A

GENERAL DICTIONARY OF HUSBANDRY,

PLANTING, GARDENING,

AND THE

Vegetable Part of the *Materia Medica*;

WITH THE

Deſcription, Uſe, and *Medicinal* Virtues

OF THE SEVERAL

HERBS, FLOWERS, ROOTS, &c.

Selected from the Beſt Authorities,

BY THE

EDITORS of the FARMER's MAGAZINE.

VOLUME I.

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M DCC LXXIX.

PREFACE.

WHEN we conſider the great advantages of Agriculture to mankind, we need not wonder to find ſo many books written on the ſubject; but we muſt own we wonder to find, that ſo many ſhould have been written ſo badly; as if the ſimple operations of Nature in Vegetation were as obſcure as Metaphyſics or the Arcana of Chemiſtry. Hearſay is taken for ocular demonſtration, and calculations made in the cloſet are printed as though they were the reſult of experience, or made from a real ſurvey and the exact journal of a Farmer: ſuch works as theſe may amuſe the apron-ſtring farmer, or ſpeculative ſtudent, but they will be laughed at by men of buſineſs and real underſtanding.

We have read ſome author who makes a diſtinction between Learning and Languages, and there is certainly a very eſſential difference between the learning of a practical obſervant Farmer and the pedantic performances of a cloſeted Bookworm. Theory ſhould always be founded on Practice, —never ſhould precede it; if it does, it will be more abſurd than uſeful. Although it is not at all neceſſary for a Farmer to underſtand Latin and Greek, yet we can ſee no reaſon why Latin and Greek ſhould injure his ploughſhare, or mildew his crops, provided he pays that attention to his buſineſs which the nature of that buſineſs requires. With all

the graceful charms of poetry in Virgil's Georgicks, we meet with the precepts of the huſbandman; the Gentleman is mixed with the Scholar; and the man of Science is truly polite.

Induſtry is the life and ſoul of Huſbandry: Buſtle, buſtle, ſhould be the watch-word of a farmer. "We will go and do "it" is of ten times more conſequence in buſineſs than the command, ſimply, "Go and do it." The maſter's eye ſhould ſee all, and his hand aſſiſt in all the occupations of his farm; he ſhould riſe early and never fail to viſit his fields daily. As he riſes early, ſo alſo he ſhould go early to his bed; and joining temperance and ſobriety to his induſtry and regularity, he will ſeldom fail to enjoy the greateſt of all temporal bleſſings—Health, Peace, and Contentment. In his family he ſhould be regular, and teach, not by precept but, by example. As he reſembles the Patriarchs in the ſimplicity of his life, ſo ſhould he alſo endeavour to purſue their footſteps in every moral and religious duty. He ſhould be the friend, the guardian, and the father of the poor; not to ſupport them in idleneſs, but to excite them by an honeſt induſtry to ſupply their own wants.

Of all the buſineſſes in life, that of a Farmer is the moſt independent: while others are endeavouring, by every art and means they can employ, to ſell or diſpoſe of their commodities at the cheapeſt rate, the farmer is always ſure to find a ready ſale at a market price; his commodities alone ſell for ready money; all others ſubmit to Credit. But this independence can only be ſupported by care and attention to his farm; he ſhould not only ſee, and aſſiſt in all, but he ſhould alſo enquire of his ſervants into the ſtate of all matters every morning and every evening; it will be no mean condeſcenſion, nor need he be aſhamed of paying attention to his ploughman or his cow-boy; by aſking often, he will accuſtom

accuſtom the man to tell him if there be ought amiſs. In the morning, when he riſes, he will do well to examine with circumſpection into every thing, animal and vegetable, from the ſtable to the barn, to the pigs, to the ſheep, to the cows; he muſt extend his care to the fences and the corn, to the condition of his waggons, his carts, his ploughs, and their appurtenances. His management ſhould be as exact as his attention.

No ſervants ſhould be kept but ſuch only as are induſtrious. The care of the cattle ſhould not be entruſted to any ſervant that is not a man of humanity; a horſe or an ox cannot tell their maſter their injuries, or complain of the ill uſage they receive too often from the wretch who drives them. A knowledge of human nature will lead us eaſily to diſcriminate the good from the bad among the labouring part of mankind, and we ſhall not be often miſtaken where an attempt at politeneſs has not veiled the other vices over with the additional one of hypocriſy; we may eaſily enough diſtinguiſh the temper of an undebauched ruſtick, but a canting whining one will certainly be deceitful.

Some perſons perhaps may think it a matter of ſmall moment when we adviſe that the farmers' ſervants ſhould regularly attend divine ſervice; but WE think it important and conſequential; for they will ſeldom ſerve their maſters faithfully, who do not ſerve their God attentively; and we recommend "THE HUSBANDMAN'S SPIRITUAL COMPANION" as a proper vade-mecum for every Farmer and his ſervant.

While the Farmers of different counties may purſue different modes of Agriculture, peculiar or proper only to the counties they inhabit, we may find almoſt a fameneſs among the good Farmers of every county; thus an inhabitant of the

the Iſle of Wight will be found to follow the ſame courſe that a Norfolk Farmer on the ſame kind of land would wiſh to purſue; but were a Farmer irrationally to change a ſyſtem he had found ſucceſsful to another he had ſeen prove better on land of different properties, he would ſtand a much fairer chance of ruin than advantage. Not only farms, but ſituations alſo, will require and demand a difference of culture on lands of the ſame nature in different ſituations, or differently circumſtanced; where there is great plenty of meadow graſs, leſs clover will be required; and where no ſtock is kept, turnips will be unneceſſary.

Land is kept in heart by a change from corn to pulſe, turnips, clover, &c. and obviouſly requires ſuch change. Human nature calls for a change of food, and the greateſt labour and exerciſe are requiſite to make any one laſtingly wholeſome.

Purſuits of a different nature from his own buſineſs will never enrich the Farmer: the care of a farm is conſtant and urgent; every neglect is important, and the loſs of a day may be the loſs of a year.

It would be needleſs in this place to point out all the work that a Farmer has to do; it is almoſt impoſſible; one farm will differ from another in ſituation and in ſoil; one will want floating, another will want draining, the ſoil of one may be gravelly, another ſtoney, another clayey, another ſandy, &c.; and the properties of each being eſſentially different, they will require management as eſſentially different alſo.

Accounts of every tranſaction, and a regular diary of occurrences, expences, and profits, ought always to be kept by the Farmer, as well as the Tradeſman. An account of the work

work done by the men and horſes ſhould be duly and punctually kept; by this means a man can aſcertain the profit or loſs of each crop, and from thence form a true judgment of the whole. At the end of his account-book ſhould be kept a number of pages for miſcellaneous obſervations and memorandums of different kinds; they would eaſe his memory, and form a hiſtory of his farm. Theſe are matters of importance, and cannot be diſpenſed with by thoſe who would wiſh to know the ſtate of their farm, and how their affairs go on.

What has been ſaid with regard to the Farmer will in general hold good to the Gardener, who may be called a Farmer on a ſmaller ſcale: His plants are infinitely more various, and the attention required more minute: As the loſs of a day with a Farmer may be the loſs of a year, ſo the miſmanagement or loſs of an hour may be the loſs of a crop in a garden.

A Calendar may be uſeful to a Gardener, but to an intelligent Farmer ſuch a publication would produce very little advantage, and to an ignorant one would be the occaſion perhaps of innumerable miſtakes and errors.

To ſpeak of the work we have undertaken with impartiality, we cannot ſpeak as Authors but Compilers; we have endeavoured to ſelect the beſt matter from the beſt authorities, ſuch as MILLER, ELLIS, LISLE, MORTIMER, TULL, MAWE, the MUSEUM RUSTICUM, FARMER's MAGAZINE, DICTIONARIUM RUSTICUM, EVELYN's SILVA by HUNTER, COMPLEAT BODY OF HUSBANDRY, &c.

In our accounts of the Diſeaſes of Horſes, we have followed BARTLET, GIBSON, BRACKEN, &c. as we ſaw or judged moſt proper. In treating of the Diſeaſes of Cows, we

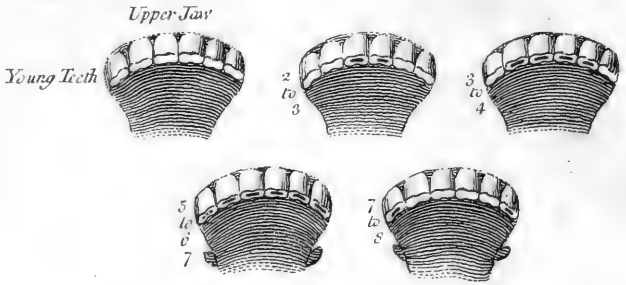
we have, in all we could, followed WILLIAMSON's prescriptions in the Farmer's Magazine, and cannot help regretting, that he has given us no more of that knowledge which he seems to have obtained from a long course of practice and experience.

Although Originality is not required in a work like this, yet some abilities are necessary to select as well as arrange that matter which may be useful; to dwell on such subjects as are important, and to pass over slightly such as are of little consequence.

We have endeavoured all in our power to insert every thing that may tend to please and to profit; and the expression of a man who well understood human nature may, perhaps, not unaptly be applied to us.

Omne tulit Punctum, qui miscuit Utile Dulci.

Teeth as they Appear at the different Ages under mentioned.



Teeth as they Appear in the different Ages under mentioned.

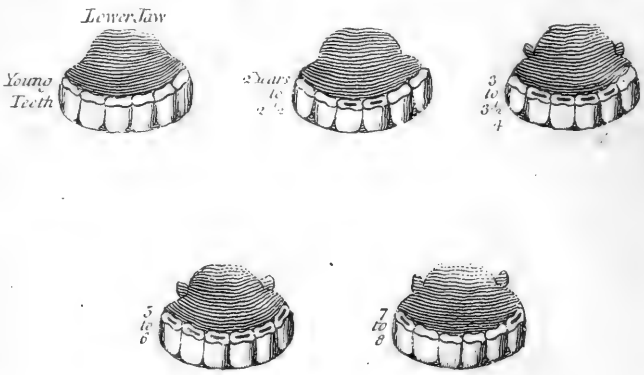


PLATE to shew the Age of a Horse by his Teeth.

NB. The Mark is denoted by a blackish Dash on the Top of the Teeth.

A

GENERAL DICTIONARY, &c.

A, or *a a*, or *ana*, among phyſicians, denote an equal weight, or quantity, of the ſeveral ingredients.

ABELE-TREE, [*Populus*] a ſpecies of *Poplar*, having large leaves. It may be propagated either by layers, cuttings, or ſuckers; from which laſt it moſt readily ſucceeds. The beſt time for tranſplanting the ſuckers into the nurſery is as ſoon as their leaves begin to decay, which commonly happens in October. The cuttings ſhould be planted in February or March.

The moſt expeditious method is to procure truncheons from three to ſeven or eight feet high; make a hole eighteen or twenty inches deep with an iron crow, or bar, or a ſharp ſtake: if the ſoil is not very moiſt fill the hole with water. By this ſimple method they will in a few years become of a conſiderable ſize.

There is ſcarcely any tree which this climate produces from which ſuch great advantages may be derived as from the different ſpecies of the poplar. They will grow very faſt and luxuriantly in boggy ſoils where few other trees will thrive. Mr. Boutcher, in his treatiſe of foreſt trees, ſays, they will make very quick advances in the hungrieſt devouring clays, in burning ſand or gravel, as well as in the moſt ſterile barren moſs.

As theſe trees produce many ſide branches, they ſhould be cut away cloſe to the trunk every third or fourth year till they are fifteen feet high.

Their ſhade is one of the moſt friendly both to animals and vegetables; their leaves ſooneſt thicken the earth on which they grow, and produce the beſt effects in compoſt ſoils of any leaves whatever; and what is remarkable, cattle are very fond of the graſs which grows immediately under the dripping of theſe trees. The uſe of the wood is ſo well known that it is needleſs to mention it.

ABLACTATION, among the antient gardeners, the ſame with what is now called marching, or grafting by approach. See MARCHING, &c.

ABLAQUEATION, is, by removing the earth, and by that means laying bare the roots of fruit trees in winter, called by our modern gardeners "baring of trees." This practice is now juſtly laid aſide on account of its being very hurtful to trees that are expoſed to high winds.

ABORTION, among gardeners, ſignifies ſuch fruits as are produced too early, and never arrive at maturity.

ABORTIVE CORN, a diſtemper of corn mentioned by M. Tillet, in a diſſertation which gained the prize at the academy of Bourdeaux.

This diſtemper, ſays that ingenious naturaliſt, ſhews itſelf long before harveſt, when the ſtalk is not above eighteen inches high; and may be known by a deformity of the ſtalk, the leaves, the ear, and even the grain.

The ſtem of abortive corn is generally ſhorter than that of other plants of the ſame age; it is crooked, knotted, and ricketty; the leaves are commonly of a bluiſh green colour, curled up in various forms; ſometimes turned like wafer cakes, and often rolled in a ſpiral form. The ears have very little of their natural form; they are lean, withered, and ſhew very imperfect rudiments, either of the chaff or grain.

All theſe ſymptoms are however only to be found in plants that are in the height of the diſtemper. The ſtalks are often pretty ſtrait, the leaves but little curled, and the chaff tolerably well formed; but inſtead of incloſing a ſmall embryo, white and ſoft at the

ſummit, it contains only a green kernel, terminating in a point, not unlike a young pea when forming in its pod.

Theſe abortive kernels have two or three points very viſible; they are then faſhioned as if two or three kernels were joined together at the baſe. When theſe kernels are ripe, or rather when they are dried up, they grow black, and ſo greatly reſemble the ſeeds of cockle, that huſbandmen, who are not acquainted with this diſtemper, often confound abortive wheat with the ſeeds of that weed.

This diſtemper M. Tillet ſuſpects to be occaſioned by inſects; for he perceived on the ſickly plants ſmall drops of a very limpid liquor, which he judged to be extravaſated ſap.

ACACIA [*Robinia*] *Falſe Acacia.* There are a great many different ſpecies of the acacia; Mr. Boutcher ſays above thirty, though Mr. Miller enumerated only twelve. Theſe gentlemen do not agree in the names of the different ſpecies; Mr. Boutcher treats of three only, the others being principally intended for the ſtove or the green-houſe.

The common, or Virginian acacia, was at firſt in great eſteem; but as the branches were frequently broken by high winds, when they grew to any conſiderable ſize, it ſoon got into diſrepute. Of late years however it is again become faſhionable, ſo that there are few gardens without it; for being protected in the plantation or wilderneſs by other trees, this misfortune is avoided. This is commonly called the Locuſt-tree in America, from whence the ſeeds are annually ſent to England.

The ſeeds ſhould be ſown on a bed of light mellow earth in March, and in five or ſix weeks the plants will appear. Great care muſt be taken to keep them clean from weeds; and if the weather be hot and dry, to water them in the evenings. They may remain in this ſituation till the next ſpring, at which time they ſhould be removed into the nurſery to remain two years, when they will be fit to tranſplant where they are deſigned to grow. If they are deſired to be larger, they ſhould be removed again into the nurſery, and remain two years longer before they are taken up for good.

Mr. Miller ſays, this ſort grows to a very large ſize in America, where the wood is much valued for its duration; moſt of the houſes which were built at Boſton in New England, upon the firſt ſettling of the Engliſh, was with this timber, which ſtill continues ſound.

ACACIA [*Gleditſia*] *Honey Locuſt*, or *three-thorned Acacia.* Mr. Boutcher calls it, the American Acacia, with triple thorns, commonly called the Locuſt-tree in the Weſt-Indies; but Mr. Miller ſays, it is called Locuſt, or Honey Locuſt, to diſtinguiſh it from falſe Acacia, which in America is frequently called the Locuſt *Tree.*

Water ACACIA. Both theſe ſorts are propagated by ſeeds ſown on a bed of light but good earth early in the ſpring; but if aſſiſted by a moderate hot-bed they will come up ſooner and ſtronger. They ſhould be watered frequently (though gently) eſpecially if the ſpring ſhould prove dry; and be inured to the free open air by raiſing the frames. As theſe plants continue growing late in the ſummer, they ſhould be protected from the autumnal froſts.

In the following ſpring, but not very early, they may be removed into the nurſery. Take up the plants very carefully without bruiſing their roots, and water them frequently in dry weather. They may remain in theſe beds two years, and then may be tranſplanted to the ſpot where they are intended to remain; but if they have another remove in the nurſery, with plentiful waterings, as before, and remain two years longer, the trees will be much finer and more hardy.

All the acacias delight in a deep, moiſt, rich ſoil, and may be much improved in their form by looſely tying the leading ſhoot to a ſtake. They are cultivated by the Chineſe for the ſake of their flowers, with which they dye that beautiful yellow which we find bears waſhing in their ſilks and ſtuffs.

ACACIA, the inſpiſſated juice of the unripe fruit of a large prickly tree, called by Caſpar Bauhine, *Acacia foliis ſcorpicidis leguminoſæ.*

This juice is brought to us from Egypt, in round diſh maſſes, wrapt up in thin bladders. It is outwardly of a deep brown colour, inclining to black: inwardly of a reddiſh or yellowiſh brown; of a firm conſiſtence, but not very

very dry. It ſoon ſoftens in the mouth, and diſcovers a rough, not diſagreeable taſte, which is followed by a ſweetiſh reliſh. This inſpiſſated juice entirely diſſolves in watery liquors; but is ſcarcely ſenſibly acted on by rectified ſpirit.

Acacia is a mild aſtringent medicine. The Egyptians exhibit it in ſpitting of blood, in the quantity of a dram, diſſolved in any convenient liquor; and repeat this doſe occaſionally: they likewiſe employ it in collyria for ſtrengthening the eyes, and in gargariſms for quinſeys. Among us, it is of little other uſe than as an ingredient in mithridate and theriaca, and is rarely met with in the ſhops. What is uſually ſold for the Egyptian acacia is the inſpiſſated juice of unripe ſloes: this is harder, heavier, of a darker colour, and ſomewhat ſharper taſte, than the true ſort.

Acacia Germanica, the inſpiſſated juice of wild ſloes, the fruit of the common black thorn, [*prunus ſylveſtris*] which is uſually ſold in the ſhops for the true Egyptian acacia. It is equally aſtringent with the Egyptian ſort, but has more of a ſharp or tartiſh taſte, without any thing of the ſweetiſh reliſh of the other.

ACAJOU, the *Caſhew-nut-tree*, a ſpecies of *Anacardium*. It is a native of Brazil, where the Indians make a kind of vinous intoxicating liquor of its fruit. The kernel may be eaten when roaſted, but its huſk is extremely acrimonious. *See Caſou.*

ACONITE. *See* Wolfsbane.

Aconite, the Winter. *See* Hellebore.

ACORN, the fruit of the *Oak*. Acorns are ſaid to have been the primitive food of mankind. They are aſtringent, and therefore recommended in hæmorrhages, alvine fluxes, and other preternatural or immoderate ſecretions.

At preſent, acorns are principally uſed in fattening hogs, for which they are very proper. Some care is, however, neceſſary to be taken when hogs feed upon acorns, for otherwiſe they will be ſubject to a diſtemper, called the garget. To prevent which, the beſt way is to moiſten ſome peaſe or beans with water, and ſprinkle over it ſome antimony pounded and ſifted; if this be repeated every other day for a fortnight or three weeks, it will effectually preſerve them from the diſorder. Or if the acorns be collected and prepared in the following manner, they may be given to hogs without any danger:—

Dig a hole in the ground in a warm place, large enough to contain ſeveral buſhels of acorns; in this let the acorns be put, and well moiſtened with water, [mixed with a little urine] or in which a handful or two of common ſalt has been diſſolved: [the acorns being too aſtringent without theſe precautions] in a few days they will begin to heat and ſpire; obſerve them therefore attentively, and when they have made a ſhoot about three inches long, take them out of the hole, and ſpread them to dry on a barn floor, and in a day or two they will be fit to be given to the hogs. This matter muſt, however, be managed with care and caution; they muſt not have too many given at a time; at firſt twice a day is often enough to feed them for a day or two; afterwards three times a day. Nor ſhould they, while they eat this food, be confined to a ſtye, but ſuffered to run at large; for if their liberty be too much abridged, they will never thrive well, or grow fat, on acorns.

It is no uncommon thing in Hertfordſhire, with the management above directed, and the aſſiſtance of a little waſh, and a few grains now and then, for a farmer to kill ſeveral hogs in a ſeaſon, which ſhall weigh from eight to ten ſcore, and ſometimes even more.

Theſe hogs make very good meat, but it is not ſo fine as when the hogs are taken up, and four or five buſhels of peaſe or barley meal given to each, to compleat their fattening before they are killed.

Under the article Oak we ſhall give a very particular account of its cultivation; but as Mr. Miller adviſes us to ſow the acorns as ſoon as they are ripe, we now beg leave to expreſs our diſſent; we are of opinion that the acorns ſhould be kept till the following ſpring, and that they will then beſt ſucceed; and in this opinion we are confirmed by Mr. Boutcher.

The acorns ſhould be gathered from the fineſt maiden-thriving trees, and ſpread in an airy covered place, and frequently turned till they are quite dry; when they may be mixed with ſome

Acid. *See poſtea.*

ſome dry ſand and preſerved till February; by which time many of them will juſt begin to ſprout. We have known them thus preſerved in a caſk with ſome fine mould.

ACRE, a quantity of land containing four ſquare roods, or one hundred and ſixty ſquare perches, poles, rods, or lugs: this is the *ſtatute acre*. Cuſtomary acres differ in different counties.

The Scots acre is greater than the Engliſh acre in the proportion, as 1369 to 1089.

The Iriſh plantation acre is greater than the Engliſh ſtatute acre in the proportion as 196 to 121.

The French acre [*Arpent*] is very near equal to one acre and three quarters of a rood Engliſh meaſure.

ACREME, in old law books, is uſed for a portion of land containing ten acres.

ACROSPIRE, the popular name for what botaniſts call the germ. *Acroſpired*, in malt-making, is when the barley ſhoots or ſprouts out at the blade end, as well as the root end; which every one knows exhauſts the ſubſtance of the grain, and ſpoils the future malt.

ADAM's APPLE. *See* ORANGE.

ADDER, the Viper. *Adder ſtung* is ſaid of cattle when bitten by an adder, hedge-hog, &c. for which ſome recommend an ointment made of dragon's blood with a little barley-meal and the white of eggs. This is a ſtrange application for the bite of a viper; the fat of the reptile rubbed upon the part bitten, is an infallible remedy in the human ſpecies, as we know by experience, and many have experienced equally good effects from olive oil rubbed warm on the part. *See* VIPER.

ADDER's-TONGUE, [*Ophioglo ſſum*] a plant that grows in moiſt meadows. The leaves are eſteemed to be vulnerary; the expreſſed juice is given internally for wounds, bruiſes, &c. and an ointment is made of it with lard or whey butter for the ſame purpoſes externally.

ADDER's-WORT. *See* BISTORT.

ADLE-EGGS, ſuch as have not been impregnated by the cock.

ADNATA, or ADNASCEUTIA. Among gardeners, terms uſed for ſuch offſets, as, by a new germination under the earth, proceed from the lily, narciſſus, hyacinth, &c. and afterwards grow to the roots.

ADONIS, or FLOS-ADONIS, *Pheaſant's Eye*, or *Red Maiths*. There are three ſpecies of this flower,—the common adonis, or flos adonis, with ſmall red flowers, of late called red morocco;—the annual adonis with pale yellow flowers;—and the perennial adonis with yellow flowers, by ſome titled fennel-leav'd black hellebore.

The firſt and ſecond are annuals. If the ſeeds are ſown ſoon after they are ripe, the plants will come up the following ſpring. Theſe plants will thrive beſt in a light ſoil; and as the ſeeds may be ſown in any ſituation the flowers may be had in ſucceſſion. They ſhould not be tranſplanted unleſs they are very young.

The third ſort has a perennial root and an annual ſtalk, and is likewiſe propagated by ſowing the ſeeds ſoon after they are ripe in an eaſtern ſituation. They will appear in the ſpring, when they ſhould be weeded and watered. [In future we ſhall not repeat theſe inſtructions, becauſe every perſon knows the utility of keeping plants free from weeds, and of watering them in a dry time.] The following autumn the plants muſt be carefully taken up and planted in a nurſery bed, where they may remain two years to acquire ſtrength, when they may be tranſplanted into the pleaſure garden to remain for good.

ADRACANTH, the ſame as TRAGACANTH, which ſee.

ADY, a ſpecies of the palm-tree found in the iſland of St. Thomas; the fruit of which is of the ſize and ſhape of a lemon, and contains an aromatic kernel, from which an oil is prepared, that anſwers the ſame end as butter in Europe.

AFTERMATH, the graſs which ſprings or grows up after mowing, or the graſs cut after the corn. In the neighbourhood of London the aftermath when cut and made into hay is of conſiderable value; but great care and nicety is required in making this hay ſo as to make it ſell well, for reaſons ſo obvious that we need not mention them.

The cloſer the graſs is cut the finer and better will be the aftermath for grazing; for cattle will not eat the dead ſtubble which is left after mowing; but as this cannot be diſtinguiſhed by the naked eye, being covered by the aftermath,

aftermath, we ſhall give our readers the following new, but ſimple method to diſcover whether the field was mowed cloſe or not. The hand being open, apply the palm to the graſs, preſſing it down gently till the ſtubble is felt; this being repeated in ſeveral parts of the field will point out the length of the ſtubble; for where it is very ſhort the hand will of courſe almoſt touch the ground; and we need not inform the grazier how much ſuperior ſuch an aftermath is to thoſe where the ſtubble is ſeveral inches long: neat cattle not caring to bite below the points of the dead ſtubble graſs.

AFTER SWARMS, in the management of bees, are thoſe that leave the hive after the firſt ſwarm. *See* BEE.

AGARIC, [*Agaricus*] a fungus growing on old larch trees. This fungus is an irregular ſpongy ſubſtance, extremely light, and of an uniform ſnowy whiteneſs (except the cortical part, which is uſually taken off before the agaric is brought into the ſhops.) It cuts freely, without diſcovering any hardneſs or grittineſs, and readily crumbles betwixt the fingers into a powder. Agaric has no remarkable ſmell: its taſte is at firſt ſweetiſh, but on chewing for a little while, proves acrid, bitter and naufeous. It was formerly in great eſteem as a cathartic, but the preſent practice has almoſt entirely rejected its uſe. It operates exceeding ſlowly, inſomuch that ſome have denied it to have any purgative virtue at all: given in ſubſtance, it almoſt always occaſions a naufea, not unfrequently vomiting, and ſometimes exceſſive tormina of the bowels; theſe effects are attributed to its light farinaceous matter adhering to the coats of the inteſtines, and producing a conſtant irritation. The beſt preparation of agaric ſeems to be an extract made with water acuated with fixt alcaline ſalt; or with vinegar or wine: the firſt is ſaid by Bolduc, and the two latter by Neuman, to prove effectual and ſafe purgatives. Nevertheleſs, this is at beſt a precarious medicine, which we ſtand in no manner of need of; hence the college have juſtly rejected it from all the compoſitions which it formerly had a place in, except the mithridate and theriaca.

AGARICUS *pedis equini facie, Tourn.* Female agaric, called, from its being very eaſily inflammable, touchwood, or ſpunk. This fungus is frequently met with, on different kinds of trees in England; and has been ſometimes brought into the ſhops mixt with the true agaric of the larch: from this it is eaſily diſtinguiſhable by its greater weight, duſky colour, and mucilaginous taſte, void of bitterneſs. The medullary part of this fungus, taken from the oak, beat ſoft, and applied externally, has been of late greatly celebrated as a ſtyptic, and ſaid to reſtrain not only venal but arterial hæmorrhages, without the uſe of ligatures.

AGE *of a horſe.* This is eaſily known by his mouth till he comes eight, after which the uſual marks wear out. A horſe, like many other brute animals, has his teeth divided into three ranks, viz. his fore-teeth, which are flat and ſmooth, his tuſhes, and his back-teeth. His back-teeth, or jaw-teeth, are called his grinders, being thoſe by which a horſe chews and grinds his provender, and are twenty-four in number, twelve above, and twelve below: they are ſtrong double teeth with ſharp edges; but when a horſe grows old, they wear much ſmoother.

The firſt that grows are his foal teeth, which begin to appear a few months after he is foaled: they are twelve in number, ſix above, and ſix below; and are eaſily diſtinguiſhed from the teeth that come afterwards, by their ſmallneſs and whiteneſs, not unlike the fore-teeth of a man.

When a colt is about two years and a half old, he caſts the four middlemoſt of his foal teeth, viz. two above, and two below; but ſome do not caſt any of their foal teeth till they are near three years old. The new teeth are eaſily diſtinguiſhed from the foal teeth, being much ſtronger, and always twice their ſize, and are called the nippers or gatherers, being thoſe by which a horſe nips off the graſs, when he is feeding abroad in the fields, or, in the houſe, gathers his hay from the rack. When a horſe has got theſe four teeth complete, he is reckoned three years old.

When he is about three and a half, or in the ſpring before he is four years old, he caſts out four more of his foal teeth,

teeth, viz. two above, and two below, one on each ſide the nippers, or middle teeth: ſo that when you look into a horſe's mouth, and ſee the two middle teeth full grown, and none of the foal teeth, except the common teeth remaining, you may conclude he is four that year, about April or May. Some indeed are later colts, but that makes little alteration in the mouth.

The tuſhes appear near the ſame time with the four laſt-mentioned teeth, ſometimes ſooner than theſe, and ſometimes not till after a horſe is full four years old: they are curved like the tuſhes of other beaſts, only in a young horſe they have a ſharp edge all round the top, and on both ſides, the inſide being ſomewhat grooved and flattiſh, inclined to a hollowneſs.

When a horſe's tuſhes do not appear for ſome time after the foal teeth are caſt out, and the new ones come in their room, it is generally owing to their foal teeth having been pulled out before their time, by the breeders or other dealers in horſes, to make a colt of three years old appear like one of four, and that he may be more ſaleable; for when any of the foal teeth have been pulled out, the others ſoon come in their place; but the tuſhes having none that go before them, can never make their appearance till their proper time, viz. when a horſe is about four, or coming four; and therefore one of the ſureſt marks to know a four-year old horſe, is by his tuſhes, which are then very ſmall, and ſharp on the top and edges.

When a horſe comes five, or rather in the ſpring before he is five, the corner teeth begin to appear, and at firſt but juſt equal with the gums, being filled with fleſh in the middle. The tuſhes are alſo by this time grown to a more diſtinct ſize, though not very large: they likewiſe continue rough and ſharp on the top and edges. But the corner teeth are now moſt to be remarked; they differ from the middle teeth in being more fleſhy on the inſide, and the gums generally look rawiſh upon their firſt ſhooting out, whereas the others do not appear diſcoloured. The middle teeth arrive at their full growth in leſs than three weeks, but the corner teeth grow leiſurely, and are ſeldom much above the gums till a horſe is full five: they differ alſo from the other fore teeth in this, that they ſomewhat reſemble a ſhell; and thence they are called the ſhell teeth, becauſe they environ the fleſh in the middle half way round; and as they grow, the fleſh within diſappears, leaving a diſtinct hollowneſs and openneſs on the inſide. When a horſe is full five, theſe teeth are generally about the thickneſs of a crown piece above the gums. From five to five and a half they will grow about a quarter of an inch high, or more; and when a horſe is full ſix, they will be near half an inch, and in ſome large horſes a full half inch above the gums.

The corner teeth in the upper jaw fall out before thoſe in the under, ſo that the upper corner teeth are ſeen before thoſe below; on the contrary, the tuſhes in the under gums come out before thoſe in the upper.

When a horſe is full ſix years old, the hollowneſs on the inſide begins viſibly to fill up, and that which was at firſt fleſhy grows into a browniſh ſpot, not unlike the eye of a dried garden bean, and continues ſo till he is ſeven; with this difference only, that the tooth is more filled up, and the mark, or ſpot, becomes faint, and of a lighter colour. At eight the mark in moſt horſes is quite worn out, though ſome retain the veſtiges of it a long time; and thoſe who have not had a good deal of experience, may ſometimes be deceived by taking a horſe of nine or ten years old for one of eight. It is at this time only, when a horſe is paſt mark, that one can eaſily err in knowing the age of a horſe; for what practices are uſed to make a very young horſe or colt appear older than he is, by pulling out the foal teeth before their time, may be diſcovered by feeling along the edges where the tuſhes grow, for they may be felt in the gums before the corner teeth are put forth; whereas, if the corner teeth come in ſome months before the tuſhes riſe in the gums, we may reaſonably ſuſpect that the foal teeth have been pulled out at three years old.

It will, perhaps, be needleſs to mention the tricks that are uſed to make a falſe mark in a horſe's mouth, by hollowing the tooth with a graver, and burning a mark with a ſmall hot iron; [called biſhoping] becauſe thoſe who are acquainted with the true marks, will

will eaſily diſcover the cheat by the ſize and colour of the teeth, by the [length] roundneſs, and bluntneſs of tuſhes, by the colour of the falſe mark, which is generally blacker, and more impreſſed than the true mark, and by many other viſible tokens, which denote the advanced age of a horſe.

After the horſe has paſſed his eighth year, and ſometimes at ſeven, nothing certain can be known by the mouth. It muſt, however, be remembered, [that at about eleven or twelve he begins to wink or twinkle with his eyes, and] that ſome horſes have but indifferent mouths when they are young, and ſoon loſe their mark; others have their mouths good for a long time, their teeth being white, even, and regular, till they are ſixteen years old and upwards, together with many other marks of freſhneſs and vigour; but when a horſe comes to be very old, it may be diſcovered by ſeveral indications, the conſtant attendants of age, viz. his gums wear away inſenſibly, leaving his teeth long and naked at their roots: the teeth alſo grow yellow, and ſometimes browniſh. The bars of the mouth, which in a young horſe are always fleſhy, and form ſo many diſtinct ridges, are, in an old horſe, lean, dry, and ſmooth, with little or no riſing. The eye-pits in a young horſe (except thoſe come of old ſtallions) are generally filled up with fleſh, look plump and ſmooth; whereas, in an old horſe, they are ſunk and hollow, and make him look ghaſtly, and with a melancholy aſpect. There are alſo other marks which diſcover a horſe to be very old, viz. grey horſes turn white, and many of them all over flea-bitten, except about their joints. This, however, happens ſometimes later, and ſometimes ſooner, according to the variety of colour and conſtitution. Black horſes are apt to grow grey over their eye-brows, and very often over a good part of their face, eſpecially thoſe who have a ſtar or blaze fringed round with grey when they are young. All horſes, when very old, ſink more or leſs in their backs, and ſome horſes, that are naturally long-backed, grow ſo hollow with age, that it is ſcarce poſſible to fit them with a ſaddle. Of this kind are ſeveral Spaniſh and Barbary horſes, and many of the Daniſh and Flanders breed. Their joints alſo grow ſo ſtiff with old age, and their knees and hocks bend ſo, that they are apt to trip and ſtumble upon the leaſt deſcent, though the way be ſmooth, and no ways rugged. After which they can be of little uſe to the owner. *Gibſon on Horſes.*

[To oblige our readers, we have given a copper-plate engraving of a horſe's teeth as they appear at his different ages.]

Age *of neat cattle*, viz *the Ox, Cow, and Bull.* The age of theſe animals is thus known by the teeth. At the end of ten months they ſhed their firſt fore-teeth, which are replaced by others, larger, but not ſo white; and in three years all the inciſive teeth are renewed. Theſe teeth are at firſt equal, long, and pretty white; but as the creatures advance in years, they wear, become unequal, and black. The age of the creature may alſo be eaſily known by counting three years from the point of the horn, and one for each of the joints or rings on the horn. *Buffon.*

Age *of Sheep.* Theſe animals in their ſecond year have two broad teeth; in their third year they have four broad teeth before; in their fourth year ſix broad teeth, and in their fifth year eight broad teeth. After which none can tell how old a ſheep is while all the teeth remain, except by their being worn down. *Ellis on Sheep.*

At the end of one year, rams, ſheep, and wethers, loſe the two fore teeth of the lower jaw; and they are known to want the inciſive teeth in the upper jaw. At eighteen months the two teeth joining to the former, alſo fall out; and at three years, being all replaced, they are even and pretty white. But as the creature advances in age, they become looſe, blunt, and afterwards black. The age of the ram, and all horned ſheep, may alſo be known by their horns, which ſhew themſelves in their very firſt year, and often at the birth, and continue to grow a ring annually to the laſt period of the creature's life. *Buffon's Hiſtoire Naturelle.*

Age *of Goats.* The age of goats is known by the ſame tokens as thoſe of the ſheep, viz. by their teeth, and the annual rings on their horns. *Buffon.*

Age *of a Tree*, according to Mr. Evelyn, may be known by the trunk, which being cut tranſverſely, plain, and ſmooth, ſhews it by the number of

concentric circles or rings in the wood. These rings are largeſt and moſt diſtinct in the large quick-growing trees, and are likewiſe more ſo on the ſouth than on the north ſide of the tree.

This is a popular notion, and much inſiſted on by carpenters, &c. and that a tree gains a new one every year. Theſe rings were counted on ſome oak trees in the New Foreſt (where the trees are reckoned to be ſeveral hundred years old) and from three to four hundred have been diſtinguiſhed. The fir-tree is ſaid to have juſt ſo many rows of boughs about it as it is years growth; and it has been obſerved, that there is juſt one ring leſs immediately above the row of boughs than immediately below. After all, it is more a matter of curioſity than uſe, and cannot be often known with certainty, as the perſon who plants timber trees rarely chuſes to have them cut down again.

AFRICAN or FRENCH MARIGOLD, [*Tagetes*] of which there are ſeveral ſpecies, but are all too well known to require any deſcription. They are ſo ſubject to vary and degenerate that the ſeed muſt be collected from the fineſt flowers, and exchanged every other year for ſeed that was ſaved on a different and diſtant ſoil.

The ſeeds muſt be ſown upon a moderate hot-bed, or in a very warm ſituation; taking care in the former caſe not to draw the plants too much, and to give them freſh air, or they will not be handſome. When they are about three inches high they may be tranſplanted into another moderate hot-bed, or very warm border arched over with hoops covered with mats, remembering to inure the plants to bear the freſh air as they acquire ſtrength. [This, in ſhort, ſhould always be attended to when plants are raiſed upon hot-beds, and afterwards tranſplanted into the parterre, &c. to remain.] About the end of May they may be taken up with a ball of earth at the roots, and planted in the borders or flower pots.

AGIST, AGISTMENT, AGISTAGE, or AGISTATION, in law, the taking in other people's cattle to graze at ſo much per week. The term is peculiarly uſed for the taking in cattle to be fed in the King's foreſts, as well as for the profits thence ariſing.

AGISTOR, or AGISTATOR, an officer belonging to the foreſts who has the care of the cattle taken in to be grazed, and levies the monies due on that account. There are four ſuch agiſtors in each foreſt, all created by letters patent, and commonly called gueſt takers, or gift takers.

AGRARIAN, in a general ſenſe, belonging to or connected with lands.

AGRARIAN LAWS, among the Romans, thoſe laws relating to the diviſion and diſtribution of lands, of which there were a great number; but that called the *agrarian law*, by way of eminence, was publiſhed by Spurius Caſſius about the year of Rome 268, for dividing the conquered lands equally among all the citizens, and limiting the number of acres which each citizen might enjoy.

AGRARIUM, the ſame as *Agiſtment*.

AGRICULTURE, in a general ſenſe, ſignifies the art of rendering the earth fertile by tillage and culture; in which ſenſe it comprehends gardening as well as huſbandry. See GARDENING and HUSBANDRY. In a more particular and reſtrained ſenſe it is uſed for the management of arable lands by ploughing, fallowing, manuring, &c. See the articles PLOUGHING, &c. Agriculture is a no leſs honourable than profitable art, held in the higheſt eſteem among the antients, and in general equally valued by the moderns. The Egyptians aſcribed the invention to Oſiris, the Greeks to Ceres and her ſon Triptolemus, and the Italians to Saturn or Janus. But the Jews, with more reaſon, aſcribe this honour to Noah, who immediately after the flood ſet about tilling the ground and planting vineyards.

Agriculture has been the delight of the greateſt men. We are told that Cyrus the younger planted and cultivated his garden in a great meaſure with his own hands; and it is well known that the Romans took many of their beſt generals from the plough.

But not to detain the reader with any farther encomium on this univerſally admired art, we refer him to an excellent and well-written Diſſertation on this ſubject in the *Farmer's Magazine*, No. I. and ſhall here only ſubjoin its principal branches, which will be treated of under their reſpective heads.

Agriculture, then, may be ſubdivided into the proper management,

1. Of

1. Of all kinds of arable lands, whether of a clayey, fandy, loamy, or other ſoil. See the articles CLAY LANDS, SANDY LANDS, &c.

2. Of lands employed in paſturage, whether they be meadow lands, marſhy lands, &c. See MEADOW, &c.

3. Of wood-lands, or thoſe laid out in nurſeries, plantations, foreſts, woods, &c. See the article WOOD, &c.

AGRIMONY, [*Agrimonia*] is a troubleſome plant enough in paſture grounds, but ſometimes cultivated in gardens. There are ſeveral ſpecies, all which are hardy perennial plants, and will thrive in almoſt any ſoil or ſituation. They are beſt propagated by parting their roots in autumn when their leaves begin to decay, though they may be propagated by ſowing their ſeed at the ſame time.

The leaves of agrimony are uſed in medicine. They have an herbaceous and ſomewhat acrid, roughiſh taſte, accompanied with an aromatic flavour.

Agrimony is aperient, detergent, and ſtrengthens the tone of the viſcera; hence it proves ſerviceable in ſcorbutic diſorders, in debility and laxity of the inteſtines, &c. Digeſted in whey it affords an uſeful diet-drink for the ſpring ſeaſon, not ungrateful to the palate or ſtomach.

Hemp AGRIMONY, *Water Agrimony*, or *Water Hemp*, [*Eupatorium Cannabinum*] has an acrid ſmell and a very bitter taſte, with a conſiderable ſhare of pungency. The leaves are greatly recommended for ſtrengthening the tone of the viſcera, and as an aperient; and ſaid to have excellent effects in the dropſy, jaundice, cachexies, and ſcorbutic diſorders. Boerhaave informs us, that this is the conſtant medicine of the turf-diggers in Holland againſt ſcurvies, foul ulcers, and ſwellings in the feet, which the natives are ſubject to. The root of this plant is ſaid to operate as a ſtrong cathartic.

AGUE TREE. See SASSAFRAS.

AIL, ANE, or AWNE, a long needle-like beard, which ſtands out from the hull or huſk of a grain of corn.

AIR, that fine, thin, elaſtic fluid, in which we breathe, and which ſurrounds the earth to a great height. It will be extremely difficult for us to be ſufficiently explicit on this article without being too prolix.

The air, beſides its various other uſes, is a principal cauſe of the vegetation of plants, an inſtance of which we have from Mr. Ray, in the Philoſophical Tranſactions, of lettuce-ſeed, that was ſown in the glaſs receiver of the air-pump which was exhauſted and cleared from all air, which grew not at all in eight days time; whereas ſome of the ſame ſeed that was ſown at the ſame time in the open air, was riſen to the height of an inch and an half in that time; but the air being let into the exhauſted receiver, the ſeed grew up to the height of two or three inches in the ſpace of one week.

Another inſtance of the uſefulneſs of the air in vegetation, is the ſedum, which will puſh out roots without earth and water, and live for ſeveral months: and ſome ſorts of aloes, if hung up in a room entirely ſecured from froſts, will remain freſh for ſome years, though they will ſenſibly loſe in their weight. Air is capable of penetrating the porous and ſpongy parts of plants, and being there contracted, of dilating itſelf again.

The air operates alſo within the bowels of the earth, and, by its ſubtilty perſpiring through the pores, aſſiſts in the rarefaction of the crudities of the earth, and in the diſpelling all ſuperfluous moiſture, entering into the very pores and veins of the trees, plants, herbs, &c. carrying along with it thoſe ſalts contained either in itſelf, or lodged in the earth: which ſalts or juices are altered according to the ſeveral figures or dimenſions of the different ſtrainers or veſſels of thoſe ſeveral plants which grow upon the ſame ſpot of earth, which is ſo impregnated with theſe ſalts: and hence thoſe varieties in taſte and ſmell proceed, notwithſtanding they all receive their nouriſhment from the ſame ſtock that is lodged in the earth.

The air alſo affects the branches, leaves, and flowers of trees, plants, and herbs, entering and perſpiring through them, and even through the bark and body of trees: and by the ſame kind of ſubtilty it does, by its refreſhing breezes, moderate the intenſeneſs of the ſun-beams, cooling, clearing, blowing, opening, and extending all the offspring of nature. The air fixes and inſinuates its aëreal ſubſtance into the liquid ſaps of vegetables: and, as all the agitations in

nature proceed from the contrariety of parts inhabiting together, this aëreal and liquid ſubſtances being mixed, cauſe the agitation and motion in vegetables, or, more properly, ſet it all into a ferment, whether it be in the roots, or in the ſtem; and it riſes by co-operation of the ſun, which is the third agent in vegetation, up to the top of a tree, &c. as liquids riſe by fire to the top of the containing veſſel.

The air, we find, produces a vibratory motion in ſeveral bodies; and, particularly in plants, the air-veſſels thereof perform the office of lungs: for the air contained in them, ſometimes contracting, and ſometimes expanding, according as the heat is increaſed or diminiſhed, preſſes the veſſels, and eaſes them again by turns; and thus promotes a circulation of their juices, which could ſcarce otherwiſe be effected.

Air, ſays the learned Dr. Hales, is a fine elaſtic fluid, with particles of very different natures floating in it, whereby it is admirably fitted by the great author of nature, to be the breath or life of vegetables, as well as animals, without which they can no more live nor thrive than animals can. As a proof of the great quantities of air in vegetables, he refers to the third chapter of his excellent Treatiſe of Vegetable Statics, where, he ſays, in the experiments on vines, the great quantity of air was viſible, which was continually aſcending through the ſap in the tubes; which manifeſtly ſhews what plenty of it is taken in by vegetables, and is perſpired off with the ſap through the leaves.

He adds ſeveral experiments, with an apple-branch, apricot-branch, birch, and other plants, to prove the ſame thing.

And Dr. Grew has obſerved, that the pores are ſo large in the trunks of ſome plants, as in the better ſort of thick walking canes, that they are viſible to a good eye without a glaſs; but, with a glaſs, the cane ſeems as if ſtuck at top full of holes with great pins, ſo large as very well to reſemble the pores of the ſkin in the ends of the fingers, and ball of the hand.

In the leaves of pines, they likewiſe, through a glaſs, make a very elegant ſhew, ſtanding almoſt exactly in rank and file thro' the length of the leaves. Whence it may be thought probable that the air freely enters plants, not only with the principal food or nouriſhment by the roots, but alſo through the ſurface of their trunks and leaves, eſpecially at night, when they are changed from a perſpiring to a ſtrongly imbibing ſtate.

Dr. Hales likewiſe tells us, that, in all thoſe experiments that he tried to this purpoſe, he found that the air entered very ſlowly at the bark of young ſhoots and branches, but much more freely through old bark; and that in different kinds of trees it had different degrees of more or leſs free entrance.

And likewiſe, that there is ſome air both in an elaſtic and unelaſtic ſtate, mixed with the earth (which may well enter the roots with the nouriſhment) he found by ſeveral experiments, which he gives in the above-mentioned treatiſe.

The excellent Mr. Boyle, in making many experiments on the air, among other diſcoveries, found, that a good quantity of air was produceable from vegetables, by putting grapes, plums, gooſeberries, peaſe, and ſeveral other ſorts of fruits and grain, into exhauſted and unexhauſted receivers, where they continued for ſeveral days emitting great quantities of air.

This put the curious Dr. Hales upon further reſearches to find out what proportion of air he could obtain out of the vegetables in which it was lodged and incorporated; and, from a vaſt variety of curious and accurate experiments, concludes, that air abounds in vegetable ſubſtances, and bears a conſiderable part in them: and, that if all parts of matter were only endowed with a ſtrongly attracting power, all nature would then become one unactive cohering lump.

Wherefore it was abſolutely neceſſary, in order to the actuating this vaſt maſs of attracting matter, that there ſhould be every where mixed with it a due proportion of ſtrongly repelling elaſtic particles, which might enliven the whole maſs, by the inceſſant action between them and the attracting particles.

And ſince theſe elaſtic particles are continually in great abundance reduced by the power of the ſtrong attracters, from an elaſtic to a fixed ſtate, it was therefore neceſſary, that theſe particles ſhould be endued with a property of reſuming

reſuming their elaſtic ſtate, whenever they were diſengaged from that maſs in which they were fixed, that thereby this beautiful frame of things might be maintained in a continual round of the production and diſſolution of vegetable, as well as animal bodies.

The air is very inſtrumental in the production and growth of vegetables, both by invigorating their ſeveral juices, while in an elaſtic active ſtate, and alſo by greatly contributing in a fixed ſtate to the union and firm connection of the ſeveral conſtituent parts of thoſe bodies, viz. their water, fire, ſalt, and earth.

To conclude, by reaſon of thoſe properties of the air before-mentioned, it is very ſerviceable to vegetables, in that it collects up and breaks open the clouds, thoſe treaſures of rain, which nouriſhes the vegetable tribe.

