo apt to wound their roots, which is of more conſequence than many people apprehend.

In the firſt year of this plantation, you may have a crop of Onions thinly ſown; laying in ſome rotten dung in the alleys, to mix with the earth, you may alſo for that year have a crop of Collyflowers; all which will be taken off before *October*, when you are to dreſs your beds for winter, which muſt be performed thus:—— About the twentieth of *October*, when you ſee the Aſparagus-haulm turning yellow, cut it down, ſpading the ground in the alleys, lay the ſame upon your Aſparagus-beds, and before the froſts come on, cover your beds ſix inches thick with the beſt rotted dung of your oldeſt hot-beds, which will protect them in the winter; in *March*, or the beginning of *April*, dreſs them with

an

an Aſparagus-fork, which will not injure the young crowns of your graſs; keep them always clear from weeds, and the refuſe of the dung which comes off theſe beds in their ſpring-dreſſings, may be dug into the alleys, for Collyflowers and Brocoli; but plant no Beans in theſe alleys, they being a ſort of poiſon to Aſparagus-roots. By obſerving the winter-dreſſings in *October*, and the ſpring-dreſſings in *March* or the beginning of *April* regularly, you may cut good Aſparagus the third, although it be better to defer it until the fourth year after tranſplanting.

Moſt gardeners, in cutting Aſparagus, take the biggeſt buds, and leave the ſmalleſt; but from experience I am quite certain, that this is a moſt erroneous practice; for when the ſap deſcends to the root in *October*, it is in proportion to the bud that returns it; therefore, for the firſt two years after you begin to cut, you muſt obſerve, where your bed gives two large and two ſmall graſs, to leave one large and one ſmall one, for the future welfare of the bed; and by obſerving to be tender of cutting in the two firſt years, your bed will hold for twelve or fourteen.

B A L M.

THE Common Balm is propagated by planting ſlips in *March*, in beds of good freſh earth, five feet broad, with alleys of one foot and a half broad; watering them, if the weather is dry, and to be kept clear of weeds.

There is a ſort of Balm that has its leaves finely variegated with yellow and white: this muſt be planted in a very lean ſoil, that the variegation may be preſerved.——The common ſort makes a fine tea by an infuſion of its leaves, which is an excellent remedy for the lowneſs of ſpirits.

BALM of GILEAD.

BALM of Gilead is propagated by ſowing its ſeeds in pots upon an hot-bed in *March*, and in *June* the plants muſt be tranſplanted into as good and rich a ſoil as what you have in the pots, or you may tranſplant them from their ſeed-pots into others, putting at moſt but two plants into a pot, and ſetting the pots in the green-houſe, or under a hot-bed frame, cutting them down; and the *May* following they may be tranſplanted out for good, but on a ſoil equally good with that directed above; when they are in bloom, cut down their ſtalks, and give them a dreſſing. This was my practice with this odoriferous herb, by which means I always had a ſucceſſion.

BEANS.

THE Mazagan, and the early *Liſbon*, are the earlieſt kinds; but I prefer the Mazagan Bean, as it is a very great bearer, and has a fine taſte. It is a native of a *Portugueſe* ſettlement upon the coaſt of *Africa*, and, in many winters and ſprings, comes firſt; it is beſt to have them annually from *Liſbon*, for they degenerate, if ſown from ſeeds raiſed in *England*. They may be ſown in *October* and *November*; and when they appear above ground, cover them with earth, to preſerve them from the froſt; earthing them as they advance, until the froſt is over; when they are to be faſtened to the wall, with reeds and lifts of cloth; this haſtens them on, and prevents their wind-waving or breaking; top them when in bloſſom, and they will come in very early.—There is another method to have thoſe Beans early: Lay a pound of them under the earth near a well expoſed wall; cover them with bell-glaſſes; in three weeks take them up and you will perceive them ſpringing, which when you obſerve, plant them under a ſouth-aſpected wall, allowing their buds to be equal with

with the ſurface of the ground, as the froſt will not injure them, but be ſure to cover their roots well.

Preparing the ſummer-crops in this manner forwards them much.

Next to theſe, you may, in *February*, ſow the *Spaniſh*, green *Genoa*, and the *Sandwich* Bean; and after theſe, once every three weeks, ſow the *Toaker* or *Tockay*, the *Turkey*, the *Windſor*, and *Nonpareil* Beans, from *March* until the middle of *June*, in order to have a ſucceſſion of them as late as you can; you may plant them among your rows of Cabbages, or in fields by themſelves, giving them four feet diſtance, row from row, and ſix inches to the largeſt, Bean from Bean; I always planted two Beans together, in holes two or three inches deep, and obſerved to top them when they were in full bloom, as I have found ſuch pruning to help their fruit to ſet more plentifully, than if their long ſtalks were allowed to ramble at large. The Green *Genoa* Bean I allowed to be quite ripe before I gathered it, as I preſerved it for winter-uſe; and when pulled, dried them. In winter I ſteeped them for ſome days to ſoften, boiling them with bacon and fowl; they not only retain their colour, but eat as well as in ſummer.

BEANS (KIDNEY)

AS I have already treated of raiſing Kidney-beans upon hot-beds, I ſhall not repeat it here. The beſt kind for a good crop, is the *Batterſea*, the Dwarfs being only for the hot-bed-uſe. There are ſome gardeners who adviſe planting the *Batterſea* upon a moderate hot-bed, and after they have germinated, by ſhowing their root ſpringing at the eyes of the Bean, immediately to tranſplant them into the open ground, whereby (ſay they) you will have fruit earlier by a fortnight, than if they were ſown in the natural earth. This may happen in mild ſprings; but this plant being very tender, I have often obſerved their roots to decay, when they have been thus tranſplanted. The method

I uſed

I uſed to have them early was thus: In the month of *May* I took ſome of my largeſt pots, and laying a ſtratum of good freſh rich earth at their bottom, I planted therein ſome Beans; theſe I covered with another ſtratum of the ſame earth, laying thereon ſome more Beans, this I continued to do until I had filled my pots, which I ſet in the airieſt part of my greenhouſe; in fifteen days my Beans were ſpringing faſt, when I planted them in the ſame ſort of ſoil, two inches deep upon a wall-border, by which means I had them earlier by three weeks, than thoſe which were ſown at the ſame time, without this preparation, and I had by far more ſucceſs with them, than with thoſe Beans whoſe roots were chipped (as the gardeners term it) upon hot-beds. They require to be kept quite clear from weeds, and in very dry weather you may give them moderate waterings, and, by ſowing once every three weeks, you may continue them till the froſts pinch them, and render them uſeleſs. You may in *May* ſow ſome of the early dwarf *Canterbury* Kidney-beans, which do well at this ſeaſon.

The *Scarlet Kidney-Bean* muſt be managed in the way juſt directed, as they are apt to burſt, ſhould the ſeaſon prove wet after ſowing. —— This Bean I would recommend for family uſe, not only as it holds long, but the little trouble it gives: one ſowing will be ſufficient, it being a very abundant bearer, and holds until cut down by the froſt, and is clear from the ſtrings that are ſo troubleſome in the fruit of the other kinds: they are alſo good boilers, both as to colour and flavour, and when ſomewhat large, you need do no more than quarter them with a knife. I would adviſe ſome well-rotted dung to be laid at the bottom of the drills, to be thinly covered with coal or turf aſhes, that its moiſture may not reach the ſeed, (which ſometimes has an ill effect) but to receive the fibres when they ſtrike down, which will make the plants grow with vigour; and for the better keeping them dry, I would adviſe their being ſown in drills on the tops of ridges, and in order to keep up your drills, have a reſervoir. Theſe Beans muſt be ſtaked with ſlender poles or *French* reeds, as they will run to a conſiderable height, and have a pleaſing effect when in fruit and flower, which they will be at the ſame time.

BEETS.

BEETS.

OF theſe there are three ſorts:

1. The Green Beet.
2. The Red Beet.
3. The White Beet with a large ſtalk, commonly called Beet-chard, or Swiſs Beet.

1. THE *Green Beet* is to be ſown in *March*, on a moiſt piece of land, well dug, but not over rich; and the better the ſoil is wrought, the more liberty the roots will have to ſwell, and produce large leaves. Their leaves are a good and wholeſome pot-herb, and by blanching or ſteeping them a little time in water before they are uſed, they will be rendered very palatable, and their bitterneſs removed. If you perceive them to come up too thick, they muſt be well thinned; and if ſome of their ſeeds are dropped amongſt your ſummer-carrots, they will do well, as the carrots will be drawn in ſummer, when the Beets will remain, and be much improved, by the ground being ſtirred about them. Provided you can rake the bed, on the removal of the Carrots, you may plant a ſtraggling crop of Savoys for winter and ſpring uſe.

2. The *Red Beet*, ſee PARSNIP.

3. The *White Beet* or *Beetchard* may be ſown at the ſame time as the *Green Beet*, thinning and cultivating them in the ſame manner; but obſerve, that as the Beetchards are only valued for their large flat ſtems, do not ſuffer them to appear the firſt ſummer, keeping them down by cutting, whereby their roots will be enabled to ſend up large, flat, and broad ſtems the year following; in ſoups, or fryed by themſelves, they make a delicate diſh; but they are more proper for ſoups, by their ready diſſolving quality, adding a delicate ſmoothneſs and fulneſs not to be imitated by any other herb. For the better ſupplying the kitchen, they muſt be ſown every year.

BEET-

BEET-CHARDS.

SEE BEETS.

BROCOLI.

I Proceed now to the culture of the different ſorts of Brocoli.—And here I ſhall mention a method entirely new, which I practiſed, and whereby I had Brocoli in its greateſt perfection. I prefer the White Brocoli, or what is called the *Neopolitan* Brocoli, which I would adviſe to be ſown the beginning or middle of *February*, upon a wall-border, with an eaſt-aſpect. So ſoon as theſe plants have got five leaves, tranſplant them into a more ſoutherly one, upon a very rich ſoil, where they are to ſtand.

They are tranſplanted for an increaſe of fibres; and, if they are twice or thrice tranſplanted in the nurſery-bed, they acquire twice or thrice more ſtrength; and in conſequence they produce much better than thoſe plants which have not been tranſplanted.

In order to have your Brocoli produce well, it will be very proper to tranſplant them into the furrows or alleys of your onion, carrot, or other kitchen-ſtuff beds, the beginning of *July*; preſerving them from ſnails, and hilling them, they will produce moſt noble heads in *January* and *February*; it is a crop will hold for a conſiderable time, and many perſons eſteem them more than they do the beſt Collyflowers; by ſowing ſome very early in the ſpring, the moſt forward will ſucceed your autumnal crops, by which means you will have a ſucceſſion. The *Roman* or blue Brocoli I would always ſow by the tenth of *March*; and when they have got five leaves, tranſplant them from the ſeed-bed into the nurſery-bed, at three inches diſtance, plant from plant; and keeping them clear from weeds, let them remain there until the end of *June*, when they

they ſhould be planted into a good ſoil, in three rows, three feet diſtant, and two feet plant from plant: for if they are planted thicker, they ſpire too much: you muſt hill, dig, and keep them clear from weeds, and in *November* they will ſhew their heads, which, as ſoon as they do, (except in very ſevere froſts) they muſt be cut off for uſe, that their ſide-ſprouts may advance for the ſpring, when they will hold a good while. Brocoli proſpers beſt in a rich loamy ſoil, not much expoſed to the ſun; but it ſhould never be planted under the drop of trees. The *Turnip-Brocoli* has nothing curious in it, excepting that its roots are ſhaped like a Turnip above ground, from which proceed their ſhoots, and makes a very odd appearance.

The Italian *Method of cultivating* BROCOLI *and* FINOCHIA, *communicated by the late Lord Biſhop of* Killala, *to the* Dublin Society.

THE latter end of *May*, or beginning of *June*, on the decreaſe of the moon, prepare a bed of fine rich light earth, well cleared of ſtones, and well dug, which is to be well watered the day before the ſeed is ſown, which muſt be done with a light ſcattering hand, to leave ſufficient room for the growth of the young plants. Work the ſeed gently into the earth with a fine rake, and ſtick feathers or ſomething over the beds to preſerve them from birds; in dry weather water them morning and evening for fifteen days, and after that every other day for eight or ten days more, and when they are grown to the height of a quarter of a yard, which will be in about ſix or ſeven weeks, they muſt be taken up ſeparately, and tranſplanted into another bed of fine freſh earth, prepared as the former, with this addition, that holes muſt be made in it about the ſize of the crown of a hat, in the form of a baſon, at a foot and a half diſtance; in each hole muſt be ſet a ſingle plant, putting with it two large handfuls of ſheeps-dung, filling up the hole with fine mould,

mould, as practiſed in making Cucumber holes: they muſt be watered morning and evening for eight or ten days, and afterwards every other day, as the ſeaſon requires, till they ſeem in perfect health: there is nothing afterwards to be done, but now and then hilling them, as you do Collyflowers: in about five or ſix weeks, the flower will be fit to cut, which is known by its cloſeneſs and hardneſs, as well as the extreme beauty of its colour, having a purpliſh bloom like that on Grapes: they never cut more than about nine or ten inches with the flower, as the ſtalk ſhoots out freſh ſprouts, which are cut from time to time; thoſe deſigned for ſeed are never to be cut, but ſuffered to grow till the ſeed is fit to gather, which they know by cropping a bit and ſqueezing it hard between the finger and thumb, if the ſeed ſhoots out, it is fit to gather, and muſt hang in the ſun to harden; if it does not fly from the huſk, but bruiſe in the ſqueezing, it muſt ſtand a while longer.

I was favoured with theſe directions by a gentleman at *Rome*, where he reſided many years: the ſame method is practiſed in *Italy*, except the ſeaſon of planting, which with them is in *Auguſt*: but for this climate he fixed on the end of *May*, or beginning of *June*, as moſt proper. Theſe directions have been followed in *France*, and with great ſucceſs; nor have I been leſs attentive to them, notwithſtanding the oppoſition given me by my gardener, in which I have had all imaginable ſucceſs; my Brocoli being larger, ſweeter, tenderer, and in much greater quantity than ever I met with here before, and the flower frequently as large as a ſmall Collyflower.

I ſuffered my gardener to follow his own way, and I obſerved what he ſowed early in the ſpring was apt to run in hot weather; what he ſowed in autumn, the froſt ſtunted in its growth, and the beſt he ever produced were not better than common Sprouts.

FINOCHIA ſhould be managed after the ſame manne, only ſowed a fortnight later, being extremely apt to run, and great care taken to earth it in the manner you do Celery; our *Engliſh* gardeners rarely taking care to draw the earth high enough in blanching.

CABBAGES.

THE beſt early Cabbages are the Early *Yorkſhire*, the *Batterſea*, and Sugar-loaf; theſe ſhould be ſown the end of *July*, upon an open ſpot of ground; when they have got ſix leaves, they ſhould be tranſplanted into beds of the ſame earth at four inches diſtance, that they may grow ſtrong and ſtocky; and about the end of *September* they may be planted out into a good rich ſpot of ground amongſt your winter Spinage, which when taken away in the ſpring, you ſhould draw the earth up to the ſtems of your Cabbages, whereby they will be much ſtrengthened, and in *May* they will be turning in their leaves to cabbage; then it will be proper to tie ſome of the moſt forward with baſs ſtrings or ſmall ſallow twigs, to blanch their innermoſt leaves, by which means they will have Cabbages ten days ſooner than if they were not ſo uſed. The *Batterſea* and the Sugar-loaf Cabbages are treated the ſame way, and are ſown at the ſame time; but as the *Batterſea* is apt to fly up, I prefer the Sugar-loaf. After your early Cabbages are gone, you may ridge your ground for Celery, Celeriac, Endive, &c. There is a ſort of Cabbage, called Muſk-Cabbage, which is now neglected, and not inſerted in our ſeedmens catalogues; but for taſte and flavour, no gentleman ſhould want them in his garden; it is managed in the ſame manner as the *Alnwick* Cabbage, and is in uſe from the beginning of *October* until *Chriſtmas*; and as they are apt to ſuffer in very ſevere winters, either houſe them, or, laying up your ground in ridges, pull them up by their roots, and lay them ſloping on their ſides, covering their ſtems up to their leaves and the Cabbages with ſtraw, which will preſerve them until *February*. The large *Engliſh Alnwick*, Red *Dutch*, and large *Scotch* Cabbages may be ſown in *Auguſt*, or the end of *February*; but in this country I prefer autumnal ſowing of Cabbages; and when they have ſix leaves, plant them out into beds at five inches diſtance.

tance. In *October*, if your land be dry, plant them out at three feet diſtance every way; but if you have a wet ſoil, it will be proper to defer this work until the beginning of *March*; keep them clear from weeds, which can be eaſily effected when you draw the earth to their ſtems, which may be done in *April*, and be repeated as you find neceſſary; and when you have tranſplanted them, if the weather is dry, water them often, until you perceive them to grow.

CARROTS.

THE two ſorts mentioned in the ſeedmens catalogues, are thoſe which are fit to be cultivated in gardens. To prepare for the ſowing of Carrots, take their ſeeds and rub them well between your hands, that they may ſeparate; for the hairy ſubſtance with which their ſeed-veſſels are covered, makes them adhere to one another. I would recommend the firſt crop of Carrots to be ſown about the middle of *February*, upon a wall border which has been dunged the year before; and for this crop I would recommend the the early Horned; but when you ſow Carrots, or any other light ſeeds, in ſandy ground, tread them in with your feet before you cover them, to prevent the wind from blowing them off, which often happens to Carrots, Parſnips, Lettuces, Onions, Leeks, *&c.* About the tenth of *March* I ſowed my general crop of the Orange Carrots in beds four feet broad, where I had my Onions the former year, having dug it in *October*, and laid it up in ridges for the winter's froſts. I obſerved always to ſow in calm weather, and ſometimes to put amongſt them ſome ſeeds of Radiſhes and Cabbage-lettuces, but no other ſort. My laſt ſowing for Carrots was about the middle of *July*, for winter, or rather ſpring uſe. In *October* your large Carrots are to be taken up, when their tops are to be taken off, and the Carrots laid in dry ſand, where they will be preſerved from froſt for winter uſe. Carrots are to be kept clear from weeds, and thinned to three, and ſometimes to five inches, root from root, to have them large; as

ſoon as you take them out of the ground, direct it to be laid in ridges for the advantage of the winter's froſt, for no ground generates vermin ſo much as that on which Carrots have been ſown; to prevent which I have often found no expedient more effectual than the free uſe of unſlaked lime; which with the well working of the beds, and expoſing them to the winter froſts, contributes much to the growth of theſe roots, which require a great freedom in the ſoil to ſwell in, and become large; and in order to improve their flavour, give them the advantage of new ſoil; this improves their flavour, as well as Turnips. The removal of the Lettuces, and the drawing of the Radiſhes are alſo of advantage to the Carrots, as they give a ſort of artificial ſtirring to the beds, and are taken away before the Carrots come to their full growth.

Carrots, from late experiments, have been found very advantageous for the feeding and fattening of cattle, and are well worth cultivating upon ſuch farms as have a ſoil favourable to them, that is, of a deep and light texture, as well as ſandy grounds; in ſuch ſoils they grow with a luxuriancy, which well rewards the farmer's care.

CELERY.

THE early Celery is to be ſown upon a moderate hot-bed, under a framed or a bell-glaſs, the middle of *February*, covering the ſeeds very thin, having firſt watered the bed, which muſt be ſix inches thick of dung, in order to make the ſeeds germinate the ſooner. In about five weeks the young plants will appear, and if the weather is mild, air them in the day, covering them at night with matts; in dry weather give them water twice a week. When they ſhew five or ſix leaves, plant them into the nurſery-bed made of freſh garden-mould, at one inch diſtance, plant from plant, ſhade and water them, until they have taken root. In *March*, and until the middle of *April*, you may ſow Celery upon beds in the open ground, but no later than *April*, as the Celery you planted in the nurſery in *May* will be ſufficiently large

large the latter end of *June*, when you are to take off the largeſt plants, to ſet in ridges laid out from north to ſouth, of what length you pleaſe, in ground which had been well dunged in *March*, or where your earlieſt crop of Lettuces had been ſown. Your ridges ought to be four feet, ridge from ridge, two feet in depth, and well wrought at bottom, that the fibres of the Celery may have free liberty to deſcend, by which means they will have large roots. In three weeks after planting they will begin to ſwell, and their leaves and ſtocks gradually advance, when it will be proper to land them, that is, to lay earth to the under part of the plants, which muſt be done in dry weather, and upon no account whatever, when the ridges are wet, as it would occaſion your Celery to rot, or become ſticky, hard, and ill-flavoured. Obſerve that the earth is only to riſe within one inch or two of the tops of their hearts; for were you to cover them, they would be infallibly deſtroyed; therefore you are to earth them as they advance, repeating it as they grow, which will give them fine, large, and well-coloured heads, eating criſp and tender: ſhould you obſerve any part of them to ſhoot or fly up, or ſhew their ſeed-veſſels, let them be uſed for ſoups, not for ſalladings; by *November* the feeding plants ſhould be taken up, as on the approach of the froſt they rot, and are apt to infect the ſound ones.

To have Celery very large, I purſued the following method, which I found to anſwer extremely well, and which I diſcovered by the following accident.

I had ſome Celery plants, which flowered and ſeeded very well in the ridges. Obſerving that ſome of the ſeeds had fallen in *September*, I raked the ground over them; in the beginning of *October* the young plants appeared, and the winter came in ſo mild, that few of them ſuffered, but held out very well; by the middle of *March* I tranſplanted them into a good rich nurſery-bed, ſhading and watering them, until I perceived them growing. I kept them clear of weeds, and they grew ſtocky and larger than the plants which were ſown the ſpring following: however, fearing, if they were landed too ſoon, they might fly, become rampant and ſticky, I planted them out into a ſecond

nurſery bed, the latter end of *May*, ſhading and watering them as before, and landed them in *July* and *Auguſt*, and never before had ſuch large, tender, well-blanched Celery as they were, not one plant in a hundred offering to fly; this experiment I purſued with the ſame ſucceſs; and I am perſuaded, if many of our kitchen-garden ſeeds were ſown in autumn, they would ſucceed better, forming good roots in autumn, while the weather is gentle and mild; whereas in the ſpring and ſummer they are hurried up by the ſun, without forming ſufficient roots or fibres to maintain them in vigour.

CHARDOONS.

THESE kitchen plants are not commonly propagated by our kitchen gardeners; but as ſome gentlemen eſteem them, I ſhall give my own practice, by which I had them exceedingly large, in which their excellence conſiſts.——The beſt time to ſow them is in *March*, upon a good, rich, light earth, to be kept clear of weeds, and as ſoon as the plants come up, they muſt be well watered; when they have five leaves, tranſplant them into beds of the ſame texture, at one foot diſtance, plant from plant, watering them well until you perceive them to grow, laying up the earth, or landing them as you do Celery, at the ſame time clear them of weeds: here they may ſtand until the middle or the latter end of *June*, or till the tenth of *July*.

Then prepare a piece of rich ſandy earth, and lay it up in ridges as you do for Celery, at ſix feet diſtance, ridge from ridge, and near three feet deep, taking care that the bottoms of theſe ridges are well dug, for the eaſier deſcending of the roots. Theſe Chardoons will be fit for blanching by the twentieth of *Auguſt*: in dry days prepare ſome wheat-ſtraw ropes, which are better than hay or any other bandage, gather up their leaves in a regular manner, obſerving not to bruiſe or break them, tie the ropes within ſix inches of their tops, when the plants are quite dry; bank up the earth as high as they are

are tied, but no higher, leſt you choak the plants and rot them; and as they grow long, tie and earth them as before. I have had them with well blanched ſtems, three feet high, and ſometimes more. The earlieſt Chardoons will be blanched for uſe in *October*, and will hold to *December*, if not cut off by froſt: they may be houſed as are other articles uſeful for the kitchen.

CHERVIL (SWEET.)

IT muſt be ſown in autumn, immediately after the ſeeds are ripe, in a moiſt ſhady ſpot of the garden, where it will thrive beſt, and, if not ſuffered to ſeed, it will continue for ſome years.

CHIVES.

CHIVES are propagated by parting their roots, to be planted in *July* or *Auguſt*, in a light rich ſoil, five or ſix ſmall heads in one patch, at one foot diſtance every way, and in beds or borders four feet broad, obſerving to keep them clear of weeds, and if you would have them early, they muſt have a ſouth-eaſt aſpect. Here they may continue for ſome years, but you may have a new plantation when you pleaſe.

The ſame culture is to be given the ESCALLION.

CINARA, PRICKLY.

SEE CHARDOONS.

CLARY.

THE common garden Clary muſt be ſown in *March* upon a bed of freſh earth, to be tranſplanted in *June*, on beds of the ſame ſoil, where, by keeping it clear of weeds, it will continue for ſome years.

COLLIFLOWERS.

TO have very early Collyflowers in this country for the market, where a gardener cannot get more than one ſhilling, or two at moſt, for a flower, is not worth his pains; but as this performance may fall into the hands of ſuch as purſue gardening more for pleaſure than profit, I ſhall lay before them my practice, with ſome obſervations.

You muſt be provided with ſeeds of the earlieſt kind, which are to be ſown upon an old Cucumber or Melon-bed, the twentieth of *Auguſt* at fartheſt; in hot ſunſhine, ſhade the bed, and in dry weather water them gently; for, ſhould they be hurried up, they become too long in the ſhanks. So ſoon as they have ſix leaves, tranſplant them into a ſpot of freſh earth, ſhade and water them, until they begin to grow: obſerve that where you tranſplant them, that the ſoil is not over-rich; for if they are put into too rich earth, it hurries them on to flower, which I have obſerved ſome to do in mild winters: about the middle of *October*, tranſplant moſt of this ſowing into light earth, made up into ſuch beds, as you can, in very ſevere weather, cover with ſome of your Cucumber-frames; obſerving, when you cover them, to take off all their decayed leaves, and in all temperate days, to give them as much air as you can. With reſpect to ſuch plants as you would have early, plant three of them under one of your largeſt bell-glaſſes, in rich ground, and others upon a very rich ſouth-aſpected border, near a wall, to take their chance for the winter; but

ſuch

ſuch as you ſet out for good, ſhould have a very rich, dry and ſandy ſoil, in which they will ſucceed much better than in clay. If any of your plants upon the wall-border fail about the beginning of *March*, you can ſupply them from the bells or frames: thoſe under bells, as well as frames, are to have air in mild weather, covering them only at nights, or in very cold days; when their leaves become large, and they are haſtening to flower, you muſt draw up the earth to the ſhanks of thoſe under bells, and prop up the bells, that they may receive air, and in mild weather, the bells may be taken off entirely. I am not fond of watering theſe plants, eſpecially in ſunſhine; for water given at this time moſt certainly ſcalds their leaves, which ends in the entire ruin of their flowers, making them ſmall, yellow, and frothy, as the gardeners term it. When you perceive them begin to flower, which, by good management, may be about the end of *May*, break their inmoſt leaves, to ſhade the flowers from the ſun, whereby they will keep white and firm for ſome days, until they arrive at their full ſize, which you may know by their flowers ſeeming to break and open; then pull them up early in a morning, root and all; if for immediate uſe, cut off their leaves; but if you intend to keep them for ſome days, let their leaves remain, and keep them cool. As for the plants under the wall, they ſhould be landed, that is, the earth ſhould be drawn up to their under-leaves, about the end of *February*; but if you have Radiſhes and young Lettuces between them, take off your Radiſhes, before you earth up your Collyflowers; but do not water them, except in extreme hot weather, which does not often happen in this country. Take care alſo to pick off ſnails, which now come out in numbers to feed upon their leaves, after their long confinement during the winter. By the middle of *June* the plants will ſhew their flowers, at which time, uſe them as has been directed for the early ſort under bells, but obſerve always to water them ſparingly, except in very dry weather: ſuch as were preſerved under frames, ſhould be planted out the beginning of *March*, where they are to flower, obſerving to give them the

ſame

ſame culture as thoſe upon wall-borders, already treated of; by this means you will always have a ſucceſſion, until thoſe ſown on moderate hot-beds in *February* begin to come in on the natural ground in *Auguſt* and *September*; or thoſe ſown on the natural ground in the beginning of *May*, which laſt may be continued until *November*, or later, in mild weather.

CRESSES.

1. The Common.
2. The Curled.
3. The Broad-leaved.
4. The Indian.

THE three firſt ſorts, if deſired very early, may be ſown upon a moderate hot-bed, in ſpring they may be ſown upon beds well expoſed to the ſun, where they are to be cut when young, obſerving to ſow them in drills, and to ſow the curled and broad-leaved ſorts at a greater diſtance than you do the common, that their leaves may ſtand at a diſtance from each other, for the better preſervation of the plants. You may ſow Creſſes in the common ground in *Auguſt*, for winter ſallading, where they will ſtand in mild winters.

The Indian Creſs may be planted in *April*, in holes at eighteen inches diſtance, hole from hole: their flowers are uſed in ſallads, and their ſeeds, when gathered young, make an excellent pickle.

DILL.

DILL is propagated by ſeeds ſown in *March*, upon beds of light earth. If they are too thick, hoe them to ten inches a-part; keep them clear from weeds, and in dry weather, water them. Theſe plants are very fit for perſons who pickle quantities of Cucumbers, as they give a fine reliſh to theſe pickles, and ſeveral other things.

EN-

ENDIVE.

THE curled broad leaved ſort is the fitteſt to be cultivated in gardens. The proper ſeaſons for ſowing are, between the twentieth of *June* and the twelfth of *Auguſt*, upon a bed of good kitchen-garden ground. When the plants have got five or ſix leaves, they ſhould be tranſplanted into a ſpot of good well dug earth, at fourteen inches diſtance, plant from plant, to be well watered until they begin to grow again; and as ſoon as you perceive they have got a good number of leaves, take ſome baſs-mats, and having placed the leaves in regular order, tie them near the top, and in three weeks the plants will be blanched and fit for uſe. At this time they will ſend out, or rather burſt out, their inmoſt white leaves below the tying, whereby you will know that their inner leaves are well blanched, and fit for uſe.

There is another method of blanching endive, which is uſed for the winter and ſpring crops, *viz.* In dry weather lift your Endive plants, and with a round-headed dibble, plant them into the ſides or the ridges of good, rich, well-dug beds, ſloping to the ſun, covering the plants in ſuch a manner, as that their tops only are above ground, whereby they will be ſecured from froſt, and the rain, by the declivity of the ſituation, will run off. In three weeks the plants will be ſufficiently blanched; but as they do not keep long, it will be neceſſary to keep planting every ſeaſonable opportunity. During the cold ſeaſons, and in very ſevere weather, I have kept blanched Endive in the houſe, in earth and ſand, for four weeks. Inſtead of tying up your Endive for blanching, lay boards on it when full grown in the heart, and in fourteen days you will find it well blanched.

ESCA-

ESCALLION.

SEE CHIVES.

FENNEL.

THE common Fennel is propagated by ſowing its ſeeds immediately after they are ripe, and in the ſpring tranſplanting them into beds of good earth, at about one foot diſtance. Whenever the plants ſpire and ſhew their ſeed, cut them down, that they may not ſhed it, as it would over-run the garden. Their roots ſtand many years.

FINOCHIA.

THE Finochia, or ſweet *Italian* Fennel, is but little uſed in this country. However, I ſhall here give my own practice, by which I had it very good.

I got my Finochia ſeeds annually from *Legborn*. About the beginning of *April* I ſowed it in drills, ſix inches ſeed from ſeed, upon a rich light earth, on the border of a ſouth-eaſt aſpected wall. In dry weather water the drills gently, until the plants appear above ground, which will be in four weeks after ſowing; obſerving to keep the ground clear from weeds. The drills ſhould be two feet from one another, and four or five inches deep. Draw up every other plant, to give them room to ſwell.

In a month after they appear, their lower parts will ſwell and become big, juſt above the ſurface of the earth, when it will be proper, in dry weather, to land them as you do Celery for blanching, this will make them

them eat crisp and tender; yet this must not be done all at once, but as the plants advance. For a succession you may continue sowing, following the same culture until the middle of *June*.

The *Italian* method of managing Finochia may be seen under the article BROCOLI, as communicated by the late Lord Bishop of *Killala*, to the *Dublin Society*.

GARLICK.

GARLICK is propagated in the same manner as SHALLOTS; but if in *May* you perceive it inclines to spire up and seed, twist the tops of their blades, which will prevent their seeding.

HOT-BEDS.

I Propose to give some directions for making Hot-beds of horse-dung, for those crops in the kitchen-garden which require to be early, especially Cucumbers and Melons: the raising of which, when the heat of the sun is declining, makes it necessary to assist nature in our climate.

Take a good quantity of new made horse-dung from the stable, with a good quantity of litter; lay this dung in a heap for seven days to ferment, that the rank fume may pass off; if you observe that the dung and litter are not equally mixed, turn it over again, and mix it as equally as you can, and let it lie four days longer; by this turning and mixing, it will acquire a due heat, which, when you observe, make a trench where you intend to set down your hot-bed, one foot and a half deep, if the situation is dry, and in length and breadth corresponding to the frame you are to set over it, observing that the dung projects six inches all round beyond the frame; then wheel the dung into the

the trench, ſtirring every part of it with a fork, giving a gentle treading with your feet, in ſuch a manner, that it may be perfectly even through every part of the bed; there muſt be three feet of this dung, above which lay four inches of pure dung, without any mixture of litter, the uſe of which is to prevent the ſteam of the dung from riſing, as it often does without it; ſet your frame upon it for five or ſix days before you lay on the earth, that the violent heat may go off, otherwiſe it would burn the earth, and render it of no uſe.

About five days after, lay on the earth ſix inches deep, and when it is warm, ſow your ſeeds in it; for the management of which I have already given ſufficient directions, in the raiſing of the early Cucumber. Three weeks after, you muſt prepare dung for a nurſery-bed, in the ſame manner, uſing your dung as in the former, with this difference, that when you turn the dung the ſecond time, you muſt mix with it ſome coal aſhes, which will preſerve a continuance of the heat much longer, than if you had not uſed any; take care to lay and tread your dung equally, otherwiſe it will heat unequally in ſpots, when it will be the ſooner ſpent. As ſoon as you perceive the heat is abating, add ſome new dung quite round the edges of your beds, which will renew the heat, and preſerve it a conſiderable time; but obſerve always, as the heat of your beds decreaſes, to increaſe the coverings at night on your frames and glaſſes.

When your plants are fit to be planted out in ridges or baſons, prepare and dreſs your dung in the ſame manner, mixing it with coal-aſhes, as is directed for the nurſery-beds; but at this ſeaſon, if the ground is dry, I would dig the trench two feet deep, and raiſe the dung two feet above the ſurface, managing them in the ſame manner as your beds for frames, obſerving the earth for Cucumbers muſt be twelve or ſixteen, and for Melons eighteen inches deep; if your ridges or baſons decline in their heat, add new dung round their edges, covering them with it, to allow the roots of the Cucumbers ſpace and good earth to run into, which is of greater ſervice to the plants on the ridges, than moſt of our gardeners apprehend; for as I have already obſerved,

obſerved, the roots of Cucumbers and Melons grow to the ſame length of their runners.

The dung taken from ſtables where the cattle are fed on ſtraw, is the beſt for garden uſe. And in order to be as frugal as poſſible of your dung, plant Cabbages and Collyflowers on your Onion-beds, which are always highly dunged, and hold good a long time, for many other crops.

In order to encreaſe your dung, in *October* take the leaves of your trees, and mix them with mould, by laying a ſtratum of leaves and another of earth alternately; this makes a very rich and clean compoſt for moſt kitchen-garden uſes, particularly if helped with a little unflaked lime; in the ſpring it will be fit for uſe.

Some perſons take the garbage of their kitchen-garden for this purpoſe: I do not approve of this method of making dung, nor of the cleaning of ponds, unleſs it is left to rot for ſome years.

In ſome ſituations, where there is a ſcarcity of manure for land, and an extent of woods or large groves, gentlemen would find their accounts in clearing their bottoms of the rotted leaves, which, when turned up with earth, and a mixture of unflaked lime, would make a good manure for moſt grains, and is well worth their attention. The ditches, and where the waſhing of the woods may be carried, ſhould be taken up for the ſame purpoſe.

I have ſeen cows-dung made uſe of for ridging Cucumbers and Melons, and when well tempered, it keeps the heat as long, if not longer, than horſe-dung; and I would prepare cows-dung for my flower-garden in ridging of hot-beds, as it rots much ſooner in that way, than by turning, as I have obſerved in the article of preparing this dung for the compoſts for the Oriental Hyacinths.

Beſides theſe hot-beds of dung, there has been diſcovered, within theſe few years, another kind of hot-beds, made of tanners-bark, which are thus prepared: The pits or trenches to hold the bark ſhould be three feet deep, and never leſs than twelve feet long, and ſix feet broad, as a leſs dimenſion will not keep the heat; if they are ſixteen or twenty feet in length, they will retain the

the heat ſo much longer. They ſhould be bricked upon all ſides, and at bottom, as well to hinder the earth from falling, as to prevent its mixing with the bark. This bark may be taken from the tanners pits, and ſhould have one week to drain off the ſuperfluous moiſture, otherwiſe the bark will not heat.

When you put it into your bed-pits, lay it in lightly and even, not treading it down with your feet, as you do dung; for this would make it cake, mould, and never heat; put no dung below it, for that would make it heat too ſoon, which would have a very bad effect. The tan will keep in good heat for four months; when the heat ſubſides, lay on the quantity of half of the depth of your bed of quite new bark, and it will ſoon recover its fermentation, and continue in good plight for five months longer. Theſe beds of bark are not to be covered with earth, as they are uſed to raiſe hard-ſhelled exotick ſeeds in pots, or even in the bark itſelf, and for preſerving the moſt tender exotick plants in ſtoves; and are the moſt ſucceſsful beds for bringing the Pine-apples or Ananas to perfection.

If you uſe tanners-bark for your Melon-beds, you muſt cover it with ten inches of proper earth; and in it I have fruited the *Cantalupe* Melons to great perfection.

After the bark has ſerved the hot-beds, the fineſt particles of it, when taken out by the riddle, and expoſed to rot, is a very good manure for ſome flowers; *viz.* the Oriental Hyacinths, and particularly the Oriental Narciſſus: and the groſſer part is a very good covering for their beds, or to put into the alleys of their beds in winter, to protect them from the froſt.

KAIL,

KAIL, or KILMAURS.

KIlmaurs or *Scotch* Kail are the beſt of any for boiling in winter, but they will not eat tender, until they are well pinched with the froſt. They are to be ſown in *March*, and pricked out into nurſery-beds in *May*, at three inches diſtance, keeping them clear of weeds; to be planted out for good in *July*, into ground where you have had your early crops of Peaſe, and when you have laid in ſome dung, plant them at one foot and a half diſtance every way; watering them until you perceive them to grow. In *October* hill them up, and keeping them clear of weeds, is all the culture that this Kail and Coleworths or open Kail require.

LEEKS.

LEEKS are cultivated in the ſame manner as Onions. About the beginning of *July* take your largeſt and beſt rooted Leeks, and having cut off three or four inches of their long blades, more or leſs, as they are in length, trim their longeſt fibres, and plant ſix rows in a bed of light rich earth, four feet broad, where, if they are kept clear of weeds, they will grow large in their heads, and will be much better than any that have not been tranſplanted: thinning the ſeedlings will be of great uſe. Some ſow Leeks and Onions promiſcuouſly, alledging, that when the Onions are taken off, the Leeks may remain. But this method I would not adviſe, as the laying the Onions to make them ſwell muſt be performed with the hand, and the Leeks near them may be injured; whereas the topping the Leeks muſt be done with a knife.—— The *London* Leek is to be preferred to the *French*.

LETTUCES.

1 Cabbage.
2 Sileſia.
3 Imperial.
4 Ice.
5 White Cos, or *Verſailles* Upright.
6 Aleppo.
7 Brown *Dutch.*
8 Capuchine.
9 Princeſs Lettuce.
10 *Egyptian* Green Cos Lettuce.

N. B. The laſt-mentioned is the beſt for general uſe, and is hardy.

There are ſeveral other kinds of Lettuces in the Catalogue, but thoſe here mentioned are chiefly to be preferred, whether for ſallads, or for the kitchen uſe: wherefore I ſhall confine myſelf to their culture.

FOR winter uſe I recommend the Cabbage, the Capuchine, and Brown *Dutch*, to be ſown the beginning, the middle, and the end of *Auguſt*, but not later. Lettuces ſown about the firſt of *Auguſt*, will cabbage by *November*; but the firſt froſts that ſet in will entirely rot them. Thoſe ſown about the middle or end of the month will not cabbage before the end of *March*, or the firſt ten days of *April*. Some ſow the Ice Lettuce at this ſeaſon (I mean in *Auguſt*) and at the end of *September*, tranſplant them upon a wall-border, where they may be preſerved, ſhould the winter prove mild: in *April* tranſplant them again, into a rich border, and in ſix weeks they will cabbage and produce fine heads. From the beginning of *March*, and once every fortnight until the end of *April*, you may ſow Cabbage, Sileſia, Imperial, Aleppo, Ice, and the Egyptian Green Cos Lettuces. As ſoon as the Ice or Cos Lettuces have eight or ten leaves, tranſplant them into a good rich piece of ground,

ground, eighteen inches, plant from plant; water them until they have taken new root; and when you perceive them closing in the hearts, tye them with bass, when they will blanch and cabbage better and firmer than those which have not been transplanted. Many gardeners sow their Lettuces among their Onions, but this I would never advise.

The Lamb Lettuce, or *Valerianella* may be sown in *August*, in a bed of good kitchen-garden ground: if you defer sowing them until spring, they will not come up until the spring following; however, by keeping their beds clear from weeds, they will then come up in great abundance.

The *Aleppo* Lettuce is only valued for its fine spotted leaves, which make a pleasing variety amongst other sorts.

The Green *Egyptian* Lettuce I most particularly recommend; its culture is the same as the *Versailles*, or White Cos Lettuce.

MARJORAM, SWEET and POT.

I Never used any but the sweet sort, which is an annual (the perennial kind, is a green-house plant) and is sown in *April*, upon a moderate hot-bed, where it may continue until the middle of *June*, when it will be proper to plant it into a bed of fresh light earth, watering and shading it until you perceive it growing: in *August* or *September* it flowers, which is the proper season for pulling it up.

The BASIL BUSH is cultivated in the same manner and must be also taken up when in bloom.

MUSTARD.

THE ſeeds of this plant are ſown in *December* or *January*, upon hot-beds, ſo that in a month after ſowing, they are ready to cut, which is beſt when the plants have two, or at moſt three leaves; for if they are ſuffered to ſtand longer, they will be too ſtrong. You may ſow them thick in drills upon the border of a ſouth-aſpected wall, for ſallading in *March* and *April*, until the Lettuces and other ſallads come in.

ONIONS.

1 The *Straſburg*.
2 The Silver-ſkinned.
3 The *Welſh*.
4 The *Portugal*, or red-ſkinned.

THE *Straſburg* ſhould be ſown the beginning of *March*, in good rich kitchen-garden ground, which has been well dug the preceding *September* or *October*, and laid up in ridges for the benefit of the winter froſt, to mould it; the dung (which in hot ſandy grounds ſhould be cows, and in clay ſoils, horſes) may be laid in the bottoms of the ridges to rot, to be dug in in *February*. I would have Onions ſown in beds, for the better weeding and thinning them.

Theſe beds may be four, or at moſt five feet broad, and of ſuch a length as the ground will allow. They muſt be kept conſtantly clear of weeds, and firſt thinned to two inches, bulb from bulb, and afterwards to ſix, as your Onions ſwell in bigneſs, for the more they are thinned, the larger they will grow; and as ſoon as you perceive the tops of their graſs to grow yellow, and fall, which, if a ſandy ſoil, they will do in *Auguſt*; but in clay they continue much longer in verdure. But ſhould you perceive the bulbs not to ſwell, lay down their graſs

graſs in dry weather, and in a month's time they will be ready for taking up, which muſt alſo be done in dry weather; laying them where they will have plenty of ſun and air; to be houſed in a fortnight or three weeks. When they are houſed, let them have air, and be frequently turned, and ſhould their necks ſwell, twiſt them very tight with your fingers, which will prevent their ſpringing, and keep them ſound for winter uſe; in ſevere froſt, they may be hung up in warm places in nets, or dry wheat-ſtraw laid over them.

Another method I would recommend for the preſervation of Onions is the following: as ſoon as they are taken out of the ground, let their green hearts be drawn as deep as you can out of their necks, which you muſt open with your thumb for the purpoſe, then they are to be laid in the ſun for a few days, when they will keep well, provided they are ſpread on a dry floor, to be now and then turned, and aired in dry weather.

The culture of the Silver-ſkinned Onion is the ſame with the *Straſburg*; they have a much milder taſte, and make a more beautiful appearance.

You may alſo ſow ſome ſeeds of the *Straſburg* Onion about the twelfth of *July*, for ſallads in winter. Theſe will ſtand very well in moderate weather, for ſpring or winter uſe, and their culture is the ſame as that preſcribed for ſummer crops. Obſerve to give the ſeed ſown at this ſeaſon a deeper covering than thoſe which are ſown in *March*, otherwiſe the froſt may force them out of the ground.

However, there is an Onion that is better for ſpring uſe. This is the *Welſh* Onion, which ſhould be ſown in *July*, in beds four feet broad, and what length you pleaſe. Cover the ſeeds well, and in ten days they will appear; weed them well: by *November* their leaves will have withered, when you muſt lay the earth in the alleys on the beds, raking it gently. About the beginning of *February* they will appear again very ſtrong, and in *March* will be fit for uſe. They taſte very ſtrong, and ſhould they be too thick, thin them about the end of *March*, and planting them in beds, they will produce good ſeed in *September*. They will continue

good in the ground for five or ſix years; but it will be beſt to have a plantation every three years.

The *Portugal* Onion is cultivated in the ſame manner as the *Straſburg*.

PARSLEY.

1 Common.
2 Curled.
3 *Dutch*.
4 *Hamburgh*.

THE culture I made uſe of for theſe plants, differs ſo much from the common method, that I cannot avoid being very particular in reſpect to it.

Moſt gardeners ſow the common ſort in *February*, in drills, whereby the plants are very thick, and crowd one upon another, in ſuch a manner, as not to anſwer the uſe they are intended, that is, to be well furniſhed with leaves, which they never can be, from that practice. Therefore I recommend the broad-caſt, ſowing the ſeed very thin, and, if occaſion, to thin them to four inches, plant from plant.

The Curled is to be cultivated in the ſame manner, to be left ſix inches, plant from plant: its fine curled leaves will anſwer well for garniſhing diſhes. Obſerve not to ſuffer it to run to ſeed, by keeping it properly cut, whereby it may be kept in full leaf and beauty for three years.

Neither the *Dutch* Parſley, nor the *Hamburgh*, are valuable for any thing but their roots, which, when boiled, are uſed medicinally: they are cultivated in the ſame manner as Carrots, hoeing the plants to five inches ſquare diſtance, and keeping them clear from weeds. The roots will be fit for uſe in *Auguſt*, and will continue good until *March*, if ſown upon a good rich, light ſoil.

PARSNIPS.

THE *Dutch* ſwelling Parſnip is the beſt for kitchen-uſe: and as their culture is the ſame with the Carrot, it is unneceſſary to repeat it; but you are to obſerve, when you thin them, they muſt have a greater diſtance than Carrots.

I have often ſown Red Beets amongſt my Parſnips, with very good ſucceſs; they differ in nothing from the culture of the Parſnip, but in this, that if they are ſown on a hot dry ſoil, they fly up to ſeed in *June* or *July*, which makes their roots ſmall and ſticky. To prevent this, as ſoon as they riſe ſix inches, cut them down, and hoe them, which will make their roots ſwell conſiderably. When I ſow them with Parſnips, I only drop a few of their ſeeds amongſt them; and when ſown by themſelves, they are to be thinned to one foot, plant from plant. The beſt Beet is the round turnip-rooted kind.

PEASE.

I Have already treated of raiſing Peaſe upon hot-beds, in which I uſed the dwarfs only; wherefore I ſhall not take notice of them here, but cannot omit to mention another method, by which I had Peaſe very early. In *September* I ſowed ſome of the Dwarf, and *Maſter*'s early Hotſpur in pots, and ſunk them in the common earth; and as ſoon as the froſt became violent, I brought them into the green-houſe, near the windows, where I made a border of good freſh earth, without dung; and by the beginning of *December*, when the Peaſe were ſtocky, I raiſed them out of the pots by a trowel, with a clump of earth, and planted them in this border, in rows at three feet diſtance, and ten inches plant from plant, that they might have ſufficient room, watering them gently, to ſettle the earth

about them. At due opportunities I gave them air, and drew up the earth to their ſtocks as they advanced: when they were in bloom, I watered them well, but with water that had ſtood in the houſe four and twenty hours, that it might be of the ſame temperature with the air in the green-houſe; I ſupported the Peaſe with rods, and had a good crop by the tenth of *March*.

I may be condemned for ſetting them in the green-houſe, where the other plants might imbibe too much moiſture from theſe early Peaſe, but by taking care to be ſparing of water to them, while theſe were growing, they were not in the leaſt injured. This practice I would not recommend, where the plants are much crowded.

The Peaſe which ſucceed theſe forced crops are, the early *Heſſian*, the *Maſters*, *Charleton*, and the *Reading* Hotſpur. In warm ſandy grounds, and upon ſouth-wall borders, they may be ſown the end of *October*, or beginning of *November*; earthing them as they advance; and in hard froſt, lay ſome peaſe-haulm over them; but be careful, whenever you perceive the Peaſe advancing and expanding their leaves, not to earth them higher than their leaves. Should this crop not hold, ſow another the latter end of *November*, another the beginning of *January*, and another the beginning of *February*; the laſt I have often obſerved to hold as well, and better, than any of the former crops, and to have the ſame culture: I would alſo recommend, when ſowing, to have two rows pretty near each other, that is, within ten inches of one another, and between them and the next two cloſe rows, you may leave a ſpace of two or three feet. The occaſion of ſowing in this manner is, that the ſtakes, being placed in the middle, may ſupport both rows, whereas, in the common way, every row of Peaſe muſt have a row of ſtake. The gardeners who vie with one another for the earlieſt crops, never ſtake their Peaſe, alledging that it encourages them to grow too much to haulm, and not to fruit. I admit this may be the caſe in ſandy ſoils; but in clay-lands, if the Peaſe, (eſpecially the large kinds, ſuch as the Marrowfats, Sugars, Egg, Roſe, and Rouncival Peaſe) are not ſtaked, and ſown at very great diſtances, row from row,

row, they will infallibly rot, before they are fit for the table.

Let your early Hotſpurs be ſown in *February*, to be ſucceeded by the *Spaniſh* Morrato. In *April* and *May* will be the proper ſeaſon for ſowing large Peaſe, ſuch as the Marrowfats, Rouncivals, Role, Egg, Crooked Sugar-Peaſe, and *Dutch* Admiral Peaſe.

For theſe large Peaſe, particularly the Egg and Marrowfat, let the drills be made to the depth of four inches, and one foot the diſtance between the firſt two or double drill, and between each double drill, let there be a ſpace of ſeven feet, or more, where ground can be ſpared, as air and ſun-ſhine greatly contribute to their well-bearing, and this diſtance gives room for gathering the pods from the higher branches, without injuring the haulm. Your drills being ready, and your diſtances laid out, you muſt provide yourſelf with the following compoſt, that is, one part of well-rotted dung, and two parts of un-ſlacked lime, well wrought together; this for a poor ſoil, as in a rich, the dung would make the Peaſe run too much to haulm: this is to be laid in the bottom of the drills, to the depth of two inches; but before you ſow the ſeed, draw ſome of the garden mould lightly over this compoſt; this will protect the ſeed from its heat and firſt fermentation, but by the time the Pea ſends its fibres into it, it will be ſufficiently meliorated, and contribute greatly to the ſucceſs of the crop. In good ſoils, a light ſprinkling of lime only is neceſſary, obſerving always ſo to manage your drills, that the laſt covering of the Peaſe ſhall be no more than two inches deep. Turf-aſhes, ſuch as have been preſerved under cover, and mixed with lime, in this proportion, *viz.* one ſhovelful of aſhes to two of lime, to be laid two inches deep in the drills, will give fine crops of large Peaſe. The ſeed of the large Pea is to be ſown at the diſtance of one inch, Pea from Pea, and then to be covered with the garden-mould, to the depth above directed. The two firſt landings of the Peaſe in the double drill are to be drawn from the one-foot ſpace between the rows, and the third, before ſtaking, from the two outer ſides, and ſo much mould is to be laid in from them, as will fill the inſide, to riſe above the former landings; that

is,

is, the whole is to form one ridge, whofe centre rifes between the two clofe rows. Obferve, that Peafe are to be landed when the foil is dry, and for the firft landing, muft be two inches and an half high; for the fecond, three more; and, when ftaked, about five from the ridge. The ftakes for thefe Peafe muft not be lefs than eight feet above ground, the firft row of which is to pafs in the centre of the one-foot diftance, and thefe to be the talleft, and moft bufhy: there muft alfo be a row on each of the other two fides.

Where thefe great diftances between the double rows cannot be fpared, there may be two rows of Beans.

In order to have your crops of Peafe in fucceffion, particularly the Marrowfat, the Egg-Pea, and the Glory of *England*, as they hold long, and eat well, though fomewhat old, make plantations of them about the firft of the month, from *January* to *June*, both inclufive; and as vermin, particularly mice, are very deftructive to the early crops, from the great fcarcity of food at this feafon, I would recommend traps to be laid for them, on the firft fowing of the Peafe, which are of a very fimple conftruction, being no other than two fmall uprights, fufficiently ftrong to fupport a brick laid on a thread, paffing from the tops of the uprights, firft paffing it through a Bean, which the vermin foon find out, and attack, fo as to cut the thread, when the brick falls and crufhes them to death: this is neceffary to be done, before they find out your Peafe.

By the end of *May* fow all dwarf Peafe, fuch as the dwarf Marrowfats, fhort and long podded Dwarfs, Leadman's prolific Dwarf, and the dwarf Sugar-pea, particularly in very poor foil, and at a good diftance, row from row, and Pea from Pea; for when this fort is fown upon fat land, or thick together, a vermin particularly fond of them are their deftruction, before they can perfect their crops. The Sugar-Peafe have no inner film in their pods, as all other Peafe have, and are remarkable for this fingularity in their growth.

PUR-

PURSLAIN.

BOTH the green and the golden Purſlain are equally fit for uſe, though the green is preferred by the market-gardeners. To have it early, you may ſow it in *March*, upon a moderate hot-bed; and about the end of *May*, tranſplant it into a rich bed in the open ground; and, as it will grow very large, give it half a foot diſtance, plant from plant. In *May* it may be ſown in the open ground, and in ſix weeks it will be fit for uſe; in dry weather it muſt be well watered; before you ſow it, water the ground well, and ſow the ſeed thin, giving it a thin covering with a rake, and in dry weather be careful to water it, until the plants appear. Purſlain makes a good pickle.

RADISHES.

The common ſorts of Radiſhes are,

1 Early Salmon.
2 *Richmond.*
3 *Sandwich.*
4 Short-topped early *London.*
5 Black and White *Spaniſh.*

THE beſt of theſe Radiſhes is the ſhort-topped early *London*, as it is very hardy, and its ſmall tops do not prejudice any other crop with which it may be ſown. They may be ſown in *January*, on a wall-border, of a ſandy ſoil, or the beginning of *February*, with the Cabbage or Princeſs Lettuce, to have them in *March*; and it will be neceſſary to ſow them once every fortnight, from that time until the beginning of *April*; but, excepting the two firſt ſowings, they will do better in more open places. They may be ſown amongſt Carrots, as the drawing them gives the Carrot-beds a ſtirring, which

which is very advantageous to that root. Some ſow Radiſhes in *Auguſt*, to come up in *September* and *October*, and others amongſt their winter Spinage.

The *Sandwich* or Princeſs Radiſh, and the Salmon require the ſame culture with thoſe already mentioned. The Salmon ſort is ſo called from the reſemblance of its colour to that of the fiſh.

The White and Black *Spaniſh* Radiſhes muſt be ſown in *Auguſt*, and ſeparately, as the firſt is eaten in *October*, and the other in winter. They are to be ſown upon middling kitchen-garden ground, trenched, and well ſpaded at ſowing, to allow their roots to apple well; with them you may ſow a few of the brown *Dutch*, and Capuchine Lettuces, to be tranſplanted into warm borders. The Black Radiſh ſhould be taken up in *November*, to be preſerved in dry ſand as you do Carrots.

RADISHES (THE TURNIP.)

THE Turnip Radiſh is to be ſown in *February* and *March*, and, as they are hardy, they will be fit for uſe in *April* and *May*, but no longer, being apt to fly; and this crop I would chuſe to ſow by itſelf. The ground for theſe Radiſhes muſt be well trenched, and immediately before ſowing to have a deep ſpading, that their roots may have ſcope to run down, otherwiſe they will ſtunt and become good for nothing.

ROSEMARY.

For the propagation and cultivation of this plant, follow the directions given for BALM OF GILEAD.

SAL-

SALSAFY.

THE culture of this root and SCORZONERA being much the ſame, I ſhall treat of them together.

The beſt way to have them in perfection, is, to ſow their ſeeds about the middle of *March*, in beds four feet broad, and in four rows, which are to be laid out with a line, then ſow two or three ſeeds, in holes, at eight inches diſtance from one another, covering them. When they come up, keep them very clear from weeds; and thin their roots to two in each hole, taking care that the ſoil has been well dug, that their taper roots may eaſily deſcend and ſwell. In *October* they will be fit for uſe; they are firſt boiled, and then ſliced long-ways, when you are to fry them with butter and flower, they not only eat well, but are alſo very wholeſome. The young ſtalks or ſprouts of theſe plants which remain in the ground until *April* or *May*, are eſteemed a very delicate diſh, and may be uſed as you do Aſparagus.

SAVOYS.

THE Green Savoys for an early crop (that is, ſuch as become large in *October* or *November*) ſhould be ſown in *July* of the preceding ſummer, and may be put out into nurſery-beds in *October*, where they may ſtand the winter, and in *March* ſhould be planted out for good, at two feet and a half diſtance every way, in ſome open piece of ground, neither near hedges, nor under drops of trees, where they are very ſubject to ſpire, and are often attacked by vermin.

You may alſo ſow Savoys in *March*, for the following ſpring uſe; and by managing them as I have juſt directed, will do well.

SCAL-

SCALLION.

SEE ESCALLION, or CHIVES.

SCORZONERA.

SEE SALSAFY.

SHALLOTS.

SHallots are taken out of the ground in *July*, as ſoon as their blades begin to wither: their large heads are beſt for uſe, but for planting, take their ſmalleſt ſingle cloves, with good bottoms for puſhing out their fibres; plant them, about the middle of *Auguſt*, in beds of freſh, rich, ſandy ſoil, at ſix inches diſtance, clove from clove; and, againſt the following *July*, they will produce fine, large heads; obſerving to lift them as ſoon as you perceive the tops of their blades to turn yellow. Do not, on any account, defer planting until ſpring, and be ſure to uſe no other than ſingle cloves for that purpoſe

SKIRRETS.

THE Skirret, which is one of the beſt kitchen-garden roots, has of late been much neglected, from the general ignorance of their cultivation. My method is as follows:

Their ſeed is to be ſown the beginning of *March*, on a moiſt rich ſoil, (having ridged and dreſſed it fine in *October*, that the winter's froſt might mould it) on beds five feet broad, and in holes ſix inches diſtance every way: in theſe I dropt three or four ſeeds, covered them carefully, and kept them free from weeds. When they come

come up, ſhould the ſpring or ſummer prove dry, they are to be plentifully watered, and ſhould any of them attempt to run or fly to ſeed, cut them down to within two inches of the ground, laying ſome of the earth in the alleys over the beds, being firſt well worked with the ſpade, this being the beſt method to keep their roots in a growing ſtate, cool and tender. As their leaves drop in *October*, the holes are to be marked, for the greater certainty of taking them up without wounding their roots. The Skirret is no where ſo well preſerved as in the bed, which is to be protected from the winter's violence by litter.—Be ſure always to raiſe them from ſeed.

SORREL.

THE *French*, or round leaved Sorrel is the beſt, and is propagated by ſeeds ſown in *Auguſt*, or from ſlips planted at one foot and a half diſtance, plant from plant (as it is a great runner) in a good middling ſoil, and in an open ſituation, or upon a ſouth-eaſt aſpected wall, to have it early. In ſummer, when you perceive the plants running up to ſeed, ſuffer them to run three inches high, and then cut them down cloſe, by which means the plants will puſh out new leaves and heads for freſh plantations in autumn.

The great broad-leaved Sorrel comes in earlier than the *French*, and is cultivated in the ſame manner, except to have a greater diſtance, as the leaves are larger.

SPINAGE.

The beſt Sorts are,

1 The Prickly, for winter. And,
2 The Broadeſt Leaved, for ſummer.

THE moſt proper time for ſowing the prickly ſmall-leaved Spinage for winter uſe, is from the 20th of *July* to the 12th of *Auguſt*, and in drills, rather than
in

in the field way, as it will be much eaſier cleared of weeds. This ſort may have ſome of its largeſt leaves cropt off in *October* and *November*, and may be uſed through the winter, but muſt be then cut ſparingly; for if it is too much cut, or too near the ſtalks, it will then be in danger of rotting by the froſts in *January* and in *February*: wherefore uſe it ſparingly, and it will continue good until *May*, when the large-leaved Spinage ſucceeds to it. Care muſt be taken, when ſowing the Spinage-ſeed, that the ground is not too dry; for if the weather be very dry in autumn, it will come up with the ſeed-veſſels on its top, whereby it will be of little uſe; nor ſhould it be ſown on too moiſt ground at this ſeaſon, leſt it ſhould periſh by wet and cold.

The ſummer Spinage is to be ſown about the latter end of *February*, and from that time every fortnight until the beginning or middle of *April*, for a ſucceſſion, and in moiſt ground, to prevent its running to ſeed, to which both theſe kinds are very apt. With the ſpring Spinage you may ſow a few early ſhort-topped *London* Radiſhes. This ſort, on account of its large leaves, muſt ſtand ten inches diſtance, plant from plant. The ſeeds of the largeſt kinds of Spinage are ſmooth, which diſtinguiſhes them from the ſmall-leaved prickly ſort.

THYME.

The ſorts that are cultivated in gardens, are,

1 The Common.
2 The Variegated ditto.
3 The Lemon.

THE firſt ſort may be ſown in the ſpring, upon a lean dry ſoil, in which it will thrive better than upon any other, and continue good for many years.

The two laſt ſorts are propagated from runners or ſlips planted in the ſpring, in almoſt any ſoil; where watering and ſhading them until you perceive them take root, is all the culture they require.

TUR-

TURNIPS.

The common ſorts uſed here, are,

1 The Early Round White *Dutch.*
2 The Yellow Turnip.
3 The Long *French* Turnip or *Naveau.*
4 The Green *Dutch.*

THE firſt is chiefly uſed in this country for early crops, and for eating raw in *May* and *June*, of which many are very fond. To have them very early is a great ambition amongſt gardeners: In ſandy grounds you may ſucceed very well by ſowing them in *February* to pull in *May*; but their beds are to be matted. As ſoon as they appear with five leaves, it will be proper to thin them, which is all the culture they require; and the freſher and more virgin the earth is, the ſweeter and more tender they will be. I would recommend the beds for theſe early crops to be no more than four feet broad, for the better management of them. If the weather is very dry in *March* or *April*, give them water twice a week, and at ſix in the morning; for ſhould you water them at night, the froſt might kill them; and in ſun-ſhine their leaves would be ſcorched. If you perceive the black fly to attack them, lay in ſome unſlacked lime or beer-chaff below their tops, and water them well at the hour juſt mentioned, and this will effectually deſtroy them.

In clay grounds, ſow a few beds of them pretty thick; and, as ſoon as you obſerve them above ground, matt them at night, removing the covering in the day, to give them air; and, unleſs the ſeaſon be very dry, be ſparing of your water in this ſoil, obſerving not to ſow them upon dunged land.

The ſecond ſeaſon for ſowing is from *April* to *Auguſt*, after which time no Turnips ſhould be ſown, and then beware of the black fly.

The Yellow Turnip, if ſown upon moiſt ground, eats very well, boiled in the kitchen way; but the long *French* Turnip is the beſt for ſeaſoning ſoops, as two of them will give a higher flavour than a dozen of other Turnips, and are not of any uſe for any other purpoſe. They are to be ſown about the middle of *April*.

The Green *Dutch* Turnip may be ſown in the broad-caſt; and as their culture is no other than what has been directed for the other ſorts, nothing more need be mentioned, but to weed and thin them at proper ſeaſons.

In our Seed-catalogue you will find a variety of Turnips, but chiefly for huſbandry uſe, and now much uſed in ſpring for cattle.

THE END OF THE FIRST PART.

PRACTICAL

Directions for conſtructing Aſparagus *Beds.*

IN order to make ready for this work, a compoſt is to be prepared, to conſiſt of two parts of rotted dung, and a third of good mould and ſand equally mixed, ſea ſand to have the preference.

