The gardeners dictionary :containing the best and newest methods of cultivating and improving the kitchen, fruit, flower garden, and nursery, as also for performing the practical parts of agriculture, including the management of vineyards, with the methods of making and preserving wine, according to the present practice of the most skilful vignerons in the several wine countries in Europe, together with directions for propagating and improving, from real practice and experience, all sorts of timber trees /by Philip Miller.

London : Printed for the author and sold by John and Francis Rivington ... [and 23 others], 1768.
http://www.biodiversitylibrary.org/bibliography/541

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The third ſort grows upon chalky hills in ſeveral parts of England; this hath an oblong, cluſtered, bulbous root, from which ariſes a ſingle ſtalk ſix inches high, having two oblong leaves at bottom, and rarely any above; the flowers are ſmall, of a white colour, growing in a looſe ſpike on the top of the ſtalk; they have a muſky ſcent. This flowers in Auguſt.

This ſort grows naturally in moiſt paſtures in the northern parts of England; I have alſo found it in great plenty on Enfield Chace, not far from the town.

The fourth and fifth ſorts grow upon the chalk-hills near Northfleet in Kent, and alſo upon Cauſham-hills near Reading; they have roundiſh bulbous roots, from which come out a few oblong leaves; the ſtalks riſe a foot and a half high, garniſhed with a few narrower leaves; the flowers grow in a looſe ſpike on the top of the ſtalk; they are in one of a ruſty iron colour, and the other hath herbaceous flowers. The lip of the nectarium is divided into three parts, the middle ſegment being ſtretched out much longer than the other, and is divided into two; the upper part of the flower being hooded, the whole bears ſome reſemblance to a naked man. They flower in June.

The eighth ſort grows naturally in dry paſtures in ſeveral parts of England, and is commonly called the Humble Bee Orchis; of this there are two or three varieties found wild in England, and ſeveral more in Spain and Portugal. This hath a roundiſh bulbous root; the leaves are like thoſe of the narrow-leaved Plantain. The ſtalk riſes ſix or ſeven inches high, having two or three ſheath-ſhaped leaves embracing it, which are erect; at the top of the ſtalk come out two or three flowers without ſpurs, having purpliſh creſts and wings. The nectarium is large, ſhaped like the body of a humble bee, of a dark ſooty colour, with two or three lines running acroſs it of a darker or lighter colour, which appear brighter or duller according to the poſition of the flower to the ſun. It flowers early in June. There are ſome varieties of this ſort, which differ in the colour and ſize of their flowers.

All theſe ſorts may be preſerved in gardens, though not propagated there. The beſt time to remove the roots from the places where they naturally grow, is juſt before the ſtalks fall, for at that time the roots may be eaſily diſcovered, and then they are beginning to reſt, ſo that the bulb will be fully formed for flowering the following year, and will not ſhrink; but when they are removed at a time of the year when they are in action, the bulb deſigned for flowering the following year, not being fully ripened, will ſhrink, and frequently periſh; or if they ſurvive their removal, do not recover their former ſtrength in leſs time than two years.

When theſe are removed into a garden, the ſoil ſhould be adapted to the ſorts. Such of them as grow naturally in moiſt paſtures, ſhould be planted in ſhady moiſt borders; thoſe which are inhabitants of woods may be planted under trees in wilderneſſes, but ſuch as grow upon chalk-hills ſhould have a bed of chalk prepared for them in an open ſituation, and when the plants are fixed in their ſeveral places, they ſhould not be diſturbed after; for if they are kept clean from weeds, the leſs the ground is diſturbed, the better the plants will thrive, and the longer they will continue.