The air alſo helps to waft or diſperſe thoſe foggy humid vapours which ariſe from the ſoil, and would otherwiſe ſtagnate, and poiſon the whole face of the earth.

The air, by the aſſiſtance of the ſun, aſſumes and ſublimates thoſe vapours into the upper regions; and theſe foggy humid vapours are, by this ſublimation, and the coercive power of the air and ſun, rarefied, and made again uſeful in vegetation.

On the contrary, the air, which in ſo many ways is ſubſervient to vegetables, is alſo, upon ſome accounts, injurious and pernicious to them; not only to the ligneous, herbaceous, and flowery parts above, but alſo to the roots and fibres below the earth: for as the air penetrates deep into the ſoil, it is natural to conclude, that a dry, ſcorching air, may be very prejudicial to the tender fibres of new planted vegetables.

Fixed Air, a ſpecies of factitious air, produced from alkaline ſubſtances by ſolution in acids, or by calcination.

Fixed air has been applied with ſucceſs in the cure of ſeveral diſorders; but for particulars we muſt refer to the ſeveral treatiſes on the nature and properties of air by the learned Dr. Prieſtley. In the Doctor's "Experiments on different kinds of air," we firſt met with the method of reſtoring or ſweetening air rendered noxious in conſequence of a perſon repeatedly breathing the ſame portion, or of its being conſumed by the flame of a candle, or by putrefying ſubſtances.

Our readers will be agreeably ſurprized when they are informed that this noxious quality may be corrected, and the air reſtored to a pure ſtate fit for reſpiration by only putting into it ſome ſprigs of any vegetable in a *growing* ſtate. The Doctor tried mint, groundſel, and ſpinach; the latter being a quick growing plant, reſtored the ſalubrity of the air in a few days.

Thus the continual depravation of the air ariſing from various cauſes is corrected in a great meaſure by the vegetable part of the creation.

Air-Vessels, in plants, certain veſſels, or ducts, for imbibing and conveying air to the ſeveral parts of a plant.

ALBUMEN, the white of an egg.

ALCALI. See Alkali.

ALDER-TREE, [*Alnus*] of which there are two ſpecies, the *common*, or *round leaved* alder,—and the *long-leaved* alder; this ſecond ſort is very common in Auſtria and Hungary.

Theſe trees delight in very wet boggy land, but ſhould not be planted in dry ground becauſe they impoveriſh it ſo much. Nor do they anſwer our expectations ſo much as we could wiſh when they are planted in marſhes.

If planted by the ſides of brooks they will thrive exceedingly, and may be cut for poles every fifth or ſixth year; though they will pay very well to ſtand ſeveral years longer, provided they continue to grow pretty faſt. In this ſituation alder makes an excellent fence againſt rivers and ſtreams, and preſerves the banks from being undermined or waſhed away by the water, becauſe it is always ſending out ſuckers.

Alder has one peculiar and beneficial property, no beaſt will crop it, which ſaves the expence of fencing it from cattle.

It may be propagated either by layers, or cuttings of three or four years old, and three feet long.

The beſt time for this is in February, or the beginning of March; theſe ſhould be ſharpened at one end, and the ground looſened with an inſtrument before they are thruſt into it; leſt, by the ſtiffneſs of the ſoil, the bark ſhould be torn off, which may occaſion their miſcarriage. Theſe truncheons ſhould be thruſt into the earth

two

two feet at leaſt, to prevent their being blown out of the ground by ſtrong winds, after they have made ſtout ſhoots. The plantations ſhould be cleared from all ſuch weeds as grow tall, otherwiſe they will overbear the young ſhoots; but when they have made good heads, they will keep down the weeds, and will require no farther care.

If you raiſe them by laying down the branches, it muſt be performed in October; and by the October following, they will have taken root ſufficient to be tranſplanted out; which muſt be done by digging a hole, and looſening the earth in the place where each plant is to ſtand, planting the young trees at leaſt a foot and a half deep, cutting off the top to about nine inches above the ſurface, which will occaſion them to ſhoot out many branches.

The diſtance theſe trees ſhould be placed, if deſigned for a coppice, is ſix feet ſquare; and if the ſmall lateral ſhoots are taken off in the ſpring, it will very much ſtrengthen your upright poles, provided you leave a few ſmall ſhoots at diſtances upon the body thereof, to detain the top for the increaſe of its bulk.

This wood is in great requeſt with the turners, heel-makers, &c. and will endure a long time under ground, or to be laid in water.

Mr. Boutcher has an utter diſlike to this tree; he ſays, "that ſundry aquatics, of greater beauty and value, will grow abundantly faſter in the ſame ſituations they affect."

Black, or *Berry-bearing* ALDER, [*Alnus nigra*] is common in moſt woods in divers parts of England. The internal bark of the trunk, or root of the tree, given to the quantity of a dram, purges violently, occaſioning gripes, naufea, and vomiting. Theſe may be in good meaſure prevented by the addition of aromatics; but as we have plenty of ſafer and leſs precarious purgatives, practitioners have deſervedly rejected this.

ALDER-TREE, [*Alnus vulgaris*] in medicine. The leaves and bark have a bitter ſtyptic diſagreeable taſte. The bark is recommended by ſome in intermittent fevers; and a decoction of it in gargariſms for inflammations of the tonſils.

ALE, [*Cerevifia*] a well-known liquor that needs no deſcription. See BEER, and BREWING.

It may be here obſerved, that thoſe who drink wine are not ſo ſubject to coughs, diſtempers of the breaſt, and dropſies, as they who drink ale; but then they are more ſubject to the gravel and arthritic complaints. Dr. Cyprianus, the famous lythotomiſt, obſerved, that of vaſt numbers on whom he performed the operation, he found not one *beer-ſeller* troubled with the ſtone, though he met with a great many *vintners* among his patients.

ALE-BERRY, the popular name for ale that is boiled with bread and mace, ſweetened, ſtrained, and drank hot. This is a comfortable drink for horſes, cattle, and ſheep.

Medicated ALES, thoſe wherein medicinal herbs have been infuſed, ſuch as Butler's ale, Gill ale, &c. we ſhall give one or two of thoſe that are well recommended.

Bitter ALE. Take of
Gentian root,
Lemon peel, freſh, each 4 ounces;
Long pepper, one ounce;
Ale, one gallon;
Let them ſteep together without heat.

This is an agreeable bitter ſtomachic ale, much ſuperior to the common purls, or any of the compoſitions of this kind to be met in the extemporaneous recipe writers.

Scorbutic ALE. Take of
Horſe-radiſh root, freſh, 1 pound;
Sharp-pointed dock-roots, half a pound;
Canella alba, two ounces;
Buckbean leaves, freſh, 8 ounces, or dried, three ounces;
New ſmall ale, ten gallons.

In ſcorbutic diſorders, and impurities of the blood and juices, this liquor uſed as common drink generally does good ſervice. All the ingredients are very effectual for the intention, and well ſuited to the form.

ALECOST. See COSTMARY.

ALEHOOF. See GROUNDIVY.

ALEXANDERS, *Aliſanders*, [*Smyrnium*] of which there are five ſpecies, but they are now ſeldom planted in gardens, except for variety; celery, which is ſo much ſuperior, being uſed in their ſtead.

They may be propagated by ſowing their ſeeds upon an open ſpot of ground as ſoon as they are ripe.

ALEXANDERS, *Aliſanders*, [*Hippoſelinum*] formerly much uſed in medicine, is now diſregarded.

ALKANET, [*Anchuſa*] *True Alkanet.* It is a rough, hairy plant, and bears great reſemblance in its leaves and branches to the greater garden bugloſs. It grows naturally in the Levant; but is equally hardy with the garden bugloſs, and may be cultivated in the ſame manner. See BUGLOSS.

ALKANET, [*Anchuſæ Radix*] *Alkanet Root*, the cortical part of which is of a duſky red, but imparts an elegant deep red to oils, wax, and all unctuous ſubſtances, but not to watery liquors.

It is ſometimes cultivated in our gardens; but the greateſt quantities are raiſed in Germany and France, particularly about Montpelier, from whence the dried roots are uſually imported to us.

The alkanet root produced in England is much inferior in colour to that brought from abroad. It has little or no ſmell: when recent, it has a bitteriſh aſtringent taſte, but dried, ſcarce any. As to its virtues, the preſent practice expects not any from it. Its chief uſe is for colouring oils, unguents, and plaſters. As the colour is confined to the cortical part, the ſmalleſt roots ſhould be made choice of, theſe containing proportionably more bark than the larger.

ALKALI, an appellation given to all ſubſtances which excite a fermentation when mixed with acids.

Originally, the term alkali ſignified only the ſalt extracted from the aſhes of kali or glaſs-wort; afterwards it was uſed for the ſalts of all plants extracted in the ſame manner; and as theſe were obſerved to ferment with acids, the term was extended ſo as to comprehend all ſubſtances which had this effect. Alkalies, or Alkaline ſubſtances, are therefore of various and widely different kinds. Some are earthy, as quick-lime, marble, and ſealed earths; others metalline, as gold, ſilver, tin, &c. others of animal origin, as ſhells, bezoars, the calculus humanus, &c. and laſtly, all the ſtrong ſalmarine plants, as coral.

Alkalies are either fixed, as ſalt of tartar; or volatile, as ſpirit of harſhorn, ſal volatile, &c.

It muſt be obſerved, that no vegetables can afford an alkaline ſalt without the action of fire; on the contrary, if ſuffered to dry or rot ſpontaneouſly, they vaniſh or change their form without leaving the leaſt fixed alkali behind.

Of the ſeveral kinds of fixed alkalies, the moſt common is that called pot-aſh. See POT-ASH.

Fixed ALKALINE SALTS, [*Sales Alkalini Fixi*] in medicine, are prepared from tartar, and wormwood.

SALT *of* WORMWOOD.

[*Sal Abſinthii*]

Edinb.

Let any quantity of wormwood, either freſh gathered or moderately dried, be put into an iron pan, and, with a gentle fire, reduced into white aſhes. Boil theſe with a ſufficient quantity of ſpring water, filter the liquor, and evaporate it till a dry ſalt is left behind: this proves of a brown colour; by repeated ſolution, filtration, and inſpiſſation, it becomes at length pure and white.

Lond.

Let the aſhes of wormwood [which the ſhops are uſually ſupplied with from the country] be put into an iron pot, or any other convenient veſſel; and kept red hot over the fire for ſome hours, often ſtirring them, that what oily matter remains may be burnt out. Then boil the aſhes in water, filter the ley thro' paper, and evaporate it till a dry ſalt remains; which is to be kept in a veſſel cloſe ſtopt.

After the ſame manner a fixt alcaline ſalt may be prepared from all thoſe vegetables which yield this kind of ſalt [*L.*] as bean ſtalks, broom, &c. [*E.*]

Theſe ſalts are obtained to greater advantage from dry plants than from green ones; they muſt not however be too dry, or too old; for in ſuch caſe, they afford but a ſmall quantity of ſalt. The fire ſhould be ſo managed, as that the ſubject may burn freely, yet not burſt into violent flame: this laſt circumſtance would greatly leſſen the yield of the ſalt; and a very cloſe ſmothering heat would have this effect in a greater degree; hence the aſhes of charcoal ſcarce yield any ſalt, whilſt the wood it was made from, if burnt at firſt in the open air, affords a large quantity.

If the aſhes are not calcined after the burning, a conſiderable portion of the oil of the ſubject remains in them unconſumed: and hence the ſalt turns

out

out impure, of a brown colour, and ſomewhat ſaponaceous. Tachenius, Boerhaave, and others, have entertained a very high opinion of theſe oily ſalts, and endeavour as much as poſſible to retain the oil in them. They are nevertheleſs liable to a great inconvenience, uncertainty in point of ſtrength, and without promiſing any advantage to counterbalance it: if the common alcalies are required to be made milder and leſs acrimonious, (which is the only point aimed at in the making of theſe medicated ſalts as they are called) they may be occaſionally rendered ſo by ſuitable additions.

SALT *of* TARTAR.

[*Sal Tartari*]

Lond.

Let any kind of tartar be wrapt up in ſtrong brown paper, firſt made wet, or included in a proper veſſel, and expoſed to the fire, that its oil may be burnt out: then boil it in water, and exſiccate into a ſalt as before.

Edinb.

Wrap up any quantity of white tartar in wetted paper, and calcine it in a reverberatory furnace till it becomes exceedingly white. Then diſſolve it in warm water, filter the ſolution, and evaporate it in a clean iron veſſel, till a ſalt is left behind, perfectly dry, and white as ſnow; obſerving towards the end of the operation to keep the matter continually ſtirring with an iron ladle, to prevent its ſticking to the bottom of the veſſel.

If a ſtronger ſalt of tartar is required, let the white ſalt be fuſed in a crucible, with the moſt intenſe degree of heat, and reverberated for ſome hours, till it has acquired a greeniſh or blue colour.

The white and red ſorts of tartar are equally fit for the purpoſe of making fixt ſalt; the only difference is, that the white affords a ſomewhat larger quantity than the other; from ſixteen ounces, upwards of four may be obtained. The uſe of the paper is to prevent the ſmaller pieces of the tartar from dropping down into the aſh hole, through the interſtices of the coals, upon firſt injecting it into the furnace. The calcination of the ſalt (if the tartar was ſufficiently burnt at firſt) does not increaſe its ſtrength ſo much as is ſuppoſed: nor is the greeniſh or blue colour any certain mark either of its ſtrength, or of its having been long expoſed to a vehement fire: for if the crucible is perfectly clean, cloſe covered, and has ſtood the fire without cracking, the ſalt will turn out white, tho' kept fuſed and verberated ever ſo long; whilſt, on the other hand, a ſlight accident, or dextrous management of the proceſs, ſhall in a few minutes give the ſalt the colour admired.

The ſhops were formerly burthened with a great number of theſe ſalts, which are now very judiciouſly rejected; thoſe here retained being abundantly ſufficient to anſwer all the uſeful purpoſes that can be expected from theſe kinds of preparations. All fixt alcaline ſalts, from whatever vegetable they may be obtained, are nearly one and the ſame thing, and not diſtinguiſhable from each other, at leaſt in their effects as medicines: and hence the college of London, in moſt of the compoſitions wherein theſe ſorts of ſalts are ingredients, allow any fixt alcaline ſalt to be made uſe of.

Some differences indeed are obſerved in them as uſually prepared; but theſe depend entirely upon the manner in which the proceſs for obtaining them is conducted, and not on their being produced from different vegetables. Thus a variation in the heat by which the plant is burnt or calcined, occaſions a difference in the acrimony of the produce: the more vehement and laſting the fire (to a certain degree) the more acrid is the ſalt. The circumſtances of applying the water hot or cold to the aſhes, likewiſe make a conſiderable variation: boiled water takes up more of the earthy parts (and of the oily ones, if any remain unconſumed) than cold water: and likewiſe a kind of neutral ſalt, of a quite different nature from alcaline ones, though frequently found among the aſhes of vegetables, eſpecially ſuch as have been expoſed for ſome time to the air: whilſt cold water extracts from them only the pure alcaline ſalt, unleſs it be uſed in too large a quantity, or ſuffered to ſtand too long upon them.

Theſe ſalts have an acrimonious fiery taſte. They render vegetable oils and reſins, and animal fats, ſoluble in water; and liquefy all the animal juices, except milk. Taken into the body, they ſtimulate and deterge the ſolids, attenuate

attenuate the fluids, diſſolve viſcid tenacious matter; and by theſe means, open obſtructions of the veſſels, and promote all the natural ſecretions. A dilute ſolution of them drank in bed, generally excites a copious ſweat: by walking in the cool air, its action is determined to the kidneys: taken for ſome time in proper doſes, it proves an excellent remedy for coſtiveneſs, eſpecially if a few grains of aloes be occaſionally interpoſed: this medicine has an advantage above all the other purgatives and laxatives, that when the complaint is once removed, it is not apt to return again. Theſe ſalts are moſt ſerviceable in cold phlegmatic habits, and where acidities abound in the primæ viæ: they powerfully abſorb acids, and unite with them into mildly aperient neutral ſalts. In a colliquated acrimonious ſtate of the fluids, where there is any inflammation, or a tendency to putreſcence, they are manifeſtly prejudicial.—The doſe of theſe ſalts is from two or three grains to a dram or more.

Alkalies, ſuch as pot-aſh, are of extenſive uſe in fulling, ſcouring, &c. for they diſſolve all kinds of fats and greaſy ſubſtances, with which, when properly combined, they form a ſubſtance well known by the name of ſoap. They heighten crimſon and purple colours, to which they give a bloom of inimitable beauty; but then it is extremely volatile. Dyed ſilk or woollen, that have been thus heightened, may, when faded, be in great meaſure reſtored by applying a weak ſolution of pot-aſh, or bullock's gall; purple or violet-coloured ribbons ſhould when faded be dipped in a weak ſolution of ſalt-petre.

Vegetable ſubſtances in general when fully impregnated with fixed alkaline ſalts never flame; and do not burn at all without a continuance of external heat; hence ſome have propoſed to impregnate wood with them to prevent buildings taking fire; but theſe ſalts imbibe moiſture ſo faſt from the air, that the timber would ſeldom be dry.

We did not at firſt intend to treat this ſubject ſo fully; but as both alkalies and acids are very frequently uſed in medicine, and are ſo intimately connected with our work, we have judged it moſt proper to ſubjoin the article ACID.

ACID, a general name for every thing that affects the taſte with ſourneſs. The form under which acids moſt commonly appear, is that of a tranſparent liquor; though ſolidity is rather their natural ſtate. This is owing to their affinity with water; which is ſo great, that, when they contain but juſt as much of it as is neceſſary to conſtitute them ſalts, and conſequently have a ſolid form, they rapidly unite with that fluid the moment they come into contact with it: and, as the air is always loaded with moiſture and aqueous vapours, its contact alone is ſufficient to liquify acid ſalts; becauſe they unite with its humidity, imbibe it greedily, and by that means become fluid. We therefore ſay, they attract the moiſture of the air. This change of a ſalt from a ſolid to a fluid ſtate, by the ſole contact of the air, is alſo called deliquium; ſo that when a ſalt changes in this manner from a ſolid into a fluid form, it is ſaid to run *per deliquium*.

Acids in general have a great affinity with earths: that with which they moſt readily unite, is called abſorbent earth. They ſeem to exert no action at all upon vitrifiable earths, ſuch as ſand, and ſome other kinds, at leaſt while they continue in their natural ſtate.

When an acid liquor is mixed with an abſorbent earth, for inſtance with chalk, theſe two ſubſtances inſtantly unite with ſo much impetuoſity, eſpecially if the acid liquor be thoroughly dephlegmated, that a great ebullition is immediately produced, attended with conſiderable hiſſing, heat, and vapours, which riſe the very inſtant of their conjunction.

From the combination of an acid with an abſorbent earth, there ariſes a new compound, which ſome chemiſts have called *ſal ſalſum*; becauſe the acid, by uniting with the earth loſes its ſour taſte and acquires another not unlike that of the common ſea ſalt uſed in our kitchens; yet varying according to the different ſorts of acids and earths combined together. The acid at the ſame time loſes its property of turning vegetable blues and violet colours, red.

There are three kinds of ACIDS peculiar to the mineral kingdom; the vitriolic, nitrous, and marine—theſe

are generally called mineral acids. All these are highly corrosive, insomuch as not to be safely touched unless largely diluted. Mixed hastily with vinous spirits they raise a violent ebullition, with a copious discharge of noxious fumes; by this addition the acid is dulcified, as the *Sweet Spirit of Nitre*.

Universal or VITRIOLIC ACID is so called, because it is in fact the acid which is most universally diffused thro' all nature, in waters, in the atmosphere, and in the bowels of the earth. But it is seldom pure, being almost always combined with some other substance. That from which we obtain it with most ease, and in the greatest quantity, is vitriol: and this is the reason why it is called the *vitriolic acid*, the name by which it is generally known.

When the vitriolic acid contains but little phlegm, yet enough to give it a fluid form, it is called *oil of vitriol*.

If the vitriolic acid contain much water, it is then called *Spirit of* VITRIOL. When it does not contain enough to render it fluid, and so is in a solid form, it is named the *Icy Oil of* VITRIOL.

When oil of vitriol highly concentrated is mixed with water, they rush into union with such impetuosity, that the moment they touch each other, there arises a hissing noise like that of red hot iron plunged in cold water, together with a very considerable degree of heat proportioned to the degree in which the acid was concentrated.

If, instead of mixing this concentrated acid with water, you only leave it exposed to the air for some time, it attracts and imbibes the moisture. Both its bulk and its weight are increased by this accession; [hence it has been used as an hygrometer] and if it be under an icy form, that is, if it be concreted, the phlegm thus acquired will soon resolve it into a fluid.

The addition of water renders the vitriolic acid, and indeed all other acids, weaker in one sense; that is, they leave on the tongue a much fainter taste of acidity, and are less active in the solution of some particular bodies; but occasions no change in the strength of their affinities; it even, in some cases, enables them to diffuse to several more bodies, which, when too dephlegmated, they are incapable of attacking.

The vitriolic acid, combined to the point of saturation with a particular absorbent earth, the nature of which is not yet well known, forms a neutral salt that chrystallizes. This salt is called *Alum*, and the figure of its chrystals is that of an octahedron or solid of eight sides.

The vitriolic acid, combined with certain earths, forms a kind of neutral salt called *Selenites*, which chrystallizes in different forms, according to the nature of its earth. There are numberless springs of water impregnated with dissolved *Selenites*; but when once this salt is chrystallized, it is exceeding difficult to dissolve it in water a second time.

If an alkali be presented to the selenites, or to alum, these salts will be thereby decomposed; that is, the acid will quit the earths, and join the alkali, with which it hath a greater affinity. And, from this conjunction of the vitrolic acid with a fixed alkali, there results another sort of neutral salt, which is called *Arcanum duplicatum*, *Sal de duobus*, and *vitriolated Tartar*, because one of the fixed alkalies most in use is called *Salt of Tartar*.

From the conjunction of the vitriolic acid with the phlogiston, arises a compound called *Mineral Sulphur*; because it is found perfectly formed in the bowels of the earth. It is also called sulphur vivum, or simply, sulphur.

NITROUS ACID, a particular kind of acid, which, combined with an alkaline salt, forms a body called Nitre.

The nitrous acid, combined with certain absorbent earths, such as chalk, marble, boles, forms neutral salts which do not chrystallize; and which, after being dried, run in the air *per deliquium*.

All those neutral salts, which consist of the nitrous acid, joined to an earth, may be decomposed by a fixed alkali, with which the acid unites, and deserts the earth; and from this union of the nitrous acid with a fixed alkali, results a new neutral salt, which is called *Nitre*, or *Salt-petre*.

The nitrous acid, when thus separated from its salts by the vitriolic acid, is named *Spirit of Nitre*, or *Aqua Fortis*.

tis. If it be dephlegmated, or contain but little ſuperfluous water, it exhales in reddiſh vapours; theſe vapours, being condenſed and collected, form a liquor of a browniſh yellow, that inceſſantly emits vapours of the ſame colour, and of a pungent diſagreeable ſmell. Theſe characters have procured it the names of ſmoking ſpirit of nitre, and yellow aqua fortis. This property in the nitrous acid, of exhaling in vapours, ſhews it to be leſs fixed than the vitriolic acid; for the latter, though ever ſo thoroughly dephlegmated, never yields any vapours, nor has it any ſmell.

Marine ACID, or the ACID *of Sea Salt*, an acid obtained from ſuch ſea ſalt as is uſed in our kitchens.

When it is combined with abſorbent earths, ſuch as lime and chalk, it forms a neutral ſalt that does not chryſtallize, and, when dried, attracts the moiſture of the air. If the abſorbent earth be not fully ſaturated with the marine acid, the ſalt thereby formed has the properties of a fixed alkali. The marine acid, like the reſt, hath not ſo great an affinity with earths, as with fixed alkalies.

When it is combined with the latter, it forms a neutral ſalt, which ſhoots into cubical chryſtals. This ſalt is inclined to grow moiſt in the air.

The acid of ſea ſalt, diſengaged from the ſubſtance which ſerved it for a baſis, is called *Spirit of Salt.*

From what has been ſaid of the union of the acid of ſea-ſalt with a fixed alkali, and of the neutral ſalt reſulting from that combination, it may be concluded that this neutral ſalt is no other than the common kitchen ſalt.

Common ſalt, or the neutral ſalt, formed by the combining the marine acid with this particular ſort of fixed alkali, has a taſte well known to every body. The figure of its chryſtals is exactly cubical. It grows moiſt in the air, and, when expoſed to the fire, it burſts, before it melts, into many little fragments, with a crackling noiſe; which is called the decrepitation of ſea ſalt.

Vegetable ACIDS, are native, as ſorrel, juice of lemons, barberries, and other fruits; or produced by fermentation, as tartar, vinegar, and alegar.

The medical effects of acids, duly diluted and exhibited in proper doſes, are, to cool, quench thirſt, and allay inordinate motions of the blood. By theſe qualities, in hot bilious temperaments and inflammatory diſorders, they frequently reſtrain immoderate hæmorrhagies, and promote the natural ſecretions; in ſome kinds of fevers, they excite a copious diaphoreſis, where the warm medicines called alexipharmac, tend rather to prevent this ſalutary diſcharge.

Vegetable acids, particularly the native juices of certain plants and fruits, have ſome degree of a ſaponaceous quality; by means of which they attenuate or diſſolve viſcid phlegm, and deterge the veſſels; and thus prove ſerviceable in ſundry chronical diſorders. Inveterate ſcurvies have ſometimes yielded to their continued uſe, eſpecially when given in conjunction with medicines of the acrid or pungent kind: experience has ſhewn that the acrid antiſcorbutics have much better effects when thus managed, than when exhibited by themſelves; hence in the ſcorbutic juices of our diſpenſatories, ſeville orange juice is uſefully joined to that of the ſcurvy-graſs and creſſes.

The mineral acids inſtantly coagulate blood: the vegetable dilute it, even when inſpiſſated or thickened by heat; in which ſtate, watery liquors will not mingle with it. Hence in ſome fevers, where water runs off by the kidneys almoſt as pale and inſipid as it was drank, vegetable acids ſoon render the urine of the due colour and quality. The mineral acids (the ſpirit of nitre in particular) combined with vinous ſpirits, have the ſame effect.

Acids of every kind are prejudicial in cold, pale, phlegmatic habits, where the veſſels are lax, the circulation languid, bile deficient, and the power of digeſtion weak. In theſe caſes, an acid is often generated in the ſtomach, from milk and moiſt vegetable foods, which, whilſt it continues in the firſt paſſages, occaſions uneaſineſs about the ſtomach, flatulencies, ſometimes griping pains of the bowels, vomiting, or the cholera morbus.

The mineral acids are frequently uſed to diſcharge iron-moulds, ink-ſpots, &c. but the eſſential ſalt of vegetables, ſuch as lemon, ſorrel, &c. is

See Aco: ante.

much preferable; for the former are apt to burn the linen, which the latter never do. If any of the mineral acids be diluted with water, and then ſprinkled upon writing paper, and the paper held near the fire, the water will evaporate, and the ſpirit will calcine the paper; but this effect will not be produced by any of the vegetable acids.

ALEGAR, a kind of vinegar made with malt liquor. Theſe kinds of vinegar are not ſo pure as the wine vinegars, for they contain a large portion of a viſcous mucilaginous ſubſtance, as is evident from the ropyneſs which alegar is ſubject to; hence they are prejudicial in ſcorbutic diſorders, where lemon-juice, and the beſt wine vinegars, are highly ſalutary.

ALKEKENGI. See WINTER CHERRY.

ALLELUJAH. See WOOD SORREL.

ALLEY, in the new huſbandry, implies the vacant ſpace between the outermoſt row of corn on one bed, and the neareſt row to it on the next parallel bed. See BED.

The practice of the new huſbandry has already ſufficiently ſhewn, that too narrow alleys would hardly anſwer any of the ends for which they are intended; and, on the other hand, the making them too wide is a loſs of ground. About four feet, excluſive of the ſpaces or partitions between the rows of corn in the beds, is a good middling breadth.

It is not indeed neceſſary to make the alleys quite ſo wide in good ſoils; an intelligent huſbandman will eaſily judge what breadth is moſt proper. But what greatly merits the attention of every one, and ought never to be loſt ſight of, is, that wide alleys are more eaſily and much better ſtirred than thoſe which are narrower: for when an alley is wide, the large furrow in the middle of it may be cut deep, there being then ſufficient room to turn the earth over towards the rows; while on the other hand, the earth, in too narrow alleys, cannot be ſtirred deep enough, nor can room be found for what is turned over out of the furrows, without danger of burying great part of the rows.

We will, therefore, ſuppoſe the general breadth of the alleys to be about four feet; but the whole of that breadth is not to be ploughed or ſtirred, either with the plough or cultivator, as ſoon as the field is ſown. Neither of theſe inſtruments ought to go too near the rows of corn, for fear of rooting up the plants; but a ſlip of earth, about ſix inches wide, ſhould be left untouched on the outſide of each bed; by which means the part of the alley that is to be ſtirred, will be reduced to the breadth of three feet; and even that is leſſened in the firſt ploughing before winter by a deep furrow, which is then cut cloſe to, and all along thoſe ſix inch ſlips, and the earth taken out of each furrow is thrown into the great furrow in the middle of the alley, which it ſerves to fill and arch up. Theſe two ſide furrows make together a breadth of about eighteen inches, and conſequently leave, in the middle of the alley, a breadth of about eighteen inches more, on which is heaped up the earth thrown out of the two furrows: and thus the alleys remain all the winter.

The firſt hoeing in the ſpring ſhould turn the earth, heaped up in the middle of the alleys, back towards the rows of corn. The two furrows that were opened before winter are then filled up, and a new one is cut in the middle of the alley.

To perform the firſt hoeing with the common plough, which may be very eaſily done, two turns of that inſtrument will be requiſite, namely, one on each ſide of the alley, as near as poſſible to the beds. But as theſe two turns will not be always ſufficient to form the furrow perfectly, a great deal of earth frequently remaining between it and the bed, a third turn of the plough becomes often neceſſary; and ſometimes a fourth, to hollow the middle furrow as it ought to be.

If this work be performed with the cultivator with two mould-boards, the inſtrument muſt be placed in the middle of the alley, and the horſes in one of the two furrows. The ſhare will eaſily enter a great depth into the earth, which was laid there by the laſt hoeing before winter; and as the horſes advance, that great ridge of earth will be divided into two parts, which will be turned over into, and fill up the furrows that were made before winter, on each ſide of the alley cloſe to the beds. See the article CULTIVATOR.

Thus

Thus the great furrow in the middle of the alley will be opened, and the whole operation performed by one turn of the cultivator. The earth thus turned over will be thoroughly ſtirred, and ſo much time and labour will be ſaved by this method, that the farmer may eaſily afford one or two ſtirrings more in the ſummer, which will always be of great ſervice. *M. de Chateauvieux.*

ALLEY, in gardening, implies a ſtrait walk bounded on both ſides with trees or ſhrubs, and commonly covered with gravel or graſs.

An alley is diſtinguiſhed from a path, by being broad enough for two perſons to walk a-breait, whereas a path is ſuppoſed to admit of only one at a time; but if an alley be wider than ten or twelve feet, it may, with more propriety, be called a walk.

Covered ALLEY, is that where the trees on each ſide meet at the top, ſo as to form a ſhade.

ALL-GOOD. See ENGLISH HERB MERCURY.

ALL-HEAL, [*Panacis*] is only to be met with in the gardens of the curious, the preſent pharmacy taking no notice of it.

Clowns ALL-HEAL, [*Panax Coloni*] a weed uſed by the common country people with ſucceſs in freſh wounds.

ALL-SPICE, Jamaica Pepper. See PEPPER.

ALLUVION, [*Alluvio*] among civilians, denotes the gradual increaſe of lands, along the ſea ſhore, or on the banks of rivers. This when ſlow and imperceptible, is deemed a lawful acquiſition; but when a conſiderable portion of land is torn away at once by the violence of the current, and joined to a neighbouring eſtate, it may be claimed again by the former owner.

ALMIGGIM WOOD, in ſcripture, is thought to be the Indian pine-tree, which being exceeding light, and of a beautiful white colour, was greatly eſteemed for making muſical inſtruments.

ALMOND-TREE, [*Amygdalus*] is generally cultivated in gardens for the beauty of its flowers. Theſe often appear in February, when the ſpring is forward; but if froſt comes on after the flowers appear, their beauty will be of ſhort duration, and in thoſe ſeaſons few almonds are produced; whereas when the trees do not flower till late in March, they ſeldom fail to bear plenty of fruit; many of which will be very ſweet, and fit for the table when green, but they will not keep long.

Almond-trees are propagated by inoculating a bud of theſe trees into a plum, almond, or peach-ſtock, in the month of July. The next ſpring, when the buds ſhoot, you may train them up, either for ſtandards, or ſuffer them to grow for half ſtandards, according to your own fancy.

The beſt ſeaſon for tranſplanting theſe trees, if for dry ground, is in October, as ſoon as the leaves begin to decay; but for a wet ſoil, February is much preferable: obſerve always to bud upon plum-ſtocks for wet grounds, and on almond or peach-ſtocks for dry.

Bitter ALMONDS and *Sweet* ALMONDS, [*Amygdalæ Amaræ et Dulces.*] The almond is a flattiſh kernel, of a white colour, covered with a thin browniſh ſkin; of a ſoft ſweet taſte; or a diſagreeable bitter one. The ſkins of both ſorts are unpleaſant, and covered with an acrid powdery ſubſtance: they are very apt to become rancid by keeping, and to be preyed on by a kind of inſect, which eats out the internal part, leaving the almond to appearance entire. The fruits which afford theſe kernels, is the produce of a tree greatly reſembling the peach, called by *C. B. amygdalus ſativa*. The eye diſtinguiſhes no difference betwixt the trees which produce the ſweet and bitter almonds, or betwixt the kernels themſelves: one and the ſame tree has by a difference in the culture afforded ſometimes one ſort and ſometimes the other.

Both ſorts of almonds yield on expreſſion a large quantity of oil, which has no ſmell or any particular taſte: this oil ſeparates likewiſe upon boiling the almonds in water, and is gradually collected on the ſurface: on trituration with water, it unites therewith, by the mediation of the other matter of the almond, and forms an unctuous milky liquor. Sweet almonds are of greater uſe in food than as medicines; but they do not ſeem to afford much nouriſhment, and when eaten in ſubſtance are not eaſy of digeſtion, unleſs thoroughly comminuted. They are

ſuppoſed

ſuppoſed on account of their ſoft unctuous quality, to obtund acrimonious juices in the primæ viæ: peeled ſweet almonds, eaten ſix or eight at a time, ſometimes give preſent relief in the ſoda. Bitter almonds have been found poiſonous to dogs, and ſundry other animals; and a water diſtilled from them, when made of a certain degree of ſtrength, has had like effects. Nevertheleſs, eaten, they appear innocent to men, and have been not unfrequently exhibited as medicines: Boerhaave recommends them in ſubſtance as diuretics which heat moderately, and which may therefore be ventured upon in acute diſeaſes. The oils obtained by expreſſion from both ſorts of almonds are in their ſenſible qualities the ſame. The general virtues of theſe oils are, to blunt acrimonious humours, and to ſoften and relax the ſolids: hence their uſe internally, in tickling coughs, heat of urine, pains and inflammations; and externally in tenſion and rigidity of particular parts. The milky ſolutions of almonds in watery liquors, commonly called emulſions, contain the oil of the ſubject, and participate in ſome degree of the emollient virtue thereof; but have this advantage above the pure oil, that they may be given in acute or inflammatory diſorders, without danger of the ill effects which the oil might ſometimes produce; ſince emulſions do not turn rancid or acrimonious by heat, as all the oils of this kind in a little time do. Several unctuous and reſinous ſubſtances, of themſelves not miſcible with water, may by trituration with almonds be eaſily mixed with it into the form of an emulſion; and are thus excellently fitted for exhibition. In this form, camphor and the reſinous purgatives may be commediouſly exhibited.

Afrıcan ALMOND. [*Erabajum.*] This is by ſome called the *Ethiopian Almond*, and is a native of the country about the Cape of Good Hope, where it grows to be a middling ſize tree; but in Europe it ſeldom exceeds eight or nine feet in height; for it is too tender to live through the winter in the open air.

As this plant is very difficult to propagate, it is very ſcarce in Europe. It may be propagated, though with difficulty, by making layers in April, juſt as the plants are beginning to ſhoot, obſerving always to make the layers of the former year's ſhoots, and to ſlit them at a joint, as is practiſed in laying carnations.

The plants will require a good green-houſe in winter; but in ſummer will bear the open air in a ſheltered ſituation. When they arrive at a proper age, they will produce flowers in the ſpring, which are of a pale colour, inclining to white, and will then make a pretty variety among other exotics in the green-houſe.

DWARF ALMONDS, [*Perſica*] two ſorts, one with ſingle flowers, and the other with double.

They make a very agreeable variety amongſt low flowering trees in wilderneſs walks. The ſingle ſort flowers in the beginning of April, and the double a fortnight later. They may be budded upon almond ſtocks, or propagated by layers; they will alſo take upon plum ſtocks, but then they will be apt to canker, eſpecially the double ſort, which is tenderer than the other.

ALMUG-TREE, in ſcripture, is underſtood to be a gummy oily ſort of tree, and particularly that which produces gum arabic.

ALOA, in Grecian antiquity, a feſtival kept in honour of Ceres by the huſbandmen, and ſuppoſed to reſemble our harveſt-home.

ALOE [*Agave, Americana muricata,*] Common American Aloe. Mr. Miller enumerates eight ſpecies; but the *common great American Aloe* deſerves the moſt particular notice.

It has long been preſerved in the Engliſh gardens, where, of late years, there have been ſeveral of the plants in flower, where they make a fine appearance, and continue a long time in beauty, if they are protected from the cold in autumn; for in favourable ſeaſons there will be a ſucceſſion of new flowers for near three months. If the plant is vigorous, the ſtem will riſe upwards of twenty feet high, and branch out on every ſide towards the top, ſo as to form a kind of pyramid; the ſlender ſhoots being garniſhed with greeniſh yellow flowers which ſtand erect, and come out in thick cluſters at every joint.

It has been generally believed that this plant does not flower till it is an hundred

hundred years old; but this is a miſtake; the time of its flowering depends on its growth, which will be ſafter or ſlower according to the warmth of the climate. There is a variety of this ſort with ſtriped leaves, which is now pretty common in the Engliſh gardens.

It is an hardy plant, and has been known to live in the open air for ſome years in mild ſeaſons; but ſevere winters always prove fatal, unleſs it is then ſheltered. It may be propagated by offſets, which it puts out in great plenty. Theſe ſhould be planted in pots filled with light ſandy earth, and houſed in winter; and during that ſeaſon have but little water. In ſummer they may be expoſed to the open air, but again houſed in winter.

There is another ſort nearly reſembling this, called the *Great American Aloe*, which has lately flowered in England. The principal difference is, the leaves are narrower towards their extremity, and of a paler colour; the ſtem does not riſe ſo high, nor does it branch in the ſame manner, but the flowers are collected into a cloſe head at the top; they are however of the ſame ſhape and colour.

Moſt of the aloes are too tender to be preſerved through the winter, unleſs they are placed in a warm ſtove; nor will they thrive in ſummer, if ſet abroad in the open air. They ſhould be watered gently twice a week in warm weather, for if they are watered freely, their leaves will ſoon be infeſted with inſects, and their roots decay. They ſhould be ſhifted into freſh earth every ſummer, but the pots muſt not be large, for unleſs the roots are confined, the plant will not thrive.

African ALOE, [*Aletris*] of which there are four ſpecies; but two only, viz. the *Guinea Aloe* and the *True Aloe*, ſeem worth preſerving. They are tender plants, and muſt be placed in the ſtove all the year, admitting a free air in warm weather.

ALOE, of which Mr. Miller reckons twenty-three different ſpecies. It would greatly exceed our limits to follow him through the deſcription of ſo many ſorts: we ſhall therefore content ourſelves with giving a few directions for their propagation and culture.

The ſoil in which they thrive beſt is one half freſh light earth from a common (and if the turf is taken with it and rotted it will be much better); the reſt ſhould be equal parts of white ſea ſand and ſifted lime rubbiſh; mix theſe together ſix or ſeven months before it is uſed, obſerving to turn it often.

Moſt of the Aloes are increaſed by offſets, which ſhould be taken from the mother plant about the middle of July, (the time when the plants ſhould be ſhifted) and put into very ſmall pots; but if in taking the ſuckers off, you obſerve the part which joined the mother root to be moiſt, you ſhould let them lie out of the ground in a ſhady dry place for about a week, otherwiſe they will be ſubject to rot.

After planting, place them in a ſhady dry place for a fortnight, when the tender ſorts may be removed to a moderate hot-bed, obſerving to ſhade the glaſſes in the middle of the day, to give them a very free air. Towards the middle of Auguſt begin to harden them by taking off the glaſſes in good weather, and by raiſing them with props; and towards the end of September they may be removed into the houſe.

The African Aloes for the moſt part afford plenty of ſuckers; but thoſe that do not may be propagated by taking off the under leaves and laying them to dry for about ten days, and then planting and managing them in all reſpects like the offſets; the beſt ſeaſon for this is in June.

The middle of July is a proper ſeaſon to ſhift the plants into other pots. This muſt be done with great care, remembering to put a few ſtones at the bottom of the pot that the ſuperfluous moiſture may drain off. Water them gently, and ſet them in a ſhady place for three weeks.

Towards the latter end of September remove them into the houſe again, and let them have as much free open air as poſſible, but guard againſt cool nights. Thoſe plants which are placed in a ſtove will require to be watered once a week great part of the winter, while thoſe in the green-houſe ſhould not be watered oftener than once a month.

The tender ſorts muſt conſtantly remain in the ſtove, or in ſummer be removed to an airy glaſs caſe, but muſt be protected from rain and cold. With this management the plants will thrive and increaſe, and ſuch of them as

as uſually flower may be expected to produce them in beauty at their ſeaſons.

ALOE, or ALOES, is the inſpiſſated juice of certain plants of the ſame name. The ancients diſtinguiſhed two ſorts of Aloes; the one was pure and of a yellowiſh colour, inclining to red, reſembling the colour of liver, and thence named hepatic; the other was full of impurities, and hence ſuppoſed to be only the droſs of the better kind. At preſent, various ſorts are met with in the ſhops; which are diſtinguiſhed either from the places, from the ſpecies of the plants, or from ſome differences in the juices themſelves. Theſe may be all ranged in three claſſes:

(1) ALOE SOCOTORINA. Socotorine aloes, brought from the iſland of Socotora in the Indian ocean, wrapt in ſkins; it is obtained from the *aloe ſuccotorina anguſtifolia ſpinoſa, flore purpureo, Breyn & Commelin.*—This ſort is the pureſt of the three: it is of a gloſſy ſurface, clear, and in ſome degree pellucid; in the lump, of a yellowiſh red colour, with a purple caſt; when reduced to powder, of a bright golden colour. It is hard and friable in the winter, ſomewhat pliable in ſummer, and grows ſoft betwixt the fingers. Its taſte is bitter, accompanied with an aromatic flavour, but inſufficient to prevent its being diſagreeable: The ſmell is not very unpleaſant, and ſomewhat reſembles that of myrrh.

(2) ALOE HEPATICA. Hepatic, Barbadoes, China, or common aloes; the juice of the *aloe C. B. aloe vera vulgaris, Munting.*—Hepatic aloes is not ſo clear and bright as the foregoing ſort: it is alſo of a darker colour, more compact texture, and for the moſt part dryer. Its ſmell is much ſtronger and more diſagreeable: The taſte intenſely bitter and naufeous, with little or nothing of the fine aromatic flavour of the Socotorine.—The beſt hepatic aloes comes from Barbadoes in large gourd ſhells; an inferior ſort of it (which is generally ſoft and clammy) is brought over in caſks.

(3) ALOE CABALLINA. Guinea, fetid, caballine, or horſe aloes; the produce of the *aloe Guinenſis caballina algari ſimilis, ſed tota ma ulata, Commelin.*—This ſort is eaſily diſtinguiſhed from both the foregoing, by its ſtrong rank ſmell; although, in other reſpects, it agrees pretty much with the hepatic, and is not unfrequently ſold in its ſtead. Sometimes the caballine aloes is prepared ſo pure and bright, as not to be diſtinguiſhable by the eye even from the Socotorine; but its offenſive ſmell, which it cannot be diveſted of, readily betrays it.

All the ſorts of aloes diſſolve in pure ſpirit, proof ſpirit, and proof ſpirit diluted with half its weight of water; the impurities only being left. They diſſolve alſo by the aſſiſtance of heat in water alone; but as the liquor grows cold, the reſinous part ſubſides, the gummy remaining united with the water. The hepatic aloes is found to contain more reſin, and leſs gum than the ſocotorine, and this than the caballine. The reſins of all the ſorts, purified by ſpirit of wine, have little ſmell: That obtained from the ſocotorine has ſcarce any perceptible taſte; that of the hepatic a ſlight bitteriſh reliſh, and the reſin of the caballine, a little more of the alcetic flavour. The gummy extracts of all the ſorts are leſs diſagreeable than the crude aloes: The extract of ſocotorine aloes has very little ſmell, and is in taſte not unpleaſant; that of the hepatic has a ſomewhat ſtronger ſmell, but is rather more agreeable in taſte than the extract of the ſocotorine: The gum of the caballine retains a conſiderable ſhare of the peculiar rank ſmell of this ſort of aloes, but its taſte is not much more unpleaſant than that of the extracts made from the two other ſorts.

Aloes is a ſtimulating cathartic bitter: If given in ſo large a doſe as to purge effectually, it often occaſions an irritation about the anus, and ſometimes a diſcharge of blood. Small doſes of it frequently repeated, not only cleanſe the primæ viæ, but likewiſe attenuate and diſſolve viſcid juices in the remoter parts, warm the habit, quicken the circulation, and promote the uterine and hæmorrhoidal fluxes. This medicine is particularly ſerviceable in perſons of a phlegmatic temperament and ſedentary life, and where the ſtomach is oppreſſed and weakened: In dry bilious habits, aloes proves injurious, immoderately heating the blood, and inflaming the bowels.—This juice is likewiſe, on account of its bitterneſs, ſuppoſed to kill worms, either taken internally, or applied in

plaiſters to the umbilical region. It is alſo celebrated for reſtraining external hæmorrhagies, cleanſing and healing wounds and ulcers.

The ancients exhibited aloes in much larger doſes than is cuſtomary at preſent. Dioſcorides orders half a dram or a dram for gently looſening the belly; and three drams when intended to have the full effect of a cathartic. But modern practice rarely exceeds a ſcruple, and limits the greateſt doſe to two ſcruples: For the common purpoſes of this medicine, ten or twelve grains are ſufficient; taken in theſe quantities, it acts as a gentle ſtimulating eccoprotic, capable of removing, if duly continued, very obſtinate obſtructions.

Some are of opinion, that the purgative virtue of aloes reſides entirely in its reſin; but experience has ſhewn, that the pure reſin has little or no purgative quality; and that the gummy part, ſeparated from the reſinous, acts more powerfully than crude aloes. If the aloes indeed be made to undergo long coction in the preparation of the gummy extract, its cathartic power will be conſiderably leſſened, not from the ſeparation of the reſin, but from an alteration made in the juice itſelf by the heat. The ſtrongeſt vegetable cathartics become mild by a like treatment, without any remarkable ſeparation of their parts.——Socotorine aloes, as formerly obſerved, contains more gummy matter than the hepatic; and hence it is likewiſe found to purge more, and with greater irritation. The firſt ſort therefore is moſt proper where a ſtimulus is required, as for promoting or exciting the menſtrual flux; whilſt the latter is better calculated to act as a common purge. The vulnerary and balſamic virtues of this juice reſide chiefly in the reſin; and hence the hepatic aloes, which is moſt reſinous, is found moſt ſerviceable in external applications.

ALOES-WOOD, [*Agallochum, Lignum Aloes, Xylaloes*]. There have been different conjectures concerning this plant, but no ſatisfactory account of it has hitherto appeared. Authors diſtinguiſh ſeveral ſorts of agallochum, moſt of which are ſtrangers to Europe. That which comes to us is in little hard ponderous pieces, of a yellowiſh brown colour, with ſeveral black or purple veins. It has a bitteriſh aromatic taſte, and a fragrant ſmell, eſpecially if reduced to powder, or ſet on fire. Diſtilled with water, it affords a very fragrant eſſential oil, but in ſmall quantity: Digeſted in rectified ſpirit, it yields an elegant tincture, which loſes nothing valuable in being evaporated to the conſiſtence of an extract. Agallochum is at preſent of very little uſe in medicine, and rarely to be met with in the ſhops: If it could be eaſily procured, it bids fair to be a very uſeful cordial: Hoffman greatly recommends in this intention the diſtilled oil and ſpirituous tincture; and eſteems a mixture of this laſt with tincture of ſteel an excellent corroborant.

ALP, a name given to the bullfinch in ſome part of England.

ALPINIA. This plant is a native of the Weſt-Indies, where it naturally grows in moiſt places. It is cultivated like ginger. *See* GINGER.