The quarter intended for the bed, is to be cleared to the depth of two feet, (or deeper, according to your quantity of gravel or rubbiſh) then you are to lay down ſome coarſe gravel or lime rubbiſh, to the depth of two inches at leaſt (to take off any ſtagnated water) which is to be covered with a layer of coal-aſhes to the ſame depth, and the cavity to be filled with rotted horſe dung, well trod in, kept even and cloſe, and to riſe to the ſurface of the ground; over this you are to lay four inches of the compoſt, prepared as above directed, which is to be raked very ſmooth. The beds are then to be laid in breadths of four feet, with alleys of two feet between each, putting down markers to direct the planting, from which cords are to be ſtrained, ſo as to divide the beds into ſquares of a foot each; in the centre of each ſquare you are to ſet down a plant, ſpreading out its fibres, and ſix inches from the edge of the bed, the plants not to be more than two years old, and then you are to lay on the remainder of the compoſt to the depth of two inches. —For the care of the beds and your future practice ſee *Aſparagus*, p. 184.

N. B. Great attention is to be paid to the choice of ſeed, for the raiſing of your plants, as only the very beſt can give ſuch as are worth your care, and obſerve, never to ſuffer any thing to be planted on the ſurface, or in the alleys of the beds.

PRACTICAL INSTRUCTIONS

IN

GARDENING.

PART SECOND.

FLOWERS.

An ALPHABETICAL LIST of
FLOWER SEEDS and ROOTS;
SEEDS of TREES and FLOWERING SHRUBS;
SEEDS for the Improvement of LAND;
With a COLLECTION of
AMERICAN TREE SEEDS:
Directing the SEASON of PLANTING them.

(*) *Such as ſhould have their Seed ſown the Spring after they are ſaved.*
(†) *Such as ſhould be ſown in Autumn, immediately after their Seeds are ripe; otherwiſe if kept until the Spring, they will not appear before the Spring following.*
(‡) *Such whoſe Seed will keep two Years, if well ſaved; though equally fit for uſe the firſt Year.*

N. B. *Where the Letter* h *is added, directs to be raiſed on Hot-beds;* b h *in Boxes to be placed in the Hot-bed;* b *in Boxes;* op *in the open Ground; and* p *in Pots.*

FLOWER SEEDS.

†	Adonis,	*April* and *September.*
*	African Marygold, h.	*March* and *April.*
*	Amaranthoides, white, h.	*March* and *April.*
	———, purple, h.	*March* and *April.*
‡	Amaranthus, h.	*April.*
*	——— Cockſcomb, h.	*March* and *April.*
	——— Globe, h.	*March.*
	——— Purpureus,	*April.*
	——— Tree,	*April.*
	——— Tricolor, h.	*March* and *April.*

† Anemone, or Wind-flower, *November.*
Apple Love, h. *March.*
After China, double, *April.*
————, ſingle, *April.*
† Auricula, *Jan. Feb. Sept.* and *Nov.*
Balſam, double ſtriped, h. *March* and *April.*
* Balſamine, h. *April.*
Beans, ſcarlet flowering, h. *February* and *April.*
Bell-flower, Canterbury, *April.*
* Blue-bottles, *March.*
Bottle-flower, or Cyanus, *March* and *Auguſt.*
* Borage, plain and ſtriped, *April.*
Campion Roſe, *March.*
* Candy-tuft, white, *March.*
————, purple, *March.*
* Canterbury Bell-flower, *April.*
Capſicum Indicum, many kinds, h. } *April.*
* Carnation, Dutch, *April.*
————, Engliſh, *April.*
————, French, *April.*
————, Indian Lupines, *March.*
————, Poppy, with ſeve al other ſorts. } *April.*
Carthamus, *April.*
* Catchfly, Lobel's, *April.*
China After, double, *April.*
————, ſingle, *April.*
————, Mallow, h. *March.*
Chryſanthemum, double, *March.*
* Clary, *March.*
Cockſcomb Amaranthus, h. *March* and *April.*
† Colchicum or baſtard ſaffron, *November.*
* Columbine, Virginian, *July* and *March.*
‡ Convolvulus, *April.*
* ———— Major, ſcarlet, *March* and *April.*
———— Minor, ſcarlet, *March.*
———— Major, blue, *March.*
———— Minor, blue, *April.*
† Corn Gladiolus or Corn-flag, *September.*
* Creſs, Indian, *April.*
† Crocus Vernus, *July.*

† Crown,

† Crown, Imperial — *September.*
Cyanus, or Bottle-flower, — *March* and *Auguſt.*
† Cyclamen, or Sow-bread, — *March* and *September.*
* Dame's Violet, or Heſperis, — *April.*
† Delphinium, great, — *April.*
Diamond Ficoides, h. — *April.*
Dutch Carnation, — *April.*
Engliſh Carnation, — *April.*
Everlaſting Pea, — *April.*
Flos Adonis, — *March* and *Auguſt.*
† Flower-de-luce, or Iris, — *September.*
‡ Flowering Reed, Indian, h. — *April.*
† Fraxinella, — *September.*
French Carnation, — *April.*
† Frittilaries, — *September.*
† Gentian, — *September.*
Globe Aramanthus, h. — *March.*
† Golden Rod, — *April.*
Greek Valerian, — *March.*
† Hare's-ear, — *October.*
† Hart-worth, — *October.*
* Hawkweed, crimſon, h. — *March.*
* Hieraciums, or Hawkweeds — *Auguſt.*
* Holyhock, double, — *April.*
Honeſty, or Moonworth, — *March.*
* Honeyſuckle, French, — *March* and *April.*
Humble Plant, h. — *April.*
† Hyacinth, — *October.*
‡ Indian flowering Reed, h. — *April.*
Indian Lupines, carnation, — *April.*
———, great blue, — *April.*
* Indian Pink, h. — *April.*
† Iris, or Flower-de-luce, — *September.*
‡ La Lucern, — *April.*
Larkſheel, double, with many colours, — *Auguſt* and *March.*
* Lark's-ſpur, — *February* and *March.*
* Lavatera, red, — *March.*
———, white, — *March.*
‡ Lavender, — *April.*
† Lilly Hyacinth, — *October.*

*	Linarias,	*April.*
*	Lobel's Catchfly,	*March.*
*	Looking-glaſs, Venus,	*April.*
*	Lotus,	*April.*
	Love Apple, h.	*March.*
	Love lies-bleeding,	*March.*
*	Lupines, carnation Indian,	*April.*
	———, great blue Indian,	*April.*
	———, ſmall blue,	*March.*
	———, yellow,	*March.*
	———, great ſcarlet,	*March.*
	———, white,	*April.*
	Lychnis, ſcarlet,	*April.*
	Mallow Tree,	*March.*
	———, China, h.	*March.*
	Marvel of Peru, h.	*March.*
	Marygold, ſweet-ſcented,	*April.*
*	———, French,	*April.*
	———, African,	*April.*
	———, Quild,	*April.*
	———, Campvere,	*March.*
*	Medica, or Snails,	*April.*
‡	Melilot,	*April.*
	Melongena, or Egg-plant, h.	*March.*
	Mignionet, or ſweet Reſida,	*March* and *April.*
	Millet,	*April.*
†	Moly,	*April* and *October.*
	Moonworth, or Honeſty,	*March.*
*	Moth-mullen,	*March.*
†	Muſcary,	*October.*
†	Narciſſus,	*October.*
†	———, Daffodil,	*September.*
†	———, Oriental,	*October.*
*	Navelworth, Venus,	*April.*
	Nigella Romana,	*April.*
*	Onagra, or Tree-primroſe,	*March.*
†	Ornithagulum, or Star of Bethlehem,	*September.*
†	Paſque Flower, or Pulſatilla,	*April* and *October.*
*	Peaſe, everlaſting,	*April.*
	———, painted Lady,	*March.*
	———, purple ſweet-ſcented,	*April.*

Peaſe

Peaſe, ſcarlet flowering,	*March.*
——, white ſweet-ſcented,	*April.*
——, *Tangier*,	*April.*
* Pepper, Indian, h.	*April.*
Perſicaria,	*March* and *September.*
† Phalangium, or Spiderwort,	*October.*
* Pinks of all ſorts,	*April.*
* Pink, Dutch, double,	*April.*
——, Indian, h.	*April.*
——, Pheaſant Eye,	*March.*
† Piony,	*April.*
Plant, ſenſitive, h.	*March.*
——, humble h.	*April.*
Polyanthus,	*February*, *March* and *Aug.*
† ——, or Primula Veris,	*February* and *Auguſt.*
* Poppy, Carnation, with ſundry other ſorts,	*March.*
* Primroſe-tree, or Onagra,	*March.*
Princes-feather,	*March.*
Pulſatilla, or Paſque-flower,	*April.*
Purple ſweet-ſcented Peaſe,	*April.*
—— Candy-tuft,	*March.*
† Ranunculus,	*November.*
Romana Nigella,	*April.*
Roſe Campion,	*March.*
* Scabius,	*April.*
Scarlet flowering Pea,	*March.*
—— Bean,	*February* and *April.*
Senſitive Plant, h.	*March.*
* Snails, or Medica,	*April.*
* Snap-dragon,	*April.*
† Sow-bread, or Cyclamen,	*March* and *September.*
† Spiderwort, or Phalangium,	*October.*
† Star of Bethlehem, or Ornithagulum,	*September.*
‡ Stock-jellyflowers, if kept in the ſeed pods.	*April* and *May.*
——, Brumpton,	*April* and *July.*
——, Queen,	*April* and *July.*
——, ſtriped,	*April* and *June.*
——, purple,	*April* and *June.*
——, white, with ſundry other ſorts,	*April.*

Striped

Striped Balfam, double, h.	*March* and *April.*
* Sultan, fweet,	*April.*
——-, yellow, h.	*April.*
* Sunflower, double,	*March.*
Sweet Scabius,	*April.*
—— Sultan, yellow, h.	*April.*
—— William,	*March* and *Auguft.*
Tangier Peafe,	*April.*
Tree Mallow,	*March.*
† Tulips,	*September.*
Valerian, Greek,	*March.*
* Venus' Looking-glafs,	*March* and *April.*
Virginian Columbine,	*July* and *March.*
* Wall-flower, white,	*April.*
————-, bloody,	*April.*
White Candy-tuft,	*March.*
——- fweet-fcented Pea,	*March.*
Xeranthemum, purple,	*Auguft* and *September.*

FLOWER ROOTS.

Anemonies, many forts,	*October, January* and *Feb.*
Hyacinths, double, many colours,	*October November* and *December.*
Jonquils, double,	*October* and *November.*
Iris, Perfian,	*October* and *November.*
Italian Tuberofes, h.	*March, April* and *May.*
Perfian Iris,	*October* and *November.*
Polyanthus Narciffus, many forts,	*October* and *November.*
Ranunculus, many forts,	*January, February* and *Oct.*
Snow-drops, double,	*October* and *November.*
Tuberofes, Italian,	*March, April* and *May.*
Tulips, many forts,	*October* and *November.*

SEEDS

SEEDS of TREES and FLOWERING SHRUBS.

Acorns, great oak, when ripe, or in	*February* and *March*.
———, Evergreens,	*March*.
Arbutus, or Strawberry-tree, b.	*March*.
After Pine,	*March*.
Balm of Gilead Fir,	*March* and *April*.
Beech Maſt,	*February*, *October* and *Nov.*
Birch,	*March*.
Bladder Sena, or Collutea, b.	*March*.
Broom, Spaniſh,	*March*.
Cedar of Lebanon, b.	*March* and *April*.
Cheſnut, horſe,	*February* and *March*.
———, ſweet,	*February* and *March*.
Collutea, or bladder Sena, b.	*March* and *April*.
Crab kernels,	*February* and *March*.
Cypreſs Fir, b.	*March*.
Elm,	*June*.
Evergreen acorns,	*March*.
Fir, Cypreſs, b.	*March*.
—, Red Scots,	*March*, *April* and *May*.
—, Silver,	*March*.
—, Spruce or Pitch,	*March*.
Haw-berries,	*February*.
Holly-berries,	*February*.
Hornbeam,	*February*, *September* and *Oct.*
Horſe Cheſnut,	*February* and *March*.
Laburnum,	*March*.
Larix, b.	*April*.
Lime Tree Berries,	*May*.
Pine, New England,	*March* and *April*.
Pine, After,	*March*.
——, great,	*March*.
Pitch, or Spruce Fir,	*March*.
Pyracantha,	*February* and *March*.
Scots red Fir,	*March*, *April* and *May*.

Silver

Silver Fir,	*March.*
Spaniſh Broom,	*March.*
Spruce, or Pitch Fir,	*March.*
Sweet Cheſnuts,	*February* and *March.*
Walnuts,	*February* and *March.*
Yew Berries,	*February*, *September* and *Oct.*

SEEDS for improving LAND.

Buck Wheat,	*April* and *May.*
Canary Seed,	*April.*
Clover, great red Engliſh,	*April* and *May.*
———, great red Dutch,	*April* and *May.*
———, white dwarf Dutch,	*April*, *May* and *Auguſt.*
———, yellow, or Trefoil,	*May.*
Dutch great red Clover,	*April* and *May.*
——— dwarf white clover,	*April*, *May* and *Auguſt.*
Engliſh great red Clover.	*April* and *May.*
——— Rye-graſs,	*April* and *May.*
French Furze,	*March* and *April.*
Hemp Seed,	*June* and *July.*
Iriſh Whins,	*March.*
La Lucerne,	*April* and *May.*
Lint Seed,	*April* and *May.*
Maw Seed,	*May.*
Rape Seed,	*June* and *July.*
Rye Graſs, Engliſh,	*April* and *May.*
———, Scots,	*April* and *May.*
Saint Foin,	*April.*
Scots Rye Graſs,	*April* and *May.*
Trefoil, or yellow Clover,	*May.*
Wheat, Buck,	*April* and *May.*
Whins, Iriſh,	*March.*
White dwarf Dutch clover,	*April*, *May* and *Auguſt.*
Yellow Clover, or Trefoil,	*May.*

AMERICAN

AMERICAN TREE SEEDS,

To be ſown in the SPRING.

Alder, American, op.
——, ſilver-leaved, op.
——, Virginian, op.
Alternate two and three leaved Pine, op.
American narrow leaved Thorn, op.
—— Alder, op.
Andromeda, broad leaved, or flowering Sorrel Tree, b. h.
——, red budded, b. h.
Aralia Spinoſa, or Tree Angelica, b. h.
Arbor Lotus, op.
Arboreſcens Seneas, h.
Aſh-leaved Maple, op.
——, black, op.
——, white, op.
Beam, Hophron, op.
Beech Sumach, b.
——, Virginia, op.
Benjamin Tree, b.
Birch, the ſweet black, op.
——, Popler leaved, op.
Black Champion Oak, op.
—— Dwarf Oak, op.
—— Larix, b.
—— Mulberry, op.
—— round Walnut, op.
—— Spruce Fir, b.
Boggy Chameradodendron, b.
Bread, St. John's, or Honey Loney, b. h.
Broad-leaved Andromeda, or flowering Sorrel Tree, b. h.
—— Mountain Elm, op.
—— Viburnum, op.
Button Tree, or Cephalanthus, b.
Cedar, red, b.
——, white, b.
Cephalanthus, or Button Tree, b.
Chameradodendron, Boggy, b.
———, great, b.
———, Ivy, b.
———, Olive-leaved, b.
———, Thyme-leaved, b.
Champion Oak, the Baſtard, op.
——, black, op.
——, great,
Cheſnut Virginian Oak, op.
—— Swamp Oak,
Clethra, with beautiful flowering Spikes, b. h.
Cluſter Cherry, op.
Cornelian Cherry, or white berried Cornus, op.
Cornus, great red Mountain, op.
Cultrona, red flowering, b.
——, white flowering, b.
Dogwood, b.
Downy Sumach, b.

Dwarf,

Dwarf, black Oak, op.
—— Prince of the Deſart, b.
—— ſcarlet Oak, op.
Elm, broad leaved Mountain, op.
Evergreen Euonymus, op.
—— Privet, op.
—— Rhamus, b.
—— Shrub Hypericum, b.
Euonymus Scandens, op.
——, great broad leaved, op.
Fir, Virginian Silver, op.
——, black Spruce, b.
Fringe, or Snow-drop Tree, b. h.
Great broad leaved Euonymus, op.
—— Chamerododendron, b.
—— Champion Oak, op.
—— red Mountain Cornus, op.
—— Silver-leaved Maple, op.
Gum, the ſweet, b.
Honey Loney, or St. John's Bread, b. h.
Hophorn Beam, op.
Hypericum evergreen Shrub, b.
Jerſey Pine, the rough, op.
——— Tea, b.
Itea, b. h.
Judas Tree, b.
Ivy Chamerododendron, b.
Larix, black, b.
Leſſer Spaniſh Oak, op.
Linden, op.
Locuſt, ſweet ſmelling, b.h.
Long white Walnut, op.
Lotus Arbor, op.
Magnolia, b. h.
Maple, Aſh leaved, op.
——, great Silver leaved, op.
——, dwarf Mountain, op.
——, ſtriped, op.
——, Sugar, b.
——, Virginian, op.
Minor Zanthoxilum, b. h.
Mountain Elm, broad leaved, op.
Mulberry, black, op.
Myrtle, Virginian, b.
Oak, black Aſh, op.
—, black Champion, op.
—, black Dwarf, op.
—, baſtard Champion, op.
—, great Champion, op.
—, leſſer Spaniſh, op.
—, ſhrubby white, op.
—, ſcarlet Dwarf, op.
—, Spaniſh Swamp, op.
—, Swamp Cheſnut, op.
—, Virginian Cheſnut, op.
—, white, op.
—, Willow, op.
Olive-leaved Chamerododendron, b.
Papaw, b. h.
Pine, alternate, two and three leaved, op.
—, the Dwarf of the Deſart, b.
—, two and three leaved Swamp, op
—, rough Jerſey, op.
Poplar-leaved Birch, op.
Prinos, b.
Privet, evergreen, op.
Red budded Andromeda, b. h.

Red

Red Cedar, b.
— flowering Culmia, b.
— four-fruited Viburnum, b.
Rhamus, evergreen, b.
Roſe Marſh, op.
—, ſweet Mountain, b.
Rough Jerſey Pine, op.
Round black Walnut, op.
Saſſafras, b.
St. John's Honey Loney, b. h.
Scarlet Dwarf Oak, op.
Seneas Arboreſcens, h.
Serrated-leaved Viburnum, b.
Shrub, the evergreen Hypericum, op.
Shrubby white Oak, b.
Silver leaved Alder, op.
—— Fir, Virginian, op.
Snow-drop Tree, or Fringe, b. h.
Sorrel Tree, the flowering, or broad leaved Andromeda, b. h.
Spaniſh leſſer Oak, op.
Spiney Viburnum, b.
Spinoſa, Aralia, or Tree Angelica, b. h.
Spirea, purple, b.
——, Opula Folio, b.
——, white, b.
Spruce Fir, black, b.
Striped Maple, op.
Sumach, Beech, b.
——, Downey, b.
——, Virginian, b.
——, or Tupelo, h.
Swamp Pine, the three leaved, op.
——, Cheſnut Oak, op.
Swamp, Spaniſh Oak, op.
Sweet black Birch, op.
—— Gum, b.
—— Mountain Roſe, b.
—— ſmelling Locuſt, b. h.
—— Service early, b.
Tea, Jerſey, b.
Three leaved Swamp Pine, op.
Thorn, narrow leaved America, op.
Toxicodendron foliis pendulis, b.
——— trifolium, b.
Tree Angelica, or Aralia Spinoſa, b. h.
——, Benjamin, b.
——, Button, Cephalanthus, b.
——, Judas, b.
Tulip Tree, b. h.
Viburnum, broad leaved, op.
——, red four fruited, b.
——, round leaved, b.
——, ſerrated leaved, b.
——, Spiney, b.
Virginian Alder, op.
—— Beech, op.
—— Sumach, b.
—— Silver Fir, op.
Walnut Hicory, op.
——, long white, op.
——, round black, op.
White Aſh, op.
—— berried Cornus, or Cornelian Cherry, op.
—— Cedar, b.
—— Oak, op.
—— Oak, ſhrubby, b.
Willow Oak, op.
Zanthoxilum minor, b. h.

Chriſtmas

An ALPHABETICAL LIST *of* FLOWERS,
Whoſe Culture is directed by Sir James Juſtice, *Bart.*
he having given them in the Order they appear in the Seaſons.

N. B. The Numbers that are expreſſed by Letters, have a Reference to the Treatiſe, coming before the Work.

Chriſtmas

Chriſtmas Roſe, or *Black Hellebore.*

THE firſt flower which introduces the ſpring, is botanically named, *Helleborus niger, flore albo, interdum rubente*, J. B. It blows in mild winters before *Chriſtmas*, and is very pleaſing in the garden; it bears a roſaceous flower upon ſmall ſtems, which ariſe about two inches or a little more from the ground, and has a faint, but very agreeable ſmell. This plant may be propagated by parting its roots in *Auguſt*, ſo as they may ſtrike new root before winter, planting them where they may have the benefit of the winter's ſun, to make them expand their bloſſoms early: ſome of them may be planted in a more ſhady ſituation, in which they proſper beſt of any. — They require a freſh earth, but not dunged; as it is apt to rot them.—They are alſo propagated from ſeeds, which ſhould be ſown in ſhady borders (but not under the droppings of trees, that being very prejudicial to all young plants.) In *June*, when the ſeeds are ripe, ſow them; keep the bed clear from weeds, and they will come up the following ſpring. They may continue in their preſent ſituation until *March*, when they ſhould be tranſplanted into the nurſery-bed, where they are to flower, and in *June*, or in any of the ſummer months, plant them into borders or wilderneſs quarters, where they are to ſtand for good.

It is for this reaſon that I have adviſed the ſowing and continuing to ſow the ſeeds of the *Chriſtmas Roſe*, the *Winter Aconite*, the *White Hepatica*, and ſome other flowers, that if a double one ſhould be raiſed of any of theſe flowers, which has never yet appeared, ſuch an uncommon production will give pleaſure, if not profit, for the labour and attention.

In the courſe of my proceſs for flowers, I ſhall frequently direct the ſowing the ſeeds of many flowers, as

from them only we can have the different ſorts of every ſpecies; from ſeed the famous *Black Dutch Tulip* was raiſed, and the firſt *Double Hyacinth*: and though I may deſcend to the loweſt of our flowers, yet, ſhould a double one appear, the acquiſition would not be trifling.

Winter Aconite.

THE *Chriſtmas Roſe* is ſucceeded by the *Winter Aconite*, botanically called *Aconitum Hyemale*. It hath a yellow flower; its leaves, which are of a vivid green colour, are deeply cut, and from the centre of the leaves ariſe the flowers, which expand in *January*, even when froſts and ſnow are upon the ground, and are then of a more beautiful colour, than in milder ſeaſons; the ſeeds of this plant are ripe the beginning of *April*, and, ſo ſoon as you gather them, they ought to be ſown in a good rich light ſoil, in pots or in boxes, to be expoſed to the morning ſun only. They will come up the following *December*, and, after their leaves are decayed, it will be proper to lay two inches of the ſame mould upon the pots or boxes, which will ſtrengthen the young roots, and in three years after ſowing, they will ſhow their bloſſoms; obſerve not to tranſplant them from this ſeed-bed, until they are three years old; for neither the old roots, nor the ſeedlings, agree with being tranſplanted oftner than every third year. This work ought to be performed before their leaves are entirely faded; their roots, which are ſhaped ſomewhat like an *Anemone*, but ſmaller, being of a dark earthy colour, and of conſequence difficult to find, after their leaves are quite faded.

They make a very agreeable appearance when they are planted in clumps, in long borbers, intermixed with double and ſingle *Snow-drops*, *Hepaticas*, *Donſoly*, the *Perſian Iris*, and *Vernal Colchicums*, of which I ſhall treat under their reſpective names.

Snow-

Snow-Drops.

THE next flower that adorns the ſpring, is, the *Snow-drop*, of which there are four kinds; the *ſingle*, or *leſſer bulbous rooted* is by *Tournefort* botanically called *Narciſſo-Leuconium minus*. It has a bright white flower, which comes up between its two plant leaves, and blows in *January*, even when there is froſt and ſnow upon the ground. This plant is eaſily propagated by off-ſetts, provided it is not tranſplanted more than once in three years; it is therefore a very fit companion for the *Winter Aconite*; both of which I had a long bed planted in rows alternately, which made a very fine ſhow.——This flower does not require a very rich ſoil, but freſh earth ſhould be laid upon their beds about *Michaelmas*, before the froſts ſet in, which will greatly ſtrengthen their roots for blowing fair the ſucceeding ſpring.

The moſt proper ſeaſon for lifting them is about the end of *June* or beginning of *July*, when their leaves are decayed; then they may be laid up in their reſpective apartments in the root-room to dry, obſerving to clean their bulbs from earth, and any rottenneſs which may adhere to them, and to keep them dry, until the beginning of *September*, when they ſhould be planted two inches deep, and at the diſtance of two only; for, as it is a ſmall flower, the cloſer they are planted the better their appearance.

There is another kind of this flower, which is botanically called *Narciſſo-Leucoium trifolium majus, luteis apicibus*, or *Great Snow-drop*; this is named in the *Dutch* catalogues, *Donſoly primulum*. It is larger than the former ſort, and has a high muſky ſcent, with ſome tips or ſpots upon the extremities of ſome of its petals; this ſort is not ſo common as the other, but requires the ſame culture, and is not ſo great an increaſer; it flowers about the beginning of *March*. It does not ſeed ſo freely as the other kinds.

About the time that the former ſort is in flower, another kind, called the *Double Snow-drop*, expands its bloſſoms; it is botanically named, *Narciſſo-Leucoium flore pleno minus*, *Boerh. index.* — This flower continues long in bloom, and makes a fine appearance with its double bloſſoms, the inner petals whereof are firſt of a green colour, tipt with white, and afterwards, as the flower advances, turns to a bright white. It has not ſo good a ſcent as that ſort called in the *Dutch* catalogues *Donfoly*, for in all double flowers, the multiplicity of the petals or leaves of the flower, obſtruct the organs of generation, in which the ſcent of the flower lies. They do not increaſe ſo faſt as the ſingle, but in all reſpects require the ſame culture.

The laſt kind of *Snow-drop* is called the *Greateſt Snow-drop*, and botanically, *Narciſſo-Leucoium altiſſimum*, *flore albo parvo*, *apicibus viridibus*, *Boerh. index.* I mention this flower here, becauſe it is of the ſame claſs, though it does not flower until the month of *May*. It is a hardy plant, and its bulb is as large as a *Polyanthus Narciſſus*: its ſeed-veſſels contain a round ſeed, which, when ripe, is of a clear ſhining black colour, as big as the ſeeds of *Hyacinths*, and ſeem to promiſe, with proper care and induſtry, an agreeable variety of flowers, though hitherto I have not heard of any improvement of that kind. The number of its flowers upon one ſtalk never exceed three or four. They ſhow well in borders, from their fine ſtrong ſtem, and green leaves, when planted among other flowers of their time of blowing. Their culture is the ſame as directed for the ſmaller kind of *Snow-drop*.

Hepaticas.

Hepaticas.

Of theſe there are five ſorts, *viz.*

1. The *Single White Hepatica*, botanically called, *Hepatica trifoliata, flore albo ſimplici, Boerh. index.*
2. The *Single Blue*, or, *Hepatica trifoliata, flore cæruleo, Cluſ.*
3. The *Single Red*, or, *Hepatica trifoliata, flore rubro, Cluſ.*
4. The *Double Red*, or rather peach-coloured, called *Hepatica trifoliata, flore rubro pleno, Boerh. index.*
5. The *Double Blue*, or, *Hepatica trifoliata, flore cæruleo pleno, Cluſ.*

THE treatment of each of theſe is exactly the ſame. Their ſeed muſt be ſown the beginning of *Auguſt*, in boxes on light freſh earth, expoſing them to the morning ſun only. In *November* the boxes are to be placed in a ſituation where they may enjoy the whole day's ſun, to remain until the beginning of *March*, when I would replace them in their old ſituation. During the winter, in the evenings, and in great froſts, cover the boxes with matts, not ſo much from an apprehenſion that the froſt would hurt them, but as at that ſeaſon, when their ſeeds are germinating, it might ſtop their vegetation. It is a very hardy flower, and the young ſeedlings will begin to appear in *March*, when they ought to be carefully kept clear of weeds, and refreſhed with water in hot dry weather. In this ſeed-bed they ſhould remain two years, and after their leaves are gone, they ſhould have ſome light virgin earth laid over them, which will greatly ſtrengthen their roots. In the winter remove the boxes, in the ſame manner as you did after they were ſown, and proceed with them the following ſpring as you did the preceding year. By the middle of *June*, they will be fit to be tranſplanted into beds of light freſh mould, (not much dunged) having previouſly arched the beds with hoops, to ſhade the plants from the ſun, un-

til you perceive they have taken root: plant the feedlings four inches diſtant every way, putting the earth cloſe to them as you plant them; keep them clear from weeds, and in *November* cover them to the depth of two inches from the alleys of the beds which will both ſtrengthen them and prevent the froſt or worms from throwing their young roots out of the ground: The ſucceeding ſpring, ſome of theſe ſeedlings will ſhow flowers, which, if fine in colour, ſhould be marked for the garden. Obſerve to keep them clear from weeds, and to cover them in *November*, as before directed. This is all the culture they require until *March*, when you ſhould break the mould on the ſurface of the beds, and make it fine with your hands, in order to give them a fair appearance. The plants in this fourth year will be in full bloom; and it is then that their double flowers will appear, if there are any amongſt them.

The *Hepatica* muſt not be tranſplanted oftener than once in three or four years, and, if allowed to continue ſix, will make moſt charming clumps; whereas, if they are oftener tranſplanted, the roots will grow weak, and are apt to rot. But if by their vigour they ſhould become too large, they may be parted from the mother roots in *March*, ſhading the new-planted off-ſets, and refreſhing them often with water, until they have ſtruck freſh roots: by this means they will make a fine ſhow in the ſpring, and often in the end of autumn, for many years.

The firſt ſort ſeeds very freely, and no doubt from its ſeed was raiſed the *Double White Hepatica*, mentioned by Mr. *Ray* in his *Flora*, as a very fine flower, of which we have not any at preſent, and cannot expect to recover them, otherwiſe than by continuing to ſow the ſeed, by which not only this flower may be reſtored, but a great variety may be acquired.

Primroſe.

THE next flower I propoſe to treat of, is the *Primroſe*. Of this there are two ſorts; firſt, the *Primroſe*, botanically called, *Primula veris*; which has but one flower, on a ſmall ſlender ſtalk, unable often to ſupport itſelf. The other, the *Polyanthus Primroſe*, which bears many flowers upon one large erect ſtalk; it is called, *Primula veris Polyanthos*, becauſe of its having many flowers upon one ſtalk.

The varieties which are obtained every year by the floriſts, who ſave and ſow their ſeeds, are very great, and ſome incomparable beauties happen often to reward the trouble of ſowing and cultivating them. As in this article I have had great ſucceſs, I ſhall here give my method of treating them, from the ſowing, until they flower.

I gathered the ſeed from the moſt vigorous plants, ſuch as appeared well, and had the greateſt number of flowers upon one ſtem, obſerving to water them very often in dry weather, from the time that the flower faded, until they were quite ripe, which is generally about the 25th of *June*; when their ſeed-veſſels appear brown, and ready to burſt, and the ſeed falling from the huſk, they are to be looked over every day, that as little ſeed as poſſible may be loſt.

As ſoon as the ſeed is gathered, which is by pulling off the bells that contain it, they are to be put into ſmall paper bags, for the more conveniently drying; when you are to have ready ſome boxes, of a ſize to your pleaſure, but they muſt be eight inches in the clear; to be filled with the following compoſt: To one load of well-rotted cow-dung, or leaves of trees, take half a load of fine white ſand, and two of a fine hazely loam, taken from a paſture ſome months before, and which has had the graſs ſward, or upper part, rotted amongſt the earth; mix all well together, and fill your boxes to the brim, or very near it, with this compoſt; then ſhake the boxes, to make the earth ſettle, obſerv-

ing to make the ſurface as level as poſſible; and before you ſow, let the earth have fourteen days to ſettle. When you ſow your ſeed, which ſhould be about ten days after it is gathered, obſerve that the compoſt receives a pretty hearty ſhower; but if there is not any rain, take your watering-pot with the fineſt roſe, and water it; then immediately ſow the ſeed, as equally as poſſible, and not too thick, that being a great error, as well as covering it too much, the depth of a quarter of an inch is ſufficient; and I would chuſe the covering to be of the ſurface of the earth where the plants grew, which is to be laid on gently with your hand; by this care, no part of the ſeed will be loſt.

The moſt proper ſituation for the boxes in ſummer, and even when the plants are very young, will be under a wall or hedge which looks to the north, or to the eaſt, in order to protect them from the ſun's heat: in dry weather it will be neceſſary to refreſh the earth with gentle and frequent waterings.——Some ſow the ſeed in *January*, in open mild weather, or about the firſt week of *February*, at fartheſt.

In *July*, prepare a nurſery-bed of the ſame earth in which they were ſown, and plant them at twelve inches diſtance, taking up as much earth with their roots as you can, ſo as not to diſturb their young fibres; ſhade them from all ſun, until they have ſtruck root; keep them clear from weeds, and give them gentle waterings; and let this nurſery-bed be made in ſuch a ſituation, as to have the morning-ſun only. Some of them will ſhew their flowers the ſame autumn, and many of them the ſpring following, when all the good flowers ſhould be planted out in beds by themſelves, and in a moiſt ſhady ſituation, where their varieties will much delight the curious eye: but for the greater certainty of diſtinguiſhing their beauties, I would ſuffer them to ſtand a year in the nurſery-bed; about the beginning of *November*, while the plants are in this nurſery-bed, and on a dry day, take a quantity of the compoſt in which they were ſown, and with your hand lay it an inch thick over the bed, holding up their undermoſt leaves with one hand, while with the other you preſs the earth about the plants,

plants, obſerving to keep the bed clear from weeds, and any foggy ſtuff that may lie upon its ſurface: this covering will prepare your plants for ſhewing well the ſucceeding ſpring; and, even if they ſhould happen to flower in winter, it will preſerve them from the injuries of that ſeaſon. They require to be tranſplanted every two years.

The *Double Primroſes*, ſuch as the *Double Paper-white*, the *Double Red*, and the *Double Yellow*, are pretty ornaments to a garden, eſpecially where there are quantities of them; they are eaſily increaſed by parting their roots in *March*, and planting them in a ſhady and moiſt ſituation, where they will beſt thrive.

Spring Crocus, or *Crocus Vernus*,

IS ſo called to diſtinguiſh it from the *Autumnal Crocus*, and is a great beauty in the ſpring, and of which there are great varieties; the beſt ſorts are to be had at *Haerlem*, in *Holland*, where you can buy one hundred roots, of twelve different ſorts, for one guilder.

Having provided yourſelf with a large collection of theſe roots, I would firſt plant them as edgings to long borders, in which clumps of annual, or ſome perennial flowers are ornamentally planted; taking a dibble and making a hole two inches deep, put in a root, and into each hole I would adviſe you to put a little dry ſoot, to prevent the mice falling upon their roots, of which they are very fond: plant their roots two inches from each other, and inſtead of one row, plant two, for their better appearance, obſerving to plant thoſe which flower the ſooneſt, together by themſelves, and ſo progreſſively with the others.

The ſecond method of planting them is in beds, each colour by itſelf, planting the earlieſt always by themſelves, two inches deep, and, (when they are in beds) three inches aſunder, for they will increaſe faſt enough

enough to fill up all their ſpaces or diſtances at which they are firſt planted, either by their off-ſets, or by the ſeed, which you muſt cover with one inch of earth, as ſoon as you perceive it to fall; the third or fourth year you may expect to ſee them flower; it is neceſſary to cover the ſeed immediately after falling, otherwiſe it will be loſt. I would adviſe you not to remove your *Crocuſes* oftener than once in four years; but when their leaves are withered, cover them every year with two inches of new freſh mould, which will ſtrengthen their roots, and make the new-fallen ſeeds germinate ſoon. Their ſeeds may alſo be ſown regularly in the ſame manner as ſhall be directed for the *Bulbous Iris:* but there being now abundance of their varieties raiſed, and their prices ſo low, it is ſcarce worth a floriſt's trouble or pains to ſow them in any other manner than has been juſt mentioned.

Perſian Iris.

BOtanically named, *Xiphion, Perſicum præcox, flore elegantiſſime variegato, Tournef.* This flower is juſtly termed one of the moſt ſplendid flowers of the ſpring. As I never ſowed its ſeed, ſo cannot ſay any thing of its culture that way; poſſibly there may be varieties obtained from ſeed: when I was in *Holland* and *Flanders*, the floriſts there told me, they never had obtained any variety from ſowing the ſeed, excepting the deceaſed *Jan van Leewen* at *Rotterdam*, who told me, that one of his ſeedlings had produced him a flower, whoſe ground of colour and erect petals were of a fine blue, and that the tips or uppermoſt parts of its petals were ſpotted in the ſame elegant manner as the common ſort are. I always planted them in a light ſoil, and in clumps, with other vernal flowers, where they bloſſomed very well; but I obſerved, when they put out many off-ſets, the mother-roots and off-ſets ſhewed only leaves: but as it is a root which off-ſets freely, and will not ſucceed if often tranſplanted, or kept any time out of the ground, I uſed the following method, by which it flowered conſtantly:

ſtantly: Whenever the leaves of the plant were near decayed, if it had off-ſets, I removed the earth from the bulb, until I was below it; then with my fingers I took them off, which by that time were formed into bulbs, and, taking them up carefully, laid in ſome new, rich mould, when I laid all ſmooth, without diſturbing the mother-roots; the off-ſets I planted either by themſelves or in clumps, with other vernal flowers, in the ſame rich ſandy ſoil, obſerving to preſerve all their fibres: I planted them three inches deep, opening the earth as deep as their fibres were long; by this practice the old roots flowered every year. If you are deſirous of making a nurſery of them, and to plant the off-ſets immediately, let the ground be wrought two feet deep into a ſoft mould, that their long fibres may have ſufficient room, and not be cramped by any ſtiff ſoil, into which they cannot penetrate, which will make them ſtunt, not flower, and at laſt entirely decay. I have alſo had blows of them in pots to adorn chambers early in the ſpring, but obſerved after the blow to plant them in the open ground; this work is beſt done in *June*, when you are to plant them, together with the earth which was in the pot, without diſturbing their roots in any manner whatever. As ſoon as you receive theſe roots from your floriſt, plant them, for if they lie any time out of the ground, they will be in great danger of rotting.

Daffodills, or *Pſeudo-Narciſſus*.

THE firſt of the *Daffodills* which blows in the ſpring, is the dwarf *Narciſſus* with a double head, called *Narciſſus nanus, ſeu Pumilus maximi capitis*; thus it is named in the *Voorhelms* catalogues in *Holland*: this kind does well to be planted in clumps of vernal flowers, with *Snow-drops*, and others; it thrives well in a rich light earth, but ſhould not be lifted but once in two or three years; it has a yellow flower, a very ſhort ſtalk, and a very large trumpet-like cup, fringed about the edges.

There

There is another ſort of them, which has as high a ſtalk as the other *Daffodills*, and a large trumpet-like cup, and is fringed about the edges, which in the *Dutch* catalogues goes under the name of *Narciſſus trompet major*; this requires the ſame culture with the former, and ſhould be planted in clumps of vernal flowers; this is botanically named *Narciſſus major totus luteus, calice amplo prælongo*, C. B. P.

There are great varieties of *Daffodills*, which are to be had of the floriſts. When I treat of a genus of flowers or plants, which have many ſpecies, I include none but thoſe, whoſe culture I know from my own practice.

There are four ſorts of *Daffodills*, which I ſhall deſcribe, which may be had from the *Voerhelms* and *Van Kampen* at *Haerlem*: they make pretty edgings for borders on each ſide of a walk, and do very well when planted in that way, immediately oppoſite to one another, and in the inſide of an edging of *Crocus's*. The beſt ſorts of *Daffodills* for ſuch a ſhow, are, 1*mo*, *Narciſſus van Sion*; this ſort is often mixed with ſome of *John Tradeſcant's Daffodills*: this laſt is botanically called *Narciſſus latifolius flore pleniſſimo, petalis partim flavis, partim viridibus interpolatis*: the firſt is botanically called *Narciſſus multiplex, totus flavus*. Thoſe in the *Dutch* catalogues are mixed together, and I chuſe firſt to give them their *Dutch* names, as I have always had my beſt collection from *Holland*.

2*do*, *Narciſſus incomparabilis*, incomparable *Daffodill*, botanically called *Narciſſus incomparabilis, flore pleno, partim flavo, partim croceo, Hort. Reg. Pariſien.*

3*tio*, *Narciſſus Orange Phœnix*, botanically called *Narciſſus latifolius, flore pleniſſimo, petalis majoribus pallidis, minoribus colore aurantii interpolatis.*

And 4*to*, *The double white Narciſſus*, botanically called *Narciſſus albus, flore multiplici odoratiſſimo*, which ſhould be placed in the edgings of borders, where flowers which bloſſom in *May* are planted.

All thoſe *Narciſſuſes* or *Daffodills*, (but which ſhould more properly be called *Pſeudo-Narciſſi*) ſhould be planted in *September*, in edgings, or within thoſe of the *Crocus*,

cus, at ſix inches diſtance, every way, and four in depth; you are to make uſe of a broad dibble, half a foot long. Before you begin to plant, have ready a wheel-barrow full of rich and very ſandy mould, filling the pit, into which you are to ſet the bulb, with two inches of it, that the tender fibres of the bulbs may ſhoot the more eaſily, and gather ſtrength to penetrate into the mould below, which is not of ſo fine a texture; the pits are to be filled two inches above the bulb, riddling all over them two inches more of good garden-mould. Their leaves and flower-buds will appear early in the ſpring, and, except keeping them clear from weeds, will require no further care until the *November* following, when I would adviſe another coat of good garden-mould to be laid upon them, and in the ſpring to dreſs the beds, and clear them from weeds with your hands, which will be much ſafer for their ſpringing buds, than to uſe the hoe or any other inſtrument whatever.

Of the reſt of the *Daffodills*, or *Pſeudo-Narciſſuſes*, the beſt kinds are:

1*mo*, The *Non-ſuch Daffodills*, with double flowers, and whoſe big leaves are white, but the leſſer leaves are of a gold colour, botanically called *Narciſſus latifolius, flore pleniſſimo odorato, petalis majoribus candidis, minoribus aureis interpolatis, Boerh. Ind. et Hort. Eyſt.*

2*do*, *Peerleſs Primroſe-Daffodill*, called botanically *Narciſſus medio-luteus vulgaris.*

3*tio*, *Yellow Daffodill*, with the petals of its flowers reflected, botanically called *Narciſſus luteus petalis florum valdè reflexis, Caſp. Bauch.* P.

4*to*, *The greateſt Nonpareille Daffodill*, botanically called *Narciſſus latifolius omnium maximus, amplo flavo calice, Park. Par.*

Thoſe four ſorts ſhould be planted in clumps with other flowers, which bloſſom about the ſame ſeaſon, *viz.* in *March* and *April*; and their culture being the ſame with thoſe juſt mentioned, it need not be added here; but I would adviſe that none of their kinds be lifted ſooner than once in three years.

As for the *Oriental Polyanthus Narciſſus*, I ſhall treat fully of them in another place.

Cyclamen,

Cyclamen, or *Sow-bread.*

THERE are two kinds of this flower, the one with the white flower, botanically called *Cyclamen vernum, flore albo*, C. B. and the other, which carries a ſmall red flower, called, by the botaniſts, *Cyclamen vernum minus, folio orbiculato infernè rubente, flore minore ruberrimo, Morif. hiſt.* Theſe flowers are more tender than the autumnal ſorts; and if they are not planted in pots in winter, or in ſpring, when they are in flower, they ſhould have ſome covering or bell-glaſs over them in very ſevere weather. They do very well to be planted in clumps of vernal flowers, and ſhould not be removed but once in two years; and when their leaves are faded, and their ſeeds are perfected, is the beſt time to lift them; I have often cut large roots from off their eyes, keeping them out of the ground until the wound was dry and ſound. I planted the root, as alſo that part which I cut off, three inches below the ſurface, ſurrounding their bulbs with dry ſand, when they flowered and proſpered well.

The two *Perſian* kinds flower alſo in the ſpring; but as they both require to be houſed in winter, I ſhall treat of them among the green-houſe plants, or under the article of *Guernſey Lillies.* Their ſeeds muſt be ſown in boxes filled with rich ſandy mould, as ſoon as they are ripe, and require the ſame culture as the *Bulbous Iris*, only they muſt be ſheltered in winter under a hot-bed frame, or in the front of the green-houſe, where they may have much air, but be protected from froſts; and in ſix years after their ſowing, their roots will ſhew all their beauties; obſerve to ſhift them every two years into freſh mould, and larger boxes, their roots growing faſt.

I chuſe to ſow moſt of the ſeeds of bulbs or of perennial plants, which require to be protected in winter from the inclemency of that ſeaſon, in boxes, rather than in pots, as they retain the cold and damps much longer than the latter; your boxes muſt reſt on feet ſix inches high.

Vernal

Vernal Colchicum.

IN company with the *Cyclamens* may be planted in clumps the *Vernal Colchicums*, of which there is but one ſort, botanically called *Colchicum vernum Hiſpanicum, flore rubro, C. B.* which makes a very handſome appearance with its purpliſh flower; for their increaſe, let them not be removed oftener than once in three years; but it will be very proper to lay new earth over them every *November*, before the froſts ſet in, which will preſerve their roots, and make them bloſſom well in ſpring.

Dens Canis and *Fritillaries.*

THE *Dog's Tooth Violet*, or *Dens canis* and *Fritillaries*, are to be next treated of.——Of *Dens canis* there are three ſorts; of which the white flowered with the broad leaf is the moſt common in *Britain:* its creeping leaves covering the ground, make a very pleaſing appearance in the ſpring, and is by far preferable to the others, whoſe colours are neither ſtrong nor florid: I always planted them two rows in a bed, and between each row, one of the different ſorts of *Fritillaries*, which are mentioned in Mynheers *Voorhelms* catalogues at *Haerlem* in *Holland*, that the ground in ſuch beds might be equally employed, and appear beautiful at the ſame time; for the *Fritillaries* flower much about the ſame time with the *Dens canis*, the former being naked in its ſtalk, and carrying no leaves near the ground, whilſt the low leaves of the *Dens canis* adorn and embelliſh the ſurface of the beds, and the flowers of the *Fritillaries* ſeem to riſe from the variegated leaves of the *Dens canis.*

The *Fritillaries* and the *Dens canis* are not to be moved oftener than once in two years; obſerving, about the beginning of *November*, every year, to give their beds a covering of freſh paſture-ground, or from the alleys

of

of the beds; and alſo to keep them clear from weeds; and in ſpring to go over the beds with your hand, in order to preſerve the ſpring-buds of thoſe flowers. The beſt time for lifting thoſe ſorts of flower-roots, is, immediately after their leaves are decayed, and their ſeeds are ripened, which is commonly about the beginning of *July*, when you may replant them as formerly, into beds of good light undunged earth, ſeparating their off-ſets, and planting them and the mother roots ſingly, about the beginning of *Auguſt*, as they are not to be kept long out of the ground; the *Dens canis* at two inches diſtance, and the *Fritillaries* at four, root from root.

The method I followed to propagate them by ſeed was as follows: in a fortnight after the ſeed of the *Fritillaries* were ripe, I provided boxes of two feet in breadth, three and an half in length, and ten inches deep, which, after making holes in their bottoms, and covering the ſame with oyſter-ſhells, to let the water paſs off, I filled them to the depth of ſix inches with the following compoſt, *viz.* one third of the oldeſt and moſt rotten tan-bark, one third of the pureſt white ſand, and one third of a good paſture-ſoil, which had lain by for twelve months, with its upper ſward well rotted in it; theſe I toſſed up in a heap, afterwards ſcreening it, but not too fine. The reaſon of laying no greater depth of compoſt in the boxes, is, that the boxes might be covered in bad weather, without injuring the leaves of the young plants.

Theſe plants came up the *March* after they were ſown, when I had a fine appearance, as few of the ſeeds miſſed; in winter I placed them where they enjoyed the full ſun, but removed them in the middle of the following *March*, to where they had the rays of the ſun until eleven in the forenoon only. During the inclemency of the winter, I placed them under a ſouth-aſpected wall, and in froſty evenings covered them with wooden covers; and in the extreme ſeaſon of the year, I laid ſome of the oldeſt and beſt rotted tan-bark two inches deep on the ſurface of the boxes, and the latter end of *February* I took it off with my hand. When they were brought into a more ſhady ſituation, I dreſſed the mould, and cleared it of a moſſy topping it had collect-

ed

ed during the winter, laying on half an inch of good kitchen-garden mould, in which was not any ſand, leſt, by watering, the fine mould ſhould be taken off the young roots, which is a caution neceſſary to be attended to, where a light covering is neceſſary. The ſeedlings came up well, and in *June* their leaves decayed, during which time, and until the middle of *Auguſt*, I gave them little or no water, but put a good covering of the compounded earth on their boxes; the winter and ſpring following, I uſed them as I had the year preceding, until *June*, when their leaves faded; at which time I lifted their roots, and found them as large as hazel-nuts, and quite ſound, and of a fine ſize for their age, in proportion to their mother-roots; which, notwithſtanding they ſeeded with me, bloſſomed as ſtrong the ſecond year, as they did the firſt, when I received them from *Holland*; but ſuch as perfected their ſeed, I took care to ſhift into new beds of the compoſt I have already directed for them.

To return to the culture of the ſeedlings: Having taken them out of the boxes, I laid their roots to dry in the root-room, which I cleanſed, after they had dried ſome days; then I made up a bed of the ſame compoſt, except that in this I put but half the quantity of the dry ſand, into which I planted them two inches deep, and four inches diſtance every way. In winter I covered the bed with two inches of fine rotten tan; by the end of *February* I removed it by hand, and in *March* the plants ſhewed their leaves well, three of them ſhewing flowers, one of which was a large bell, and of an admirable ſnow-white colour, chequered with black; the other was of the kind they called *Monſtrum* in the *Dutch* catalogues; the third was exactly of the colour of an apple-tree bloſſom. As ſoon as their leaves had almoſt decayed, I cut off their ſtalks a little below the ſurface of the earth, with a pair of ſciſſars, in order to ſtrengthen the roots, taking off more than one inch of the old earth, and covered them with two inches of new, and in *November* again covered them with old tan, which in the beginning of *March*, when the thaw came on, I removed; and in *April* I had ſuch a blow of ſeedlings as was never before ſeen in *Britain*, and, amongſt them, ſeven

ſorts which they had not in *Holland*; ſome of theſe I ſent to my good friends the *Voerhelms* at *Haerlem*, to add to their catalogues of this flower.

Were our gardeners and floriſts more attentive, they have every opportunity of raiſing new flowers, having a different ſoil and climate to aſſiſt them, as moſt of them are natives of other countries. Patience and care are the chief ingredients, as we cannot have a blow from the ſeed-bed under ſix years, but then by continuing to ſow, we ſhall, after that time, have every year ſomething to reward and delight us: This has been my practice with the perennial bulbous-rooted flowers, and in a few years I was fully rewarded.

Crown Imperial.

Of this flower there are the following ſorts, *viz.*

Common Crown Imperial.
Greateſt Double flowered.
——— *Double crowned.*
——— *Triple crowned.*
Flat ſtalked, or *Sword-bladed.*
Silver ſtriped leaved.
Gold ſtriped leaved.
Single yellow flowered.
Double yellow flowered.
Yellow ſtriped flowered.
Branched flowered.
Aurora coloured.
Orange flowered.
Bloody flowered, or, as the *Dutch* name it, *William Rex.*

ALL theſe roots ſhould be planted in a dry border of the garden, as too much moiſture will rot them: they are very valuable, being the earlieſt tall flower we have. I always planted them in the middle of the bed, in *September*, laying a good deal of dry ſand into the pits which I made for them, and making

making the earth neareſt to their bulbs as looſe as poſſible, that their young fibres might go through the mould with eaſe. When they were riſing to bloſſom, I placed by them ſmall ſticks, to which I faſtened their long ſtalks, to prevent the wind breaking them, as not any thing can be more prejudicial to them, than to have their ſtalks broken, or their flowers cropt by any accident; but as ſoon as you perceive their flowers decaying, and the ſeed-veſſels forming, cut them off a little below their tops, allowing the other part of the ſtalk to wither; I lifted them every third year only, whereby I had great plenty of off-ſets.

The *Dutch* floriſts have in their catalogues a plant, which they call *Lilium Perſicum*, or the *Perſian Lily*; this flower bloſſoms in *April*, has a pendulous or hanging flower like a *Martagon*, but is not reflected, and its colour reſembles that of the *Double Martagon*; this requires the ſame culture as the *Crown Imperials*, and bloſſoms much about the ſame tim.

Oriental Hyacinth.

I Come now to treat of one of the principal beauties of the ſpring, the *Oriental Hyacinth*; and as it is a peculiar favourite of mine, I ſhall accurately deſcribe the moſt beautiful ſingle and double flowers, which are in Mynheers *Voerhelms* and *Van Zompel*'s catalogues, which flowered with me; and after proceed to the culture of their old roots, and their off-ſets, and then give my own practice, whereby I raiſed many of theſe fine flowers of incomparable beauty, from ſeeds which I ſaved in this country; and as there is ſuch a variety of them, it will be neceſſary to be very exact in their deſcriptions, whereby one may know what is a fine flower, an early or a late blower, with all its properties and colours; and I chuſe to deſcribe them from the catalogues of Mynheers *Dirk* and *Pietre Voerhelms*, and *Voerhelm* and *Van Zompel*, floriſts at *Haerlem* in *Holland*, as the flowers

they ſent me, excelled all others I had, either from *Holland* or *Flanders*.

I ſhall proceed to the deſcription of the ſingle white *Hyacinths*, beginning with the earlieſt blowers.

1ſt, *Premiere Noble* is an extreme pretty flower, with a high large ſtem, which is adorned with many bells of a white colour, but are ſomewhat pendulous, and are well reflected; this is an early blower, and ſeeds well; it blows alſo very well in water-glaſſes.

2d, *La Tendreſſe* reſembles the former flower very much, as to the form of its ſtem and bells, whoſe pedicles are ſhorter and ſtronger, which keep the bells more erect; it is of a more ſhining white, and continues longer in perfection of colour; it is an early blower, ſeeds well, blows well in water-glaſſes, and is a very fit companion for the former flower.

3d, *Koningclite Parel* is a very fine flower, of a good colour, and a high ſtem, which is adorned with large bells, which are cornered prettily to the bottom of the cup; it holds its bells erect, which are very large, and has very often two of its bells joined into one at the top of its ſtem, for which it is much eſteemed; it blows early.

4th, *Incomparable* is a flower of a charming colour, it has a high ſtem, which is adorned with many bells, and are ſomewhat pendulous; it ſeeds well, blows early, and continues long in bloom.

5th, *Gekroonde Liefde* is a very pretty flower, high ſtemmed, ſurrounded with a good number of large bells, which are long, pendulous, and reflect well; it blows early, and ſeeds well.

6th, *Olyphant*, or *Eliphant*, is a large, fair, handſome flower, its ſtem is pretty high, adorned with large bells of a good white colour; and here and there, upon the tips of its petals, are ſpots of a faint carnation colour; it ſeeds well, and blows early.

7th, *Phenomene* is a fine large flower, its ſtem is high, bears many bells of a duſkiſh white colour, erect and well reflected; it ſeeds well, and flowers among the ſecond blowers.

8th,

8th, *Tuberoſiana*, ſo called, I ſuppoſe, from the reſemblance its colour and ſmell has to a *Tuberoſe*; this is one of the fineſt flowers yet raiſed, its ſtem is ſtrong, and prettily adorned with extremely large bells, which are erect to admiration, and ſo well expanded, as to touch the extreme petals of one another, and is of a ſhining white colour; it ſeldom ſeeds, which I attribute to the great ſucculency of its large flowers. This root is not ready to off-ſet, and conſequently is ſcarce; it bears a great price, of late it has not appeared in the *Dutch* catalogues, but before was the ſole property of Meſſrs. *Voerhelms*; it is a ſecond blower.

9th, *William Friſo*. Before I proceed to the deſcription of this flower, it is worth remarking, that when the *Dutch* give any name to a flower, which deſerves obſervation, they call it by a name to which its appearance bears ſome reſemblance, or by ſome great hero or learned man, poſſibly in botany, or ſome other ſcience, either antient or modern. So it is in this flower, the bells of which, upon a high bold ſtem, and at the tips or extremities of their petals, are very much fringed, are large and thick ſet, and are of a fine white; it ſeeds very well, from which I have raiſed ſeveral fine double flowers; it is amongſt the ſecond blowers.

10th, *La Reine de Femmes*, or *Queen of Women*, for its high and floriferous ſtem, the exquiſitely pure ſhining white colour of its bells, which are very erect, long, and is charmingly reflected, one of the moſt attractive flowers to the eye of the beholder yet known; its ſtem, from three inches above the ſurface of the ground, being quite filled with its charming flowers, to the number often of thirty-four, and ſometimes thirty-eight, to which magnitude I blowed it in my own garden. It ſeeds ſometimes, continues a month in full bloom, when it is carefully attended, and is a late blower, preſerving its admirable colours to the laſt. At its firſt appearing in *Holland*, it was ſold for fifty guilders per root, which is a great price for a *Single Hyacinth*.

The next diviſion of the *Single Hyacinths*, is called the *Single Roſe-coloured Hyacinth*.

1ſt, *Roſe Princeſſe* is a very pretty ſmall flower; its ſtem is not high, neither are its bells large, but its rich carmine colour is very engaging; beſides, that it has this particular excellence, that the longer it blows, the better it comes to its colour, and retains this colour till it is quite faded; it ſeeds conſtantly and plentifully, ſo that I have had roots of it which have borne good ſeeds two years ſucceſſively; it is a ſecond blower.

2d, *Bouquet Couleur de Chair*, or *Fleſh-coloured Poſie*, is a very handſome flower; it has a high ſtem, which is adorned with ſmall bells of a fine fleſh-colour; it ſeeds well, and is a ſecond blower.

3d, *Roſe Charmante* is a very pretty flower; its high ſtem is elegantly adorned with many bells of a roſe-colour, and makes it deſerve the name of a *Charming Roſe*; it ſeeds well, and is a ſecond blower.

4th, *Cleopatra* is a moſt handſome flower, with a high ſtem and very large bells, finely ſhaded with roſe colours; it ſeeds well, and is a ſecond blower.

5th, *Roſemonde* is an extreme pretty flower, with a high ſtem and large bells, elegantly mixed with white and coral colours; it ſeeds well, blows amongſt the ſeconds, and has borne a good price in the *Dutch* catalogues,—— As does alſo,

6th, *Gekroone Roſencrans*, which is a very pretty large flower, with a high ſtem, adorned with many large bells, of a bright mixture of red and white; it is a late blower, and ſeeds well.

7th, *Roſe Pyramidale* is a pretty flower; its bells upon a high ſtem are ranged in form of a pyramid, and are of a fine bluſh colour; it ſeeds well, and is a late blower.

8th, *Hermaphrodite* is a pretty bluſh-coloured ſemi-double flower, from whence it takes its name of *Hermaphrodite*; the ſtem is not tall, nor are the bells thick ſet, but they are pretty large, and are of a good colour, and it ſeeds conſtantly, from which I have raiſed ſome very valuable double flowers; it is a late blower.

9th, *Roſe Prieell*, or *Roſe-Cradle*, is a high-ſtemmed flower, which carries ſmall ſemi-double flowers, which, in mild ſeaſons, bear good ſeeds; it is a late blower.

10th

10th, *Aurora* is a ſmall ſemidouble late flower; it ſeeds, and is of a good *Aurora* colour.

11th, *Roſe Naturelle* is a moſt elegant flower, of a fine roſe-colour, with a handſome ſtem and large bells; it is a ſecond blower.

12th, *Soleil du Monde* is a charming new flower, of a very fiery colour; it is a late blower.

Having deſcribed the beſt ſorts of ſingle and ſemi-double white and roſe-coloured *Hyacinths*, which were under my care, I ſhall now proceed to the deſcription of ſingle and ſemi-double *Blue Hyacinths*, and ſhall begin with the dark-coloured.

1ſt, *Avant Coureur*, or *Forerunner*, ſo named from its being the very next to the brumal or winter *Hyacinths*, which bloſſom in *January*; it has a high ſtem, which bears flowers of a dark-blue on the outſides of the bells, the inner parts whereof are of lighter blue colours: it ſeeds ſometimes in mild ſeaſons, and blows very early, and may be known by this circumſtance, that ſo ſoon as the leaves of the plant begin to appear above the ſurface of the ground, at the tips of the upper parts of their leaves, they have a ſpot of reddiſh colour.

2d, *Neger*, or *Black*; this is a ſmall-belled flower, of a black colour; it ſeeds well, and is an early blower, and has a bold ſtem.

3d, *Koningelite Purpre*, or *Royal Purple*, is much ſuch another flower as the former, but has its bells of a ſtrong and dark purple colour; the ſtem and form of its bells are much the ſame as the *Neger*; it ſeeds often, and blows early, and is a very fit companion for the *Neger*.

4th, *Koning Van Poolen*, or *King of Poland*, is a very pretty, large belled, and high ſtemmed flower; its flowers are not very thick ſet on the ſtem, nor are the petals much reflected, but it has peculiar ſpots of a lighter colour near the outſide-end of its bells, which are very pretty; it ſeeds well, and is an early blower.

5th, *La Couronne Triumphante*, or *Triumphant Crown*, is a very fine flower, having a fine ſtem, adorned with very large dark-coloured blue bells, through which paſs

great ſtripes of a very dark colour; its bells are well reflected; it ſeeds well, and comes amongſt the firſt of the ſecond blowers.

6th, *Baſhaw Van Cairo* is one of the prettieſt ſingle flowers that is to be ſeen; it has a large high ſtem, thick ſet with many bells, which are well reflected; the inner parts whereof are of a light blue, with dark ſtripes, and the outer parts of them are of a dark blue, well ſtriped with light colours; it ſeeds extremely well, and is a ſecond blower.

7th, *Gratianus* is a very handſome flower; its ſtem not very high, but bears large and long bells, of a very pretty dark colour; it ſeeds well, and is a ſecond blower.

8th, *Paſtor fido* is a large, bold, blowing flower, with a large ſtem, whoſe bells are well ſtriped with dark ſtripes, half the length of its petals or flower-leaves; it ſeeds, and is a ſecond blower.

9th, *Paſſa Jupiter* is a flower which has a thick ſtem, of a blackiſh colour, ſupporting its bells, which are ſomewhat larger than the former, for whom it is a fit companion to be planted near; it ſeeds well, and is a ſecond blower.

10th, *Golconda* is an extreme pretty flower, with a thick and tall ſtem; its bells, which are large and prettily diſpoſed on the ſtalk, are well reflected, and have a very uncommon bright, blue colour, mixed with a red, which makes a pleaſant and ſtrange appearance, reſembling exactly what the *French* call *une Gorge d'une Pigeon*, or *Pigeon's Neck*; it ſeeds well, and is a late blower: this flower bears a high price in *Holland*.

11th, *L' Azuur Croon*, or *Azure Crown*, is of an extreme fine colour, for it has a high ſtem, richly adorned with large bells of the brighteſt azure colour that can be ſeen, ſo as to attract very much the beholder's eyes; it is a new flower, and is much valued; it ſeeds, and is a late blower.

12th *Moſambique* is a prodigious large flower, with a high ſtem and large bells, of a fine mixed colour of blues, charmingly ſtriped and ſhaded; it ſeeds, and blows late.

13th,

13th, *Rex Indiarum* is a bold, fullen, dark-coloured flower, its ſtem is high, which is well ſurrounded with large bells of a very fine and vaſtly dark blue colour, ſtriped with black; it ſeeds well, and blows late.

14th, *Dolphin* is a fine flower, quite reſembling the ſhining various colours of the dolphin fiſh, with a high ſtem and large bells, finely and variouſly coloured; it is backward in ſeeding, and blows late: This flower is now much valued.

15th, *Gekroonde Moer*, or *Crowned Moor*, is of a dark, ſhining, elegant blue colour, and its ſtem is well ſet with large bells of the colour above deſcribed; the pedicles of its bells are ſhort and ſtrong, and bear them very erect, and carry a full face; it ſeeds, and bloſſoms late.

16th, *Brunon* is a flower of a brown colour, having its ſtem of the ſame colour, with ſtrong erect bells, finely ſtriped with a bright ſhining beau blue; it ſeeds, and blows late, and is a new flower, and bears a good price.

I come now to deſcribe the light-coloured ſingle, and ſemi-double flowering *Hyacinths*.