OPUNTIA. Tourn. Inſt. R. H. 239. tab. 122. Tuna. Hort. Elth. 295. Cactus. Lin. Gen. Plant. 539. [This plant is called Opuntia, becauſe Theophraſtus writes, that it grows about Opuntium.] The Indian Fig, or prickly Pear; in French, *Raquette.*

The CHARACTERS are,

The flower is compoſed of ſeveral petals, which are obtuſe, concave, and placed in a circular order, ſitting upon the germen. It has a great number of awl-ſhaped ſtamina, which are inſerted in the germen, are ſhorter than the petals, and terminated by oblong erect ſummits. The germen, which is ſituated under the flower, ſupports a cylindrical ſtyle the length of the ſtamina, crowned by a multifid ſtigma. The germen afterward turns to a fleſhy umbilicated fruit with one cell, incloſing many roundiſh ſeeds.

This genus of plants is ranged in the ſecond ſection of Tournefort's ſixth claſs, which includes the herbs with a Roſe flower, whoſe pointal or empalement becomes a fruit with one capſule. Dr. Linnæus places it in the firſt ſection of his twelfth claſs, in which he ranges thoſe plants whoſe flowers have more than nineteen ſtamina, which are inſerted either into the empalement, or petals of the flower.

The SPECIES are,

1. OPUNTIA (*Vulgaris*) articulis ovatis compreſſis, ſpinis ſetaceis. *Indian Fig with oval compreſſed joints, and briſtly ſpines.* Opuntia vulgò herbariorum. J. B. 1. 154. *The common Opuntia, or Indian Fig.*
2. OPUNTIA (*Ficus Indica*) articulis ovato-oblongis, ſpinis ſetaceis. *Indian Fig with oblong oval joints, and briſtly ſpines.* Opuntia folio oblongo media. Tourn. Inſt. R. H. 239. *Middle Indian Fig with oblong leaves.*
3. OPUNTIA (*Tuna*) articulis ovato-oblongis, ſpinis ſubulatis. *Indian Fig with oblong oval joints, and awl-ſhaped ſpines.* Opuntia major, validiſſimis ſpinis munita. Tourn. Inſt. R. H. 239. *Greater Indian Fig with very ſtrong ſpines.*
4. OPUNTIA (*Elatior*) articulis ovato-oblongis, ſpinis longiſſimis nigricantibus. *Indian Fig with oblong oval joints, and very long black ſpines.* Tuna elatior ſpinis validis nigricantibus. Hort. Elth. tab. 194. *Taller Indian Fig with ſtrong black ſpines.*
5. OPUNTIA (*Maxima*) articulis ovato-oblongis craſſiſſimis, ſpinis inæqualibus. *Indian Fig with oblong, oval, thick joints, and unequal ſpines.* Opuntia maxima, folio ſpinoſo, latiſſimo & longiſſimo. Tourn. Inſt. 240. *Greateſt Indian Fig, with the longeſt and broadeſt prickly branches.*
6. OPUNTIA (*Cochinelifera*) articulis ovato-oblongis ſubinermibus. *Indian Fig with oblong oval joints, almoſt without ſpines.* Opuntia maxima, folio oblongo-rotundo majore, ſpinulis mollibus & innocentibus obſito, flore ſtriis rubris variegato. Sloan. Cat. Jam. 194. *Greateſt Indian Fig, with a larger, oblong, round leaf, armed with ſoft, innocent, ſmall ſpines, and a flower variegated with red ſtripes, commonly called the Cochineal Fig.*
7. OPUNTIA (*Curaſſavica*) articulis cylindrico-ventricoſis, compreſſis, ſpinis ſetaceis. *Indian Fig with compreſſed, cylindrical, bellied joints, and briſtly ſpines.* Ficus Indica, ſeu Opuntia Curaſſavica minima. Hort. Amſt. 1. 107. *Indian Fig, or the leaſt Opuntia of Curaſſoa, frequently titled Pinpillow.*
8. OPUNTIA (*Spinoſiſſima*) articulis longiſſimis tenuibus compreſſis, ſpinis longiſſimis confertiſſimis, gracilibus albicantibus armatis. Houſt. MSS. *Staley Indian Fig, with large, narrow, compreſſed leaves, armed with the longeſt, narroweſt, white ſpines, growing in cluſters; this is by the gardeners called, Robinſon Cruſoe's Coat.*
9. OPUNTIA (*Phyllanthus*) prolifer enſiformi-compreſſus ſerrato-repandus. *Indian Fig with compreſſed ſword-ſhaped joints, whoſe indentures turn backward.* Cereus ſeroloendri folio brachiato. Hort. Elth. 73. tab. 64. *Torch Thiſtle with a branching Spleenwort leaf.*