ALUCO, in natural hiſtory, a name by which ſome authors call the common white owl.

ALVEOLUS, in natural hiſtory, properly denotes one of thoſe waxen cells, whereof the combs in bee-hives conſiſt. *See* BEE.

AMEL-CORN. The ſame with Spelt. *See* SPELT.

AMARANTH, or FLOWER GENTLE. [*Amaranthus.*] A genus of very beautiful plants cultivated in gardens.

There are many ſpecies of this plant, but the three following are the principal generally cultivated, 1. *Amaranthus tricolor*, 2. *Amaranthus bicolor*, 3. *Flower Gentle*, with five ſtamina, and very long cylindrical ſpikes, commonly called *Princes Feathers*.

The firſt ſort has been long cultivated in gardens for the beauty of its variegated leaves, which are of three colours, viz. green, yellow, and red; theſe are very elegantly mixed, and when the plants are in full vigour, the leaves are large, and cloſely ſet from the bottom to the top of the ſtalk, and the branches form a ſort of pyramid; ſo that there is not a more beautiful plant than this, when it is in its full luſtre.

The ſecond ſort has been introduced into the Engliſh gardens much later than the firſt ſpecies. It grows to the ſame height with the former, and greatly

greatly resembles it in the manner of of its growth: but the leaves have only two colours, which are obscure purple, and a bright crimson; these are so blended as to set off each other, and, when the plants are vigorous, they make a fine appearance.

The third sort, which is a native of America, grows with an upright stem above three feet high; the leaves and stalks are of a pale green colour; the spikes of the flowers are produced from the wings of the stalks, and also in clusters at the extremity of the branches; they are of a bright colour, hang downwards, and some of them two feet and a half long.

These plants must be sown on a hot bed in February, or the beginning of March at farthest; and in about a fortnight's time, if the beds be in good temper, the plants will rise; when you must prepare another bed covered with good, rich, light earth, about four fingers thick. As soon as this bed is in proper temper to receive the young plants, you should raise them up with your finger, so as not to break off the tender roots, and prick them into your new hot-bed, about four inches distant every way, giving them a gentle watering to settle the earth to their roots; but in doing this be very cautious not to bear your young plants down to the ground by hasty watering, for they rarely rise again, at least so as to recover their former strength. When your plants are firmly rooted, and begin to grow, you must observe to give them air every day, more or less, to prevent their drawing up too fast, which weakens their stems.

In about three weeks or a month's time these plants will have grown so as to stand in need of another hot-bed, which should be of a moderate temper, and covered with the same rich earth about six inches thick, into which they should be removed; observing to take them up with as much earth about their roots as possible, and plant them seven or eight inches distant every way, giving them some water to settle the earth about their roots: and keep them shaded in the heat of the day, until they have taken fresh root, and be sure to refresh them often gently with water, and give them air in proportion to the heat of the weather, covering the glasses every night with mats, lest the cold chill your bed, and stop the growth of the plants.

In the beginning of May you must provide another hot-bed, which should be covered with a deep frame, that your plants may have room to grow. Upon this hot-bed you must set as many pots as can stand within the compass of the frame; these pots must be filled with good rich earth, & the cavities between each pot filled up with any common earth, to prevent the heat of the bed from evaporating, and filling the bed with noxious steams; then take up your plants from the former hot-bed, with as much earth as possible about their roots, and place each single plant in the middle of one of the pots, filling the pot up with the rich earth, and settle it close to the roots of the plant with your hands; water them gently as before, and shade them in the heat of the day from the violence of the sun, by covering the glasses with mats: refresh them often with water, and give them plenty of air in the day time.

In about three weeks more these plants will have attained a considerable size and strength, so that you must now raise the glasses very much in the day time: and when the air is soft, and the sun is clouded, draw off the glasses, and expose them to the open air, repeating it as often as the weather will permit; which will harden them by degrees to be removed abroad into the places where they are to remain the whole season, which should not be done till the first week in July, when the air is soft, and in a gentle shower of rain.

Let them be set first near the shelter of a hedge for two or three days, where they may be screened from the violence of the sun, and strong winds, to which they must be inured by degrees. These plants, when grown to a good stature, perspire very freely, and must be every day refreshed with water, if the weather proves hot and dry; otherwise they will stint, and never produce so large leaves, as those which are skilfully treated.

There is another species called the *Tree Amaranth*, which is directed by the college to be used in medicine.

AMARANTH, [*Celosia*] of which there are four species; one of which is the *Crested Amaranth*, well known by the name *Cockscomb*.

They

They are raiſed from the ſeeds ſown on a hot-bed about the beginning of March, and afterwards managed like the preceding article. In the beginning of September the amaranths will have perfected their ſeed, when you muſt ſelect the largeſt and moſt beautiful but leaſt branching plants of each kind for ſeed; remove them under ſhelter till the ſeed is maturely ripened. In gathering the ſeed you muſt be particularly cautious to chuſe thoſe ſeeds which are in the middle of the plume, for though they may be few, yet they are far ſuperior to thoſe on the ſide branches, or neck of the plume.

AMARANTHOIDES. GLOBE-AMARANTH, [*Gomphrena*,] of which three ſpecies are enumerated, 1. The Globe Amaranth, with large purple heads; 2. Gomphrena, with an erect ſtalk, and an uninterrupted ſpike of flowers; 3. Perennial Globe Amaranth, with radiated ſtraw-coloured flowers.

The firſt grows naturally in India, but has for many years been cultivated in the European gardens. There are two varieties of this ſort, one with fine bright purple heads, the other has white or ſilver heads; theſe never alter, ſo that they are permanent varieties, tho' in other reſpects they differ not. If theſe flowers are gathered before they are too much faded, they will retain their beauty for ſeveral years: hence they are called *Everlaſting*: they are uſed in Portugal to adorn their churches in the winter. The ſeed ripens late in autumn, and the plants decay ſoon after.

The ſecond ſort has much ſlenderer ſtalks than the firſt, but grows taller; the leaves are ſmaller, but of the ſame ſhape; the flowers are ſmall and of a pale purple colour.

The flowers of the third ſort are of a pale ſtraw colour, ſo make no great appearance; nor will the ſeeds always ripen in England, though the plants will live two or three years in a ſtove.

The firſt and ſecond ſorts are propagated by ſowing the ſeed on a good hot-bed, in the beginning of March; when the plants are half an inch or an inch high, they muſt be tranſplanted to another hot-bed, for a month or five weeks, when they muſt be removed into ſmall pots, placed on another hot-bed and filled with light earth; when the plants have filled theſe pots with their roots, they muſt be put into larger pots, that ſhould be placed in another gentle hot-bed; this treatment will bring the plants to flower more early, and cauſe them to grow larger than when they are placed abroad. In the beginning of July, the plants may be inured to bear the open air, and may ſoon after be removed and intermixed with other annual plants in the pleaſure-garden; but it will be proper to keep a plant or two ſheltered for ſeed, becauſe thoſe expoſed to the open air ſeldom produce good ſeeds, eſpecially if the autumn proves wet or cold.

AMBER-TREE, [*Antheſperinum*]. *Male* and *Female Amber Tree*. Theſe plants are preſerved in curious gardens, and may eaſily be propagated by cuttings (during the ſummer months), which ſhould be planted in borders of light earth; and in about ſix weeks time, they ſhould be taken up and planted in pots; and about October, removed into the conſervatory. Theſe plants muſt frequently be renewed with cuttings, for the old ones ſeldom laſt more than four years.

Its chief beauty is its ſmall ever-green leaves, which, when rubbed between the fingers, emit a fragrance reſembling amber.

AMBERVALIA, a ceremony practiſed by the ancient Romans, in order to procure from the gods a happy harveſt.

This ceremony conſiſted of a proceſſion in which the victims were conducted thrice round the corn fields before they were ſacrificed. Twelve prieſts walked at the head of the proceſſion, which conſiſted of all the neighbouring inhabitants, every one being crowned with leaves of oak, and ſinging hymns in honour of Ceres, the goddeſs of corn.

AMBLE, a peculiar kind of pace, wherein a horſe's two legs of the ſame ſide move at the ſame time. *See Plate I.*

In this pace the horſe's legs move nearer the ground than in the walk, and, at the ſame time, are more extended: but what is moſt ſingular in it is, that the two legs of the ſame ſide, for inſtance, the off hind and fore legs move at the ſame time; and then the two near legs, in making another ſtep, move at once; the motion being performed

formed in this alternate manner. So that the two ſides are alternately without ſupport, or any equilibrium between the one and the other, which muſt neceſſarily prove very fatiguing to the horſe, being obliged to ſupport himſelf in a forced oſciliation, by the rapidity of a motion, in which his feet are ſcarcely off the ground. For if in the amble he lifted his feet as in the trot, or even in a walk, the oſcillation would be ſuch, that he could not avoid falling on his ſide, and it is only by keeping his feet very near the ground, and by the quick alternate motion, that he ſupports himſelf in this pace, in which the hind leg is not only to move at the ſame time with the fore leg of the ſame ſide, but alſo to gain on it, or touch the ground a foot, or a foot and a half, beyond the ſpot where the latter grounded. The further the hind-leg extends beyond the place where the fore-leg grounded, the better the horſe ambles, and the whole motion is proportionably faſter. Thus the whole difference between the amble and the trot conſiſts in this, that the two legs moving together in the latter are in a diagonal poſition, whereas, in the former, the two legs of the ſame ſide move together.

This pace, which is very fatiguing to the horſe, is very eaſy to the rider. It has not the roughneſs of the trot, which is cauſed by the reſiſtance of the fore-leg, at the lifting up of the hind; becauſe, in the amble, this fore-leg is lifted up at the ſame time with the hind-leg of the ſame ſide; whereas in the trot the fore leg of the ſame ſide is at reſt, and reſiſts the impulſe during the whole time that the hind-leg is in motion.

They who are ſkilled in horſemanſhip tell us, that horſes which naturally amble, never trot, and that they are a great deal weaker than others. Colts, indeed, very often move in this manner, eſpecially when they exert themſelves, and are not ſtrong enough to trot or gallop. Moſt good horſes, which have been over-worked, and on the decline, are alſo obſerved voluntarily to amble, when forced to a motion ſwifter than a walk.

The amble may, therefore, be conſidered as a defective pace, not being common, and natural only to a very few horſes, which, in general, are weaker than others. Add to this, that ſuch amblers as ſeem the ſtrongeſt, are ſpoiled ſooner than thoſe which trot or gallop.

There are various methods of diſcipline for bringing a young horſe to amble: ſome chuſe to toil him in his foot pace through new ploughed fields, which naturally inures him to the ſtroke required in the amble; but this diſorderly toil is very apt to weaken, and ſometimes to lame a young horſe. Others attempt it by ſtopping him in a gallop, or trot; ſo that by loſing both, he neceſſarily ſtumbles on an amble; but this is apt to ſpoil a good mouth and rein, and expoſes the horſe to the danger of an hoof-reach, or ſinew ſtrain, by over-reaching, &c. Some prefer ambling by weights as the beſt way; and in order to this, either over-load the horſe with exceſſive heavy ſhoes, or fold thick pieces of lead about the fetlock paſterns, without conſidering that the former are apt to make him interfere, or ſtrike ſhort with his hind-feet; and that the latter, beſides that miſchief, expoſe the horſe to incurable ſtrains, cruſhing of the coronet, breeding of ring-bones, &c. Others load the horſe with earth, lead, &c. which often occaſion a ſwaying of the back, over-ſtraining of the fillets, &c. Some endeavour to make him amble in hand, before they mount his back, by means of ſome wall, ſmooth pale, or rail, and by checking him in the mouth with the bridle-hand, and correcting him with a rod on the hinder hoofs, and under the belly, when he treads falſe; but this is very apt to ſpoil a ſpirited horſe, even before he can underſtand what you would have him do.

The beſt method ſeems to conſiſt in trying with your hands, by a gentle and deliberate racking and thruſting of the horſe forwards, by helping him in the weak part of his mouth with your ſnaffle, which muſt be ſmooth, big, and full; and correcting him firſt on one ſide, then on the other, with the calves of your legs, and ſometimes with a ſpur. If you can by this means make him fall readily into an amble, though in a ſhuffling and diſorderly manner, much labour will be ſaved; for that aptneſs to amble will render the tramel more eaſy to him, and he will find the motion without ſtumbling or being frighted.

AMBROSIA,

AMBROSIA, among ancient naturaliſts, a term uſed for the rough or crude wax, ſuppoſed to be the food of bees.

AMBROSIA. There are five ſpecies of this plant, one is a native of the eaſt, the other four of America, of which laſt, one is a perennial ſhrub, that will live ſeveral years, if it be ſheltered in a common green-houſe with myrtles, &c. The others are only cultivated by the curious for the ſake of variety.

AMBRY, AUMBRY, or AMMBRY, a pantry, cup-board, or ſafe, to ſet victuals in.

AMBURY, or ANBURY, among farriers, denotes a tumour, wart, or ſwelling, which is ſoft to the touch, and full of blood. It is cured by tying a horſe-hair very hard about its root, and when it falls off dreſs it with a little powdered verdigreaſe to prevent a return of the complaint. If it is ſo ſituated that nothing can be tied about it, the beſt method is to extirpate it with an hot iron, or to eat it off with oil of vitriol.

AMETHYST, [*Amethyſtea.*] This plant is a native of the mountains of Siberia. It is annual, and produces pretty blue flowers in June. The ſeeds ſhould be ſown as ſoon as ripe, in the ſpot where they are to remain.

AMMANIA, of which there are two ſpecies; one was ſent from Jamaica, where it naturally grows in moiſt places. Theſe muſt be raiſed on a hot bed in the ſpring, and afterwards removed to another hot-bed, to bring them forward; they then ſhould be tranſplanted into pots, and placed under a frame, or in a glaſs-houſe, or ſtove, to ripen their ſeeds, for the plants are too tender for the open air in the country, unleſs the ſummer proves very warm.

The other grows naturally in Virginia and Carolina. This is an annual plant, and may be raiſed by ſowing the ſeeds, on a hot-bed in the ſpring, and afterwards removing the plants to a warm border. It is preſerved only for the ſake of variety, for it has no beauty.

AMMONIAC, or GUM AMMONIAC. Ammoniac is a concrete gummy reſinous juice, brought from the Eaſt-Indies, uſually in large maſſes, compoſed of little lumps or tears, of a milky colour, but ſoon changing, upon being expoſed to the air, of a yellowiſh hue. We have no certain account of the plant which affords this juice; the ſeeds uſually found among the tears, reſemble thoſe of the umbelliferous claſs. Such tears as are large, dry, free from little ſtones, ſeeds, or other impurities, ſhould be picked out and preferred for internal uſe: the coarſer kind is purified by ſolution and colature, and then carefully inſpiſſating it; unleſs this be artfully managed, the gum will loſe a conſiderable deal of its eſſential oil: the ſtrained gum of the ſhops is a grievous abuſe, being a compoſition of ingredients much inferior in virtue. Ammoniac has a naufeous ſweet taſte, followed by a bitter one; and a peculiar ſmell ſomewhat like that of galbanum, but more grateful; it ſoftens in the mouth, and grows of a whiter colour on being chewed. Thrown upon live coals, it burns away in flame: it is in ſome meaſure ſoluble in water and in vinegar, with which it aſſumes the appearance of milk; but the reſinous part, amounting to about one half, ſubſides on ſtanding. Ammoniac is an uſeful deobſtruent; and frequently preſcribed for opening obſtructions of the abdominal viſcera, and in hyſterical diſorders occaſioned by a deficiency of the menſtrual evacuations. It likewiſe deterges the pulmonary veſſels, and proves of conſiderable ſervice in ſome kinds of aſthmas, where the lungs are oppreſſed by viſcid phlegm: in this intention, a ſolution of gum ammoniac in vinegar of ſquills proves a medicine of great efficacy. In long and obſtinate colics proceeding from viſcid matter lodged in the inteſtines, this gummy reſin has often produced happy effects, after purges and the common carminatives had been uſed in vain. Ammoniac is moſt commodiouſly exhibited in the form of pills: about a ſcruple may be given every night, or oftener. Externally it ſoftens and ripens hard tumours; a ſolution of it in vinegar ſtands recommended by ſome for reſolving even ſchirrhous ſwellings.

AMMOMI VERI SEMEN, [*amomi racemoſi.*] The ſeeds of the true amomum robught from the Eaſt-Indies. The true amomum is a round fruit, about the ſize of a middling grape; containing under a membranous cover, a number

a number of ſmall rough angular ſeeds, of a blackiſh brown colour on the outſide, and whitiſh within: the ſeeds are lodged in three diſtinct cells; thoſe in each cell are joined cloſely together, ſo as that the fruit upon being opened, appears to contain only three ſeeds. Ten or twelve of theſe fruits grow together in a cluſter, and adhere, without any pedicle, to a woody ſtalk about an inch long: each ſingle fruit is ſurrounded by ſix leaves, in form of a cup; and the part of the ſtalk void of fruit is cloathed with leafy ſcales. The huſks, leaves, and ſtems have a light grateful ſmell, and a moderately warm aromatic taſte: the ſeeds freed from the huſks, are in both reſpects much ſtronger; their ſmell is quick and penetrating, their taſte pungent, approaching to that of camphor. Notwithſtanding amomum is an elegant aromatic, it has long been a ſtranger to the ſhops: it is directed as an ingredient in the theriaca: the college of Edinburgh, ſubſtitute to it cloves; that of London, the ſeeds of a plant of our own growth, called *Baſtard ſtone parſley*.

AMPHIBIOUS, a term ſometimes applied to plants, more uſually called aquatic.

AMPHITHEATRE, in gardening, implies a temple of view, erected on a riſing ground, of a ſemicircular figure.

Theſe amphitheatres are formed of ſeveral ſorts of ever-greens, obſerving to plant thoſe of the ſhorteſt growth in front, and the talleſt trees, ſuch as pines, firs, cedars, &c. behind. But as the modern taſte in gardening excludes regularity and ſtiffneſs, amphitheatres are at preſent but little eſteemed.

AMYLUM, a term given to ſtarch. *See* STARCH.

ANACARDIUM, the *Caſhew nut*, or *Acajou*. This grows to a conſiderable height in its native country, which is the Weſt-Indies; but it is difficult to preſerve the plants in England.

They are eaſily raiſed from the nuts, and at firſt grow pretty faſt, which has led ſome people to think they were hardy; but they afterwards grow ſlowly and are very tender. One nut only muſt be planted in each pot, and they ſhould remain in it, for they ſeldom live after being tranſplanted. The plants muſt be conſtantly kept in the ſtove, for they are too tender to live abroad in England even in the warmeſt ſeaſon of the year, nor will they thrive in a common green-houſe in ſummer. The milky juice of this tree will ſtain linen of a deep black, which cannot be waſhed out again; but whether this has the ſame property as the Eaſtern anacardium, has not been fully aſcertained; for the inſpiſſated juice of that tree is the beſt ſort of lack which is uſed for ſtaining black in China and Japan.

ANACARDIUM, or MALACA BEAN, [*Anacardium.*] This is the fruit of a tree growing in Malabar, and other parts of the Eaſt-Indies. It is of a ſhining black colour, of the ſhape of a heart flattened, about an inch long, terminating at one end in an obtuſe point, and adhering by the other to a wrinkled ſtalk. It contains, within two ſhells, a kernel of a ſweetiſh taſte: betwixt the ſhells is lodged a thick acrid juice. The medical virtues of anacardium have been greatly diſputed: many have attributed to them the faculty of comforting the brain & nerves, fortifying the memory, quickening the intellect; and hence a confection made from them has been dignified with the title of *confectio ſapientum*: others think it better deſerves the name of *confectio ſtultorum*, and mention inſtances of its continued uſe having rendered people maniacal. But the kernel of anacardium is not different in quality from that of almonds. The ill effects attributed to this fruit belong only to the juice contained betwixt the kernels, whoſe acrimony is ſo great, that it is employed by the Indians as a cauſtic. This juice is recommended externally for tetters, freckles, and other cutaneous deformities; which it effectually removes by exulcerating the part, ſo that a new ſkin comes underneath. Geoffroy cautions women to abſtain from this coſmetic during menſtruation; and aſſures us, that he has ſeen eryſipylas's break out over the whole face, from making uſe of it at that period.

ANANAS. *See* PINE APPLE.

ANATOMY of Plants. *See* PLANT.

ANDENA, in old writers, ſignifies the ſwarth made in mowing hay, or as much

much ground as a man could ſtride over at once.

ANDROMEDA. There are five ſpecies of this plant, which have no Engliſh name. One of the ſorts may be propagated by ſeeds, which ſhould be procured from America, where it is known by the name of Sorrel-tree. It is difficult to keep in gardens, becauſe it naturally grows in boggy places and requires a greater heat than that of this climate.

All the others are very hardy plants, and delight in moiſt ground, and flower about June or July: they may be increaſed by taking off their ſuckers and planting them where they are to remain; for they do not bear to be removed afterwards.

ANDROSACE. There is no Engliſh name for this plant, of which there are three ſpecies. The ſeeds ſhould be ſown ſoon after they are ripe, which is about the end of May; the plants require a ſhady ſituation, but they are only preſerved in botanic gardens for the ſake of variety.

ANELE, or ANIL, in our old ſtatutes, names uſed for indigo. *See* INDIGO.

ANEMONE, the *Wind-flower*, vulgarly called *Emony*. Mr. Miller enumerates ſix ſpecies of this flower, viz. 1. Wild Anemone, with a large white flower; 2. Wild or Wood Anemone, with a large flower; 3. Wood Anemone, with a blue flower; 4. A ſmall white flowering Virginia Anemone: 5. Narrow-leaved Anemone, with a ſingle flower; 6. Broad-leaved garden Anemone.

The beſt ſort of theſe flowers are natives of the Eaſt, from whence the roots were brought originally; but have been ſo greatly improved by culture, as to render them ſome of the chief ornaments of our gardens in the ſpring. The principal colours of theſe flowers are red, white, purple, and blue, and ſome are finely variegated with red, white, and purple. There are many intermediate ſhades of theſe colours; the flowers are large, and very double, and, when properly managed, are extremely beautiful.

The ſoil in which theſe flowers will thrive extremely, may be compoſed in the following manner: Take from a common or paſture land a quantity of untilled or virgin earth of a light ſandy loom, or hazel mould, obſerving not to take it above ten inches deep below the ſurface; and if the turf be taken with it the better, provided it has time to rot thoroughly before it is uſed: mix this with a third part of rotten cow-dung, and lay it in a heap, keeping it turned over at leaſt once a month for eight or ten months, the better to mix it, and rot the dung and turf, and let it have the advantage of the free air.

This earth ſhould be mixed twelve months before it is uſed, if poſſible; but if you are conſtrained to uſe it ſooner, you muſt turn it over the oftener, to mellow and break the clods; and obſerve to rake out all the parts of the green ſward that are not quite rotten before you uſe it; for, if ſuffered to remain, they would prove prejudicial to the roots.

The beginning of September is a proper time to prepare the beds for planting, when this compoſt ſhould be laid, at leaſt, two feet and a half thick; and in the bottom there ſhould be about four or five inches of rotten cow-dung, or the rotten dung of an old melon or cucumber-bed, ſo that you muſt take out the former ſoil of the beds to make room for it. Your earth ſhould be laid in the beds at leaſt a fortnight or three weeks before you plant the roots, that it may ſettle properly.

The beſt ſeaſon for planting theſe roots, if for forward flowers, is about the latter end of September, and for thoſe of a middle ſeaſon, any time in October; but obſerve to perform this work, if poſſible, at, or near the time of ſome gentle ſhowers; for if you ſhould plant them when the ground is perfectly dry, and no rain ſhould fall for three weeks or a month after, the roots will be apt to grow mouldy upon the crown; and if once they get this diſtemper, they ſeldom come to good after. The roots ſhould be planted about three inches deep, with the eye uppermoſt, and about ſix inches aſunder.

Towards the latter end of June the leaves of your firſt blown roots will begin to decay; ſoon after which you muſt take them out of the ground, clearing them from decayed ſtalks, and waſhing them to clean the earth from the roots; then ſpread them upon a

mat,

mat, in a dry ſhady place, till they are perfectly dried, when you may put them up in bags, and hang them out of the reach of mice, or other vermin, which will deſtroy many of the roots if they come at them.

ANGELICA. There are five ſpecies of this plant, but the *Common Garden Angelica* is moſtly cultivated, the others being of no uſe and little beauty, except for variety in botanic gardens.

Angelica is a native of Lapland and other northern countries, & is cultivated in gardens for medicinal uſes, and alſo for making a ſweet-meat, which is by ſome greatly eſteemed. It loves a very moiſt ſoil; and the ſeeds ſhould be ſown ſoon after they are ripe. They will flower the ſecond year; but if you wiſh to continue the roots, you muſt cut down the ſtems, for if they ſtand for ſeed, their roots will ſoon after periſh.

The London gardeners, who have ſmall rivulets running through their gardens, raiſe large quantities of this plant for the confectioners; the ſtalks are cut while they are tender, commonly in May.

GARDEN-ANGELICA; the roots, leaves, and ſeeds. This is a large umbelliferous plant, growing ſpontaneouſly in the northern climates: for the uſe of the ſhops, it is cultivated in gardens, in the different parts of Europe: Bohemia and Spain are ſaid to produce the beſt; the college direct the roots brought from Spain to be alone made uſe of. Angelica roots are apt to grow mouldy, and be preyed upon by inſects, unleſs thoroughly dried, kept in a dry place, and frequently aired: we apprehend that the roots which are ſubject to this inconvenience, might be preſerved by dipping them in boiling ſpirit, or expoſing them to its ſteam, after they are dried.

All the parts of angelica, eſpecially the root, have a fragrant ſweet ſmell, and a pleaſant bitteriſh warm taſte, glowing upon the lips and palate for a long time after they have been chewed. The flavour of the ſeeds and leaves is very periſhable, particularly that of the latter, which on being barely dried, loſe the greateſt part of their taſte and ſmell: the roots are more tenacious of their flavour, though even theſe loſe part of it upon keeping. The freſh root, wounded early in the ſpring, weeps an unctuous, odorous, yellow juice, which ſlowly exſiccated, proves an elegant aromatic gummy reſin, very rich in the virtues of the angelica. On drying the root, this juice concretes into diſtinct moleculæ, which on cutting it longitudinally, appear diſtributed in little veins: in this ſtate, they are readily extracted by pure ſpirit, but not by watery liquors. Angelica is one of the moſt elegant aromatics of European growth, though little regarded in the preſent practice. The root, which is the moſt efficacious part, is rarely met with in preſcriptions, and does not enter any officinal compoſition. Some of the diſtilled waters owe their pleaſantneſs to the leaves and ſeeds. The ſtalks make an agreeable ſweetmeat.

ANGELOT, a ſort of ſmall cheeſe generally made in the form of an heart, at the county of Boay in Normandy; it is very fat, and of an exquiſite taſte.

ANGLING, among ſportſmen, the art of fiſhing with a rod, to which are fitted a line, hook, and bait.

It would be impoſſible (in any reaſonable compaſs allowed for this work) even to abridge the neceſſary rules laid down by thoſe who have profeſſedly treated of this art; we muſt therefore refer the curious to *Browne's*, or *Brookes's*, &c. *Art of Angling*.

ANGORA *Goat*. See GOAT.

ANIMA, the ſoul or principle of life in animals; in a leſs proper ſenſe it is uſed for the principle of vegetation in plants.

ANIMAL, in natural hiſtory, an organized and living body, which is alſo endowed with ſenſation; thus animals are ſaid to grow or increaſe, plants to grow and live; but animals alone to have ſenſation.

Animals are either aërial, terreſtrial, aquatic, or amphibious.

Aërial animals are thoſe which have wings, with which they can ſupport themſelves in the air, as birds, and flies, &c. Terreſtrial, are thoſe whoſe only place of reſt is upon the earth. Aquatic, are thoſe whoſe conſtant abode is in the water; and we call theſe Amphibious, which live freely in the air upon the earth, and yet are obſerved to live long in the water, as if they were natural inhabitants of that element, as the otter, beaver, &c.

ANIMALCULE,

ANIMALCULE, a very minute animal, ſcarcely, if at all, viſible to the naked eye.

Animalcules, though ſo very minute as to be ſeen diſtinctly only by the microſcope, are vaſtly more numerous than any other part of the animal creation. They have been diſcovered in moſt liquors, in ſeveral of the chalybeat waters, as well as in common water; in oats, barley, wheat, peas, fruit, &c. and in the puſtules of the itch, which diſorder they in fact conſtitute; hence the cure is eaſily pointed out and aſcertained, viz. by ointments made with ſulphur, or mercury; the former is the moſt certain, and, if rightly uſed, infallible; mercury is not ſo certain, becauſe it muſt *touch* every puſtule, or the cure will not be complete, and how dangerous this is in ſome conſtitutions we need not obſerve. Sulphur, or brimſtone, infallibly ſuffocates the animalcules by its noxious ſteam, which is raiſed by the heat of the body.

ANIME, a reſin exſuding from the trunk of a large American tree, called by Piſo, *jetaiba*, but by the Indians, *courbaril*.

This reſin is of a tranſparent amber colour, a light agreeable ſmell, and little or no taſte. It diſſolves entirely, but not very readily, in rectified ſpirit; the impurities, which are often in large quantity, remaining behind. The Brazilians are ſaid to employ anime in fumigations for pains and aches proceeding from a cold cauſe; with us it is rarely if ever made uſe of for medicinal purpoſes; it is however ſometimes uſed in making varniſhes.

ANJOU CABBAGE-SHRUB, an excellent vegetable both for the kitchen and the food of cattle, cultivated with great ſucceſs in ſeveral provinces of France; and that ingenious huſbandman, the Marquis of Turbilly, lately ſent a parcel of the ſeeds to our *Society for the encouragement of arts, &c.* who very readily diſtributed them to ſuch gentlemen as applied to them for that purpoſe, in order to their being cultivated here; ſo that there is reaſon to hope, that this uſeful plant will ſoon become common in England. The following inſtructions are given by the Marquis for cultivating the Anjou Cabbage.

The great Anjou cabbage is one of the moſt uſeful leguminous plants for country people. It will grow in almoſt any ſoil, not excepting even the moſt indifferent, provided it be ſufficiently dunged. It is but little known about Paris, and in many other places, where it might be cultivated to great advantage.

The ſeeds of this cabbage are commonly ſown in June, in a quarter of good mould, in the kitchen garden, and watered from time to time in caſe of drought. The plants will riſe pretty ſpeedily, and ſhould be thinned ſoon after, wherever they ſtand too thick. The next care is to keep them free from weeds whilſt they continue, by hoeing the ground between them. About the firſt of November, they ſhould be tranſplanted into the field where they are to remain. They ſhould be planted there in trenches dug with a ſpade, pretty deep, that is, they ſhould be buried almoſt up to the leaves. The diſtance between them ſhould be two feet, or two feet and a half every way, according to the goodneſs of the ſoil. Particular care ſhould be taken never to plant them with a dibble, as gardeners plant other ſorts of cabbages. A layer of dung ſhould be ſpread along the bottom of the trench, and the roots of the tranſplanted cabbages covered therewith. The mould taken out ſhould then be returned back upon the dung; and as the trench will then no longer hold it all, there will remain a ridge between each row of cabbages.

Towards the middle of May enſuing, the ground ſhould be well ſtirred between the plants, with a ſpade, or ſome other proper inſtrument, and its whole ſurface laid quite level. After this, nothing more remains to be done, except pulling up the weeds, from time to time, as they appear.

Many huſbandmen ſow the ſeeds of theſe cabbages with thoſe of hemp; and though this may not be ſo ſure as the former, it often ſucceeds very well, eſpecially in wet years. When the hemp is pulled up, a multitude of little cabbages are ſeen, and which having then a free air, grow apace. They are tranſplanted about the firſt of November in the manner before directed, and are preferred to thoſe of the kitchen garden, becauſe they are not ſo apt to run up to ſeed the next ſpring; an accident which ſometimes happens

to a few of theſe cabbages, in certain years; and it then becomes neceſſary to replace them by others which have not run up, and which are reſerved for this purpoſe in a ſeparate ſpot of ground.

Several farmers uſe a plough to cut the trench for tranſplanting theſe cabbages: but then they do not remove them till the ſpring, leaving them, in the mean time, in the place where they were ſown. They afterwards give the earth a ſtirring with a ſpade, and lay it ſmooth towards the end of May, in the manner before directed. Whole fields of theſe cabbages may be ſeen on many farms in Anjou and Poitou, and which prove a very uſeful reſource.

In the month of June, ſuch of theſe cabbages as are already large, and do not turn in their leaves for cabbaging, but ſtill continue green, begin to be fit for uſe, and ſoon ariſe at their full perfection, which they retain till the next ſpring, when they begin to run up, and afterwards bloſſom. Their ſeeds ripen towards the end of July, and what is intended for ſowing ſhould be then gathered.

In Anjou, when theſe cabbages are entirely run up, they generally grow to the height of ſeven or eight feet: ſometimes they reach to eight feet and a half, or nine feet; nay, ſome have even been ſeen of a greater height.

From the month of June, when theſe cabbages begin to be fit for uſe, their leaves are gathered from time to time, and they ſhoot out again. They are large, excellent food, and ſo tender that they are dreſſed with a moment's boiling. They never occaſion any flatulencies or uneaſineſs in the ſtomach; and are alſo very good food for cattle, which eat them greedily. They likewiſe greatly increaſe the milk of cows.

Such are the properties of this kind of cabbage, greatly eſteemed in Anjou, Poitou, Britany, Le Maine, and ſome other neighbouring provinces. In Anjou, farmers are bound by their leaſes to plant yearly a certain number of theſe cabbages, and to leave a certain number of them ſtanding when they quit their farms.

This cabbage forms a kind of ſhrub, the great utility of which may be gathered from this, that its leaves afford nouriſhment to men and cattle; and its ſtalk, which is about the thickneſs of one's wriſt, is uſed, when dry, for fuel.

It ſometimes happens in extremely ſevere winters, that ſome of theſe cabbages are frozen; and this, in the above provinces, is conſidered as a very great loſs; but this accident is rare, becauſe this kind of cabbage reſiſts froſts better than moſt others.

The ground where theſe cabbages are planted ſhould be fenced in very carefully by hedges or ditches, to preſerve it from the depredations of cattle, which are extremely fond of them. With this precaution I have made ſeveral plantations of them, near the houſes erected in the midſt of the heaths and commons I have broken up and improved; and they have ſucceeded very well, though the ſoil is but indifferent in many places.

I have, near my houſe in Anjou, two well incloſed fields, deſtined for this ſort of plantation. They are planted alternately every year with young cabbages. When theſe are pulled up, after they have ſeeded in the ſecond year, at the time already mentioned, the ground where they ſtood is dug up, and ſowed with peaſe or beans, the crop of which being taken off before the firſt of November, makes room for planting new cabbages at the proper ſeaſon. The ſoil is looſened and enriched by the peaſe and beans, and by this means the land is never reſted; nor is ever exhauſted, becauſe it is dunged whenever the cabbages are planted.

Theſe cabbages are of ſuch excellent ſervice to me, that I have often wondered at their not being cultivated in all the different countries of Europe. I believe they would ſucceed every where, and I adviſe all huſbandmen to make plantations of them.

I wiſh that this ſhort memoir, founded on my own experience, may contribute to extend the culture of this uſeful plant.

ANISE, [*Pimpinella*] is an annual plant, which grows naturally in Egypt, but is cultivated in Malta and Spain, from which countries the ſeeds are annually brought to England.

The ſeeds ſhould be ſown the beginning of April upon a warm border, where the plants are to remain; when they come up they ſhould be thinned and

and kept clean from weeds, which is all the culture this plant requires, but it is too tender to be cultivated in England for profit.

ANISEED, [*Aniſum.*] The ſeeds have an aromatic ſmell, and a pleaſant warm taſte, accompanied with a degree of ſweetneſs. Water extracts very little of their flavour; rectified ſpirit the whole. Theſe ſeeds are in the number of the four greater hot ſeeds: their principal uſe is in cold flatulent diſorders, where tenacious phlegm abounds, and in the gripes to which young children are ſubject. Frederick Hoffman ſtrongly recommends them in weakneſs of the ſtomach, diarrhœas, and for ſtrengthening the tone of the viſcera in general; and thinks they well deſerve the appellation given them by Helmont, *inteſtinorum ſolamen.*

ANNALES, yearlings, or young cattle of the firſt year.

ANNATTO, *Arnotto*, or *Rocou Shrub*, (as the Indians call it) grows plentifully in ſeveral parts of South-America. It is a woody plant, uſually about nine feet high, and bears greeniſh-yellow flowers; theſe are ſucceeded by conical pods containing the ſeeds, which, when ripe, are of a beautiful crimſon colour. From the pellicles of theſe ſeeds is prepared the true annatto: it is alſo called Orlean and Rocou. Some of the venders of cheeſe-colouring being unacquainted with the Indian name *Rocou*, boaſt of their having the true *Rock* annatto. It is poſſible indeed that indigo and annatto, from their ſometimes having the appearance of broken fragments of a rock, may have been called *Rock* Indigo, &c.

Its preparation is various: The Indians (who moſtly cultivate the plant) macerate the ſeeds in lemon juice in which a ſpecies of gum has been diſſolved; this yields the celebrated crimſon paint with which they adorn their bodies.

Others rub the ſeeds upon the palms of their hands previouſly oiled, till the fine red film is peeled off, and thus obtain a tranſparent *fucus* little inferior to carmine. It is commonly obſerved that Indian lake does not mix well with water, but diſſolves in ſpirit, and becomes wholly tranſparent in oil.

Others again rub the ſeeds againſt the ſide of a baſon, in which is a ſuitable quantity of water; the colouring particles ſubſide, and are afterwards ſtrained: this is exceſſively tedious.

The moſt common method to obtain annatto in any conſiderable quantity, is by ſteeping the ſeeds for ſome time in water, and then pounding them till they are left white. The liquor ſtrained through cane ſieves and boiled, throws up a red ſcum, which is taken off and afterwards boiled down and formed into balls while it is ſoft: this is the ſort that we import from Spain.

Good Annatto is moderately hard, and of a pretty deep but dull red, and ſometimes verges to the ſaffron colour. It diſſolves in rectified ſpirits, to which it communicates an high orange: hence its uſe in varniſhes. Water acts very languidly upon it, as indeed from the manner of its preparation it is not poſſible it ſhould diſſolve in a ſimple aqueous menſtruum. With the addition of pot-aſhes, however, it readily diſſolves without altering its colour. Wool or ſilk boiled in the ſolution receives a deep but periſhable dye. Some of the chymiſts aſſert too much when they tell us, that acids turn all vegetable blue and purple colours red; and on the other hand, that alkalies change the vegetable red colours to a violet or purple; for indigo is an exception to the former, and annatto to the latter.

Annatto has its uſe in painting, and an orange lake inferior to nothing for beauty may be prepared from it by boiling the annatto with pearl-aſhes, and then precipitating the colour: but then it is extremely apt to fly.

Its moſt prevailing uſe is to colour cheeſe, for which purpoſe it is admirably adapted, inſomuch that no attempt to invent a ſubſtitute for it has yet perfectly ſucceeded. When a little genuine annatto is imported, it is ſoon bought up, and ſometimes (though not always) it is mixed up in a ſhameleſs manner into what is called *cheeſe-colouring*, which the farmers to their coſt too often experience. Some of them little think that they give a ſhilling an ounce to ragged fellows (who hawk it about) for old bricks ground to powder, mixed up with ſtarch, and perhaps a little flag annatto, and then coloured yelloviſh with turmeric.—This caution, which is founded on facts, is given to prevent their being

thus impoſed on in future, and to recommend their applying to perſons of credit.

It may not be amiſs to inform thoſe who have not ſeen it uſed in dairies, that the annatto is dipped in the milk, and then rubbed againſt a ſmooth hard ſtone till the milk is of a reddiſh orange colour, which will be more or leſs bright according to the goodneſs of the annatto, or colouring.

ANNATS, [*Annates*] a law term for the *firſt fruits*, ſo called, becauſe they are paid after one year's profits.

ANNUALS. Thoſe plants are ſaid to be annual which continue one year only; or ſuch as ſpring up, ripen their ſeed, and periſh in that ſpace of time. Thus wheat, barley, oats, beans, peaſe, &c. are annual plants.

ANNUAL *Meadow-graſs*, called in ſome parts of England, Suffolk-graſs, a ſpecies of very beautiful graſs, making the fineſt turfs, and ſeems particularly well adapted to dairy farms.

"I have, ſays Mr. Stillingfleet, ſeen whole fields of it in High Suffolk, without any mixture of other graſſes; and as ſome of the beſt ſalt butter we have in London comes from that country, it is moſt likely to be the beſt graſs for the dairy." He adds, "that he obſerved, upon Malvern-hill, a walk made there for the convenience of the water drinkers, which was, in many places, covered over with this graſs, in leſs than a year, though he could not find a ſingle plant of it beſides in any other part of the hill. This was doubtleſs owing to the frequent treading, which has the greateſt tendency to make this graſs flouriſh; and therefore it is very evident, that rolling muſt be very ſerviceable to it. As the flowers and ſtems of this plant do not grow brown ſo ſoon as thoſe of other graſſes, nor cover the radical leaves ſo much, becauſe they are conſiderably ſhorter, this affords a more pleaſing turf than any other graſs."

Mr. Ray obſerves of the common meadow graſs, that it is a ſlender and ſucculent plant, very agreeable to cattle, and a fattener of them; that it delights in a rich ſoil; and that it is not injured by being trodden under foot, and therefore is commonly found along the ſides of paths and roads. It ſpindles and ears in the ſpring, and continues to ſhoot during the whole ſummer.

ANNUAL *Poa-graſs*. See *Poa-graſs*.

ANNUITY, an yearly income ariſing from money, &c. for either a term of years, or upon a life, or for ever, frequently paid out of an eſtate.

ANNULLING, a term ſometimes uſed for cancelling or making void a deed, leaſe, covenant, or the like.

ANNUNCIATION, the tidings brought by the angel Gabriel to the bleſſed Virgin Mary of the incarnation of Chriſt, commonly called Lady-Day, being one of the four quarter-days uſually fixed for the payment of rent.

ANT, or Piſmire, [*Formica*] a well-known inſect, much celebrated for its induſtry and œconomy.

Ants are very injurious both to paſture lands and gardens; in the former by throwing up hills, and in the latter by feeding on the fruit, &c.

The ſight of ants is really very inſtructive. They are a little people united, like the bees, in a republic, governed by its own laws and politics. They have a kind of oblong city, divided into various ſtreets, that terminate at different magazines. Some of the ants conſolidate the earth, and prevent its falling in, by a ſurface of glue with which they incruſt it. Thoſe which we commonly ſee, amaſs ſeveral ſplinters of wood, which they draw over the tops of their ſtreets, and uſe them as rafters to ſuſtain the roof; and acroſs theſe they lay another rank of ſplinters, and cover them with a heap of dry ruſhes, graſs, and ſtraw, which they raiſe with a double ſlope, to turn the current of the water from their magazines; ſome of which are appropriated to receive their proviſions, and in the others they depoſit their eggs, and the worms that proceed from them.

As to their proviſions, they take up with every thing eatable, and are indefatigable in bringing home their ſupplies. You may ſee one loaded with the kernel of ſome fruit, another bends under the weight of a dead gnat. Sometimes ſeveral of them are at work on the carcaſe of a May-fly, or ſome other inſect. What cannot be removed they eat on the ſpot, and carry home all that is capable of being preſerved. The whole ſociety is not permitted to make excurſions at random: ſome are detached as ſcouts, to get intelligence; and, according

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to the tidings they bring, all the community are upon the march, either to attack a ripe pear, a cake of ſugar, or a jar of ſweet-meats; and, in order to come to this jar, they leave the garden, and aſcend the houſe; there they find this mine of ſugar, this rich Peru of ſweets, that opens all its treaſures to their view. But their march to it, as well as their return from it, is under ſome regulation: the whole band is ordered to aſſemble and move in the ſame track; but the injunction is not executed with much ſeverity, and they have liberty to expatiate when they have an opportunity to ſpring any game in the country. The green vermin that make an infinite waſte among flowers, and cockle the leaves of the peach and pear trees, are ſurrounded with a glue, or kind of honey, which is ſought for by the ants with great avidity.

The ants, after they have paſſed the ſummer in a conſtant employment and fatigue, ſhut themſelves up in the winter, and enjoy the fruits of their labour in peace; however, it is probable, they eat but little in that ſeaſon, and are either benumbed, or buried in ſleep, like a multitude of other inſects; and therefore their induſtry in ſtoring up proviſions is not ſo much intended to guard againſt the winter, as to provide, during the harveſt, a neceſſary ſuſtenance for their young. They nouriſh them, as ſoon as they leave the egg, with an aſſiduity that employs the whole nation; and the care of their little progeny is eſteemed a matter of importance to all the ſtate.

When their young quit the egg, they are little worms, no longer than common grains of ſand, and after they have for ſome time received their aliment, which is brought to them in common, and diſtributed in equal proportions, they ſpin a thread, and wrap themſelves up in a white web, and ſometimes in one that is yellow; at which period they ceaſe to eat, and become aurelias. In this ſtate, ſome people fancy they are the eggs of ants, when in reality they are the nymphs, out of whoſe ruins new piſmires are to riſe. Though the young diſcontinue their eating, their nurture ſtill proves very fatiguing to their parents. Theſe have generally ſeveral apartments, and remove their young from the nurſery to ſome other manſion they intend to people. They either raiſe the aurelias towards the ſurface of the earth, or ſink them to a diſtance from it, in proportion as the ſeaſon is either warm or cold, rainy or dry. They raiſe them when the weather proves ſerene, or when a long drought is ſucceeded by gentle dews; but, at the approach of night and cold, or the appearance of ſhowers, they claſp their beloved charge in their arms, and deſcend with them to ſuch a depth, that one muſt then dig above a foot into the earth before thoſe aurelias can be diſcovered.

If a mouſe, frog, or other like animal, be placed in an ant-hill, he will be devoured, in a few days, to the bones and ligaments. Hence we are furniſhed with a method of obtaining ſkeletons of thoſe animals, exquiſitely beautiful and perfect, far ſurpaſſing any thing that can be executed by artificial anatomy. The ſubject is for this purpoſe to be incloſed in a wooden box, and properly diſtended, to prevent the parts from collapſing or being cruſhed together by the earth. The box is to be perforated with a number of holes, through which the inſects will preſently find their way.

The great ant is extremely fond of the ſugar cane. In ſome of our Weſt-India iſlands they are incredibly numerous and voracious, inſomuch that large premiums are offered for a certain method to deſtroy them. When large fires have been kindled for this purpoſe, the ants will, by a kind of natural inſtinct, gather round the fire in great numbers, and extinguiſh it. Incredible as this may ſeem, the fact is well atteſted.

Theſe inſects and their eggs are at preſent of no uſe with us in medicine, though formerly much celebrated for aphrodiſiac virtues, and ſtill employed in the *aquæ magnanimitatis* and other like compoſitions of foreign diſpenſatories. It is remarkable, that theſe animals contain a truly acid juice, which they ſhed in ſmall drops upon being irritated: by infuſing a quantity of live and vigorous ants in water, an acid liquor is obtained nearly as ſtrong as good vinegar. Neuman obſerves, that on diſtilling them either with water or pure ſpirit, a clear limpid oil ariſes, which has ſcarce any taſte, or at leaſt is not hot or pungent like the eſſential oils of vegetables.

ANT-*Hills*,

ANT-*Hills*, the habitations of the ants, conſiſting of little eminences, compoſed of ſmall particles of ſand, lightly and artfully laid together.

Theſe hills, though very convenient for themſelves and their own ſocieties, are very deſtructive to the farmer, depriving him of as much land as the hills cover; which may be often computed at a tenth part, or more, of his valuable graſs lands. Nay, in ſome places, where negligence has ſuffered them to multiply, almoſt half of it has been rendered uſeleſs: the hills ſtanding as thick together as graſs-cocks in hay time: and what is moſt ſurpriſing, this indolence is defended by affirming, that the area or ſuperficies of their land is thereby increaſed: whereas it is well known that very little graſs ever grows on the hills, and that which does grow yields a poor hungry food, which neither ſheep nor cattle will eat till they are forced to it; and therefore, if the ſurface be increaſed, the produce is proportionably decreaſed.

The manner of deſtroying them is to cut the hill with an half-moon from the top to the bottom, into three or *four* parts, according to its ſize, and then to turn the quarters back; the core, or earth is next to be cut off, and the turf laid down again in its place; obſerving to lay down firſt that quarter of the turf which was laſt turned back, otherwiſe it will not lie ſo ſmooth on account of the tool entering the hill in a ſloping poſition. The Half-moon deſcribed in the firſt number of the *Farmer's Magazine*, with a ſlight alteration as there mentioned, is admirably adapted to this purpoſe.

The beſt time for this work is the depth of winter; rain and froſts being fatal to theſe inſects. Some recommend human ordure to kill or deſtroy them; but, ſuppoſing the fact, who can apply it?

If the earth taken out of the hills be mixed with lime, and often turned, it will make a good manure.

When theſe inſects are very numerous they are not ſuddenly exterminated; for after the hills are all laid we may ſee that they will ſoon begin again to form new ones, which muſt be again laid; though while they are very ſmall they may be readily ſtamped down by one's foot.