1ſt, *Paſſa Cato* is one of the largeſt belled ſingle flowers yet raiſed, it has a middling high ſtem, thick and very ſtrong; its bells are of an indifferent blue, mixed with a duſky green; it is not ſo valuable as formerly, and ſeldom ſeeds; it blows early.

2d, *Flore maculato* is a fine large flower; the ſtem is high, the bells of a good light blue, are very prettily, in the innermoſt parts of its petals, mixed with ſmall drops of a very bright white, from which ſpotting it takes its name; it is an old, but valuable flower, and has not appeared in the *Dutch* catalogues for ſome years paſt; it ſeeds, and from it I raiſed ſome very fine double and ſingle flowers; it blows early.

3d, *Bontenbelt blauwe en Witte Geſtreept bonte*; this is a moſt charming flower; its ſtem is pretty high, which is adorned with bells of a middling ſize, remarkably ſtriped the whole length of the bell, with a bright ſhining white, and a beau blue colour; it ſeeds well, and from its ſeed was raiſed the fine double blue flower,

Bonte

Bonte Souſpareille, which I ſhall deſcribe in its place; it blows early, and, at its firſt appearance, reſembles what we call our *Striped Cotton-Sattin Silks*, even before it opens its bells.

4th, *Claremonde Bleek blauwe en Witte Geſtreept*, is a new flower, and one of the ſtriped ſorts, has no difference remarkable in its flower from the preceding *Hyacinth*, but this, that the blue ſtripes have a very dark colour, and the white ſtripes are of a ſhining white colour; it is amongſt the claſs of the ſecond blowers.

5th, *Blandina*; this is a bold flower with a high ſtem, and large bellsof a ſtrong marble colour, which are well reflected; it ſeeds, and flowers amongſt the ſecond blowers.

6th, *Triton* is a large flower, has a ſtrong ſtem, and large bells of a very pretty colour, the extremities of whoſe petals are reflected, and ſhew a very bright blue; it ſeeds, and flowers amongſt the ſecond blowers.

7th, *Trebiſonde* is a very elegant coloured flower, with a large ſtem, around which are large bells with ſtripes of dark and light blues; this flower ſeeds well, and is a ſecond blower.

8th, *Biſarde Agate* is a very large ſemi-double flower, having a very ſtrong and high ſtem, which carries ſometimes thirty-eight bells of an extreme pretty agate colour; it ſeeds in mild ſeaſons, for which it is valuable; it is a ſecond blower, and continues long in bloom.

9th, *Centaurus* is another ſemi-double flower, with a ſtrong and high ſtem, which carries ſtrong ſemi-double bells of a pretty colour, though not ſo many as the former does; it ſeeds conſtantly, and is a ſecond blower.

10th, *Koningin Elizabeth* is a fine well coloured flower, has a good ſtem, upon which are bells of a light-coloured blue, which are well reflected, but are ſomewhat pendulous, or hanging downwards: it ſeeds well, and is a ſecond blower.

11th, *Prince Van Aſturien* is much ſuch another flower, in its colour and ſtem, but its bells are more erect; this root is very apt to fly into hearts and off-ſets, whereby it ſeldom ſeeds; it is a ſecond blower.

12th,

12, *Fabius Maximus* is a vaſt large flower, with a ſtrong ſtem, which carries very large bells finely enamelled with three colours; it ſeeds, and blows amongſt the earlieſt.

13th, *Koningin Anna*, or *Queen Anne*, is a ſweet light coloured flower, its ſtem is of a good height, adorned with good bells well reflected, of a pretty agate colour; it is a late blower, and ſeeds well.

14th, *Varro*, as to its ſtem and bells, is much ſuch another flower, but it carries more bells upon its ſtems, ſeeds well, and blows late.

15th, *Schoone Aſia*, or *Pretty Aſia*, reſembles the two former flowers, but has a fine ſtripe in its bells of a dark blue; it ſeeds well, and blows late.

16th, *Ganymedes* is an extreme pretty flower; its ſtem is high, and is beautifully adorned with bells finely enamelled, with two ſorts of pretty blue colours; it ſeeds, and is a ſecond blower.

17th, *Premier noble blue* is a flower very much reſembling the *Premiere noble white*, in the form of its ſtem and bells, it ſeeds, and blows early.

18th, *Griſdeline Royale* is a charming flower; it is of a remarkable *Griſdeline* colour; its ſtem and bells make a noble appearance; it ſhould have a place in every good collection of *Hyacinths*, becauſe, as it ſeeds freely, one has a chance to raiſe fine varieties from it; it is a ſecond blower.

19th, *Porcelaine Royale* is alſo a flower of an uncommon grand appearance, its ſtem is high and great, ſupporting bells of a fine watered porcelaine colour; it ſeeds, and is a ſecond blower.

20th, The three *Brumal*, or *Winter* ſorts of *Hyacinths*, *viz.* The *Brumalis Januarius*, the *Vroege Garcon*, and the *Vroege*, or *Early Imperial*, deſerve a place in every good collection of flowers, upon account of their blowing in *January* and *February*, and may be well planted in clumps of the earlieſt vernal flowers, as they do not require the niceſt care in their culture; and as they often produce great plenty of off-ſets, when they are planted in a rich, light, ſandy ſoil.

Having thus deſcribed the beſt ſorts of ſingle, and ſome of the ſemi-double *Hyacinths*, blue, white, and roſe-

roſe-coloured; I ſhall proceed to offer my practice of managing the roots of thoſe flowers which carry ſeed, the method of ſowing their ſeed, and cultivating them, until they ſhow their bloſſoms, in which I had moſt extraordinary ſucceſs.

As ſoon as you perceive the ſeed-veſſels of the *Hyacinth* forming, you then may judge what roots ſhould remain for ſeed, and what are to be ſooner taken out of the ground. Such as are to ſeed, muſt be looked over twice every day, as ſoon as their ſeed-veſſels begin to open, and ſhew their ſeeds, ſome black, and ſome brown, in order that the whole of the ſeed may be preſerved. Theſe ſeeds, when firſt gathered, are very clammy; wherefore, to prevent their moulding, let them be ſpread on paper, in large boxes, and in an airy place, not expoſed to the ſun, where they may lie ſome days to dry, then to be put into paper bags, and laid in ſome airy place for two or three weeks, before ſowing.

Directions for making the Compoſt for the Oriental Hyacinth, &c.

THE few general rules I ſhall lay down for cultivating flowers, will anſwer the ſucceſs deſired, if carefully attended to.—In the firſt place, a compoſt is to be prepared for them, for which I ſhall give very particular directions. And, ſecondly, to give them this compoſt annually, to take them up in a proper time, every year as ſoon as their bloom is over; in winter to cover them, in ſuch a manner, as that their tender fibres will be protected from the froſt. And, laſtly, when they are in bloom, to cover them in ſuch a manner, as that their ſtems may not be drawn, or their bloſſoms ſpoiled by the injuries of the weather. The compoſt I prepared for them is as follows: From the month of *June* to that of *November*, I gathered from the paſtures what cow-dung I could. (Horſe-dung, though very well rotted, is not proper for *Hyacinths*, nor any bulbous-rooted flower.) And that from paſtures is preferable to that collected from the cow-houſe; the firſt, when freſh gathered, ſooner

ſooner rots, and is much ſtronger, from their manner of feeding. However, the latter is not to be deſpiſed, when the firſt is not to be had. When this dung is taken into the compoſt yard, it muſt be well expoſed to the ſun and wind, the better to imbibe the nitrous particles of the air, &c. for which purpoſe I conſtantly turned and toſſed it up, until the froſt ſet in for continuing, when I laid it out to three inches depth, to mould and rot by the froſt, which does more in a month, than can be procured in four from any other practice. From the firſt of *March* I continued turning it, until about the twentieth of *April*, when I laid it up in heaps, in form of hot-beds, and as ſoon as I perceived it heating, I covered it with near a foot of good hot-bed mould, and had very good Cucumbers and Pompions on theſe heaps, with ſeveral other hot-bed crops.

Whilſt the dung was at this work, I prepared the earth for the *Hyacinths*, in which great care is to be taken. The earth about *Haerlem* (where *Hyacinths* thrive beſt) is of the colour of a black fallow, mixed with a white ſand, and which, by lying, neither turns of a red, nor of a yellow colour, which is the colour of moſt of our *Britiſh* ſand, except that ſand which is found upon the banks near the ſea, which is called *Holland* ſand, and becomes whiter the longer it is kept. The black earth is alſo found in ſome of thoſe banks near the ſea, but more frequently in ſhort heathy paſtures: wherefore, in order to come as near as poſſible to the *Haerlem* ſoil, take one third of this white ſand, and two thirds of this black mould, ten inches deep below the ſurface; taking ſome of the ſward with it, and when you have picked out all the large ſtones let it be mixed with the white ſand, in the proportion juſt directed, and toſſed up, until the earth and ſand be well incorporated, and the ſward well rotted, ſo as to make an heap of compoſt, reſembling as near as poſſible the *Haerlem* ſoil.

You are alſo to be provided with the fine riddlings of tan, and ſuch as has been two years out of the pit, and worked in the ſtove; this muſt be expoſed to the froſt to mould and turn to earth; but where this is not to be had, take a quantity of well rotted leaves of trees, which will be equally good.

In

In *Auguſt* or *September*, I removed the mould from the cow-dung beds, as at that time the crops raiſed on them would be taken off; I then toſſed the dung over and over, as I perceived it to want moulding, and in winter, when the froſt ſet in, I laid it out pretty thin, to be perfectly well rotted againſt *April*, when I mixed it with the other materials, in the following proportions; *viz.* Two ſixth parts of the earth and ſand, which by this time were well incorporated, and ſeemed of a blackiſh fallow; three ſixth parts of this well rotted cow-dung; and one ſixth of the rotted tan, or leaves of trees; and when theſe were well mixed, I riddled it very fine: I alſo reſerved a large heap of the rotted cow-dung, as it is much uſed in renewing the beds; a quantity of this dung I put into the beds I had made up for the flowering roots, and at ſuch a depth, as might be within reach of their fibres, which is of great ſervice to them whilſt they are in bloom, and even afterwards, by enabling them to re-furniſh themſelves with ſtrong bold leaves, ſtems and flowers, for the enſuing year; the neglect of this compoſt, and omitting annually to make up the beds, as is here directed, I can aſſure my readers, is one of the chief cauſes, if not the ſole one, that occaſions *Hyacinths* to degenerate in *Britain*; and this I aver from actual experience. The compoſt I have preſcribed muſt be finely riddled, (notwithſtanding what others may ſay to the contrary) as it is neceſſary it ſhould be as fine as meal or flour, that every fibre of the *Hyacinth* may be invted into it, and to breed new ones, as on their multiplicity depends all your ſucceſs.

I ſhall now direct their propagation by ſeed; the beſt time for ſowing of which is about the latter end of *September*, when you muſt be provided with boxes of good timber, two feet and an half in breadth, and about four in length, with many holes in their bottoms, to be covered with the moſt concave oyſter-ſhells, to allow the moiſture to paſs off freely; theſe boxes muſt be eight inches deep in the front, riſing to ten in the rear, that the water may run off more freely from their wooden covers in winter, which is preferable to placing them under hot-bed frames, or any other covering. Theſe boxes muſt have feet of ſix inches high, and ſufficient-

ly

ly ſtrong; for were they to reſt on bricks, they would imbibe too much moiſture.

Having laid the compoſt carefully in the boxes, ſo as not to miſplace the oyſter-ſhells, take your ſeed from the ſeed-bags, and lay them in freſh water for ſix hours; then lay on them ſome fine powdered chalk, which will colour them white, ſo as they may be diſtinguiſhed from the black colour of the mould, that you may ſee how and where you ſow; place them in rows, one inch row from row, and half an inch ſeed from ſeed; lightly covering them; ſetting a ſmall bit of wood at the head and foot of each row, that you may know where to find their roots when they are to be liſted, after their ſeed-leaf is quite decayed; cover them with an inch of the ſame mould, and let the boxes have a ſouth-eaſt aſpect, but not too near a hedge or wall, and in ſuch a ſituation as they may enjoy the whole rays of the ſun in winter: In *October* or *November* ſome of theſe ſeedlings will come above ground with their ſeed-leaf, and the huſk of the ſeed on its top, exactly like an onion, when you ſhould lay on the ſurface of the ſeedling-box ſome very fine old rotten tan-bark, to protect them from the froſt; obſerve alſo to cover them every night with the wooden covers, and in great rains and ſnows: but to be raiſed in the day-time, except when it ſnows; though even then the covers ſhould be ſupported, to allow the air to refreſh them; for the greater certainty of preſerving them from moulding, when they will thrive the better; and in this ſeaſon they muſt be carefully attended.——If the froſt is very intenſe, lay in a quantity of ſtraw under the bottom of the box, as well as over the covers, which I would chuſe ſhould fold over the ſeedling-boxes.

In this ſituation, and with this care, they may remain until *February* or *March*, when the covers may be opened all day, and at night, as they have the ſmall covering of bark over them, through which a ſudden daſh of rain cannot ſo eaſily penetrate; nor would I remove their covering of bark from them, until their leaves are gone, as they may receive ſome nouriſhment from it, as well as from the compoſt wherein they are ſown; and in dry ſeaſons, when you are to give them water,

water, it will glide more eaſily through the parts of the bark, than if you were to water the naked ſurface, when the earth might be drove off from their roots, even by the fineſt roſed watering-pot, which would be very prejudicial to them. —— Take care alſo, in hot ſun-ſhine, that you erect a ſhed to protect them from it, otherwiſe they might be hurried; and be careful that the ſhed be at ſuch a diſtance, as to admit a free paſſage for the air. —— About the middle or the end of *May* their leaves will be faded; and about the thirtieth of *June*, removing the bark with your hand, look for your ſmall wooden marks at the extremities of the rows; which as ſoon as you have diſcovered, ſearch for the roots, which you will find as big as ſmall peaſe, and many as large as a ſmall ſhallot; having put out one or two ſmall fibres at moſt, which muſt not be taken from them; then lay them upon papers to dry, in a place of the root-room, where they may enjoy the air as fully as poſſible, but not the rays of the ſun; but be ſure in the interval between their leaves fading and their roots being lifted, not to water them. If you are apprehenſive that you have not taken up all the young roots, riddle the earth, and ſuch as you find muſt be put with the others; and now that you have the boxes emptied, turn them on their ſides to dry and ſweeten. In ſix weeks the roots are to be re-planted, firſt clearing them of all mouldineſs and decayed ſkin, but not to take off any of the outſide covering that is found. My reaſon for lifting theſe roots ſo early, is, that I have always found it dangerous to ſuffer them to be in an inactive ſtate in the ground, in which they are for ſome time after their leaves are down; in this ſtate they are apt to rot with the leaſt damp; the taking them up gives the faireſt opportunity of preſerving them, by being ſpread out to dry.

The ſecond year's proceſs differs very little from the former; ſo that you are to prepare your boxes in the ſame manner, and with the ſame compoſt, making it as fine as poſſible, that no obſtruction may be given to their tender fibres, as the leaſt obſtruction in their vegetation makes them rot, which they are apt to do. In ſix weeks after

after lifting, or ſooner if you perceive them ſpringing, they are to be planted in rows, three inches aſunder, and two root from root.

As ſoon as the froſt ſets in, I covered them with the ſame ſort of tan as in the preceding year, protecting them from the hot ſun in the ſpring, that their leaves ſhould not be hurried out of their verdure, which is very injurious; and in winter I laid a little more bark upon them.

At the lifting ſeaſon, you are to treat them as you did the former year, when you may expect to find them as large as common ſhallots.——— About the middle of *September* I replanted them in boxes two feet deep, in order to encreaſe the depth of earth; as their fibres will be in proportion as the roots advance in bigneſs, I planted them in rows three inches aſunder, and two root from root, for the more room they have, the better will they proſper. They are now to be managed as before; but ſhould you find them in winter, too near a wall or hedge move them to a more open ſituation; I would adviſe the boxes being ſtrapped with iron, ſo as to admit a pole to paſs on each ſide, for the more ready moving them, as the boxes will now be heavy, and are the beſt things for nurſing theſe young plants in, which I would not plant in the open ground until after the third year. ——— I lifted this plantation in five weeks after their leaves were down, and laying them in the root-room, I managed them in the ſame manner as I did the former years. Their roots being now pretty large, about the beginning of *September*, I dug a trench in the garden three feet deep below the ſurface, taking out all the natural earth, and making the bottom of the trench level, I put in the compoſt formerly preſcribed, to one inch below the ſurface of the path-way; this bed ſhould be only four feet broad, and the length according to the number of ſeedlings. After the bed had ſettled a few days, I planted them in the following manner: Having laid out eight ſtraight lines the length of the bed, I took ſome of the drieſt ſandy earth I could find, and laid it on the ſurface of the bed, to the depth of half an inch, and fixed them ſo in it

U with

with my hand, that the riddling of the earth, with which they were covered, would not turn them on their ſides; with the compoſt I gave them a covering two inches and an half; in this ſituation they remained until the froſt ſet in, when I covered them with rotted tan, near two inches thick, filling the alleys of the beds with the ſame, to the tops of the beds, doing the ſame with the beds where the old roots were planted, to prevent the froſt entering the ſides or ends of the beds; and beyond the ends of the beds I laid the old tan two feet thick, for the better protecting them from the froſt.

Before I planted theſe young roots, I took ſome ſtakes of timber, in which were fixed ſtaples to admit the ends of hoops, theſe were drove down in the path-way, near the two ſides of the bed, at four feet diſtance; and oppoſite to each other, in the ſpring, you are to ſet in your hoops, and acroſs them ſecure ſome rods to ſupport mats as a ſhade from the ſun and weather, to protect the flowers and leaves of the plants. Before I ſet up the hoops, I removed the tan-covering with the hand, and had laid on half an inch of good ſtiff, garden, clayiſh mould, without any mixture of ſand; the uſe of this is, that in watering the beds, (which may be neceſſary) the looſe ſandy earth may not be waſhed from the roots of the plants. — Some of them will ſhew flowers this ſeaſon, which, as ſoon as they appear, ſtick down by their ſides long wires painted green, which are made for this purpoſe, to which gently faſten them, when their flower-ſtems riſe, firſt below their bells, and afterwards, as they riſe, between their bells, with a piece of baſs-mat, but with great care, marking the good flowers.—— They muſt continue in that poſition until the lifting ſeaſon, when they are to be treated in the ſame way as you do your full-grown roots, as directed in pag. 272.

I ſhall now proceed to deſcribe ſome of the beſt ſorts of the double flowers, in the ſame manner as I have done the ſingle.

The

The firſt which appears in Mynheers *Voerhelms* and *Van Zompel*'s catalogues for the year 1754, are the *dark coloured double blue Hyacinths.*

1ſt. *Paſſetoute*, is a mighty fine flower, its ſtem is not very high, but is adorned with large bells of a charming colour, with a ſtripe through them of a very dark colour; its innermoſt petals are large and well diſpoſed: this flower well deſerves its name, is an early blower, and blows well in water-glaſſes.

2d. *Kroon Van Braband*, or *Crown of Brabant*, is a very pretty flower, its ſtem is higher than the former, and is beſet with dark coloured bells, whoſe innermoſt petals are ſmaller, and finely enamelled with ſeveral colours; it blows early, and alſo in water-glaſſes.

3d. *Violet Croon*, or *Violet Crown*, is a mighty pretty flower, of a charming violet colour, its ſtem is high, the bells are double, very large, and well reflected, ſhewing their dark hearts, they are thick ſet, or rather grow in a clump upon the ſtem; this flower blows early.

4th. *Incomparable*, is a pretty flower upon a tall ſtem, which is extremely well ſet with ſmall violet-coloured bells, which in mild ſeaſons bear ſeeds; it is a very pleaſing flower, and ſhould be in every good collection of *Hyacinths.*

5th. *Semper Auguſtus*, is a noble flower, with a high bold ſtem, which is ſurrounded with a great many large double bells well reflected, and which diſplay their beautiful innermoſt petals, charmingly enamelled with a beautiful diverſity of brown and blue colours; it blows early.

6th. *Gekroonde Saphire*, is a very fine flower, with a high ſtem, and a fine ſpike of large ſaphire-coloured bells, well reflected; it bears a fine truſs of bells at the top of its ſtems, as all the *Gekroonde* flowers do; it blows early.

7th. *La Grand Belle*, is a flower of an admirable fine violet-colour; it is an old flower, and had the name of *violet* added to it, until the flower, which is hereafter immediately deſcribed, appeared in the *Dutch* cata-

logues;—it has a ſlender ſtem, and the bells appear on two ſides only, they are long, and not well reflected; it blows early, and is valuable only for its fine ſtrong colour.

8th. *La Grande Violette*, is a fair fine flower, with a bold ſtem, upon which are placed large, erect, open, and well reflected bells, of a very deep violet colour, which make a pretty appearance; it is an early blower, and continues long in its brighteſt bloom.

9th, *Jouweell van Holland*, is a fine well-choſen flower, of a middling ſize, the outward parts of its bells are of a fine Imperial blue colour, the ſtem is high, the bells are well ſet thereon, and are well reflected, ſhowing an elegant heart, well mixed with brown, blue and purple colours; it is a ſecond blower, and continues long in full bloom.

10th. *Purpre ſans pareille*, is an extreme pretty flower, has a high and bold ſtem, with pretty bells, very double, erect, and well reflected, which ſhew their innermoſt petals to perfection, very well enamelled with purple and light blue colours; it is a ſecond blower, and in a bed of *Hyacinths*, where double blues and double whites are planted alternately, is a very fit companion for the *Koning van Groote Britannien* double white *Hyacinth*, their time of their flowering being the ſame.

11th. *Keyſer Amurath*, or *Emperor Amurath*, is a fine bold flower, with a high blackiſh coloured ſtem, with large bells pretty well reflected, which at their firſt opening have a ſmall white leaf in the bottom of its cup; it is a ſecond blower.

12th. *Perſeus*, is a fine handſome flower, its ſtem is high, its bells are pretty large, much of the colour and form of the *Paſſetoute*, but has a longer ſpike of flowers on its ſtem; it is an early blower.

13th. *Mars*, is a fine large flower, with a high ſtem, on which grow its large bells, not very double, but they have a fine black coloured heart; its flower is of a bold aſpect; it is a ſecond blower.

14th. *Counſeilleur Burkline*, is one of the fineſt flowers yet produced from ſeeds, ſome of its lower bells being of a moſt beautiful enamelled colour, upon a large thick ſtem;

ſtem; and, beſides their being well reflected, are as broad as an ordinary *Ranunculus*; it is a moſt valuable flower, and an early blower.

15th. *Cedo nulli*, is an extreme pretty, large, new flower; it has a fine high and noble ſtem, its bells are very large, thick ſet, and well reflected, of an exquiſite fine colour, and has a heart very prettily enamelled with variety of colours, and continues long in bloom; it is a late blower.

16th. *Brunette amaible*, is a charming pretty flower, having a pretty high ſtem, on which are thick ſet dark-coloured bells, which make a very pretty appearance; it is a ſecond blower.

17th. *Rex Negros*, is a fine large dark-coloured flower, with a high ſtem; its bells are well reflected, and diſplay a heart of the moſt dark colours of all the blues; it has a noble aſpect, and is a ſecond blower.

18th. *Koning der Mooren*, or *King of the Moors*, reſembles the flower immediately above deſcribed, but has a large black-coloured ſtem, and its bells are of a very dark colour, nevertheleſs they are vaſtly pretty; it is a ſecond blower.

19th, *Tros-Blom*, or *Bouquet*, or *Cluſter of Flowers*, named very properly, it being a large noble flower, with a high, bold, and floriferous ſtem, and the bells are numerous, and well reflected, with enamelled hearts; it is a ſecond blower, and bears its bells in a long ſpike.

20th. *Grandeur Superbe*, although it is a low-priced flower, yet is one of the pretticſt and largeſt flowers amongſt the whole tribes of *Hyacinths*; it has a high floriferous ſtem, its bells are very large, erect, and well reflected, which diſplay a pretty heart; it is a ſecond blower.

21ſt. *Overwinnaar*, or *Conquceror*, is an exceeding fine flower, it has a ſmall ſtem of a black colour, which carries at moſt ſix or ſeven bells, which are very large, erect, and of a round figure, are well reflected, and have this particularity in them, that from the center of the heart of the flower, there come out two ſmall long petals or leaves, which go to the outmoſt verge of the

flower, of a quite ſnow-white colour, without any mixture of blue in them; it is a late blower, and at its firſt appearance was ſold for one hundred guilders per root.

I ſhall now deſcribe ſome of the prettieſt *light-coloured double blue Hyacinths*, beginning with

1ſt. *Bonne ſans pareille*, or *Good without an equal*, is an extreme pretty flower, has a high ſtem, adorned with very double bells, which are moſt beautifully ſtriped with blue and white through their whole petals; it has a fine ſpike of flowers, and blows early.

2d. *Soveraigne*, is a very pretty flower, with a high bold ſtem, which carries fine double bells; the petals are well reflected, ſhewing a fine heart, enamelled with many ſmall petals of a very dark blue; it blows early, and carries a fine ſpike of flowers.

3d. *Agaet Mignion*, or *Small Agaet*, is a fine flower, of a high ſtem, and but a ſmall bell, ſemidouble, but well reflected, and the whole bell cornered to its bottom; it ſometimes ſeeds, and has a very fine ſpike of flowers, and blows early.

4th. *Koning Willem*, or *King William*, is one of the beſt ſemi double flowers yet known; it ſeeds conſtantly, has a pretty high ſtem, and pretty well reflected bells, and blows early.—I have raiſed a great many vaſtly fine double flowers, of moſt extraordinary beauty, from its ſeeds; it has a fine ſpike of flowers.

5th. *La Plus Belle du Monde*, or *The Greateſt Beauty in all the World*, is a very fine flower, it has a pretty ſtem, with double bells, which hang their heads a little, as being ſhy to ſhew the beautiful enamelling of their innermoſt petals, which continue a long time in full bloom; it is an early blower, and has a good ſpike of flowers, and is a very fit companion for the *Jeuweel van Europa double white Hyacinth*, the form of their bells, and the ſeaſon of their flowering being much the ſame.

6th. *Flora perfecta*, or *Perfect Flower*, is a pretty flower, it has a good ſtem, which carries bells of a very fine colour, in which there is not a little variety; the

the innermoſt petals of the flower are very large, like the *Paſſetoute*; it is a ſecond blower, and its flowers grow in truſſes rather than in ſpikes, in a moſt regular and perfect manner.

7th. *Landgraaf van Soutzemberg*, or *Earl of Soutzemberg*, is a very fine large flower, has a bold ſtem, which carries large and double bells, whoſe petals are well reflected, diſplaying a dark blue heart, of a nice form; it is an early blower, and has a fine ſpike of flowers.

8th. *GLORIA MUNDI*, is one of the fineſt, largeſt, and moſt ſhowy flowers as yet raiſed, and at once ſtrikes the eyes of the beholders with wonder and admiration, on account of its moſt beautiful colours, the largeneſs and vaſt number of its bells, which are admirably diſpoſed around its large and high ſtem, and are well reflected; all which form ſuch a beautiful and luſtrous ſpike of flowers, as has not yet appeared amongſt the *Double blue Hyacinths*; it is a ſecond blower.——At its firſt appearance it was ſold for five hundred guilders per root.

9th. *Merveille du Monde*, or *Wonder of the World*, is a very pretty flower; it has but a ſmall ſtem, and carries but few bells; but its excellency conſiſts in the largeneſs of its bells, and their being well reflected, which diſplay their hearts moſt wonderfully enamelled with a ſurpriſing variety of colours; it is a late blower.

10th. *Koningin van Vrankryk*, or *Queen of France*, is a very pretty flower, with a tall ſtem, which carries many bells, well reflected, which ſhow a double heart, well mixed with ſeveral agreeable colours: it makes a good ſpike of flowers, and is a ſecond blower.

11th. *Praal Creraate*, or *Open Ornament*, is a very charming flower; its ſtem is none of the higheſt, but its bells are very large, and well reflected, which ſhew an enamelled heart, much like the *Merveille du Monde*, but the colours are more diſtinct; this flower blows in a truſs, and is a ſecond blower.

12th. *Pronk Jeuweel van Flora*, or *Flora's pretty Jewel*, is a mighty pretty flower, with a fine ſtem, ſurrounded with double, well reflected, erect, and round bells, which diſplay a heart of a fine mixture, of

dark blue colours; it makes a fine ſpike of flowers, is a ſecond blower, and merits a place in a good collection of *Hyacinths*.

13th. *Gloria Florum*, is a very large double flower, with a high ſtem, which is richly garniſhed with large and double bells, of exquiſite beauty, as to their colours and their ſhape, they make a very fine ſpike of flowers; it blows early, and continues long in bloom.

14th. *Rien ne me ſurpaſſe*, or *Nothing ſurpaſſes me*, is a very fine flower, with prodigiouſly large expanded bells, upon a high ſtem, which are of an exquiſite fine beautiful blue on the outſide of their bells, are ſomewhat pendulous, their hearts or innermoſt petals being of a vaſtly dark coloured blue, feathered with petals like rays, all about them, which make a mighty fine ſhowy ſpike of flowers; it is a very late blower, and excels moſt flowers I know.

15th. *Illuſtre d'Hollande*, or *Illuſtrious of Holland*, is a very fine, large, and double new flower; its ſtem is high, its bells ſurpriſing, as to their form and colours, for beauty; it is a Bouquet or truſs-blowing flower, and blows amongſt the ſeconds

16th. *Paſſe non plus ultra*, is a moſt ſurpriſing beautiful large flower; its ſtem, its bells, together with the uncommon enamel of the inner petals of its bells, ſtrike the eye with a moſt ſurpriſing luſtre; it is a ſecond blower. This flower has a particularity in it, which is this: The ſides of the bulb open in the ſpring, to allow (as it were) the great bud and leaves to paſs out eaſily from the heart of the bulb, and theſe chaſms in the bulb do not cloſe up, until it has fully ſucked enough from the earth, in which it is planted, to fill up theſe chaſms; ſo that when you intend to lift it, remove the earth from the bulb, and obſerve if the bulb has filled up its chaſms, one, two, or more; and if they are filled up, and the chaſms are not there, and the bulb is round and ſound, then, and not till then, is the time to lift it, or ſuch bulbs as grow in this extraordinary vigorous manner.

17th. *Aſpaſia Panache*, is one of the prettieſt flowers which have appeared; its bells are large, quite round, numerous, and erect, diſplaying remarkably marbled,

or

or rather chequered bells with many light and dark blue colours; it is a fit companion for the *Controlleur-General double white Hyacinth.*

I come now to deſcribe ſome of the beſt *Double white* and *Roſe-coloured Hyacinths*, and begin with thoſe which are pure *White*, without any mixture.

1ſt. *Morgen Staar*, or *Morning Star*, is a very fine flower, with a pretty high ſtem, the bells are large, and double, and well reflected; it grows in the bouquette or truſs-form, and not in the ſpike manner; it blows early, and is a fit companion for the *Paſſetoute double blue*, the figure of their flowers and time of blowing being much the ſame.

2d, *Paerle Croon*, or *Pearl Crown*, is a pretty flower, its ſtem is indifferent high, upon which are ſeven, eight, or ten bells, of a fine pearl colour, well reflected; this blows early, but has not appeared in the *Dutch* catalogues for ſome years paſt.

3d. *Virgo*, is an extreme pretty and double flower, with a bold high ſtem, upon which grow many double, erect, and well erected bells, of a bright ſhining white colour, which continue long in bloom; it blows early, and is a very fit companion for the *Bonne ſans pareille double blue Hyacinth.*

4th, *L'Admirable*, is a very pretty flower; its ſtem is high, adorned with large double long bells, which, both in their inſides and outſides, are of a moſt extraordinary ſhining white colour; this is a ſecond blower, and has a long ſpike, and is a fit companion for the *La Grande Violette double blue.*

5th. *Kroon Vogel*, or *Crowned Bird*, is a very handſome large airy double flower, with a high ſtem, which bears large double bells erect, and well reflected, in the bouquette or truſs faſhion; it is a ſecond blower; this is a fit companion for the *Violette Croon double blue.*

6th. *Colcſſine*, is a very large ſtrong double flower, has a large ſtrong ſtem, with many bells, which are double, erect, and well reflected; it blows late in a ſpike, and mixes well with the *Cœrine double blue Hyacinth.*

7th.

7th. *Jeuweel van Alfema*, I muſt place this flower here, although it is placed amongſt the *double whites* with violet hearts, by Mynheers *Voerhelms*, in their catalogues; but I could never obſerve any violet colours, or any other colours but white in it.—— It is a great beauty, is extremely double, has a high ſtem, upon which grow very large bells, erect, and well reflected, and double, to that degree, that one flower ſeems to come out of the heart of another, as ſome of the very double *Carnations* do. This has a good ſpike of flowers, and is a late blower; and, at its firſt appearance in *Holland*, was ſold for a very great price.

8th. *Saturnus*, is a fine large new flower, with a high ſtem, ſurrounded with great double, erect, well reflected, and moſt magnificent bells. The bells of this flower are ſet upon their pedicles in a very uncommon manner, which botaniſts call, *floribus pediculo inſidentibus*, the flowers ſitting upon their pedicles, as the flowers of the *Aſtragalus maritimus annuus, procumbens latifolius*, of *Tournefort* do, which this flower, very ſingular in its appearance, does alſo; it blows amongſt the ſeconds, with a fine ſpike of flowers, and ſhould be in all good collections of double *Hyacinths*.

To the *Pure Whites* ſucceed the *Double White Hyacinths*, with violet-coloured hearts.

1ſt. *Jeuweel van Europa*. This is a double flower, with a good ſtem, upon which are placed ſeven or eight very double bells, erect, and charmingly well reflected, which diſplay their hearts, well mixed with violet colours; it blows in the *Bouquette* faſhion, and early, and is a fit companion for the *La plus belle du Monde double blue Hyacinth*.

2d. *Roſe blanche et Violette*, or *White and Violet Roſe*, is one of the prettieſt flowers of the whole *Hyacinth* tribe: its ſtem is indifferently high, ſurrounded with ten or ſometimes fourteen bells, of a moſt extraordinary colour, being of ſuch a ſhining white, as to dazzle the eyes of the beholder, and are very double and well reflected, which diſplay a charming large heart, of an uncommon

uncommon dark violet-colour, very diſtinct and large, without any mixture of white, and it has very often a double bell at the top of the ſtem, which makes an uncommon beautiful appearance; it blows in the *Bouquete* or truſs faſhion, continues very long in the perfection of its bloom, and is a ſecond blower.

3d. *Turkſen Keyſer*, or *Turkiſh Emperor*, is an extreme pretty double flower, with a high ſtem, which carries double bells, erect and well reflected, which diſplay a large heart, finely enamelled with dark purple and green, and a faint white colour; the uttermoſt petals being turned up in form of the brims of a hat; it has a fine ſpike of flowers, and is a ſecond blower.

4th. *Blanche Noiratre*, or *Blackened White*, is a charming flower, with large bells of a fine white colour, with its petals powdered all over with ſmall black powderings, like ſmall particles of ſand; they are well reflected, and are erect, and grow upon a good ſtem, in the *Bouquette* or truſs faſhion; it is a ſecond blower.

5th. *Staaten General*, or *States General*, is a charming flower, its ſtem is not of the higheſt ſort, but is ſurrounded with vaſtly fine large bells well reflected, which diſplay a fine mixed heart; it is a ſecond blower.

6th. *Aſſemblage de Beautes*, or *Aſſemblage of Beauties*. I am very ſenſible, that the exacteſt deſcription of this flower comes very far ſhort of the original, which is really one of the moſt charming flowers of all the *Hyacinth* tribes; its ſtem is not very high, but is adorned with bells, ſome of which are broader than an *Engliſh* crown, erect and well reflected, diſplaying a large heart, chamingly mixed with violet, white, ſcarlet, and carnation colours; it continues a long time in high bloom; it is a ſpiky flower, and is a late blower; it is a fit companion for the *Cedo Nulli double blue Hyacinth*.

7th. *Juno*, is a very pretty flower, with a high ſtem, the bells are very prettily reflected, and ſhew a fine, ſmall, violet heart; they are ſomewhat pendulous, but it bears a fine ſpike of flowers, and blows late, and has not been in the *Dutch* catalogues for ſome years.

8th.

8th. *Koningen Esther*, is a very pretty flower, with a high ſtem, and good bells of a ſhining white colour, erect and well reflected, ſhewing the innermoſt parts of its petals powdered, as it were, with a violet duſt. This has a fine ſpike, and is a ſecond blower.

I am now to deſcribe ſome of the *Double White Hyacinths*, which are mixed with red.

1ſt. *Belle blanche incarnate*, or *Pretty white and carnation colour*, is a fine flower, with a high ſtem, which bears large bells of a ſhining white colour, erect and well reflected, the inner petals of which are of a bright carnation colour, without any mixture; it has a fine ſpike of flowers, and is an early blower.

2d. *Feu d'Amour*, or *Fire of Love*, is a charming flower, with a high ſtem, upon which grow large bells well reflected, but ſomewhat pendulous, of a bright white colour, having a very large heart, of an extraordinary ſcarlet colour; it has a fine ſpike of flowers, and is a ſecond blower.

3d. *Comptroller General*, is a good flower, it has a ſhort ſtem, upon which are nine very large double, erect, and well reflected bells, which diſplay a large heart, of a light carnation colour, which often changes to white before the flower fades; it blows with the ſeconds, and in the *Bouquette* manner; this flower blows well in water-glaſſes.

4th. *Koning David*, is a pretty flower with a middling ſtem; its bells are large and double, erect and well reflected, and ſhew a heart very prettily enamelled with red; it is a ſecond blower, and blows in the *Bouquette* or truſs faſhion.

5th. *Koning van Groote Britannien*, is an extreme fine flower, with a high bold ſtem, which bears large, double, erect, and well reflected bells, which diſplay a heart mixed with ſcarlet, violet, white and green, in a very elegant manner; I have had each bell of its lower tire bigger and broader by an inch than an *Engliſh* crown; it is a ſecond blower, and has a fine ſpike of flowers; this flower blows well in water-glaſſes.

6th.

6th. *Koning Sefoſtris*, is a charming fine flower, its ſtem is is not ſo high as the former flower, but its bells are as large and well reflected, of a vaſt ſhining ſhowy white, with a large bright ſcarlet heart, entirely of one colour, and very ſplendid; it is a ſecond blower, and bears a pretty ſpike of flowers.

7th. *Koning Solomon*, is one of the grandeſt and prettieſt flowers which has ever appeared amongſt the *Hyacinth* tribe; and it may well be named *King Solomon*, as it might juſtly vie with that great prince, in the prime of all his glory; this hath a high and bold ſtem, adorned with a great number of large, ſtrong, ſucculent, ſpicy-ſmelled, erect, and admirably well reflected bells, which attract the eyes, inſpire joy to the beholder, and diſplay a large heart moſt admirably enamelled, with carnation, white, yellow, and bright green colours; it has a noble ſpike of flowers, and is a late blower.——At its firſt appearance, it was ſold for ſix hundred guilders per root.

8th. *Flos Solis*, is an extreme pretty flower, with a high ſtem, ſurrounded with fourteen bells, of a midling ſize, and of an extreme pure white colour, fringed like the *Sun-flower*; in the middle of whoſe well reflected bells, appears a large heart, of a very deep ſcarlet colour, without any mixture; it flowers in the *Bouquette* manner, and is a late blower.

9th. *Vogel Struys*, is a very fine large flower, with a good ſtem, and large well reflected bells, of a beautiful white colour, which ſhew a large, good, red heart; it blows in the *Bouquette* manner, and is a ſecond blower.

10th. *Stadhouder van Hollande*, is ſuch another flower as the *Staaten General*; it has a large ſtem, adorned with bells of an extraordinary ſize, erect and well reflected, which diſplay a heart charmingly enamelled with ſcarlet, carnation, white, and green colours, intermixed in a moſt beautiful manner, and even moſt diſtinctly, ſo as one can perceive the different colours at a diſtance; it has a fine ſpike of flowers, and is a ſecond blower.

11th. *Berg Veſuvius*, or *Mountain Veſuvius*; this is the prettieſt double white *Hyacinth* I ever ſaw, its bells are very

very double, very large, and of a round perfect form, and has the largeſt and the fineſt deep coloured ſcarlet heart yet ſeen among the double hyacinths; in ſhort, he who is poſſeſt of this flower, has the beſt and moſt beautiful of all the double white and red hyacinths; it has a noble ſpike of flowers pyramidally ſet, and is a ſecond blower; it is one of the beſt flowers yet known.

12th. *Gloria Hollandiæ*, is a moſt magnificent, and a moſt charming new flower, with a large, ſtrong, high ſtem, which is adorned with bells vaſtly large, double and well reflected, diſplaying the whole inner petals or heart of the flower, in a whole congregated maſs of bright ſcarlet, and ſtrong gold colours; few flowers can compare with, and ſcarce any excel it, in its fine ſpike; it is a ſecond blower.

13. *Gloria florum ſuprema*, exceeds all of its kind yet raiſed, for its high ſtem, erect, well reflected bells, of a moſt ſnowy white, large and well diſpoſed to admiration, diſplaying a vaſtly large heart, of a moſt ſhining ſcarlet, a bright carnation, and grand gold colours finely enamelled; it is a new flower, has a noble ſpike of flowers, and is a ſecond blower.

14. *Baron van Waſenaer*, is a very fine new flower, has a good ſtem, adorned with bells, erect and well reflected; which, over the whole inner large petals, ſhew a very fine mixture of red, yellow, and green colours; it has a fine ſpike of flowers, and is a ſecond blower.

I ſhall proceed to deſcribe ſome of the double white hyacinths, mixed with fleſh colours.

1ſt. *Amytas*, is a fine ſhowy flower, it has a pretty high ſtem, well ſet with large white bells, pendulous, but well reflected, which diſplay faint carnation ſtripes, through moſt of the innermoſt petals of the flower; it has a fine ſpike of flowers, and is a ſecond blower.

2d. *Palais Van Juno*, or *Juno's Palace*, is a noble fine flower, with a very high ſtem, which ſuſtains many double, large, erect, well reflected bells, whoſe hearts have a charming bluſh through them; it has a fine ſpike of flowers, and is a late blower.

3d.

3d. *Griffiere Van de Staaten General*, or *Griffiere of the States General*, is a noble, high, bold-ſtemmed flower; its bells are large and double, and all over their inner petals carry a charming mixture of bright carnation colours; it has a fine ſpike of flowers, and is a late blower.

4th. *Prins Frederick Van Baden-durlach*, is a fine high ſtemmed flower, with a noble aſpect; its bells are large, double, erect, and admirably well reflected, which diſplay a heart of a fine carnation, white, and a green mixture; it has a fine ſpike of flowers, and is a very early blower.

5th. *Grand Roſe Royale*, is a very large and a very charming double flower, a pretty ſtem, ſuſtains large, well reflected, fleſh-coloured bells; it blows in the truſs or *Bouquette* faſhion, and is a late blower.

6th. *Perfecta*, is a charming flower, it has a high ſtem, which bears very neatly ſhaped, erect, well reflected bells, which have elegant hearts of roſe colours; it bears a good ſpike of flowers, and is a ſecond blower.

7th. *Robin*, is a good ſemi-double flower; it bears ſeeds in a mild ſeaſon very freely, and therefore is valuable; it is a ſecond blower.

8th. *Eucharis*, is an extreme pretty flower, with a good ſtem, its bells on the out-ſide are of an elegant white colour, erect, and well reflected, having hearts of a moſt charming bluſh colour; it has a good ſpike of flowers, and is a ſecond blower.

9th. *Agamemnon*, is a very fine, large, old flower, with a high noble ſtem, upon which are placed very large fleſh-coloured bells, erect, and well reflected; it makes a very pretty ſhow, has a good ſpike of flowers, and is a late blower.

10th. *Roſe en douceur*, or *Roſe in its Sweetneſs*, is a moſt charming roſe, or rather a fleſh-coloured flower, with a good ſtem, large, double, erect, and well reflected bells, which diſplay their hearts charmingly enamelled with different ſorts of roſe colors; this is a new flower, blows in the bouquette manner, and is a ſecond blower.

11th. *Grand Monarque du France*, or Great French Monarch, is the largeſt belled hyacinth yet known, erect,

erect, noble in its appearance, and really ſtrikes the eyes with awe, reſpect, and reverence; it is a ſecond blower, and adorns a collection of hyacinths.

I come now to deſcribe the red-coloured hyacinths, which are the fineſt kinds of the double, upon account of their admirable colours, and which of late years have been much improved by the many charming flowers which have been raiſed of this colour from ſeed, by the floriſts in *Holland*, and which, at their firſt appearance, have been ſold for a very conſiderable ſum.

1ſt. *Aimable Rouge*, or *pretty Red*, is a very pretty ſmall flower, its ſtem is not high, its bells are pretty double, erect, and have a moſt agreeable red colour in the bottom of the bell; it is an early blower.

2d. *Coralline*, is much ſuch another flower, with a higher ſtem, and the bells are better reflected, and have a mixture of coral and carnation colours; it is an early blower. There is another kind of this flower, which blows later, and is called by the name of *Coralline tardive*, or late flowering *Coraline*.

3d *Roſe Illuſtre*, is a very pretty flower, with a high ſtem; its bells are large, erect, very double, and well reflected, which diſplay their hearts of the moſt beautiful bluſh colour, and a bluiſh ſhade mixed with it, that can be ſeen; it is an early and moſt charming ſpike of flowers, and has moſt uncommon colours.

4th. *Pyramidale Incarnate*, is a very pretty carnation coloured flower, without any mixture, in a pyramidal form; it has a high ſtem, the bells are but thinly ſet upon it, are erect, and very well reflected, which ſhow their hearts of a deeper colour than the outſides of their petals; it has a pretty aſpect, a fine ſpike of flowers, and is a ſecond blower.

5th. *Velthaen*, or *Field-hen*, or Poppy, is a very fine flower, a good ſtem, and bells well reflected and erect, which in their hearts have this ſingularity of three ſmall petals or leaves, as red, and of as bright a colour as our field poppies, from whence it takes its name; it is an early blower.

6th.

6th. *Roſe Krans*, is a fine flower, its ſtem is not very tall; its bells are ſmall, and rather long, indifferently reflected, but it has a very fine rich roſe colour; it blows in the *Bouquette* manner, is a ſecond blower, and ſometimes ſeeds.

7th. *General Veltugmeeſter*, or *General Field-marſhal*, is a noble high ſtemmed flower, with large, erect, round, double, and well reflected bells, of a good roſe colour, with a greeniſh ſhade, which is its only fault; it has a fine ſpike of flowers, and is a ſecond blower.

8th. *Gulde Zon*, or *Golden Sun*, is a vaſtly fine, large, rich coloured flower, with a high ſtem, large, erect, very double and with well reflected bells, which diſplay a heart of a noble dark *Carnation*, it blows in the *Bouquette* manner, and is a late blower.

9th. *Gloria Rubrorum*, or *Glory of the Reds*, is an extreme fine carmine-coloured flower, with a noble ſtem, which is remarkably adorned with bells, diſplaying bright roſe colours in their hearts, and over the whole flower; it has a good ſpike of flowers, and is a ſecond blower.

Having deſcribed the beſt double *Hyacinths*, I ſhall proceed to the culture and management of them.

Directions for the Raiſing of Hyacinths.

THE moſt favourable time for planting the double *Hyacinth* is about the latter end of *September*, which I would execute in the following manner: Mark out a convenient place in the garden, not too near a wall or hedge, and at the ſame time well ſheltered from winds and cold blaſts, the length as you pleaſe, but the breadth of five feet; the natural earth is to be taken out to the depth of three feet below the ſurface of the path-way, the bottom of which is to be levelled, then lay in to the depth of eight inches of well rotted cow-dung, beat down, and levelled, then lay over it twelve inches of the prepared, well rotted and riddled heap of dung, and four of ſand; by this means [illegible] of the three feet, of this trench, will be filled up: My reaſon for laying in this depth of well rotted dung and ſand, is, that the extremity of the fibres of the *Hyacinth*

may reach them, and draw from thence ſufficient to ſupport a ſtrong flower the ſucceeding year, and to ſupply the ſucculency of their ſtrong ſtems and bells; then fill the trench with the compoſt as directed in page 272, until it be near equal with the ſurface of the path-way; then on the ſurface of the compoſt lay one inch of your ſandy earth, the pureſt and fineſt you have: When you are to plant four or five roots in breadth, in five feet beds, and eleven inches every way root from root, in the quincunx order, and not nearer to the outer extremity of the bed than ſix inches; the roots you are to ſet down with your fingers, to the depth of one inch, and over them lay on three inches of the compoſt riddled over it, with one of good garden mould, ſo that no more than the depth of four inches will be above the top of the bulbs. I have frequently planted them, with great ſucceſs, about the beginning of *October*, when I covered them with no more than two inches of compoſt until the beginning of *November*; for when they are too much covered, they will not ſtrike out their fibres, but rot, the air, by the depth of earth, being excluded from them, which, by a thin covering, is admitted ſo as to provoke them to ſend out their fibres. As ſoon as the froſts ſet in, or by the end of *November*, cover your beds with two inches of good earth, and three of old rotten tan-bark, or fallen leaves of trees, and alſo two feet beyond the extremities of the beds; filling the alleys between the beds (which may be two feet broad) as high as the ſurface, there to remain until the end of *February*, or beginning of *March*, according as the weather is mild or ſevere, and then to be removed with the hand only, for the better protection of the ſhoots, which at this time will begin to appear. In the place of tan, as a covering to the bed, I have uſed peaſe haulm, which is a much lighter covering, and more eaſily admits the rancid vapours of the beds to paſs off, which, when confined, deſtroys the root; and, the better to protect them from this evil, is the occaſion of making every thing ſo fine we lay over them: when the tan is uſed, be careful to remove it as ſoon as the ſeverity of the weather is gone, for then your roots will germinate faſt, and require the admiſſion of the air to promote it. I always planted

planted a double white and a double blue *Hyacinth* in the firſt row, and ſo alternately the whole length of the bed, obſerving to plant thoſe together which come in at the ſame time, that is early blowers, ſecond blowers, and late blowers, all by themſelves; the ſecond row I began with a double blue, and then a double white, in the quincunx order, to the end of the row, and in the ſame manner with the third and fourth rows. As ſoon as I perceived their leaves appearing, I examined my pocket index of roots, in order to ſet down their labels, with numbers on them as marked in the index, ſuch as, No. 1. to *Morgen* ſtar double white, and No. 2. to *Paſſetoute* double blue *Hyacinths*, and ſo on through the whole bed, ſo as to preſerve their diſtinctions at the ſeaſon of lifting, as have been directed. You muſt obſerve to uſe your covers not only when the flowers are in bloom, but before they bloſſom, to protect their flower-buds before they open, from froſt, ſnow, hail, or much rain.

The beſt coverings for *Hyacinths* are painted cloths or matts, ſuſtained by arched hoops, which are fixed on frames to the height of two feet: The preſent method of incloſing the beds with ſtrong boards is beſt, as they not only keep them well incloſed, but admit ſtaples in their ſides to receive the hoops, ſo that the covering is ſoon laid on, or removed, as the weather makes it neceſſary; theſe coverings muſt be removed in mild weather to preſerve the flowers and roots in good health.

When the ſtalks of the flowers ſpired up, I very gently tied them below the bells to iron wires, made for the purpoſe, as I already obſerved; and when the bells ſeparate, open, and prepare for flowering, I gently tied a piece of baſs mat between the bells, to ſuſtain their ſtems and flowers to the wire, which makes a very handſome appearance; and as ſoon as their flowers were quite faded, I gathered up their long leaves and tied them to the wires, but ſo looſely as not to break or hinder them from growing; this is only to preſerve them from breaking or wind-waving. Five or ſix weeks after they have done blowing, and their green leaves are turning yellow four or five inches below their tops, I carefully lifted them out of the ground, immediately cutting off their leaves and ſtems cloſe to their bulbs. Another method to be purſued,

fued, for the purpoſe of knowing when the roots are ready for lifting, is, to take the earth from the top of the bulbs, if the leaves and flower-ſtem are healthy, and appear ſmaller at the bulb than at the ſurface of the bed; you may then be aſſured, the enſuing flower and leaves are fully formed, ſo that they ſhould be immediately lifted, for fear of their rotting; when they are lifted, they are to be treated as before directed, viz. to have their leaves and ſtem immediately cut off, and directly laid with their reſpective labels in their boxes in the root-room, to dry by the air and wind, but not by the rays of the ſun, obſerving not to take any of their fibres off, allowing them to wither; as the bulb is never injured by the fibres being ſuffered to decay in this manner, but by ſuffering their ſtems and leaves to be bruiſed; when theſe are removed, you may ripen the roots by laying them upon the top of the beds wherein they bloſſomed, covering them with a little dry ſand, and ſhading them in the hotteſt ſunſhine with matts, not laid on the earth, but hung as ſun-ſhades, by which means the roots will have free air to ripen, the better to preſerve them until the ſeaſon for planting returns.

The latter is moſt practiſed by nurſery-men, as it gives the outward coat or ſkin of the roots a harder ſubſtance, ſo as the better to pack for exportation, while others follow the firſt, which is that I practiſe for the ſaving of my fineſt *Hyacinths*, and which others purſue with no leſs ſucceſs.

From an exact attention to the following rules, I have had my flowers ſo much in their prime, as not to degenerate; an almoſt univerſal complaint.

1ſt. It is certain, that moſt part of our ſoils in *Britain* have more or leſs clay in them, except the pure white ſand, or dark grey ſandy earth, which is found near the ſea, or where ſhort tufty heath grows. Theſe ſoils are moſt proper for *Hyacinths*; and it was my practiſe to take three parts of old well rotted cow-dung, one of pure white ſand, with one part of dark coloured ſandy earth, and another of well rotted, and fine ſifted tan; in this compoſt they thrive well, but where there is any mixture

mixture of clay, the root becomes inactive, and inſtead of fifty, have not five fibres to draw nourihment for the flower.

2d. *Hyacinths* ſhou'd never be planted where there is ſtagnated water, whether above or below the ſurface.

3d. You muſt uſe no other dung for your compoſt but that of cows, which muſt be well rotted, and of two or three years old; but for want of this dung, old rotted tan-bark, or rotted leaves of trees will do.

4th. You muſt not uſe for the compoſt, that earth wherein *Hyacinths* have been often planted, nor ſuffer their roots to continue in the ground, for they muſt be lifted every year.

5th. Do not plant good and ſound roots with ſuch as are not ſound, otherwiſe the latter will infect the former.

6th. Obſerve to ſow *Hyacinth* ſeed every year, for from them you may raiſe many different ſorts of flowers, as good, and more to be depended upon, than ſuch as are imported from *Holland*.

7th. Where the ſowing the ſeed may be thought too tedious, and that you chuſe to propagate ſome favourite flowers, do it by off-ſets, which of ſome flowers are difficult to procure; but purſuing the following expedient, they may be had, which frequently produce as good flowers as any imported from *Holland*: A fortnight or three weeks after they are paſt their bloom, take ſuch roots out of the ground as you chuſe to have off-ſets from, cut off their long leaves and flower ſtems, but do not take off their fibres; and juſt above the circle from whence ſpring theſe fibres, cut the bulb acroſs in four quarters, a third part into its ſubſtance, but ſo as not to touch its innermoſt coats or its heart, then wiping it with a cloth, put it into the ground again, and cover it with no more than one inch of earth; lift this root again in three or four weeks, and lay it in the root-room with the others, and at the uſual ſeaſon let it be replanted. This root will not bear a flower the enſuing ſeaſon, but in its place will, at the lifting ſeaſon, give you ſix, eight, or ten large off-ſets, which, as they are bred (I may ſay) in our ſoil and climate, are much more to be depended upon for bloſſoming well, and for continuing to do ſo, than thoſe imported from *Holland*. Nor is there any fear of their roots degenerating, provided they are lifted

out of the ground every year, and that the ſoil juſt directed is annually given to them when they are replanted, and the other directions followed. I affirm, from repeated experiments, that I have had the ſame roots bloſſoming fair with me for ſix years together, and would have continued to have bloſſomed ſome years longer, if the roots had not expended their ſtrength by off-ſetting.

I ſhall now proceed to give a catalogue of early doubles, ſecond blowing doubles, and the lateſt flowering double *Hyacinths* in Mynheers *Voerhelms* and *Van Zompell*'s catalogues, floriſts at *Haerlem*, and in the ſame manner I ſhall claſs their ſingle *Hyacinths*; and of all theſe ſorts I ſhall take their beſt good ſtandard flowers, without regarding what are new, or what are high-priced. What induces me to do this, is, that when a floriſt or a gentleman deſigns to plant beds of ſingle or of double *Hyacinths*, he may plant his flowers uniformly, according to their ſeaſon of flowering, early blowers by themſelves, ſecond blowers together, and late blowers in the ſame order, that his bed may not appear with flowers blowing promiſcuouſly, an early with a late, and ſo on, in a confuſed manner, which is only to be avoided by claſſing theſe flowers according to their different times of blowing. I do not think it worth a floriſt's time, pains, and expence, in this country, to ſow ſeeds of all ſorts of flowers; if he ſows the ſeed of the *Hyacinth*, *Auricula*, and *Ranunculus*, for a trial, together with the *Polyanthos Primroſe*, *Chriſtmas Roſe*, *Winter Aconite*, and *Hepatica*, with ſome others, to obtain double flowers, where they have not as yet appeared, he does well. He may alſo do more, if it ſuits his conveniency and taſte; for I mean not to confine him.*

* The Floriſts in *Holland* have a method of placing the flower leaves of their *Hyacinths*, and other flowers, upon paper, which keep their colour for many years, and which no Floriſts ſhould be without. The moſt curious in the catalogue I have marked with an aſteriſm.

Hyacinths

Hyacinths double white and red, early Blowers.

Morgen Star
Belle blanche Incarnaate
* Prince Frederic van Baden Durlach
Paerle Croon
Coraline
* Pilius Cardinaleum
Gloria Florum alba
* Rubro Royale
* Rofencrans van Flora
Rubre Cæfar
* Rofe Illuftre
* Jeuwell van Europa
Conftantia
* Rofe triumphe van Flora
Belle Pomona white
Virgo white
White Pyramide
* Roodenhaen
Koningin Eſther

Hyacinths double blues, early Blowers.

Paffetoute
Croon van Braband
* Bonte Sanfpareille
Landgraaf van Soutzemberg
* Confeilleur Burklin
* Directeur General
* Gloria florum blauwe
Rex Florum
Demus
Citheris
* La plus belle du monde
* Grande Violette
Perfeus
* Violette Croon
* Semper Auguftus
Carolus Magnus
Olympia
Polycrates
Incomparable
Madame Royale
Keyfer Tiberius
Baillieu van Amftellant
Souveraigne
Gekroonde Vryheid
Louis Quinze triumphante.

Hyacinths double whites and red, ſecond Blowers.

Pallas
Saturnus
* Feu d'Amour
* Optimus
* Koning van Groote Britannien
Kroon van Groote Britannien
* Gloria Hollandiæ
* Gloria Rubrorum
* Gloria mundi Rubrûm
Controlleur General
* Couleur de Feu
Admiral van Hollande
Roſe ſuperbiſſima
Koningin van Hongarien
Baron van Waſſenaer
La Magnifique
Witte non plus ultra
* Berg Veſuvius
Vogel Stuys
* Reviſeur General
* Roſe de Parade
Koning David
Lucella
Valeria
* La Beautê Incomparable
La Jove d'Hollande
General Veltugmeeſter
* Monarque du Monde
* Pontifex Romanus Red
* Praal Cierate White
Praxinoë
Griffioën
* Purpre Roſe
Roſe blanche et Violette
Roſe en douceur
* Roſe d'Hollande
Roſe Sacrè
Roſe Incomparable
Koningelite Roſe
Kroon Vogell
Staaten General
* Soleil brilliante
Kerk Croon
Koningin Alexandra
Amatiſte
Amintas
Amelia Sophia
* Luyſtre van Flora
* Illuſtre Beautè
* *GLORIA FLORUM SUPREMA.*

Hyacinths double blues, ſecond Blowers.

* Pontifex Romanus blue
* Gloria Mundi blue
* Purpre Sanſpareille
Keyſerine Aſpaſia
* Illuſtre d'Hollande
Vleigende Vogell
* Grooten Sultan
Victor Amadeus
* Tros-blom
Grand treſoriere de Bretagne
Rex Negros
* Koning der Mooren
* Paſſe non plus ultra
Gekroonde Saphire
Gekroonde Staarbeelde
Baillieu van Brederode
Koningin van Vrankryk

Pronk

Pronk Jeuwell van Flora
* Archidamus purpre
Parmenio
Metellus
Leonidas
Procureur General
* Brunette aimable
Gekroonde Leuw
Gekroonde Fonteine
Antigonus
* Francois Premiere
* Aſpaſia panachè
* Pluto
* Sanſpareille panachè
Duc de Luxemburg
Triumphe du Monde
* Flora perfecta
Keyſer Amurath
Prins Noble
Kroon Imperiale
Praal Cieraate Blew
Konings Croon
* Grandeur Triumphante
Prins van Birkenfelt
Graave van Buuren
Duc de Kanmerland
Paſſe la grand belle panachè.

Hyacinths double red and white, late Blowers.

* Jonquille mignion yellow
Purpre blanche
* Aſſemblage de Beautes
Vrendenryk
* Koning Solomon
Rider Catz
* Topaz
* Tempel Solomons
Griffiere van de Staaten General
Coloſſus
* Palais van Juno
* Flos Solis
Juno
* Gulde Zon
Koningin Jocaſta
Jeuwell
Roy de Peru
* Toog van Flora
Agamemnon
Jeuwell van Alſema
La Grand Roſe Royale
Dendropedios

Hyacinths double blues, late Blowers.

* Rien ne me ſurpaſſe
* Cedo nulli
Purpre Jeuwell
Cid
Czaarire
* Overwinnar
Hertog van Courland
Koning Minos
* Grand Mogoll
Zegen Zuyll
Zegen Praall
Rex Indorum
* Treſorier General
Virgo blue
Miltiades
Merveille du Monde

Early

Early Hyacinths ſingle Blue.

Avant Coureur
Dutcheſſe d'Orleans
Grooten Sultan
Kroon Van Braband
Cincinnatus
* Paſſa Cato
Paſſa Cretal
Aimable boit
Maculato flore
Koning's Kroon
Leopoldus
Duc de Weymar
Gallas
* Niger.

Second blowing ſingle blue Hyacinths.

Aglaurus
Baſſa Van Cairo
Emilius
Gekroond Moer
Gratianus
Gravine
Herderin
Keyſer van Java
Paſtor fido
Proſerpina
Rex Indiarum
Admiral de Ruyter
Agreeable
Mirabelle
Papirius
Ganymedes
Gekroonde Vreede
Grand Viſier
Griſdeline Royale
Hegiſippus
Ixion
Keyſer
Keyſer Conſtantin
Lyra
Porceleine Royale
Premiere Noble
Aletis
Alexis
Atlas
Belle Clara
Biſard Agaet
Blandina
* Botenhelt blauwe en Witte
Koning van Poolen
* La Courronne Triumphante
* Comble du Gloire
Menelaus
Mignion
Sylla
Trebiſonde
Centaurus
Claremonde blauwe en Witte
Crocodil
Cretal
Dedalus
Treſoriere
Triton
Triumphante
Turkſen Standart
Varro.

Lateſt

Lateſt Blowers ſingle blue Hyacinths.

Dolphin
General Grovenſteine
* L'Azuur Kroon
Morinete
Golconda
Koningin Anna
Cerealis
Semper Auguſtus
Thalus
Porceleine Kroon.

Early blowing ſingle white and roſe-coloured Hyacinths.

Koning David
Aula
Olyphant
* Premiere Noble
Trompeter
Galathea
* Koningclite Parel
* La Tendreſſe
* Roſe Princeſſe.

Second blowing ſingle white and roſe-coloured Hyacinths.

* Tuberoſiana
Eleanora
Gekroonde Liefde
Incomparable
* Roſe Naturelle
Mariamne
Pironella
* William Friſo
Witte Valk
* Alexandra
Caſſeopeia
Clarinde
Cleopatra
Mynheer Juſtice
Clito
* Roode Keyſerine
Four Ardent
Gekroonde Roſencrans
Leſbia
Lucretia
Orange Vlies
Reine d'Eſpagne
Phyllis
Princeſſe d'Orange
Prokris
Rakima
Rodonica
Roſaline
Roſemonde
Raſenhoff.

Lateſt blowing ſingle white and roſe-coloured Hyacinths.

* La Reine de Femmes
Reine de Portugal
Antonius
Aurora
Hermaphrodite
Rubans d'Or
* Koraal Tak
Princeſſe d'Orange

Roſe

Rofe Charmante	Paſſa Keyſers Croon
Rofe Nigniarde	Soleile du Monde.

I ſhall likewiſe introduce here the early and late blowing *Oriental Narciſſus*, with ſome particulars neceſſary to be more exactly attended to, extracted from the general Direction in page 293.