These plants are all of them natives of America, though the firſt ſort is found growing wild on the ſides of the roads about Naples, in Sicily, and Spain, but it is probable that the plants may have been brought from America thither at firſt. This ſort has been long in the Engliſh gardens; the joints or branches of this are oval, or roundiſh, compreſſed on their two ſides flat, and have ſmall leaves coming out in knots on their ſurface, as alſo on their upper edges, which fall off in a ſhort time; and at the ſame knots there are three or four ſhort briſtly ſpines, which do not appear unleſs they are cloſely viewed; but on being handled, they enter the fleſh, and ſeparate from the plant, ſo are troubleſome, and often very difficult to get out of the fleſh. The branches of this ſort ſpread near the ground, and frequently trail upon it, putting out new roots, ſo are extended to a conſiderable diſtance, and never riſe in height; theſe are fleſhy and herbaceous while they are young,

but as they grow old become drier, of a tough contexture, and have ligneous fibres. The flowers come out on the upper edges of the branches, generally, though ſometimes they are produced on their ſides; theſe ſit upon the embryo of their fruit, and are compoſed of ſeveral roundiſh concave petals, which ſpread open; they are of a pale yellow colour, and within ariſe a great number of ſtamina, faſtened to the embryo of the fruit, which are terminated by oblong ſummits; and in the center is ſituated the ſtyle, crowned by a many-pointed ſtigma; after the flowers are paſt, the embryo ſwells to an oblong fruit, whoſe ſkin, or cover, is ſet with ſmall ſpines in cluſters, and the inſide is fleſhy, of a purple, or red colour, in which are lodged many black ſeeds. This plant flowers here in July and Auguſt, but unleſs the ſeaſon is very warm, the fruit will not ripen in England.

I received ſome branches of this ſort from Mr. Peter Collinſon, F. R. S. who aſſured me they were ſent him from Newfoundland, where the plants grow naturally, which is much farther to the north than it was before known to grow; and how it endures the cold of that country is inconceivable, for though the plants will live abroad in England, in a warm ſituation and a dry ſoil, yet, in ſevere winters, they are generally deſtroyed, if they are not protected from the froſt.

The ſecond ſort hath oblong, oval, compreſſed branches, which grow more erect than thoſe of the firſt, armed with long briſtly ſpines, which come out in cluſters from a point on each of the compreſſed ſides, ſpreading open like the rays of a ſtar. The flowers grow upon the embryo of the fruit, which come out from the upper edges of the leaves like the firſt, but are larger, and of a brighter yellow colour. The fruit is alſo larger, and of a deeper purple colour, the outer ſkin is alſo armed with longer ſpines; this is the moſt common ſort in Jamaica, and upon the fruit of this the wild ſort of cochineal feeds, which is called Sylveſter. I had ſome of the plants ſent me with the live inſects upon them from Jamaica, by the late Dr. Houſtoun, who was writing a hiſtory of theſe inſects, at the time when he was taken ill and died; theſe inſects kept alive upon the plants here for three or four months, but afterward periſhed. If the fruit of this plant is eaten, it will dye the urine of a bloody colour.

The third ſort hath ſtronger branches than the ſecond, which are armed with larger thorns, of an awl-ſhape; they are whitiſh, and come out in cluſters like thoſe of the other ſort. The flowers are large, of a bright yellow colour, and the fruit is ſhaped like that of the ſecond ſort.

The fourth ſort grows taller than either of the former; the branches are larger, thicker, and of a deeper green, and are armed with ſtrong black ſpines, which come out in cluſters like thoſe of the other ſorts, but the cluſters are farther aſunder. The flowers are produced from the upper edges of the branches; they are ſmaller than thoſe of the other ſorts, and are of a purpliſh colour, as are alſo the ſtamina; the fruit is of the ſame form as thoſe of the firſt, but do do not ripen here.