ANTHOLYZA. We have no Engliſh name for this plant, of which there are two ſpecies.

They are propagated by offſets which the bulbous roots ſend forth in pretty great plenty, or by ſeeds which are ſometimes perfected in Europe. If the ſeeds are ſown in pots ſoon after they are ripe, and the pots plunged into an old bed of tan which has loſt its heat, and ſhaded in hot weather, the plants will come up the following winter, when they muſt be covered with glaſſes to ſcreen them from the cold. In ſummer, after the leaves are decayed, the roots ſhould be taken up, and planted each in a ſeparate pot. The plants are not very tender, yet it will be proper to place the pots under a hot-bed frame. Where any damp ariſes, it is very apt to occaſion a mouldineſs upon their leaves.

The roots ſhoot up in Autumn, and the flowers begin to appear in May; the ſeeds ripen in Auguſt, and ſoon after their leaves and ſtalks decay. Theſe plants are a great ornament to the green-houſe when they are in flower, and as they require but little culture, they deſerve a place in every good garden.

ANTHOS, is *Greek* for flower; but by way of excellency it is appropriated to roſemary, ſo as to expreſs only its flowers.

ANTICOR, a diſeaſe among horſes, conſiſting of a malignant ſwelling in the breaſt, which extends ſometimes to the very ſheath under the belly; and is attended with a fever, great depreſſion and weakneſs, and a total want of appetite.

The cure ſhould be firſt attempted by large repeated bleedings, to abate the inflammation; emollient clyſters ſhould be injected twice or thrice a day, with an ounce of ſal prunella in each. The ſwelling ſhould be bathed with marſhmallow ointment, and an opening poultice, with onions boiled in it, ſhould be daily applied over it. If by this method continued four or five days, the inflammation in the throat and gullet be removed, the attention ſhould more particularly turn to encourage the ſwelling on the breaſt, and bring it, if poſſible, to matter: let the poultice therefore be continued, and give the horſe two ounces of Venice

nice treacle, diſſolved in a pint of beer, every night. When the ſwelling is grown ſoft, it muſt be opened with a knife, and dreſſed with turpentine digeſtive, the danger being then over.

But ſhould it be found impracticable to bring the ſwelling to matter, and the ſwelling upwards ſhould increaſe ſo as to endanger ſuffocation, authors have adviſed to pierce the humour with a hot pointed cautery, and dreſs part with the turpentine digeſtive, ſharpened with a ſmall quantity of Spaniſh flies and euphorbium in powder, in order to ſtimulate and promote a greater diſcharge; and at the ſame time fermenting and bathing the adjacent parts with the ointment of marſh-mallows.

M. Gueriniere, as well as Soleyſel, have adviſed opening the ſkin, when the tumour cannot be brought to matter, in order to introduce a piece of black hellebore-root ſteeped in vinegar, and to confine it there for twenty-four hours; this alſo is intended as a ſtimulant, and is ſaid to anſwer the intention, by occaſioning ſometimes a ſwelling as big as a man's head.

APARINE, gooſe-graſs, or clivers. See Goose-grass, &c.

APHERNOUSLI, or *Arbennouſli*, a ſpecies of pine, or pinaſter, growing wild on the Alps, where one would think it impoſſible that any tree could vegetate and proſper; and therefore would probably thrive to great advantage on our bleak, barren, rocky, mountainous tracts of land.

The timber is large, and has many uſes, eſpecially within doors, or under cover. The branches reſemble thoſe of the pitch-trees, commonly called the ſpruce fir: but the cones are more round in the middle, being of a purpliſh colour, ſhaded with black. The bark of the trunk, or bole of the tree, is not reddiſh like the bark of the pine, but of a whitiſh caſt, like that of the fir. The huſk, or ſort of ſhell, which incloſes the kernels, is eaſily cracked, and the kernels are covered with a brown ſkin, which peels off: they are about as large as a common pea, triangular like buck-wheat, and white and ſoft as a blanched almond, of an oily agreeable taſte, but leaving in the mouth that ſmall degree of aſperity, which is peculiar to wild fruits, and is not unpleaſing. Theſe kernels make a part ſometimes in a Swiſs deſert; they ſupply the place of muſhroom buttons in ragouts; and are alſo recommended in conſumptive caſes, on account of their balſamic oil.

Wainſcoting, flooring, and other joiner's work, made with the planks of aphernouſli, are of a finer grain, and more beautifully variegated than deal, and the ſmell of the wood is more agreeable. From this tree is extracted a white odoriferous reſin.

The aphernouſli is of a healthy, vigorous nature, and will bear removing when it is young, even in dry warm weather. The wood makes excellent firing in ſtoves, ovens, and kilns; but is dangerous to be uſed on the hearth or in grates, being apt to ſplinter and fly to a conſiderable diſtance.

It bears ſome reſemblance to the white Canada-pine, which is better known in England by the name of Weymouth-pine. See Pine.

APIARY, a bee-garden, or place where bees are kept. See the article *Bee*.

APOPLEXY, or, as the farriers generally call it, the *ſtaggers*, a diſeaſe to which the horſe is ſubject, and by which the creature drops down ſuddenly without ſenſe or motion, except a working of his flanks, proceeding from the motion of the heart and lungs, which never ceaſes while any ſpark of life remains.

The previous ſymptoms are drowſineſs, watry moiſt eyes, ſomewhat full and inflamed, a diſpoſition to reel, feebleneſs, a bad appetite, and almoſt continual hanging of the head, or reſting it in his manger, ſometimes with little or no fever, and ſcarce any alteration in the dung or urine. When the apoplexy proceeds from water collected in the ſinuſes and ventricles of the brain, the horſe has generally, beſides all the foregoing ſymptoms, a diſpoſition to rear up, and is apt to fall back, when any one goes to handle him about his head. The reaſon of his falling backwards ſeems to be obvious, becauſe when the head is raiſed with his mouth upwards, the water in the ventricles cauſes a weight upon the cerebellum, or part lying under the brain, and origin of the nerves, ſo as to deprive the creature of ſenſe and motion at once: this does not, however, prove ſuddenly mortal. Young horſes are moſt ſubject to it, and, with

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proper helps, and good uſage, ſometimes get over it: but when the apoplexy proceeds from wounds or blows on the head, or from any other cauſe producing ruptures in the blood-veſſels, or from matter collected in the brain, or its membranes; or if any part of the brain or its membranes be indurated, or grown callous, by long continuance, the horſe will not only have moſt of the ſymptoms already deſcribed, but will be frantic by fits, eſpecially after his feeds, ſo as to ſtart and fly into motion at every thing that comes near him. Theſe caſes are extremely dangerous, and ſeldom admit of a perfect recovery. But when horſes fall down ſuddenly and work violently at their flanks, without any ability to riſe, even after plentiful bleeding, ſuch horſes ſeldom recover.

All that can be done in ſuch caſes is to ſtrike the veins in ſeveral parts at once, to raiſe up the horſe's head and ſhoulders, propping them with plenty of ſtraw; and if he ſurvive the fit, to cut ſeveral rowels; though in caſe of ruptured veſſels, or if any kind of extraneous matter be lodged on the brain, or its membranes, all theſe helps will be of little ſervice.

But if the apoplectic fit happens to be only the effect of a plethora, or fulneſs of blood, from high-feeding, and want of ſufficient exerciſe; or if it be the effect of a fizy blood, which is often the caſe of many young horſes, that have been fed for ſale, or from catching cold while the blood is in this ſtate, the cure will not be attended with any great difficulty, notwithſtanding a horſe, in theſe circumſtances, may reel and ſtagger, and ſometimes fall down ſuddenly.

Firſt of all bleed plentifully, and keep the horſe for ſome time to an opening diet of ſcalded bran, and ſometimes ſcalded barley, leſſening the quantity of his hay. After two days repeat the bleeding, but in a ſmaller degree. If the horſe has a cold, it will be proper to give him pectoral drinks, proper for that diſorder.

But if no ſymptom of a cold appear it will be neceſſary, after bleeding and a ſpare diet, to give him two or three purges, not only to remove the plethora or fulneſs, but to attenuate and thin his blood, for which the following is recommended:

"Take of the fineſt ſocotorine aloes, an ounce and a quarter; freſh jallap, two drams; ſalt of tartar, three drams; native cinnabar, or the cinnabar of antimony, half an ounce; make it into a ball with a ſufficient quantity of ſyrup of roſes or marſhmallows; adding twenty or thirty drops of chemical oil of anniſeeds, making the whole into a ball, rolling it in liquorice-powder."

The purge may be made ſtronger or weaker by increaſing or diminiſhing the jalap. Let this be repeated two or three times, and the horſe will probably recover, without a relapſe. Powder of antimony, or its preparations, as the liver, the *crocus metallorum*, its cinnabar, or the native cinnabar, mixed with equal parts of gum guiacum, may be alſo given in ounce doſes, for three or four weeks, to mend his blood, and take off its fizineſs. Nor ſhould exerciſe, as ſoon as the horſe is able to bear it, be omitted.

When a horſe drops down ſuddenly with hard riding, or violent driving, it in many reſpects reſembles an apoplexy, and all the organs of the head are affected as in an apoplexy; but as this proceeds only from the extraordinary rarefaction of the blood, and its rapid motion, whereby the ſmall veſſels of the brain, heart, and lungs, are ſo extremely diſtended as to cauſe an univerſal preſſure on the origin of the nerves; the horſe by this means loſes all ſenſe and motion, and generally falls ſuddenly, eſpecially upon any ſudden ſtop; becauſe when the bodily motion ceaſes, the circulation of the blood in the veins is not accelerated in proportion to its influx from the arteries, which ſoon produces a ſuffocation and a falling down without ſenſe or motion. Inſtances of this kind are not uncommon, eſpecially in very hot weather, when the external heat adds greatly to the blood's motion and rarefaction. But as we ſuppoſe in this caſe, little or no fault in the blood, except, perhaps, a plethora, or weakneſs of the veſſels, the quickeſt and readieſt remedy is bleeding; and unleſs the horſe dies with the violence of the fall, which ſometimes happens, or by burſting the ſmall veſſels of the brain or lungs, or happens through polipuſes in the heart or principal veins, he will ſoon riſe of himſelf,

ſelf, or without much help, and may be preſerved from ſuch accidents for the future, by better uſage.

We are by no means friends to *quackery*, or impoſture; but a very ſenſible and intelligent Farmer aſſures us, that he has with the deſired ſucceſs given the genuine *Bateman's Drops*, in both the mad and ſleepy ſtaggers, and that he has recommended this medicine to his acquaintance, who have experienced equally good effects from it in this dreadful diſorder. The doſe is three-fourths of a bottle in a pint of warm, mild ale: if it does not operate in fifteen minutes, put a whole bottle in the above quantity of ale, and repeat it. The firſt doſe ſeldom fails of ſucceſs; it generally throws the animal into a profuſe ſweat in a few minutes, and he is uſually fit for buſineſs within twenty-four hours after.

APPENDANT. See COMMON *Appendant*.

APPETITE, a certain painful or uneaſy ſenſation, always accompanied with a deſire to eat or drink.

Horſes, more than moſt other creatures, are ſubject to diſeaſes of the ſtomach, particularly to a *want of appetite*, and a *vitiated*, or *voracious appetite*.

Want of APPETITE is when a horſe feeds poorly, and is apt to mangle his hay, or leave it in the rack, and at the ſame time gathers little fleſh, and his dung habitually ſoft, and is of a pale colour.

Theſe are evident ſigns of a relaxed conſtitution, wherein the weakneſs of the ſtomach and guts may have a very great ſhare. This habitual weakneſs may be either natural or hereditary, or may be cauſed by ſome previous ill management; ſuch as too much ſcalded bran, or too much hot meat of any kind, which relaxes the tone of the ſtomach or guts, and in the end produces a weak digeſtion, and conſequently a loſs of appetite.

The beſt method to harden and recover ſuch horſes, is to give them much gentle exerciſe in the open air, eſpecially in dry weather; never to load their ſtomachs with large feeds, and to keep them as much as poſſible to a dry diet, indulging them now and then with a handful of beans among their oats; but in caſe the horſe grows weak, and requires the help of phyſic, a few laxative purges like the following, ſhould be given:

"Take ſuccotorine aloes, ſix drams; rhubarb in powder, two drams; ſaffron dried and powdered, one dram: make it into a ſtiff ball, with a ſufficient quantity of ſyrup of roſes, and add two drams of the elixir proprietatis, prepared with oil of vitriol."

This purge will work very gently, and bring the horſe to a better appetite, and ſtrengthen his digeſtion. It may be repeated once a week, or once in ten days, and after the operation of each purge,

"Take a large handful of the raſpings or ſhavings of guaiacum, pomegranate bark, and balauſtines bruiſed, of each an ounce; galangals and liquorice root ſliced, of each half an ounce: let theſe be boiled in ſix quarts of ſmith's forge-water, to three pints; and while it is warm, infuſe in the decoction two drams of ſaffron, and half an ounce of diaſcordium."

Let this be divided into two drinks, and give one after the purge has done working, and the other after two days' intermiſſion; in cold weather the drinks ſhould be warmed before they are adminiſtered: the ſame may be complied with after the laſt purge, and repeated as often as may be neceſſary, continuing to give the horſe conſtant exerciſe in the open free air; and this will be the likelieſt method to ſtrengthen ſuch horſes as are of weak, relaxed conſtitutions.

But where ſuch a habit is contracted by too much feeding, eſpecially on hot ſcalded diet, which is often the caſe of young horſes kept up for ſale, the beſt way is to bleed and purge ſuch horſes, and at the ſame time to rowel them in the belly; for this ſort of feeding eaſily occaſions horſes to be lax, that have no natural diſpoſition to it; for when they grow ſuddenly fat by ſuch management, the ſecretions from the guts become greaſy, which always cauſes weakneſs and relaxation in them, and often forms a proper nidus for the breeding of vermin; all which may be eaſily remedied by purging in the firſt place, and afterwards by proper exerciſe, and a clean diet.

As for thoſe horſes that are of a hot fiery diſpoſition, and loſe their appetites by their heat and fretting, it is a caſe that cannot eaſily be remedied,

becauſe of the natural inflammatory diſpoſition of their blood; the only method is to keep them to a cool diet while they are young, and, in country places, to let them run abroad, eſpecially wher they have ſtables and warm ranges, to keep them from the inclemency of the weather in winter; for theſe ſort of horſes are always tender, being, for the moſt part, extremely thin ſkinned, and their blood of a thin texture, and eaſily put in motion. For the ſame reaſon, the beſt way, in ſummer, is to bring them up in the daytime, and only let them run abroad in the night, they being more hunted with flies than any other, which keeps them continually upon the fret, and hinders them from thriving. When ſuch horſes live till they are full aged, their heat and fierineſs often abate, ſo that they grow more uſeful; but while they are young, they are more ſubject to inward impoſtumations than horſes of a cooler temperament; and theſe often kill them ſuddenly, or bring them into lingering conſumptive maladies, which in ſome meaſure may be prevented by the above method.

Vitiated, or *Voracious* APPETITE, is that where the animal is always craving for meat, and frequently called *foul-feeding*. See FOUL-FEEDING.

APPLE-TREE, [*Malus*] a well-known fruit-tree, that needs no deſcription.

Amongſt the great variety of fruit-trees growing in England, there ſeems to be none ſo univerſal as the apple-tree; for be the land either hot and dry, or wet and cold, one or other of the ſorts will produce fruit, and where the land is good in its kind in very great quantities.

Although the apple-tree is ſo very common in England, it is not a proof that the tree is a native of this iſland; for according to the obſervation of Sir William Temple, it appears, that ſoon after the conqueſt of Africa, Greece, Aſia Minor, and Syria, by the Romans, there were brought into Italy divers ſorts of *Malæ*, which we call apples, and from thence ſent into other parts of Europe, and propagated as other fruits; the crab apple perhaps may be excepted, though not with any certainty.

Three only of the foreign ſorts of apples are much eſteemed in England, viz. the French rennet, the rennet-griſe, and the violet-apple; the other being early fruit, which do not keep long. Beſides, their fleſh is generally mealy, ſo that they do not deſerve to be propagated, as we have many better fruits in England.

The firſt apple which is brought to the London market is the codlin; a fruit too well known to need any deſcription.

The next is the Margaret apple; this fruit is not ſo long as the codlin, and of a middle ſize; the ſide next the ſun changes to a fair red when ripe, the other ſide is of a pale yellow green; the fruit is firm, and of a quick pleaſant taſte, but does not keep long.

The ſummer pearmain is an oblong fruit, ſtriped with red next the ſun; the fleſh is ſoft, and in a ſhort time mealy; ſo that it is not greatly eſteemed.

The Kentiſh fill baſket is a ſpecies of codlin, of a large ſize, and longer ſhaped than the real codlin. This ripens a little later in the ſeaſon, and is generally uſed for baking, &c.

The tranſparent apple. This was brought to England about the year 1724, and was eſteemed a curioſity: it came from Peterſburgh, where it is affirmed to be ſo tranſparent, that the kernels may be perfectly ſeen, when the apple is held to the light; but, in this country, it is a mealy inſipid fruit, ſo as not to be worth propagating.

Loan's pearmain is a beautiful fruit to the ſight, of a middling ſize; the ſide next the ſun is of a beautiful red, and the other ſide ſtriped with the ſame colour; the fleſh is vinous; but as it ſoon grows mealy, it is not greatly eſteemed.

The quince-apple. This is a ſmall fruit, ſeldom larger than the golden-pippin, but longer, and reſembles the quince in ſhape, eſpecially towards the ſtalk; the ſide next the ſun is of a ruſſet colour, on the other ſide inclining to yellow. This is an excellent apple for about three weeks in September, but it will not keep much longer.

The golden-rennet is a fruit ſo well known in England, as to need no deſcription. This ripens about Michaelmas, and for about a month is a very good fruit, either for eating raw, or baking.

The

The aromatic pippin is alſo a very good apple. It is about the ſize of a nonpareil, but a little longer: the ſide next the ſun is of a bright ruſſet colour: the fleſh is of an aromatic flavour: it ripens in October.

The Hertfordſhire pearmain, by ſome called the winter pearmain. This is a good ſized fruit, rather long than round, of a fine red next the ſun, and ſtriped with the ſame colour on the other ſide; the fleſh is juicy, and ſtews well, but is not eſteemed for eating by any nice palates. It is fit for uſe in November and December.

The Kentiſh pippin is a large handſome fruit, of an oblong figure; the ſkin is of a pale green colour: the fleſh is full of juice; which is of a quick acid flavour. This is a very good kitchen fruit, and will keep till February.

The Holland pippin is larger than the former; the fruit is ſomewhat longer, the ſkin of a darker green, and the fleſh firm and juicy. This is a very good kitchen fruit, and will keep late in the ſeaſon.

The monſtrous rennet is a very large apple, of an oblong ſhape, turning red towards the ſun, but of a dark green on the other ſide; the fleſh is apt to be mealy, and is therefore not much valued by thoſe who are curious, and only preſerved for the magnitude of the fruit.

The embroidered apple is a pretty large fruit, ſomething ſhaped like a pearmain; but the ſtripes of red are very broad, from whence the gardeners have given it this title. It is a middling fruit, and commonly uſed as a kitchen apple, though there are many better.

The royal ruſſet, by ſome called the leather-coat ruſſet, on account of the deep ruſſet colour of the ſkin. This is a large fair fruit, of an oblong figure, broad towards the baſe; the fleſh is inclinable to yellow. This is one of the beſt kitchen apples we have, and the trees are very great bearers; they grow large and handſome, and the fruit is in uſe from October to April; it is alſo a pleaſant fruit to eat.

Wheeler's ruſſet is an apple of a middling ſize, flat and round; the ſtalk is ſlender; the ſide next the ſun of a light ruſſet colour, the other ſide inclining to a pale yellow when ripe; the fleſh is firm, and the juice has a quick acid flavour; but is an excellent kitchen fruit, and will keep a long time.

Pile's ruſſet is not quite ſo large as the former, but is of an oval figure, of a ruſſet colour towards the ſun, and of a dark green on the other ſide. It is a very firm fruit of a ſharp acid flavour; but is much eſteemed for baking, and will keep ſound till April or later, if well preſerved.

The nonpareil is a fruit pretty generally known in England; though there is another apple frequently ſold in the markets for it, which is what the French call *haute-bonne*: This is a larger fruit than the nonpareil, more inclining to yellow, the ruſſet colour brighter, it is earlier ripe, and ſooner gone: It is not ſo flat as the true nonpareil, nor is the juice ſo ſharp, though it is a good apple in its ſeaſon. But the nonpareil is ſeldom ripe before Chriſtmas, and, when well preſerved, will keep till May perfectly ſound. This is juſtly eſteemed one of the beſt apples yet known.

The golden-pippin is a fruit peculiar to England. There are few countries abroad where this ſucceeds well, nor do the trees produce ſo good fruit in many parts of England as could be wiſhed. This is in ſome meaſure owing to their being grafted on free ſtocks, which enlarges the fruit, but renders it leſs valuable; becauſe the fleſh is not ſo firm, nor the flavour ſo quick; it is alſo apt to be dry and mealy. This ſhould therefore always be grafted upon the crab-ſtock, which will not canker like the others; and though the fruit will not be ſo fair to the ſight, yet it will be better flavoured.

All the different ſorts of apples, which, though very numerous, are diſtinguiſhed generally into thoſe that are fit for the deſert, the kitchen, and the cyder-preſs, may be propagated by grafting, or inoculation, though the latter is ſeldom practiſed.

The ſtocks which they are grafted on muſt be of the ſame kind, for they will not take on any other ſort of fruit-tree. In the nurſeries there are three ſorts of ſtocks generally uſed to graft apples upon; the firſt are called free-ſtocks, which are raiſed from the kernels of all ſorts of apples indifferently, and theſe are alſo by ſome called crab-ſtocks; for all thoſe trees which are

produced from ſeeds, before they are grafted, are termed crabs, without any diſtinction; but ſuch ſtocks as are raiſed from the kernels of crabs preſſed for verjuice, ſhould be preferred, becauſe they are never ſo luxuriant in their growth as thoſe from apple kernels, and will keep longer ſound; and it is very certain, that by frequent grafting ſome ſorts of apples upon free-ſtocks, the fruits have been rendered larger, but leſs firm, poignant, and of ſhorter duration.

The ſecond ſort of ſtocks is the Dutch paradiſe apple, called the Dutch creeper; theſe are deſigned to ſtint the growth of the trees, and keep them within compaſs for dwarfs, or eſpaliers.

The third ſort is the Paradiſe apple, which is a very low ſhrub, and therefore only proper for trees which are kept in pots by way of curioſity, for theſe do not continue long.

Mr. Hitt tells us, that the taſte of fruit may be much improved by proper ſtocks as well as by proper ſoils. For if two nonpareil trees be planted, one in a wet clay ſoil, and the other in a loam properly dry, though they were both grafted upon one kind of ſtock and from one and the ſame branch, yet the fruit will be different both in ſize and goodneſs.

Again, if a nonpareil be grafted on a paradiſe ſtock, and another from the ſame branch be grafted upon a crab ſtock, and both planted in the ſame ſoil and ſituation, the fruit of the latter will be ſour and ill-taſted if compared with the former. He adds farther, that he always found the taſte of the fruit ſomewhat reſembled the taſte of that fruit which the ſtock would naturally have produced.

Thoſe ſtocks for eſpaliers ſhould be preferred which the nature of the fruit requires. Such as produce fruit of the ſweeteſt flavour, and are ſooneſt apt to turn mealy and inſipid, ſhould, in order to improve their juices, be grafted upon codlin-ſtocks; and thoſe whoſe fruit yields juices of a more acid and rough taſte, may be improved by grafting them on paradiſe-ſtocks; ſuch, however, as are deſigned for ſtandards, may be grafted upon crab-ſtocks, eſpecially thoſe ſorts that are uſed in the kitchen, which require a tartiſh taſte. Both paradiſe and codlin ſtocks ſhould be grafted as near the ground as poſſible.

Mr. Miller obſerves, that codlin-ſtocks always put out ſuckers, (which the other ſorts never do) and likewiſe ſhoots from the knots of the ſtems, which, if not conſtantly taken off, much weaken and injure both tree and fruit; and that theſe ſtocks decay ſooner than crab ſtocks; and laſtly, that the fruit from the latter will be firmer, laſt longer, and have a ſharper flavour.

The method of raiſing ſtocks from the kernels of crabs, or apples, is, to procure them where they are preſſed for verjuice, or cyder; and after they are cleared from the pulp, they may be ſown upon a bed of light earth, covering them over about half an inch thick with the ſame light earth; theſe kernels may be ſown in November or December, where the ground is dry, but in wet ground it will be better to defer it till February; but then the ſeeds muſt be preſerved in dry ſand, and kept out of the reach of vermin; for if mice or rats can get to them, they will devour the ſeeds: there ſhould alſo be care taken of the ſeeds, when ſown, to protect them from theſe vermin, by ſetting traps, &c. to take them. In the ſpring, when the plants begin to appear, they muſt be conſtantly kept clear from weeds, which, if ſuffered to grow, will ſoon overtop the plants, and ſpoil their growth; if theſe thrive well, ſome of them will be fit to tranſplant into the nurſery the October following; for the ſooner theſe ſeedling plants are removed from the ſeed bed, the leſs danger there will be of their ſhooting down tap-roots, which, in fruit-trees, ſhould always be prevented. The ground where theſe young ſtocks are to be planted, ſhould be carefully digged, cleanſed from the roots of all bad weeds, and laid level; then the ſtocks ſhould be planted in rows three feet aſunder, and the plants one foot diſtant in the rows, cloſing the earth pretty faſt to their roots; when the ſtocks are tranſplanted out of the ſeed bed, the firſt autumn after ſowing, they muſt not be headed; but of ſuch as are inclined to ſhoot downward, the tap-root muſt be ſhortened, in order to force out horizontal roots. If the ground is pretty good in which theſe ſtocks are planted, and the weeds conſtantly cleared away, the ſtocks will

will make great progress; so that those which are intended for dwarfs, may be grafted the spring twelve months after they are planted out of the seed beds; but those which are designed for standards, will require two or three years more growth, before they are fit to graft, by which time they will be upwards of six feet high.

The farther management will be explained under the proper articles, Espalier, Grafting, Inoculation, Orchard, Pruning, Shapes for Trees, &c.

All sorts of apples have the common quality of cooling and abating thirst; the more acid kinds loosen the belly, the austere have rather a contrary effect.

The best method to keep apples for winter use, is to let them hang upon the trees, until there is danger of frost; to gather them in dry weather and lay them in large heaps to sweat for a month or six weeks; afterwards look them over carefully, taking out all such as have appearance of decay, wiping all the sound fruit dry, and pack them up in large oil jars, which have been thoroughly scalded and afterwards dried, stopping them down close to exclude the external air, and then place them in a dry vault or cellar; if this is duly observed, the fruit will keep sound a long time, and their flesh will be plump, for when they are exposed to the air, their skins will shrink and their pulp grow soft.

By the statute, the 7th of Anne, it is enacted, that the measure, commonly called water-measure, by which apples and pears are frequently sold, shall for the future be round and 18 inches and a half within the hoop, and 8 inches deep, and so in proportion; and that every such measure by which apples or pears shall be measured shall be heaped as usually, under the penalty of ten shillings, on conviction before one justice, or Mayor, half to the informer, and half to the poor; but not to extend to the measures sealed by the company of fruiterers in London.

Bitter Apple. See Colloquintida.

Crab Apple. See Crab.

Custard Apple. [*Annona*] There are eight species of this tree,—the custard-apple, four-scp, sweet-sop, water-apple, cherimolias, sweet-apple, purple-apple, North-American annona, or papaw. The sorts which are natives of the warm parts of America are too tender to live in this country if they are not preserved in warm stoves. If the seeds are fresh from America, they will easily vegetate; but they must be sown on a good hot-bed pretty early in the spring; the plants should be kept in the bark stove, but in warm weather should have plenty of fresh air or they will be very sickly, and soon after be covered with vermin, which will cause them to decay. They must constantly remain in the tan-bed, and then the leaves will appear very fine and beautiful in the winter season.

The fruit of the Papaw is shaped like a pear inverted; it is eaten by the Negroes, and is the food of Cuanas and other animals. These plants will thrive in the open air in England if they be planted in a warm situation, but should be first trained up in pots and sheltered in the winter for two or three years, by which time they will have acquired some strength, when they may be planted in the ground where they are to remain: This sort flowers in many good gardens.

Love Apple, or *Tomato*, [*Lycopersicum.*] There are six species of this plant, all of which are propagated by sowing their seeds on a moderate hot-bed in March; and when the plants are two inches high they should be transplanted into another moderate hot-bed, and shaded till they have taken root; let them then have a large share of fresh air, and in May they may be removed into pots or borders near walls, pales, or hedges, that have a warm aspect, to which their branches should be fastened, otherwise they will trail on the ground, and then the fruit will not ripen.

Mad Apple, or *Egg-Plant*, [*Melongena*] of which there are four species: 1. Mad apple with an oblong violet-coloured fruit; 2. Mad apple with a taper violet-coloured fruit; 3. Mad apple with an incurved fruit; 4. Apple-bearing Nightshade with prickly leaves and fruit.

The first sort grows naturally in Asia, Africa, and America; the fruit is oval and fleshy, about the size and shape of a swan's egg, of a dark purple on one side and white on the other. There are several varieties of this species; one with white fruit called the

Egg-

Egg-Plant, another with yellow fruit, and another with pale red fruit.

The fruits of all the ſpecies are commonly eaten by the inhabitants of the warm parts of the globe, and are eſteemed a delicacy.

All the ſpecies are propagated by ſeeds, which ſhould be ſown upon a moderate hot-bed early in March; when they come up, they ſhould be removed to another hot-bed and watered, and ſhaded until they have taken root, and have plenty of freſh air, if the weather be warm, otherwiſe they will draw up very weak: and they muſt likewiſe be plentifully watered. In May, the plants will be ſtrong enough to fill the frame, when they muſt be tranſplanted into a rich ſpot of ground, where they muſt have water plentifully, till they have taken root; after which they will require but little care.

Theſe plants are only preſerved as curioſities in Engliſh gardens, the fruit being ſeldom eaten in this country, except by ſome Italians and Spaniards, who have been accuſtomed to eat them in their own countries.

Male Balſam APPLE, [*Momordica*] of which there are three ſpecies, all annual plants, which have trailing ſtalks like the cucumber or melon. Their ſeeds muſt be ſown on a hot-bed the beginning of March, and when they come up they ſhould be tranſplanted into a freſh hot-bed, and afterwards treated as cucumbers.

With proper management they will produce fruit in July, and their ſeeds will ripen in Auguſt or September, when it muſt be gathered immediately.

Theſe plants are not much cultivated, except in curious gardens, for the oddneſs of their fruit. Some perſons put them in pots with ſtakes, to which they are faſtened, and then place the pots in ſtoves; in this manner they make a better appearance, though they do not thrive ſo well nor produce ſo much fruit.

Sour APPLE, or *Sour Sop*. See *Cuſtard Apple*.

Sweet APPLE, or *Sugar* APPLE. See *Cuſtard Apple*.

Thorn APPLE. [*Datura*] There are ſix ſpecies of this plant. The moſt common ſort has a round prickly fruit, and a ſingle white flower. Some of the others require a hot-bed in the ſpring, and afterwards to be planted in a warm border, or the ſeeds will ſeldom ripen.

APPLES *of* SODOM, fruit which was ſuppoſed to grow on the banks of the Dead Sea, (where Sodom formerly ſtood) and ſaid to be extremely fine and tempting on the outſide, but within was full of aſhes. Mr. Maundrell has proved this to be a fiction.

APPORTIONMENT, the diviſion of a rent into parts, in the ſame manner as the land out of which it iſſues is divided.

APPRAISER, a perſon commonly ſworn to value or ſet the price on goods; if he values them too high, he is obliged to take them at the price appraiſed.

APPRENTICE, a young perſon that is bound for a certain number of years in order to learn any art, trade, or myſtery. He muſt be bound by deed, and the deed muſt be indented, and he muſt likewiſe be retained by the name of an apprentice expreſsly, otherwiſe he is no apprentice though he be bound.

An apprentice being by deed, cannot be diſcharged but by deed; but the maſter and apprentice may, by agreement between themſelves, leave each other; the maſter giving leave under his hand, which diſcharge muſt be confirmed by a Juſtice.

The maſter is allowed by law, with moderation, to chaſtiſe his apprentice.

With reſpect to binding poor apprentices, the churchwardens and overſeers, by the aſſent of two Juſtices, (one of the quorum) may bind any ſuch children whoſe parents they ſhall judge not able to maintain them, to be apprentices, where they ſhall ſee convenient, till the male children ſhall come to the age of twenty-four, and the females to the age of twenty-one, or marriage; and as the churchwardens and overſeers have this power, ſo they are the proper judges of perſons who are fit to be their maſters; and theſe are perſons, who, by their profeſſion or manner of living, have occaſion to keep ſervants; but then this is to be approved by the Juſtices, and if the maſter is diſſatisfied he may appeal to the ſeſſions.

The power of binding to the age of twenty-four ſeems cruel; and it is much to be wiſhed that the pariſh officers had power granted generally to put

put out poor apprentices for the term of ſeven years, or till they ſhall attain the age of twenty-one years, and no longer.

APPROACHING, in gardening. See GRAFTING by APPROACH.

APPROPRIARE COMMUNAM, in law, is to diſcommon; that is, to incloſe any parcel of land that was before open and common.

APPROVEMENT, is where a man hath common in the lord's waſte ground, and the lord of the manor incloſes part of the waſte for himſelf, leaving nevertheleſs ſufficient common with egreſs and regreſs for the commoners. If, however, there ſhould not be ſufficient common left for the tenant, he may have a writ of aſſize and recover triple damages: in ſuch a caſe alſo a commoner may break down the incloſures.

APRICOT-TREE, a fruit-tree now well known in the Engliſh gardens.

There are about ſeven varieties of apricots cultivated in the Engliſh gardens, viz. 1. The Maſculine apricot. 2. The Orange apricot. 3. The Algier apricot. 4. The Roman apricot. 5. The Turkey apricot. 6. The Breda apricot. 7. The Bruſſels apricot.

The Maſculine is the firſt ripe of all the apricots; it is a ſmall roundiſh fruit, of a red colour towards the ſun; as it ripens the colour fades to a greeniſh yellow on the other ſide. The tree is very apt to be covered with flowers; but as they come out very early in the ſpring, they are frequently deſtroyed by the cold, unleſs the trees are covered to protect them.

The Orange is the next ripe apricot; this fruit is much larger than the former, and, as it ripens, changes to a deep yellow colour. The fleſh of this is dry, and not high flavoured: it is fitter for tarts, than for the table.

The Algier is the next in ſeaſon; this is of an oval ſhape, a little compreſſed on the ſides; it turns to a pale yellow, or ſtraw colour, when ripe; the fleſh is dry, and not high flavoured: this, and what is by ſome perſons called the Common apricot, are often confounded.

The Roman is the next ripe apricot; this is a larger fruit than the former, and not compreſſed on the ſides; the colour is deeper, and not ſo dry as the former.

The Turkey apricot is yet larger than either of the former, and of a globular figure; they turn to a deeper yellow than the former; the fleſh is firmer, and of an higher flavour than either of the former.

The Breda apricot (as it is called from its being brought from thence to England) was originally brought from Africa: this is a large, roundiſh fruit, changing into a deep yellow, when ripe; the fleſh is ſoft, full of juice, and of a deep orange colour on the inſide; the ſtone is rounder and larger than that of the other ſorts. This is the beſt apricot we have; and, when ripened on a ſtandard, is preferable to all other kinds.

The Bruſſels is the lateſt ripe of all the apricots; for, when it is planted againſt a wall, it is generally the beginning of Auguſt before it is ripe, unleſs when it is planted to a full ſouth aſpect; which is what ſhould not be practiſed, becauſe the fruit is never well taſted which grows in a warm expoſure. This fruit is of a middling ſize, rather inclining to an oval figure; red on the ſide next the ſun, with many dark ſpots, and of a greeniſh yellow on the other ſide; the ſkin is firm, and of an high flavour; the fruit often cracks before it is ripe. Mr. Hitt ranges theſe differently; he places the Bruſſels 3d, and the Orange 4th.

Moſt people train theſe trees up to ſtems of ſix or ſeven feet high, or bud them upon ſtocks of that height; but half ſtandards, of about two and a half, or three feet in the ſtem, ſhould be preferred to thoſe which are much taller.

Theſe fruits are all propagated by budding them on plum ſtocks, and will readily take upon almoſt any ſort of plum, provided the ſtock be free and thriving, (except the Bruſſels kind, which is uſually budded on a ſort of ſtock, commonly called the St. Julian, which better ſuits the tree, as being generally planted for ſtandards, than any other ſort of plum will.) Mr. Hitt obſerves, that the ſtocks upon which he found the apricot to proſper beſt, and yield the moſt palatable fruit, are the red wheat plums; they having a tart taſte, and are tolerably free from gum and ſuckers. The manner of raiſing the ſtocks, and budding theſe trees, are treated of under their reſpective articles. Theſe

These trees are all (except the two laſt ſorts) planted againſt the walls, and ſhould have an eaſt or weſt aſpect; for if they are planted full ſouth, the great heat cauſes them to be mealy before they are well eatable. The border under theſe walls ſhould be ſix feet wide at leaſt, and, if it was as broad as the wall is high, the better; and if the earth be two feet deep, or two and a half at moſt, it is enough.

If your ground is wet cold loam or clay, you ſhould raiſe your borders as much above the level of the ſurface as it will admit, laying ſome ſtones or rubbiſh in the bottom, to prevent the roots from running downwards; but, if you plant on a chalk or gravel, it will be better to raiſe the borders to a proper thickneſs with good loamy earth than to ſink the borders by removing the chalk or gravel.

The beſt ſoil to be uſed for theſe and all other ſorts of fruit trees, is freſh untried earth, from a paſture ground, taken about ten inches deep, with the turf, and laid to rot and mellow at leaſt twelve months before it is uſed; and this muſt be kept often turned, to ſweeten and imbibe the nitrous particles of the air.

Your borders being thus prepared, make choice of ſuch trees as have two ſtrong branches beſides collateral ones; and if the branches have been once cut down in the nurſery and thoſe parts well healed, they are not the worſe; and the more the principal branches are extended from each other, the better; and if your ſoil be dry, or of a middling temper, you ſhould prefer October as the beſt ſeaſon for planting.

But do not cut off any part of the head at that time, unleſs there are any ſtrong fore-right ſhoots which will not come to the wall, which may be taken quite away.

Having fixed the tree in the ground, nail the branches to the wall, to prevent their ſhaking. In this ſtate let it remain till the middle of March, when, if the weather is good, you muſt unnail the branches of your trees, ſo as not to diſturb the roots, and, with a ſharp knife, cut off the head of the tree, if it has but one ſtem, or where it may have two or more ſhoots, each of them muſt be ſhortened to about four or five eyes above the bud, ſo that the ſloping ſide may be towards the wall.

In the ſpring, if the weather proves dry, you muſt, now-and-then, give your trees a gentle refreſhing with water all over their head, which will greatly help them; and alſo lay ſome turf, or other mulch, round their roots, to prevent their drying during the ſummer-ſeaſon: as new branches are produced, obſerve to nail them to the wall; and ſuch ſhoots as are produced fore-right, muſt be intirely diſplaced. This muſt be repeated as often as it is neceſſary, to prevent their hanging from the wall; but by no means ſtop any of their ſhoots in ſummer; the beſt time for this being in December, after they have ſhed their leaves.

The ſecond ſummer obſerve, as in the firſt, to diſplace all fore-right ſhoots as they are produced, nailing in the other cloſe to the wall horizontally, ſo that the middle of the tree may be kept open; and never ſhorten any of the ſhoots in ſummer, unleſs to furniſh branches to fill vacant places on the wall; and never do this later than April. About December ſhorten thoſe ſhoots, as was directed for the firſt year.

The following year's management will be nearly the ſame with this; but only obſerve, that apricots produce their bloſſom-buds, not only upon the laſt year's wood, but alſo upon the curſons or ſpurs, which are produced from the two year's wood: great care ſhould therefore be had in the ſummer management, not to hurt or diſplace them.

Theſe few rules, well executed, together with a little obſervation and care, will be ſufficient; and, to pretend to preſcribe particular directions for all the different accidents, or manner of treating fruits, would be impoſſible; the reader will find what has been ſaid, if duly attended to, ſufficient.

The Bruſſels and Breda apricots, being, for the moſt part, planted for ſtandards, will require very little pruning or management; only obſerve, to take out all the dead wood, or ſuch branches as croſs each other; this muſt be done early in autumn, or in the ſpring after the cold weather is paſt, that the part may not canker where the inciſion is made.

APRIL, is the fourth calendar month in the civil year, and conſiſts of thirty days.

The

Many will no doubt expect the Husbandman's and Gardener's Kalendar for this month.

With respect to the first, it is morally impossible to give even a tolerable account of the Farmer's duty for each month. The seasons, the soil, and its peculiar management, the different situation and condition of estates, &c. &c. all concur to render such an attempt highly ridiculous and absurd.

About an hundred years ago, when agriculture was but little practised, and, if possible, less understood, a Kalendar had its use. Wooldridge published one at the end of his System of Agriculture, collected from different authors, in which he likewise gave the substance of Mr. Evelyn's Hortulan Kalendar. Wooldridge was copied by that errant plagiarist who wrote the Art of Husbandry by J. Mortimer, Esq; F. R. S. who is again copied by the modern writers of Kalendars. Who but must laugh when he reads—who but must grieve when he pays for such miserable stuff, as "Fell the timber you intend to bark, keep geese and swine out of commons and pastures, cleanse ditches, gather up worms and snails in evenings and mornings, open the doors of the bee-hives," which is given in the Kalendars for April.

As to the Gardener's Kalendar, Mr. Miller fills near thirty octavo pages with directions and catalogues for this month. If these directions are supposed to be necessary, we cannot abridge them, nor have we room to insert them.

The following catalogues, however, may serve to refresh the memory of those who are fond of gardening.

Products of the Kitchen Garden.

Sprouts of broccoli, cabbages, and savoys, are now very good, if they are gathered before they run up to seed. The young shoots of turneps and hop-tops are often eaten when there is a scarcity of other greens, all sorts of young sallet-herbs, spinach, raddishes, asparagus, coleworts, parsley, alisanders, chard beet, some late celery and endive in moist ground; sorrel, burnet, thyme, hyssop, winter savory, pot-marjorum, brown Dutch, and cabbage lettuces, in frames or under glasses on warm borders; also some cos lettuce, where they have escaped the frost, will be fit for use towards the end of the month; chervil, young onions, leeks, cives, scallions, rocambole, borage, sage, rosemary, and some parsnips and carrots, where they have been preserved in sand; for where they have remained in the ground, those which are found will have sprouted, after which their roots will become sticky and tough, so unfit for eating. Young carrots which were sown in autumn are now in prime; and the young shoots of salsify or tragopogon, which is by some persons preferred to asparagus when gathered young. Upon the hot-beds, cucumbers, pease, kidney-beans, and purslane; and towards the end of the month, you have often peas on warm borders where they have escaped the frost, and some early cabbages.

Fruits in Prime, or yet lasting.

Pears, frane-real, bergamot, bugi, Saint Martial, winter boncretien, Lord Cheyne's winter green, bessy de chaumontelle from an espalier on cold land; carmelite, and for baking, the cadillac, and Parkinson's warden.

Apples; golden russet, Pile's russet, Wheeler's russet, nonpareil, John apple, stone pippin, with some others.

In the forcing-frame, cherries, masculine apricot, some plums; and on the hot-bed strawberries.

Plants now in Flower in the Pleasure Garden.

Anemonies, Ranunculuses of various kinds, polyanthuses, auriculas, tulips, crown imperials, hepaticas, hyacinths of various sorts, narcissuses, daffodils, jonquils, violets, muscarias, dwarf-flag iris, great snowdrop, spring cyclamens, spring colchiums, pulsatillas, bulbous fumitory, ducks-foot or May apple, rose-roots, wood anemony, friar's cowl, Italian arum, double ladies smock, double pilewort, starry hyacinths, dog's-tooth, double daisies, tritillarias of various kinds, gentianella, double caltha palustris, large green-flowered ornithogalum of Naples, Persian lily, orchises of several sorts, sanguinaria, Solomon's seal, American lung-wort, meadia, double saxifrage, Venetian vetch, lynchnises, allyson creticum, bugle, cat's-foot lily of the valley, leopard's-bane, honeywort, leon topelaton, hearts-ease, periwinkle with single flowers both small and large, as also with double flowers of a purple colour, borage-leaved ver-

baſcum, blue-flowered perennial moth-mullein, with ſome others.

Hardy Trees and Shrubs now in Flower.

Lilac, with white, purple, and blue flowers, Perſian lilac with privet leaves, commonly called the Perſian lilac with entire and with cut leaves, laburnums, double-flowering peach-tree, double-flowering pear-tree, cherry pluni, almond with white and peach-coloured bloſſoms, amalanchier, aria theophraſti, viburnum, bird cherry, Corniſh cherry, cockſpur hawthorn, dwarf almond with ſingle and double flowers, hypericum frutex, Benjamin-tree, barberry-tree, bilberry-buſh, bladder-nut, ſervice-tree, turpentine-tree, early white and Italian honeyſuckles, yellow jaſmine, lauruſtinus, ſcorpion ſena, caragana, eaſtern bladder ſena, dwarf cherry, coronilla cretica, Siberian cytiſus, ſingle virgin roſe, hairy cytiſus, laurel, pyracantha, Glaſtonbury thorn, nettle-tree dogwood, quicken or mountain aſh, ſpindle-tree, ſcarlet-flowering maple, horſe cheſnut, ſpirea frutex, upright and fly honeyſuckle, azalea's, with ſome others.

Medicinal Plants, which may now be gathered for uſe.

Brooklime, water-creſſes, wood-roof, mouſe-ear, daiſy, rice-leaved whitlow-graſs, bugle, ſhepherd's-purſe, dandelion, white ſaxifrage, coltsfoot, hairbells, ground-ivy, dead-nettle, wood-ſorrel, cowſlip, primroſe, raddiſh-root.

Plants in Flower in the Green-Houſe and Stove.

African geraniums of various ſorts, ilex-leaved lantana, candy tuft-tree, African anthericum with aloe leaves, and two or three ſorts with onion leaves, tree ſcabious, cyſtiſes, three or four ſorts of arctotus, meſembryanthemi of ſeveral ſorts, aloes of ſeveral kinds, coronilla cretica, cyſtiſus canarienſis, medicago frutescens, Aleppo cyclamens, hermannias of four or five ſorts, colutea æthiopica, polygala Africana, hypericum balcaricum, two ſorts of African ſhrubby tanſey, three-leaved African ſumach, melianthus minor fœtidus, cotyledons, turnera, malphigia of two or three ſorts, humble plant, ciſtus halimi folio, olive tree, watſonia, African ſiſyrinchium, calla, æthiopica, crinum, cunonia, African hyacinth with ſmooth and with waved leaves, dumb cane, rauvolfia, waltheria, atamuſco lily, pancratium, ſmall creeping cereus with crimſon flowers, cannacorous, ixia of ſeveral ſorts, antholyza, ſhrubby African ſtarwort of two ſorts, tetragonia, clutia, ſome ſorts of mimoſa, dioſma of two ſorts, African ſhrubby ſage with yellow and blue flowers, ſhrubby ſtachys from the Canaries, teucrium, bœticum, ſhrubby convolvulus from Crete, heliotropium ſcorodoniæ folio, coral-tree, hæmanthus colchici foliis, black flowering lotus, tree houſeleek, craſſula, African wood ſorrel with large purple and alſo with yellow flowers, China roſe, elychryſum orientale, Spaniſh toad-flax, ornithogalum from the Cape of Good Hope, African marigold two ſorts, chryſocoma, euphorbias, ſorrel-tree, lycium with narrow leaves, canary ſhrubby fox-glove, othonna two or three ſorts, Peruvian heliotrope, African cacalia, with ſome others.

AQUA, water. This term is frequently met with in the writings of phyſicians, chymiſts, &c. for certain medicines, or menſtruums, in a liquid form, diſtinguiſhed from each other by particular epithets, as *aqua fortis*, *aqua vitæ*, &c.

AQUÆDUCT, an artificial canal, or channel, made of ſtone, brick, or timber, to convey water from one place to another. Thoſe aquæducts which the Romans built were ſurpriſingly magnificent. That which Lewis XIV. erected near Maintenon for carrying the Bucq to Verſailles is perhaps the greateſt now in the world.

AQUAGE, a water-courſe.

AQUATIC, an appellation given to ſuch things as live or grow in the water; thus we ſay, aquatic animals, aquatic plants, &c.

AQUATIC *Plants*, are the withy or willow, ozier, water creſſes, &c. See WILLOW, OZIER, &c.

AQUEDUCT. See AQUÆDUCT.

ARABANT, *ad curiam domini*, was intended of thoſe who held by the tenure of ploughing and tilling the lands of the lord.

ARABLE LAND, ſuch as is tilled or cultivated for the production of corn.