The *Hyacinths* and *Polyanthos Narciſſus*, ſeveral gentlemen complain, never bloſſom fair but in the firſt ſpring after they are brought from *Holland*, which I muſt attribute to miſmanagement, as I have frequently raiſed them to carry ſeventeen, twenty, and twenty-four flower-bells of moſt extraordinary beauty, as large and as fragrant as ever I met in *Holland* or *Flanders*; when, on their firſt coming over, they had not more than nine, ten, and ſome fourteen bells of flowers upon their ſtem.

The year before I received my roots from *Holland*, I collected a good quantity of freſh, ſandy, black-coloured earth; if it was not as ſandy as I could wiſh, I added a fourth part of good white ſea ſand; to this a third of old well rotted cow dung, and a fourth of well rotted tan; then, having taken out the natural earth to the depth of three feet, I filled the pit with the compoſt, firſt laying the depth of eight or ten inches of pure, old, well rotted cow-dung, which is reſerved for the purpoſe, when preparing the compoſt, as directed in page 274, and to be only ſix inches from the bottom of the *Narciſſus*' bulbs, to receive their long fibres.

The bulbs I planted five inches deep, and, in very ſevere winters, covered the tops of theſe beds with three or four inches of tan to keep out the froſt. Some of theſe bulbs I lifted the firſt year, eſpecially if they had made off-ſets, (and moſt of them had two or three) replanting them again in *October*, in new earth of the ſame compoſition; and their off-ſets I planted in the ſame manner in the nurſery-garden, but them I did not lift until they were to be planted in the great flower-garden with the old roots.

If you perceive that your *Oriental Narciſſus*' have not any off-ſets, you may let them remain in the ground for two years; but when this happens, I am certain it is owing to ſome unſkilful management; ſo that they ſhould

be

be lifted, in order to replant them in the compoſt juſt directed, when they will give abundance of off-ſets.

Should you be deſirous to have your off-ſets large, you may ſuffer them to remain in the ground; but, in *November*, give them a covering of two inches of rich and ſtrong kitchen-garden mould; and in *December*, cover them with four inches of old-rotted tan.

Having given the whole of Sir James Juſtice's *Directions for the Culture of the Hyacinth, we ſhall introduce that practiſed by Mr.* George Voorhelm, *of* Haerlem, *who was a great Admirer of this Flower, and an excellent Practitioner; extracted from his Treatiſe.—He recommends the following Compoſt.*

TO two fixths of grey ſand, or black fallow, add three fixths of cow-dung, and one fixth of tan, or the leaves of trees; theſe are to be taken freſh, and when mixed, are to be thinly laid out for ſix months to meliorate, and to be kept clear of weeds, and then to be turned every ſix weeks for ſix months more, when it may be laid into the frames, to the depth of two feet, to receive the roots, which I would not adviſe to be planted deeper than four or five inches. The aſpect we give the beds here, are an *Eaſt* or a *Southerly*; the firſt we prefer, as the flowers then have not too much ſun; and the beds are ſecured from the other points by walls or hedges ſituated at a good diſtance. I have obſerved, in general, that the roots weighing about one ounce, or one and a half, give the moſt perfect flowers; and to the moſt forward flowers we give a greater depth in planting than to the later, in order to have them in blow at the ſame time.

The length of the frames he recommends, are to be about 30 feet long and four broad, and all others in this proportion; this to be divided into five rows, each of which are to have forty roots planted in them; and, for a greater regularity, the frame is to be laid out in cheques, in the centre of which a root is to be laid; and as to colours, in this order, a blue next a white or red, obſerving

ing to plant the talleſt blowers in the upper part, and the loweſt in the front, reſerving the middle for the moſt beautiful; but, previous to laying out the frames in this manner, he directs ſix inches of the compoſt to be taken off, and the remainder laid ſmooth to receive the roots, which ſhould be on a fine day, about the eighth or tenth of *October*, when the forward blowers are to be planted two inches deep, the other laid on the ſurface, raiſing the compoſt about them to the height of two inches; when this is performed through the whole frames, the ſix inches of compoſt firſt taken off, is to be laid gently on, and ſmoothed over, when, for four months, not more is to be done, than to protect them from ſevere froſt, (when they are one inch above ground) by a layer of tan, three or four inches deep, to be removed by the firſt of *March*, when wooden covers, which are eaſily uſed with his frame, as it is made like thoſe of our hot-beds, riſing no higher in the front than the growth of the flower requires, gradually aſcending to the back, and are uſed to protect them in the ſpring nights: Their flowers are alſo to be protected, by covering of canvaſs raiſed on hoops. The lifting of theſe roots he would not have done until the leaves have loſt their green colour, and turned brown, and even become dry; and when that is done, it ſhould be executed with abundance of care, to avoid doing the leaſt injury to the root and fibres, when they are to be laid in the root-room to be dried by the air only, and to be no way handled until the planting ſeaſon, when all ſuperabundant fluff is to be taken off, with the off-ſets, which will come away freely: It is at this time you ought to examine your roots, in regard to health and ſoundneſs, to prevent diſappointments. As to other particulars, they are ſo fully given by Sir *James*, as to render them unneceſſary here.

N. B. The compoſt he uſed for his *Hyacinths*, after their blow, he gave for the uſe of the beds, where he raiſed his *Tulips*, *Ranunculus*, *Anemonies* and *Auriculas*.

Early

Early blowing Oriental or Tros Narciſſus.

Primo Geel
* Soleil d'Or
* Baſſelman Major
Belle Ligeoiſe
Belle Orore
Grooten Czar
Hertogin
Bellei Idoor
* Medioluteo Calice plene
Major
Caliſthenes
Charmante Nyt
Fonteine
Gouden Beer
Gouden Sceptre
Grand Etandart
Medioluteo triumphante
Polymneſtor
Medioluteo Royale
Baſſelman Jeaune
* Paſſe Baſſelman.

Late blowing Oriental Narciſſus.

Witte Vreede
Witte Duiff
Witte Nonpareille
Taſſete Minor
Taſſete Major
Triumphe de l'Empire
Suprema
Souvereigne
Primo Citroniere
Pretioſa
Luna
La Syrenne
Koning van Sweeden
Koningin van Sweeden
* Grande Citroniere
Aulus
Imperator
Imperatrice
* Sulpher Kroon
Reine d'Angleterre
Czaar.

HAVING

Directions for blowing the Hyacinth in Water.

HAVING laid down the culture of the double and ſingle *Hyacinths*, and the *Oriental Narciſſus*, I ſhall proceed to direct their blowing in water, for which purpoſe you muſt be provided with the early blowers of theſe flowers, to be ſet on glaſſes made for that purpoſe, which is to be filled within a quarter of an inch of the bulb with freſh clear ſoft water; in fourteen days you will perceive them to ſend down their fibres; the water muſt be renewed once every four weeks, and once every week, as ſoon as you perceive theſe flowers preparing for bloom. When their flowers are entirely faded, take their roots and plant them into good, rich, light, freſh earth, covering them to the depth of four inches, firſt ſpreading out their fibres, and tying their ſtem and leaves to reeds or wires; and when they have faded, ſmooth the bed over, leaving the roots in the ground for that ſeaſon; covering them well with rotted tan in the winter, and to manage them in the ſpring as you do the others; but if, in the ſpring, after they have been in the water-glaſſes, you obſerve their flower-ſtems to be very ſmall, nip them off before they expand their bloſſoms, in order to ſtrengthn the root.

All the early ſingle-white and Blues, double Whites, viz.

Morgen Staar
Prins Frederic van Baden Durlach
Coralline
Koning van Groote Britain
Comptroller General.

Double Blues.

Kroon van Brabant
Agaet Mignion
Paſſetoute
Souveraigne
Landgraaf van Soutzemberg.

Theſe doubles blow beſt in water, as does the *Oriental Narciſſus*, ſuch as the *Soleil d'Or*, *Baſſelman Major*, and *Paſſe Baſſelman*.

There

There being many who are fond of this flower, yet for want of leiſure, are not able to attend to more general directions; therefore, for their eaſe, I ſhall lay before them ſuch an abſtract, with ſome obſervations as, I flatter myſelf, will be no leſs acceptable than effectual.

Some Directions to be particularly attended to, in Regard to the Hyacinth.

1mo. TO judge if the ſoil, wherein you plant your *Hyacinths*, be agreeable to them, weigh the roots, marking down their reſpective weights; and when you have taken them up, and they are dry, weigh them again, and if found lighter than before, be aſſured your ground has been too poor, but if your roots are increaſed in ſize, and are yet lighter, then the dung has been too ſoon ſet to work, that is, before it has been ſufficiently rotted, or, which is more probable, that it has been horſe, inſtead of cow dung, which, when mixed with ſand, is too powerful.

And, 2do. To their juices not flowing regularly, muſt be attributed their rotting, for when they ſtagnate, they cannot maintain their coats or ſkins, when rottenneſs enſues.

3do. I have often obſerved at lifting, that their roots are ſeemingly burſting on one ſide, and ſometimes at the lower part of the bulb: This is a ſure ſign, that their fibres have been cramped in going down into the ſoil by clay or ſtones, or that they have periſhed in the winter by ſtagnated water, or, not ſufficiently covered, ſo that their fibres have periſhed by cold, or, have been planted in a too hot ſoil, and not lifted in proper time.

To remedy theſe evils, let your compoſts be rotting for two years, to be incorporated at leaſt one before uſed, excluding clay or any coherent particles; but let it be rich, freſh, ſoft, and very ſpungy, ſo as to allow their fibres to play at pleaſure, for upon their number depends your ſucceſs; cover their beds in winter, with old tan from the alleys, and over it lay peaſe haulm, when it will be beyond the power of froſts to harm them. And, *I ſtly*,

obſerve to lift the bulbs in five or ſix weeks at leaſt, after their flowers are quite faded (ripening and managing them, as I have already directed under the article of *Hyacinths*) otherwiſe, their roots will rot by a ſuper-abundant nouriſhment. On the other hand, ſhould they be lifted too ſoon, their growth will be checked, ſo that they will produce but a weak flower.

It is neceſſary to obſerve, that the earlieſt ſorts ſhould be planted four or five inches deep; but the late blowers no more than two and an half: This caution is neceſſary, as the lateſt blowers are longer in ſtriking their fibres than the early, and ſhould they have more covering they would not appear, and more ſo as they have an additional covering in winter. This depth encourages their early appearance in the ſpring for blowing; which is of ſingular uſe, as it forwards their lifting, which prevents their rotting, or degenerating: This depth alſo encourages their off-ſets to be more numerous, and every way better than if they were planted deeper.

Let me here add two flowers, that are much eſteemed in the *London* gardens, the firſt is called the *Reſeda Ægyptiaca minor floribus odoratiſſimis*, or yellow flowering *Ægyptian Baſtard Rocket*, with moſt ſweet ſmelling flowers. This is an annual, and muſt be ſown in *March* upon a hot-bed, and when the plants have acquired ſtrength, ſhould be put upon another hot-bed, to bring them on, and may then be potted, and placed in rooms, to perfume them with their fragrant odours (which reſembles the ſcent of a ripe raſpberry,) or they may be planted into warm borders, where they will ſeed well; and if you have a moderate ſtove, they will flower as well as ſeed there in the winter. This plant is named in the *Dutch* catalogues, by the unintelligible name of *Gingabo*, but in *London*, it is called the *Mignion*, or *Minionette d'Ægypte*. The other flower is the *Rapuntium flore maximo coccineo ſpicato*, or red cardinal flower: There is alſo a blue of this plant, but the red-flower is preferable, as it excels all others in the richneſs of its colour. The ſeed is to be ſown in pots filled with undunged, light, freſh virgin earth, to be covered very lightly; and in cold weather, to be ſet under bell-glaſſes, ſuffering them to have ſun until eleven in the forenoon only, watering them

them gently; after they have come to ſome growth, tranſplant each ſingle into pots, where they may continue until *March*, when you muſt give them larger pots, filled with the ſame earth in which they were ſown, keeping them in the green-houſe until *May* or *June*. When they be in to bloſſom, you may ſet ſome in chambers with the *Tuberoſe*, and the *Reſeda* or *Baſtard Rocket*, where they will make a handſome appearance; the blue flowered will ripen its ſeed, if the long ſtems are tied up, which may be ſown as ſoon as ripe, to be ſet in the green-houſe, or into an airy glaſs caſe, to ſcreen them from froſt, they appear early the next ſpring. You may alſo encreaſe them by dividing their roots; which work ſhould be performed in *March*, but at no other ſeaſon. When the plants are growing, and when they are in flower, they muſt have plenty of air and water; but little of the latter in winter. The *Ruyſchiana flore cæruleo* thrives well with the ſame culture; it is a fine flower, and ſhould not be wanted in curious gardens.

Directions for raiſing the Polyanthos Narciſſus.

THE next beauty which appears in the ſpring, is the *Polyanthos Narciſſus*, of which there are many ſorts in Mynheers *Dirk Voerhelms* catalogue, as alſo in Mynheer *Voerhelm* and *Van Zompel's*. I ſhall confine myſelf to the culture of their roots and off-ſets only, as ſeedlings are ſeldom raiſed here.

Having made choice of a ſituation, where they may be free from great winds, the earth which has been employed one year in the *Hyacinth* bed, with a third more of very old and well rotted tan, will ſerve them; firſt removing three feet and one half of the garden ground, when the compoſt is to be laid in, previouſly laying down ſome old rotted tan, to riſe within ſix inches of the bottoms of the bulbs, and within two inches of the ſurface of the earth; the roots are to be planted at four inches diſtance, root from root, and four deep in the compoſt; and when the froſt ſet in for good, lay over them four inches of rotten tan, which, in *May* is

may be taken off, obſerving never to plant them earlier than the firſt of *October*; otherwiſe they are apt to ſpring in *January*, when the froſt is ſevere; and which will moſt certainly deſtroy them.

The *Dutch Floriſts* always lift them as ſoon as their leaves are quite faded. This is their practice, but when you are for having off-ſets, they muſt remain for two years in the ground; the autumnal ſorts, and the *Belle Donna*'s I planted in pots, filled with the earth that had been one year in uſe for my *Hyacinths*; but of theſe I ſhall be more particular when I treat of the culture of the green-houſe and ſtove-plants.

Of the *Polyanthos Narciſſus*, I would chuſe to have four of each that are in *Voerhelms* catalogue, which are moſt charming flowers, ſuch as the *Soleile d'Or*, the *Baſſelman major*, *Baſſelman jeaune*, or *yellow*, *Grooten Czaar*, *Taffette minor medio luteo*, *calice pleno major*, *Witte non pareille*, *pretioſe*, and many other ſorts.

Their off-ſets require no other culture than the mother roots, and they may be allowed to continue two years in the earth, until they acquire ſtrength to bloſſom, but not longer; obſerving to cover them in winter, with four inches of old well rotted tanners bark, or, where it is not to be had, a good covering of ſtraw, or peaſe haulm; as ſoon as they are of the proper ſize to bloſſom, you may plant them with the other roots. I always lifted them as ſoon as their leaves were quite faded, when I laid them in the root-room, to dry with the wind. The *Jonquils* I planted in the compoſt juſt mentioned, adding thereto one half of light, freſh, ſandy ſoil; firſt removing the garden earth to the depth of twenty two inches below the ſurface of the path-way, laying at the bottom ſome gravelly earth and lime rubbiſh, to the depth of five inches, beating the ſame hard with a ſpade, over which I laid my compoſt, planting my roots three inches deep, laying over them two inches of good garden mould; by this contrivance all under water was carried off, and the fibres of the *Jonquils* ſo confined as to occaſion them to bloſſom fair. I conſtantly obſerved to lift them once every two years, and ſometimes every year, juſt as I obſerved them to flower ſtrong or otherwiſe; and in winter laid on them ſome rotted tan or ſtraw.

Directions

Directions for raiſing the Auricula Urſi, *or* Bear's Ear, *as well by ſlipping as from Seed.*

THE next flower which attracts our attention, is the *Auricula Urſi*, or Bear's Ear, which for its great variety, and its ever-green leaves, is extremely pleaſing.

The flowers that are moſt eſteemed, are ſuch as have a ſtrong erect ſtem, ſhort pedicles or foot-ſtalks, bright glowing well ſhaded colours, and thoſe being different diſtinctly and well marked, with a round, florid, large eye, together with well expanded bells, which muſt not croud one upon another, but ſhow themſelves diſtinctly, with a narrow funnel, incloſing well proportioned *Filaments*, and to which their large leaves add much beauty.

The ſoil in which theſe plants delight, is a free freſh loam, taken from under a turf, which has not been ſtirred for many years, and is what we call virgin-earth; to which muſt be added an equal quantity of compoſt, made up of three parts old rotted three years old cow dung, and one of ſea, or river-ſand, excluding horſe-dung: Theſe are to be in ſeparate heaps, until a few days before uſing, otherwiſe they will breed vermin, which is very injurious to the *Auricula*. When you ſet them in pots, lay an oyſter ſhell over the hole, with the concave ſide downwards, for the readier paſſing off of the water, for ſhould it ſtagnate it would be very hurtful to them.

The beſt time to take off the off-ſets from the *Auricula*, is about the 12th of *Auguſt*; they may be alſo taken off from *February* to *May*, provided it can be done without wounding the root, of which you ſhould be very careful, as it's now your flowers are coming to blow; but ſhould this not be practicable, the flowers that ſhow from the ſuckers are to be taken away, as ſoon as the ſtalk comes to its height, when the flower is to be taken off under the bud; and ſhould the plants be brought from a diſtance, it will be neceſſary to trim their roots, to cut off all dead fibres, and to ſhorten their long ones, when all

the old earth is to be waſhed off, in order to re-pot them; firſt fill the pot half full or a little more, with the compoſt juſt preſcribed; then cut a little off the extremity of the root of the plant, and if you obſerve, that it is white without any yellow or brown ſpots in it, the plant is ſound, but if you perceive any of theſe ſpots, you muſt cut as long as they appear, and when your plant is ready, let the earth riſe in the middle of the pot, whereon place the *Auricula*, ſpreading down its fibres, which are to be covered with the compoſt riſing to the ſetting on of the leaves, then place the pot in a veſſel of water half way deep, when the water will aſcend to the root, which you will obſerve by the earth ſpotting black, then it is to be ſet in the ſhade, ſo as not to have the ſun for one month at leaſt, keeping them always moiſt about their fibres, but not wet. Your plant in a month will ſtrike root, when it muſt not have much water, but rather allow it to get rain, and that but moderately, and not in ſudden daſhes, it muſt alſo be defended from ſudden blaſts of wind, and ſtorms; but in moderate weather it muſt be expoſed to a free air, ſoft ſhowers, evening and morning dews, *&c.* Should the leaves of the plants be perceived to droop, cover them with pots or ſmall hand-glaſſes, (except when moderate ſhowers fall,) until they recover their ſtrength, and you obſerve them growing. If theſe plants offer to flower in autumn, they may be allowed to run their ſtems up to their heighth, then nip them off below their flower-buds; but this you muſt not do, until you perceive a new heart riſing by the ſide of their flower-ſtems, when they are not to get any rain or water, for ten or fifteen days, but what you give them.

In this ſhaded ſituation, and under this management they muſt remain until the 20th of *October*, when they ſhould be placed in your *Auricula* frame.

Your plants being in your frame, you are to keep them in a growing ſtate; and when froſt (that bane to vegetation) ſpreads its dominion over our climate, you muſt endeavour to ſuſtain your plants in that vegetation they had attained to, and in ſuch proportion as the inclemency of the winter will permit.

The humidity of the air in winter will keep your plants in a ſufficient moiſt ſtate, which is all that is now required, but if from an accidental ſtate of the weather, you ſhould

ſhould find they want water, let it be given in ſmall quantities, and that from a ſmall can, with a ſpout like a tea-kettle, drawing the earth quite up to the neck of the plants, in a gentle ſlope, that the water may run off, as not any muſt touch the heart, for at this ſeaſon it would rot them, and you are more particularly to obſerve this direction in times of froſt, or when it is expected, and not upon any account to water them, until a thaw ſets in. In mild weather, they muſt have air given them, of which no opportunity ſhould be neglected, for upon this depends the health of your plants. It will alſo be neceſſary to examine the roots of your plants by gently uncovering them. If they appear white and large, they are in health; but if brown and ſoft, they have certainly got too much water, which at this ſeaſon is very hurtful to them, and with which they ſhould be indulged only in mild weather, or after great winds; and from the time you ſet your plants in the ſhade, neglect no opportunity to give them the influence of the ſun's rays until the beginning of *March*, as they will refreſh them exceedingly. By the end of *January*, if the weather is mild, you muſt give new earth to your *Auriculas*, or as ſoon after as the weather will give you an opportunity, by removing the old ſo low as their fibres, which, by no means injure; then water them, to ſettle the earth, and ſhade them for a fortnight, when you may indulge them with ſoft ſhowers and ſun-ſhine, protecting them from harſh winds and froſt. By the firſt of *April*, you muſt remove the plants to the ſtage for blowing, which is to be conſtructed with rows of ſhelves, one above another, and covered at the top to keep the plants from wet; the ſtage muſt be open to the morning ſun, and protected from that of the mid-day; the better to effect this, it is recommended to have a curtain of ſtrong ſheeting, to let down according to the ſun's height, and as a defence againſt high winds, and to keep off ſhowers; and in order to give the curtain a ſteadineſs, let it be leaded at the bottom; but more effectually to prevent it from injuring the pots by any motion, let an upright or two be placed before it; and as but one ſide of the ſtage is open to the air, and that too oppoſite the north, turn the pots about as often as you perceive their flower-ſtems inclining to it;

and as ſoon as you perceive the beauty of the flower is going off, ſet them on the railed ſtage, No. 2. of which I have given an engraved repreſentation. When your flowers are in blow, give them all the air you can, but protect them from the ſun and wind, giving them a good watering twice a week, or oftener as you ſee occaſion, picking off all dead or dying leaves; and whenever you do this, be careful they do not come off with ſtrings peeling down the plant; in that ſtate it will be better to take them off with the point of a knife. Such as you would chuſe to have ſeed from, muſt be managed in another manner.

In *February* or *March*, when you give new earth to your *Auriculas*, obſerve if they have well-rooted off-ſets: If they have, take them off (obſerving the caution in page 313) and when potted, place them in a ſhady ſituation, not expoſed to ſtorms. You may continue to take off-ſets, from *February* until *May*: They will ſtrike in three weeks; and by autumn, if well taken care of, they will be pretty ſtout. At this time Floriſts are particularly deſirous of removing the off-ſets, that the *Mother-Plant* may not be impeded, but be enabled to bring forth a ſtrong and well formed flower.

In *October*, ſet the off-ſets in the ſhade, or in the frame, to be managed as I have directed for their mother-plants the preceding winter. In *February*, when you earth up the old plants, prepare a bed of freſh virgin-loam only; which will be much the better to be often turned in the winter, to be moulded by the froſt. Make this bed two feet deep, and three broad; raiſing it three inches above the path-way, allowing it three weeks to ſettle before planting; then take three dozen of your ſtrongeſt off-ſets, or even ſome of the mother-plants, if you ſhould not have ſufficient of the firſt; take them out of the pots with their whole earth, make pits in your bed, and plant them as deep as they were in their pots, eight inches aſunder every way; and in dry weather, give them ſome water in an evening: Here they will flower, and produce you much more and better ſeed than your plants in pots. This bed muſt be in a well ſheltered ſpot, ſo as to have the ſun from morning till eleven in the forenoon.

Your

Your *Auricula* ſeed will ripen in *July*, which you will know by their pods turning brown and burſting; then look over the plants every day, gather them as they ripen, and put them into ſmall paper bags, hanging them in a window to get the ſun for ten days to prevent moulding; but do not take the ſeed out of their huſks until you ſow them, which ſhould be done the firſt week in *February*, and in virgin-earth, mixed with one third of rotten willow-wood, and ſome of the earth about them; the ſeed which are to be ſown in large pots are not to be covered to ſcarce a quarter of an inch, to be conſtantly kept in a ſhaded ſituation, quite excluded from the ſun's rays, as they would kill all the young plants, which will ſhew themſelves in *April* or *May*; they are to be kept moiſt, and to be tranſplanted into pots in *September*, filled with the ſame compoſt in which they were ſown. By the end of *October*, let the pots be ſet where they may have the ſun's rays during the winter, and about the firſt of *March*, ſet them into a free, open ſituation, but well ſheltered from ſtorms.

When you tranſplant, or thin theſe plants, lay the ſurface of the earth in the ſeedling pots ſmooth; as many of the young plants will not come up, till the ſecond year after ſowing.

In *September*, re-pot the old plants, off-ſetts and ſeedlings into freſh earth, whereby you will never fail of a good ſucceſſion of fine flowers: In two or three years, your ſeedling *Auriculas* will ſhow their beauties, when you will diſtinguiſh thoſe that merit your care.

Deſcription of the Frame neceſſary for the growing and Protection of the Auricula.

HAVING already deſcribed the ſtage for blowing the flowers, we ſhall give a deſcription of that which is neceſſary, for affording the plants the protection they require from cold, violent rains, ſtorms, and a hot ſun. Its form reſembles that of a hot-bed frame, but open on all ſides, whoſe dimenſions and form will be better

ter underſtood, by viewing the engraved plate, Fig. 1. The other frame, Fig. 2. is for the reception of the pots, except when they are on the blowing ſtage, the pipped circles ſhow how they are to ſtand by each other. Its height from the ground, is to be no more, than that which is given it by a *Dutch* tile, as the ſituation of the frame muſt be very near the earth, in order to keep the compoſt in the pots moiſt. As ſoon as its neceſſary to ſhade the plant, whether from the inclemency of the weather, the ſun's rays, wind or rain, the frame with the pots is to be covered with the other, which for the purpoſe of protection is to have a covering of painted cloths, with rollers at each end, which are to be laid over the frames, entirely covering the ſides, but leaving the ends open. Theſe rollers not only keep the cloths down, but are of uſe in taking them up, when they are to be removed.

Mr. *Bullen* formerly of *Tenibinch*, in the co. of *Dublin*, being remarkable for his knowledge in flowers, we ſhall introduce here, his method of raiſing and cultivating the *Auricula*, as communicated by Mr. *Bullen* of *New-ſtreet*.

He recommends three different ſorts of compoſts for the purpoſe, which are, firſt, to one buſhel of ſea ſand, one of ſandy loam, and ten of well rotted cow dung. The ſecond, to half a buſhel of ſea ſand, add one of loamy ſoil, and one of Melon earth. The laſt, is a mixture of cow and horſe-dung, with one part ſea ſand, and one of ſandy loam; the dung to be two or three years old, to be well and equally mixed together, and turned for two months, keeping it clear of weeds.

N. B. All mixed ſoils or compoſts, ſhould lie ſome time for their parts to incorporate with one another, before they are uſed.

Mr. *Bullen*'s directions being laid down in the kalendar way, we ſhall keep to it.

Directions

Fig. 1.

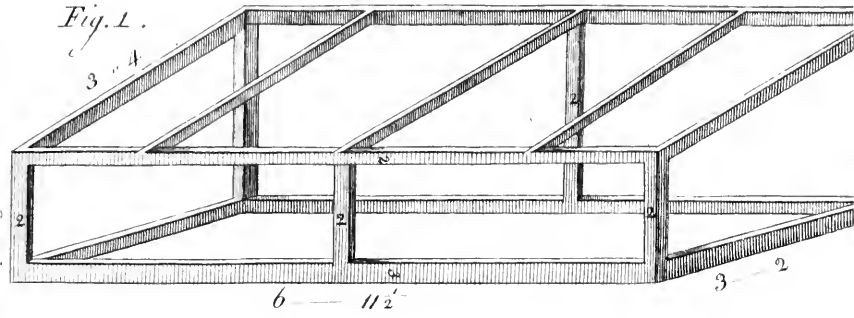
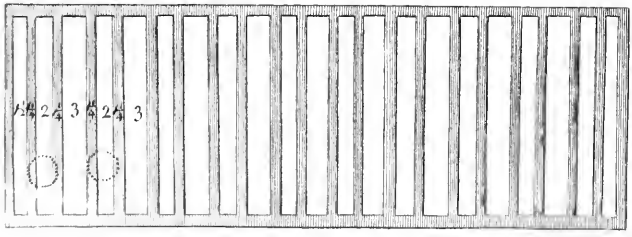


Fig. 2.



Directions for the managing the Auricula, *as laid down by* Mr. Bullen.

January. IF the weather is open, the truſſes will ſoon appear, when you are to earth up your pots, obſerving to give a gentle fall to the earth from the plant, to the rim of the pot, below which it ſhould be a ſmall matter, in order to retain the water now given them, which is not to touch the plant; they are then to be placed under hoops, about ſix rows deep, the hoops are to riſe 14 inches above the pots, when a broad mat will cover them on both ſides; which is to be laid on every night; let not any rain or ſnow come to them; and when the froſt encreaſes, double your covering, but never uſe ſtraw or peaſe haulm, &c. as they bring vermin; let the ſituation for your flowers be warm, and where they will enjoy the winter ſun, having the protection of a hedge, pale, or wall, from cold winds.

The frame of which we have juſt given a deſcription, will very well anſwer the purpoſe, and ſave much trouble.

February. You are to attend to the former month's directions, and to indulge them with warm rains provided they are not too great; continue to cover every night, keeping clear of vermin; take off ſuch dead leaves, as come off eaſily, which they will do when perfectly decayed, and no other. Such ſeed as you would chuſe to ſow at this ſeaſon, muſt be put down in pots or boxes of light rich earth, to be placed where they may have the morning ſun until *April*; but the latter end of *Auguſt* is the time I would chiefly recommend for this work.

March. Let your plants have ſuch ſhowers as fall, but as the air is frequently very dry, water about four o'clock in the evening without the roſe, that the water may run round the pot without touching the plant, a little of which they ſhould not want: Should too many heads appear on your plants, ſlip ſuch off as will not wound, or too much diſturb the roots, when your main truſs will blow the better; the heads you ſlip off are to be put into ſmall pots, but I would adviſe their being ſet round your

your carnation pots at this time of the year, but not more than three or four in a pot, and they close to the side of it; observe always before you pot them, to place convex oyster-shells over the holes in the pots, to let off the water, the earth in your pots you must never suffer to be dry, the plants are now to be placed under frames, glasses, or mats, keeping them free from frost and too much sun, and clear of vermin.

The seedlings are to be placed, where they may have the morning sun, until ten o'clock, as their plants will begin to appear, and should they be exposed to the full sun but one day, it would destroy them; water is to be given them in dry weather, but in a gentle manner, lest you wash them out of the ground.

April. This flower comes on now very forward, so that you may stage many in a day: such of your two years old plants as will not blow, pull to pieces, and prune to the quick, i. e. cut the red speck out of their roots, and prune their fibres; setting two or three in a pot, according to their size: The plants which were taken off the last *August*, raise out of the pots with their earth to them, to be put into smaller pots, observing that the bodies of the plants rise above the mould; then water with the rose to settle the earth, but afterwards water without it; they are to be set in the shade until *August*, observing to keep them moist; the reason for not using the rose is, that it washes the meal into the heart of the plant, which occasions them to rot, this danger is not to be feared from rain, unless very violent, and attended with storms; the pots are now to be set in the frame. The plants from which you expect to have seed, should be removed into the open air as they are now in full blow, and placed where they may have the morning sun, without which they will not produce good seed. Your seedlings must be carefully protected from the sun, and kept in the shade until *August*, when they may be planted out; at this season they must be frequently refreshed with water.

May. Your blow being now over, remove your plants from the stage, placing them in such a situation as they will meet the morning, or a little of the afternoon sun, to be watered every other day if required, and kept clear

clear of weeds, dead leaves, and from the dripping of trees.

The latter end of this month, look over your plants from which you intend to have feed, the approach of its ripening you will know by the ſtalks beginning to grow yellow; and in the top of the round feed-veſſel will appear a ſmall hole, which ſigns if you do not carefully attend, the feed will be ſhed, but as ſoon as you perceive theſe appearances, cut them down, keeping the tops upright, otherwiſe the feed will fall out.

June and *July*. Keep your plants free from vermin; at this ſeaſon you are to be particularly watchful of a little maggot or grub, which eats the leaves and ſmall ſhoots, and are to be found in the body of the plants; let them enjoy ſuch rains as fall, refreſhing them with water when there is occaſion.

The ſeed is to be gathered as it ripens in a dry morning, to be laid on ſheets of paper, and placed where they will have three hours ſun, for a month, until they are out of danger of moulding, then they are to be laid in a dry place until the middle of *Auguſt*, when the ſeeds may be cleaned out.

Auguſt. You are now to cut out your plants that blowed with three or four pips, in order to ſhift them into larger pots, likewiſe thoſe that were taken off the old roots the *March* and *April* before; ſome of your plants will now want to be ſeparated; the young heads are to be kept three weeks longer in the ſhade, but the ſtrong plants muſt now have the ſun admitted to them in the frames. Keep your plants clean, as ſome of them will now begin to blow, and ſuch as do, only allow one pip to open, it will be proper to nip off the flower when the ſtalk is fit to be pulled out; and as it grows in the middle of the plant, it leaves a hole where the water lodges, which will rot the plant if not prevented; to remedy this evil, you muſt cover the plant with a glaſs; and as ſometimes the ſtalk will not come out readily, but rot down, ſuch muſt be taken out with the point of a knife, ſetting a glaſs over it, until the hole is cloſed, which muſt be carefully attended to, as plants are often rotted by the lodgment of water, made where the ſtem is taken out.

The

The beginning of this month tranſplant your ſeedlings into a bed or boxes of the ſame ſort of ſoil, as they were ſown in, to be ſet at the diſtance of three inches ſquare from each other, watering them after planting, and if in beds, they muſt be ſhaded every day, until they are well rooted, but if in pots or boxes, they may be removed to a ſhady ſituation.

The latter end of this month is the beſt time to ſow the ſeed, whether in pots or boxes, the latter muſt not be leſs than ſix inches deep; in them lay two inches of ſea-coal cinders, and over them ſpread good freſh light ſandy earth, mixed with very rotten cow-dung, or tanner's bark, to the depth of three inches; over which ſift ſome earth taken out of hollow willow trees, until the pots or boxes are full, and then ſow the ſeeds on the top, without any covering of earth, only preſſing them into the mould with a piece of flat board, to ſettle them below the edges of the box, &c. that in watering the ſeeds may not float over their brims: this ſeminary muſt be continually refreſhed with water, in ſmall quantities at a time, ſo that it may never be without a conſtant moiſture, otherwiſe the ſeeds will not come up. It is neceſſary to cover the boxes, &c. with a net or wire, to prevent the cats or birds from deſtroying or burying the ſeeds too deep. Set your pots, &c. where they may have no more than the morning ſun until *October*.

September. Your young plants are now to be brought out of the ſhade, which you are not to ſuffer to be too dry, keep the froſt from them, and they will grow all the year, ſome of them will ſhow flowers in the ſpring.

October. The directions of the laſt month to be obſerved in this, tho' more truffes will appear.

The boxes, &c. of ſeedlings are to be removed to a ſituation where they will have the noon ſun.

November and *December*. As the froſt now begins to come in ſevere, which is very injurious to theſe plants, the ſun melting it into the body of the plants, which freezes again at night, ſome ſhelter is abſolutely neceſſary, either with mats, boards, or glaſſes; when theſe are wanting, lay the pots on their ſides, as the plants will be leſs injured than if they ſtood upright; they are to be kept dry until *January*.

Now

Now remove the boxes, &c. of ſeedlings into a warm ſituation, there to remain until *March*; let them be ſheltered from great rains and froſt.

Some general Directions in the Care of the Auricula, *as recommended by Mr.* Miller.

THE compoſt he directs is, a freſh light ſandy mould, mixed with well rotted cow dung. His *firſt* general direction is, in winter to protect your plants from much rain and cold winds, and in *March* when their buds are coming forward, to protect them, giving them free air in mild weather. *Second*, About the beginning of *February*, when the weather is mild, new earth your pots, taking away the old as low as the root, and that your plants may blow with ſingle heads, remove your off-ſets as ſoon as poſſible. Such flowers as appear in autumn pinch off.

Third, The pots to be protected from froſt, when they are budding their flowers.

Fourth, When the bloſſom-buds begins to ſwell, protect them from violent ſhowers, in order to preſerve the *White-meal* or *Farina* that appears on them, and to give the plants as much mild air as is poſſible, and to have frequent, but gentle waterings.

Fifth, When the flower begins to open, place the pots on the blowing ſtage, to be indulged with the morning ſun, and to be protected from that of the mid-day and rain; and when the bloom is going off, ſet out ſuch plants as are intended for ſeed in the free air, to be indulged with falling ſhowers.

Mr. *Miller* directs the bed for the ſeedlings to be prepared thus: Let half a foot of well rotted cow dung, be laid ten inches under the ſurface, to be well trod down, to preſerve the plants from being lifted by worms, and which will much forward them, when their fibres enter it.

Many

Manner of raiſing the Serotines, Baguets, Bybloomens, *and* Bifard Tulips, *with Catalogues of the beſt Flowers.*

THE next plant, which attracts our attention in the ſpring is the *Tulip*.

Theſe are divided into *Præcoces* or earlier, and *Serotines*, or late blowers, which are divided into *Baguets*, *Bybloomens*, which are a ſort of *Baguets*, and into *Biſards*—The varieties of this flower are prodigious, and to give a catalogue of them would be needleſs, ſince every year produces new ones.

I had the beſt kinds, from Mynheers *Voerhelms* and *Van Zompell*, *Floriſts* at *Haerlem*, and notwithſtanding the varieties of their ſorts, they were always very diſtinct.

I bought from them a good number of the beſt *Præcox*, or early blowing *Tulip*, which I planted in the ſame ground I had the year before blown my *Hyacinths*, ſtirring up the beds, to the depth of two inches below the path-way, and adding to them a fourth part more of fine well prepared white ſand, when I planted them three inches deep, and nine inches root from root, and uſed the ſame covers in the ſpring, as I had for my *Hyacinths*; for if theſe flowers which ſhew their flower-buds by the firſt of *March*, are not carefully covered, they blight, and ſeldom come to perfection: The neglect of them in this particular, has brought them into the diſcredit of not being ſure blowers, which is only to be attributed to miſmanagement. Theſe early *Tulips* muſt be lifted three or four weeks ſooner than the others, and properly diſtinguiſhed in the root-room. They are to be replanted in the beginning of *September*; obſerving that their ſituation be rather dry than moiſt, and well ſheltered from winds, which in the ſeaſon of their bloom, are very piercing and cold. The depth given to theſe roots in planting, is the better to enable them to ſupport their long ſtems, and heavy heads when in bloom; and the covering them ſo early, as when their flower appears, is to protect them from

from the wind, which has ſo much power on them, as frequently to looſen their fibres in the ground, which greatly injures the root as well as the flower.

All the *Serotines*, or late blowers, ſuch as *Baguets*, *Byblœmens* and *Biſards*, I planted from the beginning to the middle of *October*, at fartheſt.

And firſt, of the *Baguets*. I ſhall give a liſt of the beſt, old, and good ſtandard flowers, in *Voerhelm*'s catalogue, the better to avoid miſtakes, theſe here recommended I had in the higheſt perfection.

N. B. The *Aſtras* in the catalogue diſtinguiſh the moſt capital flowers.

Baguets.

* Arceſius
Admiral General
* Admiral Gulde Leuw
Agricola
Aimable
Alexander de Groot
Conquette d'Houſtrive
Conquette van Royen
Duc d'Argyll
Duc d'Chartres,
Duc de Luxemburgh
Ducheſſe de Bourgogne
Generaal Tobb
* Graaf van Moorſt
Gratioſa
Hippolytus
Hoff van Holland
* Hollandia
Koningin van Vrankryk
* Kroon P. van Danemarken
* La Magnifique
La Nobleſſe
Leopoldus
Merveille du Monde,
Merveille d'Utrecht
Amazone
Belle Africa
Bellona
Bran-v-lag,
Brunette Royale
Cabinet Royale
Narciſſus
Noord Star
Nova
* Seven Provincien
* No. 2. Oortman
Parnaſſus
Prince van Baden-Durlach
Semper Auguſtus
Sphæra mundi
Treforiere
Triumph van Leyden
Vegt Jeuwell
* Jeuwell van Europe
Veltheer
Vergulde Kam
Whitte Leeuw
Jeuwell van Flora
* Mount van Holland
Morrelly.

Bybloomen's, more particularly marked *Baguet, Rigaut, Tulips.*

Baguet Rig. Battaille
do Admiral
do Belliſſimo
Baguet Rigaut Cæſar
do Electeur
do Frangebruyn
do Hercules
do Hector
do Imperatrice
do Elegantiſſimo
do Excellentiſſimo
do Bonaventure
do La Magnifique
do Le Roy
do L'Empereur
* do Roſe Grandiſſima
* Beauregard Akerkamp
Beauregard Admiral
* Beauregard Merveilleuſe.

Theſe are fine, large dark coloured flowers, very ſtrong, and ſome of them ſo large, that when they are in perfection of bloom, will contain an *Engliſh* pint of liquid within their petals or flower-leaves.

Bybloomen Tulips.

Curius
Rex Indiarum
Dame de France
* Cupido
La Rupelmonde
* Grande Fidelle,
Incomp. Brunon
Incomp. de Grauw
* Grand Roy de France
* Hauteſſe Roſe
* Hauteſſe Griſdeline
Hauteſſe Violette
* Hertog van Lancaſter
Incomparable Arch - Duchеſſe
* Incomp. Favourite
Incomp. Premiere noble
Incomp. Florida
Jeuweell van Dort
Jeuweell van Hollande
Jeuweell van Zeeland
Keyſerin van Java
Koning van Siam
Koning van Pruiſſen
L'Eminence
Erfstad houdereſſe
Cardinal Infant
* Parroquet Rouge
Overwinnaar
Porcia
Reine de Congo
Reine de Guine
Roſe Triumphe
* Roſe Feu du Grand Valeur
Stadhoulder General
Socrates Verheterde
* Triumphe de Liſle,
do No I.
Triumphe Griſdeline
* Duc de Toſcane,
* Reine d'Amazones
Jeuweell van *Voerhelm*
Gagne la Rache.

As I never attempted raiſing *Tulips* from the ſeed, being otherwiſe too much engaged, I ſhall recommend the method of my friend, Mr. *Miller*, whoſe knowledge in theſe particulars is very extenſive, and may well be depended on.

Directions

Directions for raiſing Tulips from Seed, as practiſed by Mr. Miller.

"THE manner of propagating theſe flowers from ſeed is as follows: You ſhould be careful in the choice of the ſeed, without which there can be little ſucceſs expected. The beſt ſeed is that which is ſaved from breeders which have all the good properties of good flowers for the ſeeds of ſtriped flowers ſeldom produce any thing that is valuable.

"The beſt method to obtain good ſeeds is to make choice of a parcel of ſuch breeding *Tulip* roots as you would ſave ſeeds from, and place them in a ſeparate bed from the breeders, in a part of the garden where they may be fully expoſed to the ſun, obſerving to plant them at leaſt nine inches deep; for if they are planted too ſhallow, their ſtems are apt to decay before their ſeed is perfected.

"Theſe flowers ſhould always be expoſed to the weather, for if they are ſhaded with mats, or any other covering, it will prevent their perfecting the ſeed. About the middle of *July* (a little ſooner or later, as the ſummer is hot or cold) the ſeeds will be fit to gather, which may be known by the drineſs of their ſtalks, and the opening of the ſeed veſſels, at which time it may be cut off, and preſerved in the pods till the ſeaſon for ſowing it, being careful to put it up in a dry place, otherwiſe it will be ſubject to mould, which will render it good for little.

"Having ſaved a parcel of good ſeed, about the beginning of *September*, is the beſt ſeaſon for ſowing it, where there ſhould be provided a parcel of ſhallow ſeed pans or boxes, which ſhould have holes in their bottoms, to let the moiſture paſs off; theſe muſt be filled with freſh ſandy earth, laying the ſurface very even, upon which the ſeeds ſhould be ſown as regularly as poſſible, that they may not lie upon each other, then there ſhould be ſome of the ſame light ſandy earth ſifted over them, about half an inch thick. Theſe boxes or pans ſhould

be placed where they may have the morning ſun till eleven of the clock, in which ſituation they may remain until *October*, at which time they ſhould be removed into a more open ſituation, where they may enjoy the benefit of the ſun all the day, and be ſheltered from the north winds, where they ſhould remain during the winter ſeaſon, but in the ſpring, when the plants are up, they ſhould be again removed to their firſt ſituation; and if the ſeaſon ſhould be dry, they muſt be refreſhed with water, while the plants remain green, but as ſoon as their tops begin to decay, there muſt be no more given them, leſt it rot their tender bulbs, therefore the boxes ſhould be placed in a ſhady ſituation during the ſummer ſeaſon, but not under the drip of trees.

"Theſe plants, at their firſt appearance, have very narrow graſſy leaves, very like thoſe of onions, and come up with bending heads, in the ſame manner as they do; ſo that perſons, who are unacquainted with them, may pull them up inſtead of graſs, whilſt they are very young, before their leaves are a little more expanded, which is rarely performed the firſt year, for they ſeldom appear before the middle of *March*, and commonly decay about the latter end of *May*, or the beginning of *June*, according as the ſeaſon is hotter or colder.

"The weeds and moſs ſhould alſo be cleared off from the ſurface of the earth in the boxes, and a little freſh earth ſifted over them ſoon after their leaves decay, which will be of great ſervice to the roots. Theſe boxes ſhould be conſtantly kept clear from weeds, which, if permitted to grow therein, when they are pulled up, their roots will be apt to draw the bulbs out of the ground. At *Michaelmas* they ſhould be earthed again, and as the winter comes on, they muſt be again removed into the ſun as before, and treated in the ſame manner, until the leaves decay in the ſpring, when the bulbs ſhould be carefully taken up, and planted in beds of freſh ſandy earth, which ſhould have tiles laid under them, to prevent the roots from ſhooting downward, which they often do when there is nothing to ſtop them, and thereby they are deſtroyed. The earth of theſe beds ſhould be about five inches deep, over the tiles, which will be ſufficient for nouriſhing theſe roots while they are young.

"The

"The diſtance, which theſe young bulbs ſhould be allowed, need not be more than two inches, nor ſhould they be planted above two inches deep; but toward the end of *October*, it will be proper to cover the beds over with a little freſh earth about an inch deep, which will preſerve the roots from the froſt, and prevent moſs or weeds from growing over them; but, if the winter ſhould be very ſevere, it will be proper to cover the bed either with mats or peas haulm to prevent the froſt from entering the ground, for theſe roots are much tenderer while young, than they are after they have acquired ſtrength.

"In the ſpring the ſurface of the ground ſhould be gently ſtirred, to make it clear, before the plants come up; and if the ſpring ſhould prove dry, they muſt be frequently refreſhed with water, during the time of their growth; but this muſt not be given to them in great quantities, leſt it rot their tender bulbs; and when the leaves are decayed, the weeds ſhould be taken off, and the beds covered with freſh earth; which ſhould alſo be repeated again in autumn.

"In theſe beds the bulbs may remain two years; during which time they muſt be conſtantly kept clear from weeds, and in the ſpring and autumn freſh earthed, in the manner already directed; after which the bulbs muſt be taken up, and planted into freſh beds, at four inches aſunder, and as many deep, where they may remain two years more; during which time they ſhould have the ſame culture as before; and after that, the bulbs being large enough to blow, they ſhould be taken up, and planted in freſh beds at the uſual diſtance, and in the ſame manner as old roots; where, when they flower, ſuch of them as are worthy to be preſerved, ſhould be marked with ſticks, and at the ſeaſon for taking them up, they muſt be ſeparated from the others, in order to be planted as breeders in different beds; but you ſhould by no means reject the others until they have flowered two or three years, as it is impoſſible to judge exactly of their value in leſs time; for many, which at firſt flowering appear beautiful, will afterwards degenerate ſo as to be of little value, and others, which did not pleaſe at firſt, will frequently improve; ſo that

they ſhould be preſerved until their worth can be well aſcertained.

" In this method many ſorts of new breeders will be annually raiſed, from which there will always be fine broken flowers, which, not being in other hands, will enhance their value; and it has been entirely owing to this method of raiſing new flowers that the *Dutch* have been ſo famous, amongſt whom the paſſion for fine *Tulips* ſome time ago reigned ſo violently, that many of the floriſts near *Haerlem* have often given a hundred ducats for one ſingle root, which extravagance was the occaſion of an order being made by the *States*, to limit the utmoſt price that ſhould be afterwards given for any *Tulip* root, were it ever ſo fine.

" Having thus given an account of the method of raiſing theſe flowers from ſeeds, I ſhall now proceed to the management of thoſe roots which are termed breeders, ſo as to have ſome of them every year break out into fine ſtripes.

" There are ſome who pretend to have a ſecret how to make any ſort of breeders break into ſtripes whenever they pleaſe, but this, I dare ſay, is without foundation: for from many experiments which I and others have made of this kind, I never could find any certainty of this matter. All that can be done by art, is, to remove the roots every year into freſh earth of different mixtures and a different ſituation; by which method I have had very good ſucceſs.

" The earth of theſe beds ſhould be every year different, for although it is generally agreed that lean hungry freſh earth haſtens their breaking, and cauſes their ſtripes to be the finer, and more beautiful, yet, if they are every year planted in the ſame ſort of ſoil, it will not have ſo much effect on them, as if they were one year planted in one ſort of earth, and the next year in a very different one, as I have ſeveral times experienced; and if ſome fine ſtriped *Tulips* are planted in the ſame beds with the breeders intermixing them together, it will alſo cauſe the breeders to break the ſooner.

" The beſt compoſt for theſe roots is a third part of freſh earth from a good paſture, which ſhould have the ſward rotted with it; a third part of ſea ſand, and the other

other part ſifted lime rubbiſh; theſe ſhould be all mixed together ſix or eight months at leaſt before it is uſed, and ſhould be frequently turned in order to mix the parts well together. With this mixture the beds ſhould be made about two feet deep, after the following manner: After the old earth is taken from out of the bed to the depth intended, then ſome of the freſh earth ſhould be put in about eighteen inches thick; this ſhould be levelled exactly, and then lines drawn each way of the bed, chequerwiſe; at ſix inches diſtance, upon the centre of each croſs, ſhould be placed the *Tulip* roots in an upright poſition, and after having finiſhed the bed in this manner, the earth muſt be filled in, ſo as to raiſe the bed ſix or eight inches higher, obſerving, in doing this, not to diſplace any of the roots, and alſo to lay the top of the beds a little rounding, to throw off the water.

"There are many perſons who are ſo careleſs in planting their *Tulip* roots, as only to dig and level the beds well, and then with a blunt dibble to make holes, into which they put the roots, and then fill up the holes with a rake, but this is by no means a good method; for the dibble in making the holes, preſſes the earth cloſely on each ſide, and at the bottom, whereby the moiſture is often detained ſo long about the roots as to rot them, eſpecially if the ſoil is inclinable to bind; beſides, the earth being hard at the bottom of the bulbs, they cannot ſo eaſily ſhoot forth their fibres, which muſt certainly prejudice the roots.

"Theſe beds ſhould be ſunk, more or leſs, below the ſurface, according to the moiſture or dryneſs of the ground, for the roots ſhould be ſo elevated as never to have the water ſtand near the reach of their fibres in winter, for moiſture is very apt to rot them; ſo that where the ſoil is very wet, it will be proper to lay ſome lime rubbiſh under the earth, in order to drain off the wet, and the beds ſhould be entirely raiſed above the level of the ground; but to prevent their falling down into the walks, after froſt, or hard rains, it will be proper to raiſe the paths between them, either with ſea coal aſhes or rubbiſh, eight or ten inches, which will ſupport the earth of the beds; and theſe paths may ſlope at each end from the middle, which will make a paſſage for the

water to run off as it falls. But where the ſoil is dry, the beds may be ſunk eighteen or twenty inches below the ſurface, for in ſuch places the beds need not be more than four or ſix inches above the ſurface, which will be allowance enough for their ſettling.

"During the winter ſeaſon there will be no farther care required. The roots, being planted thus deep, will be in no danger of ſuffering by ordinary froſts, but if the winter ſhould prove very ſevere, ſome rotted tan or peas haulm may be laid over the beds to keep out the froſt during its continuance, to be removed as ſoon as the froſt is over; and in the ſpring, when their leaves begin to appear above ground, the earth upon the ſurface of the beds ſhould be ſtirred to clear it from weeds, moſs, &c. and when the flower buds begin to come up, they ſhould be guarded from froſt, otherwiſe they are very ſubject to blight and decay ſoon after they appear, if the froſt pinches their tops; but they need only be covered in ſuch nights, when there is a proſpect of froſt, for at all other times they ſhould have as much open air as poſſible, without which they will draw up weak, and produce very ſmall flowers.

"When theſe breeders are in flower, you ſhould be careful in examining them to obſerve if any have broken into beautiful ſtripes, which, if they have, they ſhould be marked, that they may be ſeparated from the breeders, to be planted amongſt the ſtriped flowers the following year; but you ſhould carefully obſerve, whether they have thrown off their former colour entirely, as alſo when they decay, if they continue beautiful to the laſt, and not appear ſmeared over with the original colour, in both which caſes they are very ſubject to go back to their old colour the next year: But if their ſtripes are diſtinct and clear to the bottom, and continue ſo to the laſt (which is what the floriſts call dyeing well,) there is no great danger of their returning back again, as hath been by ſome confidently reported, for if one of theſe flowers is quite broken, (as it is termed) it will never loſe its ſtripes, though ſometimes they will blow much fairer than at others, and the flowers of the off-ſets will be often more beautiful than thoſe of the old roots.

"This alteration in the colour of theſe flowers may be ſeen long before they are blown, for all the green leaves

leaves of the plant will appear of a fainter colour, and ſeem either ſtriped with white, or of a brownish colour, which is a plain proof that the juices of the whole plant are altered, or, at leaſt, the veſſels through which the juice is ſtrained; ſo that hereby particles of a different figure are capable of paſſing through them, which, when entered into the petals of the flower, reflect the rays of light in a different manner, which occaſions the variety we ſee in the colours of flowers. This breaking of the colours in flowers proceeds from weakneſs, or at leaſt is the cauſe of weakneſs in plants; for it is obſervable that after *Tulips* are broken into fine ſtripes, they never grow ſo tall as before, nor are the ſtems, leaves, or flowers, ſo large, and it is the ſame in all other variegated plants and flowers whatever, which are alſo much tenderer than they were before they were ſtriped; ſo that many ſorts of exotic plants, which by accident became variegated in their leaves, are often rendered ſo tender, as not to be preſerved without much care, though indeed the ſtriping of *Tulips* doth never occaſion ſo great weakneſs in them as to render them very tender. The greateſt effect it hath on them, is in leſſening their growth, cauſing ſome (which, while they continued in their original plain colours, did riſe near three feet in height) to advance little more than two after their colours were altered; and the more beautifully their ſtripes appear, the ſhorter will be their ſtems, and the weaker their flowers.

"There is nothing more to be obſerved in the culture of ſtriped flowers than what has been directed for breeders, excepting that theſe ſhould be arched over with tall hoops and rails, that they may be ſhaded from the ſun in the day time, and protected from ſtrong winds, hard rains, and froſty mornings, otherwiſe the flowers will continue but a ſhort time in beauty; but where theſe inſtructions are duly followed, they may be preſerved in flower a full month, which is as long as moſt other flowers continue.

"There are ſome perſons, who are ſo extremely fond of theſe flowers, as to be at a great expence in erecting large frames of iron work to cover their beds of *Tulips*, in ſuch a manner, that they may walk between two beds, under

under the frames, over which are ſpread tarpawlins, ſo as to keep off ſun, rain, and froſt, whereby they can view the flowers without being at the trouble of taking off or turning up the tarpawlins, or being incommoded by the ſun or rain, which cannot be avoided where the covering is low; beſides, by thus raiſing the covers, the flowers have a greater ſhare of air, ſo that they are not drawn ſo weak, as they are when the covering is low and cloſe to them, but theſe frames, being expenſive, can only be uſed by perſons of fortune; however, there may be ſome of wood contrived at a ſmaller expence, which, being arched over with hoops, may anſwer the purpoſe as well as iron frames, though they do not appear ſo well, nor are ſo laſting.

"But after the flowers are faded, the heads of all the fine ſorts ſhould be broken off to prevent their ſeeding; for if this is not obſerved, they will not flower near ſo well the following year, nor will their ſtripes continue ſo perfect; and this will alſo cauſe their ſtems to decay ſooner than otherwiſe they would do, ſo that their roots may be taken up early in *June*; for they ſhould not remain in the ground after their leaves are decayed. In taking the roots out of the ground, you muſt be very careful not to bruiſe or cut them, which will endanger their rotting, and if poſſible, it ſhould be done a day or two after rain. When theſe roots are taken out of the ground, they muſt be cleared from their old covers, and all ſorts of filth, and ſpread upon mats in a ſhady place to dry, after which they ſhould be put up in a dry place, where vermin cannot get to them, obſerving to keep every ſort ſeparated, but they ſhould not be kept too cloſe from the air, nor ſuffered to lie in heaps together, leſt they ſhould grow mouldy, for if any of the roots once take the mould, they commonly rot, when they are planted again.

"The off-ſets of theſe roots, which are not large enough to produce flowers the ſucceeding year, ſhould be alſo put by themſelves, keeping each ſort diſtinct; theſe ſhould be planted about a month earlier in autumn than the blowing roots, in particular beds by themſelves in the flower nurſery, where they may not be expoſed to public view; but the earth of the beds ſhould be prepared for them in the ſame manner as for larger roots, though

though theſe ſhould not be planted above five inches deep, becauſe they are not ſtrong enough to puſh through ſo great a covering of earth as the old roots; they may be placed much nearer together than thoſe which are to flower, which moſt of them will become ſtrong enough to do in one year, when they may be removed into the flower-garden, and placed in the beds amongſt thoſe of the ſame kinds."

That this treatiſe may be no way deficient in an Article ſo much eſteemed by Floriſts, we ſhall add the practice of another excellent gardener.

Directions for raiſing Tulips from Seed, as practiſed by Francis Beulinz, *Floriſt, near the Chartreux, at* Bruſſels *in* Flanders.

WHEN the ſtems of theſe flowers appear to riſe above their leaves, and to be preparing for bloom, they ſhould be tied to long iron wires or ſmall reeds, that they may be preſerved from breaking by wind. The ſtems, as they advance in height, ſhould have all opportunities of ſun to ripen the ſeeds; which, as ſoon as they offer fair, encourage them by all means.

The ſeeds will be ripe by the end of *June*; which you will perceive by the ſeed-veſſels opening, and ſhewing the ſeeds; when they muſt be cut off and laid in a dry place, to be kept until the middle of *September*; and to be ſown in the following manner, and in the compoſt as here directed.

To one load of virgin-mould, take a quarter of a load of very white ſea-ſand, neither red nor yellow, nor of the fineſt ſort, but of a coarſe ſubſtance; or in its place ſome coarſe free river ſand: To this add, of very old and well rotted cow-dung, one half load; and the other quarter muſt be of a ſhort, moſſy, black earth. Mix and incorporate theſe, one year at leaſt, before ſowing: Boxes are then to be made three feet long, two broad, and one foot deep; boring many holes in their bottoms, to be covered with concave oyſter-ſhells, for the readier paſſing off of the ſuperabundant water; and to the ſides of the ſeedling boxes, which cannot be eaſily lifted, put two ſtaples for poles, like to thoſe that are in the ſides of ſedan-chairs, that they may be carried from one place to another,

ther, without diſturbing the earth. The ſeed is to be ſown about the 20th of *September*, giving the boxes the advantage of the moſt ſunny ſituation, and to cover their ſurface with three inches of tan in ſevere froſt; folding wooden covers are uſed for theſe boxes, to protect the ſeedlings from heavy ſhowers, violent and ſharp winds, which in *March* is to be removed with the hand, when the boxes are to be moved into a more ſhaded ſituation for the ſpring and ſummer, watering them when their leaves appear, as occaſion ſhall require; but when they are faded, be moderate in your watering, as their roots are then in an inactive ſtate; great care muſt be taken to keep the boxes clear of weeds, which ſhould they come to any height, would take with them the ſeeds in removing; you are to obſerve that the leaves of the young *Tulips* at their firſt coming up appears like graſs.

Here your ſeedlings may continue for two or three years, obſerving to give them freſh mould every *Auguſt*, that which has been already preſcribed, which will very much ſtrengthen their roots; at this time, it will be neceſſary to move theſe plants into a ſituation, where they will have the ſun until eleven o'clock only.

When you lift them, let their leaves be down and the earth very dry; which you muſt riddle that none of the roots may be loſt, they are to be laid in the root-room, until the beginning of *October*; when they are to be replanted into larger boxes, and the ſame ſort of earth in which they were ſown, managing them as you did the former year: They are to remain in the boxes for two years longer, as they are then to be planted into beds; and the moſt proper ſoil for them, is that wherein hyacinths have been planted the preceding ſpring. If any of them flower this fifth year, they muſt have covers, and be lifted every year when their leaves are down, as you do with your old ſtandards; and before you condemn a flower for its bad appearance, you muſt indulge it with two years trial, for the root will not have ſtrength to expand its petals, and diſplay its colours ſooner.

As their roots become large, you muſt add to the ſand of the compoſt; and when they have all advanced to the ſtate of flowering, uſe that compoſt which I have preſcribed for the old blowers, whoſe culture has been already laid down.

A Liſt

A Liſt of the *Biſard Tulips*, which for beauty of colour and high ſtems are greatly eſteemed.

Abondante
Aigle Noir
Aglauros
Hippolyte
* L'Aſtre du Jour
Arienne
Belle Minerve
Aiglon
Bellinde
Belliſſarius
* Blande d'Oret noir Frange
Blyrothea
Bocaall
Brunette Griſdeline
Brunon
Roi de Sweden
Chimene
Chamelion
Charmante
Cuveliere
Directus
Clorilde
Du Thoy
Efialtes
Fountainbleau
Ganymedes
Generaliſſimus
* Gloriane
Glorieuſe
Gouden Wapen
Henriette
Hianitbe
Hogenbot
Icodrode
Iphigenie
Jemima
* Juarlie
Keyſer Carel-beſte
La Poudree
Keyſer van Java
La belle Brune
La belle Colombine
La Bulgare
La Solitaire Brune
* L'Excellente Brune
* La Cadiere
* La Sublime
Lucia
Lucifer
Elegantiſſimo
Excellentiſſimo
General Bathiani
Eumetis extra
Fabule
Negrin
Nimroth
* Nitocris
Nubiaan
Oziris
Perminie
Querdidie
* Raviſſante
Regulus
Roy de Siam
Ruſſienne
Sageſſe
Romulus
Sautrelle
Semiramis
Seneſchall
Schonendonk
L'Invincible
Magnifique
Monterat
Migreliene

Mnemoſina

Mnemoſina
Jeuweell Royale
* Chapeau-tranſparant
* Lion
Siveline
Sephora
Soleil d'Or
Soleil Royale
Spadille
* Staaten General extra Schoone
Tacimine
St. Andre Frange
F. Reuweel
Voorſt van Hanover
Titienne
Victorieux
Sappho.

The Management of the Double Tulip, with ſome Directions for breaking of Breeders into beautiful Tulips.

THE double *Tulips* I planted in my *Hyacinth* ground, which I ſtirred up from the time I lifted my *Hyacinths*, adding a fourth of fine white ſand, prepared for the purpoſe, and as ſoon as they appeared, I treated them in the ſame manner I did my other *Tulips*.

In ten days after their bloom was over, I carefully nipped off their ſeed veſſels; and when their ſtalks were entirely withered, I lifted them; this I did with a ſmall blunt iron inſtrument, that I ſhould not wound their roots, laying them in the root-room, and as ſoon as they were dry, cleanſed them from old ſkins, old earth, and rotted fibres, which were not ſo proper to be taken from them when juſt lifted; obſerving not to take off any off-ſets from them, but ſuch as came from them freely, and were fully formed. This I obſerved as a general rule in regard to the off-ſets of all my bulbous rooted flowers. In the root-room they were preſerved by the free admiſſion of air, and not by any other expedient, which I have ever found to ſucceed beſt.

In reſpect to *Breeders*, I muſt not omit a practice I obſerved in *Holland*, to force them to break their colours, for which purpoſe a Gentleman of my acquaintance prepared a very lean, ſandy, and gravely ſoil, wherein he planted them eight inches below the ſurface, from which he had forty *Baguets*, extremely well broken, moſt of which retained their ſtripes to their fading, and had entirely thrown off their original colours. The autumn

tumn following, he planted them in his richeſt garden mould, where moſt of them retained their fine colours, and were vaſtly beautiful. The occaſion of his changing the ſoil the ſecond year, was, that where they were firſt planted, the ſize of their roots were ſo diminiſhed, that he was apprehenſive their flowers would be likewiſe ſmall, therefore he planted them in the rich ſoil to enlarge their roots. This experiment ſucceeded very well; for the roots recovered their former ſize, and moſt of them retained their beautiful ſtripes into which they had been broken.

Directions for the Culture of the Anemone.