The fifth ſort is the largeſt of all the ſorts yet known. The joints of theſe are more than a foot long, and eight inches broad; they are very thick, of a deep green colour, and armed with a few ſhort briſtly ſpines; the older branches of this often become almoſt taper, and are very ſtrong. The flowers of this ſort I have never yet ſeen; for although I have had many of the plants more than ten feet high, none of them has produced any flowers.

The ſixth ſort has been always ſuppoſed to be the plant, upon which the cochineal inſects feed; this hath oblong, ſmooth, green branches, which grow erect, and riſe to the height of eight or ten feet, having ſcarce any ſpines on them and thoſe few which are, can ſcarce be diſcerned at a diſtance, and are ſo ſoft as not to be troubleſome when handled. The flowers of this ſort are ſmall, and of a purple colour, ſtanding upon the embryo of the fruit, in the ſame manner as thoſe of the other ſort, but do not expand open like them. The flowers of this appear late in the autumn, and the fruit drop off in winter, without coming to any perfection here; this ſort is cultivated in the fields of New Spain, for the increaſe of the inſects, but it grows naturally in Jamaica, where it is probable the true cochineal might be diſcovered, if perſons of ſkill were to ſearch after the inſects.

The ſeventh ſort is ſaid to grow naturally at Curaſſao; this hath cylindrical ſwelling joints, which are cloſely armed with ſlender white ſpines. The branches ſpread out on every ſide, and where they have no ſupport, fall to the ground, very often ſeparating at the joints from the plants, and as they lie upon the ground, put out roots, ſo form new plants; this ſort very rarely produces flowers in England. In the Weſt-Indies it is called Pinpiliow, from the appearance which the branches have to a pin-cuſhion ſtuck full of pins.

The eighth ſort was ſent me from Jamaica by the late Dr. Houſtoun, who found it growing naturally there in great plenty, but could never obſerve either fruit or flower upon any of the plants, nor have any of them produced either in England. The branches of this ſort have much longer joints than any of the other; they are narrower, and more compreſſed. The ſpines of this are very long, ſlender, and of a yellowiſh brown colour, coming out in cluſters all over the ſurface of the branches, croſſing each other, ſo as to render it dangerous to handle; for upon being touched, the ſpines adhere to the hand and quit the branches, and penetrate into the fleſh, ſo become very troubleſome.

The ninth ſort grows naturally in the Braſils; this hath very thin branches, which are indented regularly on their edges, like Spleenwort; they are of a light green, and ſhaped like a broad ſword; theſe are ſmooth, having no ſpines. The flowers come out from the ſide, and at the end of the branches, ſitting on the embryos in the ſame way as the other ſorts; they are of a pale yellow colour. The fruit is ſhaped like thoſe of the firſt ſort, but rarely ripen in England.

All theſe ſorts (except the firſt) are too tender to thrive in the open air in England; nor can many of them be preſerved through the winter here, unleſs they have artificial heat; for when they are placed in a green-houſe, they turn to a pale yellow colour, their branches ſhrink, and frequently rot on the firſt approach of warm weather in the ſpring.

Theſe plants may be all propagated by cutting off their branches at the joints, during any of the ſummer months, which ſhould be laid in a warm dry place for a fortnight, that the wounded part may be healed over, otherwiſe they will rot with the moiſture which they imbibe at that part, as is the caſe with moſt other ſucculent plants. The ſoil in which theſe plants muſt be planted, ſhould be compoſed after the following manner, viz. one third of light freſh earth from a paſture, a third part ſea ſand, and the other part ſhould be one half rotten tan, and the other half lime rubbiſh; theſe ſhould be well mixed, and laid in a heap three or four months before it is uſed, obſerving to turn it over at leaſt once a month, that the ſeveral parts may be well united; then you ſhould paſs it through a rough ſcreen, in order to ſeparate the largeſt ſtones and clods, but by no means ſift it too fine, which is a very common fault; then you ſhould reſerve ſome of the ſmaller ſtones and rubbiſh to lay at the bottom of the pots, in order to keep an open paſſage for the moiſture to drain off; which is what muſt be obſerved for all ſucculent plants, for if the moiſture be detained in the pots, it will rot their roots and deſtroy the plants.