ARALIA, Berry-bearing Angelica. There are three ſpecies, viz. 1. Canada berry-bearing angelica; 2. Berry-bearring angelica with a naked ſtalk; 3. Angelica-tree.

The firſt and ſecond ſorts are eaſily propagated by ſeeds, which ſhould be ſown

ſown in autumn ſoon after they are ripe. In the autumn following, when their leaves decay, the roots ſhould be tranſplanted, where they are to remain; being hardy plants they will grow in any ſituation. The third ſort is propagated by ſeeds which muſt be procured from North-America, or by its roots; for as the roots ſpread far in the ground, ſo they will put out young plants at a diſtance from the ſtems, which may be taken off before they begin to ſhoot in the ſpring. The flowers of this ſort make no great figure, but the plants are preſerved in moſt of the curious gardens in England.

ARBOR, a tree.

ARBOREOUS, ſomething belonging to or partaking of the nature of trees: thus moſſes, &c. growing on trees are called arboreous.

ARBORESCENT, a term applied to ſuch things as reſemble trees; thus we read of arboreſcent ſhrubs, arboreſcent animals, &c. of which laſt kind is that great natural curioſity the ſtar-fiſh.

ARBOR VITÆ, or *Tree of Life*, [*Thuya.*] The ſpecies of this beautiful evergreen are, 1. Common arbor vitæ; 2. Chineſe arbor vitæ; 3. Arbor vitæ with ſtriped leaves; though Miller ſays this laſt is only a variety of the firſt which proceeds from a weakneſs in the plant, and therefore can only be preſerved by propagating the plants by cuttings or layers; and theſe muſt be planted on thin land to preſerve the variegation ſtrong.

Both the other ſorts may be propagated either by ſeeds, layers, or cuttings; but as raiſing the firſt by ſeeds is tedious, the other methods are preferred. It grows naturally in Canada, Siberia, and other northern countries.

The Chineſe arbor vitæ is at firſt a little delicate and grows ſlowly; the ſeeds ſhould therefore be ſown in pots, and in the preceding ſpring, when they begin to vegetate, plunged into a moderate hot-bed till June; obſerving to protect them in the winter. This treatment ſhould be renewed till they are fit for the nurſery. Theſe plants may likewiſe be raiſed from layers or cuttings, obſerving when they have ſtood two years and are rooted to plant them in pots and plunge them into hot-beds, as directed for raiſing them from ſeeds.

This tree requires a particular addreſs in pruning it; for if it is ſtripped or trimmed cloſe to any conſiderable height, the body will be very ſlender and bear no proportion to its large and weighty top. The beſt method to prevent this will be to cut away from the bottom to near the top, all ill-placed forked branches (of which this tree produces many) reſerving only at proper diſtances ſuch as are vigorous and radiate directly from the body.

ARBOUR, a kind of ſhady bower formerly in great eſteem, but of late rejected on account of its being damp and unwholeſome.

ARBUTUS, the Strawberry Tree. We have five ſpecies of this tree. 1. The Common Arbutus; 2. Arbutus with plain leaves, called by ſome Adrachne; 3. Arbutus, called the Bilberry of Arcadia with alaternus leaves; 4. Arbutus, called the Bilberry with oblong whitiſh leaves; 5. Arbutus, called Uva Urſi, or Bear-berries.

The firſt ſort has two or three varieties, one with double flowers, and another with red flowers. Theſe muſt be preſerved by inarching or grafting them upon the common arbutus, for their ſeeds do not produce the ſame kind.

The beſt method to propagate the arbutus is from ſeeds which ripen from the middle of November till the end of December, obſerving that the ripe berries loſe their fine ſcarlet, and become of a browniſh tawny colour. The whole berries ſhould be preſerved entire in dry ſand (and not waſhed as ſome adviſe) till the ſeaſon of ſowing, when by ſoftly rubbing them in the hands the ſeeds will eaſily ſeparate from the pulp. The ſeeds ſhould be ſown in March upon a moderate hot-bed, and in five or ſix weeks the plants will appear, when they muſt have frequent but very ſlight waterings; the beds muſt be ſhaded in the heat of the day till Auguſt, when the glaſſes may be taken off till winter approaches, and then they ſhould be replaced.

The ſucceeding ſpring plant them in pots and plunge them in another hot-bed, and with the uſual waterings let them remain till Auguſt, when they may be taken out and placed in any warm ſheltered ſpot till October; they ſhould now be expoſed to the winter

ſun, but they ſhould be ſheltered with mats in ſevere ſtorms. In the next ſpring take the dead mould out of the pots and add ſome freſh; remove them to a ſhady border till autumn, and then expoſe them again to the winter ſun under a wall or hedge as before.

The ſpring following they may be tranſplanted into the open ground, where they are to remain; but they will be ſtronger and more hardy if they are removed into other pots for a year or two. Great care muſt be taken not to water them too much at their roots. They love a dry warm ſoil, but will not thrive in moiſt, heavy or clay land.

ARCHANGEL, or Dead Nettle, [*Lamium.*] There are various ſpecies and varieties; but as many of them are weeds, ſo there are ſeldom more than five ſorts admitted into gardens. Some of theſe will ſow themſelves; the others may be propagated by parting the roots in autumn.

White ARCHANGEL, [*Lamium Album.*] This grows wild in hedges, and flowers in April and May. The flowers have been particularly celebrated in uterine fluors, and other female weakneſſes; as alſo in diſorders of the lungs.

ARCHIMEDES's SCREW, ſo called from Archimedes its inventor, a kind of ſpiral pump for raiſing water.

This engine is too well known to require a particular deſcription. It is not much uſed, though it may be uſeful in raiſing water that is foul with ſand, &c. as the leathers of pumps will be ſoon deſtroyed by theſe particles. And it was principally this reaſon that induced the ingenious Mr. Smeaton to erect a machine of this kind in the gardens of her Royal Highneſs the Princeſs Dowager of Wales at Kew, where it is worked by horſes, and ſupplies all the ponds, &c. in that extenſive garden with water. A machine of this kind, turned by a windmill, might be of great uſe in draining lands in ſeveral parts of England, as it is not ſubject to be out of order, and might be made to raiſe a very large quantity of water to a ſmall height. In the courſe of this work we ſhall deſcribe ſeveral other contrivances for this purpoſe, there being many very curious and uſeful engines depoſited in the machine room of the Society for the encouragement of arts, &c.

ARCHITECT, a perſon who draws the plans of edifices, and ſuperintends and directs the ſeveral artificers employed in the building.

ARCHITECTURE, the art or ſcience of erecting edifices, whether for habitation or defence; and hence ſubdivided into civil, military, and naval.

Civil ARCHITECTURE, is abſolutely, and by way of eminence, ſtiled *Architecture*, and teaches how to make any kind of buildings, as palaces, churches, private houſes, &c. and the rules to be obſerved in it are ſolidity, convenience, and beauty, to which ſome add, order, diſpoſition, proportion, decorum, and œconomy. Solidity implies the choice of a good foundation, and ſound materials; convenience conſiſts in ſo ordering the parts of an edifice that they may not embarraſs one another; beauty is that agreeable form and pleaſing appearance which it exhibits to the eye of a ſpectator; order gives each part of the building a convenient bigneſs, whether conſidered apart, or with relation to the whole; and diſpoſition is the agreeable union of all the parts. Proportion is the relation that all the work hath to its parts, and which every one ſeparately hath to the whole; decorum teaches to have a regard to deſign, cuſtom, and nature; and œconomy to conſider the expences, in order to regulate the form and magnitude of the fabric.

With reſpect to the ſeveral periods and ſtates of architecture, it is diſtinguiſhed into antient, gothic, and modern. The Greeks and Romans were ſo happy in adjuſting the various proportions of an edifice, that any neglect of their rules has been found to be a deviation from proportion and beauty itſelf. It is for this reaſon that the moderns have retrieved the primitive ſimplicity of modern architecture, which, upon the decline of the weſtern empire, was loſt in the general confuſion of arts and ſciences, being ſucceeded by the gothic and moreſk, ſo called from the Goths and Moors. Theſe made perfection to conſiſt in the delicacy and multitude of the ornaments, which they beſtowed on their buildings, with abundance of care, as may be ſeen in moſt of the antient

ſtructures

ſtructures in England and other parts of Europe.

The manner then, of the ancients being reputed the ſtandard of beauty and grandeur, another diviſion of architecture ariſes from the different proportions obſerved by them in different buildings; according to the bulk, ſtrength, delicacy, richneſs, or ſimplicity required. This conſiſts of five orders, all invented at different times, and on different occaſions, viz. tuſcan, doric, ionic, corinthian, and compoſite.

ARCUATION, in gardening, the raiſing of trees by layers, which is done thus. Strong mother plants, or ſhoots, muſt be planted in a clean border in a ſtraight line, ſix inches aſunder; and when they have ſhot five or ſix main branches from the root, and as many collateral branches, theſe main branches muſt be bent to the ground; for which reaſon, ſome cut them half through, and peg them faſt down.

The ſmall branches muſt be covered three inches thick upon the joints, and have a large baſon of earth made round them to hold the water.

Some perſons give the branches a twiſt, to make them root the ſooner.

ARDERS, fallowings, or ploughings of land.

ARENA, Sand. See SAND.

ARGILLA, Clay. See CLAY.

ARGOL, a common name for red tartar. See TARTAR.

ARID, dry.

ARK, a large cheſt to put corn or fruit in, like the bin of a buttery.

ARLES, or EARLES, earneſt; thus an arles-penny, ſignifies an earneſt penny. Servants' vails are likewiſe called *arles* in ſome places.

ARMAN, in farriery. See DRENCH.

ARNALIA, arable grounds.

AROMATIC, an appellation given to ſuch plants and other bodies as yield a briſk fragrant ſmell, and a warm ſpicy taſte, as cloves, cardamom-ſeeds, cinnamon, nutmegs, &c. Their peculiar qualities reſide in a volatile oil, uſually called eſſential oil, and a groſſer reſinous ſubſtance, capable of being extracted by ſpirit of wine. The virtues of all aromatic vegetables are extracted by vinous ſpirits; very imperfectly by watery liquors. In diſtillation they ariſe with water more perfectly than with ſpirit. Aromatics, conſidered as medicines, warm the ſtomach, and by degrees the whole habit, raiſe the pulſe, and quicken the circulation: hence in cold languid caſes, they increaſe ſtrength, and promote the natural ſecretions.

It is remarkable, that aromatics or ſpices preſerve animal ſubſtances from putrefaction; and that providence has taken care to furniſh warm climates with plenty of aromatics, which the inhabitants make frequent uſe of, and probably thereby check that ſpontaneous tendency to putrefaction, to which the heat inclines them.

Beſides all kinds of ſpices, not a few of the nervous ſimples may be ranked among the aromatics.

ARPENT, the French name for an acre.

We have already obſerved under the article *Acre*, that the French arpent is very nearly equal to one acre and three quarters of a rood Engliſh meaſure. But it may be neceſſary to add here, that the French have three different arpents, diſtinguiſhed by the epithets *little*, *middle*, and *great* arpent.

The little ARPENT contains 100 perches of eighteen feet and a half ſquare; conſequently its ſuperficial meaſure is 32,400 French feet, equal to 34,603 feet, or three rood, ſeven perches, and twenty-ſeven feet Engliſh meaſure.

The middle ARPENT, conſiſts alſo of 100 perches, twenty feet ſquare, which make 40,000 French feet ſuperficial meaſure; equal to 42,720 feet, or three rood, thirty-ſix perches, and 149 feet Engliſh meaſure.

The great ARPENT, contains 100 perches of twenty-two feet ſquare. *See the article* ACRE.

ARRACHE. See ORACH.

ARREARS, or arrearages, the remainder of a ſum due, or money remaining in the hands of an accountant. It ſignifies alſo, more generally, the money that is due for rent, unpaid for land or houſes; likewiſe what remains unpaid of penſions, taxes, or any other money payable annually, or at any fixed term.

ARRENTATION, in the foreſt-law, is the licenſing an owner of lands in a foreſt, to incloſe them with a low hedge, and a ſmall ditch, in conſideration of a yearly rent.

ARRESTS, in farriery, mangy tumours upon a horſe's hinder legs, between the ham and the paſtern.

ARROW-

ARROW-HEAD, [*Sagitta.*] It grows in rivers and watery places, and flowers in May and June. The herb and ſeed are both uſed, and are of a cold and moiſt temperament according to Matthiolus and Boerhaave, but the ſmell and taſte ſpeak it of a hot nature.

ARROW-ROOT, or INDIAN ARROW-ROOT, [*Maranta,*] two ſpecies. Theſe plants are natives of a warm country, and therefore will not live in this, unleſs they are preſerved in ſtoves. They propagate faſt by their creeping roots, which ſhould be parted about the middle of March, and planted in pots of freſh light earth, and plunged into a moderate hot-bed of tanner's bark; refreſhing them now and then with a ſmall quantity of water, till the green leaves appear, when they ſhould be watered oftener. When the plants decay ſo that the leaves die to ground, the pots ſhould be ſtill continued in the bark bed, otherwiſe the roots will periſh; but ſhould have but little water given them.

Mr. Miller ſays, Indian Arrow-root is eſteemed a ſovereign remedy to cure the bite [he means the *ſting*] of waſps, and to extract the poiſon of the manchineel-tree. The Indians maſh the clean root, and then apply it as a poultice to draw out the poiſon from a wound occaſioned by their poiſoned arrows. It will alſo, he ſays, ſtop a gangrene, if it be applied before it be gone too far; ſo that it muſt be a very valuable plant.

ARSMART, [*Perſicaria,*] of which there are various ſpecies. The oriental Arſmart is a large plant, riſing to the height of eight or ten feet where the ſoil is moiſt. The plants are annual, and make a beautiful appearance; and may eaſily be propagated by ſuffering the ſeeds to ſhed where the plants grow, and tranſplanting them in the ſpring where they are to remain.

Spotted ARSMART, [*Perſicaria Mitis*] grows wild in moiſt watery places, and is recommended for external purpoſes. Tournefort aſſures us (in the memoirs of the French academy 1703) that it is one of the beſt vulneraries and antiſeptics he knows, and that a decoction of it in wine ſtops gangrenes in a ſurpriſing manner. The preſent practice, however, has no dependance on it.

Biting ARSMART, LAKE WEED, or WATER PEPPER, [*Perſicaria Urens*] is readily diſtinguiſhed from the other by its pungent, biting, pepper-like taſte. Its virtues are thoſe of an acrid ſtimulating medicine: in phlegmatic habits it promotes the urinary diſcharge, and has frequently done good ſervice in ſcorbutic complaints. The freſh leaves are ſometimes applied externally for curing old fiſtulous ulcers, and conſuming fungous fleſh; for theſe purpoſes they are ſaid to be employed by the farriers, among whom they are at preſent principally made uſe of.

ARTEDIA. We have no Engliſh name for this plant, of which there are two ſpecies. One of them is a native of the Eaſt, and the other grows upon the African ſhore in the Mediterranean, and likewiſe in Spain.

Both theſe plants decay as ſoon as they perfect their ſeeds, and many times before they are ripe, in England. The ſeeds ſhould be ſown in autumn in a warm border to remain, for they will not bear tranſplanting.

ARTICHOKE, [*Cynara*] of which there are two ſorts cultivated in gardens; one known by the name of the globe artichoke, and the other called the French artichoke. The globe artichoke produces large round heads, with broad brown ſcales turning inward: the eatable part at the bottom of the ſcales is very thick, and better flavoured than the other ſort, which produces taller ſtalks, with leſs heads, and conically ſhaped; the ſcales are narrower, and have leſs fleſh at their bottoms; on which account the French ſort is pretty much excluded from the Engliſh gardens, the other being conſiderably preferable.

The artichoke delights in a deep, rich, and moiſt ſoil, well prepared with rotten dung, and mixed to the depth of three feet at leaſt; for the deeper the mould is, the leſs watering they will require in ſummer, and produce larger and better flavoured heads.—The manner of propagating this plant, is from the ſlips or ſuckers (though they may be raiſed from ſeed) which ariſe from the old roots in February or March, or as ſoon as the hard froſts are over, which, if planted in a proper ſoil, will produce good fruit in the autumn following. Theſe ſuckers ſhould be carefully taken off with roots to them, particularly where a freſh

a freſh plantation is intended; and as they are pretty deep in the ground, the earth ſhould be removed from around the mother plant, to take them off the more eaſily, leaving two or three of the ſtraighteſt, cleareſt, and moſt promiſing plants, which are produced from the under part of the ſtock, for a crop, obſerving in ſlipping off the other ſuckers, to be careful not to injure thoſe which are deſigned to remain. When this operation is done, the earth ſhould be drawn to the plants which are left, and well cloſed to them, cutting off the extremity of the leaves which hang down; after which, the ground between them ſhould be dug, and a crop of ſpinage may be ſown, which will be taken off before the artichokes cover the ground. Toward the latter end of April, or beginning of May, when the plants begin to ſhew their fruit, all the young ſhoots produced from the root ſince the laſt dreſſing ſhould be diſplaced, ſo as to leave only the principal plants which are intended for fruiting, which will by that means bear the better, and likewiſe to take off all the ſuckers that are produced from the ſides of the ſtalk, leaving only the principal head, which will cauſe the fruit to be conſiderably larger. When the artichokes are fit to be uſed, they ſhould be cut, and the ſtalks broke off cloſe to the ſurface of the ground, in order that the ſtocks may make freſh ſhoots before the end of October, which is the ſeaſon for earthing them up, although it may be deferred till any time in December, provided the ſeaſon proves mild.

The method of earthing artichokes, (or landing them as by ſome called) conſiſts in cutting off all the young ſhoots quite cloſe to the ground, then digging a trench between each row, and covering the roots with the earth thrown up in form of a ridge, over the line of the artichokes: this will ſecure them from the froſts that are common, and is by far much better than covering them with long dung, which is a bad practice, becauſe the dung laying near the roots is very apt to rot them, beſides harbouring of vermin, which may deſtroy the roots; though it would not be amiſs in very ſevere froſts, to put ſtraw, peas-haulm, &c. on the ridges, which will keep ſome part of the extremity of the weather from them, without damaging the roots; but this covering need not be uſed till there is no avoiding it, and ſo ſoon as the weather becomes mild, it ſhould be taken off, for it will be a diſſervice to the plants, if it lies too long on them. After the plants are earthed up with the afore-mentioned precautions, they will not want any farther care till February or March, when they will have grown through the ridge of earth, and muſt be managed as before-directed.

Though the ſtocks of artichokes will laſt ſeveral years in a good rich ſoil, yet as they are great impoveriſhers of the ground, their fruit will dwindle ſo as to render it neceſſary to have a freſh plantation every fourth or fifth year, or rather every year, on account of having their fruit in autumn; for this purpoſe, the ground being prepared and proviſion made of a ſufficient number of ſuckers, make choice of thoſe which are clear, ſound, and not woody, having ſome fibres to their bottom; with a knife cut off the knotted part which joined to the ſtalk. If it cuts criſp and tender, it is a ſign of the ſucker's being good; but if tough and ſtringy, it is to be rejected. Having properly ſingled out thoſe which are fitting for the purpoſe, cut the large outſide leaves off pretty low, in ſuch a manner that the middle leaves may riſe above them; the plant being thus prepared, the beſt method of planting is in rows as ſtraight as poſſible, which muſt be done by ranging a line acroſs the ground, ſetting them at about two feet aſunder in each row; and if more rows are wanted than one, theſe ſhould be at the diſtance of five feet, and the plants ſet in quincunx order: the depth they ſhould be planted to be about four inches, and the earth well cloſed about the roots; and if the ſeaſon proves dry, they ſhould be often watered till they have taken good root: if the ſeaſon proves favourable for them, and particularly on a moiſt rich ſoil, theſe plants will produce the largeſt and beſt artichokes ſome time in Auguſt and September, after the old ſtocks have ceaſed bearing; ſo that the ſeaſon is conſiderably lengthened for producing this fruit, by making a new plantation every year.

The kitchen-gardeners near London who endeavour to make the moſt of every

every inch of their high-rated land, generally plant their rows of artichokes nine or ten feet aſunder, and beſides ſowing between them radiſhes or ſpinage, they plant two rows of cauliflowers, at the diſtance of two feet and a half aſunder in rows, and four feet from row to row, ſo that full five feet are allowed for the artichokes. In May, when the crop of radiſhes or ſpinage is off, they ſow along the middle of the ſpace between the two rows of cauliflowers, a line of cucumbers for pickling, at the diſtance of three feet; and between the cauliflowers and artichokes, they plant for winter uſe a row of cabbages, or ſavoys, which have room enough to grow after the cauliflowers and artichokes are taken off: thus the ground is fully cropped during the whole ſeaſon. A moiſt rich ſoil always yields the largeſt and beſt artichokes, but if it be very moiſt, the roots will not live through the winter: ſuch ground ſhould therefore be allotted for freſh plantations, made every ſpring, to ſupply the table in autumn, after the old ſtocks have done bearing; but for early fruit, the plants ſhould be in a drier ſituation; they ſhould be alſo in an open place, that is free from the drip of trees, for they would draw the plants up weak, and thereby render the fruit ſmall and trifling. If the artichoke ſtocks ſhoot forth but weakly in the ſpring, as they will do if they have been hurt by froſt, or too much wet, it is beſt to uncover them with a ſpade, looſening and breaking the mould around them, or rather to dig the whole ground, if it be not planted with any thing elſe, and then to earth or raiſe a ſmall hill about each ſtock, which will greatly help them: in about three weeks or a month after, the ſlips will be fit to take off.

The bottoms of artichokes are good for many culinary uſes. The way to preſerve them all the winter is to ſeparate them from the leaves or ſcales, parboil them, and hang them up in a dry place, ſtrung on packthread, with a clean piece of paper between every bottom, to prevent their touching one another; they are likewiſe ſaid to be very good pickled. The artichoke ſuckers, which grow on the ſides of the ſtalk, are alſo uſed in ſeveral intentions in cookery.

Artichokes are accounted a diuretic, and good againſt the jaundice; but they are more eſteemed as a food than a medicine.

The ingenious cultivator M. de Chateauvieux, has raiſed excellent artichokes in the open field, without dunging the ground, or even watering the plants, merely by a thorough ſtirring of the earth, according to the principles of the new huſbandry. "Artichokes, ſays that ingenious gentleman, planted at the beginning of May, produced, in September, their firſt fruit, which was, in general, from twelve to fifteen inches in circumference. Their leaves entirely covered the beds ſix feet wide."

Jeruſalem ARTICHOKE, [*Helianthus*] a ſpecies of the ſun flower, of the perennial kind, propagated in many gardens for the roots, which are eſteemed by ſome people; but they are watery and windy, which hath brought them almoſt into diſuſe.

Theſe are propagated by planting the ſmaller roots, or the larger ones cut into pieces, obſerving to preſerve a bud to each ſeparate piece, either in the ſpring or autumn, allowing them a good diſtance, for their roots will multiply greatly: the autumn following, when their ſtems decay, the roots may be taken up for uſe. Theſe plants ſhould be cultivated in ſome remote corner of the garden, for they are very unſightly while growing, and their roots are apt to over-run whatever grows near them; nor can they be eaſily deſtroyed, when they are once well fixed in a garden.

ARTICLE, a clauſe or condition of a contract, treaty, &c.

ARTICULATED *Plants*, are ſuch as are diſtinguiſhed from ſpace to ſpace, by knots or joints along their ſtems.

ARTIFICIAL GRASSES, ſuch as are introduced into the field, and cultivated afterwards; as burnet, clover, lucern, ſaintfoin, ray-graſs, ſpurry, &c. *See the method of cultivating each under its proper article.*

ARTIFICIAL PASTURES, ſuch lands as are properly cultivated and ſown with the above plants, or any other that yield a great deal of fodder for cattle.

ARVALES FRATRES, in roman antiquity, a college of twelve prieſts, inſtituted by Romulus, who himſelf made one of the body: they aſſiſted in

in the ſacrifices of the ambervalia, offered annually to Ceres and Bacchus, for the proſperity of the principal fruits of the earth, viz. thoſe of corn and wine.

ARUM, *Wake-robin, Cuckow-pint,* or *Prieſt's what d'ye call it.* Mr. Miller enumerates eighteen ſpecies of this plant, which are preſerved in the gardens of thoſe perſons who are curious in collecting exotic plants for the variety of their leaves, their flowers having but little beauty, nor do they always appear in this country. They are propagated eaſily by offſets from their roots.

Ethiopian ARUM, or *Wake-robin,* [*Calla,*] grows naturally at the Cape of Good Hope. It propagates very faſt by offſets, which ſhould be taken off the latter end of Auguſt, at which time the old leaves decay. They may be planted in the open air with other hardy exotics till the middle of autumn, when they muſt be removed into ſhelter for the winter ſeaſon. If they are planted in a warm border and a dry ſoil, they will live in the open air in mild winters; but with a little ſhelter in froſts they may be preſerved in full growth very well.

ARUM, *Common Wake-robin,* grows wild under hedges, and by the ſides of banks, in moſt parts of England. It ſends forth in March, three or four triangular leaves, which are followed by a naked ſtalk, bearing a purpliſh piſtil incloſed in a long ſheath: this is ſucceeded, in July, by a bunch of reddiſh berries. In ſome plants, the leaves are ſpotted with black, in others with white ſpots, and in others not ſpotted at all: the black ſpotted ſort is ſuppoſed to be the moſt efficacious, and hence is expreſsly directed by the college. All the parts of arum, particularly the root, have an extremely pungent, acrimonious taſte: if the root be but lightly chewed in the ſpring (at which time it is the ſtrongeſt) it continues to burn and vellicate the tongue for a conſiderable while, occaſioning at the ſame time an intenſe thirſt: theſe ſymptoms are removed by butter, milk, or oily liquors. Dried and kept for ſome time, it loſes its acrimony, and becomes an almoſt inſipid farinaceous ſubſtance. This root is an irritating, attenuating medicine. It does good ſervice in cold ſluggiſh habits: and in diſorders proceeding from thick tenacious phlegm; which it powerfully diſſolves, and at the ſame time, by ſtimulating the ſolids, promotes its expulſion either through the cuticular pores, or the groſſer emunctories. The moſt convenient method of preparing it for exhibition, ſeems to be by beating the freſh root with gummy reſins, and making it into pills; in this form it will retain its virtue longer than in that of powder. Juncker particularly obſerves of this root, that if given to the quantity of a dram along with a ſpirituous vehicle, it occaſions a plentiful ſweat, even in perſons otherwiſe little diſpoſed to this evacuation; but that if exhibited barely in the form of powder, it has not this effect. Some recommend a tincture of it drawn with wine; but neither vinous, ſpirituous, nor aqueous liquors extract its virtues; nor do they ariſe in diſtillation.

ASAFOETIDA, *Devil's Dung,* is a kind of gum, of a very offenſive ſmell, produced by a plant common in ſome parts of Perſia.

The plant which produces it is one of the pentandria digynia of Linnæus, and one of the herbæ umbelliferæ ſemine foliaceo, ſeu alia foliacea cineto of Ray. We had a multitude of various and falſe accounts of it for a long time; Garcias telling us it had leaves like the hazel; and Bontius making two plants of it, one like a willow, and the other with a root like a turnip; ſome have given it leaves like the fig-tree, ſome like thoſe of rice, and others have made it a ſhrub of the phylleræ kind. Kæmpfer is the author to whom we owe the true account of it. This is given in his Amœnitates Exoticæ, where he deſcribes it fully and accurately, under the name of umbellifera levitico affinis foliis inſtar præoniæ ramoſis, caule pleno maximo, ſemine foliaceo nudo ſolitario brancæ urſinæ ſive paſtinacæ ſimili radice aſam fœtidam fundente. The Perſians call both the plant and the juice hingeſch; and the Indians, hiing; but the more accurate in both countries call the plant hingeſch, and the juice or gum, hiing.

The root of this plant is perennial, and very large. It is covered with a thick black rind, which eaſily comes off from the reſt, when freſh. Within it is perfectly white, and full of white,

milky, and ſtinking juice, which, when collected and dried, is what the Perſians call hiing, and the Europeans aſa-fœtida. The top of this root is furniſhed with a large tuft of hairy or filamentous matter, like that on the crown of the meum or ſpignel. The leaves are very large, and like thoſe of the piony.

The ſtalk is as thick as a man's arm, and grows to eight or nine feet high. It gradually becomes taper toward the top, whence it is divided into a ſmall number of branches. The leaves ſtand alternately on theſe ſtalks, and that at no great diſtances from one another. The flowers are ſmall, and diſpoſed in umbels. The ſeeds are flattiſh and ſtriated, and of an oval figure; they have ſomewhat of the aſa-fœtida ſmell, but much leſs than might be expected. It grows in Perſia, but there only in two places, at leaſt in thoſe only in any great plenty. Theſe are the mountains about Heraat, and the province of Laar. In theſe places it [illegible] with juice, and yields the gum in great plenty; when found elſewhere, it yields very little. The leaves in theſe places are of a horrible offenſive ſmell, and no animal will touch them: but the people of the town of Diſguum affirm, that, in the country beyond them, the plant loſes much of its bad ſmell, and that the goats feed very greedily on the leaves, and grow very fat upon the diet. Some have pretended to diſtinguiſh two ſpecies of this plant, the one yielding a ſmaller quantity of juice, and that of a leſs fœtid ſmell; the other yielding more of it, and that more ſtinking: but Kæmpfer, who was upon the ſpot, declares the plants to be the ſame, and all the difference to be in the ſoil that produces them. If what the Perſians of Diſguum ſay be true, however, it very well accounts for the difference of the Cyrenaic and Perſian kinds of Silphium; for the plant in the firſt of theſe places, might be as mild as beyond Diſguum, or even more ſo.

It is very ſingular in this plant, that it ſeldom flowers, ſometimes not till its twentieth, thirtieth, or even fortieth year. During all this time the root is increaſing in ſize, and, conſequently, it ſometimes grows to an enormous bulk: roots of it have been ſeen of the thickneſs of a man's thigh, and of a yard and a half in length: thoſe of the thickneſs of one's arm are frequent. When it ſends forth a ſtalk, and has ripened its ſeed, it periſhes. The ancients made a diſtinction in their Silphium, as it was produced from the ſtalk, or from the root of the plant; but, at this time, all that we have is obtained from the root. They never make inciſions in roots of leſs than four or five years ſtanding; and they always find, that, the older and larger the root, the more plentifully the juice flows.

The gum or juice, as it flows from the root, is white, and perfectly reſembles cream, and has no viſcidity: on the contact of the air it dries and hardens, and becomes viſcous and coloured. The moſt ſtrongly ſcented aſa-fœtida is always eſteemed the beſt; and Kæmpfer obſerves, that it is much ſtronger, when freſh, than when kept and imported into Europe; and that a drachm of it has more ſcent than an hundred weight of what our druggiſts keep.

The leaves of the plant appear in autumn, and continue green the whole winter; in ſpring they wither. About the end of April, when their leaves are in their decaying ſtate, the Perſians aſcend the mountains in ſearch of the plants. They clear away the earth about the root for ſix or ſeven inches deep; they then twiſt off the leaves, and the fibrous ſubſtance at the top of the root. They next earth up the root again to its top, which is now perfectly bare; and this they cover with a bundle of weeds, to keep off the heat of the ſun, which would otherwiſe deſtroy it. They lay a ſtone over all this to keep it firm, that the wind may not blow it off; and in this condition they leave the root for a month or ſix weeks. At the end of this time, they take off the covering, clear away the earth a little from the crown of the root, and, with a ſharp knife, cut it tranſverſely off, taking off about an inch, or a little more, at the top. They then cover this wounded root with the weeds again, making them ſtand hollow from the wounded part, and thus leave them for two days; at the end of which time they return, and find the top of the root, where they had cut it off, covered with exſudated juice or aſafœtida: this they collect, and put up in proper veſſels;

veſſels; and, clearing away the earth a little lower, they cut off another ſlice from the top of the root, but this not thicker than a crown piece, and cover it up again for another gathering. As they take a large compaſs of ground for their ſearch, they are kept in conſtant employment; the roots of the firſt day's cutting being ready for their taking the gum from, by that time they have cut the more diſtant ones, which they are regularly to return to afterwards. After they have gone through this ſecond operation with all the roots, and collected the ſecond quantity of gum from them, they cover them up for eight or ten days; and after having ſpread their gum in the ſun to harden it, they carry it home. Four or five men generally go out in a company, on theſe expeditions; and it is a common thing for them to bring home 50lb. weight of it from this firſt gathering; this, however, is eſteemed but an inferior kind of aſafœtida; after the roots have remained covered for eight or ten days, they viſit them again, take off the covering of the weeds, and collect the gum. They then cut off another ſlice of the root, and after that another, and then a third; this is done at the diſtance of two days between each operation, and the earth is every time cleared away to a proper depth, and the whole proceſs managed as before.

After the third collection in this ſecond expedition, they cover up the roots again, and return home with their ſtores, leaving them covered for three days. After this, they return to their work, and cut them again three ſeveral times at the ſame diſtances of time; and, after the third collection of this laſt expedition, they leave them to periſh, for they never recover this terrible operation.

Aſafœtida is compoſed of a gummy and reſinous ſubſtance, the firſt in the largeſt quantity. Its ſmell and taſte reſide in the reſin; which is readily diſſolved and extracted by pure ſpirit, and the greater part with the gummy matter by water. It is by much the ſtrongeſt of the deobſtruent warm fœtid gums; and is given not only againſt hyſterical complaints, flatulent cholics, and obſtructions of the breaſt, but in moſt nervous diſorders, in which it frequently acts as an antiſpaſmodic, and an anodyne: in ſome caſes muſk, and in others opium, are uſefully joined with it. Hoffman recommends it as one of the moſt powerful anthelmintics hitherto known. It is moſt commodiouſly taken in the form of pills, from a few grains to a ſcruple, or half a drachm. It loſes both its ſmell and ſtrength with age; a circumſtance neceſſary to be attended to in proportioning the doſes neceſſary to be given in order to procure the intended effect.

The antients attributed to this medicine many other virtues, which are at preſent not expected from it.

Asa Dulcis. See Benzoin.

ASARABACCA, [*Aſarum*] of which there are three ſpecies, the Common, the Canada, and the Virginia; which are eaſily increaſed by parting the roots in autumn.

Common Asarabacca, [*Aſarum*] is a very low ever-green plant, growing naturally in France, Italy, and other warm countries: the dried roots have been generally brought from the Levant; thoſe of our own growth being ſuppoſed to be weaker. The roots and leaves of aſarum have a nauſeous, bitter, acrimonious, hot taſte; their ſmell is ſtrong but not very diſagreeable. Given in ſubſtance, from half a drachm to a drachm, they evacuate powerfully both upwards and downwards. It is ſaid, that tinctures made in ſpirituous menſtrua, poſſeſs both the emetic and cathartic virtues of the plant: that the extract obtained by inſpiſſating theſe tinctures, acts only by vomit, and with great mildneſs: that an infuſion in water proves cathartic, rarely emetic: that aqueous decoctions made by long boiling, and the watery extract, have no purgative or emetic quality, but prove notable diaphoretics, diuretics, and emmenagogues. The principal uſe of this plant among us is, as a ſternutatory. The root of aſarum is perhaps the ſtrongeſt of all the vegetable errhines, white hellebore itſelf not excepted. Snuffed up the noſe in the quantity of a grain or two, it occaſions a large evacuation of mucus, and raiſes a ptyaliſm. The leaves, the only part retained in our diſpenſatory, are conſiderably milder, and may be given to the quantity of three, four, or five grains. Geoffrey relates, that after giving a doſe of this errhine at night,

he has frequently obſerved the diſcharge from the noſe to continue for three days together; and that he has known a paralyſis of the mouth and tongue cured by one doſe. He recommends this medicine in ſtubborn diſorders of the head, proceeding from viſcid tenacious matter, in palſies, and in ſoporific diſtempers. The leaves are an ingredient in the pulvis ſternutatorius of the ſhops, and in the cephalic ſnuffs.

Baſtard ASARUM, [*Aſarina.*] There are two ſpecies of this plant, one grows naturally in Italy and the South of France; and the other in North-America. The ſeeds ſhould be ſown in autumn in the places where the plants are to remain.

ARTEDIA. We have no Engliſh name for this plant, of which there are two ſpecies. One of them is a native of the Eaſt, and the other grows upon the African ſhore in the Mediterranean, and likewiſe in Spain.

Both theſe plants decay as ſoon as they perfect their ſeeds, and many times before they are ripe, in England. The ſeeds ſhould be ſown in autumn in a warm border to remain, for they will not bear tranſplanting.

ASCARIDES, ſmall worms common in horſes, reſembling needles, ſome of them white, and ſome of an azure colour, with flattiſh heads. They are often called needle-worms by the farriers.

Theſe worms are very troubleſome, and hard to be rooted out, and expoſe horſes to frequent gripes, and other fretting uneaſy diſorders in their guts. They breed at all times of the year, and often when one brood is deſtroyed another ſucceeds. They are not mortal; but when a horſe is peſtered with this ſort of vermin, though he will go through his buſineſs tolerably well, and ſometimes feed heartily, yet he always looks lean and jaded; his hair ſtares as if he was ſurfeited, and nothing he eats makes him thrive; he often ſtrikes his hind feet againſt his belly, which ſhews where his grievance lies, and is ſometimes griped, but without the violent ſymptoms that attend a cholic, or ſtrangury, for he never rolls or tumbles, but only ſhews uneaſineſs, and generally lays himſelf down quietly on his belly for a little while, and then gets up and falls a feeding; but the ſureſt ſign is when he voids them with his dung.

Theſe ſmall worms ſometimes come away in great numbers with a purge, and ſome horſes get clear of them by purges only; but this does not often happen; for the horſes that breed aſcarides are, above all others, ſubject to ſlime and wormy matter. They ſeem to have their lodgment about the beginning of the ſmall guts, near the ſtomach, among the concocted aliment or chyle, both from their colour, the ſymptoms of the gripes, and the ſudden fits of ſickneſs theſe horſes are often ſeized with, which ſometimes make them abruptly leave off their food, for a few minutes, and fall greedily to it again as ſoon as the ſick fit is over. They are ſeldom ſeen, except when a horſe has had a purge given, or when he falls into a natural purging, which thoſe horſes are often ſubject to, and then they come away in very great numbers, with much ſlime and naſtineſs. They not only make a horſe grow lean, and look ſurfeited; but in opening his mouth, one may perceive a more than ordinary languid whiteneſs, and a ſickly ſmell, from the want of thoſe due ſupplies of blood and nouriſhment, which give a livelineſs to the colour that is always perceivable in ſound vigorous horſes; ſo that whatever be the primary cauſe, theſe worms ſeem, in a great meaſure, to proceed from a vitiated appetite, and a weak digeſtion, which renders them the more difficult to be removed; for which reaſon recourſe muſt be firſt had to mercurials, and after theſe, to ſuch things as are proper to ſtrengthen the ſtomach, promote digeſtion, and give a better tone to the ſolids.

To a horſe, therefore, that is troubled with theſe ſmall white, or azure coloured worms, the following method may be obſerved:

"Take of calomel two drachms; diapente half an ounce; make it into a ball, with a ſufficient quantity of conſerve of wormwood, or of rue, and give it in a morning, keeping the horſe from meat and water four hours before, and four hours after taking it."

The next morning adminiſter the following purge, taking great care to keep the horſe from wet, or from any thing that may expoſe him to catch cold.

"Take hepatic aloes, one ounce; ſalt of tartar two drachms; freſh ginger

ger grated, a drachm and a half; oil of amber a middling ſpoonful: make the whole into a ball with flour or liquorice powder."

This purge may be worked off in the ſtable with warm water, which is much the ſafeſt way when mercurials are given. The calomel ball and purge may be repeated in ſix or eight days; and again in ſix or eight days more.

When a horſe has gone through a courſe of theſe mercurial purges, let the following drink be given two or three times a week, and continued till the horſe begins to thrive and look healthful.

"Take rue, camomile flowers, and horehound, of each a handful; galangals, bruiſed in a mortar, three drachms; liquorice root, ſliced, two drachms: boil it in a quart or three pints of forge water five or ſix minutes, in a covered veſſel, and keep it covered till cold: then ſtrain it through a piece of coarſe canvas, and give it in the morning upon an empty ſtomach."

ASCENT *of Fluids*, is particularly underſtood of their riſing above their own level, which is cauſed either by attraction, preſſure, elaſticity of the air, the force of piſtons in pumps, &c. There are various experiments for proving the aſcent of fluids by attraction; thus, if a tube be filled with ſand, or ſifted aſhes, well preſſed together, and one end of it be placed in a veſſel of water, the water will be attracted by the ſand, or aſhes, and riſe to a great height above that in the veſſel. Or if any part of a piece of cap-paper, ſponge, bread, ſugar, linen, or ſeveral other ſubſtances, be wetted, the water will aſcend or deſcend, and therefore propagate itſelf to the other parts by the power of attraction. This is likewiſe the cauſe of the aſcent of ſpirit of wine, oil, melted tallow, or any other unctuous body into the wick of a candle. Nor is it unreaſonable to think, that this is alſo the cauſe of the aſcent of ſap in trees, and of the various ſecretions of fluids through the glands in animals, and of ſeveral other effects of nature.

ASH, or ASH-TREE, [*Fraxinus.*] Mr. Boutcher enumerates the following ſpecies, viz. Common aſh; Manna aſh; Virginian flowering aſh; New-England aſh, with ſharp-pointed leaves; Carolina aſh; White American aſh; Black American aſh; Red American aſh; White-flowering aſh; and the Aſh with ſtrip'd leaves.

Having gathered the keys of the common aſh, in fair weather, about the beginning of November, from handſome vigorous trees, ſpread them in an airy loft or covered place, turning them frequently till quite dry, which, in a proper ſituation, they will be in three or four weeks time; then mix them with looſe ſandy earth, and let them be protected from wet till the following ſpring, when they ought to be ſown about the beginning of April, on well-prepared freſh mellow ſoil, on beds three feet and a half broad, with alleys eighteen inches between the beds, and covered three quarters of an inch deep. Theſe ſeeds will not appear above ground till the ſucceeding ſpring, during which time it muſt notwithſtanding be kept quite clean, and as looſe and little poached as poſſible; and in February, before the ſeeds begin to ſpring, let the ſurface of the ground be gently raked over, removing all muſty and foggy particles they may have contracted during the winter, and throw a little freſh rich mould over them, to replace what you have taken away, which will much promote the future growth of the plants. In this ſeminary the trees are to remain only one year.

In October, as ſoon as their leaves are tarniſhed, remove them from this nurſery; and having pruned off, cloſe by the body, all the ſtrong and ill-placed branches, ſtill leaving a number of ſmall ones to attract and detain the ſap for the augmentation of the trunk, plant them in another quarter of any tolerable ground, in lines, three feet and a half aſunder, and fifteen or ſixteen inches in the line, where they may remain three years, obſerving to dig the ground between the lines every ſpring.

By this time the trees, in an ordinary ſoil, will be about ſeven or eight feet high, ſtrong, well-rooted, and of a proper ſize to make extenſive plantations; but where a ſucceſſion of large ones are wanted, remove them every fourth year, pruning their roots and bodies as formerly, watering them at planting, and three or four times afterwards, in dry weather, every twelve or fourteen days, giving them greater

intervals

intervals in proportion to their ſize; from which management, they may be removed at any bulk you chuſe them, without any ſenſible check.

The aſh ought neither to be planted in gardens, near other trees, nor in any other mixt plantations. There is no plant I remember, that ſo ſoon, and ſo much exhauſts the virtues of the ſoil; and the ſhade is malignant to every production of the earth, being thus a ſtep-dame to other trees: let them be planted in concert, where, notwithſtanding theſe unfriendly qualities, if properly managed, they will yield great profit to the owner in a few years.

This tree will grow in very ſteril barren ſoil, and in the bleakeſt and moſt expoſed ſituations; but in a deep mould, though of no generous quality, and where there is no ſtanding water, it will quickly arrive to a great magnitude.

Having prepared another quarter of good ground in the nurſery, in the ſame manner as for the ſeed, the following February or March, remove them; keep them as ſhort time as may be out of the ground, to prevent the ſmall fibres withering, and cut away only the downright top-roots; lay them in drills, cut down perpendicular with the ſpade, as directed for other plants; let theſe drills be eighteen or twenty inches aſunder, and plant them at the diſtance of eight or nine inches in the drill; give them a gentle watering at planting, and continue it three or four times, at proper intervals, if the weather is dry; and here, giving them proper culture, let them remain two ſeaſons.

All the other kinds are propagated by budding them on the common aſh, which being a large-growing hardy tree, will be a conſiderable improvement on the dwarfiſh and tenderer ſorts.

Mountain Ash. See Service Tree.

Ash Tree. [*Fraxinus excelſior C. B. Fraxinus vulgatior J. B.*] The bark of this tree is a moderately ſtrong aſtringent, and as ſuch has ſometimes been made uſe of: the ſeeds, which are ſomewhat acrid, have been employed as aperients. There are ſo many other medicines more agreeable, and more efficacious for theſe intentions, that all the parts of the aſh tree have long been neglected.

ASHES, the earthy particles of combuſtible ſubſtances, remaining after they have been burnt.

If the aſhes are produced from vegetable bodies, they contain a conſiderable quantity of fixed ſalt, blended with the earthy particles, and from theſe particles the alcaline ſalts, called pot-aſh, pearl-aſh, &c. are extracted.

Aſhes of all ſorts contain in them a very rich fertile ſalt, and are ſome of the beſt manure to lay upon cold lands, eſpecially if kept dry; for one load of dry aſhes will go as far as two not kept ſo. But as rain water diminiſhes their ſalts, ſo the moiſtening them with chamber-lie, or ſoap-ſuds, will add greatly to their ſtrength. That the aſhes of any ſort of vegetables are very advantageous to land, is what is experienced in moſt places in England, by the improvement that is made by burning of fern, ſtubble, ſtraw, heath, furze, ſedge, bean-ſtalks, &c.

Coal Ashes are ſingularly beneficial to ſtiff and four land, for which purpoſe they are ſucceſsfully uſed in the neighbourhood of ſome great cities, where coal is burnt for fuel. They open clayey grounds, and correct their bad qualities.

Kiln Ashes, made of ſtraw, furze, &c. are a good manure for almoſt any kind of ſoil; but they muſt not be ſpread in windy weather, becauſe they are ſo very light that they would be eaſily blown away.

Peat Ashes are likewiſe a very good manure. Mr. Ellis has rightly obſerved, that there is a conſiderable difference between the aſhes of lean peat, and thoſe produced by the fatter kind. If barley, ſays he, be ſown ſo late as the beginning of May, lean peat aſhes in particular may be applied over it, or harrowed in with the grain; but aſhes burnt from fat black peat, ſuch as is dug at Newbury, are of ſo ſulphureous a nature, that farmers are afraid to lay them on their barley; nor do they dreſs their wheat with them till the ſpring is advanced, and then they are ſown over it.

The earth of which this rich manure is made, is taken from a black mooriſh ground, with a narrow wood ſcoop, which brings it out like a long brick. Theſe pieces of ſwampy earth are laid on the ground to dry in the ſummer; after which they are ſold for fuel. But when

when they are to be uſed for manure, after being dried, they are burnt in heaps, laying on more peat upon the outſides, as the fire increaſes within, to keep it from having too much vent.

The great uſe of theſe aſhes was diſcovered about 70 years ago; but they ſoon fell into diſrepute, owing to the injudicious management of people, who imprudently laid on too great quantities of them at a time, by which means the corn was burnt. Afterwards they found that ſix, or at moſt ten buſhels, were ſufficient to be ſown over an acre of wheat, peaſe, turnips, clover, rape-ſeed, or ſainfoin, as early as could conveniently be done. But ſtill many are afraid to ſow them over barley, leſt a dry ſeaſon ſhould enſue, and burn it up: for theſe aſhes are thought to contain three times as much ſulphur as there is in coal aſhes. This is reaſonably ſuppoſed from their very ſtrong ſulphureous ſmell; their ſparkling and jumping when ſtirred while burning, and their drying up corn by their too great heat. Theſe peat aſhes, as likewiſe thoſe of wood or coal, will help to keep off the ſlug from peaſe and other grain, by the ſalt and ſulphur contained in them, and conduce very much to their preſervation in cold wet ſeaſons. But no danger of over-heating need be feared from the aſhes of that peat which grows, as turf, over ſandy bottoms, as great quantities do on Leighton-heath in Bedfordſhire; for theſe are much too lean, and the others are too rank.

The refuſe aſhes which remain after the ſalts called Pot-aſhes or Pearl-aſhes, are extracted, are alſo of great ſervice to land; but as they have been in a great meaſure deprived of their ſalts, it is neceſſary to lay them on ſomewhat thicker than other aſhes. They ſhould always be mixed with ſome other light ingredient, which may be uſed in any quantity, if laid on very ſtiff land. If the land be not over ſtiff, they may be laid upon it with leſs mixture.

Soap Ashes are a compoſition of wood aſhes and lime, remaining after the ſoap-makers have drawn off their lye.

They are an excellent manure for either arable or paſture land. They ſhould be laid on paſture ground in the beginning of winter, that the rain may more eaſily diſſolve and waſh them in.

A writer in the *Muſeum Ruſticum* declares, that he has for many years paſt received great benefit by uſing ſoap aſhes as a manure, with which he almoſt conſtantly dreſſes his wheat lands; but never uſes it alone, on account of its hot burning quality.