TO the *Tulip* ſucceeds the *Anemone*, or *Wind-flower*. This flower is one of the beauties of the ſpring, which I would adviſe to be got from *France* or *Holland*, as they have greater varieties of them, than are with us, whoſe colours are confined to reds and whites; whereas I have ſeen there great varieties of blues, purples, and browniſh colours, moſt admirably intermixed, and of moſt other colours, excepting yellow. It is called *Wind-flower*, from its ſeeds being contained in down, which are eaſily carried away by the wind.

They are diſtinguiſhed into the narrow and broad-leaved kinds: I renewed their beds every year with the compoſt I uſed for *Hyacinths*, to which I added a fourth part more of a freſh yellow marliſh earth. For a full blow, I planted them the end of *January*, in beds two feet deep of compoſt, ten inches root from root, and two inches deep. To plant them ſooner, I found was expoſing them too much to winter froſts, which had deſtroyed many of mine: Should the winters prove mild, you will have a greater increaſe of roots by planting them early; but this I found too hazardous, ſo that I did not plant them earlier than *December* or *January*. In planting, I always obſerved to put their roſes (as their flower-buds are termed) uppermoſt, and in *March* and *April*, in dry weather, I often refreſhed them in the evening, or early in the morning with water, and this I found to be the only proper time of doing it.

As

As ſoon as their leaves were faded, I lifted them, and ſpread them on a cloth in the root-room, to dry; and after they had lain there twenty days, I cleaned them, and laid them in their proper drawers, firſt taking off their longeſt off-ſets, which is a more favourable time than when you are going to plant, as the amputated part has time to heal and dry, otherwiſe there would be a mouldineſs from the gummy ſubſtance of this root.

Of theſe flowers, there is a great and beautiful variety, which makes them deſerving of a place in every good collection of flowers.

Directions for raiſing the Ranunculus.

THE *Ranunculus*, or the *Crow-foot*, deſerves our next attention, and theſe are divided into two ſorts: The *Turky Ranunculus*, and the *Perſian*, of which there are many beauties obtained every year from ſeed. I ſhall firſt treat of the *Turky Ranunculus*; and of thoſe in *Voerhelms* catalogue there are fourteen ſorts, *viz.*

Admiral van Conſtantinople
Exquiſita Romana
Merveilleuſe Luteo
Merveilleuſe de Paris
Monſtrom Trache
Oſſen-bloed
* Paſſe Oſſen-bloed
Pivan Major
Romanum
Romanum Trache
Sphericus
* Tribellius Trache
Turban d'Or
Turkſe Turban
The Seraphics, or Whites and Reds
Minerva, Reds or Carmine Colours
Mufti, or La Pucelle de France, Whites
And the yellow Merveilleuſe mixed with fine red colours.

The *Paſſe Oſſen-bloed* blows two ranges, ſometimes three of flowers, upon which account it is the moſt eſteemed.

The proper time of planting them is in the beginning of *December*; their appearance will be a little before the beginning of *March*, when our ſevereſt froſts are gone. Plant them in a bed of what length you pleaſe, but in breadth five feet, and in depth three, and of the ſame mould

mould wherein your plant your *Hyacinths*, adding a ſixth part of cow dung; in this compoſt you are to plant them two inches and one half deep, and four inches diſtance root from root: Thus muſt they remain until their leaf-buds begin to appear, when you are to riddle over them one inch more of ſtiff mould; to prevent their being expoſed too much to the dry weather, and to the heat of the ſun, both of which are very prejudicial to this plant when in flower, which they will be, by the beginning or the middle of *May*. In the evening I gave them frequent waterings, or very early in the morning, but not when the ſun ſhined. As ſoon as their leaves were quite decayed, I took the roots out of the ground, ſpread them upon a cloth, and dried them: When they were dry, I cleared them from the earth, and took from them ſuch off-ſets as came off freely.

In *January* or *February*, (ſhould the froſt ſet in ſevere) whilſt their roots are ſpringing, and ſending their fibres into the ground, I covered the ſides of their beds with two or three inches of rotten tan-bark, but never ſuffered it to mix with their compoſt, it being extremely prejudicial to them; I alſo covered the beds with long ſtraw, except when their leaves appeared above ground; when I laid on an inch more of earth, but no ſtraw, as that would rot their young leaves, and perhaps their roots alſo.

The *Perſian* kinds of *Ranunculus*, cannot be equalled by any flower in beauty, diverſity of colours, and forms of their vaſtly magnificent flowers; for which reaſon I ſhall be the more particular in their culture, and of the management of their ſeedlings.

I would adviſe to have the roots of the double flowers from the mynheers *Voerhelms*, or *Voerhelm* and *Van Zerpel* at *Haerlem*, and the ſemidouble from ſome florifts in *Flanders*; as the *Voerhelms* ſeldom part with their beſt ſemidouble flowers; as it is from theſe they have the beſt ſeed. I planted the fineſt double ſorts about the beginning of *February*, in light rich earth, as directed for the *Turky* ſorts; obſerving to give them every year freſh compoſt. If you plant them in pots, put one root, or two at moſt, into a two-penny pot; and ſo ſoon as you have planted them, ſink the pots into the ground, two

inches below the ſurface, in the forms of beds, four in breadth, and as many as you pleaſe in length. Upon the approach of froſt, I covered them with two inches of old tan; which I ſuffered to continue for the advantage of watering them, without diſturbing their fine compoſt.

It will be proper to cover theſe flowers when they are in blow, from the influence of the ſun, otherwiſe they will be hurried out of their beauty: As ſoon as the leaves are dry, I took them out of their pots, and the open ground, and laid them in the root-room in their particular drawers, until the ſeaſon for planting, taking care to protect them from the froſt. Notwithſtanding what I have directed with reſpect to planting the *Ranunculus* in pots, you may plant them in beds of the ſame compoſt as thoſe in the pots; and if they are not injured by vermin, they will bloſſom and proſper well; the beds are to have two feet depth of compoſt; as their ſmall fibres run deep into the earth, provided it is well prepared, and will give more flowers and off-ſets than when ſhallower.

There is another method of preparing beds for this flower, which I have ſeen practiſed with great ſucceſs: A trench is firſt dug two feet deep, in which put fourteen inches of old well-rotted dung from an old cucumber, or melon bed; over which lay ten inches of good, freſh, light earth, in which plant your *Ranunculus* roots; and when their fibres reach the old rotted dung, they are kept moiſt and active, whereby they ſhow a ſtrong bloom; but be ſure to give them new compoſt and dung every year, otherwiſe they will decline. If you have any very well-rotted cow dung, I would prefer it to horſe dung, from any hot-bed whatever.

As to the ſeedlings, not any can be expected to ſucceed well, but ſuch as are obtained from well coloured ſemidouble flowers. And in order to preſerve the ſeed, you muſt as ſoon as you perceive the ſeed part from the axis of their flowers, look them over carefully twice a day, and gather what are ripe, leaving the others to ripen, which will be three weeks at leaſt from the time your earlieſt ſeeds are ripe; then lay them in their ſeed-paper bags until *October*, which ſeaſon I take to be the moſt proper for ſowing them; for ſhould they be ſown earlier,

earlier, they will ſpring up before the froſt comes on, which will endanger them, either by throwing their young roots out of the ground, or by cutting off their leaves.

I then prepared boxes for them, much in the ſame manner as I did for the ſeedling *Hyacinths*, but ſomewhat ſhallower; the ſeed is to be ſown thin, and to be protected as much as poſſible from the froſt, which the cover of the boxes much aſſiſt in.

The young plants, by this management, will begin to appear by the firſt of *March*, when the ſeverity of the froſts is over, when the boxes are to be removed into a ſituation where they may enjoy the benefit of the ſun, until eleven o'clock only. I prefer boxes for theſe as well as moſt other flower-ſeeds, as the wood is warmer than any earthen ware; I always took care to lay ſome very fine riddled rotten tan over the ground, before the froſt ſet in, which alſo kept down the light earth in watering, ſo that it was preſerved about their roots. In *June* they are to be lifted out of the boxes, to be replanted about the middle of *November*, giving them new earth and larger boxes, to be covered as before with rotted tan. The boxes for this purpoſe were one foot and an half deep, and in length according to your number of roots, to be planted at two inches diſtance, root from root, and near two inches deep, in the ſame ſort of compoſt before uſed. I planted them in boxes for this ſecond year, rather than in beds, the better to protect them from the ſeverities of the weather; they appeared in *March*, and ſome of them flowered: Thoſe which were ſingle and of an ordinary colour, I pulled up when they were in bloom; the good ones I allowed to remain in the ground until the lifting ſeaſon; ſuch as flowered in the ſecond year, were only ſemidoubles, excepting two dozen of fine doubles, of which I took particular care, and planted them among the fineſt doubles, being extraordinary fine flowers, and ſo much eſteemed as to be placed in the *Dutch* catalogues.

About the middle of *December*, or the beginning of *January*, the ſeedlings which I laid in the root-room, I planted into a long bed two inches deep, in the compoſt, which was laid two feet deep, and four broad, which I

covered with two or three inches of tan, as ſoon as I perceived the froſt to ſet in; in *March* I removed it, and as ſoon as I perceived their leaves coming above ground, I riddled an inch of the ſtrongeſt garden mould on them, without any mixture of ſand: The uſe of which was to ſtrengthen the young roots, and alſo to preſerve the earth from being waſhed off their bulbs in watering. I alſo covered them with mats when in bloom, ſupported by hoops, taking care to pull up all bad flowers, when they ſhewed themſelves. By this management, I had moſt extraordinary ſucceſs, obſerving to procure ſome freſh roots of the beſt ſemidoubles every year from abroad, and at home, for it is neceſſary to change the ſeed to obtain good flowers.

The following liſt is a collection of the beſt *Perſian* kinds, diſtinguiſhed by their colours; and thoſe marked with an *Aſteriſk* * are particularly beautiful.

Ranunculuſes, Purple and Roſe-coloured.

* Ambuſtus
Jeuweel van Europa
Adminiſtrateur
Archeveque du Canterbury
Baſhaw van Cairo
* Belle Africa
* Ballotin
Boſphorus
Cardinal's Hood
Dromedaris
Electryon
Etiopiaan
Grand Conquerant
Gekroonde Moor
Grand Maitre Royale
* Grande Monarque
* Griſdeline Roots
* Jeuweel Griſdeline
Incomparable nova
Katarinete
Keyſer Amurath
Koning David
L'Ambe du jour
Metellus
Milo
My Lord Walgraaf
Nonius
Purpre ſans pareille
Purpre Manteel
* Phœnix florum
* Purpre incomparable
Premiere noble
Provincie Roſe
* Roſe Charmante
Roſe d'Amour
Roy de Fleurs
* Saphire
Stadhouder General
Gloria Ranunculorum
* Veſuvius
Violete Griſdeline
Viperino
* Violete incomparable
* Violete illuſtre
Violete ſans pareille
Cour de Toſcane, Violete ſuperbe preſque bleuf.

Ranun-

Ranunculuſes of Orange Colours.

Admirante
* Belle rouge Orange
* Comte de Lowendahl
Colombus
Ariſtander
* Faval
Feu Conſtante
Feu Dominante
* Grand Feu du Roy
Koningin van Sicilien
L'amp d'Or
Metropolitaan
* Orange Voorſt
Orange Boom
Perdiccas
* Phœnix triumphante
Feu imperiale
Feu Royale
* Feu triumphante
Four Ardent
Furieuſe de France
Procurator
Thitone
* Topana
Averaus
* Demophoon.

Ranunculuſes of white mixed with red Colours.

Belle aimable
* Belle Catarina
* Belle rouge Griſdeline
Bonte Leuw
Briſetoute
* Charmante Griſdeline
Capitain General
* Gravin van Yarmouth
Dallila
Trois Couleurs Eclatantes
Triple Croon
* Picoté aimable
Queen of Hungary
Raine blanche
Roſe Imperiale
Agaet Incomparable
Diademe
Pironetta
* Eucharis
Sneeuberg
Koningin Elizabeth.

Ranunculuſes of yellow and red Colours.

Belle Aſia
Berg Etna
* Swarte Leuw
Gouden Sceptre
Guldezon
Gouden Ketten
Jeuweel van Dort
* Iſabelle triumphante
Jonquille aimable
* Goudenberg
Rhadamanthus
Soleil Levant
Vergulde Lampet
Vergulde Servies
Reine de Morocco
Laomedon
* Marquiſe dell Campo Florido.

Ranunculuſes of feuillemort Colours.

La Vauve Galante
Achæus
Agariſte
Bruin feuillemort Fluweel
Brunon
* Feuillemort Charmante
* Le Monde traveſtie
* Cantor
* Chimney-ſweeper
Mouron
Rakima
* Seimra Bruin
* Sultan Oſman Bruin
Feuillemort noir
* Glorieuſe feuillemort brune
La Financier
Mortſhead
La bella Veuve
* Victorieuſe
Vleermuys
Feuillemort ſanſpareille
La Sepulchre de Louis
Quatiſorſe
Demon.

I ſhall now proceed to the Directions for the other great ornaments of our gardens, viz. The *Annuals*, *Perennials*, and *Biennials*; and as thoſe of the greateſt curioſity and value, are originally from *Holland*; I ſhall begin with a liſt of them, as given by the beſt floriſts there; then will follow the ſame, under the names aſſigned them by the beſt botaniſts; to which are added the names they are beſt known to, by the *Engliſh* gardeners; with theſe are given their culture, and to the whole is added for the firſt time, an alphabetical liſt of their names in *Engliſh*, which it is expected will be very acceptable, as it has a reference to the two preceding liſts by figures, correſponding to thoſe in the other liſts; ſo that the *Dutch*, and botanical names, may with eaſe be referred to, as well as the culture of every plant. The *Dutch* names will be of uſe to ſuch gentlemen, as are inclined to import, and prevent miſtakes in this way, which but too frequently happen.

The Dutch *Catalogue of the moſt curious* Annuals *and* Exotic Plants, *that have been raiſed in that Country; neceſſary for thoſe who would import any of them from thence. The Figures preceding the Articles have Reference*

ence to the Engliſh *Catalogue, as well as that of their Culture.*

N. B. The articles marked with an *Afteriſk* are ſuch as are moſt eſteemed for their ſuperior excellence.

CATALOGUES van ſchoone BLOMZAADEN te vinden by Dirk *and* Pierre Voerhelm, *Blomiſt te* Haerlem, 1754.

Het Honderd Soorten tot 5 *Gulden.*

Bloem-Zaaden, die het eerſte Jaar bloeiſen.

1 Abutilon groſſularia folio flore rubro
2 Acetoſa veſicaria
3 Ageratium folio ſerrato
4 Agremona Mexicana
5 Alcea flore veſicario Africana
*6 do. Perennis flore alb.
*7 do. Purpureo
8 Amaranthus maxima erecta
9 do. ſparſa
10 do. ſpica virid.
11 Annagallis flore alb.
12 do. Phæniceo
13 do. cæruleo
14 Anthirrinum arvenie flore albo
15 do. rubro
*16 do. majus perenne flore albo
*17 do. rubro
*18 do. variegato
19 Agremona ſpinoſa.
20 Alarini Lobelli
21 Aſtragalus maritim.
22 do. Stellatus
23 Aſphodelus luteus
24 Aſter Chinenſis magno flore albo
25 do. cæruleo
26 do. purpureo
27 do. minor albo
28 do. Conizoides
29 do. Jacobea folio
*30 Atriplex buxifera
*31 do. odorato
*32 Balſamina fœmina flore albo
33 do. incarnato
34 do. variegato
35 do. purpureo
36 do. albo pleno
37 do. incarnato pleno
38 do. incarnato variegato pleno
39 do. purpureo pleno
40 do. purpureo variegato pleno
41 do. Roſeo pleno
42 do. tricolore pleno
43 do. luteo, ſeu noli me tangere
44 Bellis American. Coronopi flore luteo
45 do. Cabo de Bon eſperance

46 do. Majus
47 Bidens Canadenſis latifol. flore luteo
*48 Blataria flore albo
*49 do. luteo
50 Borago Cretica flore variegato
51 do. major folio variegato
*52 do. major flore cæruleo
53 Bugloſſum majus flore albo
*54 Buphthalm. Papav. fol. flore luteo
*55 do. Tanaceti folio flore luteo
*56 do. albo
57 Bupleurum perfoliat.
58 Caliminta Montan.
59 Calendula flore ſulphurino
60 Caltha vulgaris flore pallido
61 do. Polyanthos maxima
*62 do. Prolifera
63 Capno des Fumaria
64 Carduus Italicus ſpinoſus Horrible
65 do. Mariæ
66 do. minor flore lut.
67 Caryophyllus Chinenſis flore pleno
68 Caryophyllata flore luteo
*69 do. variegato
70 Cartamus flore croc.
71 Caucal. Monſpeliac.
72 Cerinthe flore albo
73 do. luteo
74 do. purpureo variegato
75 do. rubro variegato
76 Chryſanthemum flore albo pleno
*77 do. luteo pleno
*78 do. fiſtuloſa
*79 do. ſulphurin. pleno
80 Chamæpitys
81 Cicer album
82 do. rubrum
83 Clymenum Hiſpanicum
84 Coluthea Arbor, veſic. Barba Jovis fol. flore rubro
85 Condrilla Cretica flore roſeo
86 do. flore luteo
87 do. Orientalis flore rubro
88 do. Tingitana flore luteo
*89 Coniſa Argenteo
*90 do. Aureo
*91 Conſolida Anglica flore albo
*92 do. cæruleo
*93 do. variegato
94 do. incarnato
*95 do. incarnato variegato
96 do. pallido
97 do. Reg. flore albo
98 do. pallido
99 do. cæruleo
*100 do. pallido varieg.
101 do. argenteo
102 do. cæruleo variegato
103 do. cinereo
104 do. incarnato
*105 do. interdum pleno cæruleo

106 do.

106 do. incarnat.
107 Convolvulus auriculatus baconi
108 do. major flore pallido
109 do. roſeo
110 do. purpureo
111 Cotula flora albo
112 do. luteo
113 Concurbita fructi pomi forma
*114 Cucumis Aſininus
*115 Cyanus arvenſis diverſi color
116 do. flore albo
117 do. cæruleo
118 do. purpureo
119 do. orientalis flore albo odorato
*120 do. luteo odorato
121 do. Purpurea odorato
do. ſegetum flore purpureo
122 Ervum verum
123 Ervum equinum minus
124 do. majus
125 Fœnum Græcum ſativum
126 Flos Adonis flore rubro
127 do. Africanus aureo pleno
*128 do. fiſtuloſa pleno
*129 do. luteo pleno
130 do. Indicus minor
131 do. Tunetanus vulgaris
*132 do. flore atro rubente
133 do. luteo
*134 do. variegato
135 do. pleno
136 do. Principis flore albo
137 do. cæruleo
138 do. pallido
*139 do. Solis luteo
*140 do. pleno
141 do. ſemine albo
142 do. pleno
*143 do. flore ſulphureo
*144 do. pleno
*146 Galega flore albo
147 do. cæruleo
*148 Garidella foliis tunicisſime diviſis
149 Geranium latifolium
150 do. Muſcatum
151 do. ſemine nigro
152 Glaucium flore luteo
153 do. flore rubro
154 do. cæruleo.
155 Gramen Alopecoides majus
*156 do. Tremulum majus
*157 do. minus
*159 Hallicaccin. fructu aureo
160 Hediſarum annuum
161 do. Clypeatum flore albo
*162 do. rubro
163 Hedipnoides flore triplo
164 Hiera. Barbarum flore albo
*165 do. luteo medio nigro
166 do. Montanum perenne flore luteo
167 Heſperus Montan. altifolius
168 Hypecoun

169 Hi-

169 Hipericum flore luteo
170 Horminum coma rubra
*171 Hyſophus flore rubro
172 Lathyrus Auguſti folio flore rubro
173 do. albo et rubro variegato
174 do. flore luteo
175 do. Odorato flore albo et rubro variegato
*176 do. purp. et rubro variegato
177 do. Supinuus minus
178 do. Tingitanus
179 do. Vicia ſubterr.
*180 Lavandula folio diſſecto
*181 Leucanthem. Tanaceti folio flore majore
182 Lychnis perfoliata flore rubro
183 do. Hirſuta minor flore variegato
184 do. Miſſipole flore albo
185 do. carneo
186 do. purpureo
*187 do. Scabioſa
188 do. Segetum
189 do. Orientalis flore rubro
190 do. Saponaria flore pleno
*191 Linaria Auguſti folio flore albo
*192 do. flore albo et luteo
193 do. cærul. et luteo
194 do. luteo parva
195 do. perennis flore purpureo
196 Linum Africanum
197 do. altiſſimum
198 do. Umbilicatum flore albo
199 Lyſimachi Virginina
*200 Lotus flore atro rubente folio variegato
201 do. luteo
202 Lucojum annuum flore rubro
203 do. flavo
204 do. arboreſcens flore albo
205 do. purpureo
206 do. roſeo
207 do. rubro
208 do. variegato
*209 do. folio glabro flore albo
210 do flore lutea mixto
*212 do. perenne flore lutea
214 do. vernum flore purpureo
215 do. rubro
*216 Lupinus flore albo
*217 do. luteo odorato
*218 do. Indicus flore cæruleo
*219 do. major incarnato variegato
220 Lupinus minor ſemine pallido flore cæruleo
*221 Lupinus majore cæruleo variegato

222 do

222 do. minor cæruleo variegato
223 Marjorana Cretica odorato
*224 Malva Bætica flore albo
*225 do. Roſeo
*226 do. incarnato
*227 do. rubro
228 do. Orientalis rubro
229 do. flore albo
*230 do. folio criſpo
*231 do. variegato
232 Matricaria folio criſpo
*233 do. flore pleno
234 Medica Cochialata major
235 do. minor
236 do. hirſuta
*237 do. maculata ſapinoſa
238 do. Turbinata
239 do. Orbiculata
240 do. Semine glabro
241 do. plano
242 Melilotus Italicus
243 do. flore violaceo
244 do. minor
245 Meagrum Monoſparum
246 Milium Gambocciium
247 do. Solis
248 Mirabilis Peruvianus flore albo et rubro
249 do. luteo et rubro
250 do. toto rubro
251 do. luteo
252 Moldavica flore albo
253 do. cæruleo
*254 do. Orientalis flore violaceo
*255 Nardus Bohemica flore albo
256 do. cæruleo
*257 do. Orientalis flore variegato
*258 Naſturtium Indicum majus, flore aureo
259 do. luteo
*260 do. minus flore aureo
261 do. flavo
262 Necanthemum flore purpureo
263 Nicotiana latifolia
264 do. rotundo folio
*265 Nigella flore albo pleno
*266 do. cæruleo pleno
267 Ochrus ſemine pullo
268 Ornithopodium minus
*269 Papaver flore albo pleno
270 do. incarnato pleno
271 do. purpureo pleno
*272 do. incarnato ſtrato pleno
273 do. roſeo ſtraito pleno
274 do. rubro ſtraito pleno
275 do. totum rubrum
276 do. albo major interdum pleno
277 do. incarnato ſtraito pleno minor
278 do. Erraticum flore albo
*279 do. diverſi-color flore pleno
*280 do. Phænicco

281 do.

*281 do. atra rubente fimbria
*282 do. Phæniceo fimbriato
283 do. pallido
284 do. roſeo
285 Pelecinus Vulgaris
286 Perſicaria Orientalis
287 Phaſeolus Indicus coccineo
288 do. nigro
289 do. minor fructu luteo
290 do. pallido
291 Pomum Amoris fructu luteo major
292 do. minor
293 do. rubro major
294 do. minor
*295 Ptarmica flore albo pleno
*296 do. purpureo pleno
297 Reſeda flore albo
There is now another of the Roſeda, viz.
298 Reſeda Egyptiaca, Floribus ex luteo viridibus odoratiſſimis
298 Ricinus Americanus
299 Scabioſa Annus maxima
301 do. flore albido
302 do. prolifero
303 do. purpureo
do. variegato
304 Schandix major
305 Scorpioides Corniculis aſperis
306 do. non aſperis
307 do. ſiliqua craſſa
308 Scholymus ſpinoſus flore luteo
*309 do. flore variegato
310 Seſamoides parvus Matthioli
311 Specul. Venereum flore albo
312 do. purpureo
313 Stachys agria platani folio
314 Thlaſpidium flore pallido luteo
315 Thlaſpi Creticum flore albo
316 do. purpureo
317 do. violaceo
*318 do. Monſpeliaco
319 do. luteo minor
*320 do. ſaxatile flore luteo
*321 do. Virginiana albo odorato
322 Tordilium Narbonenſe
323 do. Syriacum
324 Trifolium Lagopi folio
325 do. flore albo
326 Triticum Americanum
327 Valeriana æſtiva
328 do. Indica flore albo
329 do. rubro
330 Valerianella Cretica fructu veſicaris
331 do. Umbellata
332 Verbaſcum nigrum flore albo
333 do. flore luteo
334 Vicia Orientalis

335 do

335 do. glabro amplo candido
336 do. ſativa
337 do. ſemine nigro
338 do. Silveſtris fructu rotundo
*339 Viola hortenſis tricolor
340 Vulneraria Pentaphyllos
341 Urtica Romana.

Bloem-Zaaden, die't tweede Jaar bloeijen, or ſeeds of biennial flowers which bloſſom the ſecond year after ſowing.

342 Acarna Theophraſti et Plinii
343 Aſtragalus Alpinus procerior alopecuroides
*344 Aquilegia variegata
*345 do. Virginiana
346 Bardana Arachoides
347 Bellevidere
348 Bulbonac flore albo
*349 Bulbonac flore cæruleo
350 Capſicum arboreſcens fructu rubro
*351 Caryophillis Barbatus flore variegato
352 Clenopodium Canadenſe
*353 Carolina magno flore
354 Coluthea arboreſcens veſicaria flore luteo
*355 Digitalus flore albo
*356 do. roſeo
*357 do. rubro
*358 do. purpureo
*359 do. Virginiana
360 Geranium majus cæruleo
361 do. variegato
362 Horminum Cornicerv. folio
363 Laburnum
*364 Lathyrus perennis major
*365 do. minor
366 Leucojum Cerinthi folio
367 Lychnis Coronaria rubro
*368 do. variegato
*369 Malva hortenſis roſea flore albo pleno
*370 do. atro rubente pleno
*371 do. incarnato pleno
*372 do. luteo pleno
*373 do. variegato pleno
*374 do. nigro pleno
*375 do. purpureo pleno
*376 do. roſeo pleno
*377 do. rubro pleno
*378 Malva Mexicana Mexicana,
*379 Moldavica Americana perennis
*380 Papaver Indium perenne
*381 Plantago roſeo
382 Scabioſa perennis
383 Son-

383 Sontalina incana odorata
384 Tyntimalis Cataputia
*385 Valeriana Græca flore albo
*386 do. cæruleo
*387 do. minima flore cæruleo
388 Vicia Bengalenſis
*389 Viola Mariana flore albo
*390 do. cæruleo
391 Vulneraria

Bloem Zaaden, or ſeeds of flowers which muſt be ſown upon hot-beds.

392 Abutilum Indicum flore aurantio
393 Amaranthus tricolor luteo rubro et viridi
394 do. rubro et viridi
395 do. Globoſus flore albo
396 do. purpureo
397 do. Chriſtatus flore albo
398 do. luteo
399 do. rubro
401 do. Conglomerato
402 do totum rubrum
403 Alcea Americana flore aurantio
404 Bidens Indicus flore aurantio
405 Canna Indica flore luteo
406 do. rubro
407 Datura flore purpureo odorato
408 Ficoides Chryſtallina
409 Lacrymæ Jobi
410 Malum inſanum fructu luteo
411 do. purpureo
412 Ocimum Nobile
413 Piper Indicum oblongo fructu luteo
414 do. rubro
415 do. major fructu luteo
416 do. rubro
417 do. minor fructu luteo
418 do. rubro
419 do. fructu Ceraſi
420 do. minore
421 do. Punctata.

An Explanation of the Authors Names, and Abbreviations made Uſe of in the following Dutch *Catalogue, of Flowers, Botanically explained.*

Tournef. Inſtitutions of Botany, by *Joſeph Pitton Tournefort*, printed at *Paris* 1716, *Quarto*.

C. B. Aſper Bauchinus his *Prodromus* to his Theatre Plants, printed at *Baſil* 1671, *Quarto*.

C. B. P.

C. B. P. Caſpar Bauchinus his *Pinax* to his Theatre of Plants, printed at *Baſil* 1671, *Quarto.*

H. Cliff. Hortus Cliffortianus, or a Catalogue of the Garden of Plants at *Hartecbamp*, belonging to Mr. *George Clifford* of *Amſterdam*, ranged according to the new method of the Sexes of Plants, by Dr. *Charles Linnæus*, Profeſſor of Botany at *Upſal* in *Sweden*, printed at *Amſterdam* in *Folio*, 1736, with elegant Figures.

Boerh. Ind. An Index of the Plants growing in the Phyſic Garden at *Leyden*, by Dr. *Herman Boerhaave*, printed at *Leyden*, 1719, in *Quarto.*

Lugd. A general Hiſtory of Plants, by *Dalechamp*, printed at *Lyons* 1586, two Vols. in *Folio.*

J. B. An univerſal Hiſtory of Plants, by *John Bauchinus*, in three Vols. *Folio*, printed at *Embrun*, 1650.

Inſt. R. H. Ray's Hiſtory of Plants, *London* printed 1704, in three Vols. *Folio.*

Hort. Lugd. Bat. Hortus Lugduni-Batavorum, or a Catalogue of rare Plants, which are growing in the Phyſic Garden at *Leyden*, printed in *Octavo* at *Leyden*, 1695.

Tournef. Coroll. A Corollary to the inſtitutions of Botany, by *Joſeph Pitton Tournefort*, printed at *Paris* 1703, *Quarto.*

Boerh. Ind. alt. The ſecond part of *Boerhaave*'s Index of the Plants growing in the Phyſic Garden at *Leyden.*

H. C. The *Hortus Catholicus*, *i. e.* the Univerſal Garden, by *Franciſcus Cupani*, printed at *Naples* 1696, *Quarto.*

Mor. Hiſt. An univerſal Hiſtory of Plants, by *Robert Moriſon*, printed at *Oxford* 1699, in three Vols. *Folio.*

Tabern. Icons of Plants, by *Taberræ-montanus*, printed at *Francfort* 1590, *Folio.*

Martin. Hiſt. John Martin Profeſſor of Botany in *Cambridge*, his *Decades* of rare Plants.

Germ. Emac. Gerard's Hiſtory of Plants, improved by *Thomas Johnſton*, printed at *London* 1633, *Folio.*

H. Eyſt. Hortus Eyſtettenſis, by *Baſilius Baſler*, printed at *Norimberg* 1618, *Folio.*

Hort. Cathar. The *Hortus Catharticus*, printed at *Amſterdam*, 1695.

Miller.

Morison. Histoir. Ting. *Morison*'s History of *African* Plants.

Hort. Amst. The History of rare Plants, which are growing in the Physic Garden at *Amsterdam*, by *Caspar* and *John Comelines*, printed at *Amsterdam*, in two Vols. *Folio*, 1701.

Hort. Elth. *Hortus Elthamensis*, or a Description of rare Plants which were growing in the Gardens at *Eltham*, as they are classed by Dr. *John James Dillenius* in two Vols. *Folio*, with Figures, printed at *London*, 1732.

Raii Hist. *Ray*'s History of Plants, printed at *London* 1704, three Vols. *Folio*.

Clus. Hist. *Charles Clusius*'s History of rare Plants, printed at *Antwerp* 1605, *Folio*.

H. R. P. A Catalogue of the Plants growing in the Royal Gardens at *Paris*, printed at *Paris* 1665, *Folio*.

Park. Theat. Bot. The Theatre of Plants by *John Parkinson*, printed at *London* 1640, *Folio*.

Pluck. Phyt. *Plucknet*'s *Phytographia*, *i. e.* a Delineation of Plants, printed at *London* 1692, *Folio*.

Bocconi rar. Plant. Figures and Descriptions of rare Plants, observed by *Paul Bocconi* in *Sicily*, and printed at *Oxford*, 1674, in *Quarto*.

The List of Annuals, *&c. with their Botanical and* English *Names, as also the Culture of each Plant, with Figures of Reference to the* Dutch *Catalogue.*

1st, *Abutilon grossilaria folio flore rubro*; the proper name of this plant is, *Malva Caroliniana repens Grossularia folio*; it requires a gentle hot-bed in the spring, and when the plants are three inches high, they should be transplanted into the flower borders, and shaded until they take root, and planted into a warm situation, where they will flower, and perfect their seed: Those plants with the *Altheas* or *Mallows* make a fine appearance, flowering most of the summer months, and make a good show

ſhow in the flower-garden; they require a rich ſandy ſoil, and ſhould have the ſame culture with the *Mallows*, which I mention here to avoid repetition.

2d, *Acetoſa Veſicaria*, is a ſpecies of the *Sorrel*, the culture of which every gardener is acquainted with.

3d, *Ageratum folio ſerrato.*

The right name of this plant is, *Ageratum foliis ſerratis, C. B.* the *Common Maudline.* This is propagated in gardens for medicinal uſe; it requires a light undunged ſoil, and is increaſed by parting its roots in ſummer: But I am of opinion, there is another ſort of this plant which is marked in the *Dutch* Catalogues, *Ageratum Alpinum foliis ſerratis glabris flore purpureſcente: Purple flowered Alpine Ageratum*, with ſmooth leaves, ſerrated upon the outer edges of the leaves. This is a very hardy plant, being a native of the *Alps*, and muſt have a ſtrong ſoil in a ſhady ſituation; it creeps upon the ground, and I have uſed it for edgings in the wilderneſs; it increaſes by ſeeds, and by dividing its roots in *Auguſt.*

4th, *Agrimonia Mexicana.* This I take to be the *Eupatorium Peruvianum folio ſubrotundo, trinervi et acuto, flore cæruleo, Vaille-memoires d'Acad. des ſciences. Peruvian Hemp, Agrimony*, with a trinervous ſharp pointed leaf, and blue flowers.

This is a hardy plant, but muſt have a ſandy ſoil, and if raiſed on a moderate hot bed, it will come the ſaſter on; if planted in pots, and under any common hot-bed frame.

5th, 6th and 7th, are already treated of, under the article *Abutilon*, No. 1.

8th, *Amaranthus maxima erecta*, or *Tree Amaranth.*

9th, *Amaranthus ſparſa*, is the *Amaranthus maxima, panicula, longa, pendula, ſemine rubello*, or *Love lies a bleeding.*

10th, *Amaranthus ſpicis viridibus*, or *Amaranth* with a red ſpike, and green tips upon the flower petals.

Theſe three ſorts I have ſeen raiſed and flowered pretty well in the open ground, but they are much better, to be raiſed on hot-beds. Wherefore I ſhall here treat of all the *Amaranthuſes* mentioned in the catalogue, under numbers 393, 394, 395, 396, 397, 398, 399, 401, 402, and inform my readers of their management, by

which I obtained theſe beautiful flowers to their greateſt perfection of bloom.

Having provided myſelf with good ſeeds from abroad, I ſowed them upon a hot-bed of horſe-dung the end of *February*; and in froſty nights covered them with mats laid over the glaſſes; I alſo ſowed them very thin, that when I had occaſion to tranſplant them, (which muſt be done) I lifted them with good balls of earth to preſerve their roots.

If the hot-bed is in good proportion of heat, thoſe plants will appear above ground in a fortnight's time, when you ſhould prepare another hot-bed near the ſeed-bed; that, in tranſplanting, the plants may not ſuffer by being carried too far when they are young, and their roots tender: When this laſt bed is in a right temperature of heat, lift the *Amaranths* from their ſeed-bed with a trowel, and with as much earth as you can; cover this nurſery-bed with ſix inches of good, rich, freſh earth, where they are to be planted in rows, five inches aſunder every way, and water them with a ſmall bottle, and a few ſtraws upon its mouth, whereby the water will drop and not guſh out; and this method is better than to uſe a watering-pot, by which theſe very young plants are ſometimes beat down, when they rot and die. I took care to ſhade them in the heat of the day, by laying mats over the glaſſes, until I perceived the plants to have ſtruck freſh root; and in warm weather, I lifted up the glaſſes to give them air, and theſe I turned inſide out, to dry the ſteam which might be collected upon them from the fermentation of the dung, for ſhould it fall upon the young plants, it would be very prejudicial to them. Cover the glaſſes in the night, to prevent the cold injuring them: In three weeks theſe plants will grow large and near meet, and then I would adviſe planting each in a two-penny pot, and in a hot-bed of tanners bark, or in a glaſs-caſe made for the purpoſe of raiſing tender annuals. I choſe to ſow theſe plants on dung in preference to tan, on account of laying the earth over the dung, which I could not do on tan, and they ſpring better in earth laid on dung, than in pots ſunk in tan.

Directions

Directions for the Conſtruction of a double glazed Frame, for the raiſing of tender Plants, and the Manner of preparing the Bark Bed kept in it; of which an engraved Repreſentation is given, for the readier Conception of its Form.

ABOUT the middle of *March* you are to provide yourſelf with tan, which muſt be firſt laid in an heap to drain; as it would not ferment or heat ſo well, or ſo equally as it would, when ſome of the moiſture is drained off; and for this purpoſe I would make choice of the middling ground bark, as the heat of the largeſt is too violent, and that of the ſmalleſt evaporates too ſoon for the purpoſe of raiſing *Annuals*. As ſoon as you perceive the bark to begin to heat, lay it in your pit, which, in wet ground, ſhould be half a foot below the ſurface of the earth, and in dry ground two; the pit being firſt incloſed with brick, and paved at bottom, to prevent the earth from mixing with the tan: The breadth of this bed ſhould not exceed ſix feet; the length as you pleaſe, but not leſs than twenty. The frame I uſed for this purpoſe, was of the following dimenſions.

Upon the wall, which is to be one foot above the ſurface, you ſhould raiſe a ſquare wooden frame, four feet in height. In this ſquare frame ſaſhes are to be placed in manner of window lights, which occaſionally move up and down; over theſe other ſaſhes are to ſlide in grooves from front to rere, meeting in the centre at top, running under a board which projects on each ſide, to carry the rain on the glaſs, to prevent its deſcending where the ſaſhes meet; this board comes from the piece of timber that divides the ſlopes to the ſouth from thoſe to the north. The occaſion of having ſloping as well as upright ſaſhes to the north is, that in Summer the frame might have all the air poſſible (when the light may be taken away) and in winter, the cold by them would be ſufficiently excluded, to protect ſuch plants as required no more than

common ſhelter from froſt, which, when it became ſevere, I ſet my flue to work, which I had conſtructed in the wall of the north ſide, and in order to encreaſe the warmth, had ſhutters for the upright ſaſhes, and others that moved in grooves to cover the ſloping lights, which were alſo of uſe in ſtormy weather; when I had occaſion to uſe the flue, I did not encreaſe the heat more than to raiſe the *Botanical Thermometer* to near temperate, and even at the diſtance of ten degrees below it, I found it ſufficient to expel almoſt any froſt.

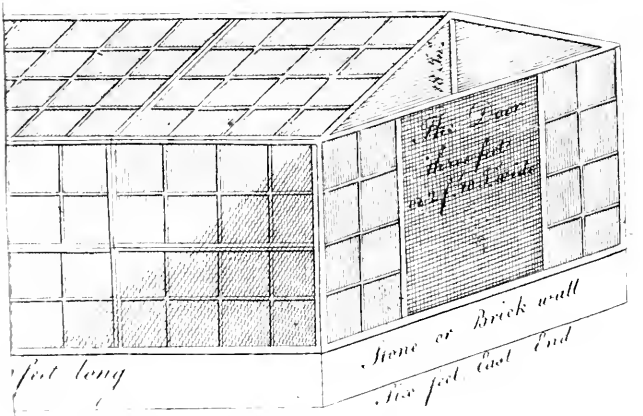
The eaſt and weſt ends of this houſe are alſo to be glazed, and at the eaſt end I erected a ſmall ſhed, to incloſe the fire place of the flue, and the door of entrance. This glaſs-caſe was very convenient; for, in ſummer, I raiſed many *Annuals* (which by miſmanagement, are dwarfs in our climate) to a great ſize; and in winter it was a reſervoir to my tender plants.

But to return to the culture of the *Amaranthus*. As ſoon as I had planted them in their pots, I ſunk them up to their rims in the tan; which if but of a moderate heat, I covered the ſlope-glaſſes of the caſe with mats, until I perceived the *Amaranthuſes* had taken new root, when I opened both the front and ſlope-glaſſes to admit air in the day, in mild weather: By the beginning of *July*, I had them ſix or ſeven feet high, with ſtrong ſtems, and preparing to flower; then I removed them to the greenhouſe, placing them as near the front windows as I could, watering them all over, and in ten days ſet them out, when I ſaw an appearance of rain, and near a hedge, where they might be protected for eight days from the violence of the ſun, and afterwards gave them a warm and calm ſituation, where they flowered, and ripened their ſeed to great perfection; which I took care to gather from the flowers, at the top of the ſpike or ſtalk, but not from thoſe on the collateral branches. The ſoil I uſed for them was good, rich, light earth; and as theſe plants are very free in perſpiring, I took care to give them a good ſhare of water in dry weather, which made them grow ſtrong and flower well.

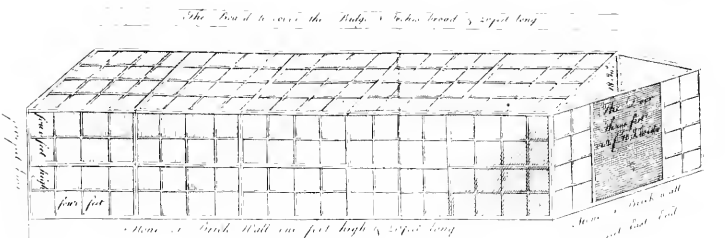
The

p. 360

eches broad & 20 feet long



feet long


four feet
four feet

The ſame culture will ſerve the two ſorts of *Amarantoides*, or *Globe Amaranthus*, or *Everlaſting Flowers*, both which are great beauties: They are named *Everlaſting Flowers*, from their holding their beauty many years, when gathered in full bloom.

The purple kind has been an inhabitant of *England* for many years; the white kind is more rare, and vaſtly beautiful, and they will bloſſom in a good ſtove until *January*.

11. *Anagallis*, or *Pimpernel*, of which there are three ſorts: *Anagallis flore albo*, *C. B. P.* white flowered *Pimpernel*.

12. *Anagallis flore Phœniceo*, *C. B. P. Pimpernel*, with red flowers.

13. *Anagallis flore cæruleo*, *C. B. P. Pimpernel*, with blue blowers.

Theſe grow in cultivated places in the corn-fields; but the beſt ſorts require to be ſown in the ſpring, on a bed of light earth, and to be kept clear from weeds, and well watered, where they will make a good appearance.

14. *Antirrhinum arvenſe flore albo*, *Snapdragon*, or *Frog's Mouth*; of which there are the following ſpecies in the *Dutch* catalogues of flower-ſeeds.

15. Do. *Flore rubro*.

The firſt ſort is the *Antirrhinum medium flore albo patulo. virid. Luſitan*, or *Middle Snapdragon*, with a white ſpreading flower.

The ſecond is the *Antirrhinum majus ſexatile, flore minore purpuraſcente, foliis anguſtiſſimis, Bar. Icon. Great Rock Snapdragon*, with very ſmall leaves, and a purple flower.

16. *Majus perennes flore albo*.

17. Do. *flore rubro*.

18. Do. *variegato*.

The firſt, *Antirrhinum latifolium flore albo, rictu luteo*, *Boerh.* the broad-leaved white flowering *Snapdragon*.

The ſecond, *Antirrhinum latifolium flore rubro, rictu luteo*, the broad-leaved *Snapdragon*, with red flowers.

And the third, *Antirrhinum linariæ angusti folio eleganter variegato, flore rubro, rictu luteo*, ſtriped *Snapdragon*.

Theſe plants ſhould be ſown in *April* or *May*, in an undunged ſandy ſoil; for if they are ſown in rich land, they will neither flower nor proſper: In *October* following, I cut down their ſtems (eſpecially thoſe which attempt to flower the firſt year) within three inches of the ground, whereby their roots will be ſtrengthened; and the beginning of *April* following, I tranſplanted them into the ſame ſort of ſoil, to remain there for flowering: If they are tranſplanted into pots, I chooſe to perform this work the ſecond year after ſowing; and when they had done blowing, took off the off-ſets from the mother plants in *April*, but always from their beſt flowers; then planted them in the pots in a lean ſandy ſoil, mixed with ſome lime rubbiſh, which had lain a year incorporating with the earth before uſing it; by which means I have preſerved theſe plants in vigour for ſeveral years, and have had them to ripen their ſeeds very well with me, from which I have raiſed many fine ſeminal varieties.

19. *Agremona Spinoſa*, or *Agremona Mexicana*, *Tournef.* or the *Prickly Poppy*. This is an annual plant, which ſhould be ſown in *March*, and in *May* tranſplanted into the borders of the flower-garden, where it will thrive and perfect its ſeeds ſo well, that thoſe ſeeds ſcattered on the borders will appear ſoon in the ſpring, and produce their flowers annually.

20. *Alarina Lobellii* is the *Aſarini Lobelii Lugdun.* 915. *F.* 171. *Hedera ſexatilis magno flore*, *B. P.* 306. *Antirrhinum foliis oppoſitis cordatis crenatis*, *H. Cliff.* 325. *Rock Alehoof*.

This plant requires the ſame culture with the *Snapdragon* or *Antirrhinums*; they grow beſt in a ſandy, or rather a ſtoney ſoil; for if they are planted in a rich dunged ſoil, they never flower ſo well, and very often rot in winter; wherefore I would adviſe to plant them in court-yards, near walls, and upon a ſandy or rocky ſoil, where they will make a handſome appearance in moſt of the ſummer months.

21. *Aſtra-*

21. *Aſtragalus maritimus* is the *Aſtragalus annuus maritimus, procumbens, latifolius, floribus pediculo inſidentibus, Tournef. Annual Trailing Milk-Vetch* with broad leaves, and the flowers ſitting on pedicles.

22. Do. *Stellatus* is the *Aſtragalus annuus, procumbens, floribus glomeratis purpureis, Boerh. Ind. Annual Trailing Milk-Vetch*, with purple flowers growing in cluſters.

Both theſe ſorts ſhould be ſown in light freſh earth in *March*, and duly watered; and if they are too thick ſown, they ought to be ſo thinned, as to be two feet diſtance plant from plant, and kept clear from weeds; they flower in *June* and *July*, and their ſeeds ripen in *Auguſt*.

23. *Aſphodelus luteus* is the *Aſphodelus luteus et flore et radice, C. B. Yellow Aſphodel*, or *King's Spear*. Theſe plants are propagated by ſeed, which ſhould be ſown ſoon after they are ripe, three inches deep, upon a light, freſh, ſandy ſoil, in a warm border, in *Auguſt* or *September*, which is the beſt ſeaſon, and I would chooſe to perform this work in this manner: Make a bed four feet broad, and as long as you pleaſe; then ſow your ſeed, thruſting them one inch deep with your finger below the ſurface of the bed, and afterwards cover them with one inch more of the ſame earth; in the ſpring theſe plants will appear, when they muſt have an inch more of freſh earth laid upon them, which will greatly ſtrengthen their young roots; they muſt be kept clear from weeds, and watered in dry weather: In *October*, a new cover of two inches of the ſame earth muſt be put upon them: The beginning of *March* following, I planted them out into borders, where they are to remain and flower; they are alſo propagated by dividing their roots in autumn, once in three years, but not oftner; and obſerve to let ſix inches of earth be above the root when it is planted, and at twelve inches diſtance root from root: Thoſe roots, which you intend to propagate by off-ſets, ſhould have their ſtalks cut down ſo ſoon as their flowers fade; the ripening of their ſeeds waſtes the roots, and hinders them to off-ſet. Some perſons adviſe to tranſplant them the firſt year after ſowing, but that is a practice I would not recommend, as they have not ſtrength to flower the ſe-

cond year; and ſhould that work be performed at *Michaelmas*, it is doubted if theſe young plants would outlive a ſevere winter.

24. *Aſter Chinenſis magna, Flore cæruleo.*
25. —— *flore albo magno.*
26. —— *flore purpureo.*
27. —— *minor flore albo.*

But their botanical names are, *Aſter annuus caule villoſo, purpuraſcente Eryngii folio, flore maximo purpureo, pulcherrimo, ſemine violaceo, Kian-ſita, Sinenſis Jeſſieu, H. R. P. Annual Star-wort* from *China*, with purple hairy-ſtalks, eryngo leaves, and a beautiful large purple flower, and violet-coloured ſeed. There are alſo ſome of them with blue, large white, and ſmall whitiſh coloured flowers; and one kind, the ſeed of which I had lately ſent me, whoſe flower leaves are white, and moſt elegantly ſtriped with a bright ſcarlet colour.

Theſe are all vaſt pretty ornaments to the flower-garden in autumn; they ſhould be ſown upon a rich ſandy border in the middle of *March*, and when they are two inches high, ſhould be tranſplanted into a nurſery-bed of the ſame ſoil, and be well watered and ſhaded from the rays of the ſun, until you perceive them to be taking new root: Some of the ſtrongeſt may be lifted and planted in pots, filled with the ſame ſoil, to adorn court-yards and parlours, where they will make a moſt handſome appearance: They flower in *Auguſt*, *September* and *October*, and ſome of them ripen their ſeeds. I have raiſed many ſeminal varieties, beſides thoſe mentioned in the *Dutch* catlogues, from ſeed of my own ſaving; to procure which, I uſed two methods: In *July*, I ſowed ſome of their ſeed in pots, and during the winter, gave them ſhelter, either in the green-houſe, or under a frame, to keep them from the froſt, which would entirely ruin them: By this method, my plants were ſtrong, fit to plant out in *April*, and flowered in *May* and *June*; and I had from theſe plants as fine ripe ſeed in *September*, as any which came from abroad; from which, *anno* 1749, I raiſed many extraordinary beautiful, ſeminal varieties of pink, deep carnation, blue, white, and purple colours, and one in particular with a ſtriped blue

and

and white flower. Some of theſe ſeeds I ſowed in *February*, upon a moderate hot-bed, which puſhed them forward; theſe I planted out early in the month of *April*, and had the ſame ſucceſs with them as I had with thoſe which I ſowed in autumn: At which ſeaſon I would recommend the ſowing of all ſuch flower-ſeeds, when there is ſhelter to preſerve them in winter.

We are now come to the double purple ſort.

28. *Aſter Conizoides.*

29. *Jacobea folio.*

Theſe are the two ſorts of *Annual Aſterifcus*, or *Yellow Starworts*, at leaſt, if any flower can be ſo named: They muſt be ſown early in the ſpring, on a warm open border: It is needleſs to tranſplant them; for it is better to allow them to remain where they are ſown; by which means, they will flower ſooner, and of conſequence ſeed better than if they were tranſplanted.

30. *Atriplex baccifera* is the *Chenopodio-morus minor*, *Boerh. Ind. Smaller Mulberry Blight*, or *Berry Bearing Orach.*

31. *Odorato* is the *Chenopodio-morus major*, *Boerh. Ind. Greater Mulberry Blight*, or *Strawberry Spinage*; but why it is in the *Dutch* catalogue named *Odorato*, is what I cannot comprehend, becauſe really this plant has but a very faint ſmell, if any.

The uncommon and beautiful appearance of the flowers and ſeed-veſſels of theſe two laſt named plants, makes them deſerve a place in every good garden. That they might bloſſom and ſeed early, I uſed the following culture: About the middle of *February*, I ſowed them upon a hot-bed, whoſe greateſt heat was over; and as ſoon as they came up, gave them air in good weather, by taking off the glaſſes, that they might not be drawn too much, obſerving alſo to water them when occaſion required: Towards the middle of *April*, I tranſplanted them into a bed of rich ground, eight inches diſtance, plant from plant, lifting them with as much earth out of the hot-bed as I could, that their tender roots might not be injured by tranſplanting: This work I performed in an evening, and watered them with a bottle between their roots, rather than with a

garden,

garden-pot, which is too violent for moſt young plants. I covered their bed with mats ſuſtained by arches of hoops, until I perceived they had taken new roots; and in about ſix weeks after, I thinned them if too thick: When they began to grow tall and ſpire up for flower, I ſet down iron-wires cloſe by their ſtems, to which I tied them, by which means they made a more beautiful appearance than if they had trailed upon the ground. They flowered in *June* and *July*, and many of their ſeeds were ripe by the beginning of *Auguſt*, which when I perceived, and that their ſeeds were falling upon the ground, I ſtirred the ſurface of the bed with my hand to cover them; and in about ſix weeks after, I had a plentiful crop of young ſeedlings, which, about the beginning of *October*, I tranſplanted into large pots, and put them under hot-bed frames to ſave them from the ſeverities of the winter, by which management I had a great many plants early in the ſpring to plant out.

I uſed alſo to plant pots full of them, to flower in chambers, and in the green-houſe in the ſummer, with *Balſamines*, *Amaranths*, *Tuberoſes*, *&c.*

The 32, 33, 34, 35, 36, 37, 38, 39, 40, 41 and 42, are all ſeminal varieties of the *Balſamina fœmina*, *Female Balſam*, or *Balſam Apple*. All thoſe ſeeds muſt be ſown on a moderate hot-bed early in the ſpring, obſerving to give them much air, that they may not be drawn ſlender and long by too much heat. So ſoon as they riſe to eight inches, lift them with a good ball of earth, and put three of thoſe plants into a three halfpenny pot; but to have them in the greateſt perfection, obſerve theſe few following rules.

1mo. As to the four firſt ſorts mentioned in the *Dutch* catalogues, *viz. Balſamina fœmina flore albo.* do. *incarnato*, do. *variegato.* do. *purpureo.* I did not chuſe to purchaſe their ſeeds, as they are but ſingle flowers, and few double bloſſoms are to be expected from them; and as we have the ſeeds of the double flowers ſpecified in the ſame catalogue, I thought it more proper to purchaſe thoſe, from which I might expect a fine blow.

2do. In lifting thoſe plants from their hot-bed, I obſerved to pot thoſe only which had ſpotted ſtems, from which

which I always obtained variegated flowers, having, as I ſaid before, tranſplanted them into pots filled with rich, light, freſh earth. I watered them well, to ſettle the earth about them, and ſet them in to my glaſs-caſe, for forcing of *Annuals* (which I have already deſcribed.) I ſet their pots but half-way in the tan-bark, leſt too great a heat might injure their tender roots; but the great fermentation of the bark once over, I ſunk the pots to their brims, obſerving at the ſame time to water and ſhade them well, until I obſerved that they had ſtruck new root; in ſix weeks after, they were ſome three, ſome four feet high, when I removed them from this glaſs-caſe, and put them into the green-houſe, where they bloſſomed moſt beautifully, obſerving to tie their ſtems to long ſmall reeds, to keep them from falling, breaking, or wind-waving.

3tio. As ſoon as they began to expand their bloſſoms, I obſerved to pinch off all ſuch as had but one colour, preſerving thoſe that were variegated, by which means I had always good ſeeds from my own plants, from which I raiſed numbers of vaſt fine flowers every year, preſerving none but the moſt beautiful.

43. *Balſamina fœmina, ſeu Noli me tangere*; this may be ſown in *March*, in a bed of light earth, and may remain where it is ſown, but be ſure to keep it clear from weeds: It is preſerved only by the curious, for the diverſion it affords to perſons who handle its ſeed veſſels when ripe, which burſt with uncommon elaſticity upon the leaſt touch, as moſt kinds of this flower do; wherefore great care ſhould always be had in gathering the ſeeds of their beſt ſorts.

44. *Bellis Americana Coronopi flore luteo.*

The *Latin* word *Bellis*, though improperly given to this plant in the *Dutch* catalogues, induces me to treat of the garden kinds of *Bellis's* or *Daizies* which I had forgot. They are very handſome, and make a very fine appearance, either when they are planted in clumps, or in edgings to borders in a ſhady ſituation; and there are ſix or ſeven ſorts of them which deſerve our regard.

They

They delight in a good hazely loamy earth not dunged, and muſt be tranſplanted, and their roots muſt be parted every year the beginning of *March*, which is the beſt method to prevent their degenerating, or flying off into the flower of the wild *Daizy* or *Gowan*; they proſper beſt in a ſhady ſituation, but not under the drops of trees. But we return to deſcribe,

45. *Bellis Cabo de bon Eſperance.*

46. ——————— *Majus.*

The firſt of theſe is the *Chamæmelum Luſitanicum latifolium, ſive Coronopi folio Breynii*, or *Broadeſt Leaved Portugal Chamomile.* This is a hardy plant; its ſeed ſhould be ſown in the beginning of *March*, on a bed of rich light earth, keeping the ground clear from weeds, and giving frequent waterings; when they are two inches high, tranſplant them into beds at ten inches diſtance; and when they are four inches high, they ſhould be then tranſplanted into large borders, where they are to bloſſom, ſhading them from the ſun, and watering them, until they have taken root, where their flowers will, with others, make a very beautiful appearance.

45th, *Leucanthemum Luſitanicum folio argenteo laciniato. Inſt. R. H. Portugal Ox-eye Daizy*, with a ſilver-jagged leaf. This plant requires the ſame culture with the former, and ſome of them may be planted in pots, to adorn rooms, where their ſhining leaves will make a very good appearance.

46th, *Chamæmelum fætidum, C. B. Stinking Chamomile*, or *May-weed:* This requires the ſame culture, but ſhould not be tranſplanted; but if ſown too thick, ſhould be thinned, and the ground afterwards ſmoothed over with the hand; they require often watering, which will much promote their growth.

47th, *Bidens Canadenſis latifolia flore luteo Tournef. Broad-leaved Canada Hemp-Agrimony*, with a yellow flower; this being a native of *Canada*, muſt be raiſed on a hot-bed early in the ſpring, in order to have it perfect its ſeed in *Britain*; they may alſo be planted into pots, to adorn court-yards or parlours; they agree beſt with a light ſoil.

48th, *Blattaria alba, J. B.* the *White Mulleine.*

49th,

49th, *Blattaria lutea, C. B.* the *yellow Moth Mullein:* I ſowed them in *July* on a dry rubbiſh ſoil, and in winter, in ſevere froſts, I covered them with peaſe haulm; in the ſpring I tranſplanted them into the ſame ſort of ſoil, wherein they flowered and ſeeded very well, and much ſtronger than thoſe plants which were ſown in the ſpring.

There is another ſort of this plant, called *Blattaria flore rubeo, Boerh. Ind.* or *Roſe Coloured Moth Mullein.* This is preferable to any of the two former ſorts; it requires much the ſame culture (with this difference) that I ſowed it in pots, which I put under a hot-bed frame, to preſerve it from the ſeverities of the winter: In the ſpring following, I tranſplanted it into a dry gravelly ſoil, where it proſpered well for ſeveral years.

50. *Borago Cretica flore variegato* is the *Borago flore palleſcente, roſeo, aut ſuave-rubente, Tournef.* The *Borage*, with pale or roſe-coloured flowers.

51. *Borago foliis variegatis, Hort. Lugd. Bat.* The ſtriped leaved *Borage.*

52. *Borago major flore cæruleo, J. B. Borage* with large blue flowers; they ſhould be ſown in *March*, in a poor dry ſoil, wherein they will flower and ſeed beſt.

53. *Buglaſſum anguſtifolium majus flore albo, C. B. P. Greater Narrow-leaved Bugloſs*, with a white flower; theſe plants ſhould be ſown in *March*, in a ſhady place in the wilderneſs quarter, where they will flower and perfect their ſeeds.

54. *Buphthalmum papaveris folio*, &c. is the *Buphthalmum tanaceti folio orientale flore luteo ampliſſimo, Tournef.* the *Eaſtern Ox-eye* with large yellow flowers.

55. *Buphthalmum tanaceti minoris folio incano, flore ſulphureo ampliſſimo, Boerh. Ind. alt. Ox-eye* with hoary leaves, and a large ſulphur-coloured flower.

56. *Buphthalmum orientale tanaceti minoris folio, flore albo ampliſſimo, Tournef. Cor. Eaſtern Ox-eye* with large white flowers.

All theſe flowers ſhould be ſown in *March* on a light undunged ſoil, and in *May* be tranſplanted into the flower-borders, or into pots, to adorn chimneys; they flower in *July*, and perfect their ſeeds early in *September*. I have alſo ſowed them upon a moderate hot-bed in *March* with great ſucceſs.

57. *Pa-*

57. *Bupleurum perfoliatum longifolium annuum, Tournef. Annual long-leaved perfoliated Hare's Ear*; this thrives beſt in a good garden ſoil, and is to be ſown in *March*.

58. *Calaminta magno flore, C. B. Calamint* with large flowers; to be ſown early in ſpring, on a light dry ſoil, wherein they flower and ſeed well.

59. *Calendula flore ſulphurino*, is the *Caltha vulgaris flore Citrino, C. B.* the *Common Marygold*. This plant is improperly named *Calendula*, in the catalogue, for that name is only applicable to the *African Marygold*, whereas the moſt proper name of this plant is *Caltha*, notwithſtanding Doctor *Linnæus* claſſes the *Calendula*'s amongſt the *Caltha*'s.

60. *Caltha vulgaris flore, pallido, C. B.* the *Pale coloured Marygold*.

61. *Caltha polyanthos maxima, C. B.* the *Largeſt double Marygold*.

62. *Caltha media, folio longo prolifera, Boerh. Ind.* the *Chilling Marygold*.

All theſe plants ſhould be ſown in beds or borders of common earth in *March*, the two firſt ſorts are pot-herbs, and, if permitted to ſtand, will, by the dropping of their ſeeds, ſow themſelves.

The ſeeds of the two laſt mentioned ſhould be carefully gathered, and the plants tranſplanted into places where they are to remain and bloſſom. This operation ſhould be performed, when the plants are three inches high, and when there is an appearance of rain; but it will be proper to exchange theſe ſeed with a neighbour or nurſeryman, once every two years, otherwiſe they are apt to degenerate.

63. *Capnoides, Tournef. Podded Fumitory*. This is a very pretty *Annual*; to be ſown in *March*, and when the plants are young, they may be tranſplanted into pots or the borders of the flower-garden, where, if they are allowed to ſhed their ſeeds, they will give abundance of plants the enſuing ſummer.

64. *Carduus Italicus ſpinis horribilibus, J. B. Great thorned Italian Thiſtle*.

65. *Carduus humilis alatus, ſive Carduus annuus Mariæ, folio lituris nigris notato, H. Cathart. Dwarf Annual Lady's Thiſtle*, with dark ſpotted leaves.

66. *Car-*

66. *Carduus minor flore luteo, C. B. Leſſer Yellow Thiſtle.*

All theſe plants ſhould be ſown in a dry poor ſoil in the ſpring, but ſhould not be tranſplanted. They perfect their ſeeds very well in *Britain.*

67. *Caryophillata flore luteo,* is the *Caryophillata montana, flore magno luteo, J. B. Mountain Avens* with great yellow flowers.

Theſe plants may be ſown in *March,* ſhould be tranſplanted into moiſt ſhady borders, and may be increaſed by parting their roots in the ſpring, when they will make a fine appearance in a wilderneſs, without any culture, but keeping them clear from weeds.

68. *Caryophillus Sinenſis ſupinus Leucoii folio, flore pleno, Boerh. Ind. alt.* the *Double China Pink.*

69. *Caryophillus Sinenſis ſupinus. Leucoifolio flore vario, Tournef.* the variegated *China* or *Indian Pink.*

Theſe plants from ſeeds afford a charming variety of very rich colours, from whoſe flowers only the ſeeds are to be gathered, for they are very ſubject to degenerate, and they have this particularity in them, that from the ſeed of the double flowers come always double flowers, but the ſeeds ſaved from ſingle flowers ſeldom produce double flowers.

I always ſowed the ſeed in *April* on a moderate hot-bed to haſten their vegetating; and after they had arrived two inches high, planted them out, (having firſt, whilſt in the hot-bed, inured them to the air) into a nurſery-bed; ſo ſoon as I perceived them ſpring up to flower, I cut them all off, never ſuffering them to flower the firſt year, for thereby their roots are much injured; they endure the cold very well in winter; and the ſucceeding ſeaſon I allowed them to flower at pleaſure: Of the fine ſorts, ſo ſoon as they appeared, I took off the off-ſets and planted them in the borders of the flower-garden, whilſt I kept their mother roots in the nurſery-bed to give me ſeed. Nor did I allow theſe young plants to flower the firſt year after tranſplanting, but nipped all their flower-buds off. With this management I had very fine flowers for many years together.

70. *Carthamus officinarum flore crocco, Tournef. Baſtard Saffron* or *Saf-flower*; this plant delights in a good rich ſoil,

foil, and when they are two inches high, ſhould be tranſplanted; or if they are ſown too thick, they ſhould be thinned, for their branches ſpread much, by which means their ſeeds do not ripen ſo well. They make uſe of this plant in *Germany* for dyers, and ſow them in the open fields.

71. *Caucalis Monſpeſſulanus, Tournef.* or *Baſtard Parſley of Montpellier*; this plant grows well in rich garden ground, and ſhould be ſown in *March:* It is no great beauty, and is no otherwiſe to be regarded than as it makes a variety in your collections. It ſeeds well in *Britain.*

72. *Cerinthe quorundam major, flore albeſcente, J. B.* the *Large Honeywort* with whitiſh flowers.