When you plant any of the branches of theſe plants (except the firſt ſort) you ſhould plunge the pots into a moderate hot-bed, which will greatly facilitate their taking root; you ſhould alſo refreſh them now and then with a little water, but be very careful not to let them

them have too much, or be too often watered, eſpecially before they are rooted. When the plants begin to ſhoot, you muſt give them a large ſhare of air, by raiſing the glaſſes, otherwiſe their ſhoots will draw up ſo weak, as not to be able to ſupport themſelves; and after they have taken ſtrong root, you ſhould inure them to the air by degrees, and then remove them into the ſtove where they ſhould remain, placing them near the glaſſes, which ſhould always be opened in warm weather; ſo that they may have the advantage of a free air, and yet be protected from wet and cold.

During the ſummer ſeaſon theſe plants will require to be often refreſhed with water, but it muſt not be given to them in large quantities leſt it rot them, and in winter this ſhould be proportioned to the warmth of the ſtove; for if the air be kept very warm they will require to be often refreſhed, otherwiſe their branches will ſhrink; but if the houſe be kept in a moderate degree of warmth, they ſhould have but little, for moiſture at that ſeaſon will rot them very ſoon. The heat in which theſe plants thrive beſt, is the temperate point, as marked on botanical thermometers, for if they are kept too warm in winter, it cauſes their ſhoots to be very tender, weak, and unſightly. Thoſe ſorts which are inclinable to grow upright, ſhould have their branches ſupported with ſtakes, otherwiſe their weight is ſo great, that it will break them down.

Theſe plants are by moſt people expoſed to the open air in the ſummer ſeaſon, but they thrive much better if they are continued in the ſtoves, provided the glaſſes be kept open, ſo that they may have free air; for when they are ſet abroad, the great rains which generally fall in ſummer, together with the unſettled temperature of the air in our climate, greatly diminiſh their beauty, by retarding their growth; and ſometimes in wet ſummers they are ſo replete with moiſture, as to rot in the ſucceeding winter; nor will thoſe plants which are ſet abroad (I mean the tender ſorts) produce their flowers and fruit in ſuch plenty, as thoſe which are conſtantly preſerved in the houſe.

ORANGE. See AURANTIUM.

ORCHARD. In planting of an Orchard, great care ſhould be had to the nature of the ſoil; and ſuch ſorts of fruits only ſhould be choſen, as are beſt adapted to the ground deſigned for planting, otherwiſe there can be little hopes of their ſucceeding; and it is for want of rightly obſerving this method, that we ſee in many countries Orchards planted, which never arrive to any tolerable degree of perfection, the trees ſtarving; and their bodies are either covered with Moſs, or the bark cracks and divides, both which are evident ſigns of the weakneſs of the trees; whereas, if inſtead of Apples the Orchard had been planted with Pears, Cherries, or any other ſort of fruit better adapted to the ſoil, the trees might have grown very well, and produced great quantities of fruit.

As to the poſition of the Orchard, (if you are at full liberty to chuſe) a riſing ground, open to the ſouth-eaſt, is to be preferred; but I would by no means adviſe planting upon the ſide of a hill, where the declivity is very great; for in ſuch places the great rains commonly waſh down the better part of the ground, whereby the trees would be deprived of proper nouriſhment; but where the riſe is gentle, it is of great advantage to the trees, by admitting the ſun and air between them, better than it can upon an entire level; which is an exceeding benefit to the fruit, by diſſipating fogs and drying up the damps, which, when detained amongſt the trees, mix with the air and render it rancid: if it be defended from the weſt, north, and eaſt winds, it will alſo render the ſituation ſtill more advantageous, for it is chiefly from thoſe quarters that fruit-trees receive the greateſt injury; therefore, if the place be not naturally defended from theſe by riſing hills (which is always to be preferred,) then you ſhould plant large growing timber-trees at ſome diſtance from the Orchard, to anſwer this purpoſe.