My method, adds he, is to make a large heap of dung and earth, that is, two loads of earth to one of dung, placed in alternate layers to rot. After this has undergone a ſtrong fermentation, I cauſe the whole heap to be turned and well mixed, leaving it ſome time longer to mellow.

I then procure the ſoap aſhes, and mix them with the compoſt, in the proportion of one load of aſhes to ten of the compoſt, leaving, for ſome time, the whole to mellow together.

When wheat ſeed-time comes, about the latter end of September, I cauſe about ten cart loads of this rich compoſt to be laid in little heaps on each acre of the land I intend to ſow with wheat: this manure is immediately ſpread, and, ſowing my wheat broad caſt, I plough it in together with the compoſt.

The advantages ariſing from this practice, on ſtiff ſoils, are many; and particularly, if the farmer is the leaſt careful in preparing his tilth, he will have a clean crop, free from ſmut or weeds; a matter of no ſmall conſequence to him.

I have tried this manure on lighter lands, and find it anſwer extremely well, provided it has lain a conſiderable time in the compoſt heap, to mellow and abate its natural heat; but it agrees beſt by far with clayey ſoils, and in ſuch is well worthy of being recommended as an excellent dreſſing for a wheat crop.

Turf Ashes, the aſhes produced by burning turf, or the parings of the ſurface of heathy and moriſh land. See the article Burn-Baking.

Theſe aſhes (in the moors of Yorkſhire, where, as the Rev. Mr. Comber informs us, they are greatly uſed, the principal firing being turf) are carried out daily, or once in two or three days, to the dung-hill; and the farmer takes the opportunity of his firſt leiſure towards the end of the year, to carry them out to his meadow land, on which he lays them thicker or thinner, as he has more or leſs land which he apprehends

hands to want them, or more or leſs of them. The firſt rains waſh them in, and the next ſummer never fails to ſhew their good effect.

In the moors of Yorkſhire, the farmer is ſo ſenſible of the efficacy of theſe aſhes, that it is become a proverb among them, "The better fire, the richer farmer." In conſequence of this principle, the farmer endeavours to procure all the aſhes he can from the cottagers who have no land. And hence a happy connection ariſes; for the poor cottager finding the article of carriage the chief part of the expence of his fuel, is wiſe enough to bargain with the farmer to bring him home ſuch a quantity of turfs in conſequence of his aſhes.

[For a very particular account of the nature of the *Salt* contained in theſe aſhes, ſee Columella's diſſertation on manures in the Farmer's Magazine.]

ASPALATH. [*Aſpalathus*] See Rose Wood.

ASPARAGUS, vulgarly called *Sparrowgraſs*. Mr. Miller gives us ten ſpecies of this plant, all of which are of foreign growth, but are preſerved in the gardens of the curious, where they add to the variety, being not difficult to manage. In winter they ſhould have a place among other exotic plants.

The garden aſparagus is propagated by ſowing of the ſeed; in the procuring of which, you ſhould be particularly careful to get it from ſome perſon of integrity; or, if you have any opportunity, ſave it yourſelf, or in ſome other neighbouring garden. In order to which a ſufficient number of the faireſt buds ſhould be marked early in the ſpring. Theſe buds will, many of them, produce great numbers of red berries; which ſhould be ſuffered to remain upon the branches until the latter end of September, when the haulm will begin to decay; then cut off the branches, and ſtrip the berries into a tub, where they may lie in an heap to ſweat for three weeks; by which means the outer huſks will be rotten: then fill the tub with water, and break all the huſks, by ſqueezing them between your hands. Theſe huſks will all ſwim upon the water, but the ſeed will ſink to the bottom; ſo that, by pouring off the water gently, the huſks will be carried along with it; and by putting freſh water two or three times, and ſtirring your ſeed about, you will make it entirely clean; then ſpread your ſeed upon a mat, and expoſe it to the ſun and air in dry weather, until it is perfectly dry; when you may put it into a bag, and hang it up in a dry place till the beginning of February; at which time you muſt prepare a bed of good, rich earth, made very level, whereon you muſt ſow your ſeed, (but not too thick, which will cauſe your plants to be ſmall) and, having trod your ſeed into the ground, rake it over ſmooth.

In the following ſummer keep it diligently cleared from weeds, which will greatly add to the ſtrength of your plants; and, towards the latter end of October, when the haulm is quite withered, you may ſpread a little rotten dung over the ſurface of the ground, about an inch thick; which will preſerve the young buds from being hurt by the froſts, &c.

The ſpring following your plants will be fit to plant out for good (for I would never chuſe plants of more than one year's growth, having very often experienced them to take much better than older, and to produce finer roots) you muſt therefore prepare your ground by trenching it well, burying therein a good quantity of rotten dung at the bottom of each trench, that it may lie at leaſt ſix inches below the ſurface of the ground: then level your whole plot very exactly, taking out all large ſtones; but this ſhould be done not long before you intend to plant your aſparagus; in which you muſt be governed according to the nature of your ſoil, or the ſeaſon; for if your ſoil is dry, and the ſeaſon forward, you may plant early in March; but, in a very wet ſoil, it is better to wait till the middle of April; which is about the ſeaſon that the plants are beginning to ſhoot. I know many people have adviſed the planting of aſparagus at Michaelmas; but this I have experienced to be very wrong; for in two different years I was obliged to tranſplant large quantities at that ſeaſon; but I had better have thrown away the plants; for upon examination, in the ſpring, I found moſt of the roots were grown mouldy, and decaying: and, I am ſure, not one in five of them ſucceeded; and thoſe which did were ſo weak, as not to be worth their ſtanding.

The ſeaſon being now come, you muſt,

muſt, with a narrow pronged dung-fork, carefully fork up your roots, ſhaking them out of the earth, and ſeparating them from each other; obſerving to lay their heads even, for the more convenient planting them; which muſt be performed in this manner: your plot of ground being levelled, you muſt begin at one ſide thereof, ranging a line very tight acroſs the piece; by which you muſt throw up a trench exactly ſtraight, and about ſix inches deep; into which you muſt lay your roots, ſpreading them with your fingers, and placing them upright againſt the back of the trench, that the buds may ſtand forward, and be about two inches below the ſurface of the ground, and at twelve inches diſtance from each other; then, with a rake, draw the earth into the trench again, laying it very level, which will preſerve the roots in their right poſition: then remove your line a foot farther back, and make another trench in like manner, laying therein your plants, as before directed, and continuing the ſame diſtance row from row; only obſerving, between every four rows, to leave the diſtance of two feet and a half, for an alley to go between the beds, to cut the aſparagus, &c.

Your plot of ground being finiſhed and levelled, you may ſow thereon a ſmall crop of onions, which will not hurt your aſparagus; and tread in your ſeeds, raking your ground level.

There are ſome perſons who plant the ſeed of aſparagus in the place where the roots are to remain; which is a good method, if it be performed with care. The way is this:—after the ground has been well trenched and dunged, they lay it level, and draw a line acroſs the ground (in the ſame manner as is practiſed for planting of the young plants) then, with a dibble, make holes at a foot diſtance; into each of which you muſt drop two ſeeds, for fear one ſhould miſcarry: theſe holes ſhould not be more than half an inch deep: cover the ſeed by ſtriking the earth in upon it; and go on, removing the like a foot back for another row; and, after four rows are finiſhed, leave a ſpace for an alley between the beds, if it is deſigned to ſtand for the natural ſeaſon of cutting; but, if it is to be taken up for hot-beds, there may be ſix rows planted in each bed; and the diſtance in the rows need not be more than nine inches. This ſhould be performed by the middle of February, becauſe the ſeeds lie long in the ground: but if onions are intended to be ſown upon the ground, that may be performed a fornight or three weeks after, provided the ground is not ſtirred ſo deep as to diſturb the aſparagus-ſeeds, in raking the onion-ſeed into the ground.

As the roots of aſparagus always ſend forth many long fibres, which run deep into the ground; ſo, when the ſeeds are ſown where they are to remain, theſe roots will not be broken or injured, as thoſe muſt be which are tranſplanted: therefore they will ſhoot deeper into the ground, and make much greater progreſs; and the fibres will puſh out on every ſide; which will cauſe the crown of the root to be in the center; whereas, in tranſplanting, the roots are made flat againſt the ſide of the trench.

When your aſparagus is come up, and the onions have raiſed their ſeed-leaves upright, (which will be in three weeks or a month after planting) you muſt, with a ſmall hoe, cut up all the weeds, and thin your crop of onions, where they may have come up in bunches; but this muſt be done carefully, and in dry weather, that the weeds may die as faſt as they are cut up, being careful not to injure the young ſhoots of aſparagus. This work muſt be repeated about three times; which, if well done, and the ſeaſon not too wet, will keep the ground clear from weeds until the onions are fit to be pulled up, which is commonly in Auguſt; and is known when their greens fall down, and begin to wither. When you have drawn off your onions, you muſt clean your ground well from weeds; which will keep it clean till you earth your bed, which muſt be in October, when the haulm begins to decay; for if you cut off the haulm, while green, the roots will ſhoot freſh again, which will greatly weaken them. This young haulm ſhould be cut off with a knife, leaving the ſtems two or three inches above ground; which will be a guide to you to diſtinguiſh the beds from the alleys; then, with an hoe, clear off the weeds into the alleys, and dig up the alleys, burying the weeds in the bottom; and throw

the earth upon the beds, ſo that the beds may be about five inches above the level of the alleys: then you may plant a row of coleworts in the middle of the alleys; but do not ſow or plant any thing upon the beds, which would greatly weaken the roots: nor would I ever adviſe the planting of beans in the alleys (as is the practice of many) for it greatly damages the two outſide rows of the aſparagus. In this manner it muſt remain till ſpring, when you muſt hoe over the beds, to deſtroy all the young weeds; then rake them ſmooth, and obſerve, all the ſucceeding ſummer, to keep them clear from weeds; and in October dig up the alleys again, as was before directed, earthing the beds, &c.

The ſecond ſpring after planting, you may begin to cut ſome of your aſparagus, though it will be much better to ſtay until the third; therefore now you muſt fork up your beds with a flat pronged fork, made on purpoſe, which is commonly called an aſparagus fork: this muſt be done before the buds ſhoot in the ſpring, and with care, leſt you fork too deep, and bruiſe the head of the root; then rake the beds over ſmooth juſt before the buds appear above ground; which will deſtroy all young weeds, and keep your beds clean much longer than if left unraked, or done ſo ſoon as forked: and, when your buds appear about four or five inches above ground, you may then cut them; but it ſhould be done ſparingly, only taking the large buds, and ſuffering the ſmall to run up to ſtrengthen the roots; for, the more you cut, the greater will be the increaſe of buds; but they will be ſmaller, and the roots ſooner decay. When you cut a bud, you muſt open the ground with your knife (which ſhould be very narrow and long in the blade, and filled with teeth like a ſaw) to ſee whether any more young buds are coming up cloſe by it, which might be either broken or bruiſed in cutting the other; then, with your knife, ſaw it off about three inches under-ground. This may appear a troubleſome affair, to people unacquainted with the practical part; but to thoſe who are employed in cutting aſparagus, will perform a great deal of this work in a ſhort time; but care in doing it is abſolutely neceſſary to be obſerved by all who cut aſparagus.

The manner of dreſſing your aſparagus-beds is every year the ſame as directed for the ſecond.

ASPARAGUS [*Sativus.*] This plant is cultivated in gardens for culinary uſe. The roots have a bitteriſh glutinous taſte, inclining to ſweetneſs; the fruit has much the ſame kind of taſte; young ſhoots are more agreeable than either. Aſparagus provokes appetite, but affords little nouriſhment; it gives a ſtrong ill ſmell to the urine a little time after taking it, and for this reaſon chiefly is ſuppoſed to be diuretic: it it likewiſe eſteemed aperient and deobſtruent; the root is one of the five called opening-roots. Some ſuppoſe the ſhoots to be moſt efficacious; others the root; and others the bark of the root. STAHL is of opinion, that none of them have any great ſhare of the virtues uſually aſcribed to them. Aſparagus appears from experience to contribute very little either to the exciting of urine when ſuppreſſed, or increaſing its diſcharge; and in caſes where aperient medicines generally do ſervice, this has little or no effect.

African ASPARAGUS, [*Medeola*] of which there are three ſpecies, which are freely propagated by offsets from their roots in July. They ſhould be planted in pots, and may remain in the open air till there is danger of froſts, when they ſhould be removed into ſhelter. If they are placed in a warm green-houſe, they will thrive and flower very well; but they ſeldom produce fruit unleſs they have ſome heat in winter; therefore where that is deſired, the plant ſhould be placed in a ſtove kept to a moderate degree of warmth.

ASPARAGUS-*fork*, a flat pronged fork, make on purpoſe to fork up the beds of aſparagus.

ASPECT, among gardeners, the ſame with expoſure. See the article EXPOSURE.

ASPEN-TREE, [*Populus*] a ſpecies of the Poplar-tree. The leaves are ſmooth on both ſides, and ſtand upon long and ſlender foot-ſtalks, ſo are ſhaken by the leaſt wind, from whence it was titled the Trembling Poplar, or Aſpen-tree.

It is cultivated in all reſpects as the Abele-tree. See ABELE-TREE.

ASPHODEL, or KING'S SPEAR, [*Aſphodelus.*] There are five ſpecies of this flower, which being pretty ornaments

ments for a garden, and requiring but little trouble to cultivate them, are the more acceptable.

They may be propagated by their ſeeds, ſown ſoon after they are ripe, on a border of freſh light earth. The plants will appear in ſpring, and may be tranſplanted by the Machaelmas following into the flower-nurſery; when the roots have acquired ſtrength enough to produce flowers the following year, they ſhould, when their leaves are decayed, be carefully taken up and tranſplanted in the flower-garden.

African ASPHODEL, or *Spiderwort*, [*Anthericum.*] Mr. Miller enumerates ten ſpecies. They are propagated by ſeeds, which ſhould be ſhown in autumn, in a bed of light ſandy earth, in a warm ſituation. In the following autumn, when their leaves decay, they ſhould be carefully taken up and tranſplanted into the flower-garden, where they will remain for years, if not killed by the froſt; to prevent which, ſome rotten tan ſhould be laid over the roots in winter, which will always ſecure them.

ASS, a creature well known in moſt parts of Europe, and proves very uſeful in many reſpects, if taken proper care of.

The horſe is trained up, great care is taken of him, he is inſtructed and exerciſed; while the poor aſs is left to the brutality of the meaneſt ſervants, and the wantonneſs of children, that ſo far from improving, he muſt be a loſer by his education: and indeed had he not a large fund of good qualities, the manner in which he is treated is ſufficient to exhauſt them. He is the ſport, the but, and the drudge of the vulgar; who, without the leaſt thought or concern, drive him along with a cudgel, beating, over-loading, and tiring him. We do not remember, that, if there were no horſes, the aſs would be conſidered, both with regard to himſelf and us, as the moſt uſeful, moſt beautiful, and moſt diſtinguiſhed of animals. Inſtead of being the firſt, he is now the ſecond; and from this accident alone, he is held in no eſtimation. It is the compariſon that degrades him: he is conſidered, not in himſelf, but relatively to a horſe. We forget that he is an aſs; that he has all the qualities of his nature, all the gifts annexed to his ſpecies; and think only on the figure and qualities of the horſe which are wanting in him, and which it would be improper for him to have,

By his natural temper he is as humble, as patient, and as quiet, as the horſe is proud, fiery, and impetuous; he bears with firmneſs, and perhaps with courage, blows and chaſtiſements. He is ſober, both with regard to the quantity and quality of his food, contenting himſelf with the moſt harſh and diſagreeable herbs, which the horſe, and other animals, will not touch. In water he is very nice, drinking only of that which is perfectly clear, and at brooks with which he is acquainted.

The aſs, though a contemptible creature, is very ſerviceable to many that are not able to buy or keep horſes; eſpecially where they live near heaths or commons, the barrenneſt of which will keep them, being contented with any traſh, dry leaves, ſtalks, thiſtles, briars, chaff, and any ſort of ſtraw is excellent food for them; they require very little looking after, and will ſuſtain labour, hunger, and thirſt, beyond moſt creatures. They are ſeldom or never ſick; and endure longer than any other creature. They may be made uſe of to plough light lands, to carry burthens, to draw in mills, for which they are very excellent, to fetch water, or any other odd things. They are very uſeful for their milk, which is an excellent reſtorative in conſumptions, and other weakneſſes: but they would be of much more advantage were they uſed, as they are in foreign countries, for the breeding of mules. See the article MULE.

Wild ASS. See ZEBRA.

ASSART, in law, an offence committed in a foreſt, by pulling up trees by the roots. This is a greater treſpaſs than waſte. A perſon however may ſue out a licence to aſſart ground in a foreſt; that is, to clear it and make it arable; and from thence lands are called aſſarted; and formerly aſſart rents were paid to the crown for ſuch lands.

ASSAYING, of weights and meaſures; the examining the common weights and meaſures by the clerk of the market.

ASSIGN, a perſon to whom a thing is aſſigned, or made over.

ASSIGNEE, a perſon appointed by

another to do an act, tranſact ſome buſineſs, or enjoy a particular commodity.

ASSIGNMENT; the transferring the intereſt one has in a leaſe, or other thing, to another perſon; and this may be of lands in fee for life or years, of annuity, rentcharge, &c.

ASSIMILATION, that motion by which bodies convert other bodies related to them, or at leaſt ſuch as are prepared to be converted, into their own ſubſtance and nature. Thus all the parts, as well ſimilar as organical, in vegetables and animals, firſt attract with ſome election or choice, nearly the ſame common, or not very different juices for aliment, and afterwards aſſimilate, or convert them into their own nature.

ASTER, *Starwort*. Mr. Miller reckons thirty ſpecies of this flower; the greater part of which are propagated by parting the roots as ſoon as they have done flowering. Theſe roots ſhould not be removed oftener than every third year, where they are expected to produce many flowers.

The China Aſters are propagated by ſowing the ſeed in the ſpring upon a gentle hot-bed juſt to bring up the plants, for they ſhould be inured to the open air as ſoon as poſſible, to prevent their being drawn up weak. From the hot-bed they ſhould be removed to a bed of rich earth for a month or five weeks, and then into the flower-garden.

The ſeeds ripen the beginning of October, which ſhould be gathered when it is perfectly dry; and in order to preſerve the kinds with double flowers, there ſhould be great care taken to ſave thoſe which grow upon the ſide branches, which are commonly fuller of leaves than the flowers on the main ſtem.

ASTEROIDES, *Baſtard Starwort*, commonly called *Yellow Starwort*. See ELECAMPANE.

ATMOSPHERE, the vaſt body or collection of air which ſurrounds the earth to a very conſiderable height, and is admirably fitted for the reſpiration and nouriſhment of aninals, the growth of vegetables, &c.

Clouds, which are precipitated in drops of rain, for the ſervice of mankind, do not conſiſt wholly of watery particles; for beſides aqueous vapours, and what theſe contain, there are raiſed from the ſurface of the earth into the air, ſulphureous and ſaline particles, which are alſo carried up into the clouds, and mixed with the aqueous vapours. Here we have a mixture of all ſuch ſubſtances, as it were, in their extremely ſmall parts, floating in the air together, and the effects of theſe ſulphureous and ſaline particles thus mingled with aqueous vapours, are ſometimes very ſenſible, eſpecially in thunder and lightening; when the ſulphureous and nitrous particles taking fire, by the motion ariſing from heat, break out with the violence of flaſhes and noiſe, very much reſembling the effects of gun-powder.

Since it is plain, that there is a vaſt quantity of nitrous, ſulphureous, and bituminous matter all over the ſurface of the earth, and that plants and animals abound with volatile ſalts, we need not wonder that the heat of the ſun fills the air with ſuch fine particles, and all ſorts of unctuous exhalations, by firſt expanding them, after which they riſe till they meet with air and other mixtures of the ſame ſpecific gravity. What are uſually called *ignes fatui*, ſeem to conſiſt of a more unctuous ſubſtance than other exhalations, for we find their oily particles are eaſily fixed, but not ſo ſoon ſpent as thoſe of ſulphur and nitre. Shooting ſtars are improperly ſo called, becauſe they are nothing more than exhalations kindled in the air.

Thus we plainly ſee how full the atmoſphere is of theſe rich ingredients for the buſineſs of vegetation; and becauſe they are of ſuch vaſt conſequence to the growth of plants, we will enumerate the ſources of them upon the frame of the globe; from whence the ſun and wind borrow them, in order to diſperſe them properly in the air, that they may intimately mix, and deſcend with the rain drops, and ſo being conveyed to the mouths of the fibres tubes of plants.

Salts are of various kinds, but all have a ſharp pungent taſte, though not all alike; and of theſe ſome are dug out of the earth like ſtone out of a quarry; others are made by art, by letting the ſea-water into ſhallow pits on the ſhore, and continue there till the aqueous particles are exhaled by the ſun and wind, and then the ſalt remains

remains at the bottom. The ſalt is in its nature the ſame in both caſes; for the ſaline particles are not made by art in the combination of ingredients to imitate it; they are only ſeparated from the watery particles wherein they floated. The qualities of this excellent ingredient in vegetation are, that it eaſily diſſolves, and melts readily in the open air, if it be refined from all heterogeneous matter; when the water wherewith it is entangled is any ways drawn off, there remains a groſs ſediment, but the finer parts are carried away with it; this ſediment the fire cannot melt, but reduces it to a calx.

This facility of the finer parts ſwimming, as they are ſpecifically lighter than water, contributes to the benefit of plants; or rather theſe fine ſaline particles are of the ſame ſpecific gravity with the water; that they may intimately mix with it, and be carried in thoſe vapours through all the neceſſary ſtages, till they return to the earth again. This quality of melting and diſſolving in water and air, ſets the finer parts at liberty, and prepares them to take wing with the common exhalations. And yet the ſediment, or groſſer parts, left behind, have their excellent uſes in helping the embrios of plants to ſend out their fibrous tubes, in ſearch after more refined particles, which either adhere to the ſuperficies of the particles of earth, or are contained in their internal pores.

Nitre, of which there are ſeveral ſorts, natural and artificial, the former refining itſelf, and the latter refined by art, is a kind of ſalt which eaſily takes fire, but like ſea-ſalt is eaſily reduced to a calx. The vapours, or particles of nitre, when they deſcend for the uſe of plants, are found to contain abundance of ſpirits; for the nitre, as a ſalt, is impregnated with them, which render it volatile, and the fluid, or ſpirit, extracted from it, is very ſharp and corroſive. The calx to which nitre is reducible, as well as the calx of common ſalt, has its excellent uſe in vegetation; and when it is reduced by fire to this ſtate, it then takes the name of fixed ſalt.

Sulphur, is a liquid clammy ſubſtance, whoſe parts are ſoon ſeparated, and riſe up into the air with other vapours, and ſoon occaſions violent motions in the atmoſphere, and becomes entombed in the aqueous particles, and is with the rain brought down to the plants.

Bitumen is pretty much of the ſame nature with ſulphur, and with it is in great plenty in moſt bodies, but in the moſt remarkable manner, and in the greateſt quantities, in pit-coal.

Naptha is a kind of bitumen, and the only difference is, that it takes fire ſooner than bitumen is obſerved to do, and is not ſo eaſily quenched; and this facility of admitting the heating particles, which throw theſe inflammatory bodies into a ſpeedy motion internally, is of great uſe in the different degrees of the plant's growth.

Maltha ſeems to be a ſpecies of naptha; its properties, as they appear to common obſervations, are, that if it touches, it ſticks ſo faſt to it, as not eaſily to be ſeparated; and water thrown on it in moderate quantities, does but the more inflame it, and earth alone is able to quench it. This valuable ingredient, when it deſcends in the drops of rain, adheres very intimately to the internal parts of the ſoil, both in the ſuperficies and the concave parts of the pores; and other deſcents of rain increaſe the motion of the internal parts of the particles of maltha, and thereby promote a fine dilatation in the tubular interſtices of the fibres of plants, and duly contribute to the acceleration of that motion in them, which is neceſſary to the different ſtages of their growth and nouriſhment. Before the fine parts of the maltha are in readineſs, or duly prepared by moiſture, and their well regulated fermentation, and while it is waiting for the deſcent of more rain, it is diveſted of all internal motion, and confined as a priſoner, till the other requiſites to the plant's welfare are properly aſſembled, and ready to perform their offices.

Theſe are the chief materials which give motion to plants, and of which the latter are found to conſiſt, when they are analized, unfolded, or ſeparated into their competent parts by chemiſtry. The profeſſors of that art call the volatile ſpirits, ſulphur, and ſaline particles, the active principles; becauſe theſe, when duly prepared, and exactly applied to the mouth of the fibres, become the ſole agents, and

by

by their continual motion, cauſe the whole action of the plant.

The vapours thus raiſed from the ſurface of the earth, become the original matter of all meteors, or heterogeneous ſubſtances, fit for the production of the vegetable world; and conſequently an inſtrument in the wiſe appointment of Divine Providence, for the preſervation of man, and all ſubordinate animals. When theſe heterogeneous vapours are thus lifted up above the earth, one degree of cold condenſes them into larger globules, which then becoming ſpecificially heavier than the atmoſphere, fall in drops of rain, and bring down all thoſe treaſures entombed in them. A greater degree of cold produces a coagulation of the heterogeneous vapours, which ſhoot like ſalts in various forms, united into certain angles, and make the flakes of ſnow, which ſtill contain the nutritive principles.

A third, or ſtill greater degree of cold, combines the vapours into a harder ſubſtance, wherein the valuable ingredients are entombed, and they deſcend in what we call hail; but if the cold condenſes the vapours before they riſe high above the ſurface of the earth, they will be unable to aſcend, but will hover about, and fill the lower part of the atmoſphere with what is uſually called a fog, or miſt; if the cold be ſtill more intenſe, the miſt is frozen to every twig and blade of graſs in form of a white incruſtation, which is called rime. When the air in the daytime is warm, and the vapours buoyed up in it are too fine to be then viſible, they will be condenſed by the coolneſs of the evening, and deſcend on the vegetables in the form of dew: and if the evening of ſuch a fine day be cold enough to freeze, then inſtead of a dew, the ſurface of the ground will be covered with what is commonly called a white froſt. Theſe are the various ways appointed to bring down again upon the earth the treaſures that were taken from it, in order to be prepared and properly ſpread over the globe, by methods and contrivances equally beautiful and ſurprizing.

But among the riches of the atmoſphere for the production of vegetables, we muſt not forget the conſequences which the air itſelf is of to them, as we have already obſerved under the article of AIR.

ATTAINT, among farriers, a hurt in a horſe's leg, proceeding either from a blow with another horſe's foot, or from an over-reach by an horſe's ſtriking the caulk of his hind ſhoe againſt his fore leg

ATTORNMENT, is the tenant's acknowledgement of a new lord, by becoming his tenant.

AVENGAE, [from *avena*,] ſignifies a certain quantity of oats paid to a landlord in lieu of ſome other duties, or as a rent from the tenant.

AVENUE, a walk planted on each ſide with trees, leading to an houſe, wood, &c.

The old method of planting avenues was with regular rows of trees, and this has been always obſerved till of late; but we have now introduced a much more magnificent way of planting avenues: this is by ſetting the trees in clumps or platoons, making the opening much wider than before, and placing the clumps of trees about three hundred feet diſtant from one another. In each of thoſe clumps there ſhould be planted either ſeven or nine trees; but it is to be obſerved, that this is only to be practiſed where the avenue is to be of ſome conſiderable length; for, in ſhort walks, this will not appear ſo ſightly as ſingle rows of trees. The avenues made by clumps are fitteſt of all for parks. The trees in each clump ſhould be planted thirty feet aſunder, and a trench ſhould be thrown up round the whole clump, to prevent the deer from coming to the trees to bark them.

AVENS. See HERB BENNET.

AVER, a general name for a labouring beaſt of any kind.

AVERAGE, a term uſed by the Farmers in ſome part of England for the ſtubble of corn fields after harveſt; when this is common to the tenants the land is called average-land: average likewiſe ſignifies an antient ſervice which the tenant owed to his lord by horſe or carriage.

AVER-CORN, a name formerly given to the corn conveyed to the lord's granaries by the tenants.

AVER-LAND, the land ploughed by the tenants for the uſe of their lord.

AUGUST, is the eighth month of the civil year, and contains 31 days.

We ſhall obſerve the ſame method in giving the gardener's kalendar for this month as we adopted for April.

Pro-

Products of the Kitchen-garden.

Cabbages, kidney-beans, ſeveral kinds of peas, artichokes, garden-beans, carrots, cabbage lettuces of ſeveral ſorts, finnochia, celery, turneps, cucumbers, melons, onions, purſlane, all ſorts of young ſallet herbs, ſome late cauliflowers, endive, ſorrel, baum, burnet, marigolds, beet, ſpinach, potatoes, muſhroons, tomatos, baſil, thyme, ſavory, marjoram, clary, mint, ſage, roſemary, lavender, hyſſop, capſicums for pickling, cucumbers for pickling, large-rooted parſley, fennel, dill, ſprouts from cabbage-ſtalks, card beet, cicers, radiſhes, ſcorzonera, horſe radiſh, naſturtium indicum, the flowers for ſallets and the ſeeds for pickling, pumkins, gourds, parſneps, and ſome other ſorts.

Fruits in prime.

Apples; the ſummer white couſtin, margaret apple, codlin, ſummer pearmain, ſummer pipin, and ſome others.

Pears; the Jargonelle, Windſor, cuiſſe madame, orange muſk, groſs blanquette, muſk blanquette, long-ſtalked blanquette, poir ſans pea, muſcat rabine, amber pear, green orange, caſſolette, magdalen pear, groſs oignonet, poir roſe, ſummer boncretion, cailot roſat, petit ruſſelet, with ſome others of leſs note.

Peaches; red and white magdalen, early Newington, the mignonne or minion, Italian peach, nobleſt, bellows or belliſs, violette hative, la chevreuſe or belle chevreuſe, early admirable, albemarle, nivette peach, montaubon, royal George, purple alberege, chancellor, bourdine, with ſome others.

Nectarines; Roman red, elruge, newington, brugnon, Italian and murray.

Plums; Orleans, white perdrigon, violet perdrigon, red imperial, white imperial or bonum magnum, le royale, cheſtun plum, drap d'or, St. Katharine, roch courbon, reine claude, commonly called in England green gage, la mirabelle, apricot plum, prune monſieur, maitre claude, royale dauphin, with ſome others.

Grapes; the July, white ſweet-water, black cluſter, munier, chaſſelas, white muſcadine, white frankindal, black ſweet-water, and orleans.

Figs; the early white, long blue, long white, black iſchia, brown or chefnut iſchia, large yellow iſchia, green with white fleſh, green with purple fleſh, and green with red fleſh, Brunſwick, Malta, black Naples, and cyprus fig.

Filberts, nuts, mulberries, alpine, ſtrawberry, gooſeberries, currants, black cherry, Hertfordſhire cherry, amber, and Morello cherries; melons, and in the ſtove the anana or pine apple, and the muſa.

Plants now in flower in the Pleaſure Garden.

Some carnations, painted lady pink, oldman's-head pink, female balſamine, marvel of Peru, amaranthuſes, gomphrenas, ſeveral ſorts of ſtarwort, golden rods of ſeveral kinds, ſcarlet and blue cardinal's flowers, campanula of ſeveral ſorts, hollyhocks, colchicum of chio, autumnal cyclamens, greater convolvulus of ſeveral ſorts, flos adonis, Venus looking-glaſs, Venus navelwort, Africans, and French marygold, ſweet ſultans, Indian ſcabious, nigellas, candy tuft, apocynums, ſweet pea, tangier pea, everlaſting peas, ſunflowers of many kinds, lavateras, mallows of ſeveral ſorts, linarias, centaurias, ketmia, veſicaria of four kinds, ſtramoniums, tuberoſes, ſclareas, geraniums, lychniſes, annual ſtocks, blattaria lutea, double ptarmica, xeranthemums, two or three ſorts of marygolds from the Cape of Good Hope, onagras, lyſimachias, veronicas, autumnal hyacinth, globe-thiſtles, dwarf annual ſtock, naſturtium indicum, fairchild's mule, Virginian ſpiderwort, catanance quorundam, catanance flore luteo, clicryſum Americanum, ſtœchas citrina, double feverfew, coronilla herbacea, chryſanthemums, eryngiums, glauciums, aſclepias or ſwallowwort with white, yellow, and black flowers, periplocas, capnoides, or evergreen fumitory, aconitum lycoctonum luteum, aconitum ſalutiferum, Napellus cœruleus, alceas, helianthemums, double ſopewort, argemonne Mexicana, antirrhinums, lupines of ſeveral ſorts, lavendula folio diſſecto, iris uvaria, cerinthe with purple and yellow flowers, Perſicaria orientalis, phyſalis of ſeveral ſorts, limoniums, dracocephalum, molucca lævis & ſpinoſa, ſolanums of various kinds, melongena, hedyſarums, phalangiums, oriental buglos, alyſſums, ambroſia of three ſorts, baſil, capſicum, palma Chriſti, tobacco, clinopodium Virginianum,

hianum, commelina, China ſtarwort with ſingle, and double red, blue, and white flowers, monarda of three ſorts, trachelium umbelliferum, convolvulus minor with white, blue, and ſtriped flowers, hawk-weeds of divers ſorts, purple ſenecio, ſeveral ſorts of ononis, ſome ſorts of aſtragalus, Canary lavender, ſeveral ſorts of vervain, echiums, globularia, collinſonia, poliums, ſpigelia, lychnideas, perennial blue lupine, eupatoriums, dianthera, rudbeckia of ſeveral ſorts, ruyſchiana, acanthus, cirſiums, greater centuary, carthamus, glycine, perennial fumitories of ſeveral ſorts, gnaphaliums, lunarias, chryſocoma, three or four ſorts of bupthalmum, zinnia, gaura, orobus tragopogon of two or three ſorts, ſcorzonera, biſſerula, clitoria, hibiſcus of ſeveral ſorts, hæmanthus, with ſome others.

Hardy trees and ſhrubs now in flower.

Common white jeſſamine, paſſion flower, periploca, ſcorpion ſenna, ſhrubby althæa of ſeveral ſorts, agnus caſtus, honeyſuckles, mallaw-tree, ſhrubby Canary hypericum, ſtinking ſhrubby hypericum, lauruſtinus, double virgin's bower, bignonia or trumpet-flower, angelica-tree, magnolia or laurel-leaved tulip tree, traveller's-joy, muſk roſe, bladder ſenna of three ſorts, Spaniſh broom, ciſtuſes of ſeveral kinds, phlomiſes, celaſtrus, ſumach of ſeveral ſorts, double and ſingle pomegranate, cytiſuſes of three or four ſorts, catalpa, clethra, itea, diervilla, hydrangea, lotus of two or three ſorts, ſpireas, prinos, ſeveral ſorts of dyers-broom, tamariſk, medicago frutеſcens, periclymenum Virginianum, azalea, kalmia, rhododendron, andromeda, azederach, kidney-bean-tree, caſhioberry-buſh, thymelea, toxicodendron, ſpartiums, geniſtas, with ſome others.

Medical plants which may now be gathered for uſe.

Bear's-breech, vervain mallow, garlick, dill, nightſhade, biſhopſweed-ſeed, love-apple, vervain, gooſeberry, arum or cuckow-pentle-roots, Italian ſtarwort, yellow ſtarwort, golden rod, baſil, ſummer ſavory, briony-berries, navew-roots, honey-ſuckle, capſicum or Indian pepper, ſafflower, knotgraſs, nettle-ſeed, onion-ſeed, fleawort, cornelian cherry, coriander-ſeed, carrot ſeed, endive, arſeſmart, jaſmine-flowers, glaſſwort, lupine, marjoram, tobacco, poppyheads, ſtœchas or French lavendar, thorn-apple.

Plants in flower in the Green-houſe and Stove.

Geraniums of ſeveral kinds, meſembrianthemi of various kinds, ſtepalia of two ſorts, ſeveral ſorts of aloes, ſedums, cotyledons, myrtles, oranges, ciſtuſes, colutea, æthiopica, ſeveral ſorts of paſſion-flower, ſenſitive-plant, humble-plant, Indian figs, orleanders, alceas, ketmias of ſeveral ſorts, hæmantkuſes, cardinal-flower, Egyptian ſea lavender, leonurus minor, arctotuſes, St. John's-wort of Minorca, iattropha of ſeveral ſorts, quamoclit, Spaniſh jaſmine, Arabian jaſmine, azorian jaſmine, Indian yellow jaſmine, laurel-leaved jaſmine, apocinums, acacias, ſena Alexandria, caſſias of ſeveral ſorts, hedyſarums, elichryſums, Indian naſturtiums with a double flower, ragwort, dorias, ſenecio folio retuſo, canna Indica, ſabagos, trachelium umbellatum azurium, limonium aſplenii folio, limonio ficulum gallas ferens, turnera, convolvuluſes of ſeveral ſorts, plumeria, phytolaca, piercea, poliums, ſolanums, lotus argentea cretica, martynia, Indian arrow-root, ceſtrums, baſella, cotton-plant, indico plant, guava, coſtus arabicus, eupatoriums, buphthalmums, carica papaya, conyzas, cereuſes, euphorbii, melon thiſtles, dioſma of three ſorts, blue flowering ſage from the Cape, crinum, pancratiums, limodorum, kempfera, clitoria, ſpigelia, paſſerina, royenia, arum ſcandens, waltheria, polyanthes, ſida, caper, chironia, China chaſte-tree with cut leaves, ſeveral ſorts of ricinus, crotolarias, ononiſes, malphighia, cacalia of two or three ſorts, grewia, vulkhameria, black flowering lotus, milleria two ſorts, guanabanus or four ſop, cornutia, tournefortia, ſhrubby polygala, hermannias, ſaururus, plumbago, wackendorfia, ambroſia from Peru, d'ayena, ſhrubby heliotropium of Peru, blue branching ſtarwort from Africa, erhetia, robinia, trandeſcantia, commelina, wormwood-tree, Canary convolvulus, ſhrubby convolvulus, bignonias, lantana of ſeveral ſorts, ſorrel-tree, toxicodendron, craſſulus, cyanella, with ſome others.

AVIARY, a plant ſet a part to feed and propagate birds. An Aviary ſhould be

be large enough to allow the birds a conſiderable freedom of flight, and turfed, to avoid the appearance of foulneſs on the floor.

AVIGNON *Berries*, commonly called French berries, or yellow berries, the fruit of the evergreen privet. See EVERGREEN PRIVET.

AULM, an old word for Elm.

AUMBRY. See AMBRY.

AUNCEL *Weight*, that is, *Hand-ſale weight*, an ancient kind of ballance, now out of uſe, being prohibited by ſeveral ſtatutes, on account of the many deceits practiſed by it. The perſon who weighed the goods lifted the beam with his finger or his hand, and conſequently had it often in his power to make either ſcale preponderate,

AVOCADO, or *AvogatoPear*, [*Perſea*] This is a native of the Weſt-India Iſlands, and is ſo called from its fruit, which in form and thickneſs reſembles a pear.

The pulpy or fleſhy part of the fruit is of a pale green, with little or no conſiſtence when ripe, and melts in the mouth like marrow, which it greatly reſembles in taſte.—The ſkin is ſmooth and thin, but of a ſtrong tough ſubſtance, and of a beautiful green colour, which does not become yellow till the fruit is perfectly ripe.—The fruit, by reaſon of its ſoftneſs, may be eaten out of the ſurrounding ſkin with a tea-ſpoon, like jelly and marmalade. It is frequently ſerved up in the Weſt-Indies, on a plate, with ſugar, roſe-water, and orange-flowers; moſt commonly, however, it is mixed with ſugar, and the juice of limes, which render it extremely palatable.

The unripe fruit too is frequently plucked and eaten in thin ſlices, with pepper and ſalt. In this ſtage, the taſte of the avogato greatly reſembles that of artichokes. Every preparation of this fruit is eſteemed highly nouriſhing; as it warms, exhilarates, and fortifies the ſtomach.—It is particularly recommended in dyſenteries.

In the middle of the pulpy part of the fruit lies the nut or ſeed, which is very large, almoſt round, of a pale ruſſet colour, a little wrinkled, contains no kernel within it, and whoſe degree of hardneſs does not exceed that of a cheſnut diveſted of its ſkin. This nut, about an hour after it is ſeparated from the fruit, ſplits of itſelf into two or three pieces. If committed to the ground in this ſtate, no vegetation enſues, becauſe the embryo of the ſeed is broken; ſo that ſuch as would propagate theſe plants from ſeed, muſt ſow the nuts the moment they are taken out of the pulp; in which caſe they will begin to germinate in eight or ten days after.

The bark and wood of this tree, which riſes to a conſiderable height, are of a greyiſh colour. The leaves are long, pointed, of a ſubſtance like leather, and of a beautiful green colour. The flowers are produced in large knots or cluſters, at the extremities of the branches, and conſiſt each of ſix petals diſpoſed in the form of a ſtar, and of a dirty white, or yellow colour, with an agreeable odour, which diffuſes itſelf to a conſiderable diſtance. The tree begins to bear fruit two years and a half, or at moſt three years after being planted; and, like moſt of the trees in warm climates, bears twice a year.

The buds of the avocado pear-tree are ſaid to be uſed with ſucceſs in ptiſans againſt the venereal diſeaſe. An infuſion of them in water, drank in the morning faſting, is ſtrongly recommended for diſlodging coagulated blood in the ſtomach, produced by a fall, or a ſevere ſtroke on that important entrail. "The wild boars in the Eaſt-Indies," ſays Labat, "eat greedily of the mammees and avocado pears, which give their fleſh a luſcious and moſt agreeable ſavour."

In Europe this plant is preſerved as a curioſity, by thoſe perſons who delight in collecting exotic plants; and though there is little hope of its producing fruit, yet for the beauty of its ſhining green leaves, which continue through the winter, it deſerves a place in every curious collection of plants.

It is propagated by ſeeds, which ſhould be obtained as freſh as poſſible, from the countries of its growth; and if they are brought over in ſand, they will be more likely to grow, than ſuch as are brought over dry. Theſe nuts or ſeeds ſhould be planted in pots filled with light earth, and plunged into a hot-bed of tanners bark. In about five or ſix weeks the plants will come up, when they muſt, while young, be treated very tenderly; but when they have grown about four inches high, they ſhould be carefully tranſplanted; and if there are two or more plants in one

pot, they must be parted, being careful to preserve a ball of earth to the root of each, and planted into separate small pots, then plunged into a hot-bed of tanners bark, observing to shade them until they have taken new root; after which time they should have fresh air admitted to them in proportion to the warmth of the season. Towards Michaelmas the plants must be removed into the stove, and plunged into the bark-bed, where, during the winter season, they should be kept warm, and must be gently watered twice a week. In the spring the plants should be shifted into pots a size larger than the former, and the bark-bed should be then renewed with fresh tan, which will set the plants in a growing state early, whereby they will make a fine progress the following summer. These plants should be kept in the stove, for they are too tender to bear the open air in this country, except in the warmest part of summer.

AVOIRDUPOIS, a weight of sixteen ounces in the pound, by which all things that have a refuse, or waste, are commonly weighed.

AURICULA, or *Bear's Ear*, vulgarly called *Riccolus*, [*Auricula Ursi*]. To enumerate the varieties of this plant, would be almost endless and impossible, for every year produces vast quantities of new flowers, differing in shape, size, or colour of the flowers; and also in the leaves of these plants there is so great a variety, that the skilful florist is often capable of distinguishing the particular varieties thereby.

But as it seldom happens, that such of these flowers as are at one time in great esteem, continue to be regarded a few years after, (there being still finer or larger flowers produced from seeds, which are what the florists chiefly seek after), it would be needless to mention any of them; wherefore I shall proceed to give the characters of a good auricula.

1. The stem of the flower should be lofty and strong.

2. The foot-stalks of the single flower should be short, that the umbel may be regular and close.

3. The pipe or neck of each flower should be short, and the flowers large, and regularly spread, being no ways inclinable to cup.

4. That the colours are very bright, and well mixed.

5. That the eye of the flower be large, round, and of a good white or yellow, and that the tube or neck be not too wide.

All the flowers of this kind, that want any of the above-mentioned properties, are now rejected by every good florist; for as the varieties every year increase from seeds, so the bad ones are turned out to make room for their betters; but in some people the passion for new flowers so much prevails, that, supposing the old flower greatly preferable to a new one, if it is of their own raising, the latter must take place of the old one.

In order to obtain good flowers from seeds, you must make choice of the best flowers you have, which should be exposed to the open air, that they may have the benefit of showers, without which they seldom produce good seeds: the time of their ripening is in June or July, which you will easily know, by their seed-vessel turning to a brown colour, and opening; you must therefore be careful lest the seeds be scattered out of the vessel, for it will not be all fit to gather at the same time.

The time for sowing this seed is commonly in August, but if it be sown before Christmas it will be time enough.

The best soil for this seed is good, fresh, light, sandy mould, mixed with very rotten neats dung, or very rotten dung from the bottom of an old hot-bed: with this you should fill your pots or boxes, in which you intend to sow your seeds; and having levelled the surface of the earth very smooth, sow your seeds thereon, covering it very lightly with rotten willow mould taken out of the stems of decayed hollow willow-trees: then cover the box, &c. with a net or wire, to prevent the cats, fowls, &c. from scratching out, or burying your seeds too deep; for whenever this happens, the seeds will remain a year in the ground before the plants appear, if it should grow at last; therefore many persons never cover these seeds, but sow them upon the surface of the earth, in the boxes uncovered with earth, for the rain to wash them into the ground, which is often the best method: let these boxes, &c. be placed so as to receive only the morning sun, during the winter season; but in the beginning of March remove them where they may scarce have any

sun,

ſun, for your young plants will now ſoon begin to appear, which, if expoſed to one whole day's ſun only, will be all deſtroyed.

During the ſummer ſeaſon, in dry weather, often refreſh them with water, but never give them too great quantities at once. In the July following, your plants will be large enough to tranſplant, at which time you muſt prepare a bed or boxes, filled with the above-mentioned ſoil, in which you may plant them about three inches ſquare, and (if in beds) you muſt ſhade them every day, till they are thoroughly rooted, as alſo in very hot dry weather; but if they are in baſkets, or boxes, they may be removed to a ſhady place.

When the ſeedling auriculas are planted in beds, there ſhould be ſome rotten neats dung laid about ten inches under the ſurface, and beaten down cloſe and ſmooth: this will prevent the worms from drawing the young plants out of the earth, which they generally do where this is not practiſed. This dung ſhould be laid about a foot thick, which will entirely prevent the worms getting through it until the plants are well eſtabliſhed in the beds; and the roots of the auriculas will ſtrike down into the dung by the ſpring, which will make their flowers ſtronger than uſual: theſe beds ſhould be expoſed to the eaſt, & ſcreened from the ſouth ſun.

When you have taken all your plants which are come up out of the boxes or pots, level the earth gently again; for it often happens, that ſome of the ſeeds will lie in the ground two years before they appear, eſpecially if they were covered too deep when ſown, as was before obſerved.

The ſpring following many of the firſt plants will ſhew their flowers, when you may ſelect ſuch of them as have good properties, to be removed into pots of the ſame prepared earth, and preſerved until the next ſeaſon, at which time you will be capable to form a judgment of the goodneſs of the flower; but thoſe that produce plain coloured or ſmall flowers ſhould be taken out, and planted in borders in the out-parts of the garden, to make a ſhew, or gather for noſe gays, &c. the others, which do not produce their flowers the ſame year, may be taken up, and tranſplanted into a freſh bed to remain till you ſee how they will prove.

The manner of propagating theſe flowers when obtained, is from offſets or ſlips, taken from the old roots in April, when the flowers are in bloom: theſe offſets muſt be planted into ſmall pots filled with the ſame ſort of earth, as was before directed for the ſeedlings; and, during the ſummer ſeaſon, ſhould be ſet in a ſhady place, and muſt be often (but very gently) refreſhed with water, but in the autumn and winter ſhould be ſheltered from violent rains. The ſpring following theſe young plants will produce flowers, though but weak; ſoon after they are paſt flowering, you muſt put them into larger pots, and the ſecond year they will blow in perfection.

But, in order to obtain a fine bloom of theſe flowers, you muſt obſerve the following directions:

Firſt, Preſerve your plants from too much wet in winter, which often rots and ſpoils them, but let them have as much free open air as poſſible; nor ſhould they be too much expoſed to the ſun, which is apt to forward the budding for flower too ſoon: and the froſty mornings, which often happen in March, thereby deſtroy their buds, if they are not protected therefrom. To prevent which, thoſe who are very curious in theſe flowers, place their pots in the autumn under a common hot-bed frame, where in good weather, the plants may enjoy the full air, by drawing off the glaſſes; and in great rain, ſnow, or froſt, the plants may be ſcreened by covering them. When this method is practiſed with judgment, the flowers will be much ſtronger, and the plants will increaſe faſter than when they are expoſed abroad.

Secondly, In the beginning of February, if the weather is mild, you muſt take off the upper part of the earth in the auricula pots, as low as you can without diſturbing their roots, and fill up the pots with freſh rich earth, which will greatly ſtrengthen them for bloom; as alſo prepare your offſets for tranſplanting in April, by cauſing them to puſh out new roots.