73. *Cerinthe quorundam major, flore flavo, folio, ſpinoſo, J. B.* the *Large Honeywort* with prickly leaves and a yellow flower.

74. *Cerinthe flore verſicolore ex albo et purpureo, Boerh. Ind. alter.* the *Honeywort* with purple and white party-coloured flowers.

75. *Cerinthe flore verſicolore ex albo et rubro, Boer. Ind. alter.* the *Honeywort* with party-coloured flowers of red and white.

The ſeed of all theſe plants ſhould be ſown in autumn after they are ripe, for if they are kept until the ſpring they ſometimes do not germinate; they are to be ſown on a warm border by a wall, and they will withſtand the winter ſeverities without covering; in the ſpring, in moiſt weather, they may be tranſplanted into the borders of the flower-garden; where they will make a pretty variety; and if they are there allowed to ſhed their ſeed, you will have plenty of plants the enſuing ſummer.

76. *Chryſanthemum matricariæ folio flore albo pleno, H. C.* the *Double White Corn Marygold.*

77. *Chryſanthemum matricariæ folio, flore luteo pleno, Boerh. Ind.* the *Double Yellow Corn Marygold.*

78. *Chryſanthemum Creticum, petalis florum fiſtuloſis, Tournef.* the *Quilled Corned Marygold.*

79. *Chryſanthemum matricariæ folio, flore pleno ſulphurino, Boerh. Ind.* the *Double Sulphur-coloured Marygold.*

I always ſowed thoſe plants upon a moderate hot-bed, in order to have them early; and when two inches high,

high, I tranſplanted them into a nurſery-bed, where I ſuffered them to remain until they were preparing to flower, when I marked ſuch as were double and ſingle, the latter I rejected, but the double I planted in the borders, and in pots; theſe in the borders grew very large as to the plant, but had but few flowers; theſe in the pots, by having their roots confined, flowered better, but did not grow ſo ſtrong as to their leaves and ſtalks; in both of theſe methods I was much diſappointed in gathering good ſeed, wherefore I planted cuttings of the double in pots, which took root in three weeks; in winter I covered them with a hot-bed frame, and ſometimes in great froſts put them into my glaſs-caſe, with the *Sedums* and *Ficoides*'s, where I preſerved them through the winter. In *April* I planted them out to flower in a middling ſoil; from the ſeed of theſe plants I always had admirable flowers. The ſame culture I uſed to the different ſorts of the *Flos Africanus*, and the *Flos Tunetanus*.

80. *Chamæpitys moſchata, foliis ſerratis: An prima Dioſcoridis? C. B.* The *Ground Pine* with ſerrated leaves; this plant delights in an undunged ſoil. It is an *Annual*, and ſhould be ſown ſoon after its ſeed is ripe; for if they are kept till the ſpring, the ſeed often fails.

81. *Cicer ſativum, flore candido, C. B. P.* white flowered *Garden Chiches*.

82. *Cicer ſativum flore ex rubro purpuraſcente, ſemine rubro, C. B. Garden Chiches*, with purpliſh red flowers and a red ſeed.

Theſe ſeeds ſhould be ſown in the beginning of *March*, in rows three feet aſunder; and when they appear, they ſhould be hoed up like peaſe in drills; they flower in *July*, and their ſeed ripens in *Auguſt* and *September*.

83. *Clymenum Hiſpanicum flore vario, ſiliqua plana, Tourn. Spaniſh Chichling Vetch*, with a variegated flower, and a plain pod.

I chooſe to ſow theſe ſeeds in *September*: They endure the cold very well, and will flower ſooner than thoſe ſown in the ſpring, and perfect their ſeed better; they delight in a dry, warm, undunged ſoil.

84. *Coluthea Æthiopica, flore Phaſeoli folio herbæ Jovis, Breyn. Cent. Ethiopian Bladder Senna*, with red flowers and leaves like the *Silver Buſh*.

Theſe plants I choſe to ſow on a hot-bed early in the ſpring; and when the plants were four inches high, I tranſplanted them into pots filled with freſh ſandy earth, ſhading them until they had taken new root. In winter I put them into an open glaſs-caſe, covering them from froſt; and the enſuing ſpring, planted them by a warm wall in the open border, where they produced many fine ſcarlet flowers, and perfected their ſeed very well: I alſo obſerved to tye their ſtalks to ſticks, to prevent the winds from breaking their tender branches, by which their beauty would have been loſt: I alſo obſerved never to put them into a green-houſe, for in that ſituation they would have been drawn up too much, to the great prejudice of the plant.

85, 86, 87, 88. Are all ſeminal varieties of the *Chondrilla*, or *Gum ſuccory:* There is little beauty in theſe plants, and they ſhould be ſown in the ſpring upon an open border, where they will flower and ſeed very well.

89. *Conyza foliis argenteis, J. B. Flea-bane* with ſilver leaves.

90. *Conyza foliis aureis, C. B. Flea-bane* with yellow leaves.

Thoſe may be ſown in the ſpring in a dry ſoil, where if kept clear of weeds, they will thrive well; ſome of them I choſe to ſow in pots.

91. *Conſolida Anglica flore albo*, is the *Symphitum*, or *Conſolida major fœmina, flore albo, C. B. P.* The *Greater Female Comfrey* with a white flower.

92. *Conſolida Anglica, flore cæruleo*, is the *Symphitum orientale, folio ſubrotundo, aſpero, flore cæruleo odoratiſſimo, Tourn. Coir. Eaſtern Comfrey* with a rough roundiſh leaf, and a very ſweet ſmelling blue flower.

93. Seminal variety of the 92d ſort.

94. *Symphitum Creticum echii folio anguſto, villis longiſſimis horridis, flore croceo, Tourn. Coir. Candy Comfrey*, with a narrow *Viper's Bugloſs Leaf*, covered with very long hairs, and a ſaffron coloured flower.

95. A ſeminal variegation of the former plant.

96. *Symphitum echii folio ampliore, flore albo Inſt. R. H. Comfrey*, with a large *Bugloſs Leaf* and a whitiſh flower.

All

All thoſe plants are propagated by ſowing their ſeed in *March*, in a freſh undunged ſoil; they ſhould be thinned, and in *Auguſt*, tranſplanted into the places where they are to remain to flower and perfect their ſeed.

97, 98, 99, 100, 101, 102, 103, 104, 105, 106. Are all ſeminal varieties of this plant named the *Conſolida regalis* in the *Dutch* catalogues of flower ſeeds, which is the *Delphinium* or *Lark-ſpur*.

The ſeed of all thoſe plants ſhould be ſown in autumn, immediately after they are ripe; if they come up before winter, they are hardy enough to ſtand the froſt; in the ſpring when they are two or three inches high, they ſhould be tranſplanted into a nurſery-bed and placed one foot aſunder every way, as they branch out very much, and there they may remain to flower, which they will do in *June* and *July*, and ripen their ſeed in *Auguſt*, obſerving to keep the beſt colours, and double flowers for ſeeding, by which means you will improve them, and raiſe great varieties of this beautiful flower.

107. *Convolvulus auriculatus Baconi*, I take to be the *Convolvulus maritimus noſtras, rotundis foliis Soldanella officinarum, Mor. Hiſt.* This plant grows on the ſea-ſhore, or on a gravelly ſandy place in the garden; it may be ſown in the ſpring.

108, 109, 110. Are perfect weeds in a garden, and of thoſe there are many ſeminal varieties of colours; they ſhould be ſown on a bed of light earth in the ſpring, where they will flower, and perfect their ſeeds in autumn.

111. *Cotula flore albo* is the *Chamemælum Æthiopicum lanuginoſum, flore albo Breynii*, woolly *Ethiopian Chamomile*, with a white flower.

112. Do. *Flore luteo* is the *Chamemælum Æthiopicum lanuginoſum flore luteo, Boerh. Ind.* The *Woolly Ethiopian Chamomile* with a yellow flower.

I always choſe to ſow the ſeed of theſe plants on a hot-bed in the ſpring, and afterwards I planted them abroad, where they flowered and perfected their ſeed in autumn.

113. *Cucurbita* or *Squaſh*. They require to be ſown upon a moderate hot-bed; and in *May* you may tranſplant them into rich earth, near to a wall, againſt which you may tie up the branches of theſe *Squaſhes*, where, with their fruits, they will make a very pleaſing appearance.

114. *Cucumis Aſininus*, *Squirting Cucumber*, or the *Elaterium officinarum*, *Boerh. Ind.* This plant is preſerved in gardens for diverſion: For when the ſeed of the plant is ripe, whenever they are touched, they ruſh out with impetuoſity on the perſons who touch them; the ſeed ſhould be ſown on a warm border in *March*, at about nine or ten feet diſtance, where they will thrive exceedingly; and, if ſuffered to ſhed their ſeed, will give you next year, a plentiful crop of young plants.

115. *Cyanus arvenſis diverſi-color* is the *Cyanus ſegetum flore vario*, *Corn-bottle* with a variable flower.

116. Do. *Flore albo*, *C. B.* white flowered *Corn-bottle*.

117. Do. *Flore cæruleo*, blue flowered *Corn-bottle*.

118. Do. *Flore purpureo*, purple-flowered *Corn-bottle*.

Theſe ſeeds ſhould be ſown in autumn, immediately after they are ripe, and in ſpring, they may be tranſplanted into borders, where they will flower and ſeed well.

119. *Cyanus Orientalis*, *flore albo odorato* is the *Cyanus floridus odoratus Turcicus*, *ſive Orientalis major*, *flore albo*, the white flowered *Sweet Sultan*.

120. Do. *Luteo odorato* is the *Cyanus floridus odoratus Turcicus*, *ſeu Orientalis major flore luteo*, *H. L.* the *Yellow Sweet Sultan*.

121. Do. *Purpureo odorato* is the *Cyanus floridus odoratus Turcicus*, *flore purpureo*, *Park. Purple Sweet Sultan*.

The yellow kind I always ſowed upon a hot-bed, to make it vegetate, and afterwards planted them out in *May* into the borders, where they made a gay appearance, being preferable to the other two ſorts in ſmell and colour. The white and purple-flowered *Sweet Sultans* I ſowed in open borders, where they flowered well. All the ſorts require to be well watered in dry weather. I obſerved always to keep the earlieſt blowers for ſeed; as ſoon as they attempted to ſeed from two or three

three flowers, I cut off all the others which haſtened the perfecting of their ſeeds, and this method I practiſed with many annual flowers, which continued in bloom until the froſt pinched them, whereby I gathered good ſeeds.

122. *Ervum verum Camerarii*, *Camerarius*'s true-jointed *Podded Vetch*; their ſeed ſhould be ſown on a warm border, at ten inches diſtance, ſeed from ſeed, whereby their ſeeds will ripen well: They muſt be earthed up like peaſe.

123. *Ervum equinum ſiliqua ſingulari*, *C. B.* the *Horſe Shoe Vetch* with a ſingle pod; the ſeed ſhould be ſown in *March* on a warm border, in the place where they are to remain, one foot ſeed from ſeed, for they ſpread much; they will flower in *June*, and ripen their ſeed the beginning of *September*.

124. *Ervum equinum ſiliqua multiplici*, *C. B. Horſe Shoe Vetch* with many pods. This requires the former culture in every reſpect.

125. *Fœnum Græcum ſativum*, *C. B. Garden Fenugreek*; theſe plants ſhould be ſown in a light ſoil in *March*, and kept conſtantly clear from weeds, and ſhould be thinned, ſo that the plants may ſtand where they were ſown, at one foot diſtance plant from plant; they will flower in *June*, and perfect their ſeed in *September*.

126. *Flos Adonis hortenſis*, *flore minore atrorubente*, *C. B.* the common *Flos Adonis*, with a red flower; the ſeed of this plant ſhould, with other *Annuals*, be ſown in *Auguſt* on borders, where they will out-live the winter, and flower in *April*, and in moſt of the ſummer months, and ripen their ſeed very well. There is another ſort called *Flos Adonis ſylveſtris foliis longioribus*, *flore luteo*, *C. B.* yellow-flowered *Flos Adonis*, which requires the ſame culture, and is a far prettier flower in every reſpect; it flowers early, and makes a moſt beautiful appearance. For this ſee article *Buphthalmum*, *&c.*

127. *Flos Africanus aureo pleno* is the *Tagetes maximus reſtus*, *flore maximo multiplicato*, *aurantii coloris*. Greateſt upright *African Marygold*, with a very large orange-coloured flower.

128. *Tagetes maximus rectus, flore maximo multiplicato fistuloso, aurantii coloris*, upright *African Marygold*, with a very large orange coloured piped flower.

129. *Tagetes maximus rectus, flore maximo multiplicato pallidè luteo odorato.* Greateſt upright *African Marygold*, with a very pale yellow double flower, with a ſweet ſcent.

130. *Tagetes maximus rectus, flore maximo multiplicato pallidè luteo et fistuloso.* Greateſt upright *African Marygold*, with a large double, pale and piped flower, called the *Quilled African*.

131. *Flos Tunetanus vulgaris.* Before I deſcribe this plant and its varieties, I muſt make the proper diſtinction between the *Flos Africanus* and the *Flos Tunetanus*, which are often blended together, under the denomination of *African* and *French Marygolds*. The *African Marygold* is a native of *Africa* about *Tangier*, on the *African* ſide of the *Mediterranean*; whereas the plant here named *Flos Tunetanus* is a *Chineſe* plant, and was firſt ſent over to the King of *France*'s royal gardens at *Verſaille*, by the *French* miſſionaries, from whence it was diſtributed amongſt the curious in *Europe*; and from its being firſt raiſed in *France*, it has been called the *French Marygold*, though both plants require the ſame culture.

132. *Tagetes Indicus minor, flore ſimplici ſive Caryophyllus Indicus, J. B. Common French Marygold*, with a ſingle flower, commonly called *Indian Clove Gillyflower*.

133. *Tagetes Indicus minimus, flore ſericeo hirſutie obſito, H. L. Smalleſt French Marygold*, with a ſmall red hairy flower.

134. *Tagetes Indicus medius flore luteo multiplicato, H. L.* The middle *French Marygold*, with a double yellow flower.

135 and 136, are ſeminal varieties of 132, as is alſo the piped variegated ſort 130, all of which are *Annuals*. To have theſe flowers blow to great perfection, it will be proper to uſe the following culture: In *March* ſow them upon a moderate hot-bed, ſuch as has ſerved to raiſe your early cucumbers, (for a hot-bed of more heat would

would injure them;) when they are two inches high, tranſplant them into another moderate hot-bed, obſerving to ſhade the plants, and to water them often, but gently, until you perceive they have taken new root; the more air they are indulged with every fine day, the better they will proſper. When they are ſeven or eight inches high, tranſplant them into beds in the open ground, covering them with double mats laid upon arched hoops; here they may remain until the middle or end of *May*; then prepare a bed of good, rich, light, ſandy earth, and obſerve to throw out the ſingle flower, which you will know by their long narrow flower-pods; the double have their pods much ſwoln; tranſplant them into nurſery beds, lifting them with balls of earth, or into pots to adorn rooms, or court-yards, thoſe in beds at fifteen inches aſunder, where they will flower and ſeed to great perfection: Theſe I deſigned for ſeed, I nipt off their ſide branches, and never ſuffered them to bear more than three or four heads, and tied their ſtalks up to wires or rods to ſuſtain them from being broken by winds, *&c.* By which method I raiſed many ſeminal varieties of both ſorts, obſerving to plant moſt of the ſweet ſcented ſorts in pots for rooms, the others having a diſagreeable ſcent. By this management, and ſetting them for three weeks into the glaſs-caſe, I have had them five feet high, which rather appeared like flowering ſhrubs than annual plants; thoſe in pots continued flowering all the winter in the houſe, and thoſe in the open borders until the froſt nipped them;—they will do indifferently well, if ſown in the open ground, but will not bear a large flower.

137. *Flos Principis flore albo*; but its true name is the *Amaranthus ſpica albeſcente habitiore, Martin. hiſt. Amaranthus* with a great whitiſh ſpike of flowers.

138. A ſeminal variegation of the former, as is alſo the 139th.

Theſe require the ſame culture with the *Amaranthus*, and thrive with leſs forcing, but as there is no great beauty in thoſe plants, they ſeem at preſent to be much neglected in our *Engliſh* gardens.

The 140, 141, 142, 143, 144, and 145, are all ſeminal varieties of the flower named here *Flos ſolis*, which is botanically called the *Corona ſolis*, *Tabern.* All theſe plants are natives of *America*; notwithſtanding they flower ſo well in this iſland. Theſe here mentioned are *Annuals*, and in the beginning of *March* ſhould be ſown upon a bed of light freſh earth; when they are three inches high, tranſplant them into a nurſery bed, from which they may be removed when they are a foot high, into borders or boſquets, of large flowering plants in the garden, watering them well until they have taken root; and when they flower, tie them up to long ſtakes, that the wind may not break them; their chief beauty conſiſting in their being erect, ſo as to ſhew their large ſtalks and bloſſoms to the greateſt perfection.

146. *Galega vulgaris floribus penitus candidantibus*, *C. B. Common Goat's Rue* with white flowers.

147. *Galega vulgaris*, *flore cærulea*, *C. B. Common Goat's Rue* with blue flowers.

Theſe plants are beſt propagated by ſowing their ſeed in a bed of rich light earth; keep them clear from weeds, and if the plants are too thick, thin them to one foot, plant from plant, and the ſecond year they will flower, and will continue to do ſo for ſome years, provided they are not ſuffered to ſeed, after which they ſoon decay.

148. *Garidella foliis tenuiſſimè diviſis*, *Tournef.* There is no *Engliſh* name for this plant, Dr. *Tournefort* having named it *Garidella*, in honour to Dr. *Garidell*, profeſſor of phyſic at Aix in Provence. This plant requires the ſame culture with the *Galega*, and ſhould never be tranſplanted.

149. *Geranium latifolium annuum floribus cæruleis longiſſimis*, *Hort. Oxonienſis*, broad leaved annual *Cranes-bill* with a blue flower, and a very long beak.

150. *Geranium cicutæ folio Moſchum redolens*, *C. B. P. Muſked Cranes-bill.*

151. *Geranium tenui-folio Myrrhinum*, *flore amplo purpureo*, *ſemine nigricante*, *Barr. obſcur.* fine cut leaved *Crane's-bill*, with a large purple flower and a dark coloured ſeed.

Theſe

Theſe ſhould be ſown in *March* on a bed of freſh light earth, and may be allowed to ſtand to ſeed, which they will drop in autumn, and the young plants will come up before winter; they will flower early the ſucceeding ſpring: Keeping them free from weeds, and thinning them, if too thick; this is all the culture they require.

152. *Glaucium flore luteo, Tourn. Yellow horned Poppy.*

153. *Glaucium orientale flore rubro maximo, Tourn. Coir. Eaſtern horned Poppy,* with a great red flower.

154. *Glaucium flore violaceo, Tourn.* Blue flowered *Horned Poppy.*

The firſt ſort is a triennial plant, if it is ſown in a light undunged ſoil; but if it is ſown in a rich ſoil, it flowers the firſt year, and then often dies.

The ſecond ſort requires the ſame culture. I ſowed both ſorts in *March* in poor ground.

The third grows in many places in *Cambridgeſhire* in *England,* and requires the ſame culture; if they flower the firſt year, cut off their flowers; and the ſecond year you may ſuffer them to flower, when they will perfect their ſeeds much better than in the firſt year.

155. *Gramen Alopecuroides majus, Germ. Emac.* the *Common Fox-tail Graſs.*

156. *Gramen ganniculatem locuſtis maximis Phœniciis tremulis, Tourn.* the greateſt *Quaking-graſs,* with red pannicles; there is a ſort which is white.

157. *Gramen tremulum minus pannicula parva, Farklin. Smaller Trembling-graſs.*——All thoſe ſorts ſhould be ſown in *March,* or in autumn, on a bed of light earth, and require no other culture, but to be kept free from weeds.

158. *Alkekengi officinarum, Tourn. Common Winter Cherry* of the Shops.

This plant is propagated by ſowing its ſeed in the ſpring on an open undunged border; and when they are an inch high, they may be tranſplanted into pots, and ſet in the ſhade, and in *November* will ſhew their fruit, which at firſt is incloſed in a tunicle; which, as it ripens, burſts, and diſplays a fine gold coloured fruit in *December.*

December. I chose to plant them in pots, to confine their roots, which in the open ground spread too much, in which they may be planted.

159. *Hedisarum annuum majus Zeylanicum mimosæ foliis, Tourn.* the greater annual *French Honey-suckle*, with leaves like the *Sensitive Plant*.

160. *Hedisarum clypeatum flore suaviter rubente, H. Eyst. French Honeysuckle*, with a delicate red flower.

161. *Hedisarum clypeatum flore albido, Tourn.* white-flowered *French Honeysuckle*.

The first sort should be sown on a hot-bed in the spring, and then may be transplanted into pots when it is two inches high, and set in a warm situation, where it will flower and seed well: The other two sorts should be sown in *March* on a bed of light earth, and about the middle of *July* should be transplanted into borders or pots, (especially the red flowering sort) where they will flower much better than if they were transplanted in the spring. The red sort makes a fine show with its scarlet blossoms.

162. *Hedypnois annua Tourn. Crooked seeded Hawk-weed.*

These plants should be sown in *April*, in the places where they are to remain (as they do not agree with being transplanted) on a bed of light earth, and to be left at nine inches distance plant from plant.

163. *Hieracium barbatum flore sulphureo medio nigrum, Lesser Hawk-weed*, with sulphur coloured flowers, and black bottoms.

164. *Hieracium barbatum medio nigrum minus, H. L. Lesser yellow Hawkweed.*

165. *Hieracium murorum folio pilosissimo, C. B. P. Golden Hawkweed* with hairy leaves.

The two first sorts should be sown in autumn, in fresh undunged earth, and should be thinned to eight inches plant from plant; they will flower well the succeeding spring, and perfect their seed.

The last sort is an abiding plant, and by parting their roots, may be propagated and planted in fresh undunged, or rather a stony earth, and in any situation.

166. *Hes-*

166. *Hesperis montana pallida odoratissima, C. B. P. Pale Mountain Dame's Violet*, with a very odoriferous smell.

This plant should be sown in *March*, and the following year may be transplanted into a place which has been dunged with tanners bark, which will make the plants produce a great quantity of large flowers: Although these plants are biennial, when you suffer them to seed, yet, by pulling off their flowers before they decay, and cutting them down, which makes their roots produce new heads, they will flower four or five years, without decaying.

167. *Hypecoon orientale, latiore folio, flore magno, Tournef. Corrol. Eastern Horn wild Cummin*, with a broad leaf and a large flower. I would advise the seed of this plant to be sown, (where they are to remain, for they do not agree with transplanting) in autumn, soon after they are ripe; for if sown in spring, they seldom vegetate the first year; but if sown in *August*, they will soon vegetate, and both flower and perfect their seed. They love a fresh, light and undunged earth.

168. *Hypericum vulgare flore luteo, C. P. B. Common St. John's Wort*, is a plant common in *England*; it should be sown in autumn, it loves a fresh undunged soil, and will grow in almost any situation.

169. *Horminum comâ purpureâ violaceâ. J. B. Clary*, with purple *Violet Tops*.

170. A species of the *Horminum*, I never heard of, nor do I know it by this name.

The first plant should be sown in *March*, upon a border of undunged fresh earth, kept clear of weeds, and to stand no nearer than eight inches distance plant from plant, and in *March* transplant them where they are to remain, allowing two feet plant from plant.

171. *Hyssopus flore rubro, C. B. P. Red flowering Hyssop.*

This plant should be sown in a fresh undunged sandy soil, where it thrives better than in rich moist earth, and if sown too thick, should be thinned.

172. *Lathyrus angusti-folius flore rubro, J. B.* Narrow-leaved red-flowering *Chickling Vetch*, commonly called *Scarlet Lupine*.

173 *La-*

173. *Lathyrus anguſti-folius Americanus variegatus, C. B. P.* Narrow-leaved *Chickling Vetch* of *America*, with a variegated flower.

174. *Lathyrus Bæticus flore luteo, Park. Theat. plant. Spaniſh Chickling Vetch* with a yellow flower.

175. *Lathyrus anguſti-folius, flore ex albo et rubro variegato, odorato, J. B.* Commonly called the *Painted Lady Pea.* This is a ſeminal variety of the 176th, but not ſo ſweet ſcented.

176. *Lathyrus diſtoplatyphyllos hirſutus, mollis, magno et peramœno flore odoratiſſimo, Hort. Cathart. Sweet ſcented Pea*; of this kind of *Pea* there is both the purple and white flowered.

177. *Lathyrus ſupinus. Creeping red Chickling Vetch.*

178. *Lathyrus Tingitanus ſiliquis orbi flore amplo ruberrimo, Moriſon. Hiſtoir. Ting. Tangier Chickling Vetch*; with a large deep red flower.

179. *Lathyrus arvenſis repens tuberoſa radice, C. B.* Creeping wild *Chickling Vetch*, with a *Tuberoſe* root.

All theſe plants may be ſown in autumn, or in the ſpring, though I prefer autumnal ſowing by a warm hedge or wall rather than in *March*; for thoſe ſown in *Auguſt* will be four times larger than thoſe ſown in the ſpring. Sown in patches in the garden they look well.

The laſt ſort may be alſo then ſown, and may afterwards be propagated by parting its *Tuberoſe* roots; in *February* I have eaten the roots roaſted like potatoes, which pleaſe ſome palates.

180. *Lavendula folio diſſecto, C. B. Cut-leaved Lavender.*

This plant ſhould be ſown in *March*, in a freſh ſoil, and afterwards tranſplanted into pots, to adorn rooms, where it will flower and ſeed well.

181. *Leucanthemum tanaceti folio, flore majore, Boerh. Ind. Ox-eye Daizey*, with a *Tanzey Leaf* and a large flower.

Theſe plants ſhould be ſown in beds of light freſh earth, and afterwards tranſplanted into a nurſery-bed, at eight inches diſtance, where they may remain until *July*, then plant them into the garden borders, and in the following

following ſpring they will flower. There is another ſort, with a variegated leaf.

182. *Lychnis ſegetum rubra, foliis perfoliatis, C. B. P. Red Corn Campion,* with thorough wax-leaves.

183. *Lychnis hirſuta minor, flore variegato, Tourn. Small hairy Campion,* with a variegated flower, commonly named *Dwarf Lychnis.*

184. *Lychnis coronaria ſativa Dioſcoridis flore albo, C. B. P. Single white Roſe Campion.* The *painted Lady Roſe Campion,* which is the prettieſt flower of all the *Campions,* is cultivated in the ſame manner with the others, but it requires a good undunged freſh ſoil, and to be planted in pots, to ſhelter it from the ſeverities of the weather in winter.

185. *Lychnis hirſuta, flore incarnato, major, C. P. B. Pale Lychnis* of *Conſtantinople.*

186. *Lychnis Hiſpanica Valerianæ rubræ folio, flore purpuraſcente, Tourneſ. Spaniſh Campion,* with a red valerian leaf, and a purple flower.

187. *Lychnis foliis ſcabioſæ altiſſimæ annuæ, quæ foliis Agrimoniæ nonnihil ſimilia ſunt, H. L. Lychnis,* with ſcabious leaves.

188. *Lychnis ſegetum meridionalium, annua, hirſuta floribus rubris uno verſu diſpoſitis, Moriſon. Hiſt. Corn annual hairy Campion,* with flowers ſet on one ſide of the ſtalk.

189. *Lychnis coronaria Dioſcoridis ſativa, flore rubro, veluti flammeo fulgens, C. B. P. Roſe Campion,* with a flaming red coloured flower.

190. *Lychnis ſeu ſaponaria, flore pleno, Tourn.* generally named *Double Soapwort.*

All theſe (except the laſt) ſhould be ſown in *March* on beds of light freſh earth, and from thence tranſplanted into nurſery beds of the ſame earth, at ten inches diſtance, where they ſhould remain till ſpring, when they muſt be tranſplanted into the borders of the pleaſure garden. The laſt ſort bears ſeed, and being a flower of no great beauty, is planted in a place by itſelf, being a great runner, therefore I always uſed to plant it in pots for rooms, where, with other flowers it made a very good appearance.

191. *Linaria annua anguſti-folia, floſculis albis longius caudatis, Triumph.* *Narrow leaved annual Toad-flax*, with ſmall white flowers, having long ſpurs.

192. *Linaria annua anguſti-folia, flore ex albo et luteo variegato majore, Moriſ. Hiſt. Plant.* *Narrow leaved annual Toad-flax*, with a large variegated white and yellow flower.

193. *Linaria latifolia tryphylla, flore purpureo magno ricto aureo, Hiſt. R. H.* *Broad three leaved Toad-flax*, with a purple flower and a golden ſtandard.

194. *Linaria quadrifolia lutea, C. B. P.* *Four leaved yellow Toad-flax.*

195. *Linaria perennis purpurea major odorata, C. B. P.* *Great purple ſweet ſmelling Perennial Toad-flax.*

All theſe may be either ſown in light freſh earth in autumn, (which I would rather adviſe) or in the ſpring, and be kept clear from weeds; and the *Perennial* kind may, from the ſeed-bed, be tranſplanted into the middle of large borders in the flower-garden, where they will make a fine appearance, as they continue long in bloom. It will be proper that this work be done in *April.*

196. *Linum ſativum latifolium Africanum fructu majore Tournef.* *Broad leaved African Flax*, with a large fruit.

197. *Linum perenne majus cæruleum, capitulo majore, Moriſ. Hiſt.* *Greater Perennial blue Flax*, with a larger head.

198. *Linum umbilicatum*, is the *Omphalodes linifolia, Tourn.* called *Venus Navel Wort.*

The two firſt ſorts ſhould be ſown in the ſpring, upon a bed of light earth, to be kept clear from weeds, where they will flower well; the laſt ſort I always choſe to ſow in autumn, when they will flower early, and ripen their ſeed much better, than thoſe ſown in ſpring.

199. *Lyſimachia orientalis anguſti-folia, flore purpureo, Tourn. Corr.* *Narrow leaved Willow-herb*, with a purple flower.

The ſeeds of this plant ſhould be always ſown in autumn, (for if they are kept till the ſpring, they do

not

not grow) on a warm border of light freſh earth, and in the ſpring the plants may be removed into a place where they may have the morning ſun, and where they are to flower, for they are not fond of being often tranſplanted.

200. *Lotus ruber ſiliqua anguloſa, foliis variegatis, Boerh. Ind. Red ſquare podded Birdsfoot, Trefoil,* with variegated leaves.

201. *Lotus anguſti-folius, flore luteo purpuraſcente, ex inſula Sancti Jacobi, Hort. Amſt. Narrow leaved Birdsfoot Trefoil,* with a yellow purpliſh flower from *St. James's Iſland.*

The firſt of thoſe plants is a ſeminal variety, but has this excellent qualification, that theſe ſeedlings always retain their variegation, which few variegated plants do.

The ſecond ſort is a tender plant, and both of them require to be raiſed upon a moderate hot-bed in *March*, ſuch as has uſed to raiſe early *Cucumbers*. When the plants are two inches high, they ſhould be tranſplanted into pots, and theſe pots ſunk into a moderate hot-bed, which will aſſiſt the plants the readier to ſtrike root: As they are impatient of cold, they muſt have a warm green-houſe in winter, and when they are in the hot-bed, they muſt have as much air as poſſible, otherwiſe they will be drawn too much: In *May* their pots may be removed for fourteen days into the ſhade, and afterwards placed in a warm ſituation, free from winds, where they will flower well and ripen their ſeeds; they delight in much water in the ſummer ſeaſon, but in winter muſt have it ſparingly, leſt you rot their tender roots.

202. *Leucoium minus et annuum, Dodon. Leſſer annual Stock Gilliflower.*

203. This I ſuppoſe to be a ſeminal variety of the former, though I muſt own I never ſaw the plant.

I ſowed the ſeeds of the firſt plants at two ſeaſons, in *March* and in *May*, upon a light bed of freſh earth, and obtained many double from ſeed. The ſeedlings at both ſeaſons flowered in ten weeks time after their being

being ſown, which has acquired it the name of the *Ten Weeks Stock-Gilliflower:* From the double I took cuttings in *July* and *September*, which being planted in pots, in freſh, light, undunged earth, out-lived the winter under the ſhelter of a hot-bed frame, or in an airy glaſs-caſe, with *Ficoides*, &c. and flowered in *April* and *May*.

204. *Leucoium incanum majus multiplex, flore albo, Tourn. Great hoary Stock Gilliflower*, with a double white flower.

205. *Leucoium majus incanum multiplex flore purpureo, C. B. P. Great hoary Stock Gilliflower*, with a double purple flower.

206. *Leucoium flore pleno, ex albo et purpureo variegato, Hort. Elth. Double Stock Gilliflower*, with a double purple and white variegated flower.

207. *Leucoium majus incanum flore roſeo pleno, Boerh. Ind. Alt. Great double Roſe-coloured Stock Gilliflower.*

208. A ſeminal variety of the former plant.

209. *Leucoium majus incanum, flore coccineo, Moriſ. Hiſt.* The great *hoary Stock Gilliflower*, with a crimſon flower, named the *Brumpton Stock.*

210. A ſeminal variegation of the former plant.

211. *Leucoium album odoratiſſimum, folio viridi glabro, C. B. P. Great white Wall-flower.*

212. *Leucoium majus, flore intus luteo, extus ferrugineo*, called the *Raven Wall-flower.*

213. *Leucoium luteum vulgare. Common yellow Wall-flower, C. B. P.*

214. *Leucoium purpureum, C. B. P. Purple early Stock.*

215. *Leucoium rubrum, C. B. P. Early red Stock.*

From the ſeeds of all thoſe plants, I have raiſed many fine double ſorts of extraordinary beauty. Their culture I managed in a particular manner, whereby I loſt none of them by the ſeverity of our winter; and which I would venture to recommend to the curious, as numbers periſh in winter for want of proper management. They are all *Biennials*, except the *Ten Weeks Stock*, therefore, inſtead of ſowing them in *March*, or *April*, I always ſowed them in the middle

middle of *July*, when it was about full moon. I further obſerved, that what ſeed I gathered myſelf, and which I took only from the ſingle flowers that had ſeven, eight, or ten petals or flower leaves; if I preſerved thoſe ſeeds in their pods for one year, and ſowed them in the ſecond, I had more double flowers than if I had ſown them the firſt year: My reaſon for ſowing them in *July*, was, that, to ſow them early, I muſt expoſe them to the winter's froſt, which from many repeated experiments, deſtroyed thoſe flowers, and diſappointed all my expectations. Therefore, as ſoon as they had ſeven or eight leaves, which was about the tenth of *September*, I tranſplanted them into boxes and large pots as thick as they could conveniently be planted; and upon the approach of the winter ſtorms, I moved them into the pine apple ſummer beds, or into hot-bed frames, covering the glaſſes in great froſts with mats, to preſerve theſe ſeedlings, which I planted in a ſandy, light, freſh, undunged ſoil; I alſo obſerved to give them as much air in mild weather as was poſſible: and towards the middle of *April*, having firſt inured them to the open air, I tranſplanted them into nurſery-beds of the ſame ſoil, at eight inches aſunder, plant from plant: Of the double I planted many in pots, and took cuttings off them from their branches, planting them in a ſhady ſituation, which in five weeks, I tranſplanted into pots, or into the borders of the flower-garden: Theſe in pots I have kept many years in bloom and vigour, renewing my cuttings every year to preſerve them, obſerving always to take thoſe cuttings from the branches of the plants which bore no flowers, and giving them ſome ſhelter in winter. The ſingle I threw out; but the ſemi-double, or thoſe plants, whoſe flowers had ſix, ſeven, eight, or more flower leaves, I ſuffered to ſeed, but never ſowed ſeed of my own gathering more than once, chooſing rather to ſow the ſeed which came from abroad, as they are apt to degenerate: I uſed the ſame method with all the wall-flowers, which ſucceeded to my beſt expectations, by which means I had always a fine ſucceſſion of thoſe beauties, which, when in bloſſom, much adorned, and filled my room, court-yard,

green-houſe, and wherever I choſe to diſpoſe of them, with their fragrancy.

216. *Lupinus ſativus flore albo, C. B. P. Garden Lupine,* with a white flower.

217. *Lupinus ſylveſtris flore luteo odorato, C. B. P.* The *Common Yellow Lupine.*

218. *Lupinus cæruleus anguſti-folius elatior Raii Hiſt. Narrow-leaved blue Lupine.*

219. *Lupinus peregrinus major flore incarnato, Hort. Lugd. Great Foreign Lupine,* with a fleſh coloured flower, commonly called the *Roſe Lupine.*

220. *Lupinus ſilveſtris flore purpureo, ſemine rotundo, variegato,* J. B. called the *Leſſer blue Lupine.*

221. *Lupinus peregrinus major villoſus cæruleus. Great blue Lupine.*

222. *Lupinus minor perennis Virginianus repens, Moriſ. Hiſt. Smaller blue-creeping Virginian Lupine,* which is *Perennial.*

All theſe ſorts of *Lupines* are *Annuals* (excepting the laſt;) they ſhould be ſown in a dry ſoil, and in patches of the borders of the flower garden; the talleſt ſorts ſhould be tied up to proper ſupporters, in caſe of winds, whereby their great flower ſtalks, and heavy heads of ſeed veſſels, may not be broke: They continue a long time in flower in ſummer and autumn; but if you deſign to have good ſeed, plant them early in a warm border, and tie up their ſtalks to ſupport them; and as ſoon as their ſeed veſſels appear on the firſt ſtem, cut off all lateral branches, by which means theſe plants, having but one ſtem of pods to maintain, will ripen their ſeed ſooner in autumn, than thoſe which are always flowering and endeavouring to produce ſeed, which they cannot do, by the number of their lateral branches of flowers that are inceſſantly coming out; they do not proſper if tranſplanted.

The laſt ſort is a *Perennial* plant, which will proſper very well, and bear many flowers, if it is allowed to remain in the place where it was firſt ſown; it agrees beſt with a dry light ſoil, where it will annually produce fine ſpikes of blue flowers, but it does not perfect its ſeed in this country.

223. *Marjorana Chetica origani folio villoſo, ſatureii odore, majoribus corymbis albis. Hairy Candia Marjoram,* with

with an origany leaf, and large round tufted white heads.

This is a plant which grows naturally in the *Levant*, and in great numbers about *Smyrna*, from whence I had a quantity of ſeed, but never produced ſeed in this country; it is the beſt of all the *Marjorams*; for if it is required, you may have it at any time in winter, when you plant it in pots in a light freſh ſoil, the better to protect it from the winter; it muſt be ſheltered in the moſt airy part of our green-houſe in winter, ſo as it may not be drawn too much, which is as prejudicial to it, as if it had not any ſhelter; and it muſt have new earth in *May*, little water in winter, but plenty in ſummer.

224. *Malva Bætica flore albo*,

225. Do. *Flore roſeo*,

226. Do. *Flore incarnato*,

227. Do. *Flore rubro*,

Are all ſeminal varieties of the *Candy Mallow*; they are all *Annuals*, and ſhould be ſown in *March* on a light freſh ſoil, and when they are two inches high, may be tranſplanted into the places where they are to remain: If they are ſown in *July*, they will ſtand the winter colds, will flower larger, and ſeed better than thoſe ſown in ſpring.

And here I think it neceſſary to ſpeak of the *Lavatera*'s, although they come nearer to the *Alcea*'s; but as I had no opportunity of treating of them there, I do it here. They are all of them *Annuals*, and I would adviſe them to be ſown in pots in autumn, and ſheltered in winter; and by the middle of *May*, they ſhould be taken out of the pots, and planted in the open ground, where they will flower early and ſtrong, and ripen their ſeed much better than thoſe which are ſown in the ſpring. You may ſow them both in autumn and in *March*, for a ſucceſſion of flowers. The moſt of the *Lavatera*'s are botanically named, *Lavatera Africana, flore variegato*, or *African Lavatera*, with a ſtriped flower.

228. *Malva orientalis erectior, flore magno ſave-rubente, Tourn. Corr. Upright Eaſtern Mallow*, with a large red flower.

This is the prettieſt of all the *Mallows*, making a great ſhow with its fine red flowers in the middle of long bor-

ders with other flowers; it requires the same culture with the other sorts.

229. *Malva Sinensis erecta, floculis albis minimis. Upright Chinese Mallow*, with small white flowers.

230. *Malva foliis crispis, C. B. P.* the *curled leaved Mallow*.

231. *Malva folio variegato, C. B. P.* the *variegated leaved Mallow*.

These are *Annuals*, and require the same culture as the other *Mallows*.

232. *Matricaria foliis elegantissimè crispis, et petalis florum fistulosis, Tournef. Feverfew* with elegant curled leaves, and the flower petals fistulous.

233. *Matricaria flore pleno, C. B. P. Double flowered Feverfew*.

The seed of these plants should be sown in *March*, and should in *May* following be transplanted into borders, with balls of earth about them; they may be also increased, by parting their roots in the spring; but then it is not proper to allow them to seed, for that weakens their roots; therefore, when the plants have done flowering, those you intend to increase by off-sets, should be cut down.

234, 235, 236, 237, 238, 239, 240, 241, are all seminal varieties of the *Medica Cochleata*, or *Snail Trefoil*. For the odd appearance of which plants, no good garden should want them; and as they require little culture, there is no trouble except in keeping them clear from the weeds about them: They should be sown in a warm dry sandy soil in *April*, and about ten days after they are sown, must have water given them to hasten their germinating; if they are sown in wet ground, it will make their seed burst and rot; they should be thinned, if sown too thick, to the distance of a foot, plant from plant, as they creep much, and by all means be kept clear from weeds; they flower in *June* and *July*, and will soon after perfect their seed, which has an odd appearance, and must be laid in a dry place until the spring.

242. *Melilotus Italica* is the *Melilotus Italica foliculis rotundis, C. B. P. Italian Melilot*, with round small leaves.

243. Do.

243. *Melilotus flore violaceo* is the *Melilotus major odorato violacea, Morif. Hift.* Commonly called *Sweet Trefoil.*

244. Do. *Minor* is the *Melilotus corniculis reflexis repens vel minor, C. B. P. Smaller creeping Melilot.*

Thefe plants are all *Annuals*, and fhould be fown on a warm border in *Auguft*, which will make them flower earlier in the year, and ftronger than thofe plants which are fown in the fpring; but as their feed arrives in winter, in *Britain*, from abroad, it will be proper to fow them early in the fpring in a good foil, and on a moderate hot-bed; they fhould be thinned, if fown too thick; but they fhould not be tranfplanted, whereby their flowering and feedling would be poftponed for fome weeks; but allowing thefe plants to remain where they are fown, they will flower foon, and perfect their feed early; when the feed falls on the ground, run it over with a fmall rake, to cover it, and the feed will foon come up if it is rainy weather; they will endure the winter, and flower and feed early: This method I ufed for all fuch plants as required rather to be fown in autumn than in the fpring.

Minionette, or *Magnion d'Ægypte*, fee *Refeda Ægyptica*, &c. No. 310.

245. *Myagrum Monofpermum latifolium, C. B. P. Broad leaved one Grain Gold of Pleafure.*

This is an *Annual* plant; to be fown in *Auguft*; and when the plants are once fown, they will fow themfelves, if you allow their feed to drop; fpring-fowing of the feed does not fucceed fo well, they often failing to germinate at that feafon; keep the plants, when they appear, clear from weeds, and at a foot diftance, plant from plant, which is all the culture they require.

246 and 247, are plants, which, by thefe names in the *Dutch* catalogues, I know not; but this I know, that they are *Millets*; all which are *Annuals*, and require to be fown in *April* on a light fandy warm foil, and fhould be kept clear from weeds, as foon as they appear above ground, which is all the culture they require.—Their feed are good for making puddings.

248, 249, 250 and 251, are all feminal varieties of the *Jalapa*, but not of the *Jalapa officinarum*, or *Jalapa cathartica*, that plant being now found by the late ingenious

nious Doctor *William Houſton*, to be a ſpecies of the *Convolvulus*. But to return to the culture of this plant, called in the *Dutch* catalogues, *Mirabilis Peruviana*, I uſed the following method, which by experience I found to exceed all others: Having procured good ſeed of a variety, I ſowed them in *April* upon a moderate hot-bed; and when they were four inches high, I tranſplanted ſome of them into pots in a light, rich, ſandy ſoil, and ſome of them into a warm border, inuring thoſe in pots by degrees to the open air in *June*: and thoſe which I planted in beds upon a very warm border, I always tied their branches up to reeds, to prevent the winds from daſhing, waving, or breaking them: By this method they will flower late in the year; but the firſt year's flowers are not much to be regarded. As ſoon as the froſt has pinched their ſtalks and flowers, take their roots carefully out of the pots, and borders, keep them all the winter among dry ſand, in a place where no manner of froſt can get at them, and the ſucceeding *March* plant them into pots, which muſt be ſunk into a moderate hot bed of tan bark, obſerving in good weather to give them air, that they may not be too much drawn, which would ſpoil their bloſſoms; by *June* you may take them from the hot bed, ſetting them for ten days in the green-houſe, or for want of one, in a ſhaded place, but not under the dropping of trees. When you take them into the ſhade, water thoſe you intend to keep in pots, giving new earth to them as far in the pots as you can, without touching their main or top roots; thoſe you intend to plant in borders, ſhould have much water the evening before you tranſplant them, that the whole ball of earth may come out of the pot with them; then tranſplant them into pits made in the borders, and fill the pits up with the ſame earth as in the pots: They are one of the *Noctiflorous Plants*; for as ſoon as the ſun's rays are gone off them, they expand their bloſſoms, and ſhut them again when his rays ſhine upon the plants; the ſeeds muſt be carefully looked to every day when they begin to ripen, they being then very apt to drop; and where they fall, they ſpring in autumn, and are thereby deſtroyed in winter. It is beſt to ſave the ſeed of the variegated kind, they ſeldom degenerating from their variega-

variegation. The plants, by this management, will rife to be four feet high, and daily produce new flowers, until the froft pinches them; and notwithftanding their roots will continue fome years, I would chufe to fow their feed annually.

252. *Moldavia Betonicæ folio flore albo Tournef. Turkey Balm*, with a betony leaf and a white flower.

253. *Moldavia orientalis falicis folio, flor parvo cæruleo, Tourn. Corr. Eaftern Moldavia*, with willow leaves and a fmall blue flower.

254. *Moldavia orientalis Betonicæ folio flore magno violaceo, Tourn. Corr. Eaftern Moldavia*, with a betony leaf and a large violet flower.

The firft and fecond forts are *Annuals*, and fometimes *Biennials*, and fhould be fown in *March* on a border, in a very warm fituation of freth light earth; after they come up, they may be tranfplanted into the borders of the flower garden: They flower in *June* and *July*, and ripen their feed in *Auguft*; fome of their feed may then be fown in a warm fituation, where they will endure the cold of our winters very well; by potting their feedlings, they will be out of danger.

255. *Nardus Bohemica flore albo*, the white flowered *Bohemian Spikenard.*

256. *Nardus Auftriaca flore cæruleo*, blue *Auftrian Spikenard.* Both thofe plants grow in *Germany*, they fhould be fown in autumn, or in the fpring, on a light freth foil, and they may be increafed by parting their roots in *March:* There is no great beauty in them.

257. *Nardus orientalis flore variegato*, the moft beautiful of them all, is the variegated flowered *Eaftern Spikenard*; it requires the fame culture.

258, 259, 260 and 261, are all feminal varieties of the *Naftiurtium Indicum* or *Acrivifla.* They are all annual plants, and fhould be fown in *March* in a good garden foil three feet diftance, plant from plant, putting two feeds in every pit when you fow them; they are great creepers, and will, in good freth earth, continue in bloom from *June* until the froft kills them; and may be fheltered in winter, by planting cuttings of them in fummer in pots, and thefe cuttings will flower in winter. Their feed when half ripe makes a good pickle.

262. *Necanthemum*; the name given this plant is ſuch as I have not heard of before in any botanical author; I do not know to what genius to apply this *heteroclite* name, of which I know no meaning; and it was to correct theſe blunders in the *Dutch* catalogues, which induced me to undertake this work, however unſucceſsful I may have been; for when I ſowed the ſeed of this odd named plant for two years, and once more in a hot bed, it did not come up, ſo I know nothing of the plant either by its name or appearance.

263. *Nicotiana major latifolia, C. B. P. Greater broad leaved Tobacco.*

264. *Nicotiana major rotundi folia, C. B. P. Greater round leaved Tobacco.* Their culture is in *March*, to prepare a hot-bed of dung, ſow them upon it, as ſoon as you perceive the violent heat of it is over; and when the plants are two or three inches high, tranſplant them into another moderate hot-bed, where let them continue until their leaves are meeting, at which time plant them in a heap of your richeſt compoſt, or ſuch earth as is prepared my melons, and cucumbers, three feet, row from row, and two feet, plant from plant, lifting them with large balls of earth; while they were in the hot-bed, I inured them to the open air, and gave them plenty of water when they required it: In *Auguſt* they prepared to flower, at which time cut off their tops that their leaves might be better nouriſhed; and by the end of that month cut them quite down for uſe, otherwiſe their leaves would have failed and the crop been loſt.

265. *Nigella flore minore albo pleno, C. B. P. Fennel Flower*, with a ſmall white double flower.

266. *Nigella flore majore cærulea pleno, C. B. P. Double blue Fennel Flower*, or *Devil in a Buſh.*

Theſe plants ſhould be ſown in patches, where they are to remain in the borders of the flower-garden in *March*, and watered and kept clear from weeds, which is all the culture they require.

267 *Ochrus folio integro caprecolos emittante, ſemine pullo, C. B. P. Winged Pea* with an entire leaf, ſending forth tendrils and a brown ſeed.

This plant ſhould be ſown in drills, very thin in the rows, three feet row from row, and ſhould be hoed up

as

as peaſe, and kept clear from weeds, and when they ſpire to flower, ſhould be ſupported up by ſticks, whereby they will ripen their ſeed better than if they lay on the ground.

268. *Ornithopodium ſcorpioides, ſiliqua compreſſa, Tournef.* *Caterpillar-Birds-foot*, with a flat Pod.

Theſe plants ſhould be ſown in patches in *March*, on the borders of the flower-garden, and are fit companions for the *Snail*, and *Caterpillar* plants, as they require the ſame culture.

From the 269 to the 278, are the ſeminal varieties of the *Papaver hortenſe*, or *Garden Poppy*; and from 278, to the 285, are the ſeminal varieties of *Corn-poppies*, or the *Papaver erraticum*.

Theſe ſhould be ſown in *March* or *April* in patches, or among the borders of the pleaſure-garden, and ſhould be thinned, the good flowers kept for ſeed, and then pulled up with their roots, otherwiſe they breed vermin.

285. *Pelecinus vulgaris, Inſt. Raii Herb.* *Common Pelecinus.*

This plant ſhould be ſown early in *April*, in a light freſh earth, cleared from weeds, and if too thick, ſhould be thinned; when they ſeed, their pods make a pretty appearance, being ſerrated on both ſides. To have them ſeed well, I would have them ſown on a moderate hot-bed in *March*.

286. *Perſicaria orientalis, nicotianæ folio, calice florum purpureo, Tournef Corr.* *Eaſtern Arſeſmart* with a tobacco leaf and a purple flower cup.

Theſe plants ſhould be ſown in autumn, when their ſeed is ripe; tranſplant them in the ſpring in the borders of large gardens, allowing them much ſpace; for no plant will thrive under the drop of their great leaves.

287. *Phaſeolus flore coccineo, Moriſ. Hiſt.* *Red-flowered Kidney Bean.*

288, 289, and 290, are all ſeminal varieties of this plant; they ſhould be planted in *April*, on a dry ſoil in dry weather, and keeping them clear from weeds is all the culture they require; the firſt ſort I planted in large tubs, and putting a long wooden ſtake in the middle of the earth, and from that tying as many ſtrong packthreads to the inſide of the tub, as I had planted beans, their

their tendrils ran up upon the threads, and when they were in flower they made a fine ſhow, and are very great bearers, and are ſtrongly recommended for family uſe.

291. *Lycoperſicon Galeni, Ang. Yellow Love Apple.*

292. *Lycoperſicon fructu ceraſi luteo, Tourn. Love Apple*, with a yellow cherry-ſhaped fruit.

293. *Lycoperſicon Galeni, fructu rubro, Boerh. Ind. Love Apple*, with a red fruit.

294. *Lycoperſicon fructu ceraſi rubro, Tourn. Love Apple*, or *Pomum amoris*, with a red cherry-ſhaped fruit.

Thoſe plants ſhould be ſown on a moderate hot-bed in *March*, and when they are two inches high, ſhould be tranſplanted into another moderate hot-bed, ſhading them until they take new root; and I took care to give them much air in mild weather: In *June* they may be tranſplanted into pots of good garden mould, ſhading them until they take freſh root, when, giving much water, they will flower and fruit admirably. Some people plant them from the ſecond hot-bed into the open ground, upon a moiſt rich ſoil, where they will thrive well, provided their branches are tied up, which would otherways break by the weight of their fruits.

295. *Ptarmica flore albo pleno, Cluſ. Hiſt. White double flowered Sneezewort.*

296. *Ptarmica flore purpureo pleno, Boerh. Ind. Purple double Sneezewort.*

Thoſe plants make a fine ſhow when they are planted in pots, where their roots are confined, for in good ground their roots ſpread too much; they do well alſo in gravelly borders, where they will make a pretty ſhow: By cramping their roots they flower beſt.

297. *Reſeda folio calcitrapæ, flore albo, Moriſ. Hiſt. Bliſ. Baſtard Rocket*, with a ſtar thiſtle leaf, and a white flower.

Reſeda Ægyptiaca minor floribus odoratiſſimis, or *Yellow flowering Ægyptian Baſtard Rocket*; it is called *Mignion d'Ægypte*, or *Minionette*. For its culture, ſee page 310.

The firſt mentioned *Reſeda*'s ſhould be ſown in *March*, on a bed of freſh undunged earth, keeping them clear from weeds, thinning them, if ſown too thick, to ſix inches plant from plant.

298. *Ricinoides*

298. *Ricinus Americanus, caule virescente, H. R. P.* The greater *Palma Christi*, with green ſtalks. This plant ſhould be ſown in *March* upon a moderate hot-bed, and when they are two inches high, may be tranſplanted, with a good ball of earth, into pots, in *April* into another hot-bed, taking care to ſhade them, until they are well rooted; as they grow very quickly, they will require ſoon two penny or three penny pots; for the purpoſe of raiſing them, force up the ſhell which covers the hole at the bottom of the pot with a ſmall ſtick, when they will come up, earth and all; then plant them into the big pot in freſh light earth, ſhading and watering them until you perceive they grow again, giving them in good weather as much air as you can, by which means they will be fit to be ſet out into the open air with *Myrtles, Oranges, &c.* about the middle of *June*, which ſhould be in a warm place, well ſheltered from winds, as their large leaves (which make a good appearance) would be prejudicial to them: In *October* remove them into the green-houſe, with *Oranges, &c.* where they will flower and perfect their ſeed. When they are ſet abroad in the common air, I tied their ſtems to ſmall green wires, to preſerve them from the injuries of the weather, whereby I have had them eight feet high in ſtem by the ſecond year of their growth.

299. *Scabioſa altiſſima annua, foliis agrimoniæ nonnihil ſimilibus, H. L.* the talleſt *Annual Scabious*, with leaves like *Agrimony*.

The 300, 301, 302, 303, are all ſeminal variegations of the ſame plant; thoſe ſorts I always (contrary to the practice of many) chooſe to ſow at the end of *July*, ſo that they might be tranſplanted before winter into the borders of the pleaſure-garden, when they will be ſtrong plants to endure the winter ſeverities, and flower much better the ſucceeding year than thoſe which are ſown and flower the ſame year; and as it is a dry ſeaſon commonly when they are ſown, I ſowed them on a ſhady and moiſt ſoil, to haſten their vegetation, otherwiſe they will often fail. The ſorts here ſet down in the *Dutch* catalogues are what I uſed, eſpecially the *Scabioſa proliſera*, or *Childing Scabious*, becauſe of its very uncommon appear-

appearance, and the ſtrong muſky ſcent they emit, for which reaſon they are called *Muſk Scabious.*

304. *Scandix Cretica major, C. B. P. Great Shepherd's Needle* of *Crete.* Their plants ſhould be ſown in *Auguſt*, where they are to remain; and keeping them clear from weeds is all the culture they require.

305. *Scorpioides buphleuri folio, corniculis aſperis in ſe convolutis, Moriſ. Hiſt. Prickly Caterpillar.*

306. *Scorpioides buphleuri foliis, ſiliquis levibus, Park. Theat. Bot. Smooth Podded Caterpillar.*

307. *Scorpioides ſiliqua craſſa, Boelii Germ. Emac. Thick Podded Caterpillar.*

Theſe plants ſhould be ſown in beds or patches of the borders of a flower-garden, where they are to remain, as they do not agree with tranſplanting; and when they come up, they ſhould be thinned, if too thick, to one foot, plant from plant, and be kept carefully and conſtantly clear from weeds, which is all the culture they require.

308. *Scolymus Chryſanthemus annuus, R. H. Par. Annual Golden Thiſtle.*

309. Is a ſeminal variegation of the former plant.

Theſe plants ſhould be ſown in *March*, where they are to remain, and on a freſh ſoil kept clear from weeds, and thinned to two feet, plant from plant.

310. *Seſamoides parva Matthioli*; *Matthiolus's Baſtard Seſamum*, or *Oily Grain.*

Theſe plants ſhould be ſown and forced in hot-beds, as was directed for the *Amaranths*, otherwiſe they will not perfect their ſeed in this country.

311. *Campanula arvenſis erecta, flore albo, Inſt. R. Herb. Upright Venus' Looking-glaſs*, with a white flower.

312. *Campanula arvenſis erecta, flore cæruleo, Tourn. Upright Venus' Looking-glaſs*, with blue flowers.

Thoſe plants I ſowed at three different times in the year, in *March* and in *April*, on a bed of light freſh earth, to flower in that ſeaſon, keeping them clear from weeds, and giving them water in very dry weather; as alſo, about the middle of *Auguſt*, to flower early the next ſpring, as they endure the ſeverities of the winter very well, by which means their flowers will be larger, and their ſeed better.

313. *Stachy-*

313. *Stachys agria, folio majore laciniato, Greater Baſe Hore-hound,* with deep-cut leaves. I choſe to ſow the ſeed of this plant in pots in *June*, and to keep them in winter in the green-houſe, as the froſt is very hurtful to them. In the ſpring following, when I tranſplanted them into the open ground, I ſupported their ſtalks; when they bloſſomed and ſeeded very well.

314. *Thlaſpidium annuum, flore pallide luteo, Inſt. R. H. Annual Baſtard Mithridate Muſtard,* with a pale yellow flower.

This plant ſhould be ſown in *Auguſt*, in a poor, dry, warm ſituation, to ſtand the winter, whereby they flower early and perfect their ſeed, which, if allowed to fall on the ground, will produce a plentiful crop of plants next ſeaſon: They muſt be kept clear from weeds. You may alſo ſow ſome of them in pots in caſe of a very ſevere winter, whereby they may be ſheltered under a frame, or in the glaſs-caſe.

315. *Thlaſpi Creticum, quibuſdam flore rubente et albo, J. B. Candy Mithridate Muſtard,* with a reddiſh and a white flower.

316. *Thlaſpi Alpinum, folio rotundo carnoſo, flore purpuraſcente, Inſt. R. Herb. Mithridate Muſtard* of the *Alps*, with a round fleſhy leaf, and a purpliſh flower.

317. Do. *Flore violaceo, Violet-flowered Alpine Muſtard.*

318. *Thlaſpi Luſitanicum umbellatum, folio graminco, flore albo purpuraſcente, Inſt. R. Herb. Portugal Mithridate Muſtard,* with a flower in an umble, and of a white and purple colour.

319. *Thlaſpi parvum ſaxatile, floribus aureis, C. B. P. Small Rock Mithridate Muſtard,* with a geld-coloured flower.

320. *Thlaſpi ſaxatile orientale, floribus aurantii coloris, foliis poligulæ, petalis florum æqualibus, Tourn. Cor. Eaſtern Rock Mithridate Muſtard,* with *Milkwort* leaves, and an orange-coloured flower, whoſe petals are of an equal length.

321. *Thlaſpi Virginianum, foliis Iberidis amplioribus ſerratis, odoratis, Inſt. R. Herb. Virginian Mithridate Muſtard,* with leaves like the *Sciatica* Creſs, ſerrated and well ſcented.

All

All theſe plants are *Annuals*, and their ſeed ſhould be ſown in *March* upon a dry ſoil; keeping them clear from weeds, and watering them in dry weather in ſummer, is the beſt culture you can give them.

322. *Tordilium Narbonenſe minimum*, *Inſt. R. H. Small Narbonne Hartwort.*

323. *Tordilium minus limbo granulato Syriacum*, *Moriſ. Plant. Umbellif. Small Hartwort* of *Syria*, with a gradulated border.

Theſe are *Annuals*, which ſhould be ſown in autumn, and be kept clear from weeds, which is all the culture they require: You may ſow the laſt ſort in pots to be ſheltered in winter.

324. *Trifolium lagopoides hirſutum anguſtifolium Hiſpanicum*, *flore ruberrimo*, *Moriſ. Hiſt. Hairy narrow leaved Hares-foot Spaniſh Trefoil*, with a very red flower.

325. *Trifolium orientale altiſſimum caule fiſtuloſo*, *flore albo*, *Tourn. Corr.* the *Talleſt Eaſtern Trefoil*, with a hollow ſtalk and a white flower.

The firſt ſort makes a fine appearance with its pretty ſcarlet flowers; it is an *Annual*, and ſhould be ſown in *March*, and kept clear from weeds, or they may be ſown alſo in autumn, in pots for winter ſhelter, and for early bloſſoming and ſeeding.

The other ſort may alſo be ſown in autumn, and makes a very good appearance, and ſhould be cleared from all weeds: Both theſe ſorts I had in great perfection by autumnal ſowings.

326. *Maize*, or *Indian Wheat*. There are many ſeminal varieties of this, which differ only in the colour of the grain. Theſe are generally ſown upon a hot-bed, and in *June* are planted out into a rich border, where they are to remain and ripen their ſeed, which come to little without this method of forcing them; you muſt keep them clear from weeds, and give them water in dry weather, which is all the culture they require.

327. *Polemonium vulgare cæruleum*, *Tournef. Greek Valerian*, with a blue flower.

328. *Polemonium vulgare album*, *Tournef. Greek Valerian*, with a white flower.

329. *Polemonium vulgare flore variegato*, *Tourn. Greek Valerian*, with a variegated flower.

The

The ſeed of theſe plants ſhould be ſown in *May* in a good garden mould, they will ſtand the ſeverities of our winters very well, and in the ſucceeding *March*, ſhould be tranſplanted into the borders of the flower-garden, where they will make a very pleaſing ſhow; the firſt ſort flowers early.

330. *Valerianella Cretica fructu veſicario, Tourn. Corol.* *Candy Corn Sallad*, with a bladdered fruit.

331. *Valerianella ſemine in umbello crecente, hirſuto majore, Moriſ. Hiſt. Plant. umbellif.* *Corn Sallad*, with a large hairy umbellicated ſeed.

The ſeed of theſe plants ſhould be ſown in autumn, as they are hardy, and be kept clear of weeds, is all the culture they require, for they will grow in almoſt any ſituation.

332. *Verbaſcum Alpinum perenne nigrum, flore albo, ſtamineis purpureis, H. R. Paris.*

333. *Verbaſcum fœmineum, flore luteo magno, C. B. P.* *Female Mullein*, with a large yellow flower.

The ſeed of theſe plants ſhould be ſown in autumn, as they are very hardy, and in the ſubſequent *March* may be planted out, where they are to remain; but they do not agree with being often tranſplanted.

334, 335, 336, 337 and 338, are all ſeminal varieties of the *Vicia* or *Vetch*, which in all reſpects agree with the culture given to garden peaſe.

339 *Viola tricolor hortenſis repens, C. B. P* *Panſie's Heart's Eaſe*, or *Three-coloured Violet.* Although this plant is ſaid to be annual, yet, when it is allowed to ſcatter its ſeed, it will continue itſelf; but they muſt be kept within bounds, otherwiſe they will ſpread too much. There is a great variety of them. Obſerve to take off-ſets from the beſt ſorts of them: For, although they do not keep to the colours of the mother plant, they are improved by this management, as I have often experienced.

340. *Vulneraria pentaphyllos, Inſt. R. H.* *Five-leaved Woundwort.* The ſeed of theſe plants ſhould be ſown in *March*, in freſh light earth, and in that place where they are to ſtand, muſt be kept clear from weeds, and ſhould be thinned, if they are too thick ſown, which is all the culture they require.

341. *Ur-*

341. *Urtica Romana*, or *Roman Nettle*. This plant ſhould be ſown in *March*, in a hard gravelly ſoil, and will proſper in any ſituation.