You ſhould alſo have a great regard to the diſtance of planting the trees, which is what few people have rightly conſidered; for if you plant them too cloſe, they will be liable to blights; the air being hereby pent in amongſt them, will alſo cauſe the fruit to be ill taſted, having a great quantity of damp vapours from the perſpiration of the trees, and the exhalations from the earth mixed with it, which will be imbibed by the fruit, and render their juices crude and unwholſome.

Wherefore I cannot but recommend the method which has been lately practiſed by ſome particular gentlemen with very good ſucceſs, and that is, to plant the trees fourſcore feet aſunder, but not in regular rows. The ground between the trees they plough and ſow with Wheat and other crops, in the ſame manner as if it were clear from trees; and they obſerve their crops to be full as good as thoſe quite expoſed, except juſt under each tree, until they are grown large, and afford a great ſhade; and by thus ploughing and tilling the ground, the trees are rendered more vigorous and healthy, ſcarcely ever having any Moſs, or other marks of poverty, and will abide much longer and produce better fruit.

If the ground in which you intend to plant an Orchard has been paſture for ſome years, then you ſhould plough in the green ſward the ſpring before you plant the trees; and if you will permit it to lie a ſummer fallow, it will greatly mend it, provided you ſtir it two or three times, to rot the ſward of Graſs, and prevent weeds growing thereon.

At Michaelmas you ſhould plough it pretty deep, in order to make it looſe for the roots of the trees, which ſhould be planted thereon in October, provided the ſoil is dry; but if it be moiſt, the beginning of March will be a better ſeaſon. The diſtance, if deſigned for a cloſe Orchard, muſt not be leſs than forty feet, but the trees planted twice that diſtance will ſucceed better.

When you have finiſhed planting the trees, you ſhould provide ſome ſtakes to ſupport them, otherwiſe the wind will blow them out of the ground; which will do them much injury, eſpecially after they have been planted ſome time; for the ground in the autumn being warm, and for the moſt part moiſt, the trees will very ſoon puſh out a great number of young fibres; which, if broken off by their being diſplaced, will greatly retard the growth of the trees.

In the ſpring following, if the ſeaſon ſhould prove dry, you ſhould cut a quantity of green ſward, which muſt be laid upon the ſurface of the ground about their roots, turning the Graſs downward, which will prevent the ſun and wind from drying the ground, whereby a great expence of watering will be ſaved; and after the firſt year they will be out of danger, provided they have taken well.

Whenever you plough the ground betwixt theſe trees, you muſt be careful not to go too deep amongſt their roots, leſt you ſhould cut them off, which would greatly damage the trees; but if you do it cautiouſly, the ſtirring the ſurface of the ground will be of great benefit to them; though you ſhould obſerve, never to ſow too near the trees, nor ſuffer any great rooting weeds to grow about them, which would exhauſt the goodneſs of the ſoil, and ſtarve them.

If after the turf which was laid round the trees be rotted, you dig it in gently about the roots, it will greatly encourage them.

There are ſome perſons who plant many ſorts of fruit together in the ſame Orchard, mixing the trees alternately; but this is a method which ſhould always be avoided, for hereby there will be a great difference in the growth of the trees, which will not only render them unſightly, but alſo the fruit upon the lower trees ill taſted, by the tall ones overſhadowing them; ſo that if you are determined to plant ſeveral ſorts of fruit on the ſame ſpot, you ſhould obſerve to

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place the largeſt growing trees backward, and ſo proceed to thoſe of leſs growth, continuing the ſame method quite through the whole plantation; whereby it will appear at a diſtance in a regular ſlope, and the ſun and air will more equally paſs throughout the whole Orchard, that every tree may have an equal benefit therefrom; but this can only be practiſed upon good ground, in which moſt ſorts of fruit-trees will thrive.