Thoſe plants which have ſtrong ſingle heads, always produce the largeſt cluſter of flowers; therefore curious floriſts pull off the offſets as ſoon as it can be done with ſafety to their

growing, to encourage the mother plants to flower the ſtronger; they alſo pinch off the flowers in the autumn, where they are produced, and ſuffer them not to open, that the plants ſhould not be weakened thereby.

Thirdly, You muſt cover your pots with mats in froſty weather, during this time of their budding for flower, leſt the ſharp mornings blight them and prevent their blowing.

Fourthly, When your flower-ſtems begin to advance, and the bloſſom-buds grow turgid, you muſt protect them from haſty rains, which would waſh off their white mealy farina, and greatly deface the beauty of their flowers; but at the ſame time obſerve to keep them as much uncovered as poſſible, otherwiſe their ſtems will be drawn up too weak to ſupport their flowers (which is often the caſe when the pots are placed under walls), and give them gentle waterings, to ſtrengthen them; but let none of the water fall into the center of the plant, or among the leaves.

Fifthly, When your flowers begin to open, you ſhould remove their pots upon a ſtage (built with rows of ſhelves, one above another, and covered on the top, to preſerve them from wet; this ſhould be open to the morning ſun, but ſheltered from the heat of the ſun in the middle of the day:) in this poſition they will appear to much greater advantage, than when the pots ſtand upon the ground, for their flowers being low, their beauty is hid from us; whereas, when they are advanced upon ſhelves, we ſee them in full view: In this ſituation they may remain until the beauty of the flowers is paſt, when they muſt be ſet abroad to receive the rains, and have open free air, in order to obtain ſeeds, which will fail if they are kept too long under ſhelter. When your ſeed is ripe, obſerve to gather it when it is perfectly dry, and expoſe it to the ſun in a window upon papers, to prevent its growing mouldy, and let it remain in the pods till the ſeaſon for ſowing it.

Borage-leaved AURICULA, [*Verbaſcum.*] This grows naturally upon the Alps and Pyrenean mountains; it is a very humble plant, whoſe leaves trail on the ground, but bears large blue flowers.

The root is perennial, and the plant is uſually propagated by offsets from the old plant, which ſhould be taken off in autumn, and planted in ſmall pots filled with light ſandy earth; they muſt always have a ſhady ſituation; for they will not thrive when they are expoſed to the ſun.

AURIGA, a carter, waggoner, or charioteer.

AUTUMN, the third ſeaſon or quarter of the year, when the harveſt and fruits are gathered in.

Autumn is repreſented in painting by a man at perfect age, cloathed like the vernal, and likewiſe girded with a ſtarry girdle; holding in one hand a pair of ſcales equally poized, with a globe in each; in the other, a bunch of divers fruits and grapes. His age denotes the perfection of this ſeaſon, and the balance, that ſign of the Zodiac which the ſun enters when our autumn begins.

Some computed the years by autumns; but the Engliſh Saxons by winters. Tacitus ſays that the ancient Germans knew the other diviſions of the year, but did not know what was meant by autumn.

AUTUMNALIA, thoſe fruits of the earth which are ripe in autumn.

AWM. See AILE.

AWNCEL. See AUNCEL.

AX, Axis, or Axle-tree, a piece of wood (or iron) under a waggon, cart, &c. on which the wheels turn.

AXEN, a common vulgar phraſe for aſhes.

AX-VETCH, or *Hatchet-Vetch*, [*Securidaca.*] This plant grows naturally in the corn fields in Spain and Italy; it is annual, with trailing ſtalks, and bears a large cluſter of yellow flowers of the butterfly kind.

It is propagated by ſowing the ſeeds in borders of light earth in the ſpring, in the places where the plants are to abide, for they ſeldom ſucceed well if they are tranſplanted; they ſhould be allowed at leaſt two feet diſtance, becauſe their branches trail upon the ground. When the plants come up, they will require no other care but to thin them where they are too cloſe, and keep them clean from weeds. A few of theſe plants may be admitted into every good garden for variety, tho' there is no great beauty in their flowers.

AZALDUS, a ſort of poor horſe or jade.

AZEDARACH. See BEAD-TREE.

AZEROLE, a ſpecies of the medlar. See MEDLAR.

AZYMOUS, ſomething unfermented, as bread, &c. made without leaven. Galen obſerves, that all unfermented bread is unwholſome.

B.

BACCIFEROUS, an epithet added to the name of any tree, ſhrub, or plant, that bears berries, as ſaſſafras, jaſmine, privet, bryony, honeyſuckle, lily of the valley, aſparagus, butcher's-broom, night-ſhade, gooſeberry, currant, &c. &c.

BACHELOR's-BUTTONS, [*Lychnis.*] This plant grows naturally by the ſide of ditches, and in moiſt paſtures in many parts of England, ſo is ſeldom admitted into gardens. It has a perennial root, and bears cluſters of purple flowers in April or May; the ſtalks decay in autumn, but the roots continue ſeveral years.

There is a variety of this with double flowers, which is cultivated in gardens by the title of *red bachelors buttons.* This is an ornamental plant, and continues long in flower. It is propagated by ſlips, which ſhould be planted the beginning of Auguſt in a ſhady border of loamy earth, where they will take root in about ſix weeks or two months, and may then be tranſplanted into the borders of the flower garden. Theſe roots ſhould be annually tranſplanted, otherwiſe they frequently rot; and young plants muſt be propagated by ſlips, to ſupply the decay of the old roots, which are not of very long duration. This thrives beſt in a ſoft loamy ſoil, and in a ſhady ſituation, where they have only the morning ſun.

BACHELORS-PEAR, [*Solanum,*] is very common in the Weſt-India Iſlands: it has a prickly herbaceous ſtalk three or four feet high. The flowers come out from the ſide of the branches in ſmall bunches; they are large, of a pale blue colour, and are ſucceeded by fruit about the ſize and ſhape of a Catherine pear; but the ſtalk being fixed to the large end, the fruit (which is of a gold colour when ripe) becomes inverted.

This is propapated by ſeeds, which ſhould be ſown upon a hot-bed in the ſpring, and when the plants come up fit to remove, they muſt be planted upon a freſh hot-bed, to bring them forward, and afterwards treated in the way as the tender ſorts of capſicums.

BACK, *of a horſe.* To be a good one it ſhould ſink a little below the withers; but the other part ſhould never be too low, but always ſtraight, unleſs as juſt mentioned. In this caſe, the forehand will riſe very well.

When the back of a horſe is higher behind than before, he is apt to be pinched in his ſhoulders, is very unſightly, and generally weak. Beſides, it renders the back-parts ſo heavy, that they generally have an aukward gait, and move ſlowly. A horſe ſhould be home-ribbed; but the ſhort ribs ſhould not approach too near the haunches, for then he will not have room to fetch his breath. Thoſe that are open ribbed, are of a lax texture, are looſe in the flanks like a greyhound, and conſequently weak. Beſides, they are narrow over the chine, have little or no belly, are not fit for a long journey, and will carry no great weight.

When a horſe's back is very ſhort in proportion to his bulk, and yet otherwiſe well limbed, he will hold out well enough upon a journey; but he is ſlow, and never makes a good appearance. When he is tall at the ſame time, with very long legs, he is worth little. His flanks ſhould not be hollow, but ſmooth and full; likewiſe his hind parts, or uppermoſt haunches, ſhould not be higher than his ſhoulders; and when his back is a little arched behind the ſaddle, it is a ſign of ſtrength, and a fitneſs for hunting as well as travelling.

To BACK *a Horſe,* is to mount, or get upon him; in the manage it ſignifies to mount him bare-backed, or without a ſaddle.

BACKING *a Colt,* is ſometimes uſed for breaking him.

BACK-SINEW, in a horſe, is that ſtrong ſinew extending along the hinder part of the ſhank from the knee to the heel, into which it is inſerted.

The back-ſinew is ſo very ſubject to be hurt or ſtrained, that it is conſidered as one of the moſt common and uſual accidents that happens to a horſe; it generally proceeds from hard riding upon

upon dry grounds, and from other cauſes, where the roads are ſtoney and hard, and ſometimes where they are poachy.

It is eaſily perceived by the ſwelling of the ſinew, which ſometimes extends from the knee down to the heel; and when it is ſo, a horſe does not care to ſet his foot even upon the ground; but, for the moſt part, in his ſtanding, ſets it before the other.

The uſual way of curing this malady, is with cold charges, which often ſucceed very well, if often renewed; ſome uſe curriers ſhavings bound round the knee with a bandage, and this alſo anſwers very well in ſome caſes; but there is nothing either ſo ready or efficacious as vinegar or verjuice mixed with bole, being often in a day ſoaked well into the ſinew warm; and if any thing of the lameneſs or ſwelling remains after this, and after the heat and inflammation is gone off, a mild bliſter, that has nothing corroſive in it beſides the cauſtic ſalt of the flies, will, generally ſpeaking, effectuate a cure, and bring the ſinew fine.

When hot and relaxing oils mixed together are uſed to the back-ſinew, (which many practitioners are fond of, becauſe they ſometimes ſucceed in horſes that have their ſinews ſtrong and rigid,) they are apt to ingender wind-galls of a bad kind, or make the veins on each ſide the ſinew to be full and gored; and horſes have been known to be lame for two or three years together with theſe varixes in the veins. Bliſtering in this caſe has little or no effect, firing through the vein till the blood comes being only ſufficient to remove that weakneſs. After the firing, the whole leg from the knee down to the heel, and all the hollow places on both ſides, muſt be charged with a good ſtrengthening plaiſter, which will perfect the cure, eſpecially if the horſe be turned to graſs for a month or five weeks, or, in the winter, if he run a little while in a ſmooth yard, where he has good dry litter.

The following method of curing a ſtrain, commonly called a clap of the back ſinews, was communicated by an eminent ſurgeon: it cured Mr. Dawkins's horſe after he broke down on the courſe at Reading, and many others have ſince been recovered in the ſame manner:

1ſt, Bleed immediately in the fetlock vein. 2. Bathe the affected leg with the warm blood, mixed with ſalt for half an hour. 3. Foment the leg twice a day with flannels, ſqueezed out of the following whey, made hot:

'Take a quart of milk, and when it boils add half a pint of the oldeſt and ſtrongeſt verjuice, in which an ounce of roch-allum hath been diſſolved: let this mixture boil, and you will have a ſtrong curd immediately. Strain off the whey and preſerve the curd.'

This curd muſt be applied warm once a day as a poultice after the leg hath been fomented with the whey as directed. It muſt be bound on with a ſmooth roller. In about ſix or eight days the inflammation will be aſſuaged, and then the following ſtyptic charge muſt be laid on:

'Take of the colcother of vitriol, reduced into an impalpable powder, half a pound, and mix it by little and little with the whites of two eggs beaten to a glair, adding as much ſtrong verjuice as will bring it to the conſiſtence of a cold charge. Then ſpread it on a linen cloth, and roll it on with a bandage four yards long and three inches broad, taking care that every turn be very ſmooth. This charge freſh-made muſt be renewed every 24 hours.'

Bleeding is deſigned to abate the inflammation, which always attends this accident when violent; to which likewiſe the whey will greatly contribute. The blood and ſalt will ſtimulate and cheriſh the ſinews, and conſequently prevent any farther flux of humours. The curd is a ſtyptic, and will help to reſtore the elaſticity or ſpringineſs of the ſinews, and the cold charge will greatly ſtrengthen the limb. Whereas, all oily greaſy applications relax and weaken it, and therefore ought to be ſhunned. This method is likewiſe much better than a cure by bliſtering and firing, for this laſt method eſpecially, is attended with danger, and may do much more harm than good. Beſides, experience has ſhewn the ſafety and benefit of this practice.

BACK *of a Horſe galled.* It ſometimes happens that a horſe's back is raw, or that the ſwelling and inflammation has ſmall holes, or wounds therein called warbles; in this caſe bathe

bathe the part with equal quantities of ſpirits of wine and tincture of myrrh and aloes, with a little ſpirit of turpentine: if the ſkin is rubbed off without bruiſing the part, nothing is better than Friar's balſam.

BACO, a term often uſed in old charters for a fat or bacon hog.

BACON, the fleſh of a hog ſalted and dried.

When you kill a large hog for bacon, lay the ſides in the ſalting-troughs, and ſprinkle them pretty heavily with bay-ſalt: then leave them twenty-four hours to drain away the blood, and ſome of the over abounding juices.

After this take them out, wipe them very dry, and throw away the drainings. Then take ſome freſh ſalt, and heating it well in a large iron frying-pan, rub the meat very well with it; repeating this work every day for four days, and turning the ſides every other day.

If the hog be large, keep the ſides in brine (turning them ten times) for three weeks; after which take them out, and let them be thoroughly well dried in the uſual manner: if they are not full dried, they will neither keep ſo well, nor eat ſo fine. If the hog be killed in warm weather, put the ſides into good brine as ſoon as poſſible after he is killed.

BACULUS DIVINITORIUS, [*Virgula Divina,*] a branch of hazle uſed for diſcovering mines or ſprings, &c. It is ſaid, that the ſtick being carried looſely in the hand, will on paſſing over mines, ſprings, &c. incline towards the earth. Some people lay great ſtreſs upon this, while others treat it with the contempt it deſerves.

BADGER, a carrier of luggage.

BADGER, one that is licenced to buy corn or other proviſions in one place to ſell it again in any other, without incurring the penalty inflicted on ingroſſers; a huckſter.

BADGER, the name of an animal, common in many parts of England; and called by ſeveral names, as a gray, a brock, a boreſon, or a bauſon.

BADIAGA, a water plant, reſembling the alcyoniams, but full of ſmall round granules like ſeeds. Linnæus makes it a ſpecies of ſponge.

BAG, a ſack or pouch. In commerce it ſignifies a certain quantity of ſome particular commodity; as a bag of corn, flour, &c. which differs in weight according to the different cuſtoms of countries.

BAG, among farriers, is a name given to a medicine for recovering a horſe's appetite when loſt. It is done in this manner; they take an ounce of aſſa-fœtida, and an equal quntity of the powder of ſavin; theſe ingredients they put into a bag, which they faſten to the horſe's bit, keeping him bridled for two hours, two or three times a day: as ſoon as the bag is taken off, he will immediately eat. The ſame bag will ſerve a long time.

BAG, a cow's udder.

BAGGING of hops, putting them in bags. See HOPS.

BAILIFF, an under-ſteward, who directs huſbandry, gathers rent, &c.

BAIT, in fiſhing, a thing or ſubſtance prepared to take and bring fiſhes to. See what is ſaid under the article ANGLING.

BAKING *of land.* If ſome ſorts of ſtiff and binding land be ſown dry, and a ſcud of rain-falls before the earth has time to ſettle, it is obſerved that the cruſt of ſuch land will bake ſo that the corn cannot come through, to the great damage of the crop; this evil does not happen if ſuch a ſcud of rain be followed by cool cloudy weather, and not hot ſhun-ſhine; for then the earth will not lie ſo hollow as to be baked. The beſt way to prevent this is, to roll it immediately after ſowing, which faſtens the earth together, whereby the ſun has not that power of piercing into it, and conſequently not of baking it.

Land of this kind ſhould, therefore, be ſown as often as poſſible with winter corn, ſuch as wheat and vetches; for though, if wet follows the ſowing, the ſun is not ſtrong enough at that time of the year to ſcorch the ground up, and bind it; and it is obſerved, that this ſort of ground has been always lucky for vetches, probably for the above reaſon; but after it is baked, the beſt method is to draw a light harrow over it.

BALAUSTINE, [*Balauſtia,*] the flower of the double flowering pomegranate tree, of an elegant red colour. The ſhops are uſually ſupplied with the dried flowers from abroad, though thoſe of our own growth do not appear to be any wiſe inferior to the foreign.

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The flowers are mildly aſtringent and corroborant; of a moderately rough and ſomewhat bitteriſh taſte, and of little or no ſmell or particular flavour. They give out their aſtringent matter together with a pale red colour, both to water and rectified ſpirit; the extracts obtained by inſpiſſating the tinctures, in which the active parts of the flower are concentrated, are pretty ſtrongly ſtyptic.

Balauſtines are recommended in diarhœas, dyſenteries, and other caſes where aſtringent medicines are proper, but are rarely directed in extemporaneous preſcriptions.

BALD-FACE. When the greater part of a horſe's face is covered with white, he is ſaid to be bald, or bald-faced.

BALD-MONEY, or *Bawd-Money*. See SPIGNEL.

BALK, a piece of land which has been either caſually overſlipped, or not turned up in ploughing; or carefully left untouched by the plough, for a boundary between lands, or ſome other uſe.

BALK, alſo ſignifies the ſummer-beam, or dorman of a houſe.

BALKS, or *Bawks*, implies poles laid over a ſtable, or other building, for a roof.

BALM. See BAUM.

Moldavian BALM, [*Dracocephalum*] of which there is a great variety in gardens, with flowers of different colours.

They are propagated by ſeeds, ſown either in the ſpring or autumn, in the places where the plants are to remain, and require no other treatment than to be thinned where they are too thick, and kept free from weeds.

BALM of GILEAD, [*Dracocephalum*] is a native of the Canary iſlands. It received its name from the gardeners, on account of the reſinous ſcent which the leaves emit on being rubbed. This is a perennial plant, which riſes with ſeveral ſquare ſtalks to the height of three feet or more, becoming ligneous at their lower parts, garniſhed with compound leaves at each joint, which are placed oppoſite; they have three or five lobes, which are oblong, pointed, and ſawed on their edges. The flowers terminate the ſtalks in ſhort thick ſpikes; they are of a pale blue colour, and are ſucceeded by ſmall angular ſeeds. This plant continues producing flowers moſt part of ſummer; it is uſually kept in green-houſes, but, in mild winters the plants will live abroad, if they are planted in warm borders; and thoſe plants which are kept in pots will thrive much better when they are ſheltered under a frame, than if placed in a green-houſe, where the plants are apt to draw up weak, for they ſhould have as much free air as poſſible in mild weather, and only require to be ſheltered from ſevere froſt. This may be propagated by ſeeds, which, if ſown in autumn, will more certainly grow than thoſe which are ſown in the ſpring; if the ſeeds are ſown in the full ground, it ſhould be in a warm border. It may alſo be propagated by cuttings, which, if planted in a ſhady border any time in the ſummer, will very ſoon take root, and furniſh plenty of rooted plants.

BALM of GILEAD FIR. See FIR-TREE.

BALSAM APPLE. See *Balſam* APPLE, under the article APPLE-TREE.

BALSAMINE, [*Impatiens.*] *Female Balſamine.* There are three ſpecies, viz. 1. Yellow balſamine, or touch me not; 2. Female balſamine; 3. Upright, or Female balſamine of Ceylon.

The firſt ſort grows naturally in ſeveral parts of Weſtmoreland and Yorkſhire, but is frequently introduced into gardens by way of curioſity. It is an annual plant, which riſes about two or three feet high, with an upright ſucculent ſtalk, whoſe joints are ſwollen, garniſhed with oval ſmooth leaves, which ſtand alternate on every ſide the ſtalk. The flowers come out from the wings of the ſtalks upon long ſlender foot-ſtalks, which branch into ſeveral other ſmaller, each ſuſtaining one yellow flower, compoſed of five petals, which in front are ſhaped like the lip or grinning flowers, but at their baſe have a long tail like the flowers of Indian creſs; theſe are ſucceeded by taper pods, which, when ripe, burſt open upon being touched, and twiſt ſpirally like a ſcrew, caſting out the ſeeds with great elaſticity. If the ſeeds of this plant are permitted to ſcatter, they generally ſucceed better than when they are ſown: for unleſs they are ſown in the autumn, ſoon after they are ripe, they very rarely grow. The plants require no care but to keep them clean from weeds, and thin them where they are too cloſe. This delights

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in a ſhady ſituation and a moiſt ſoil. There is a variety of this with red flowers, which came from North America, which only differs in the colour of the flowers, and growing much taller, it is equally hardy.

The ſecond ſort is the Female Balſamine, of which there are ſeveral varieties; the common ſort has been long an inhabitant in the Engliſh gardens; of this there is the white, the red, and ſtriped-flowered, and likewiſe the ſingle and double flowering. The common ſingle ſort is ſo hardy as to riſe in the full ground, and where the ſeeds ſcatter, the plants will come up the following ſpring, but theſe do not come to flower ſo early as thoſe which are raiſed upon a hot-bed; however, they generally are ſtronger plants, and continue much longer in the autumn in flower than the others, ſo are an ornament to the garden at ſuch times when there is a greater ſcarcity of flowers.

There are two varieties, if not diſtinct ſpecies, with double variegated flowers; one of them grows naturally in the Eaſt, and the other in the Weſt-Indies; that which comes from the Eaſt-Indies by the title of Immortal Eagle Flower, is a moſt beautiful plant; the flowers are twice the ſize of thoſe of the common ſort, and are very double; they are in ſome ſcarlet and white variegated, and purple and white in others, and the plants producing plenty of the flowers render them very valuable: if the ſeeds of theſe are carefully ſaved, the kinds may always be preſerved. I have raiſed ſome plants from foreign ſeeds, whoſe flowers were ſo very double as to loſe their male parts, ſo did not produce any ſeeds.

The ſeeds of theſe plants ſhould be ſown on a moderate hot-bed in the ſpring, and when the plants are come up about an inch high, they ſhould be tranſplanted on another moderate hot-bed at about four inches diſtance, obſerving to ſhade them from the ſun till they have taken new root; after which they ſhould have a large ſhare of free air, to prevent their drawing up tall and weak: they will require to be often refreſhed with water, but it ſhould not be given to them in too great plenty; for, as their ſtems are very ſucculent, ſo they are apt to rot with much moiſture. When the plants are grown ſo large as to touch each other, they ſhould be carefully taken up with balls of earth to their roots, and each planted into a ſeparate pot filled with light rich earth, and plunged into a very moderate hot-bed, covered with a deep frame, to admit the plants to grow, ſhading them from the ſun until they have taken freſh root; then they ſhould have a large ſhare of air admitted to them, and by degrees hardened, ſo as to bear the open air, into which part of the plants may be removed in July, placing them in a warm ſheltered ſituation, where, if the ſeaſon proves favourable, they will flower and make a fine appearance; but it will be proper to keep part of the plants either in a glaſs-caſe or a deep frame, in order to get good ſeeds, becauſe thoſe in the open air will not ripen their ſeeds unleſs the ſummer proves very warm; and the plants in ſhelter muſt have a good ſhare of free air every day, otherwiſe they will grow pale and ſickly; nor ſhould they have too much of the ſun in the middle of the day, in very hot weather, for that occaſions their leaves hanging, and their requiring water, which is often very hurtful; therefore if the glaſſes are ſhaded in the middle of the day for three or four hours, the plants will flower better, and continue longer in beauty than when they are expoſed to the great heat. Thoſe who are curious to preſerve theſe plants in perfection, pull off all the ſingle and plain-coloured flowers from the plants which they preſerve for ſeeds, leaving only thoſe flowers which are double and of good colours; where this is carefully done, they may be continued without the leaſt degeneracy.

The ſort which grows in the Weſt-Indies, is there called Cockſpur. This hath ſingle or ſemi-double flowers, which are as large as the laſt mentioned ſort, but I never ſaw any of them more than half double, and only with white and red ſtripes: the plants are apt to grow to a very large ſize before they produce any flowers, ſo that it is late in the autumn before they begin to flower, and ſometimes in bad ſeaſons they will ſcarce have any flowers, and but rarely ripen their ſeeds here, ſo that few perſons care to cultivate this ſort, eſpecially if they can have the other.

The third ſort here mentioned grows naturally in Ceylon, and in many parts of India. This hath very narrow ſpear-ſhaped leaves, which are ſawed on their edges; the foot-ſtalks ſuſtain each three flowers, which are ſmaller than thoſe of the common ſort, ſo are not worthy of a place in gardens, except for the ſake of variety. This is a tender plant, and requires the ſame treatment as the Immortal Eagle Flower.

BALSAM, in medicine, is an oily reſinous, and odorous ſubſtance, flowing either ſpontaneouſly, or by inciſion, from certain plants, of great virtue in the cure of ſeveral diſorders. There are many kinds of balſams, but the following are the moſt remarkable.

BALSAM *of Canada*, is a fine ſort of turpentine, much ſuperior to the common ones, obtained from the Virginian, or Canada Fir; it has ſometimes been brought to us from abroad, under the name of BALSAMUM CANADENSE.

BALSAM *of Copaiba*, *Copaiva*, or *Capivi*, is obtained from a tree of the ſame name growing in the Brazils, near Rio de Janeiro: it is alſo called BALSAMUM BRAZILIENSE.

This juice is clear and tranſparent, of a whitiſh or pale yellow colour, an agreeable ſmell, and a bitteriſh pungent taſte. It is uſually about the conſiſtence of oil, or a little thicker: long kept, it becomes nearly as thick as honey, retaining its clearneſs; but has not been obſerved to grow dry or ſolid, as moſt of the other reſinous juices do. We ſometimes meet with a thick ſort of balſam of copaiba, which is not at all tranſparent, or much leſs ſo than the foregoing, and generally has a portion of turbid watery liquor at the bottom. This ſort is probably either adulterated by the mixture of other ſubſtances, or has been extracted by coction from the bark and branches of the tree: its ſmell and taſte are much leſs pleaſant than thoſe of the genuine balſam.—Pure balſam of copaiba diſſolves entirely in rectified ſpirit, eſpecially if the menſtruum be previouſly alcalized: the ſolution has a very fragrant ſmell. Diſtilled with water, it yields a large quantity of a limpid eſſential oil; and in a ſtrong heat, without addition, a blue oil.

The balſam of copaiba, is an uſeful corroborating detergent medicine, accompanied with a degree of irritation. It ſtrengthens the nervous ſyſtem; tends to looſen the belly, and in large doſes proves purgative, promotes urine, and ſometimes the expulſion of gravel; cleanſes and heals ulcerations in the urinary paſſages, which it is ſuppoſed to perform more effectually than any of the other balſams. Fuller obſerves, that it gives the urine an intenſely bitter taſte, but not a violet ſmell as the turpentines do.—This balſam has been principally celebrated in gleets and the fluor albus, and externally as a vulnerary. The author abovementioned recommends it likewiſe in dyſenteries, in ſcorbutic cachexies, in diſeaſes of the breaſt and lungs, and in an acrimonious or putreſcent ſtate of the juices: he ſays he has known very dangerous coughs, which manifeſtly threatened a conſumption, cured by the uſe of this balſam alone; and that notwithſtanding its being hot and bitter, it has good effects even in hectic caſes.——The doſe of this medicine rarely exceeds twenty or thirty drops, though ſome direct ſixty or more. It may be conveniently exhibited in the form of an elæoſaccharum; or triturated with almonds into an emulſion; or agitated with milk, which it thus readily unites with: it imperfectly mingles, by agitation, with water alſo.

BALSAM *of Gilead*, or *of Mecca*, commonly called *Balam of Gilead*, and ſometimes *Opo balſam*, is the moſt precious of all balſams; it is alſo ſtiled BALSAMUM GILEADENSE; BALSAMUM JUDAICUM; and BALSAMUM SYRIACUM.

It exſudes in very ſmall quantities from certain evergreen trees, which grew formerly in the valley of Jericho, but after the conqueſt of the Holy Land by the Turks, were removed to Grand Cairo, and afterwards to Mecca, where the balſam plantation is ſaid to be now guarded by Janizaries, and the reſinous juice collected for the Sultan only. It is ſcarcely known in Europe; and the inferior kinds, ſaid to be extracted by lightly boiling the leaves and branches in water, are very rarely ſeen among us. The true opo-balſam, according to Alpinus, is at firſt turbid and white, of a very ſtrong pungent ſmell, like that of turpentine, but much ſweeter, and of a bitter, acrid, aſtringent taſte: upon being

being kept for ſome time, it becomes thin, limpid, light, of a greeniſh hue; then of a gold yellow; and at length of the colour of honey: after this, it grows thick like turpentine, and loſes much of its fragrance. This balſam is of great eſteem in the eaſtern countries, both as a medicine, and as an odoriferous unguent, and coſmetic. Its great ſcarcity has prevented its coming into uſe among us: in the mithridate and theriaca, which it is directed as an ingredient in, the college allow the expreſſed oil of nutmegs as a ſuccedaneum to it.

Balsam *of Peru*, is ſaid to be extracted by coction in water, from an odoriferous ſhrub growing in Peru, and the warmer parts of America. This balſam, as brought to us, is nearly of the conſiſtence of thin honey, of a reddiſh brown colour inclining to black, an agreeable aromatic ſmell, and a very hot biting taſte. Diſtilled with water, it yields a ſmall quantity of a fragrant eſſential oil of a reddiſh colour; and in a ſtrong fire, without addition, a yellowiſh red one.—Balſam of Peru is a very warm aromatic medicine, conſiderably hotter, and more acrid than copaiba. Its principal effects are, to warm the habit, to ſtrengthen the nervous ſyſtem, promote the circulation, and attenuate viſcid humours. Hence its uſe in ſome kinds of aſthmas, gonorrhœas, dyſenteries, ſuppreſſions of the uterine diſcharges, obſtructions of the viſcera, and other diſorders proceeding from a debility of the ſolids, or a ſluggiſhneſs and inactivity of the juices. It is alſo employed externally, for cleanſing and healing wounds and ulcers; and ſometimes againſt palſies and rheumatic pains.—This balſam does not unite with water, milk, expreſſed oils, animal fats, or wax: It may be mingled in the cold with this laſt, as alſo with the ſebaceous ſubſtance called expreſſed oil of mace; but if the mixture be afterwards liquefied by heat, the balſam ſeparates and falls to the bottom. Alcaline lixivia diſſolve great part of it; and rectified ſpirit the whole.

There is another ſort of balſam of Peru, of a white colour, and conſiderably more fragrant than the former. This is very rarely brought to us. It is ſaid to be the produce of the ſame plant which yields the common or black balſam; and to exſude from inciſions made in the trunk.

Balsam *of Tolu*, flows from a tree of the pine kind, growing in Tolu in the Spaniſh Weſt-Indies; from whence the balſam is brought to us in little gourd ſhells. It is of a yellowiſh brown colour, inclining to red; in conſiſtence thick and tenacious: by age it grows hard and brittle, without ſuffering any great loſs of its more valuable parts. The ſmell of this balſam is extremely fragrant, ſomewhat like that of lemons; its taſte warm and ſweetiſh, with little of the pungency, and nothing of the nauſeous reliſh, which accompany the other balſams. It has the ſame general virtues with the foregoing; but for ſome purpoſes, particularly as a corroborant in gleets and ſeminal weakneſſes, is ſuppoſed to be more efficacious.

BALSAMELLA. Balm of Gilead.

BAMBOE, or Bamboo Cane, [*Arundo Bamboa*,] a plant in the Indies which multiplies very much by its root, from which ſprings a branchy tuft after the manner of the European reeds. It is the largeſt kind of cane hitherto known. It is of an extraordinary height and bigneſs when it bears its bloſſom; each ſhoot or cane is often at the bottom as large as a man's thigh, and decreaſes gradually to the top, where it bears a bloſſom or flower, like our reeds.

The bamboe grows in all the maritime countries of the Eaſt-Indies. Its leaves are like thoſe of the other canes or reeds, but neither ſo long nor ſo broad at their baſe. With theſe bamboes the Indians build their houſes, and make all ſorts of furniture in a very ingenious manner. The wood is ſo hard and ſtrong, that it ſerves very well for piles to ſupport their houſes in thoſe places which are ſometimes over-flowed; it likewiſe ſerves for all ſorts of kitchen utenſils, tables, &c. The thickeſt bamboes ſerve to make the poles with which the ſlaves carry thoſe litters called Palanquins, ſo generally uſed in the Eaſt. They alſo make of this wood a kind of pails, in which the water keeps extremely cool.

Our gardeners have now ſeveral ſpecies of the bamboe; ſome of them, however, are ſo tender, that they will not live in this country, unleſs they are preſerved in the ſtove. That ſort

called the *Evergreen Reed*, tho' a native of a warm climate, will bear our cold of moderate winters in the open ground; it dies to the ſurface in autumn, and riſes again the ſucceeding ſpring; and if kept ſupplied with water in dry weather, will grow ten or twelve feet high the ſame ſummer. This is propagated by parting the roots early in the ſpring before they begin to ſhoot, and will in a year or two, if the ground be good, make very long ſhoots, from each of which you may have twenty or thirty large canes produced.

The ſtalks of this ſort are brought from Portugal and Spain, and are uſed by the weavers, and likewiſe to make fiſhing rods.

BANANA-TREE, [*Muſa.*] This plant riſes fifteen or twenty feet high: the lower part of the ſtalk is often as large as a man's thigh, diminiſhing gradually to the top, where the leaves come out on every ſide; theſe are often ſix feet long, and near two feet broad. The leaves are thin and tender, and ſo are very liable to be torn by wind; their growth is ſo extremely rapid that it may be almoſt diſcerned with the naked eye. The fruit, when ripe, is eaten by way of deſert, and is a ſoft pulp of a luſcious ſweet flavour.

The Banana was brought (as is ſuppoſed) from Guinea to the Canary Iſlands, and carried from thence to the Weſt-Indies. In Europe there are ſome of theſe plants preſerved in the gardens of curious perſons, who have hot-houſes capacious enough for their reception, in many of which they have ripened their fruit very well; but as they grow very tall, and their leaves are large, they require more room in the ſtove than moſt people care to allow them; they are propagated by ſuckers, which come from the roots of thoſe plants which have fruited; and many times the younger plants, when they are ſtinted in growth, will put out ſuckers; theſe ſhould be carefully taken off, preſerving ſome fibres to their roots, and planted in pots filled with light rich earth, and plunged into the tan-bed in the ſtove; they may be taken off any time in ſummer, and it is beſt to take them off when young, becauſe if their roots are grown large, they do not put out new fibres ſo ſoon, and when the thick part of the root is cut in taking them off the plants often rot.

During the ſummer ſeaſon theſe plants muſt be plentifully watered, for the ſurface of their leaves being large, there is a great conſumption of moiſture by perſpiration in hot weather, but in the winter they muſt be watered more ſparingly, though at that ſeaſon they muſt be often refreſhed, but it muſt not be given then in ſuch quantities.

The pots in which theſe plants are placed, ſhould be large in proportion to the ſize of the plants, for their roots generally extend pretty far, and the earth ſhould be rich and light. The degree of heat with which theſe plants thrive beſt, is much the ſame with the Anana or Pine-Apple, in which I have had many of theſe plants produce their fruit in perfection, and they were near twenty feet high.

The moſt ſure method to have theſe plants fruit in England is, after they have grown for ſome time in pots, ſo as to have made good roots, to ſhake them out of the pots with the ball of earth to their roots, and plant them into the tan-bed in the ſtove, obſerving to lay a little old tan near their roots for their fibres to ſtrike into, and in a few months the roots of theſe plants will extend themſelves many feet each way in the bark, and theſe plants will thrive a great deal faſter than thoſe which are confined in pots or tubs. When the bark-bed wants to be renewed with freſh tan, there ſhould be great care taken of the roots of theſe plants, not to cut or break them, as alſo to leave a large quantity of the old tan about them, becauſe if the new tan is laid too near them, it will ſcorch their roots and injure them. If the plants puſh out their flower-ſtems in the ſpring, there will be hopes of their perfecting their fruit; but when they come out late in the year, the plants will ſometimes decay before the fruit is ripe. The ſtoves in which theſe plants are placed, ſhould be at leaſt twenty feet in height, otherwiſe there will not be room for their leaves to expand; for when the plants are in vigour, the leaves are often eight feet in length, and near three feet broad; ſo that if the ſtems grow to be fourteen feet to the diviſion of the leaves, and the

the houſe is not twenty feet high, the leaves will be cramped, which will retard the growth of the plant; beſides, when the leaves are bent againſt the glaſs, there will be danger of their breaking them, when they are growing vigorouſly; for I have had, in one night, the ſtems of ſuch bent leaves force through the glaſs, and by the next morning, advanced two or three inches above the glaſs.

The Banana is greatly eſteemed and even venerated by the natives of Madeira, who term it the forbidden fruit, and reckon it a crime almoſt inexpiable to cut it with a knife; becauſe after diſſection, it exhibits, as they pretend, a ſimilitude of our Saviour's crucifixion; and to cut the fruit open with a knife, is, in their apprehenſion, to wound his ſacred image.

Some authors have imagined, that the banana-tree was that of the leaves of which our firſt parents made themſelves aprons in Paradiſe. The ſacred text, indeed, calls the leaves employed for that purpoſe, fig-leaves; and Milton, in a moſt beautiful, but erroneous deſcription, affirms the bearded, or Bengal fig, to have been the tree alluded to. But beſides that the fruit of the banana is often, by the moſt ancient authors, called a fig, its leaves, by reaſon of their great ſize and ſolidity, were much more proper for a veil, or covering, than thoſe of the Bengal fig, which are ſeldom above ſix or eight inches long, and three broad. On the other hand, the banana leaves being three, four and five feet long, and proportionally broad, could not fail to be pitched upon, in preference to all others; eſpecially as they might be eaſily joined, or ſewed together with the numerous thread-like filaments, that may, with the utmoſt facility, be peeled from the body of this tree.

BANDS, a ſmall parcel of wheat taken from the grips, and twiſted together for binding the wheat into ſheaves.

BANDS *of a Saddle*, are two pieces of iron, flat, and three fingers broad, nailed upon the bows of a ſaddle, one on each ſide, contrived to hold the bows in the ſituation that makes the form of a ſaddle.

BANE, in ſheep, the ſame with rot. See the article ROT.

BANE-BERRIES. See HERB CHRISTOPHER.

BANEWORT. See NIGHTSHADE.

BANGLE-EARS, an imperfection in a horſe, which may be remedied in the following manner: place his ears as you would have them ſtand, and then with two little boards, or pieces of trenchers, three fingers broad, having two long ſtrings faſtened to them, bind the ears ſo faſt in the places where they ſtand, that they cannot ſtir; then behind the head, and the root of the ears, you will ſee a great deal of empty, wrinkled ſkin, which you muſt pull up with your finger and thumb, and clip away with a pair of ſharp ſciſſars all the empty ſkin cloſe by the head; then with a needle and red ſilk, ſtitch the two outſides of the ſkin together, and heal the wound with a mixture of honey and turpentine; when this is done, take away the ſplints that hold up the ears, and in a little time they will keep the place where you fixed them without alteration.

BANILLOES. See VANELLOES.

BANK. See the article FENCE.

BANK, an elevation of earth, &c. to oppoſe the force of the ſea, rivers, or the like, and ſecure the land from being overflowed.

With reſpect to the water which is to be kept out, this is called banking; but with reſpect to the land which is to be defended, it is called imbanking.

Sloping banks are the beſt ſecurity againſt the incroachments of the ſea, rivers, or of lakes; making proper allowance for the weight of water, and violence of the waves. Theſe banks ſhould be raiſed about two feet above the level of the water at the higheſt tides, and their ſtrength ſhould be proportioned to the force of the water intended to be fenced off. When a river is too much confined, it ſwells conſiderably upon a flood, and conſequently requires banks of greater height and ſtrength than would otherwiſe be neceſſary; though it will ſometimes break even theſe, and carry all before it, if a ſufficient ſpace be not allowed between the bank and the channel of the river, for the increaſe of its water: but when ſuch a ſpace is left, the waters ſpread, and ſeldom riſe more than 2 or 3 feet above their uſual level. In ſome caſes, a breadth of fifteen

fifteen or eighteen feet, on each ſide, may do; but in others, fifty, eighty, or an hundred feet, or perhaps ſo many yards, according to the largeneſs of the river, muſt be left open for that purpoſe. It is beſt to err on the ſafe ſide; eſpecially as the ground that is left between the banks and the river, will be far from being loſt; for it will afford good grazing in the dry ſeaſons of the year, and may be planted with oſiers, and willows, and other trees of that kind; but theſe ſhould never be planted upon the banks, leſt the winds ſpoil and tear them, by ſhaking the trees, and looſening their roots.

In the Iſle of Ely, it is common to ſee great banks diſtant one or two hundred yards on each ſide from the channel of the river; and when they are ſo made, they are always ſafe; but where the diſtance between the banks is narrow, there, and there only, the banks are in danger of being broken down, and the country of being overflowed.

If a conſiderable body of water is to be guarded againſt, dig a trench ten or twelve feet wide, and two or three deep, or more, according to the height of the bank required. Lay all the ſoil that is taken out of this trench, on that ſide of it which lies towards the water, and leave a ſpace of two or three feet between the trench, and the foot of the bank. Let the bank be made with an eaſy ſlope of fifteen or eighteen feet in length towards the water, allowing the ſlope two and a half or three feet fall to one in height; but the inſide ſlope need not be more than eight or nine feet, which is a foot and a half ſlope to one foot perpendicular. The bank thus raiſed five or ſix feet high, according as the floods require, will be two feet wide at the top, where it ſhould be well flatted, that people may walk upon it. Let it then be ſowed very thick with graſs-ſeeds, which will be found much better than turfing it with ſods, becauſe the ſods are apt to ſhrink, open, and part from one another in dry weather, and are then liable to be waſhed away with the next flood; whereas in this much cheaper way, a cloſe covering of graſs will ſoon be formed; for any tolerable ſoil may be very ſoon brought to have a coat of graſs, by only raking it fine and ſowing it with graſs-ſeeds.

Some have attempted to guard againſt inundations by building walls of ſtone and lime, where the materials are in plenty. The great danger here is their being undermined, and that chiefly by the water's ſtriking with force againſt the bottom, upon meeting with reſiſtance from the wall. But this may be eaſily guarded againſt by laying a row of flat ſtones lower than the bottom of the river; and projecting into its bed or channel; for the water ſtriking againſt theſe ſtones, turns off without any danger to the foundation.

The broad trench within the bank, beſides affording materials for making the bank and ſlopes, is attended with the farther advantage of ſerving for a drain to the inland ground. Theſe trenches ſhould always be carried as far as the banks, particularly when theſe are intended to fence off a riſing tide; and in the loweſt part of the ground a ſluice with a valve, flap-door, or flood-gate, ſhould be placed in the bank, where it will both diſcharge the inland water, when the tide is out, and prevent its flowing in. The ſeaſon of the year freeſt from floods ſhould be choſen for making theſe banks, that the bank may have time to ſettle and grow firm before the heavy rains come on. It is alſo adviſable to be as expeditious as poſſible in this work. For if it be begun in a dry ſummer, and finiſhed in a month or two, there will be little danger of being interrupted by extraordinary floods or violent ſtorms, either of which might do more harm in one day, than could be repaired in a fortnight.

The exact dimenſions of the bank, and of the ditch within it, cannot be preciſely aſcertained by any general rule; becauſe both tides and floods riſe to different heights, and have different force, in different places and circumſtances. The ſtrength abovementioned, may be ſufficient for banks in common caſes; but in others, where a great body of water, or powerful tide is to be oppoſed, they may be, as the memoirs of the Berne Society adviſe, four feet or more wide at the top, with a baſis proportioned to their height, as three and a half are to one; or, if it be deſired to make them ſtill more ſolid, as four to one; ſo that if the bank be four feet and a half high, its baſis in the former caſe will be 14 feet wide, and in the latter 18.

The

The Dublin Society for the advancement of agriculture, informs us, that "Lord Limerick has recovered between four and five hundred acres of very rich ſalt marſh, at Dundalk in Ireland, and effectually ſecured them from the ſea, by ſuch banks as are above deſcribed; and by the ſame method, many hundred thouſand acres have been recovered from the ſea in Cambridgeſhire, Lincolnſhire, and other parts of England; not to mention the low lands of Holland; which are indeed ſecured againſt the violence of the ſea by no other means.

"If there be a neceſſity for making banks on a ſtrand where nothing but ſand can be met with, thoſe banks ſhould be large, and the ſlope very broad and extended; and if graſs-ſeed will not grow on them, let ſea-weeds be planted. Theſe, with ſticking furze, ſtraw, or loppings of trees, will help to keep the banks together."

But a better method, and more effectual, is given by Dr. Hales, in the Philoſophical Tranſactions, from the experience of Dr. Wark, a clergyman, in Scotland. The method conſiſts in fixing to the bottom of the channel, a breadth of furze proportioned to the force it is to reſiſt. The ſand or ſlime, as either abounds, will ſoon ſettle among the branches of the furze; and when the firſt bed of the furze is thus interwoven or covered, another bed of furze is to be laid on as before, and ſo on, till the bank is raiſed to a ſufficient height. Dr. Wark aſſures us, that by this ſimple method a bank was made near Holy-iſland ſo ſtrong, that it became a bar againſt the ſea itſelf.

"It ſometimes happens, that the ſea flows in through a narrow gut or paſſage, by which the inland waters are diſcharged, and then extends itſelf, and covers a great deal of ground. When this happens, if the inland waters cannot be diverted into another courſe, ſince a paſſage muſt be left for their diſcharge, let a ſtrong ſluice be fixed in the loweſt part of the channel, with large piers of ſtone, running out for its ſupport, and a ſtrong foundation of wood or broad ſtones for the water to run over. When this is done, let the banks of ſand or other ſoil near at hand, be made in the manner already mentioned, on each ſide of the ſluice.

"The reaſon why it is adviſed, in places where a ſluice is to be made, to begin the work by this rather than by the bank, is, that while the tides have liberty to flow in and out at a great breadth, the ſluice may be made in any part of the channel without being much incommoded by the tide; whereas, if it be deferred till the banks on each ſide are made, the force of the tide, when confined to a narrow paſſage, will tear up all before it, and render the building of the ſluice impracticable; and upon the ſame account, the banks ſhould be begun at the lower part of the channel, and carried on from thence to the upper grounds.

"If, by any accident, the waters ſhould ſwell ſo high as to overflow and tear the banks, farther miſchief may be prevented by fixing with all expedition, a ſail-cloth, or ſheet of linen at the bottom of the bank, where the flood breaks in; for if this be done in time, the water will flow over the cloth, without waſhing away the bank.

"In every improvement, the expence ſhould be particularly conſidered. That of making banks in this method is ſmall. In low grounds the ſoil is ſoft, and dug with eaſe, and all the work may be done with the ſpade and ſhovel, without pick-axes, which muſt be uſed in upland ground; and the materials are on the ſpot. All the charge will be often more than repaid by the firſt year's improved crop of graſs, and the ſafety of the meadows. The produce of ſucceeding years will amount much higher, and the huſbandman will be out of all danger for the future of having his lands overflowed and ſpoiled. Farmers have frequently ſuſtained more damage from the hay deſtroyed in one ſeaſon by floods, than the whole value of what it would have coſt them to incloſe and bank their meadows, and free them from all hazards."

Banking, in a ſalt-work, the raiſing a fence againſt the ſea, whereby its waters may be kept out, excepting ſo much as is neceſſary for the preparation of the ſalt.

If any perſon ſhall unlawfully and malicioufly break down, or cut down the bank of any river, or any ſea bank, whereby any lands ſhall be overflowed or damaged, he ſhall be guilty of felony without benefit of clergy. And the

the hundred shall make satisfaction for the damages not exceeding 200l. 6 *Geo.* 2. *Chap.* 37.

If any person shall unlawfully cut off, draw up, or remove and carry away piles, chalk, or other materials driven in the ground, and used for securing any marsh or sea walls, or banks, in order to prevent the adjacent lands from being overflowed, he shall on conviction before one justice, forfeit 20l. half to the informer, and half to the poor of the parish; and for want of sufficient distress, to be committed to the house of correction, to be kept to hard labour for six months.

BANISTERIA. There are six species of this plant, for which we have no English name.

They are all natives of warm countries, and cannot be preserved in England, unless they are kept in a bark stove. They are propagated by seeds, which must be procured from the countries where they grow naturally. These seeds should be fully ripe when gathered, and put into sand, in which they should be sent to England, otherwise they will lose their vegetative quality; for these seeds are not only in shape like those of the Maple, but also are of the same quality, requiring to be sown as soon as possible, when they are ripe, or preserved in sand till they are sown, otherwise they rarely succeed. The seeds should be sown in pots, and plunged into a hot-bed of tanners bark, where the heat is very moderate, and if the plants should not appear the first year, the pots should be preserved till the next spring, to see if the seeds will grow. When the plants come up, they must be planted in separate pots, filled with light earth, and plunged into the bark-bed; after which they must be treated like other tender plants from the same countries.

BANNOCK, an oat-cake kneaded with water only, and baked in the embers.

BANQUET, a little bank; a raised way.

BAOBAB, or Baobor, the African Calabash-tree, or Ethiopian Sour-gourd. See *Sour* Gourd.

BAR, in a general sense, denotes a slender piece of wood, or iron, for keeping or fastening things together.

Bar, in the manage, the highest part of that place in a horse's mouth, situated between the grinders and the tushes; so that the part of the mouth which lies under and at the side of the bars, retains the name of the gum.

A horse with sensible bars has a fine light mouth; but if they are round and hard, or if they have been broken and cicatrized, they will often be almost insensible. *See Heaves forward.*

Bar, is a bank of sand, or other matter, whereby the mouth of a river is in a manner choaked up.