Culture of the Plants which flower the ſecond Year after they are ſown, called Biennials.

342. *Acarna Theophraſti & Plinii*, the true name of the plant, is, *Acanthus ſativus vulgaris, ſeu mollis Virgilii, C. B.* the *Smooth-leaved Garden Bearbreach*, mentioned by *Pliny* and *Theophraſtus:* The ſeed of this plant ſhould be ſown in *March* upon a bed of rich light earth, kept clear from weeds; and the year after, they may be tranſplanted into the beds where they are to ſtand and flower, which is the only culture they require; or you may ſow them upon a moderate hot-bed in *March*, to bring them on ſooner.

343. *Aſtragalus Alpinus procerior Alopecuroides, Tourn. Taller Foxtail Alpine Milk-vetch.*

The ſeed of theſe plants ſhould be ſown in the beginning of *April*, upon a bed of freſh light earth, putting a very thin covering over them, and in *June* following, may be tranſplanted into the borders of the flower-garden at a good diſtance, to allow them a large ſpace.

344. *Aquilegia flore variegato, Columbine* with variegated flowers.

345. *Aquilegia Virginiana*, the *Virginian Columbine*, with variegated flowers.

The ſeed of thoſe plants ſhould be ſown on a bed of freſh earth in *March*, and in dry weather, ſhould be moderately watered: In the beginning of *July* they may be tranſplanted into a nurſery-bed of the ſame ſoil, where, if they attempt to flower, nip off their bloſſoms, and in *March* following, plant them either as edgings to the borders of ſummer flowers, or upon the beds, allowing ſome of them to continue in the nurſery-bed, to ſee their colours; and, if good, throw away the bad ones, and ſupply their places with the good ones from your nurſery-bed; tranſplant and divide their roots in the end of *July*, and trim their long fibres, but do not divide their roots too much. I always ſowed the

ſeed

ſeed of thoſe plants once every two years, and ſuch as I had from *Holland*, whereby I had many new varieties.

346. *Lapathum*, or *Burdock*; but when names are given, which no botanical authors treat of (at leaſt the modern ones) it is impoſſible to gueſs at the ſpecies or genus of a plant.

347. *Chenopodium lini folio villoſo. Tournef. Flax-leaved Orach:* called *Belvidere*.

Theſe plants may be ſown in autumn, or early in ſpring, and when they are two inches high, ſhould be tranſplanted into pots or borders; when they are full grown, they make a very pretty pyramidal buſh to adorn rooms; they are very hardy, and ſow themſelves; when in pots, they ſhould be often watered.

348. *Lunaria perennis ſiliqua rotundiore, flore albo, Tourn. Great Perennial Honeſty*, or *Moonwort*, with a round pod and a white flower.

349. *Lunaria major ſiliqua rotundiore argentato, J. B.* the *Larger Honeſty*, with a rounder pod ſilvered; it blows a ſtrong blue flower in *April* and *May*.

Theſe plants ſhould be ſown in autumn, ſoon after their ſeed is ripe, and in *June* following, they will flower, and perfect their ſeed. Their ſeed-veſſels make an odd appearance. Some perſons cut them with long ſtalks, and put them in pots or chimnies during winter.

350. This plant will be treated of amongſt the *Piper Indicum*'s. But as it is *Perennial*, it cannot be kept well in winter without a temperate heated ſtove, where it thrives and fruits very well. Moſt of the other kinds of *Capſicum's* being annuals, I thought proper to give the curious this caution concerning the culture of this plant.

351. *Caryophillus barbatus hortenſis latifolius, flore variegato, Boerh. Ind.* The *broad-leaved Sweet-William*, with variegated flowers.

Theſe plants are beſt propagated by ſeed, which ſhould be ſown in *March* on a bed of rich light earth, and in *June* ſhould be tranſplanted into beds at eight inches diſtance, plant from plant, and in *March*, you may plant them out into the borders, or uſe them

for edging to the borders of the pleaſure-garden, where, if they are of the right kind, they will make a very pretty ſhow.

By this management of their ſeed and ſeedling plants, *anno* 1749, I raiſed in my garden a plant of the whole podded double *Sweet William*, of a finer colour than *Fairchild*'s Mule, and mixed with a black fimbriation round the inſide of the uppermoſt petals. Theſe plants put into pots in a freſh light ſoil, make a pretty appearance in the windows or chimnies of rooms in ſummer.

352. *Clinopodium Virginianum anguſti-folium, floribus luteis ampliſſimis purpureis maculis notatum, cujus caulis, ſub quovis verticillo decem & ſæpe duodecem foliolis purpureis circumcinctus eſt. Baniſterii Pluck. Phytol. Tab.* 24. *Narrow-leaved Virginian Field Baſil*, with the largeſt yellow flowers ſpotted with purple.

This is a pretty ſhowy plant, the ſeed ſhould be ſown upon a very dry warm ſoil, and is hardy enough; though in caſe of extreme hard weather, I had ſome of them in pots, the better to preſerve them from the rigour of our hard winters; you may ſow them upon a moderate hot-bed.

353. *Carlina acaulis magno flore, C. B. Carline Thiſtle* without ſtalks, and a large flower; ſome plants of theſe have white flowers, and others have purpliſh.

The ſeed of theſe plants ſhould be ſown in *March* upon a bed of freſh undunged earth, and ſhould be kept clear from weeds, and thinned, if ſown too thick; they flower the ſecond year after ſowing, but do not agree with tranſplanting.

354. *Colutea orientalis, flore ſanguinei coloris, lutea maculea notato, Tourn. Corr. Eaſtern Bladder Senna*, with a blood coloured flower mixed with yellow ſpots.

The ſeed of this plant I always ſowed in *March* on a moderate hot-bed, and in *May* tranſplanted them into pots, ſheltering them in winter in an airy caſe, and gave them freſh earth in the ſpring of the ſucceeding year, by ſuch culture they flowered and ſeeded well.

355, 356, 357, 358 are all ſeminal varieties of the *Digitalis*, or *Fox-glove*. Theſe plants ſhould be ſown in *March* on a bed of very poor dry ſoil, and kept clear from weeds: The ſecond year they will flower well, provided

vided they are not planted upon too fat ground, which rots them.

359. *Digitalis Virginiana*, erroneouſly called, which induced me to ſow it in the ſame way I did the others, but the winter killed it; I found it to be the *Digitalis Canarienſis acantoides fruteſcens, flore aureo, Hort. Amſtelodam. Shrubby Canary Fox-glove*, with a golden flower.

The ſeed of this ſort I ſowed in *March* upon a hot-bed of tan-bark, and in ſix weeks tranſplanted them into pots of freſh and very ſandy earth, and ſunk the pots into this bed to make the plants take root the ſooner; which when I perceived, I expoſed them in a warm place with other exotic plants, and ſheltered them in a green-houſe in winter, where they ſhould be kept free from all froſt, giving them ſome freſh earth about their roots in *May*. I expoſed them to the open air in *June*, with *Myrtles*, *Oranges*, &c. where they flowered to great perfection, it being one of the prettieſt plants which adorns a green-houſe, and makes a fine ſhow when in flower. I gathered ripe ſeed from it.

360. *Geranium Batrachoides, gratia Dei Germanorum, C. B. P. Cranes-bill* with a crow foot leaf, and a large blue flower.

361. *Geranium Batrachoides, gratia Dei Germanorum, flore variegato, C. B. P. Cranes-bill*, with a crow-foot leaf and a ſtriped flower.

The ſeed of thoſe plants ſhould be ſown in *March*, and in the ſucceeding ſpring may be early tranſplanted into the borders of the flower-garden, where they will flower and ſeed very well, and make a good variety amongſt other flowers of their ſeaſon.

362. *Horminum orientale foliis ragoſis et verrucoſis anguſtis, flore albo, Tourn. Eaſtern Clary* with rough and narrow warted leaves and a white flower.

Their ſeed may be ſown in *March*, and kept clear from weeds, and tranſplanted into the flower-garden the ſucceeding ſpring, where they will flower and proſper well.

363. *Cytinus Aſpinus latifolius, flore racemoſo pendulo, Tourn. Broad-leaved Laburnum*, or *Bean Trefoil*.

The ſeed of this tree ſhould be ſown in *March*, and may be covered with an inch only of good garden mould, and often watered in dry weather. The plants will appear in ſix weeks after ſowing, when they muſt be kept clear from weeds; here they may continue until the *March* following, when they ſhould be tranſplanted into a nurſery-bed by themſelves, at the diſtance of three feet, plant from plant; be ſure always to keep them clear from weeds in the nurſery: They may ſtand for three years, when they may be planted out where they are to remain. It ſeems odd enough, that amongſt *Annual* and *Biennial* flowers, the *Dutch* ſhould inſert the ſeed of this tree in their catalogues; but it having a fine flower, which in *May* makes a pretty ſhow, perhaps has induced them to inſert it. The flowers of this tree are ſaid to be very prejudicial to bees, by purging them.

364. *Lathyrus perennis latifolius major, C. B. Broad-leaved common Everlaſting Pea.*

This ſhould be planted or ſown near high walls of houſes, becauſe of its rampant growth, to which its long branches ſhould be faſtened.

365. *Lathyrus lati-folius perennis minor, flore majore, Boerh. Ind. Broad-leaved leſſer Perennial Everlaſting Pea,* with a larger flower.

Both thoſe ſorts ſhould be ſown in a border as our common garden pea, and be kept clear from weeds, and in *March*, tranſplanted where they are to remain. This ſecond ſort grows only to five feet high, and has a fine large flower. Of this ſort I have ſeen the white flowered kind at Mr. *Young*'s garden at the water of *Leith*.

366. Is already treated of amongſt the *Leucoiums*.

367. *Lychnis coronaria Dioſcoridis ſativa, flore rubro veluti flammeo fulgens, C. B. P. Roſe Campion,* with a flaming red flower.

This plant, when propagated from ſeed, ſhould be ſown in *March* upon a bed of light freſh earth, and be kept clear from weeds: You may, in *June*, tranſplant them into a nurſery-bed, at ſeven inches diſtance, ſhading and watering them gently and often, until they have rooted, and that you perceive them again to grow: In *March* following, you may tranſplant them into

into the flower-garden, where they are to continue; and keeping them always clear of weeds, is all the culture they require.

368. *Lychnis coronaria floribus variegatis*, or *ſtriped flowered Campion:* This requires the ſame culture. Of this ſort particularly I had the double flowered, which was much valued. The painted *Lady Roſe Campion*, agrees well with the culture of the other *Roſe Campions*.

369, 370, 371, 372, 373, 374, 375, 376, and 377, are all ſeminal varieties of the *Malva hortenſis roſea*, or *Holly-hock*.

The ſeed of theſe plants ſhould be ſown upon a bed of freſh earth, the beginning of *April*; having before ſowing watered it, and then covering it with an inch of the ſame mould, keep them clear of weeds, in *March*, I tranſplanted them into the borders, where they were to remain and flower. Their flowers, when going off, and their ſtalks decaying, I immediately cut cloſe to the ground; nor do I approve of tranſplanting them, but this once, from their ſeed-beds, becauſe of their long-tapped root: I always ſowed their ſeed once every two years, for a new ſucceſſion of plants when the old ones failed, which ſeed I always choſe to have from abroad. This plant is very offenſive to bees.

378. Is one of the ſpecies of the *Abutilons*; but I diſtinguiſh it from other ſpecies of the ſame genus, by the name here given it in the *Dutch* catalogues, *Abutilon Mexicanum*.

379. *Moldavica Americana trifolia odore gravi, Tourn. Three-leaved American Moldavica*, with a ſtrong ſcent, commonly called *The Balm of Gilead*.

The ſeed of theſe plants ſhould be ſown in *March* in a hot-bed, and when two inches high, ſhould be planted in ſmall pots ſeparately, and placed again into a hot-bed, where they may continue till *June*, and afterwards be ſet in the air, and in *October* they ſhould be brought into the green-houſe, and put as near the open air as they can, and in mild weather ſhould have air given them. They are alſo propagated by cuttings in any of the ſummer months, and they will take root in three weeks by which means they may be continued, when the old plants fail.

380. *Papaver Indicum perenne, flore magno rubro, Indian Great Peppy.* This is a *Perennial* plant; it ſhould be ſown in patches, where it is to remain, and keeping it clear from weeds, is all the culture it requires. This plant affords plenty of ſeed annually.

381. *Coronopus maritimus roſeus Baconi, Rar. Plant. Roſe-like Sea Buckthorn Plantain.*

The ſeed of this plant ſhould be ſown in *March*, on a border of freſh earth, and kept clear from weeds; and if their ſeed is ſuffered to drop upon the earth, there will be ſufficient of plants.

382. *Scabioſa perennis Sicula, flore ſulphureo, Boerh. Ind. Perennial Sicilian Scabious*, with a ſulphur coloured flower.

The ſeed of theſe plants ſhould be ſown in *March*, on a bed of light earth, and ſhould in *June* be tranſplanted, where they are to remain for good, and be kept clear from weeds: Some of them may be planted into pots, to flower in rooms, and to be preſerved in winter: And this method you muſt uſe with them; for in winter, and in the firſt year of their growth, they are very apt to die.

383. *Santolina flore majore, foliis villoſis et incanis, Tourn. Hoary-leaved Lavender Cotton*, with a larger flower.

Theſe plants are propagated from ſeed ſown on a lean gravelly ſoil; they are alſo propagated by cuttings, which in a little time will take root, and both they and the ſeedlings may be planted into pots, to adorn balconies: They are very hardy plants, and endure the winter well.

384. *Tythimalus latifolius, Cataputia dictus, H. L. Broad-leaved Spurge*, called *Cataputia.*

The ſeed of this plant ſhould be ſown in the end of *April*, on a border of freſh earth, where they are to remain, and be kept from weeds; the ſecond year they will flower and ſeed in autumn, which, if allowed to ſow themſelves, will furniſh abundance of plants.

385, 386, 387, are already deſcribed under the article *Valeriana.*

388. *Vicia ſupra infraque terram edens, Tourn. Eatable Vetch*, having pods both above and below ground. This is an *Africa* plant originally, and has been long culti-

cultivated in the *Eaſt Indies*. I planted the ſeed in large tubs of good earth, and placed them in a tan hot-bed, that they might have room to grow both above and below ground, which they cannot do, when they are confined in the narrow bounds of pots; and without this practice, the plants will not ripen their ſeed, which are indeed a very extraordinary production of nature.

389. *Campanula vulgarior, foliis urticæ vel major et aſperior, flore duplici albo majore, Boerh. Ind. Large Nettle-leaved Bell-flower*, with large double white flowers.

390. *Campanula vulgarior, foliis urticæ, vel major et aſperior, flore duplici cæruleo, Hort. Reg. Pariſien. Large Nettle-leaved Bell-flower*, with a large double blue flower

The ſeed of theſe plants, which are but ſemi-double flowers, ſhould be ſown in a bed of very fine rich ſandy earth in *April*; in *July* they may be tranſplanted, where they are to remain for good, ſhould be kept quite clear from weeds, and be watered at planting, to ſettle the earth to them; they will endure the ſeverity of our winters very well. But if they offer to flower the firſt year, their ſtems ſhould be cut down to the leaves, and the ſecond year they will flower, and ſome of them will ſeed well.

Some of theſe I planted in pots, to have them bloſſom early in rooms. Their common name is the *Viola Mariana*; they are ſold in pots in *May* and in *June*, at *Rome*, to adorn their chambers.

391. *Vulneraria ruſtica, J. B. Ruſtic Woundwort Kidney Vetch*, or *Lady's Finger*. Their ſeed ſhould be ſown in *March*, and ſhould be kept clear from weeds, and they will ſtand the winter very well, and will flower and ſeed well the ſucceeding ſeaſon.

Such Seeds as are to be ſown on Hot-beds.

392. *Abutilum Indicum, flore aurantii coloris, J. B.* the *Indian Abutilon*, with orange coloured flowers.

The ſeed of this plant muſt be raiſed on a hot-bed, and afterwards tranſplanted into pots, or borders of good freſh light earth; and it being an *Annual* plant, will flower and ripen its ſeed; which to have in perfection, the pots ſhould be removed in *Auguſt* into the green-houſe.

The ſeveral ſorts of *Amaranthus*, from 392 to 402 inclusive, together with the *Amaranthoides*'s, have been fully treated of under the article *Amaranthus*, in the beginning of this catalogue, which renders it unneceſſary to be repeated here, ſee No. 10.

403. *Althea Americana, floribus aureis, American Mallow*, with gold coloured flowers.

This plant is propagated by ſeed, which muſt be ſown on a hot-bed in *March*, and ſhould afterwards be potted and inured to the open air, where it will flower well.

404. *Bidens trifolia Americana, Leucanthemi flore. Tourn. Three-leaved American Hemp Agrimony*, with a greater daizy flower.

The ſeed of this plant ſhould be ſown in *March*, upon a hot-bed, to bring the plants forward, and then planted out either into pots, or into warm borders, where they will flower, and perfect their ſeed very well; but I prefer planting them into pots.

405. *Cannacorus, flore luteo punctato, Tourn.* the yellow ſpotted *Indian Reed.*

406. *Cannacorus, flore coccineo ſplendente, Tourn.* the fine *Scarlet Indian Reed.*

The ſeed of thoſe plants ſhould be ſown in *March* upon a good hot-bed, and the plants when they are come to ſome ſtrength, ſhould be planted into pots of freſh light earth, and be again placed with the pots in a freſh hot-bed: When they are firſt taken out of the hot-bed, they ſhould be ſet in the green-houſe, and afterwards be placed in a warm ſituation, and free from winds: They will attempt to flower the firſt year, but thoſe may be cut off, in order to ſtrengthen their roots; the ſecond year they will ſhew their grand bloom; in winter they ſhould be placed in the green-houſe, giving them little or no water; in *March* tranſplant their roots into large pots, put them into a hot-bed to forward them, and afterwards take them out, and uſe them as in the former ſeaſon; but when they are coming to bloom, if you put them into the green-houſe or in rooms, they will bloſſom fairer than thoſe do which have not any ſhelter.

407. *Stramonium Malabaricum fructu glabro, flore ſimplici violaceo odorato, Tourn. Malabar Thorn Apple*, with a ſmooth

ſmooth fruit, and a ſingle violet coloured ſweet ſcented flower, commonly called the *Dutro of the Perſians.*

There is another kind of this *Stramonium, viz. Stramonium Malabaricum fructu glabro, foliis latioribus nervoſis, flore magno. Great Malabar Thorn Apple*, with a large white flower. This plant may be ſown on a hot-bed in the ſpring; it will flower and ripen its ſeed very well in the open air, but if it is houſed, the flowers will be larger.

The ſeed of thoſe plants ſhould be ſown on a hot-bed, and the plants when come up ſhould be treated in the ſame manner as is preſcribed for the *Amaranthus*, to force them on, otherwiſe they will neither flower nor perfect their ſeed.

408. *Ficoides Africana, plantaginis folio undulato, micis argenteis aſperſo, Tourn. Ac. Reg. African Ficoides* with a waved plantain leaf, covered over with ſilver drops, commonly called the *Diamond Ficoides.*

The ſtrange appearance which this plant has of clear large drops of ſubſtances like ice, upon its leaves and ſtalks particularly, gives it a merited place in every collection of plants.

The ſeed of this beautiful plant ſhould be ſown in *February* in pots, put into a hot-bed, and in five weeks after they will come up, provided they are ſown in a dry ſandy mould; when they have ſix leaves, they ſhould be tranſplanted into pots filled with the ſandy mould, and again put into a hot-bed, until they become large plants; but as ſoon as you perceive them to branch out and ſpread, the pots with the plants ſhould be taken out of the beds, and put into the green houſe for ten or twelve days, as near the windows as you can, to inure them to the air.

Some of them you may keep in pots, where they will flower and ſeed better, when their roots are confined, than thoſe which are taken out of the pots and planted in the garden, which will ſpread a great way, and ſhew the ſpangling of their cryſtalline-like matter upon their ſtalks and leaves: But obſerve, when the plants are in pots, and deſigned to flower and perfect their ſeed, that you do not ſuffer their roots to come out at the holes of the pot, for if they reach the earth upon which the pots

are

are placed, they would grow and prevent the plants from flowering or ſeeding; therefore ſet thoſe pots upon the pavement, or upon bricks, which will make them ſoon fly up into ſeed. A friend of mine had from eight plants of thoſe *Ficoides*'s in pots, a vaſt quantity of ſeed, ſo ſurpriſing that I could ſcarce credit ſo ſmall and ſo few plants could produce ſo much ſeed. His method was this: After the plants had been planted for ſome time in the pots, and were proſpering and growing, he put them upon a lead battlement on the top of the houſe, well expoſed to the ſun; the reflection of which upon the leads, made the plants grow well, and their being curbed in growth of leaves, by being confined in the pots, made them to flower, and to perfect their ſeed, in a much greater degree than if they had been in any garden. This I mention for perſons who are deſirous of much ſeed from their plants.

I have alſo kept them all winter, by planting their cuttings in *Auguſt* or in *July*, ten days after I had taken them off their mother plants; and when their wounds at the amputations were dry, I potted them in very dry ſandy mould, placing them in the green-houſe in the moſt airy place, or into the glaſs-caſe, which I have already deſcribed in this work; but at the ſame time preſerving them from all manner of froſt, and giving them very ſmall quantities of water. Theſe plants flowered the ſucceeding year much better than thoſe which were ſown the ſame ſeaſon, and from thoſe plants I had good ſeed.

409. *Lachrimæ Jobi, Cluſ. Hiſt. Common Job's Tears.* The ſeed of this plant ſhould be ſown in *March* on a warm border of freſh earth, at ſix inches diſtance, ſeed from ſeed, and ſhould be kept clear from weeds; this plant is named *Coix* by Doctor *Linnæus*, Profeſſor of Botany at *Upſal*, in *Sweden*.

410. *Melongena ſpinoſa, fructu rotundo crocco, Tourn. Mad Apple*, with a round ſaffron coloured fruit.

411. *Melongena ſpinoſa fructu oblongo violaceo, Tourn. Mad Apple*, with a long violet coloured fruit.

There is now a kind of it called the *Melongena Americana fructu albo oblongo*, or *Egg Plant*, from the reſemblance which the fruit of this plant has to an egg; the culture

culture of which is the ſame with the other *Melongena*'s; obſerving, if you keep it in the ſtove, or in a window within the glaſs, it will become very large, and will there ripen its ſeed well.

I ſowed the ſeed of thoſe plants upon hot-beds in *March*, and in *April* tranſplanted them into another hot-bed, at ſix inches diſtance from one another, giving them good and frequent waterings, and gave them all the air poſſible in mild weather; by the beginning of *June* they had quite filled this bed; then having a bed of good rich earth, in a warm ſituation of the garden, I lifted them with large balls of earth, and planted them into pits made for them, ſhading and watering them until I perceived they had taken new root, keeping them clear from weeds. As ſoon as their fruit appeared, I gave them great plenty of water, without which they will not fruit.

412. *Ocymum minimum*, *C. B. P.* commonly called *Buſh Baſil.* This requires preciſely the ſame culture, with the *Melongena*'s; and when they come from the ſecond hot-bed, may be planted to adorn rooms.

413, 414, 415, 416, 417, 418, 419, 420, and 421, are all ſeminal varieties of the *Capſicum Indicum*, or *Guinea Pepper.* They require the ſame culture which has been preſcribed for the *Amaranthus.* Their fruit either in pots, or in the open ground, make a fine variety, hanging upon the plants in autumn, and in winter.

An Alphabetical Liſt of the Engliſh *Names of the moſt curious* Annual *and* Exotick Plants, *which have been raiſed in our Gardens, with Reference to their Culture, (by the Figures preceding each Article) as directed by Sir* James Juſtice, *Bt. being ſuch as he had from* Holland, *and raiſed in* Scotland. *The Figures have alſo a Reference to the* Dutch *Catalogue, which we have given, that Gentlemen might not be under any Difficulty, when deſirous of importing any of them.*

392 *A Butilon*, the *Indian*, with orange coloured flowers,
196 *African Flax, broad leaved*,
197 ———, the *greater Perennial blue*,

4 *Agri-*

4 *Agrimony*, or *Peruvian Hemp*,
404 ———, the *Hemp* of *America*,
47 ———, the *Hemp*, *broad leaved* of *Canada*,
3 *Alpine Ageratum*, *purple flowered*,
20 *Alehoof*, the *Rock*,
8 *Amaranth Tree*,
10 *Amaranth*, *red ſpiked*, &c.
Amaranthus, *Globe*, p. 321,
137 ———, with a great whitiſh ſpike of flowers,
291 *Apple*, the *yellow Love*,
292 ——, the *Love*, with a yellow cherry-ſhaped fruit,
293 ——, with a red fruit,
294 ——, with a red cherry-ſhaped fruit,
407 ——, the *Thorn*, of *Malabar*, or *Dutro of the Perſians*, with a violet flower,
— ——, the *great Malabar*, with a large white flower,
410 ——, *Mad*, with ſaffron coloured fruit,
411 ———, with violet coloured fruit,
286 *Arſeſmart*, the *Eaſtern*, with a tobacco leaf,
23 *Aſphodel*, *yellow*, or *King's Spear*,
28 *Aſteriſcus*, or *yellow Starwort*,
67 *Avens*, the *Mountain*,
252 *Balm*, the *Turkey*, with a white flower,
379 *Balm of Gilead*,
32 *Balſam Apple*, or *Female Balſam*,
352 *Baſil*, the *Field*, *narrow leaved Virginian*, with its yellow flowers, ſpotted with purple,
287 *Bean*, the *red-flowering Kidney*,
363 ——, *Trefoil*, or *broad-leaved Laburnum*,
342 *Bearbreach*, the *ſmooth-leaved*,
389 *Bell-flower*, the *large Nettle-leaved*, with white flowers.
390 ———, with a large double blue flower,
44 *Bellis's*, or *Daizies*,
347 *Belvidere*, or *Fox-leaved Orach*,
200 *Bird's-foot*, *red ſquare codded*,
201 ———, *narrow leaved*, with a purpliſh flower.
268 ———, the *Caterpillar*,
354 *Bladder Senna*, the *Eaſtern*, with a blood coloured flower, mixed with yellow ſpots,
50 *Borage*, *Roſe coloured*,
51 ———, the *ſtriped leaved*,

52 *Borage*, with large blue flowers,
381 *Buckthorn*, the *Sea Roſe-like Plantain*,
52 *Bugloſs*, *greater narrow leaved*, with white flowers,
346 *Burdock*, or *Lapathum*,
412 *Buſh Baſil*,
58 *Calamint*, with large flowers,
182 *Campion*, the *Red Corn*,
183 ———, the *ſmall hairy*, with a variegated flower,
184 ———, the *ſingle white Roſe*,
186 ———, the *Spaniſh*, with a purple flower,
188 ———, the *Corn Annual hairy*,
189 ———, with a flaming red coloured flower,
367 ———, the *Roſe*, with a flaming red flower,
368 ———, the *ſtriped flowered*,
— ———, *painted Lady Roſe*,
Cardinal, the *Red*, which excels all other flowers in the richneſs of its colours, page 310,
———, the *blue*, do.
305 *Caterpillar*, the *prickly*,
306 ———, the *ſmooth podded*,
307 ———, the *thick podded*,
45 *Chamomile*, the *broadeſt leaved Portugal*,
46 ———, *ſtinking*, or *May-weed*,
111 ———, with a white flower,
112 ———, with a yellow flower,
158 *Cherry*, the *Common Winter*,
81 *Chiches*, *white flowered Garden*,
82 ———, with purpliſh red flowers,
169 *Clary*, with purple and violet tops,
362 ——, the *Eaſtern*, with a white flower,
344 *Columbine*, with variegated flowers,
345 ———, the *Virginian*, variegated,
91 *Comfrey*, the *greater Female*, with white flowers,
92 ———, *Eaſtern*, ſweet ſcented, with blue flowers,
94 ———, with a narrow viper's bugloſs leaf,
96 ———, with a large bugloſs leaf, and white flowers,
248 *Convolvulus*, a ſpecies that expands its bloſſoms when the ſun's rays are off,
115 *Corn-bottle*, with variable flowers,
116 ———, white flowered,
117 ———, blue flowered,
118 ———, purple flowered,

330 *Corn Sallad*, the *Candy*, with a bladdered fruit,
331 ———, with a large hairy umbellicated feed,
149 *Cranes-bill*, with a blue flower,
150 ———, the *muſked*,
151 ———, with a large purple flower,
360 ———, with a crow-foot leaf, and a large blue flower,
361 ———, with a ſtriped flower,
113 *Cucurbita*, or *Squaſh*,
114 *Cucumber*, the *ſquirting*,
167 *Cummin*, the *wild Eaſtern horned*,
44 *Daizies*, or *Bellis's*,
45 ———, the *Ox-eye Portugal*, with a ſilver-jagged leaf,
181 ———, the *Ox-eye*, with a tanſey leaf,
32 *Female Balſam*, or *Balſam Apple*,
43 —— ———, let no one touch me,
265 *Fennel*, with a ſmall white double flower,
266 ——, with a double blue flower, or *Devil in a Buſh*,
125 *Fennugreek*, the *Garden*,
232 *Feverfew*, with curled leaves,
233 ———, *double flowered*,
408 *Ficoides*, covered with ſilver drops, called the *Diamond Ficoides*,
89 *Flea-bane*, with ſilver leaves,
90 ———, with yellow leaves,
126 *Flos Adonis*, with a red flower,
— ——— ———, yellow flowered,
355 *Fox-glove*, a variety of them,
359 *Fox-glove*, the *ſhrubby Canary*, with a golden flower,
155 *Fox-tail Graſs*, the *common*,
14 *Frog's-mouth*, or *Snapdragon*,
63 *Fumitory*, the *podded*,
202 *Gilliflower*, the *leſſer Annual Stock*,
— ———, the *ten weeked*,
204 ———, the *great hoary*, with a double flower,
205 ———, ———, with a double purple flower,
206 ———, with a double purple and white variegated,
207 ———, the *Roſe coloured*,
209 ———, with a great hoary crimſon flower, named the *Brumpton Stock*,

146 *Goat's*

146 *Goat's Rue*, the *common*, with white flowers,
147 ———, with blue flowers,
245 *Grain Gold of Pleasure*, the *broad leaved*,
155 *Grass*, the *common Fox-tail*,
56 ——, the *greatest quaking*, with red pannicles,
57 ——, the *smaller trembling*,
413 *Guinea Pepper*, a variety of them,
85 *Gum succory*,
57 *Hare's Ear*, *Annual long leaved*,
324 *Hare's-foot*, the *hairy narrow-leaved*, with a red flower,
322 *Hartwort*, the *small Narbonne*,
323 ———, the *small*, of *Syria*,
162 *Hawk-weed*, the *crooked seeded*,
163 ———, the *lesser*, with a sulphur coloured flower,
164 ———, *lesser yellow*,
165 ———, the *golden*, with hairy leaves,
339 *Heart's Ease*, *Pansie's*, or *three-coloured Violet*,
369 *Holly-hock*, a variety of them,
348 *Honesty*, or *Moonwort*, with a white flower,
349 ———, the *larger*, with a rounder pod silverised,
72 *Honeyworth*, with white flowers,
73 ———, with prickly leaves and a yellow flower,
74 ———, with purple and white party coloured flowers,
75 ———, with red and white party coloured,
159 *Honey-suckle*, the *greater Annual French*, with leaves like the sensitive plant,
160 ———, the *French*, with a delicate red flower,
161 ———, the *French white flowered*,
313 *Hore-hound*, the *greater Base*, with deep cut leaves,
171 *Hyssop*, the *red flowered*,
248 *Jalapa*, a plant, that only expands its blossoms when the sun's rays are off,
326 *Indian Wheat*,
409 *Job's Tears*, the *common*,
23 *King's Spear*, or *yellow Asphodel*,
363 *Laburnum*, *broad leaved*, or *Bean Trefoil*,
97 *Lark-spurs*,
227 *Lavateras*,
180 *Lavender*, the *cut-leaved*,
383 *Lavender Cotton*, the *hoary-leaved*,

311 *Looking-glaſs, Venus's*, with a white flower,
312 ———, with a blue flower,
291 *Love-Apple*, the *yellow*,
292 ———, with a yellow cherry-ſhaped fruit,
293 ———, with a red fruit,
294 ———, with a red cherry-ſhaped fruit,
9 *Love lies a bleeding*,
185 *Lychnis*, the *pale*, of *Conſtantinople*,
187 ———, with ſcabious leaves,
216 *Lupine*, the *Garden*, with a white flower,
217 ——, the *common yellow*,
218 ——, the *narrow leaved blue*,
219 ——, the *great Foreign*, with a fleſh coloured flower, commonly called the *Roſe Lupine*,
220 ——, the *leſſer blue*,
221 ——, the *great blue*,
222 ——, the *ſmaller blue creeping Virginian*,
412 *Mad Apple*, the ſaffron coloured fruit,
413 ———, a long violet coloured fruit,
1 *Mallow*, *Eaſtern*,
224 ———, the *Candy*,
228 ———, *upright Eaſtern*,
229 ———, *upright Chineſe*,
230 ———, the *curled leaved*,
231 ———, the *variegated*,
403 ———, the *American*, with good coloured flowers,
242 *Melilot*, the *Italian*,
244 ———, the *ſmaller creeping*,
59 *Marygold*, the *common*,
60 ———, *pale coloured*,
61 ———, the *largeſt double*,
62 ———, the *childing*,
76 ———, the *double white Corn*,
77 ———, the *double yellow*,
78 ———, the *quilted corned*,
79 ———, the *double ſulphur*,
127 ———, the *greateſt upright African*, with a very large orange-coloured flower,
128 ———, with a large orange-coloured piped flower,
129 ———, the *greateſt upright African*, with a very pale yellow double flower, with a ſweet ſcent,

130 *Mary-*

130 *Marygold*, the greateſt upright *African*, with a large double, pale and piped flower, called the *Quilted African*,
132 ———, the *common French*, with a ſingle flower, called *Indian Clove Gillyflower*,
133 ———, the ſmalleſt *French*, with a ſmall red hairy flower,
134 ——— ———, the middle *French*, with a double yellow flower,
3 *Maudline*, *common*,
326 *Maize*, or *Indian Wheat*,
343 *Milk-vetch*, the *taller Fox-tail Alpine*,
246 *Millets*,
Minionette d'Ægypte, or the *yellow flowering Baſtard Rocket*, with moſt ſweet ſmelling flower, ſee its culture page 265, *Gingabo*, ſo called by the *Dutch*.
253 *Moldavia*, the *Eaſtern*, with blue flowers,
254 ———, with large violet flowers,
348 *Moonwort*, or *great Perennial Honeſty*,
30 *Mulberry-blight*, or *Berry bearing Orach*,
31 ———, *greater*, or *Strawberry Spinage*,
48 *Mulleine*, *white*,
49 ———, the *Moth*, *white*,
— ———, *roſe-coloured*,
333 ———, the *Female*, with a large yellow flower,
219 *Muſtard*, the *ſmall Rock Mithridate*, with a gold-coloured flower,
320 ———, the *Eaſtern Rock Mithridate*, with an orange coloured flower,
321 ———, the *Virginian Mithridate*,
314 ———, the *Annual Baſtard Mithridate*,
315 ———, the *Candy Mithridate*,
316 ———, the *Mithridate of the Alps*,
317 ———, the *Alpine*, *Violet-flowered*,
318 ———, the *Portugal Mithridate*, with a white and purple flower,
198 *Navel Wort*, the *Venus*,
258 *Naſturtiums*,
341 *Nettle*, the *Roman*,
347 *Orach*, the *Flax-leaved*, or *Belvidere*,
54 *Ox-eye*, the *Eaſtern*, with large yellow flowers,
55 ———, *hoary leaved*, with ſulphur coloured do.
56 ———, with large white flowers,

298 *Palma Chriſti*,
71 *Parſley of Montpellier*, *Baſtard*,
175 *Pea*, the *painted Lady*,
176 ——, the *ſweet ſcented*,
267 ——, the *winged*,
364 *Peaſe*, the *common Everlaſting broad-leaved*,
365 ——, the *broad leaved leſſer Perennial Everlaſting*,
285 *Pelecinus*, the *common*,
415 *Pepper of Guinea*, a variety,
11 *Pimpernel*, *white flowered*,
12 ————, *red*,
13 ————, *blue*,
80 *Pine*, the *Ground*, with ſerrated leaves,
68 *Pink*, the *double China*,
— ——, the variegated *China* or *Indian*,
381 *Plantain*, the *Roſe-like Sea Buckthorn*,
19 *Poppy*, the *prickly*,
152 ——, the *yellow horned*,
153 ——, the *Eaſtern horned*, with a red flower,
154 ——, the *blue flowered horned*,
269 ——, the *Garden*,
278 ——, the *Corn*,
380 ——, the *great Indian*,
405 *Reed*, the *Indian*, yellow ſpotted,
406 ——, the fine ſcarlet,
297 *Rocket*, the *Coſtard*,
367 *Roſe Campion*, with a flaming red flower,
70 *Saffron*, *Baſtard* or *Saf-flower*,
330 *Sallad*, the *Corn Candy*, with a bladdered fruit,
331 ——, with a large hairy umbellicated ſeed,
299 *Scabious*, the *talleſt Annual*,
300 ————, the *Childing* and the *Muſk*,
382 ————, the *Sicilian Perennial*,
84 *Senna*, *Ethiopian Bladder*, with red flowers,
354 —, the *Bladder*, with a blood-coloured flower mixed,
310 *Seſamum*, *Mathiolus's Baſtard*, or *Oily Grain*,
304 *Shepherd's Needle* of *Crete*,
14 *Snapdragon*, or *Frog's Mouth*, with a white ſpreading flower,
15 ———— *great Rock*, with a purple flower,
16 ————, broad leaved and white flowering,
17 ————, red flowers,
18 ————, ſtriped,

295 *Sneeze-*

295 *Sneezewort*, the *white double flowered*,
296 ———, the *double Purple*,
190 *Soapwort*, the *double*,
255 *Spikenard*, with white flowers,
256 ———, the *blue Auſtrian*,
257 ———, the variegated,
384 *Spurge*, the *broad-leaved*, called *Cataputia*,
113 *Squaſh*, or *Cucurbita*, with yellow ſpots,
24 *Star-wort*, *Annual*, from *China*, various colours,
28 ———, yellow,
214 *Stock*, the *Purple early*,
215 ——, the *early red*,
168 *St. John's Wort*, the *common*,
119 *Sultan*, *ſweet*, the *white flowered*,
120 ——, the *yellow flowered*,
121 ——, the *Purple*,
64 *Thiſtle*, *great ſpined Italian*,
65 ——, the *Annual Lady's*, with dark ſpotted leaves,
66 ——, the *leſſer yellow*,
308 ——, the *Annual Golden*,
353 ——, the *Carline*, without ſtalks, and a large flower,
407 *Thorn Apple*, of *Malabar*, or the *Dutro of the Perſians*, with a violet flower,
— —— ——, the *great Malabar*, with a white flower,
191 *Toad-flax*, with ſmall red flowers,
192 ———, the *narrow leaved*, variegated,
193 ———, the *broad three leaved*, purple flower,
194 ———, *four leaved yellow*,
195 ———, the *ſweet ſmelling great Purple*,
263 *Tobacco*, the *great broad-leaved*,
264 ———, the *greater round leaved*,
200 *Trefoil*, the *red ſquare codded Birdsfoot*,
201 ———, the *narrow leaved*, with a purple flower,
234 ———, the *Snail*,
243 ———, the *Sweet*,
325 ———, the *talleſt Eaſtern*,
363 ———, the *Bean*, or *broad leaved Laburnum*,
327 *Valerian*, the *Greek*, with a blue flower,
328 ———, with a white flower,
329 ———, the *Greek*, with variegated flowers,
311 *Venus's Looking-glaſs*,
21 *Vetch*, the *Annual Trail* [illegible] *Milk*.

22 *Vetch*, with purple flowers in clusters,
83 ——, the *Spanish Chickling*,
122 ——, *Camerarius's true jointed podded*,
123 ——, the *Horse Shoe*, with a single pod,
124 ——, ——————, many podded,
166 ——, *Violet, Dame's pale Mountain*,
172 ——, the *Chickling*, red flowered,
173 ——, with variegated flowers,
174 ——, the *Spanish Chickling Vetch*, with a yellow flower,
177 ——, the *creeping red Chickling*,
178 ——, the *Tangier*, with a deep red flower,
179 ——, the *wild creeping*,
334 —— or *Vicia*, a variety of them,
343 ——, the *taller Fox-tail Alpine Milk Vetch*,
388 ——, the *Eatable*, having pods above and below ground,
391 ——, *Rustic Woundwort Kidney*, or *Lady's Finger*,
211 *Wall-flower*, the *great white*,
212 ——————, called the *Raven*,
213 ——————, the *common yellow*,
199 *Willow-herb, narrow leaved*,
351 *William*, the *sweet broad leaved*, variegated,
340 *Woundwort, five leaved*.

Directions for the Culture of the Carnations.

THE next principal flower to the vernal tribe, which shews itself with splendor, is the *Carnation*, of which there are four sorts, *viz.* 1. *Flakes*, of which there are no more than two colours, whose stripes are large, passing through the leaves. 2. *Bizarrs*, they are variegated with three or four different colours, in irregular spots. 3. *Piquetts*, such as have a white ground, spotted with scarlet, red, purple, or any other colour. 4. *Painted Ladies*, such as have their leaves of a red or purple colour on the upper side, and white underneath.

The seed of this flower is to be sown about the middle of *April*, in boxes or pots, filled with fresh light earth,

earth, mixed with rotten cow dung, and well incorporated, before it comes into uſe, the ſeed is to be but thinly ſcattered on the ſurface, to be covered to the depth of a quarter of an inch, with the ſame compoſt; to have the ſun until eleven o'clock, and to be refreſhed with water when neceſſary. By the end of *July*, the plants will be ready to be ſet out into beds of the ſame compoſt, to have an airy ſituation, and at the diſtance of three inches ſquare, one from another, ſhading and watering them until they have rooted; here they are to be kept until *Auguſt*, or perhaps until the end of *September*, ſhould the beds not be ſufficiently moiſt to receive them on their ſecond tranſplanting, which is to be in beds of the ſame compoſition as before, but at ſix inches diſtance each plant, and in four rows for the better laying their layers *, which is to be performed in this bed, where

* The proceſs of laying layers of fibrous rooted plants is as follows: In *June*, when the ſhoots are ſtrong, ſtrip off the leaves of the lower part of ſuch as you intend to lay, making choice of a ſtrong joint about the middle of the ſhoot, not too near the heart or too near the root of the mother plant; then from this joint make a ſlit with your pen-knife in the middle of the ſtem, riſing upwards half way or more to the next joint, as their diſtance may be ſituated; then cut off the tops of the leaves of the plant, and the ſwelling of the joint (where the inciſion began,) on the outſide, ſo that the ſlit on that ſide may be ſeparated, and have the appearance of a tongue, as from this point the fibres are to proceed, where they would not, did both ſides of the ſlit keep united: You are now to ſtir up the earth, where you are to lay down your layer, making an impreſſion on it, for to receive the ſhoot, where you are to lay it with your finger and thumb, gently bending it, to keep it upright, and to open the ſlit, then to be covered with the mould you raiſed, and forked down with a ſmall ſtick for the purpoſe, near the mother plant; then give a gentle watering, which muſt be repeated according to the weather, but be ſure to keep the earth moiſt. In about ſix weeks, they will have ſufficiently rooted, ſo that they may be planted where they are to flower.

they are to ſhow their flowers, when you may mark the moſt deſerving of your care. That which blows without burſting the pod is to be preferred, but ſuch that do, where they have ſome peculiar beauties, ſhould be preſerved, as they may improve by care, but before you can fully determine the beauty of the plants, they muſt have two years growth, whoſe perfections are to be determined by the following particulars: *Firſt*, to have the ſtem ſtrong, to ſupport the flower erect. *Secondly*, The leaves broad, long and ſtiff, yet to expand freely. *Third*, The pod not to advance too high on the leaves. *Fourth*, The colours bright and regular. *Fifth*, To be full of leaves, which fall regular, riſing high in the middle, and whoſe extremities form a regular circle. Such are the marks of a good flower, by which you are to determine thoſe you chuſe to keep, removing the ſingle and ill coloured flowers, which will give room for the better laying of the others, whoſe layers will be ready for taking off by *Auguſt*, ſetting the larger flowers in pots, and the others in borders. But ſuch as are intended for ſeed muſt be kept in the open ground, and the ſeed taken from the flower that has been raiſed from ſeed, and not propagated by laying, as they often prove barren.

Previous to the care of your layers, you muſt be provided with the following *Compoſt*, which is to conſiſt of good upland paſture, or of a common whoſe earth is hazelly, or of a light ſandy loam; of any of theſe take the ſurface to the depth of eight inches with the turf, let them be laid together in an heap to meliorate, turning it every month for one year; then you are to add to it one third of well rotted cow dung, or where it is not to be had, the ſame quantity of the rotted dung of a melon or cucumber bed, theſe are to be mixed together, and will be much improved by being often turned together for ſix months more. But, however good your compoſt may be, you are not to expect the uſe of the ſame, continually will keep your flowers in the higheſt beauty, wherefore it will be neceſſary, to have ſome of another compoſition; uſing that juſt directed for one year, and for the next, in the place of the cow dung, uſe that from your ſtable, with an addition of ſea ſand to lighten it; but however

however good theſe precautions may be, you are not to expect a continuance of fine flowers from plants, that are ſpent in blowing, wherefore you muſt have in reſerve ſome ſtrong plants, whoſe flowers have been taken off as ſoon as they ſhow, for the purpoſe of giving an additional ſtrength to their roots, that they may give fine flowers the next ſeaſon, not more than one of which are to be expected on each plant, wherefore let all others be taken from the lateral branches. By a continuance of this proceſs, you will ever be prepared to ſhow the fineſt flowers.

Your compoſt being ready in *Auguſt* or *September*, I would adviſe the taking off the layers, which are to be ſet ſingly in halfpenny pots filled with it, your pots being of a ſmall ſize, you will the better be enabled to give the plants protection in the winter. In *October*, let them be ſet in beds of tan bark, whoſe heat is gone off, and then covered with a glazed frame, whoſe cover you are to take off or keep on, according to the ſeaſon, as the plants muſt be protected from much rain and cold, and have the air admitted in mild weather. About the latter end of *February*, or as early as the ſeaſon is favourable, tranſplant your layers into pots of eight inches over, firſt laying an oyſter ſhell on the hole to carry off any ſuperabundant water; when you have half filled the pots with your compoſt, you are to raiſe your layers with a ball of earth to their roots, which is to be taken down half way the ſtock, and thinned in order to come at the extremities of the fibres, as they are to be taken off; then you are to ſet your plant in the middle of the pot, with the remainder of the compoſt, gently cloſing it on the roots, and watering; obſerve that the loweſt leaves of the plants are to line with the upper edge of the pots, to which the compoſt is to riſe after it is well ſettled: Theſe plants are to have a ſituation that will protect them from *North* and *Eaſt* winds, and to have ſoft water given them, as the ſeaſon may require; here they are to be kept until *April*, when they are to be ſtaged for blowing, having a *South-eaſt* aſpect, defended from *Weſt* and *Eaſterly* winds, by a ſhelter at ſome diſtance. About the middle of the month the plants will begin to ſhoot out for flower, which are to be ſupported with ſlender ſticks, to which the ſhoots are to be tied with

ſome baſs-matting, about the beginning of *June*, ſome of your early blowers will begin to burſt their pods on one ſide, when with a knife you ſhould gently open them in ſtreight lines where the pods indent on the edges, too near the bottom, this will aſſiſt the flowers to lay their leaves regular, which is one of their greateſt ornaments. In the ſeaſon of flowering great care ſhould be taken, that they do not want water, and that the principal flower may ſhow well, let all others be taken away, as has been directed.

Your next care is that of preſerving your flower from its greateſt enemy, an inſect called the Ear-wigg: for this purpoſe there are the following contrivances. Some ſet two pans of about fourteen or ſixteen inches over, and three deep, one beſide the other, at the diſtance of two feet; theſe they fill with water, and in each ſet a flower pot reverſed; this is continued at the diſtance of every eight feet, on the reverſed pots boards are laid to receive the pots with the flowers. Others have benches ſupported on four feet, which they ſet in ſo many pans of water; but when a flower is to ſtand ſingly, the pot is firſt ſet in a ſmall dry pan, which is then ſet in a larger filled with water; ſuch are the contrivances for their protection; while others do no more than place ſomething of a conical form on the top of the ſtick that ſupports the flower; theſe tops are taken off every morning, to be cleared of ſuch vermin, as have retreated there; here your care is not to end for the protection of this fine flower, as by being too much expoſed to rain, or the ſun's rays would hurry it out of blow, and cut ſhort the reign of its beauty; therefore conical caps have been contrived for the purpoſe, to ſtand at the diſtance of five inches above the flower, of which ſome are made by the glaziers, and others of oiled paper, of a diameter ſufficient to cover the flower; they are to be ſupported in their places by being faſtened to the upright ſtick, to which the ſtem of the flower is tied, thoſe in particular who uſe the glazed caps, muſt cover them with cabbage leaves, when the ſun's rays are very ſtrong, and that the leaves of the flower may be ſupported in the moſt beautiful manner, cut cards of a circular form, of about five

five inches diameter, taking from the centre as much as you think the lower part of the flower will fill, then the rim is to be cut through, for the readier placing it between the leaves and the pod, on which they are to be regularly laid; when you may enjoy this pleasing beauty in high perfection, which will naturally lead you to contemplate and admire the great Creator, who has given these beauties for our entertainment and pleasure, as he has the corn of the field for our support, and not less dependent are we on him for our preservation, than the flowers of the garden on us, which were created for our delight, as God did man, that he might worship him.

PINKS are raised from slips or cuttings, which are to be taken off about the end of *July*, and at a time when rain hath fallen, but should the weather prove otherwise, they must be watered every second day, until they have rooted: They are to be planted in good rich earth, well prepared. Slips are to be taken close to the root of the mother-plant, when all the lower leaves are to be stripped off, and immediately set in the bed, at four inches distance every way, closing the earth with your hand, to exclude all air: In autumn they will be ready to plant where they are to flower. Cuttings are no other than a slip, cut into pieces with two or three joints, to be treated as the slips, and care taken in covering them.

SWEET-WILLIAM, the double, are propagated by layers like the *Carnation*, and delight in a middling soil, not too light, nor too heavy or stiff, which must not be too highly dunged; that called the *Mule* is a very fine flower, shewing its beauties in the month of *June* and *July*. This plant is very subject to canker, if planted in a soil overcharged with dung, and is to be attended and assisted as the seasons may make it necessary.

Directions

Directions for raiſing the Bulbous Iris.

THE next ſhowy flower to be treated of, is the *Iris*, or *Flower de Lys*, or *Fleur du Lys*; and they are of two ſorts, the narrow-leaved or *Spaniſh Botanice*, the *Xyphion anguſti-folium*, and the *Xyphion latifolium*, or *Engliſh Iris*; in the *Dutch* catalogues, they are called, firſt, *Iris Hiſpanica*, and in the latter, *Iris Anglica bulboſa*: The great varieties that are of this flower, are obtained from ſeed, in the following manner.

Having provided yourſelf with good roots from the floriſts at *Haerlem*, plant them in *October*, in ſuch a ſituation as they may have the ſun only until eleven o'clock; they are to be planted three inches below the ſurface of the earth, which ſhould be light, freſh, ſandy, and very moderately dunged; but if your ſoil is freſh and rich in its nature, it will not require any dung; and to prevent the roots from running down, the bed muſt be beat hard two feet below the bottom of the bulb; obſerve to keep them clear of weeds. When they come to flower, mark ſuch as you chuſe to ſave ſeed from, which muſt be ſuch as have long bold ſtems; for they give the beſt flowers. When their ſeed-veſſels become dry, and begin to open, cut them down, and rub out the ſeed to prepare for ſowing: The others you are to cut to the ground as ſoon as their flowers fade. Make boxes ready, twelve inches deep, three feet broad, and ſix long, with many holes in the bottoms, to be covered with concave oyſter-ſhells, to allow the water to paſs off. In *October*, ſow the ſeed in rows, two inches, row from row, and half an inch, ſeed from ſeed, as here they are to remain for two or three years: The ſoil moſt proper for them is, four parts of good, light, freſh earth, the ſame as is directed for *Carnations*, one part of good, light, white, dry ſea-ſhore ſand, and one part of well-rotted cow dung: Let their ſituation be to the ſouth-eaſt, not very near to a wall or hedge: Let theſe boxes have wooden folding covers; but from *March* they are not to be uſed, and in hot weather they are to be ſhaded from the ſun's rays, watering them

them when their leaves are up, but not when down. At the latter ſeaſon take off two inches of the top earth, replacing it with freſh; and in ſevere froſts, lay two inches of old rotten tan-bark over them. Thus you may uſe them, until the third year, when they are to be lifted out of their boxes: They are to be planted into a border of the ſame aſpect as before, and made up of the compoſt uſed in the beds for the old roots; the fourth or fifth year they will bloſſom in perfection: Such as are good, are to be brought into the flower-beds for ſhow, when the more indifferent may be planted in the long borders. They need not be tranſplanted but once in three years, but obſerve to lay new mould over them every *Michaelmas* and *March*.

Lilies and *Martagons*.

The moſt curious ſorts are,

The Lilies *are the*

White Lily of Conſtantinople
Striped flowered white and purple
Spotted white and purple
Largeſt double white
Orange Lily
Dwarf Orange Lily
Semidouble Orange Lily
Striped-leaved Orange Lily
Broad-ſtalked white Lily
Semi-double white
Striped-leaved ſingle white
Striped-leaved double white
Many-flowered Orange Lily
Bulb-bearing Lily
Double-fiery Lily

All theſe *Lilies* love a lean, freſh, ſandy, undunged ſoil; otherwiſe they are apt to rot. The ſtriped-leaved white *Lilies* make a fine ſhow in winter with their beautiful variegated leaves. The ſtriped-flowered white *Lily*, in order to have it in perfection of bloom, requires a very lean rubbiſhy ſoil, and an expoſure whereon the ſun ſhines only until ten o'clock: Many of theſe *Lilies* ſhould be planted in the long and croſs borders of the flower-garden, for embelliſhment; and to ſupply them, it will be neceſſary to have nurſeries of them.

The

The Martagons *are theſe.*

1 The Imperial
2 The white
3 The white-ſpotted
4 The double
5 The Canada
6 The red-ſpotted
7 The long-ſpiked
8 The greateſt American
9 The Pompony
10 The Polyanthos Conſtantinople
11 The leſſer do.
12 The yellow
13 The Aſh-coloured
14 The Fleſh-coloured
15 The ſtriped-flowered
16 The very late flowering Conſtantinople
17 The ſtriped-leaved Martagon.

The *Canada*, *Pompony*, and greateſt *American Martagons*, are more tender than any of the other ſorts, and ſhould be planted deeper in the long borders of the flower-garden; but if they are planted in quantities, or in nurſery-beds, they muſt be covered in winter, to protect them from froſt, which is very injurious to them.

The other ſorts are in no danger from cold, and thrive beſt in a freſh, light, undunged ſoil, eſpecially the ſtriped ſort, nor ſhould they be lifted but once in three years.

The *Gladiolus*, or *Corn-flags*, require the ſame culture; the moſt valuable of which are the fleſh-coloured, the white-flowered all around its ſtalk, and the great *Gladiolus* of *Conſtantinople*.

The great *Indian Gladiolus* is a green-houſe plant.

Directions for the Culture of the Colchicums.

I Have treated already of the *Vernal* or *Spaniſh purple Colchicum:* The other ſorts require the ſame culture, and ſhew beſt, when they are planted in clumps in long borders: The beſt ſorts are the early, the white, the purple, the two double ſorts, the yellow, which, more properly ſpeaking, is an *Autumnal Narciſſus*, though it is reckoned

reckoned by the *Dutch* floriſts among the ſpecies of their *Colchicums*. They ſhould not be tranſplanted oftner than every third year.

And here I muſt not omit another *Autumnal Narciſſus*, named in the *Dutch* catalogues, *Narciſſus autumnalis Liliaceus*, which is properly named, *Narciſſus autumnalis major, flore Lilıaceo*, the great *Lily Daffodil* of autumn: Its culture is the ſame with the other *Colchicums*, and when planted in clumps in borders, has a very good effect.

The *Dracunculus*, or *Dragon*, for its odd ſhaped great red flower, deſerves our attention: It flowers in *July* and *Auguſt*; and in *September*, it may be planted out into ſhaded borders, which ſhould be well defended from winds. Thoſe flowers, which have their plant leaves ſtriped, are very beautiful.

Having thus gone through the *Vernal*, *Summer* and *Autumnal*, *Annual* and *Perennial* flowers, and their ſeveral cultures, I ſhall, before I conclude, give ſome general directions to floriſts, who make the cultivating theſe flowers their chief buſineſs; having ſeen much of their culture in *Holland* and *Flanders*, I ſhall think myſelf happy, to be of uſe in this ſcience, in which I have much delighted, and I hope improved; and of this they may benefit, both to credit and profit; as the taſte for flowers, and more particularly for *Hyacinths*, *Oriental Narciſſus*, *Tulips*, *Anemonies*, *Ranunculus* and *Auriculas*, has much increaſed within theſe few years.

An undertaker in this way, muſt expect to be conſiderably in advance, before he can expect any return; and to viſit *Holland* and *Flanders*, to be informed of their improvements, as I have done, which will well anſwer his purpoſe.

The firſt thing neceſſary to be conſidered is the ſoil and ſituation, where ſhould be plenty of cow dung, tan, tanners bark, and a dark, grey, ſandy, virgin ſoil. Theſe materials properly uſed, and well mixed, comprehend the beſt compoſts neceſſary for bulbous flowers, their proportions you will find where I have laid down the culture of the reſpective flowers.

Whatever

Whatever extent your gardens are to be of, let that for your ſeed be ſeparated from that where your flowers are to blow; the whole to be incloſed with high walls, the only ſufficient fence in our climate; your ſubdiviſions may be made by yew hedges, which in ſuch places, are better than any other; you may alſo have ſome of holly, but by no means of thorns: The ſituation ſhould be tolerably flat, but not wet, and be well expoſed to the ſouth-eaſt, ſouth and ſouth-weſt rays of the ſun, to be protected, as much as poſſible, from the weſt, north and eaſt winds, by large trees at one hundred feet diſtance every way from the walls; with a pond or baſon of water well expoſed to the ſun, as water impregnated by the ſun's rays, excels any other for the garden uſe.

The next neceſſary article is a compoſt yard, whoſe ſituation muſt be well expoſed to the ſun, and paved that the ſalts of the compoſt may not be waſhed and abſorbed in the earth; and its ſituation near the garden, to be fenced in, and of an extent ſufficient to contain the variety of compoſts, which will be neceſſary to anſwer the ſucceſſion and variety that may be neceſſary, with the rotted tan for your *Hyacinths*, *Oriental Narciſſus* and *Perſian Ranunculus*, whoſe beds ſhould not only be covered to the depth of four inches over the ſurface, but ſhould alſo have four inches of tan laid to the ſides and ends of the beds, to the extent of two feet, to prevent the froſt from coming to their roots.

A good floriſt ſhould never have leſs than three years compoſt by him, and their different heaps marked with long poles, bearing the names of the flowers they are intended, with the date when firſt laid down; obſerving to have heaps in ſucceſſion for three years at leaſt, which will not be a difficult matter, if attended to at firſt ſetting out.

The next thing neceſſary for a gardener is a root-room, to be conſtructed in extent as may ſuit him, which muſt have windows in the end to the weſt, and in the north and ſouth ſides; and the eaſt end ſhould have a large door, to take in boxes or cheſts of roots, as they come packed up: And in this room, there ſhould be ſhelves on the two ſides by the windows from top to bottom, for to receive drawers, divided ſo as to receive the different

different ſorts of *Tulips*, *Hyacinths*, *Ranunculus*, *Anemonies*, and *Polyanthos Narciſſus*, properly labelled: This room ſhould be ſo ſituated, as not to be too much expoſed to the ſun, whoſe afternoon rays would be very proper for it: The *Anemonies* and *Ranunculus* boxes ſhould lie near a fire, in caſe of violent froſts.

The drawers in this root-room ſhould be no more than five inches deep, that the roots may lie ſingle, and not in heaps, one upon another, and very cloſe at bottom, but as airy above as may be, that the air and wind may have free acceſs; upon theſe ſhelves and drawers, there ſhould be folding leaves of wood, and caſes trelaced with wire for air, and well ſecured, to exclude too buſy hands.

A DIS-

A

DISSERTATION

On the CULTURE of

FOREST-TREES.

THE Proceſs I ſhall lay down I do not pretend to give as new, or what was never before practiſed; on the contrary, I have known it in uſe by many, and their ſucceſs, as well as my own, for forty years and upwards, engages me to recommend it to all. To that ſucceſs I appeal; I claim no other praiſe; I court no other merit, ſo I ſhall proceed to direct you how to raiſe trees in woods from ſeed, and how to manage them afterwards, until they come to be cut down for uſe, to the greateſt advantage.

It is the opinion of many perſons, that before they begin to plant their trees in the wood-way, they muſt make large nurſeries to fill theſe grounds from the ſeed beds. According to thoſe directions they muſt be tranſplanted from the ſeed beds into the nurſeries, and from the nurſery into the woods, where they are to continue till the axe cuts them down. In ſupport of this opinion they further ſay, that every time a tree is tranſplanted, it acquires a new ſet of fibres, whereby it ſucks more juices than trees, which have not been tranſplanted. This I own ſeems very plauſible at firſt; and I followed it for ſome time, till I found by experience its falſity. What induced me principally to follow this practice, is that certain rule in agriculture, that the more we cultivate the earth, and dreſs it, the more it gives us; from whence I argued, that the beſt method to prepare

pare ground for Foreſt-trees, was to dreſs and clean it well before I ſowed the ſeeds; but this rule, though univerſally given, has its exceptions. With reſpect to the kitchen-garden, it holds for legumens, and roots of all kinds, which are the produce of a day, and are gone tomorrow; but in foreſts and woods, time and experience taught me another rule, for the more I digged, the leſs I reaped.

I ſhall firſt ſhow the faults I committed in planting my woods; and next how I amended them, and what my ſucceſs was. As the trees I tranſplanted in or near my gardens had not the deſired ſucceſs, I therefore immediately reſolved to ſow great pieces of ground in the wood itſelf with tree ſeeds. This I did with great care. In moſt of theſe plantations I took out all the Junipers, Broom, Brambles, with every other plant that I thought would be hurtful to my young trees; I ſpaded and laboured the ground with great care, and very deep, whereby I thought I might have great ſucceſs; but at the end of ſome years, I was convinced of my error, and found that extraordinary culture was the occaſion of the ruin of my plants. It is uſual indeed to advance into expences to gain by it; but here the expence I beſtowed was the occaſion of my loſs.

If therefore we would ſucceed in planting trees whatever the ſoil may be, we muſt imitate nature; and in plain ground where Thorns, Broom or Junipers, are wanting, I would firſt of all ſow the ſeed of thoſe plants, ſome years before I ſowed or planted the ſeeds of my Foreſt-trees; for thoſe buſhes protect the young trees from ſevere froſt in winter, and from the too great heat of the ſun in ſummer; and a ſoil that is thus covered, or but half covered, with Junipers or Broom, affords an excellent protection for theſe young trees when they firſt come up from the ſeed.

In planting out ſome Firs I had a remarkable inſtance of this. The Firs were but two years from the ſeed. The beginning of *October* I planted a great number of them in a ſpot of ground pretty much overgrown with Whins: at the ſame time I planted a like number upon a neighbouring piece of ground that was entirely cleared from Whins: The effect was, that every one of theſe trees

that I planted among the Whins, grew to great perfection, and the Firs that were planted upon the ſpot of ground that I cleared of the Whins, were totally deſtroyed by the froſt of the enſuing winter. This ſhows you what protection is neceſſary to all young planted trees, particularly Firs, of which I ſhall ſpeak more fully when I come to treat of that article.

With reſpect to the ſowing of tree ſeeds in woods, the following obſervations aſſured me of the ſucceſs of theſe experiments. I had two pieces of ground, of about ſix acres each, ſown with Foreſt-tree ſeeds; they were both incloſed on all ſides with underwood hedges, ſuch as Thorns, Brambles, &c. planting them as cloſe as I could, to ſave my ſeedling plants from the irruptions of cattle; one of theſe incloſures I dug very well, and ſowed it in patches or pieces; one piece in the middle of the incloſure I ſowed with tree ſeeds, another piece I ſowed near to the hedges with the ſame; what I ſowed in the middle, came up but thinly; but what I ſowed near the hedges grew very well for the firſt and ſecond years. I did not perceive, or did not mind the difference between what was ſown in the middle, and what was ſown near the hedges, until the third year. Then I obſerved a conſiderable diminution of my young plants, which were ſown in the middle part of my incloſure; and I further obſerved in the fourth year, that by the drought of every ſummer and froſt of every winter thereafter the number of my plants was conſiderably diminiſhed; and the winter of the ſixth year, being extremely ſevere, finiſhed them altogether, whilſt the beds or ſpots which I ſowed in this incloſure by the ſides of the hedges, were ſtrong, healthy and vigorous, ſome of them having grown four or five feet high. This ſerved to ſhow me, that the good ſucceſs of thoſe beds which I ſowed near the hedges, was owing to the cover thoſe hedges afforded the young plants; but in the middle thereof, where there was no ſhelter nor protection from the ſeverities of the weather, the plants failed. To remedy therefore this inconvenience, I cauſed two ditches to be thrown up, croſſing the middle of this incloſure at right angles, and planting the tops of them with thorns, brambles, poplars, and underwood, in form of hedges;

by

by which means I prevented the loſs of a good many of my young trees in the middle of my plantation, which I could not have effected otherwiſe.