The ſoil of your Orchard ſhould alſo be mended once in two or three years with dung, or other manure, which will alſo be abſolutely neceſſary for the crops ſown between; ſo that where perſons are not inclinable to help their Orchards, where the expence of manure is pretty great, yet, as there is a crop expected from the ground beſides the fruit, they will the more readily be at the charge upon that account.

In making choice of trees for an Orchard, you ſhould always obſerve to procure them from a ſoil nearly a-kin to that where they are to be planted, or rather poorer; for if you have them from a very rich ſoil, and that wherein you plant them is but indifferent, they will not thrive well, eſpecially for four or five years after planting; ſo that it is a very wrong practice to make the nurſery where young trees are raiſed very rich, when the trees are deſigned for a middling or poor ſoil. The trees ſhould be alſo young and thriving, for whatever ſome perſons may adviſe to the contrary, yet it has always been obſerved, that though large trees may grow and produce fruit after being removed, they never make ſo good trees, nor are ſo long lived, as thoſe which are planted while young.

Theſe trees, after they are planted out, will require no other pruning, but only to cut out dead branches, or ſuch as croſs each other, which render their heads confuſed and unſightly: the pruning them too often, or ſhortening their branches, is very injurious; eſpecially to Cherries and ſtone-fruit, which will gum prodigieuſly, and decay in ſuch places where they are cut; and the Apples and Pears which are not of ſo nice a nature, will produce a greater quantity of lateral branches, which will fill the heads of the trees with weak ſhoots, whenever their branches are thus ſhortened; and many times the fruit is hereby cut off, which, on many ſorts of fruit-trees, is firſt produced at the extremity of their ſhoots.

It may, perhaps, ſeem ſtrange to ſome perſons, that I ſhould recommend the allowing ſo much diſtance to the trees in an Orchard, becauſe a ſmall piece of ground will admit of very few trees when planted in this method; but if they will pleaſe to obſerve, that when the trees are grown up, they will produce a great deal more fruit, than twice the number when planted cloſe, and will be vaſtly better taſted; the trees when placed at a large diſtance, being never ſo much in danger of blighting as in cloſe plantations, as hath been obſerved in Herefordſhire, the great county for Orchards, where they find, that when Orchards are ſo planted or ſituated, that the air is pent up amongſt the trees, the vapours which ariſe from the damp of the ground, and the perſpiration of the trees, collect the heat of the ſun, and reflect it in ſtreams ſo as to cauſe what they call a fire-blaſt, which is the moſt hurtful to their fruits; and this is moſt frequent where the Orchards are open to the ſouth ſun. But as Orchards ſhould never be planted, unleſs where large quantities of fruit are deſired, ſo it will be the ſame thing to allow twice or three times the quantity of ground; ſince there may be a crop of grain of any ſort upon the ſame place (as was before ſaid,) ſo that there is no loſs of ground; and for a family only it is hardly worth while to plant an Orchard, ſince a kitchen-garden well planted with eſpaliers, will afford more fruit than can be eaten while good, eſpecially if the kitchen-garden be proportioned to the largeneſs of the family; and if cyder be required, there may be a large avenue of Apple-trees extended croſs a neighbouring field, which will render it pleaſant, and produce a great quantity of fruit; or there may be ſome ſingle rows of trees planted to ſurround fields, &c. which will fully anſwer the ſame purpoſe, and be leſs liable to the fire-blaſts before-mentioned.

ORCHIS. Tourn. Inſt. R. H. 431. tab. 248, 249. Lin. Gen. Plant. 900. [of ὄρχις, a teſticle, becauſe the root of this plant reſembles the teſticles of a man; or of ὀρέγω, to have an appetite after, on account of its being a provocative to venery: it is alſo called κυνοσόρχις, of κυνὸς, a dog, and ὄρχις, a teſticle.] Satyrion, or Fool-ſtones.