The other incloſure I ſpoke of, contained ſix acres, three of which I dug very well, in expectation of a fine crop. The other three acres I ſuffered to lie as I found them, covered with Junipers, wild Thorns, Broom, ſome ſcantling Whins and Ferns, and other Bruſhwood. I ſowed the beſt part of thoſe two pieces of ground at one and the ſame time. In that piece which was not dug nor dreſt, I opened the upper ſward, and by a thruſt or two of the ſpade only, put in my ſeeds; and indeed I muſt own I was a little ſparing of them, being very uncertain of their ſucceſs. I even was ſcarcely at the pains to uſe a ſpade, but thruſt the ſeeds below the Junipers with my hands, and covered them as well as I could. But in the other three acres which were dug and dreſt, I ſowed the ſeeds of the trees very thick, as in my apprehenſion, from the labour I had uſed, I could not fail of ſucceeding. The event however was very different from what I expected. In the dreſt piece of ground, there came up a great number of fine young oaks, and other trees, which, in a little time after their firſt appearance, began to diminiſh; and if I had not given particular attention to them, they would have gone off altogether: while, on the contrary, the other three acres of uncultivated land, in which Broom, Junipers, with other Bruſhwood grew, was a perfect wood of young oaks, and other trees, which grew to great perfection, and came in four years time to be four or five feet high. This obſervation ſhows better than the former the neceſſity of a cover for young trees; for thoſe that were ſown in the cultivated pieces of this open incloſure, could no otherwiſe be preſerved than by planting among them cuttings of Thorns, Whins, Poplars, Saughs, &c. to protect them from the dangers of ſummer's heat and winter's froſts. Wherefore, to have a good wood in the fields, the moſt difficult thing is to find a ſufficient cover for them; and to obtain that, you muſt allow a field to lie waſte for ten or twelve years, that the Thorns, Brambles, Junipers, and other underwood, may grow up to protect the young trees. On the other hand, in culti-

vated places, you muſt fall upon ſome method to make covers grow as much in two or three years, and to give ſhelter to the earth, and what is ſown therein, as if the ſame had never been cultivated.

I have made many experiments of this nature, by ſowing Thorns, Junipers, &c. with the ſeeds of trees, but this proved all ineffectual; for many of theſe ſeeds require to lie two years in the ground before they come up, and conſequently can be of no uſe to theſe young trees that come up the year after ſowing. The beſt ſeeds for that purpoſe, are the ſeeds of the *Marſaule*, or *French Willow*, or what is botanically named *Salix Alpina, alni rotundo folio argenteo, repens.* It has round leaves, indented on the edges, and grows very quickly without any culture. In wet grounds, the cuttings of all ſorts of Willows, and black and white Poplars, will grow very well; but for dry grounds, Thorns and Elders, and the above named *French Willow*, with ſome dwarf cloſe growing Whins, are the beſt; and it is certain that the roots of this underwood will do no harm to Oaks or Beech, becauſe the roots of theſe trees run farther down than the roots of the underwood; and when theſe trees grow up, they choak and kill all underwood below them.

It has for a long time been the conſtant practice, to make experiments to know the advantage that ariſes from the culture of woods and foreſts; and for that end I cauſed to be ſown in my garden ſome ſeeds, of the ſame trees that I ſowed in my woods. The latter I left to nature, but thoſe in my garden were cultivated with the greateſt care and art poſſible; the effect was, that the Oaks I ſowed in my garden had ſtems eight feet high, and two and a half inches diameter at the bottom; while thoſe in the fields had ſtems about the bigneſs of my finger, and were but three feet high; and the Oaks in my garden had heads in eight years which ſerved as a ſufficient cover to their roots, but thoſe in the fields had no heads to cover their roots. Encouraged by the ſucceſs my trees had in the garden, I had recourſe to another experiment, which was, to incloſe a part of my woods, and there to bring up my trees with the ſame care I did in my garden; and when I found the earth was too ſtiff or too cold, I burnt a vaſt deal of the cuttings and branches

branches of trees, and dug the earth two feet and a half deep, making it very fine, and I mixed the aſhes with the ſoil: but in this I found myſelf alſo miſtaken; for at the end of three years my trees were rather worſe than before, and I was obliged to give up the experiment.

For this ill ſucceſs ſeveral reaſons may be given. The firſt year, after dreſſing the ground in the manner abovementioned, I had many enemies to encounter with, ſuch as birds, mice, *&c.* and ſuch a profuſion of weeds, that I was continually obliged to be hoeing with inſtruments, or weeding with my hand. It was then I remembered, though too late, that gardeners, when they enter on a new ſpot of ground, expect but ſmall crops for the firſt three years, until the weeds be entirely rooted out. But this was not the greateſt inconvenience with me; I wanted water for the young plants in the ſummer-time, as the continual working among them, in taking away the weeds, made the ſoil very burning and dry, and ſo looſe, that the cold eaſily penetrated to their roots, and a north wind, accompanied with a ſevere froſt, about the beginning of *April*, which was preceded by a good deal of rain, did all my plants an irreparable injury.

Nevertheleſs I did not give over the project, but endeavoured to remedy the evil that the froſt had done me, by cutting off all the dead or dying parts of my plants: This had a very good effect, and as I had but a ſmall quantity of water to give them, I reſerved it for a more preſſing occaſion. I diminiſhed the number of my weedings, leſt that by often weeding I ſhould have dryed the ground too much about them. The ſucceſs was this; that in *Auguſt* my plants reſumed their vigour, but ſtill were far from thoſe which grew in my garden; I then pruned them a little, and gave them reſt for that year.

Next year I gave them two weedings, and there was a piece of ground of about a quarter of an acre, which I forgot to weed at all; and this forgetfulneſs taught me, that theſe plants which had not been weeded, grew equally well with thoſe which were fully weeded, and many of them excelled them; from which I learned, that the more you want to extirpate weeds, and dreſs any ſpot of ground which you want to turn into woods, or foreſts, the more you cheat yourſelf; eſpecially in weeding trees

twice a year, which beſides the real inconveniencies of expoſing their roots to the parching heats in ſummer, and to hard froſts in the ſpring following, is moſt expenſive, without being of the leaſt advantage to the trees themſelves; therefore, as it will be proper to ſubſtitute ſomething in place of weeding, to enable us to attain the deſired ſucceſs, I know no method ſo proper as this, *viz.* to cut all your young trees down within an inch, or an inch and an half of the ſurface of the earth, ſlopeways, that the rain may not ſettle or reſt upon the under part of the trees. This method, ſimple as it is, experience hath taught me to be of infinite advantage for accelerating, by many years, the growth of all plantations of trees; ſuffer me, therefore, to give you an accurate detail of my management in this important ſubject.

All earth may in general be reduced to two ſorts, light earth, and ſtrong earth. If you ſow in a light earth, you may dig or plough it, and the lighter the earth is, the leſs will be the expence; and you may ſow the ſeeds of trees juſt after the plough; but thoſe kinds of ſoils being generally burning and dry, you muſt not take the weeds from them the following ſummer, becauſe theſe keep a coolneſs about the roots of young Oaks and Beech, in the hot ſeaſon, and hinder the hot rays of the ſun from ſcorching them; and when theſe weeds come to die in winter, they hinder the froſt in that rigorous ſeaſon from piercing to their roots. In ſhort, in a light ſoil, trees require little or no culture. I have ſown a great many acres of this kind of ground with great ſucceſs, for the roots of the young trees extend their fibres eaſily, whilſt the rain and dews get as eaſily down to them, and the ſeeds here ſown want nothing but a light cover of earth to make them ſucceed to your fondeſt wiſhes.

But it is more difficult to propagate trees in ſtrong clay ſoils. There the labour of ploughing and digging is uſeleſs, and very often hurtful. The beſt method I know to ſow tree ſeeds in ſuch ſoils, is to dig pits with your ſpade the ſummer preceding the autumn in which you intend to ſow them, that the ground may thereby be a little mellowed by the ſun and air, and therein ſow or plant your ſeeds, with a ſuitable cover; you muſt not leave

leave them to themſelves, but viſit them often, obſerving if they have come up the firſt year, and the ſecond year take notice if they have grown ſtronger than the firſt, and ſo the third year; and if they grow ſtronger and ſtronger from year to year, do not diſturb them; but it very often happens, that after the third year they diminiſh in their growth, and ſtunt (as the gardeners term it.) In the fourth year they do the ſame; therefore the fifth year, in the month of *March*, cut them quite down to the ground, in the ſame manner I directed formerly, and they will grow again with great vigour, and ſave you a great number of years in their growth; for the young tree being left to itſelf in the ſtrong ſoil, its tender herbaceous fibres cannot penetrate into the ſoil, the juices ſtagnate, which you will perceive by moſs and knots growing upon the bark of its ſtem, and the tree itſelf is deprived of the nouriſhment it ſhould have, whereby it produces nothing but leaves inſtead of growth; but when the ſtem of the tree is cut down, the whole force of the ſap deſcends to the roots; they open their germes, and act with great vigour againſt the ſoil which oppoſes them, where, when they come, and have alſo eſtabliſhed themſelves, they will ſend up a ſtronger ſhoot the firſt year than the former ſhoots of four years old, which you cut away; and of this I had ſo many repeated inſtances, that I give it as an approved rule, and can aſſure my readers, that it is the beſt way to cultivate woods in clay grounds.

In a ſoil which is firm, without being too hard, it will be ſufficient to cut the young plants once only; and I had a great many plantations in my own woods, planted in a clay ſoil, cut once only, which have made very fine trees; but in the other places, where the ſoil was hard and ſtiff, obſerving my trees did not grow after the ſecond year, I cut them down, and four years after I was obliged to cut them a ſecond time. I ſhall here mention another experiment I made, from whence I found the neceſſity, in ſome caſes, of cutting young trees twice.

Twenty-two years ago, I made a conſiderable plantation of ſeveral kinds of trees, ſuch as Aſh, Elm, Planes, &c. which I tranſplanted when they were pretty old. The

firſt year after they were tranſplanted, thoſe which held puſhed pretty vigorouſly, the ſecond year they grew weakly, and the third year they languiſhed very much. The trees that ſuffered moſt, were thoſe that were oldeſt when tranſplanted. I now perceived that their roots had not ſtrength enough to ſupport their heads, nor the ſhoots they had made the firſt year after tranſplanting. This determined me to cut them down; and I performed the like operation upon the ſmalleſt ones. This firſt cutting recovered my trees for the firſt two years; but in the third I perceived a great diminution in their growth, which I attributed to the inclemency of the ſeaſon; but I ſoon perceived this was not the cauſe of their decay; for the two years after that I left them uncut, they ſtill continued diminiſhing in growth, which determined me to cut them down a ſecond time, without which I ſhould have loſt all my trees; for having left ſome uncut a ſecond time to try them, theſe I entirely loſt. The ſoil in which I planted theſe trees had not been cultivated for the ſpace of twenty years before, and it is now fourteen years ſince I cut my plants, and their leaves are as green, and their ſhoots as vigorous as if they were in a nurſery-bed, which is a certain proof, that the cutting down of trees is the beſt culture they can have in whatever ſoil they grow, and is the ſureſt method to eſtabliſh their roots, to which every planter ſhould principally attend.

The authors who treat of agriculture, particularly thoſe who treat of the planting woods or foreſts for profit, or of planting trees in other forms for pleaſure, are often miſtaken in their thoughts on this ſubject. Many of them direct to take care of the tops of young plants, in order to have a great foreſt of trees in good order. This advice may be good in particular caſes; but it is generally true, and I can aſſure my readers, from many repeated experiments, that there is no method ſo certain to make trees have ſtrong, lively, and ſtreight ſtems, as to cut them once or twice, if required, down to the ground, as has been directed; and I have often examined the ſtems of trees which have been raiſed from ſeeds, with the greateſt care, and found that they have never been ſo ſtrong, ſo healthy, and ſo vigorous, as ſtems of the

the trees that have been cut down upon the appearance of the failure of their growth, and which have afterwards ſprung from the root with great vigour; and nothing is more conducive to recover trees, whoſe ſtems have ſuffered by froſt, or any other accident, than to cut them down in the manner above preſcribed.

Before I enter into a detail of the culture of particular trees, permit me to make a few neceſſary remarks on the culture of ſome, and the beſt method of ſowing them. The Oak and the Beech may be ſown in places quite uncultivated, with ſucceſs; the Oak particularly. The Beech delights in a light ſoil; for if it is ſown in clay, or where the ground is very ſtiff, the ſeeds cannot germinate, and very frequently it ſends up its root above the young ſtems, which loſes them altogether. But the Oak may be ſown almoſt in any ſoil, having ſtrength enough to ſend down its root any where; but moſt other trees ſhould be ſown in nurſeries, from whence they may be tranſplanted out for good, when they are two or three years old.

You muſt ſhun as much as poſſible to plant Oaks in the neighbourhood of Pines, Firs, or Beech, or of any other trees which thruſt their roots deep into the ground; but you may plant them to advantage near any trees which ſpread their roots, and do not run far below the ſurface. You muſt likewiſe obſerve, never to ſow woods, but in thoſe ſeaſons when the ſeeds of trees are very plentiful, and are fully ripened, and then take a particular care that birds, field-mice, and other vermin, do not attack them; for which you muſt ſet traps on all occaſions, which is the moſt effectual method to deſtroy them. You muſt be no leſs careful to prevent the intruſion of cattle into your nurſeries, or your woods, by planting hedges of Thorn, Poplar, &c. or dead wood hedges. But the beſt method of any to protect them from the irruption of cattle, is by making ditches, facing them up with ſtone, and upon the top thereof planting thorn hedges, intermixed here and there with ſome Hollies, which will ſtill be a greater ſecurity to what is planted or ſown within.

I proceed now to the culture of particular trees, and begin as follows.

The

The Oak.

THIS monarch of the woods is beſt raiſed from its ſeed, the Acorn. Authors have diſtinguiſhed theſe into ſeveral ſorts, but the moſt profitable is that we call the *Engliſh* Oak; and when theſe are deſigned to be planted in woods, the ſooner after the ſeeds are ripe, the better; the beſt Acorns are had from *England*.

There are three different ways of planting them, which I ſhall here take notice of. The firſt and moſt profitable is, when they are planted in the places where they are deſigned to ſtand, in woods, in ſhort healthy ground, in the neighbourhood of Junipers, ſhort dwarf Sauches and Ferns, and ſcantling Whins. There you have little elſe to do than to open the ſoil with the ſpade, thruſting the ſmall end down into the earth, four or five inches, turning it round ſeveral times to break the mould, and a little of the ſod above, to allow the young ſtem to come up freely. Above this, towards the winter, you muſt lay an inch and a half deep of earth, to protect them from the froſts, and when you perceive them coming up in the ſpring, and have too little earth above them, give them half an inch more. In this way they may be planted pretty thick, and when they grow up you may weed them as occaſion requires; and this may be done a ſecond time, when the trees begin to grow more full, and their heads begin to meet together: Theſe young trees are always of uſe in country affairs. I am certain from many experiments, that this hardy method of bringing up trees, is beſt for their future growth; for here they get in all kinds of ſoils, and if by chance you put them into a better ſoil than that wherein they were ſown, they will thrive the better.

The Acorns ſhould be choſen from ſuch trees as are tall, ſtreight, well thriving, and well growing. Thoſe of Pollard trees ſhould always be rejected; by Pollard trees, I mean ſuch as are crooked and ſmall, and are fit only for ſmall country uſes; thoſe, tho' they produce moſt Acorns, are not to be choſen for ſeed. You will have

have in your plantations abundance of theſe Pollards, although you do not ſow their ſeeds; for in large woods it is impoſſible that every tree ſhould thrive.

In *March* or *April*, after you have planted your Acorns, you will obſerve them to peep above the ſurface, when you are to take care that the ſeed be well covered. Your plants this year will probably make a conſiderable progreſs; if ſo, you may leave them to nature. The ſecond year, if you find they are ſtill thriving, it is a certain ſign they are rooting well. Towards the end of this year, if you think you have planted them too thick, you ſhould thin them, by removing ſome of the intermediate plants; which ſhould be immediately replanted where you intend they ſhould continue, before their roots become dry, otherwiſe they will not grow; and if they are to be ſent to a diſtance, be ſure to lift them with as much earth as you can, binding about them wet moſs, to keep them moiſt. This ſecond year you are alſo to obſerve whether your Oaks come up forked, that is, with two ſtems; when the weakeſt muſt be entirely cut off. The third year if you perceive their ſtems knot, and a light coloured moſſy ſcab come upon them, you may be aſſured your trees are not thriving; therefore they are to be cut down to the ground in *March*; this, will ſend the force of their ſap to the root, and make it eſtabliſh itſelf, ſo as to ſend up a healthy ſhoot.

By planting theſe trees moderately thick, they grow better than when the diſtance is greater, as one ſhelters another, and bids defiance to all bad weather. 'Tis certain many plants out-grow another, and that their ſpreading boughs may deſtroy the weaker; but the removal of this evil you have in your power by thinning them. I would therefore never plant Acorns, at a greater diſtance than four feet plant from plant, as you always have it in your power to give them at any time ſuch a diſtance as their encreaſe of growth may require.

If you deſign to plant in the wood way, where cattle do not feed, the graſs will twiſt about them, and prove of bad conſequence. Therefore, the year before you plant your Acorns, dig pits two feet ſquare, and two feet and an half deep, laying up the ſoil to the ſummer's ſun and the winter's cold, to mould. In *October* or *November*,

ber, plant your Acorns into theſe pits two inches deep; removing all weeds, and the graſs that grows within the pit, and the plants will come up in *March* or *April* Such graſs without the verge of the pits, will be of great uſe, in giving ſhelter to the young trees. This method of planting Oaks, has wonderfully ſucceeded with me; and, I obſerved there was leſs occaſion for cutting when planted in this manner, than in the way which I firſt mentioned; and I adviſe where ploughs cannot go, to purſue one or other of theſe methods.

The third and laſt method of planting Acorns, is by ſpading and ploughing the whole ground, and ſowing the Acorns with a drill plough. This method pleaſes a great many people, but it is not ſo natural as the two methods I formerly propoſed. It is true, indeed, you can draw them and thin them; but this work muſt be done with great caution. The good propoſed in planting them in the two firſt methods, eſpecially in grounds where there is not much ſhelter, is, that being planted moderately thick, they may cover one another from the ſeverities of the weather. As your plants will probably come up very thick, you muſt, during the ſecond year, weed in ſuch a manner, that the plants may be three fathom from each other, and four feet row from row. Thoſe which you take out now may be planted in avenues and viſtos for pleaſure. Four or five years after this, you may again thin them to a greater diſtance; what you take out will ſell for Pollards; and you may continue thinning them at different times in this manner, until you leave your Oaks twenty, twenty-five, and thirty feet diſtant, when your plants will become reſpectable, ſtately and ſtrong, and will themſelves be able to ſubdue whatever is below them. But to bring theſe plants to this noble ſtate, you muſt obſerve a few things, particularly, That during the firſt twelve or fourteen years of their growth, you ſuffer no cattle to brouze among them till they are five and twenty years old: That by all proper means you encourage them to grow tall and ſtraight, permitting none of them to fork: That in the autumn, when their leaves begin to fall, or in ſpring, before they begin to bud, you take off many, but not all their ſide branches, except you perceive the laterals become too luxuriant, and run away with

with the ſap that ſhould go to the top of the trees: And, laſtly, before you make your plantation, that you incloſe the ground with hedges or rows of trees ten deep, or more as you think convenient, to protect the young trees from the injuries of the weather.

The uſes of this tree are ſo commonly known, when it is fit for the axe, that it is needleſs here to repeat them: but there is one particular which deſerves your utmoſt attention, which is, that you never cut down theſe, or any trees, in the ſummer time, when the ſap is flowing: for the timber of the trees that are cut at that time, will never be ſo fit for any purpoſe as thoſe trees that are cut in winter, when the ſap is at reſt. This is an unerring rule, which you muſt conſtantly purſue. Thoſe perſons who deal in Oak-bark object much to this, that they cannot get the bark ſo eaſily off their trees in winter, as in ſummer. 'Tis true it is ſo, and their objection againſt felling trees in winter is very juſt; and it is equally certain, that the bark taken from theſe trees in ſummer bears a much higher price than that taken off in winter: but to pleaſe the bark merchant, you have no more to do, but, the ſummer before you intend to cut your Oaks, peel off the bark from the trunk of the tree, and ſuffer the tree to remain uncut until winter, which will do it no hurt, though the bark be taken off, nay, though it were to ſtand for two years afterwards.

The Beech.

THIS tree is propagated from ſeed, which is called *Beech-maſt*, and it may be ſown any time from *October* till *February*. The mice are ſo fond of it, that it is with great difficulty it can be preſerved from them: The beſt method I have found to prevent the vermin from injuring the ſeed of this tree, is to ſow a good deal of ſoot with it, the taſte of which they abhor; and by this means your ſeed will be preſerved. It delights in a rich loamy ſoil, where it will proſper wonderfully. It will proſper likewiſe upon the declivity of chalky or gravelly hills, particularly if they are dry; but if you plant it

it in wet or clayiſh grounds, it never will become a tree; there it grows crooked, wind-waves, cankers and decays; but in the ſoils I have juſt mentioned, it grows to great perfection. When you deſign to plant them out from the nurſeries, you ſhould chuſe a ſpot of ground to plant them in, much of the ſame nature with that wherein they were raiſed, otherwiſe both your expectation and labour will be loſt. They have a leaf of a fine green colour in ſummer, and all winter their leaves remain upon them, and become of a handſome red colour; ſo that when they are planted near firs, they entertain the eye with a very beautiful variety. When you tranſplant them from the nurſery beds into the places where they are to remain, take particular care not to over-prune their roots, and be alſo careful not to plant them deep, which, in making all plantations from nurſeries, you ſhould particularly have regard to; for there are more trees loſt by being deep planted, than by any bad management I know; and I rather would be obliged to bulk up my trees with earth about the roots, that run the riſk of planting them too deep.

The Beech requires almoſt the ſame culture and management with the Oak, with this eſſential difference, however, that though the Oak will thrive almoſt in any ſoil, this will not proſper in any but thoſe I have above directed. It makes pretty hedges in large wilderneſs quarters, and may be kept in a regular figure, if it is clipt twice a year. Its timber is of great uſe to turners, and for making chairs; and the Maſt, when you have great plenty of it, is excellent for feeding of ſwine or deer.

The Elm.

OF this tree there are ſeveral kinds, but I ſhall firſt treat of what is called the *Scots* Elm, of which there are many of great magnitude and great value. This is what Mr. *Miller* in his dictionary calls the Witch Elm; and I agree with Mr. *Evelyn*, who thinks it the *Atim* of the ancients. This ſort of Elm is propagated by

by ſeed, of which they produce, in favourable ſeaſons, a great crop. The ſeed is ripe about the ſecond week of *June*, and muſt be immediately after ſown; for they will not thrive if they are kept long out of the ground. To perform this in the beſt manner, you ſhould trench a piece of ground in *March* preceding, conform to the quantity of ſeeds you intend to ſow, in a ſhaded place of the garden, where I obſerve they grow better than when the ground is much expoſed to the ſun; obſerve, however, that the ſoil is a good free loam, otherwiſe I aſſure you, from experience, they will not thrive well. As ſoon as your ſeed is ready for ſowing, rake the ground fine, then take off a good cuffing, and water your ground below, upon which ſow your ſeed; this will make them germinate quickly; and in caſe you have many beds to ſow, the moiſture of the earth will keep the ſeed from blowing off, until you have covered your whole beds; afterwards draw on the earth with a rake, and drill them over with a ſhort tooth'd rake; keep them clear from weeds; and if the weather is extremely parching, you muſt water them. When they are about half an inch grown up, it will be proper to riddle on a little earth above them; this will keep them fixed in the ground, and prevent the froſt from throwing them out of it the ſubſequent winter; during which time if the froſt is very ſevere, you may cover them with peaſe haulm, which will give great protection to your plants: And in ſummer, if there be any drought, nothing will preſerve them ſo much as giving them plenty of water. During the firſt two years of their growth, you muſt keep them very free from weeds. About the end of the ſecond year they will be fit to tranſplant into the nurſery, where they may continue for four years, until you plant them out where they are to remain. In doing of this, you muſt be very careful not to bruiſe their tender roots; and that the pits into which you are to ſet them, have been dug a twelvemonth before you ſet in your trees, that the earth may be moulded with the ſun and air; and likewiſe take care not to plant them deeper than they were when ſet into your nurſery; but, above all, be ſure that the ground is good upon which they are planted, otherwiſe they will make a very indifferent figure, become moſſy in

their

their ſkins, hide-bound, and go off altogether; and cutting them down, which is a remedy for moſt hide-bound trees, will do them no ſervice; whereas, if they are planted in a good rich mellow loam, they will thrive exceedingly. Some years after they are planted, to enliven their growth, you ſhould dig the ground about them, lay on a little well rotted dung, and ſow Turnips and plant Cabbages. I have found this culture add ſo much to their ſtrength, that in twenty years, after being ſo uſed, they have been fit for cutting down, and appeared like trees forty years old.

If, notwithſtanding all your care, you perceive that your trees do not grow to your wiſh, I have uſed a method, which has had an excellent effect upon them; that is, early in the ſpring, whenever you perceive your trees are hide-bound, take a garden knife, and within two feet of the top of the tree to within a foot of the ground, make a large rut with the point of the knife, in a ſtraight line; and do the ſame likewiſe upon the oppoſite ſide of the tree. At the riſing of the ſap your trees will bleed a little, whereby they will be relieved from their diſeaſe. I have cured trees of this diſeaſe which have been ten or twelve years planted where they were to remain; for bleeding often gives vegetables the ſame relief as it does to animal bodies. When they are cut down, there is no tree excells them for making chairs; the way to uſe them for that purpoſe is thus: Cut down the trees in *October*, bark them, and hew them out in what faſhion you think moſt proper for your purpoſe; lay theſe logs in running water, but not in ponds or ditches, where the water ſtagnates; ſecure them from being carried off by the ſtream, and let them remain here until the end of *March*; then take them out of the water, lay them in ſome airy place to dry, but not near a fire; in the ſummer after they will work with the carpenter very well, and by the different colours of their veins will appear extremely beautiful. There are ſome perſons who lay them only ſix weeks in water, and then take them out for uſe; but you may try both ways, and chooſe that which ſuits beſt.

The other ſorts of Elms ſeldom or never bear ſeed; theſe you muſt propagate by layers, which is thus performed:

formed: Plant in your nurſery the old ſtumps or roots of thoſe trees which have been cut down, leaving a ſmall portion thereof above the ground, from whence will proceed a vaſt number of ſmall ſhoots, which ſhould be laid down, and covered with a good portion of earth during the winter; in the ſpring, ſuch layers may be taken from their mother plant a year after they are laid down, and then be put into the nurſery, from whence, in four years after, they may be tranſplanted out into ſuch places where they are to remain, obſerving always that the ground where they are to remain, be a good, free, rich loam; and I always chuſe to propagate from layers, rather than from ſuckers, for theſe I am ſure never produce good trees. Having given you directions how to make hedges of the Elm, I now proceed to the culture of another tree, which makes very fine hedges, eſpecially in large wilderneſs quarters.

The Hornbeam.

THIS tree is ſometimes raiſed from the ſeed; but as it ſeldom produces much ſeed in this country, it is better and more expeditiouſly raiſed by layers. Lay them down in autumn, and in the autumn following, they will be fit to take off, to be planted in the nurſery, the ground of which was well dug. They may remain here for two or three years, to acquire ſtrength, before they are planted out where they are to remain. If you deſign to plant them in hedge rows, you ſhould encourage all the lateral branches to grow, for this feathering of their branches will ſoon make a hedge. If, on the other hand, you deſign to plant them out for variety in your woods, you muſt treat them with reſpect to the pruning of their branches, as I have directed for other trees.

There is one ſort of tree called the Hop Hornbeam, which I prefer to the common ſort, for making hedges, becauſe its leaves come entirely off the end of autumn, and there is not that litter of leaves continually about its roots, as is the caſe with the common Hornbeam.

There are four or five different kinds of this tree, but as the Hop kind and the common ſort are moſt uſed, it is needleſs to mention the reſt.

The Aſh.

THERE are ſix different kinds of this tree; but I ſhall here treat only of thoſe which grow well. The common Aſh is propagated only by ſeeds, called Aſhen-keys. This ſeed ſhould be gathered when the leaves drop, in a dry day, and laid up in a heap to ſweat; this is a great advantage to their vegetation; for I have often obſerved, that the ſeeds uſed this way have ſprung the firſt ſeaſon, when the other ſeeds, which have been kept dry in lofts, did not ſpring till the ſecond year after they had been ſown. The ground in which you deſign to ſow them, ſhould, the preceding ſummer, be turned, and made very fine; and you may take a crop of Turnips from it, which alſo will help to open it, and they will be off time enough for you to ſow your ſeeds. In the month of *November*, ſow theſe beds very thick with the ſeeds, and the following ſpring and ſummer keep them clear from weeds; and if the weather is very dry, water them, even although your plants are not come above the ground. Next ſpring they will appear, and in ſummer it will be proper to prepare nurſery beds for them, in a piece of good rich ground; for they muſt ſtand no longer than the following autumn; becauſe if they grow well, being thick ſown, they ſoon would choak one another. Your nurſery muſt be of the ſame kind of ground with that wherein they were ſown; for it is certain this tree thrives beſt in good ground, though it will grow almoſt in any ſoil. When you are to tranſplant them, before you draw them, you muſt looſen them with the ſpade; for as they ſhoot a ſtrong root deep into the ground, they would be in hazard of breaking, if they were not thus looſened. When you have taken them up, you may ſhorten the ſtrong radical, or top roots; but be very ſparing in pruning their lateral fibres. After their removal, you may plant them in rows,

rows, at three feet diſtance row from row, and two feet plant from plant, thruſting down the earth to their roots. In ſummer they muſt be kept quite free from weeds; and the year after they are planted, if the weather is very parching, you muſt give them water, which will promote their growth, obſerving particularly to take off all ſide branches from them. This is contrary to the rule I have laid down in pruning other trees; the reaſon is, that as the Aſh ſucks very much, and when young is very full of pores, it thereby imbibes ſufficiently to ſupport its ſtock, and maintain its trunk, without the help of its lateral branches: But in taking theſe off, you muſt obſerve to do it late in autumn, and early in the ſpring, otherwiſe your trees will bleed, and ſuffer much. In this nurſery they may remain three years, and then you muſt think of planting them out where they are to remain. In this particular many people differ. In treating of woods ſome affirm, that every fourth or fifth tree in the wood ſhould be an Aſh: What they mean by this, is hard to ſay; for I am certain, that no tree will thrive under the drop of the Aſh, nor even in its neighbourhood, becauſe it is ſo ſtrong a ſucker, that it exhauſts all the nouriſhment round it; for theſe reaſons, therefore, it was my conſtant practice to plant out thoſe trees from the nurſery, into large woods or plantations, into the beſt ground I could chuſe for them, and all by themſelves, at ten ſquare feet diſtance; and after they have been planted two years, you can eaſily perceive, by their growth, what are thriving and what are not, what are ſtraight and what are crooked. The ſickly and crooked ones ſhould be cut over, to within half a foot of the ground early in the ſpring, which will induce them to ſhoot out noble ſtraight ſtems: for no tree whatever agrees better with being cut down than the Aſh. By this culture the ſtraight thriving Aſh tree will mount up to a great height, and add beauty to the foreſt, while the weaker plants form a kind of underwood, which may be cut every eight or ten years, for arbour, hop, and eſpalier poles, and for hoops, to the great profit of the owners of ſuch plantations.

The *Carolina* Aſh, with the Flat-key, together with the *Calabrian* round-leaved Aſh, commonly called the

Manna Aſh Tree, are equally hardy with the common Aſh, and will grow very well in this country, provided they have a little ſhelter when they are young.

The Plane.

THIS, in *England*, goes by the name of the Sicamore, though I cannot think it the ſame that of old went under that name. But leaving this to be diſcuſſed by botaniſts, I proceed to its culture, which is much the ſame with that of the Aſh tree. The keys or ſeeds of it muſt be ſown about the end of autumn; for if they are kept till the ſpring, they ſeldom or never vegetate. When the ſeeds come up, and are too thick, you ſhould draw out part of them, and thin your ſeed beds, which will make what remains grow the better. From the ſeed beds you may tranſplant them into the nurſery, giving them plenty of room; and from thence, three years after, you may tranſplant them into the places where they are to remain. They are not planted out in woods, as moſt other trees, but they are excellent to be planted for defence of large plantations, or large nurſeries, and gentlemens ſeats, for which uſe I think they have been the favourite trees of our anceſtors. It differs in nothing from the Aſh, but that it comes up the firſt year after the ſeeds are ſown, if they are put into the ground early in the autumn, or whenever its ſeeds are ripe. This tree is far ſuperior to the Beech, for all the uſes of the turner, particularly for diſhes, trenchers, and bowls; and when it abounds with knots, as it frequently does, it is uſed by the joiners for inlaying. I have alſo ſeen rooms lined with it; the trees indeed were very large, and had no knots in them; and when it was varniſhed had a very elegant appearance. When it is uſed in this way, both ſides of the panelling ought to be varniſhed, becauſe it is very ſuſceptible of being eaten with worms.

This tree being near a-kin to the Maple, I ſhall here likewiſe treat of it; but before I begin, I ſhall juſt enumerate the different kinds of Plane, of which there are three

three other kinds I have not yet noticed; to wit, the true Oriental Plane, the Oriental Plane with the Maple Leaf, and the Occidental or *Virginian* Plane. The Orientals are propagated either from ſeeds or by layers. The firſt method I ſhould chuſe, though the latter will alſo ſucceed, but will never make ſuch large trees. The *Virginian* or Occidental Plane, which is neareſt of kin to the *Acer majus, falſo multis platanus*, will grow extremely well by cuttings planted in the month of *October*, and I have ſeen very large poſts of them ſharpened at the end for the ſtrongeſt ſupporters of eſpaliers, and continue longer when put in the ground in good plight, than any timber I ſee uſed for that purpoſe.

The Maple.

THE ſeeds of this tree, being ſown in great nurſeries, have often produced plants with ſtriped leaves, and have retained their variegation very well, which is not common in other variegated plants, except the *Lotus* or *Birds Trefoil*, the ſeeds of which, when gathered from variegated plants, come up always variegated.

We have two ſorts of the flowering *Virginian Acers*, but that ſort, with the largeſt red flowers about the branches is preferable, chiefly for the multiplicity of its flowers. The *Norway* Maple grows to a very large tree in this country, and is raiſed by ſeeds, which it affords in great quantities, and requires the ſame culture with the common Maple, falſely called the Plane Tree, and is very proper for incloſing plantations of young trees, or for ſheltering gentlemens ſeats from the high winds.

The Cheſnut.

THIS is one of the largeſt and prettieſt trees, when rightly managed, that grows. In *Britain* it arrives at a vaſt bulk, eſpecially the ſouthern parts thereof,

as well as the Oak, which appears from the many large logs of both theſe timbers that have been found in many buildings in *London*, from *Henry* the IId's time, till within theſe fifty years paſt. And in the northern parts of *Britain*, near *Edinburgh*, I have ſeen the wooden parts of the roofs of ſtables and cow-houſes, where, by the breath of the cattle, other woods have been rotted, thoſe roofs made of Cheſnut trees have remained ſound for above fifty years. Thoſe trees, therefore, when properly planted in our woods, cannot fail to be of very great uſe and profit to the owners. Suffer me, therefore, to be ſomewhat particular upon the culture of this tree. As ſoon as you deſign to plant the nuts, you are to diſtinguiſh between what you are to plant in your woods, and what you are to plant out for pleaſure in avenues, or for bearing fruit. They require a very different culture, and you muſt take a reſolution before you plant them, which of the different methods you intend, ſo as not to confound the one with the other. I ſhall begin with giving you directions concerning thoſe which are to be planted in woods for profit. The proper choice of ſeeds, is an article of greater importance than many perſons imagine; but as upon this depends your ſucceſs, it will be neceſſary to attend carefully to it.

We annually receive theſe nuts from *Spain*, *Portugal*, and *France*; and we alſo have them from *England*. The queſtion is, whether we ſhould plant what comes from Southern climates, or the nuts which we receive from *England*, in our woods? One would naturally think, that the nuts which grow here would be more proper to plant out in woods, where they would moſt probably meet with rougher treatment and harder weather than thoſe trees which are planted near a gentleman's ſeat, or in a well fenced incloſure. But experience, the mother of all ſciences, teaches us rather to chuſe thoſe nuts which come from *Spain* and *Portugal*, provided they are large, fair, and well ripened in the woods. Thoſe nuts being larger by half than what we receive from *England*, conſequently the tree muſt be larger alſo, and the ſtouter the tree, the better able it will be to bear hardſhips. A twelvemonth before you intend to plant, make choice of the beſt fenced ground, and beſt ſoil in your woods; dig

pits

pits a foot and an half in diameter, and two feet deep; lay up the ſoil from thence to mould and mellow by the ſun and air; and obſerve, that your pits be eight feet diſtant from one another. In theſe pits plant all your good nuts, two inches deep. The good nuts you can diſtinguiſh from the bad, by putting them into water: Caſt away what ſwims, but what ſinks you are to uſe. In the ſpring following, you will obſerve them coming up; if the weather is very ſevere, you may lay an inch more of mould above them. The ſummer following you ſhould take care to keep them free from all weeds, and ſtir the mould a little about them; and remember that their future ſucceſs depends much upon the care you take in keeping cattle from their plantations. Early in the ſpring you ſhould diveſt them of lateral branches, or if they come up forked, you ſhould take away one of their branches, and leave the other for the wood. In two years you will eaſily obſerve if they are thriving; if you find that they canker, and a moſs grows about them, cut their ſhoot down at the firſt bud above the ground, in a ſloping manner, and from that bud, they will ſoon ſend up another handſome ſhoot; for their root has ſufficient ſtrength to eſtabliſh itſelf in the ground, and thereby to recover the plant; and you are to take particular care not to allow any graſs or weeds to twiſt about the young plants.

The other method of planting them is in rows. From the ſeed beds, where they are firſt raiſed, they are, as uſual, to be tranſplanted into the nurſery. When lifting them, you are to take care to cut a part of the top root off, eſpecially when they are again to be removed into the places where they are to remain. They delight in a rich ſoil, but not in clay, and muſt be removed from the nurſery-beds in two years, or three at moſt, according to their growth. If you perceive that they do not thrive, but turn crooked, you muſt cut them down, as I formerly directed, and they will ſend up a handſome ſhoot. The trees planted out in this way, will bear fruit ſooner than thoſe trees which you planted in your woods; by the taking off their top root, which makes their lateral fibres ſpread along the ground within the

influence of the ſun and of ſhowers, which are the chief principles of vegetation.

The Horſe-Cheſnut, one of the nobleſt trees that adorns our woods for beauty, muſt be treated in the ſame manner; and the Pavia, or red flowering Horſe-Cheſnut, which makes one of the moſt beautiful flowering trees that adorns our gardens, may alſo be cultivated in the ſame way; but for the firſt four years of its growth, ſhould have more ſhelter given it, in winter eſpecially: Only you are to obſerve, that ſuch Cheſnut-trees as you are to plant out for bearing fruit, ſhould not have their ſide branches ſo lopped off as thoſe trees which are planted in woods for timber.

The Walnut.

THOSE trees which are planted in your woods, ſhould be ſown in the places where they are to remain, and from thence never removed; for if their roots, which always tend downwards, are broken, cut or bruiſed, it hinders the tree from aſpiring, which is the greateſt beauty in trees planted for timber. Indeed they will not be ſo fruitful as trees that are tranſplanted; but the riſk of the operation greatly out-balances any advantage that may accrue from it. In woods theſe trees ſhould be planted at twelve or thirteen feet diſtance; for their vicinity to one another greatly promotes their growth. I would here adviſe to plant ſome of the black *Virginian* Walnuts, which are brought in great plenty from that country; for theſe naturally grow erect: But take care, that neither the common nor the *Virginian* Walnut fork when they come up; for no tree is more liable to do ſo than the Walnut; and I always would chuſe to plant them by themſelves in a well ſheltered ſituation, in every reſpect treating them as I directed for the Cheſnut. The wood of the black *Virginian* Walnut is invaluable; for by the beautiful enamelling of its veins, when it comes to be cut, it rather ſeems to reſemble marble than wood.

They delight in a rich firm loam, and they will alſo grow upon the declivities of chalky hills, or ſtony ground.

It

It is very remarkable in this tree, that the more uncultivated the ſoil is, the more beautiful is their wood, and better for the cabinet-maker's uſe than what grows in a richer ſoil.

If you deſign to plant walnut trees for fruiting, they muſt be ſown in beds. Two years after, they muſt be tranſplanted into the nurſery; when they have grown two years more, they will be fit to plant out into the places where they are to remain, and to be treated in the ſame manner as I directed for the Cheſnut; with this peculiar difference, however, that you are to plant the Walnuts no leſs than twenty-five or thirty feet diſtant one from another, for the ſake of their fruits and the extending of their branches; for it is very obſervable, that when Walnut trees are planted for fruiting, and have been frequently tranſplanted, and their radical or top root lopt a little, that not one in a thouſand of them grows erect in its ſtem, but diſperſes its branches at a great diſtance from the trunk of the tree; and the more crooked and pervading theſe branches are, you are ſure of the larger crops of fruit. I next proceed to treat of a very beautiful tree.

The Quickbeam, *or* Roane Berry Tree.

THIS tree, for its beautiful flowers in *May*, and its very handſome ſcarlet fruit in autumn, yields in beauty to no tree I know, eſpecially if we conſider the very erect ſtature to which in a ſhort time it attains. This, together with its reſiſting all the inclemencies of our climate, thriving where few other trees will proſper, makes it deſerve our utmoſt care and culture to propagate it. It is of the *Sorbus* tree kind, and is botanically named *Sorbus aucuparia Johannis Bobini*. This tree delights in a moiſt looſe ſoil, and may be eaſily propagated from the berries, which it produces in great quantities: Theſe, after picking away the pulp from about them, may be ſown in *November* or *March*, where they may continue two years; and afterwards be tranſplanted out into the places where they are to remain for good. As I ſaid before,

fore, they grow upon any ſoil, but proſper beſt where the ground is wrought moſt about them. The uſes of this tree are many: I have often ſeen good walking canes made of its boughs; and the wheelright and huſbandman apply it to many uſes: In ſhort, I know no tree ſo capable to make a large garden pretty, by its delicious flowers in the ſpring, and its charming ſcarlet coloured fruit in autumn; and, when ready for cutting, of ſuch general uſe.

I ſhall next proceed to the culture of another tree, which likewiſe yields very beautiful flowers, and the curious enamel of whoſe wood, richly deſerves the carpenter's niceſt care. Was it more generally known, it could not fail to be more eſteemed, and conſequently more cultivated.

The Laburnum, *or* Peaſe-cod Tree.

BOTANICALLY named *Citiſus Alpinus latifolius, flore ramoſo pendulo longiori, of Tournefort.* Their flowers are produced in *May* in very long yellow coloured ſpikes, which are ſucceeded by long cods like Peaſe, which include their ſeeds, and it is from the form of theſe that the tree receives the name of Peaſe-cod-tree.

It is propagated from ſeeds, which are uſually ſown in *February* or *March*, on a bed of good freſh light earth, covering them with an inch of the ſame mould; and in ſix weeks after they will appear above ground. If the weather be dry, you ſhould water them as occaſion requires.

If your trees have grown very tall the firſt year, you may tranſplant them into the nurſery, planting them in rows three feet diſtance, and one foot aſunder in the rows, laying on the roots of theſe young plants a good deal of ſtraw in the winter time, to protect their fibres from the ſeverities of the froſt, and in ſummer from the parching rays of the ſun. In the nurſery, if they like the ſoil, they will grow very faſt, and in two years muſt be planted out into the places where they are to remain; for if you ſuffer them to continue longer in the nurſery, it will be

be hard to get them up without injuring their fibres, than which nothing is more injurious to theſe trees. And here I ſhall give a very neceſſary caution for all quick growing trees, that the firſt year after they riſe, they muſt be tranſplanted from the ſeed-bed into the nurſery, where they muſt remain no longer than two years; for if they become very tall before you plant them out into the places where they are to ſtand, they ſeldom thrive well.

No tree whatever is more hardy, after it is planted out, than the Peaſe-cod tree; and if it be planted in ground it delights in, it will become very large; ſome I have ſown, grew to ſuch a ſize, that tea tables have been made of one plank of the wood. The wood is of a bright yellow colour, with blackiſh purple veins, and far exceeds the prettieſt Mahogony I ever ſaw.

The Lime.

THE firſt ſeeds of this tree I ever raiſed, were ſent me as a preſent from a gentleman in *England*. With them I received the following letter of directions how to uſe them:

"*SIR*,

"*I have ſent you half a pound of Lime-tree ſeeds perfectly ripe, which is pretty extraordinary, as they ſeldom ripen thoroughly with us. As a great deal depends upon the directions how and when to ſow them, I ſhall give you a few, which I hope you will find uſeful. No tree is ſo tender when it is young, as the Lime: After it is ſown, it lies twelve months in the ground before the ſeedlings appear, and riſes preciſely within four or five days of that day when in the preceding year it was ſown: therefore I would adviſe you to ſow the ſeeds about the twentieth of May, keeping them clear from weeds, and watering the beds in dry weather, even before they come up. In winter lay a conſiderable quantity of Wheat-ſtraw upon the beds where you ſow them, to protect them from froſt, and you will ſee your ſeeds come up within*

"*two*

" *two or three days before or after the twentieth of May* " *following. They may remain in the ſeed-bed two years,* " *and then it will be proper to plant them out in the nur-* " *ſery. Give them plenty of room therein, and let them* " *remain there for four years, and when you plant them* " *out, be ſure to give them a rich loam. By following* " *theſe directions, your trees can ſcarcely fail of growing* " *to a very great ſize. Obſerve one thing particularly, not* " *to plant them deep; for by that error I have loſt more plants* " *than any other way.*"

Conformable to this direction I managed my trees, and had a good number of the fineſt plants, raiſed from ſeed, I ever ſaw, far exceeding thoſe raiſed from layers.

It is remarkable in this tree, that ſuch as you raiſe from layers will ſeldom or never produce ſeeds. Their layers are rooted in twelve months, and may then be planted out into a nurſery, where they may ſtand four years, after which they muſt be tranſplanted out into the places where they are to ſtand, in the ſame manner as the ſeedlings above mentioned.

I come now to treat of Aquatic Trees.

The Alder, *or* Aller.

I Have often heard that this tree has been raiſed from ſeeds, but I never practiſed it. My way of raiſing it was from ſuckers, which grow in great plenty in thoſe grounds, where the old trees were cut; but though this be my practice, yet I cannot much approve of it, for the ſuckers are very long before they become fit for any uſe. Therefore, the beſt method I know to raiſe them is: Take a middle aged tree, which is twiggy about its ſides; cut it in pieces four feet long; ſharpen the cuttings at the ends, but do not take away the ſide twigs from them. In the month of *November* thruſt them into a ſwampy piece of ground, two feet down, and the year following you will obſerve them ſhoot ſtrong. In two years after this, if they produce no more than one ſhoot upward, cut that down to within three buds of the place

place from whence it ſhot; and next year, and the years following, you will ſee the ſtock ſend out two or three ſtrong ſhoots; by this means in a ſhort time you may have a whole wood of them. I have likewiſe ſeen them propagated by taking up the old roots of the trees which have been cut, together with their fibres; then ſplit the roots, preſerving as many of the fibres as you can, and plant them again, and they will ſend up a great many noble young ſhoots.

The Birch.

CONTRARY to what Mr. *Evelin* ſays, and of which Mr. *Philip Miller* takes no notice, I have raiſed a vaſt number of theſe trees from ſeeds. I bought about four pounds weight, which I ſowed in the month of *February*, in a piece of indifferent ground in a nurſery in my woods, covering them with a quarter of an inch of mould, for theſe ſeeds cannot endure to be much covered. Over this I ſpread ſome ſmall cuttings of whins, to preſerve the ſeeds from the birds (who are very fond of them at this ſeaſon of the year) which, when the plants appeared, I took away. In this nurſery they remained two years, and afterwards I tranſplanted them out into the woods, pretty thick, and took ſome of them home to make plantations of, near my houſe, purely for their fragrance; for they emit, after a ſhower of rain, an odoriferous flavour. In three years after this I obſerved my plants grow very tall, but at the ſame time very ſlender; and thoſe planted in the beſt ground were the ſmalleſt, moſt crooked, and the moſt wind-waved; therefore I reſolved to cut them down within two inches of the ground, and in about four years after I had the moſt beautiful plants I ever ſaw, ſtraight, tall, and ſtrong, and far excelling thoſe which I gathered annually in my woods to make nurſeries of. I bought alſo from the ſame perſon ſome Fir-ſeed, but that did not come up, which I attributed to its being kiln dried.

The Abele Tree

IS only propagated from the ſuckers, of which you may have in great numbers, by cutting down ſome of the trees, working the ground about them, and preſerving them from cattle. This tree together with the Aſpin or Quaking Aſp, are produced in the ſame manner. I am ſurpriſed how a late author ſpeaks ſo diminutively of the Quaking Aſp. I ſaw within theſe ten years a large plantation of theſe trees near a gentleman's ſeat in the biſhoprick of *Durham*, moſt of them near forty feet high, without a ſide branch, which he eſteemed very much, and ſold for a great price, to the millwrights and carpenters about the country.

Willows.

OF which there are thirty ſorts known to the baſket-makers. They are all propagated by cuttings, planted in a moiſt ſoil. But there is one particular kind, which excells the whole, called the *Huntingdon Willow*, which comes very ſoon to be a large tree. Theſe are more properly called Sallows; they grow in rich ground, and, although it is not wet, they will proſper well.

Willows are propagated by ſhort cuttings, but Sallows from ſtakes or truncheons, ſeven feet long, which, when thruſt into the ground in *October* or *February*, will thrive exceedingly well.

I ſhall next treat of Evergreen Trees, which are fit to be planted out into woods.

The

The Fir.

COMMONLY called the *Scots* Fir. Moſt authors who have wrote of this tree, have treated it in ſuch a ſuperficial manner, that they either ſeem not to value it, or, what I rather believe to be the caſe, they neither know the tree, nor its culture: I therefore think it my duty to give you my own practice in which I ſucceeded extremely well.

This tree is only propagated from ſeeds, which are contained in cones or clogs, as they are called, which are ripe or fall from the trees in *December* and *January*, at which time you ſhould gather them, obſerving always to make uſe of thoſe cones which fall from the eldeſt, talleſt, ſtraighteſt and beſt grown trees you have. There is ſometimes a difficulty to get the ſeeds out of the cones, and if you are not favoured with much ſun, which will make theſe cones burſt, it is extremely difficult to bring out the ſeeds. The method of getting out theſe ſeeds which ſucceeded beſt with me, was this: In my ſecond ſtove, where the air was kept up to *temperate*, I ſpread my mats upon the brick floor, under which there was no heat, the air in the room only being warmed moderately. Upon the mats I laid my clogs, which in about three or four weeks opened, and yielded me plenty of ſeed. A friend of mine that was preſent at the operation, objected, that this was very near kiln-drying, which might deſtroy the ſeeds; to which I anſwered that I was not afraid of their being too much dried, as the air in the room was but moderately warm, and there was no heat below them, and that every two days I took out what ſeeds had burſt from the cones; nor was the heat comparable to a kiln, which is warm below, where conſequently the ſeeds muſt be roaſted. The effect was, that when I ſowed my ſeeds they all came up to great perfection, notwithſtanding that I had brought them out in this manner from the cones. However, perſons that have not the ſame convenience I had, may open their cones in the ſun, which no doubt is a very good method,

and

and what does not open before they are ſown, will burſt from the cone in the ſummer time; and you ſhould keep their ſeeds in caniſters, or leather bags, till next ſowing ſeaſon, in a dry open place, where neither ſun-ſhine nor fire heat can get at them.

About the end of *April* prepare your ground for ſowing, by trenching it, and making it fine, taking out all ſtones, and roots of weeds, or graſs. If this be done in *October* preceding, it will ſtill be ſo much the better; and if you lay it up in ridges after it is ſo trenched, it will be ſtill of greater ſervice. The ground ſhould be of a middling nature, neither too poor nor too rich, too clayey, nor too ſandy. Take off a pretty good cuffing with the rake, and if the ground is very dry, and no rain like to happen, water the beds from a garden pot, with the roſe upon it; then ſow your ſeeds pretty thick; draw on the earth, and dreſs up your beds with a very ſhort toothed rake, and in two or three days after, riddle on an inch of the ſame earth upon them. Some weeks after you will ſee them peeping through the ground, and now is the preciſe time, when your greateſt care is required to preſerve them; for at their firſt appearance above ground, they bring up the huſk of the ſeed at their tops, which whenever the birds perceive, they fly greedily to attack them, and picking at the ſeed huſk, they nip off the heads of the young plants, which utterly deſtroys them. I covered my beds therefore with cloſe wrought nets, ſupported above the beds with hoops ſo high, as to be without the reach of the birds bill. This does very well; but there is ſtill a better method, which is to ſet boys near the beds, from ſun-riſing till ſun-ſet, giving them piſtols to fire, with powder only, which will ſo frighten the birds, that they will not venture, for ſome time at leaſt, to come back again. If the weather is very dry, you muſt water them frequently, which will promote their growth exceedingly, and when weeds appear, you muſt take them out carefully, becauſe in the non-age of the plants, they are apt to come up with the weeds. In the beginning of *November* riddle on a good quantity of ſaw-duſt, that has been dried ſome time, or for want of that, bere or oat chaff, which when laid upon the beds, will prevent the froſt from throwing the young

young plants out of the ground, and in *April* following, weed the beds of the Firs which have the largeſt growth, and plant them out in the following manner, which, though directly contrary to the opinion of all authors, who have wrote upon the ſubject, has, with me, always been attended with great ſucceſs. I am not for planting out the whole of the ſeedlings at this time, but ſuch only as are very rampant in their growth. At two years old your Firs muſt be tranſplanted either into nurſeries or incloſed grounds, where they are to remain. This laſt method I moſt approve of. The manner of planting is: In the month of *April*, when you intend to take out the rampant growers from your beds, after taking them out, put down the earth with your hand cloſe by the roots of theſe you leave in the beds; and if you want to carry them to any diſtance, have ſome paped earth by you, that is, ſome weil wetted earth, and tie a layer of it round the roots of your ſeedlings, which otherwiſe would dry very faſt. If you deſign to make large plantations, it will be neceſſary to incloſe the ground with fail dykes, to prevent the intruſion of cattle, which may be croſſed with other fail dykes at right angles, at every three or four acres. If your ground is bare where you intend to plant them, or if it has very ſhort graſs upon it, you have no more to do, but to make a ſlit with your ſpade, ſet in your plant at the diſtance of about two or three feet, and put the root of the plant cloſe to the ground. There is little danger of planting this tree too thick, for the rank growers will deſtroy ſuch as do not thrive, and the under branches fall off when they run high, whereby they prune themſelves, and ſave you that trouble. If Junipers, or any low growing plants are upon the ground, or if the ground where you intend to plant them, is rank with graſs, or tall growing whins, you muſt plant your ſeedlings in pits, at a little diſtance from theſe under growths, leſt they ſhould be choaked or hurt by them; and if you deſign to plant Oak, Beech, or any other trees amongſt them, they ſhould be planted at eight feet diſtance; for it is almoſt incredible to think how faſt Oaks grow when planted among Firs. I have alſo planted, with great ſucceſs, a few of the Cedars of *Lebanon* amongſt Firs; but this is not to be done, until the Firs

have become pretty large plants, to protect them; obſerving ſtrictly, however, not to ſuffer the Firs to drop over them; and betwixt the Cedars and the Firs I planted Oaks, that when the Firs were cut away, the Oak, which is a long laſting tree, might give ſuitable ſhelter to the Cedar.

Of Coppices.

THUS have I gone through moſt of the trees that are planted either for pleaſure or profit. I ſhall now conclude the whole by a few obſervations on the raiſing of Coppices, or ſmall woods, a work the more neceſſary, as it is in the power of gentlemen of but very moderate fortunes, whilſt the culture of large woods requires both extent of ground and expence in management.

Whenever you intend to make ſmall woods of coppices, you are firſt to incloſe your ground ſufficiently, ſo that no cattle may get in to browze upon your young plants, or amongſt them. If there is any natural wood in this incloſed ground, you are not to take it intirely away; nor Junipers, ſcantling Whins, or other low growing Shrubs; but ſow the ſeed of your trees near them, in ſuch a manner as that the under-wood may not choak them when your young plants come up. If the graſs is rank, you muſt pare the ſurface of the earth at a little diſtance round the pits wherein you ſow your ſeed, that the graſs may not twiſt round the young ſhoots of your plants which would choak them. I would always adviſe, rather to ſow than plant your woods; for thoſe trees which are ſown, and remain untouched, will in twenty years far outſtrip any tree you can plant. Thin your plants when they come to a tolerable height, moderately, but not all at once, for that would let in too much cold air to your plants; but from delicacy on this point, you muſt not crowd your plants too much; otherwiſe, for want of a due circulation of air, they will run like may-poles, and turn out good for nothing. Take away all forked ſhooters, by taking off their

their ſtems; but do not diveſt your trees of all their ſide branches, for this would ruin their heads. If your young plums which you ſowed, do not thrive after the firſt three or four years, cut them down, and they will ſoon after ſend up good young ſhoots, which in time will make large trees.

Theſe coppices may be cut every twelve or fourteen years, or may ſtand longer if you ſo incline; but no large wood muſt feel the weight of the axe, till it is fifty years old.

Before I leave this ſubject, I cannot but regret the univerſal neglect that at preſent prevails, in the article of woods and plantations. Oak-woods, formerly our glory, are now ſcarce known, though our Acorns and ſoil are equal, if not ſuperior, to thoſe of former times. What effect this may have on our commercial intereſt time only can diſcover. I ſhall juſt ſay, that it is far from being improbable, that neceſſity at laſt will oblige us to perform what indolence or falſe taſte at preſent hinders us from executing.

It is indeed matter of ſurpriſe, that a culture of this kind, which in a courſe of years, is attended with ſo much profit to the planter, or his ſucceſſors, ſhould be ſo greatly neglected in this induſtrious age. One would imagine that intereſt, if no other motive could prevail, would have the effect to engage many in ſuch a purſuit. —But experience ſhews us quite a different proſpect. Preſent profit, or preſent pleaſure, is the object of every wiſh; and there are but few who beſtow one thought on the advantages that would accrue to poſterity from raiſing woods and foreſts. On the contrary, even where ſuch woods are raiſed, and perhaps in a thriving condition, how often do we ſee the beſt trees culled out for ſome favourable avenue or incloſure; and even the woods themſelves mangled and cut down, and the very beſt and moſt promiſing trees deſtroyed, to form a viſto to ſome antiquated ruin; or, to be ſtill more modern, to ſome *Indian* Pagod or *Chineſe* Temple.

The author of this work ſympathizes on ſo woeful a degeneracy. He hopes the few hints he has thrown out, may have ſome effect to correct a taſte ſo generally deſtructive. The rules he has laid down, are moſtly

founded on his own experience; and he with confidence can promiſe, that if ſtrictly followed, they can ſcarce fail of the deſired ſucceſs.

An Account of the beſt Method of planting ELM TREES, *on a cold, ſtiff, clayey Soil.*

SIR,

I AM much ſurpriſed to have ſeen ſo little on the ſubject of planting: Some good directions on this head could not fail of being very uſeful to many gentlemen who lead a country life, and have little elſe to do but to improve their eſtates, and be uſeful to their neighbours.

My preſent intention is to inform you of an experiment I made in the year 1757, of planting ſome *Elms* on a ſtiff clay, a ſoil which is, in general, in this county, thought not ſo well to ſuit them as others of a lighter and drier nature.

My firſt buſineſs in this grand affair was to lay a plan of operation: accordingly, I marked out the ground, driving a ſmall ſtake in the ſpot where every tree was to be planted.

As ſoon as harveſt was over, I hired ſome labourers, and made them dig a hole ſix feet ſquare, and four feet deep, wherever they found a ſtake, throwing the earth which came out of the hole round its edges.

When this work was done, I let it lie in the above ſtate all that winter and the enſuing ſummer, with an intent that the ſtiff obſtinate nature of the clay ſhould be meliorated by the powerful influences of the froſts, ſun, and variable air.

At the end of the ſummer of 1758, I found I had not loſt my labour, when I came to examine the ſtate of my experiment. The nature of the ſoil, wherever the air could operate upon it, was entirely changed, the clay being much leſs compact, and approaching nearer to the ſubſtance of a ſtiff loam, being crumbly, though cloſe in its texture.

As ſoon as I found that my land was thus in proper order for planting, I procured from an honeſt nurſery-man, a ſuffi-

a ſufficient number of young *Elm* trees, ordering him to mark the north ſide of every one of them, with ſome white paint, previous to his taking them up.

This was a precaution ſome might think unneceſſary; but my reaſon for doing it was, becauſe I imagined that a tree, removed from its native ſpot, and tranſplanted into another place, muſt thrive better, if on being removed, it enjoyed the ſame aſpects as before; and indeed ſome ſmall experiments I had before made in this matter ſeemed to confirm me in the opinion.

As ſoon as I had beſpoke my trees, I employed ſome labourers to fill up the holes above-mentioned, with the earth that came out of them; but I firſt ſprinkled ſome ſlacked lime over the bottom of each hole, and mixed lime with the earth as it was thrown in, to the quantity of a buſhel for each hole.

When this work was done, and the ground appeared level, with a little ſpare earth near each hole, I had my trees planted in the following manner.

I began planting my trees about the tenth day of October, and had finiſhed by the latter end of the month.

I cauſed, in the firſt place, the roots to be moderately trimmed with a very ſharp knife, each root being cut ſloping, not tranſverſely, the ſlope being undermoſt or next the ground: This was, in ſome meaſure, eſſential to prevent the moiſture proceeding from rain from ſoaking into the wounded part.

Having proceeded thus far, I cauſed a tree to be ſet over each hole, upon the ſurface of the ground, round the roots of which ſome under-turf earth was piled, and over that the remainder of the natural ſoil, with which ſome ſlaked lime had been mixed.

The upper part of the little hillock, formed round the roots of the tree, was made a little hollow, to convey to the plant as much rain as would be neceſſary to ſupply it with a ſufficient quantity of moiſture.

I then employed the pariſh-ſexton to ſecure the little mound with brambles, wattled in the ſame manner as are the graves in a country church-yard; my laſt buſineſs being to apply ſome long ſtakes to each tree, by way of ſupporting it, till it had taken much root.

In this manner, then, I planted the whole number of my trees; and they ſucceeded to a wonder, for but ten failed; and the bark of theſe was, on examination, found to have been injured by an aſs, which broke into my ground: However, the next year I had them replaced, and the diſadvantage was not great.

What is moſt remarkable is, that my trees ſtood well the memorable hard froſt, without being, as far as I could find, in the leaſt injured.

I well knew, that the only way to defend the roots of my young trees from the damp, raw, under-earth, which had proved fatal to other plantations, was to raiſe them above it: This I effected, by planting them on the ſurface of the ſoil; and ſuch roots as ſtruck downwards found a good warm bed in the earth, which had been ſtirred and mixed with lime: However, as the *Elm* has naturally a ſpreading root, the nouriſhment was chiefly extracted from the upper bed of earth, the main roots being covered by only a few inches of mould, and ſome of them, at this time, lie quite bare and prominent above the earth.

A great deal depends on ſtaking young trees ſo ſecurely that they ſhall not be ſhaken by every guſt of wind, in ſuch a manner as to diſplace their roots in the earth; for by this means the fibres of the roots of ſuch ſhaken trees are removed from the ſurface which ſhould afford them nouriſhment; and either the tree dies, or the mouths of the roots muſt again have time ſo to adapt themſelves to the circumjacent particles of earth, as to be in a capacity of once more extracting their nouriſhment and food from their common mother.

I am yours, &c.

Eſſex, Nov. 12, 1764. X. Z.

THE

THE

INDEX.

N. B. The Numbers that are expreſſed by Letters, have a Reference to the Treatiſe, coming before the Work.

A.

Chervil,

D.

E.

F.

G.

H.

Standards,

T.

V.

FINIS.