The CHARACTERS are,

It hath a ſingle ſtalk with a vague ſheath; it has no empalement. The flower hath five petals, three without and two within, which riſe and join in a ſtandard. The nectarium is of one leaf, fixed to the ſide of the receptacle, between the diviſion of the petals. The upper lip is ſhort and erect, the under large, broad, and ſpreading; the tube is pendulous, horn-ſhaped, and prominent behind. It hath two ſhort ſlender ſtamina ſitting upon the pointal, with oval erect ſummits fixed to the upper lip of the nectarium. It hath an oblong contorted germen under the flower, with a ſhort ſtyle faſtened to the upper lip of the nectarium, crowned by an obtuſe compreſſed ſtigma. The germen afterward turns to an oblong capſule with one cell, having three keel-ſhaped valves, opening on the three ſides, but joined at top and bottom, filled with ſmall ſeeds like duſt.

This genus of plants is ranged in the firſt ſection of Linnæus's twentieth claſs, which contains thoſe plants whoſe flowers have two ſtamina, which are connected with, or fixed to the ſtyle.

The SPECIES are,

1. ORCHIS (*Morio*) bulbis indiviſis, nectarii labio quadrifido crenulato, cornu obtuſo. Act. Upſal. 1740. *Orchis with undivided bulbs, the lip of the nectarium cut into four points which are ſlightly indented, and an obtuſe horn.* Orchis morio fœmina. C. B. P. 82. *Common female Orchis.*
2. ORCHIS (*Maſcula*) bulbis indiviſis, nectarii labio quadrilobo crenulato, cornu obtuſo, petalis dorſalibus reflexis. Flor. Suec. 795. *Orchis with undivided bulbs, the lip of the nectarium having four lobes and an obtuſe horn, and the backs of the petals reflexed.* Orchis morio mas, foliis maculatis. C. B. P. 81. *The male Orchis with ſpotted leaves.*
3. ORCHIS (*Bifolia*) bulbis indiviſis, nectarii labio lanceolato integerrimo, cornu longiſſimo, petalis patentibus. Act. Upſal. 1740. *Orchis with undivided bulbs, the lip of the nectarium entire and ſpear-ſhaped, a very long horn, and petals ſpreading very wide.* Orchis alba bifolia minor, calcari oblongo. C. B. P. 83. *Smaller, white two-leaved Orchis, with an oblong ſpur, or Butterfly Orchis.*
4. ORCHIS (*Militaris*) bulbis indiviſis, nectarii labio quinquefido punctis ſcabro, cornu obtuſo, petalis confluentibus. Act. Upſal. 1740. *Orchis with undivided bulbs, a five-pointed lip to the nectarium, having rough ſpots, an obtuſe horn, and petals running together.* Orchis latifolia, hiante cucullo major. Tourn. Inſt. R. H. 432. *The Man Orchis.*
5. ORCHIS (*Pyramidalis*) bulbis indiviſis, nectarii labio trifido æquali integerrimo, cornu longo, petalis ſublanceolatis. Act. Upſal. 1740. *Orchis with undivided bulbs, an equal trifid lip to the nectarium, with a long horn, and ſpear-ſhaped petals.* Orchis militaris, montana, ſpicâ rubente, conglomeratâ. Tourn. Inſt. R. H. 432. *Mountain military Orchis, with a reddiſh conglomerated ſpike.*
6. ORCHIS (*Latifolia*) bulbis ſubpalmatis rectis, nectarii cornu conico, labio trilobo, lateralibus reflexo, bracteis flore longioribus. Act. Upſal. 1740. *Orchis with ſtrait, palmated, bulbous roots, a conical horn to the nectarium, the lip cut into three lobes, which are reflexed on the ſides, and bracteæ longer than the flowers.* Orchis palmata pratenſis, latifolia, longis calcaribus. C. B. P. 85. *Broad-leaved, Meadow, handed Orchis, having a long ſpur.*
7. ORCHIS (*Maculata*) bulbis palmatis patentibus, nectarii cornu germinibus breviore, labio plano petalis dorſalibus patulis. Act. Upſal. 1740. *Orchis with*

handed