To Bar *a Vein*, implies an operation in farriery, performed in the following manner: they open the skin above and below the place where the operation is to be performed, and after freeing the vein from the surrounding parts, they tie it at those openings with two ligatures; after which they open the vein between the ligatures, in order to discharge the blood. This operation is performed upon the veins of a horse's leg, and other parts of his body, in order to stop the course, and lessen the quantity of malignant humours that prevail there.

BARB, a general name for horses imported from Barbary.

The chest of the barb is long and slender, rises beautifully from the withers, his mane little, his head well shaped, small, and lean; his shoulders flat and slender; his withers narrow and plump; his back strait and short; his flanks and sides round, and not bellying out; his haunches firm and well shaped; his croup generally somewhat long, and his tail placed pretty high; his thigh well shaped, and seldom flat; his legs handsome, well shaped, and without long hair at the pastern joint; his foot well made, but his pastern often long.

Barbs are of all colours, but generally brown. They are something negligent in their goings; but, properly encouraged, shew an amazing swiftness and vigour: they are very light and fit for running, and seem of all others the fittest to breed from. It were, however, to be wished, that they were a little taller, the largest rarely exceeding fourteen hands; and one of fourteen hands and an inch, is very extraordinary. Experience has, however, shewn, that in England, France, &c. they get colts larger than themselves. Among the barbs, those from the kingdom of Morocco, are accounted

ted the beſt, except the mountain barbs. Thoſe of the reſt of Mauritania are inferior to them, as are alſo thoſe of Turkey, Perſia, and Armenia. All horſes from a hot climate have a ſmoother coat than others.

BARBADOES ALOES. See ALOES.

BARBADOES CEDAR. See CEDAR.

BARBADOES CHERRY, [*Malphigia*] of which there are eight ſpecies.

The fruit of moſt of the ſpecies is promiſcuouſly gathered, and eaten by the inhabitants of the countries where they grow; but the Weſt-India ſort is that which is cultivated in ſome of the iſlands for its fruit, tho' it is but indifferent; the pulp which ſurrounds the ſtone is very thin, but has a pleaſant acid flavour, which renders it agreeable to the inhabitants of thoſe warm countries, where, to ſupply the want of thoſe cherries which are cultivated in Europe, they are obliged to eat the fruit of theſe ſhrubs.

Theſe plants are preſerved in the gardens of thoſe perſons who are ſo curious in botanical ſtudies, as to erect hot-houſes for maintaining foreign plants; and where there are ſuch conveniencies, theſe plants deſerve a place, becauſe they retain their leaves all the year, and continue flowering from December to the end of March, when they make a fine appearance at a ſeaſon when there is a ſcarcity of other flowers, and many times they produce ripe fruit here. Thoſe ſorts whoſe leaves are armed with ſtinging briſtles like the Cowitch, are the leaſt worthy of a place in ſtoves, becauſe they are ſo troubleſome to handle, nor do their flowers make ſo good an appearance as many of the other ſorts.

As theſe plants are natives of the warmeſt parts of America, ſo they will not live through the winter in England, unleſs they are preſerved in a warm ſtove; but when the plants have obtained ſtrength, they may be expoſed in the open air in a warm ſituation, from the middle or latter end of June till the beginning of October, provided the weather continues ſo long mild; and the plants ſo treated will flower much better than thoſe which are conſtantly kept in a ſtove.

They are all propagated by ſeeds, which muſt be ſown upon a good hot-bed; and when the plants are fit to tranſplant, they muſt be each put into a ſeparate ſmall pot and plunged into a hot-bed of tanners bark, and muſt be treated in the ſame manner as we have directed for other tender plants from warm countries; the two firſt winters it will be proper to keep them in the bark-bed in the ſtove; but afterward they may be placed upon ſtands in the dry ſtove in winter, where they may be kept in a temperate warmth, in which they will thrive much better than in a greater heat: theſe muſt be watered two or three times a week, when they are placed in a dry ſtove, but it muſt not be given to them in large quantities.

BARBADOES FLOWER-FENCE, or *Spaniſh Carnations*, [*Poinciana.*] This plant, of which there are two varieties, though they ſeem to be accidental ones, grows naturally in both Indies; one hath a red and the other a yellow flower. It is planted in hedges to divide the land in Barbadoes, from whence it had the title of Flower-Fence; but in ſome of the Britiſh iſlands it is called Spaniſh Carnations. It riſes with a ſtrait ſtalk from ten to twenty feet high, and then divides into ſeveral ſpreading branches; the flowers are beautifully variegated with red or orange and yellow, and have a very agreeable odour: the leaves are uſed in the Weſt-Indies as a purgative, inſtead of ſena; hence ſome call it ſena.

Ligon ſays, the ſeeds of this plant were firſt carried to Barbadoes from Cape Verd Iſlands, and the beauty of the flowers was ſuch, that the inhabitants ſoon ſpread it over that iſland, and afterwards it was tranſported into moſt of the neighbouring iſlands. This may have been ſo, but it is very certain that the plant grows naturally in Jamaica, where the late Dr. Houſtoun found it in the woods at a great diſtance from any ſettlements. He alſo found it growing naturally at La Vera Cruz, and at Campeachy, where he alſo found the two varieties with red and yellow flowers.

The ſeeds of this plant are annually brought over in plenty from the Weſt-Indies, which, if ſown upon a hot-bed, will riſe eaſily. When the plants are come up, they ſhould be tranſplanted each into a ſmall pot, and plunged into a hot-bed of tanners bark, obſerving to ſhade them from the

ſun till they have taken root; after which they muſt have freſh air in proportion to the warmth of the ſeaſon, and be frequently refreſhed with water. When the plants have filled the pots with their roots, they ſhould be ſhaken out and placed into larger ones, that they may have room to grow. If care be taken to water and ſhift them as often as it is neceſſary, they will grow to be three feet high the firſt ſeaſon. At Michaelmas the pots ſhould be plunged into a freſh hot-bed of tanners bark in the ſtove, which ſhould be kept to the ananas heat marked in the botanical thermometers, and frequently refreſhed with water, but they ſhould not have too much water in winter. The earth which theſe plants ſhould be planted in, muſt be freſh, light, and ſandy, but not over rich, in which they will ſtand the winter better than if planted in a ſtronger ſoil.

Theſe plants muſt conſtantly remain in the bark-ſtove, where in warm weather they ſhould have a large ſhare of air, but they muſt not be expoſed to cold; if damp ſeizes their top, it very often kills the plants, or at leaſt occaſions the loſs of their heads. With proper management they will grow much taller here than they uſually do in Barbadoes, but their ſtems will not be larger than a man's finger, which is occaſioned by their being drawn up by the glaſſes of the ſtove. Mr. Miller had ſome of theſe plants more than eighteen feet high in the Chelſea garden, which produced their beautiful flowers ſeveral years. Theſe flowers have always appeared in December, but in the Weſt-Indies they are ſaid to flower twice in a year, at which times they make a moſt beautiful appearance.

BARBADOES TAR, [*Petroleum Barbadenſe.*] A mineral fluid nearly of the ſame conſiſtence of common tar: it is of a reddiſh black colour, a diſagreeable ſmell, leſs pungent than the other ſorts. This bitumen is found in ſeveral of our American iſlands, where it is eſteemed by the inhabitants of great ſervice as a ſudorific, and in diſorders of the breaſt and lungs; though in caſes of this kind, attended with inflammation, it is certainly improper; they likewiſe apply it externally as a diſcutient, and for preventing paralytic diſorders. Among us it is rarely uſed, and not often to be met with genuine. The college employ it as a menſtruum for ſulphur in the *balſamum ſulphuris Barbadenſe*, and direct an oil to be diſtilled from it.

BARBERRY, *Pipperidge-Buſh*, or *Croſs-Thorn*, [*Berberis.*] A ſhrub that grows naturally in the hedges in many parts of England; it is alſo cultivated in gardens for its fruit, which is pickled, and uſed for garniſhing diſhes.—This ſhrub riſes with many ſtalks from the root, to the height of eight or ten feet. The flowers appear in May, and the fruit ripens in September.

It may be propagated either by ſuckers, of which there are plenty about the old roots, or by layers.

The beſt time for laying down the branches, is in the autumn, when their leaves begin to fall; the young ſhoots of the ſame year are the beſt for this purpoſe. Theſe will be rooted by the next autumn, when they may be taken off, and planted where they are deſigned to remain.

A fooliſh ſuperſtition has for many ages prevailed among the Farmers in many parts of England, namely, that a field of corn will always be blaſted, if a barberry ſhrub grows in any one of the hedges that ſurround it. But theſe ridiculous notions are now pretty well baniſhed from the generality of our huſbandmen, and it is hoped, the reſt will ſoon follow their example.

Tho outward bark of the branches, and the leaves, have an aſtringent acid taſte; the inner yellow bark, a bitter one; this laſt is ſaid to be ſerviceable in the jaundice; and by ſome, to be an uſeful purgative.—The berries, which to the taſte are gratefully acid, and moderately reſtringent, have been given with good ſucceſs in bilious fluxes, and diſeaſes proceeding from heat, acrimony, or thinneſs of the juices. Among the Egyptians, barberries are frequently employed in fluxes, and in malignant fevers, for abating heat, quenching thirſt, raiſing the ſtrength, and preventing putrefaction: the fruit is macerated for a day and night, in about twelve times its quantity of water, with the addition of a little fennel ſeed, or the like, to prevent offence to the ſtomach; the liquor ſtrained off, and ſweetened with ſugar, or ſyrup of citrons, is given the patient

patient liberally to drink. Profper Alpinus (from whofe treatife De Medicina Ægyptiorum, we have extracted this account) informs us, that he took this medicine himfelf, with happy fuccefs, in a peftilential fever, accompanied with an immoderate bilious diarrhœa.

BARBLES, or *Barbs*, are excrefcences or knots of fuperfluous flefh, growing under the tongue of horfes and cows, and may be feen by drawing it afide.

They are cured by cutting them clofe off, and waſhing the wounded part with brandy, or falt and water.

BARDANA. See BURDOCK.

BARDELLE, a ſaddle made only of cloth ſtuffed with ſtraw, and tied tight down with pack-thread, without either leather, wood, or iron. In Italy they trot their colts with ſuch ſaddles.

BARCARIUM, a berghery, a ſheep-cote, and ſometimes a ſheep-walk.

To BARD, or *Beard* Wool, is to cut the head and neck from the reſt of the fleece. 8. *Hen.* 6. *Chap.* 22.

BARG, a horſe-way up a ſteep hill.

BARGAIN and SALE, is a contract in conſideration of money, paſſing an eſtate in lands by deed indented.

BARGARER, an old word for a ſhepherd.

BARILLA, a ſpecies of pot-aſh, ſometimes called Soda, prepared in Spain, from a plant called Kali, or Glaſs-wort.

BARING *of Trees*. See ABLAQUEATION.

BARK, the exterior part of a tree, which ſerves for a ſkin or covering.

It is compoſed of four ſimilar parts, viz.

1. The epidermis cuticle or ſcarf-ſkin, which enfolds the beds of the bark.

2. Veſſels containing the ſap.

3. Veſſels containing the blood or proper juice of the plant.

4. The cellular web or tiſſue.

The epidermis is a very fine membranous ſubſtance that is ſpread over the bark, and is always tranſparent and elaſtic, without colour or any ſenſible organiſations, ſome very ſmall pores excepted, which are ſometimes diſcovered in its ſubſtance, and probably ſerve the double purpoſe of throwing off the ſuperfluous nouriſhment, and imbibing new.

The ſap veſſels are woody longitudinal fibres, which are hollow, and almoſt inconceivably fine. They are ſimple, devoid of ramifications, and ſo ſituated, with reſpect to each other, as to form a tiſſue or web of ſeveral bundles in form of a net, the meſhes of which are longer than broad. Theſe ſmall bundles are the true vegetable muſcles, and differ in their figure from thoſe of animals, which are formed of large maſſes of fibres accumulated one above another.

The proper veſſels, called likewiſe, from their uſe, vegetable blood-veſſels, are ſtrait longitudinal fibres, larger than the ſap-veſſels, and leſs numerous. They are filled with the proper juice, which is generally coloured, and is, in fact, the blood of the plant. Of this kind is the milk of ſpurge, dog's-bane, and fig, the yellow juice of celandine, the reſin of fir and pine-trees, and the mucilage of plants of the mallow tribe.

The cellular web, or tiſſue, is an aſſemblage of little bladders, without any ſenſible communication, which fill the interſtices or meſhes of the net formed by the ſap-veſſels, and traverſe the whole ſubſtance of the bark and wood, from the pith or medullary ſubſtance in the centre, of which it is only a prolongation, to the epidermis or ſkin of the bark, where it is much ſlenderer than towards the centre of the wood.

Dr. Agricola ſays, that the bark of a tree may be compared to the ſkin of an animal, which is deſigned for the preſervation of the inward parts. It is generally of a ſpongy texture, and communicates with the pith, by a multiplicity of ſmall fibres paſſing between the capillary tubes, of which the wood conſiſts; ſo that the roots having imbibed the proper nutriment of the tree, it is carried up by the warmth of the ſun, through the fine arterial veſſels of the tree to the top of it; and being there condenſed by the cold, it returns by its own gravity down by the veſſels which lie between the wood and the inner bark, which perform the office of veins; and as it paſſes by, leaves ſuch part of its juices as the texture of the bark will receive, and requires for its ſupport.

Some authors are of opinion, that the ſoft whitiſh rind, or ſubſtance which lies between the inner bark and the wood, performs the office of veins; and ſome call this a third bark, ſuppoſing it to differ from the other only in having its fibres cloſer; adding that this is the part which contains the liquid ſap gums, &c. found in plants during the ſpring and ſummer months, and which hardening by degrees, is imperceptibly conveyed into the wood part of the tree, forming every year a new circle of wood between the bark and the trunk. Theſe circles are not equally thick, that circumſtance depending on the fertility of the year.

The ancients wrote their books on bark, eſpecially of the aſh and lime-tree; not on the exterior, but on the inner and finer bark.

There are many kinds of barks in uſe in the ſeveral arts; as the oak bark for tanning leather, which, when it has done that office, is fit for uſe in hot-houſes, &c. Some barks are uſed in medicine, as the jeſuits' bark, mace, &c. and others for divers purpoſes, as the bark of the cork-tree. In the Eaſt-Indies they ſpin the bark of a certain tree into a ſtuff; they alſo mix it with ſilk in manufacturing of ſtuffs, which go under different denominations.

The bark of trees in general, and eſpecially that of the oak, is extremely uſeful in vegetation. One load of oak bark laid in a heap and rotted after the tanners have uſed it for dreſſing their leather, will do more ſervice to ſtiff cold land, and its effects will laſt longer, than two loads of the richeſt dung. Mr. Miller ſays it is much better for cold, ſtrong land, than for light, hot ground, if it be uſed alone, as taken from the tan-yard; becauſe it is of a warm nature, and will looſen and ſeparate the earth ſo effectually, that, by only using it two or three times, a ſtrong ſoil, not eaſy to be wrought, will be rendered perfectly light and looſe: but by mixing it with earth of a nature contrary to that which it is intended to correct, and in a proportion ſuited to the nature of the ſoil it is to be laid on, it will prove a fine manure for almoſt any land; its ſalts being ſuch as will always fertilize the ground.

It neceſſarily abounds in vegetable parts, derived from the tree to which it once belonged; and cannot but be ſtrongly impregnated with animal juices, as it lies a long time in the tan-vats, with the ſkins and hides of animals: circumſtances which muſt render it ſingularly beneficial to all poor lands.

If laid on graſs, it ſhould be ſpread ſoon after Michaelmas, that the winter rains may waſh it into the ground: for if it be laid on in the ſpring, it will be apt to burn the graſs, and, inſtead of improving, will do it a conſiderable injury for that ſeaſon. When uſed for corn land, it ſhould be ſpread before the laſt ploughing, that it may be turned down for the fibres of corn to reach it in the ſpring; for if it lies too near the ſurface, it will forward the growth of the corn in winter; and in the ſpring, when the nouriſhment is chiefly wanted to encourage the growth of the plants, it will be ſo nearly conſumed, that the corn will receive very little advantage from it.

Mr. Bradley tells us, that he adviſed a gentleman to whom a conſiderable quantity of bark was left upon the expiration of the leaſe of a tan-yard, to lay ſome of it upon a piece of ſtubborn four land, which he did with ſuch ſucceſs, that his product was admired by all the gardeners and farmers in the neighbourhood. For ſuch ground, he thinks it ſhould be mixed with a ſandy ſoil; and that one third of bark to two thirds of ſand, will be a very ſufficient proportion for clays.

BARK-BOUND, a diſeaſe common to fruit-trees, and may be cured by making a ſlit through the bark from the top of the tree to the bottom, in February or March; and if the gaping be pretty conſiderable, fill up the rift with cow-dung.

BARKING *of Trees*, the operation of ſtripping or peeling off the bark or rind, particularly that of the oak, for the uſe of tanners.

To prevent deer, &c. from injuring the BARK *of trees*: Take lime, that has been long lain at the bottom of a tan-pit, and mix this in a tub with freſh human ordure, ſo as to make it of ſuch a conſiſtence that it may be laid on the ſtems and branches of trees by a ſmall ſized bruſh, ſuch as is uſed by white-waſhers; or it may be daubed on ſhreds of baſs mats, pieces of old rope, &c. to be tied round the ſtems and

and branches from the bottom to the top. This muſt be renewed twice in a year, or three times at the moſt, and is comparatively of no expence nor trouble.—Cattle will not come near or injure the ſmalleſt or tendereſt plant that is daubed with this mixture.

Something like this practice was recommended above an hundred years ago, by the celebrated Sir Hugh Platt and Mr. Evelyn. Sir Hugh, in his "Garden of Eden," amongſt his ſecrets of ordering trees and plants, gives the following: "Mix green cow-dung and urine together; waſh the trees with a bruſh, as high as you think meet, once in two or three months, and it will keep the trees from barking with beaſts, conies, &c. and the ſame doth alſo deſtroy the canker." Mr. Evelyn ſays, "Deer, conies, and hares, by barking the trees in hard winter, ſpoil many tender plantations. Next to the utter deſtroying them, there is nothing better than to anoint that part which is within their reach with *ſtercus humanum*, tempered with a little water or urine, and lightly bruſhed on: This renewed after every great rain. But a cleanlier than this, and yet which conies and even cattle moſt abhor, is to water or ſprinkle them with tanner's liquor, viz. that which they uſe for dreſſing their hides." Vide Dr. Hunter's edition of Evelyn's Silva, p. 227.

Jeſuit's BARK, [*Quinquina*]. See the next article.

Peruvian BARK, [*Peruvianus Cortex*,] is the bark of a tall ſlender tree, growing in Peru. It is brought to us in pieces of different ſizes, ſometimes rolled up into ſhort thick quills, and ſometimes flat: the outſide is browniſh, and generally covered in part with a whitiſh moſs; the inſide is of a yellowiſh, reddiſh, or ruſty iron colour. It has a lightly aromatic ſmell, ſomewhat muſty, yet not diſagreeable; a bitteriſh, aſtringent taſte, which dwells long upon the tongue, accompanied with a degree of aromatic warmth. The ſmall, thin, flat pieces are by ſome accounted the beſt; by others, the quill ſort, with the rougheſt coat, eſpecially if of a bright cinnamon colour on the inſide: though the large flat pieces, whether rough or ſmooth, of a lighter or darker colour, are often of equal goodneſs. The beſt bark is that which is ſtrongeſt in ſmell and taſte: this likewiſe proves friable betwixt the teeth, and doth not ſeparate into fibres; it breaks not ſhivery, but cloſe and ſmooth.

The virtues of this bark, as a febrifuge, were diſcovered by the Indians about the year 1500: Europe did not become acquainted with it till 1649: nor was it received into general practice till ſeveral years after this: ſome ill conſequences, enſuing from its imprudent uſe, having brought it for a time into diſrepute. At preſent, it is looked upon as the moſt effectual remedy in intermittent fevers of almoſt every kind, and ſafe in all ages and conſtitutions; provided it be judiciouſly and ſeaſonably adminiſtered, and due regard be had to the circumſtances of the diſeaſe. The modern practice, previous to the exhibition of this medicine, uſually gives an emetic at the beginning of a paroxiſm; in ſome caſes a cathartic, and in plethoric habits venæſection, are premiſed: theſe render the bark not only more ſafe, but likewiſe more certain and ſpeedy in its operation: where theſe evacuations are neglected, or not ſufficiently plentiful, the diſeaſe, if of long ſtanding, ſcarce yields to the *cortex*; or if it appears at length ſubdued, yet the patient does not recover his ſtrength, and ſoon ſuffers a relapſe. The uſe of the bark is begun at the end of a paroxyſm, and repeated, in the quantity of half a dram, (more or leſs according to the circumſtances of the patient) every third or fourth hour during the intermiſſion: where the fever is of the bilious kind, and accompanied with great heat, a little nitre is joined: in all caſes, moderate exerciſe generally promotes its effect. At firſt, it uſually looſens the belly, and ſometimes operates as if a cathartic had been taken; and by this means ſupplies the omiſſion of evacuations before its exhibition: if the purging continues, the medicine does not anſwer the purpoſes intended by it: in ſuch caſe, a little opium is added, which effectually ſuppreſſes the flux: if, after this, the patient continues too coſtive, recourſe is had to glyſters. The looſeneſs, however, ought not to be ſtopt too ſoon: on the contrary, where the bark does not itſelf produce this effect, it is neceſſary, Dr. Mead informs us, to join

to

to it a little rhubarb, ſo as to occaſion for a time two ſtools a day; by this means the diſeaſe is more effectually cured, and leſs ſubject to be followed by a dropſy, or ill habit of body: after a dram or two of rhubarb had been taken, it is to be diſcontinued, and the bark exhibited by itſelf. During the uſe of the bark, the pulſe (which, betwixt the paroxyſms, is generally weak and ſlow) becomes ſtronger and quicker, the appetite mends, the patient becomes more chearful, and perſpiration increaſes; theſe may be looked upon as certain preſages of its ſucceſs. Theſe effects of the bark have been too frequently overlooked in the cure of agues, though it is certain, that perſpiration, for inſtance, contributes greatly to it: hence in warm weather, fevers yield more eaſily than in cold, thoſe which have continued all the winter, frequently go off ſpontaneouſly on the return of ſummer; and exerciſe alone has ſometimes performed a cure. After the fever has been removed, the medicine is continued for ſome time longer, to prevent a relapſe; and evacuations, unleſs abſolutely neceſſary, abſtained from. The diſeaſe is nevertheleſs ſeldom compleatly cured before ſome very conſiderable evacuation, either by ſtool, urine, or perſpiration, enſues: if this does not ſucceed ſpontaneouſly, cathartics, diuretics, or diaphoretics, are given in conjunction with the bark, otherwiſe the patient continues weak, and without appetite, till either the diſeaſe returns, or changes into one of a different kind.

In ſymptomatic agues, hectic, and purulent fevers, cacochymic habits, and where the hypochondres are ſwelled and diſtended, this medicine is improper, and for the moſt part prejudicial. Its manifeſt aſtringency forbids its uſe in obſtructions of the abdominal viſcera, or ſuppreſſion of any critical evacuation; until the obſtruction is firſt removed, or the evacuation had its due courſe.

In acute, inflammatory, or malignant fevers, the bark does not ſeem to have any good effect. Nevertheleſs, in the decline of long nervous fevers, or after a remiſſion, when from bad habit, old age, fatigue, or the like, the patient is extremely weak, and the pulſe low, the *cortex* proves a medicine of excellent ſervice; provided that there is no extravaſation, that the veſſels remain entire, and pus is not already formed.

Peruvian bark has likewiſe been found eminently ſerviceable in gangrenes and mortifications, proceeding either from an internal or external cauſe. In all the caſes of this kind, where it proved ſucceſsful, it occaſioned a kind ſuppuration, which degenerated when the uſe of the medicine was diſcontinued, and again turned kindly upon reſuming it. Some have been hence induced to exhibit the *cortex* in variolous caſes, where either the puſtules did not rightly ſuppurate, or petechiæ ſhewed a diſpoſition to a gangrene; and here likewiſe it anſwered expectation: the empty veſicles filled with matter, the watery ſanies changed into thick white pus, the petechiæ became gradually of a pale colour, and at length diſappeared, and the pox began to turn ſooner than was expected.

The bark has been applied likewiſe, and not without ſucceſs, to the cure of periodic head-aches, hyſteric and hypochondriac fits, and other diſorders, which have regular intermiſſions. By its aſtringency and aromatic quality, it ſtrengthens the whole nervous ſyſtem, and proves uſeful in weakneſs of the ſtomach, and ſundry chronical diſorders, proceeding from too great laxity of the fibres. In obſtinate uterine fluxes, and old gleets, bark joined with chalybeates has notable effects.

The virtues of Peruvian bark reſide chiefly in a reſinous ſubſtance, and hence are extracted in perfection by rectified ſpirit. Aqueous liquors gain little from it, without ſtrong coction, by which the reſin is melted out, and mingled with the water; which whilſt hot, appears tranſparent, but in cooling grows turbid, and depoſits great part of the reſin to the bottom. Water elevates in diſtillation the aromatic part of the bark: pure ſpirit brings over nothing. Hence an aqueous extract proves not only leſs in quantity, but likewiſe inferior in quality to one made with rectified ſpirit. Proof ſpirit extracts the virtues of this drug in tolerable perfection, in the cold; heat enables it to take up more than it can retain when cold. Spirit of ſal ammoniac, prepared with fixt alcaline ſalts, gains very little from the *cortex*, either with or without heat: the ſpirit

fit prepared with quick-lime, and the dulcified ſpirit, in a few hours become ſtrongly impregnated with the ſmell and taſte.

The ſubſtances uſually joined with bark in preſcription, ſeem calculated either to promote its efficacy, or merely for reducing it into the intended form; without much regard to its agreeableneſs, and the conveniency of taking it: this is, nevertheleſs, a point of great conſequence, as its taſte and the quantity which is neceſſary, make the patient too frequently loath it before enough has been taken to produce the deſired effect. If deſigned to be exhibited in the ſolid form of a bolus, electary, &c. it ſhould be made up, not, as is cuſtomary, with ſyrups, but with mucilages: with the former, it ſticks about the mouth and fauces, whence its taſte remains for a conſiderable time; with the latter, it paſſes freely, ſcarce leaving any taſte in the mouth. Aromatics do not prevent the taſte of the bark diſcovering itſelf; extract of liquorice very effectually conceals it. The extract of logwood alſo, joined to that of bark, and a proper quantity of mucilage, form a very elegant and agreeable compoſition.

BARLERIA. We have no Engliſh name for this plant, of which there are ſeveral ſpecies; but in Jamaica it is called *Snap-dragon*. When the ſeeds are received from abroad, they muſt be ſown upon a moderate hot-bed in the ſpring; and when the plants are fit to remove, they muſt be each planted in a ſeparate pot, and plunged into a hot-bed of tanners bark, where they muſt remain, and be treated in the ſame manner as other tender exotics.

Some of them are eaſily propagated by cuttings during the ſummer months. The ſeed-veſſels are very elaſtic, and throw out the ſeeds with violence, on being touched when ripe.

BARLEY, [*Hordeum*] a well-known ſpecies of grain much cultivated in England, for the purpoſe of making malt. *See the article* MALT.

Barley is ſaid to have been the firſt grain introduced for the ſuſtenance of man, the cultivation of which was taught by the Goddeſs Iſis to the Egyptians, according to the moſt ancient hiſtories of that nation. It appears from Diodorus Siculus, that Iſis found the plants of barley and wheat growing in the woods, and that ſhe taught man how to collect, ſow, and cultivate them. It is much eſteemed for bread in many countries; and though wheat bread principally prevails in this kingdom, yet it is the common food of ordinary people in ſome of the counties; and experience ſhews it to be wholeſome and nouriſhing. Barley bread, however, has one very peculiar inconvenience, which is that of giving the heart-burn to pregnant women.

In ſeveral parts of Europe barley is uſed, as oats are with us, for feeding horſes. This was the uſage of the ancient Romans, and is ſtill ſo of the Spaniards and other nations, who make no uſe of malt. It ſerves admirably for fattening hogs, poultry, &c but this we need not deſcribe. Boiled barley is much uſed by ſome horſe-dealers to pamper horſes and make their coats ſleek.

Barley chaff is likewiſe mixed with corn for horſes; but we have known ſeveral diſagreeable conſequences of this, ariſing from the piles, or peels, ſticking in the horſes mouths. But the chaff is excellent to ſtrew in gardens, for no ſnail or ſlug can poſſibly crawl over its ſharp awns or beards.

We ſhall not attempt to give a minute account of its cultivation, every Farmer being ſufficiently acquainted with it; but ſhall only add ſuch remarks as we think are not ſo univerſally known; premiſing that the various names do not denote ſo many different ſpecies of barley, but are frequently given to it on account of large quantities being raiſed at or near ſome particular places; hence we have Patney barley, and Fulham barley, which are both the ſame ſpecies, as the Spring or Rathripe barley: the want of this diſtinction has occaſioned no ſmall confuſion among theoretical writers on huſbandry.

Mr. Miller enumerates four ſpecies; 1. Spring barley; 2. Common long-eared barley; 3. Sprat, or Battledore barley; 4. Winter, or Square barley, commonly called Bear, or Big; all the others being only varieties of theſe. Some add the Naked, or French barley, but this he conſiders as one of the varieties of wheat. There is, however, another ſpecies introduced from Siberia, which produces larger crops than our ſorts; but then it ſhould always be

Heated Barley. See under Malt. Way-weed.

be conſidered, that large crops impoveriſh ſoils more than ſlender ones, and beſides, it is not ſo good for malt as the Patney barley, which, on account of its beautiful colour, thin ſkin, the plumpneſs of the grain, and the quantity obtained from an acre, may indiſputably be reckoned equal, if not ſuperior, to any other ſort in Europe.

Some care is required in the choice of land for barley, there being large tracks which will bring good wheat, clover, &c. that will not bear good barley; this can only be known to the occupier. There are, generally ſpeaking, two ſorts of ſoils which are not ſo proper as ſome others; theſe are, the very light looſe ſoil which wants a ſtaple; and the ſtiff binding ſoil that often requires more labour to get it into order than can well be ſpared, or the ſeaſon will admit of: the former may be much improved by marle, clay, &c. for the other we recommend the ſpiky roller, which will break the clots infinitely ſooner than the clotting mauls or beetles.

In drawing turnips, when they precede barley, care ſhould be taken to rake over the holes, leſt the water ſhould ſtand in them, (as it ſometimes will) and chill the land.

The land ſhould be in good heart, as well as in good tilth, and then a good barley crop will ſometimes pay more than the wheat crop. Warm ſoils, well dreſſed, ſeldom fail to produce good barley. We would recommend manuring for barley, rather than wheat: ſome fold upon it as ſoon as the ſeed is ſown; but this would prove fatal in a ſtiff ſoil and rainy weather.

The field ſhould be frequently plowed, a fine tilth being abſolutely neceſſary; we think the land ſhould not have leſs than five ploughings; but ſix and even ſeven ploughings, will well repay the huſbandman, by producing a crop ſo much more plentiful than can be had in the common ordinary culture.

The time for ſowing depends ſo much upon the ſoil and the ſeaſon, that we ſhall leave it, together with the requiſite quantity of ſeed, to the Farmer's judgment; though we think, with Mr. Miller, that in common they over-ſeed their good land. If the land ſhould bake after it is ſown, a light harrow drawn over it, will prove the beſt remedy.

With reſpect to the ſeed, if it comes off a ſtiff ſtrong ſoil, the barley will not ripen ſo ſoon as when it comes off warm light land; and though a proper change of ſeed from different ſoils, is neceſſary to preſerve the grain from degenerating, yet this remark will generally be found to hold good.

The advantages of ſowing the Putney, or Rathripe barley, in preference to ſome of the other ſorts, on a good warm ſoil, ſhould not be forgotten, as it will fetch a better price than the late thick ſkinned barley, which is raiſed upon heavy land.

Great caution is neceſſary in rolling barley. It ſhould not be rolled with a very heavy roller as ſoon as it is ſown; this would too much counteract the effects expected from repeated ploughings; neither ſhould it be rolled when the barley is juſt come up; for the clots of earth, which the roller muſt break, would ſpread and ſmother many of the ſtalks or ſpires, while they are ſo very tender; on the other hand, if the barley be too high, the roller will ſqueeze the ſtalks, and make them bleed; the medium, when the barley is about two or three inches high, is much the beſt time for this buſineſs.

It is uſual in great part of the kingdom, to ſow graſs-ſeed with barley; but this is attended with great inconvenience. If the clover, &c. grows quick, it will ſoon over-power the barley, and much injure the crop: this, however, may be guarded againſt by ſowing the clover ſeed after the barley is up; but then, if there ſhould be a rainy catching harveſt, it will hardly be poſſible to get the barley ſufficiently dried; ſo that many thouſand quarters of barley are annually ſpoiled, or at leaſt much damaged. Hence it is now common with many Farmers to ſow their clover upon their wheat in the ſpring, eſpecially ſince harrowing wheat at that time has been found to be of ſuch great utility; but this will be more particularly conſidered under the article CLOVER.

Mr. Liſle's remark on the pooreſt ſandy ſoil at Patney being ſown with Rathripe barley, is without any foundation in truth. The ſoil is in general ſandy, but rich; ſo far from being poor

poor or barren, their incloſed tillage land ſeldom or never fallow; and if the farmers beſtow but a moderate ſhare of huſbandry upon it, they are certain (as far as human art or induſtry can afford certainly) of a large crop of fine corn.

As barley will not commonly come up in a very dry time, Mr. Liſle obſerves, that if it was ſowed in the evening, and left all night to be moiſtened with the dew, and harrowed the next morning, it is very probable the effect would be a ſalutary one. This notion is confirmed by the Rev. Mr. Elliott in his Eſſays on Field Huſbandry. He ſays, that a Farmer who was obliged to attend buſineſs in the courſe of the morning, ſowed ſome oats at break of day, and harrowed them in before ſun-riſing; the conſequence was, that theſe early ſown oats out-ſtripped the other oats ſown in the ſame field after the ſun was up, and likewiſe produced a better crop at harveſt.

Mr. Liſle gives us another inſtance of a malter in Hampſhire, who having taken ſome lands in the beginning of May, when no ſeed was to be had, ſowed ſome barley that he had wetted for malt and was juſt well chitted or ſprouted, which produced as good a crop, he ſays, as any ſowed that year. Theſe experiments he thinks are in favour of ſteeping or moiſtening barley before it be ſowed.

It may be expected, that we ſhould mention the different methods of peeling barley, to fit it for the market. Some threſh it over again, while it is in the chaff, and this is beſt done by two threſhers on account of the quickneſs of the ſtrokes keeping the barley in motion. Others put half a buſhel of the winnowed barley into a ſack, which is ſhaken briſkly to and fro by a man at each end, till the peels are rubbed off; this method is much approved of. A third method is by an inſtrument ſomewhat reſembling a gridiron, but with the handle fixed on the top, by which the labourer lifts it up and down till he has beat off the beards; this inſtrument is called a peeling iron, but the method is at beſt a laborious one.

For the culture of Bear Barley or Big, ſee BEAR.

French BARLEY, [*Hordeum Gallicum*, ſive *Mundatum*] Common barley is ſometimes ſo called when freed from the ſhell. *See Bere-Barley.*

Pearl BARLEY, [*Hordeum Perlatum*] is principally prepared in Germany and Holland, by grinding the ſhelled barley into little round granules, which appear of a pearly whiteneſs.

Barley, in its ſeveral ſtates, is more cooling, leſs glutinous, and leſs nutritious, than wheat or oats: among the antients, decoctions of it were the principal aliment and medicine in acute diſeaſes. It being more abſterſive than the other grain of which bread is uſually made, thoſe who are not accuſtomed to eat barley bread will find it at firſt to operate like a gentle cathartic. Barley beyond all diſpute makes the worſt kind of bread, which has likewiſe one diſagreeable property peculiar to itſelf, which is that of giving the heartburn to pregnant women. Boiled barley is much uſed by ſome horſe-dealers to pamper their horſes and make their coats fine and ſleek, when they are intended for ſale.

BARLEY *Water*, [*Aqua Hordeata*] is made thus,

Take of Pearl Barley, two ounces;
Water, four pints.

Firſt waſh the barley from the mealy matter that adheres to it with ſome cold water; then boil it a little with about half a pint of freſh water, which will acquire a conſiderable tinge from it. Throw away this tinged water, and put the barley into the water above preſcribed, made firſt to boil, and continue the boiling till half the water is waſted.

However trivial medicines of this claſs may appear to be, they are of greater importance in the cure of ſundry acute diſeaſes than many more laborious preparations.

BARLEY *Sugar*, [*Saccharum Hordeatum, ſeu Penidiatum*] is made by boiling white ſugar in barley water till it acquires ſuch a conſiſtence that it may be drawn out and twiſted into threads or ſtrings.

BARLEY-CORN, in long meaſure, is one third of an inch.

BARM, otherwiſe called *Yeaſt*, the head or workings on the ſurface of ale or beer while the liquor is fermenting.

Various unſucceſsful attempts have been made to preſerve it ſweet and fit for uſe, which are commonly retailed as good ones in books of houſewifery. Nor

Nor has a ſubſtitute for it been yet found, at leaſt made public. As its fermentative principles may be expanded almoſt ad infinitum, a much leſs portion will ſerve than is commonly uſed by bakers; but then it requires more time and labour, which they are not very readily inclined to beſtow; though when yeaſt is very ſcarce, they would certainly find their account in it. It may at any time be freed from its bitterneſs by waſhing it in ſpring water.

Barm on diſtillation yields a conſiderable quantity of ſpirit; hence it is much uſed by diſtillers for that purpoſe.

BARN, a covered place or houſe for laying up any ſort of grain, hay, or ſtraw.

Every farm ſhould be furniſhed with barns proportioned to the quantity of corn it produces, which will be a great advantage to the farmer. The barns ſhould have a dry ſituation, and be properly placed in the farm-yard, but not quite contiguous to the houſe for fear of fire.

The beſt barn floor, both for threſhing and for keeping corn, is that which is drieſt, ſmoothеſt, moſt completely ſolid, and conſequently freeſt from cracks and holes, in which inſects and vermin may ſhelter themſelves, and even breed. The ancients were remarkably careful in this reſpect, as we learn from Cato, Varro, and Columella, the laſt of which excellent huſbandmen relates particularly the great pains they took, firſt to dig up the ground to ſome depth, in order to moiſten it with freſh lees of oil, but not with any that had ſalt in them; then to mix it thoroughly with chaff, and ram it down as cloſe as poſſible; afterwards as it dried, to ſtop all the cracks and crevices that appeared; to continue beating it down with great force, to render it quite level; and laſtly, to ſtrew it again with chaff, which they trod in, and then left it to be completely dried by the ſun. All theſe writers agree, that the lees of oil, thus uſed, prevent the growth of weeds in theſe floors, and contribute to preſerve the corn from being plundered by the mice and ants. Their barns were always ſeated high, and as dry as poſſible.

A floor made in the above manner muſt be greatly preferable to either ſtone, or the earthen floors, too common in many parts of England, and from which, ſuch dampneſs has been communicated to the corn, as has rendered wheat, for example, ſix-pence a buſhel the worſe, either for keeping or exporting.

Boarded threſhing-floors, made of ſound, thick, well-ſeaſoned planks of oak, are excellent for ſervice, will laſt a long time, and may be converted into good floorings for rooms, by planing them down, after they are become two uneven for the purpoſe originally intended.

BARNACLES, horſe twitchers, or brakes, are a ſort of inſtrument uſed by farriers to put upon horſes' noſes, when they will not ſtand quietly to be ſhod, blooded, or dreſſed.

There are ſeveral ſorts of barnacles, the common ſort are rollers of wood, bound together, with the horſe's noſe between them. Another ſort have handles, and are therefore termed pincers, to diſtinguiſh them from the foregoing. And a third ſort are held together at the top by a ring incloſing buttons, having the top buttons held by an iron pin rivetting through them.

BAROMETER, vulgarly called a *weather-glaſs*, an inſtrument for meaſuring the weight of the atmoſphere, and the variations therein, in order to determine the changes of the weather.

There are ſeveral kinds invented, but the Torrocellian, (ſo called from Torrocelli the inventor) which is that now in common uſe, is perhaps the beſt of any hitherto contrived. The great fault in theſe common barometers is the ſmallneſs of the tube, which ſhould not be leſs than a quarter of an inch diameter.

The following remarks may be of uſe to the Farmers, becauſe it is not ſo much the height of the mercury on the tube that indicates the weather, as the motion of it up and down; it ſhould therefore be obſerved,

1ſt, If the ſurface of the mercury in the tube is convex, that is, higher in the middle than at the ſides, it is generally a ſign that the mercury is riſing.

2d, If the ſurface is concave, or hollow in the middle, it is ſinking.

3d, If it is level, or nearly ſo, the mercury is ſtationary; but it will generally be a little convex, eſpecially if the glaſs be a ſmall one.

4th, If the glaſs is ſmall, ſhake the tube;

tube; and if the air is growing heavier, the mercury will riſe a ſmall matter; but if it is growing lighter, it will ſink a little. This proceeds from the mercury's adhering to the ſides of the tube, which prevents the free motion, till it is diſengaged by the ſhock. Whenever therefore an obſervation is to be made with ſuch a tube, it ought always to be firſt ſhaken, otherwiſe the mercury will not vary till the weather it ought to have indicated is preſent.

It has been remarked by every obſerver of nature, that when the mercury is agitated violently in a barometer, the upper ſurface of the column is concave, when it ſinks, and convex, when it riſes. The ſame thing happens, tho' more imperceptibly, when the motion or oſcillations of the column of mercury are leſs conſiderable.

The action of the air in the different ſtates of the atmoſphere, i. e. its different degrees of weight or gravity, make the mercury riſe or ſink in the barometer with more or leſs velocity.

I obſerved (ſays Mr. Changeux) in a barometer of great mobility, firſt, that the concavity and convexity, nay, the leſs conſiderable concavity of the upper ſurface of the mercurial column, appeared viſibly before the riſing or falling of the ſame column, and hence I could foreſee the riſing or falling of the column before it happened: 2dly, that the differences in the ſurface of the mercury were the more ſenſible, in proportion as the ſucceeding change of weather was more conſiderable and permanent.

Theſe preceding *ſigns*, being well aſcertained, would render the barometer much more uſeful than it has hitherto been; and this engaged Mr. Changeux to communicate his obſervations to ſome eminent naturaliſts, who imagined that they had remarked, on ſeveral occaſions, the ſame phœnomenon. It requires, however, a nice penetration in the viſual organ, and alſo a confirmed habit of obſerving, to diſcern, at firſt ſight, the exact meaſure of convexity in the upper ſurface of the mercury in moſt of our barometers. A number of experiments convinced Mr. Changeux that all barometers do not exhibit this phœnomenon in ſuch a ſtriking manner as to render it eaſily perceivable; and the reaſon of this he thinks deducible from the different degrees of purity in the quick-ſilver, and to the greater or leſſer force of attraction in the glaſs tube.

Our author points out two or three methods of diſcerning the degrees of the *boſs* or curvity which is formed on the ſurface of the mercury in the different ſtates of the atmoſphere, and what they denote and portend. The firſt thing to be remarked is the curvature of the mercury when it is in the moſt entire ſtate of reſt: The barometer then muſt be ſhaken: After this motion, if the ſurface of the mercury becomes much more convex in reaſcending, this is a ſure ſign, that not having its *mean* convexity, it will continue to deſcend; but if the ſurface of the mercury, is not become much more convex in re-aſcending, this is a ſign that it has acquired its mean, nay, even its greateſt convexity, and it may be concluded from thence, that it will continue to riſe, or that it will become ſtationary.

There is another, and a ſtill more eaſy method of making theſe obſervations, by conſtructing a barometer with a border of a coloured liquor. This may be done by inſerting a ſmall drop of liquor (ſuch as ſpirit of wine dyed red) above the column of mercury: this drop, by occupying a place between the glaſs and the mercury, will form a kind of border; and this border (as we ſhall ſee immediately) will mark the degree of convexity from the top of the column, and render the previous ſigns of the riſing and ſinking of the mercury in the barometer clearly perceptible.—In effect, it is highly conceivable, that when the mercury is diſpoſed to riſe, the coloured border will occupy the void ſpace between it and the glaſs: when, on the contrary, it is ready to ſink, the coloured border will riſe to a level with it, nay, will ſometimes get above the ſurface of the mercury, becauſe the mercury having almoſt entirely loſt its convexity, will leave no void ſpace between it and the glaſs which contains it.

But here ariſes a queſtion: whence the mercury derives the property of aſſuming a convex form when it aſcends, and a concave one when it deſcends? this property is generally ſuppoſed to depend upon attraction, which indeed accounts for a part of the phœnomenon, even the concave form which

the mercury assumes, when it descends: and that in the following manner.—We may represent to ourselves the mercury in the barometer, as attached, in all the points of its external surface, to the internal surface of the glass tube, in which it is contained. The attractive force of this internal surface acts upon the mercury from the top to the bottom of the column, and in the reservoir where the mercury communicates with the atmosphere.——Let us then (says our author) divide, ideally, or in imagination, the column of mercury into as many concentric cylindrical layers as we think proper; it is evident that the first surface or external layer will be more powerfully attracted, than those which don't immediately touch the sides of the glass-tube. In effect, the force of attraction is in an inverse duplicate proportion of the distances. When therefore the mercury sinks in the barometer, the first surface or layer, which is contiguous to the glass, will not yeild to the central force which is imprinted on it, until the second layer, which is less powerfully attracted, has already yielded, nor the second, until the third, and so on, till we come to the center of the column, which will be the center of the concavity.

BARON and FEME, in our law, are husband and wife, and adjudged to be but one person; so that one cannot be witness for or against the other, except in cases of high treason.

BAROSCOPE. The same with BAROMETER.

BARREL, a vessel too well known to require any description.

BARREL, a measure of liquids, containing thirty-one gallons and a half of wine; thirty-two gallons of ale; and thirty-six gallons of beer. The barrel of vinegar, or beer, or other liquor, preparing for vinegar (or rather alegar) ought to contain thirty-four gallons, according to the standard alequart.

Barrel also denotes a certain weight, which differs according to the several commodities. A barrel of Essex butter weighs one hundred and six pounds; and of Suffolk butter two hundred and fifty-six pounds; a barrel of herrings is thirty-two gallons wine measure, containing a thousand herrings; the barrel of salmon is forty-two gallons, and of eels thirty gallons; the barrel of soap must weigh two hundred and fifty-six pounds.

BARREL-CHURN. See CHURN.

BARREN CORN, a name given to a distemper in corn, by M. Aimen, who first observed it. The ears of wheat or rye, the species most subject to this distemper, which are thus affected, are long, lean, and white; in some the stamina, or small threads in the middle of the flower, are dry, transparent, and horned; the female organs are small, whiter, and less velvetty, than in healthy ears: in others, the filaments are swelled, the apices, or knobs on the tops of the stamina, void of dust, or farina, and the stigmata badly unfolded. The stigmata of all blossoms of an ear are sometimes dried and parched; at other times the apices are swelled. See ABORTIVE CORN.

M. Aimen thinks, with Theophrastus, that these accidents happen to such plants as grow with most vigour. Then, says he, the sap, which is powerfully conveyed into the leaves and other parts of the plant, prevents the organs of fructification from unfolding themselves.

He also imagines that frost may cause this accident, by particularly affecting the female organs: and he thinks, that a hot gleam of sun-shine coming after a hard shower may have the same effect. If this be the case, the distemper in question may be ranked with the parched and shrivelled corn, or perhaps with the empty-eared corn. Lastly, the same naturalist observes, that insects are sometimes, though very rarely, the cause of this distemper. See SMUT.

BARREN EARTH, a name given by some to the under stratum of earth, or that which lies below the stratum frequently turned up, and cultivated for the nourishment of plants.

This notion of the under-stratum of earth being dead or barren, and will destroy every vegetable planted in it, seems to be founded on a mistake; for every kind of earth, unless it has any metallic particles mixed with it, whether it be upon or under the surface, is capable of giving nourishment to plants, provided it be for some time exposed to the influence of the air, frosts, &c. in order to enable it to dispense its nutritive qualities. An earth seemingly barren, dug out of a deep pit,

pit, may, if ſpread on the ſurface, and properly ſtirred and expoſed, be brought into a condition of bearing plants, and even much more ſo than the earth, which having been long at the ſurface, is almoſt exhauſted, by the number of vegetables it has ſucceſſively nouriſhed. The notion of any earth being barren, merely becauſe it is placed at a diſtance from the ſurface, is by the moſt intelligent naturaliſts exploded: its particles may perhaps want a proper arrangement, but it always poſſeſſes the vegetative quality. There is, however, a very great difference in theſe earths; ſome will ſoon be fit for vegetation, while others that are ſour muſt be expoſed a conſiderable time before they can be ſufficiently meliorated.

BARREN, or WILD PINE-APPLE. See PENGUIN.

BARREN SPRINGS, a name given by the huſbandmen to ſuch ſprings whoſe waters are injurious to land.

Moſt waters that flow from coal-mines, or through beds of ſulphureous minerals, have this pernicious quality, deſtroying vegetables, inſtead of nouriſhing them. They have a harſh and brackiſh taſte, are generally of a reddiſh colour, and depoſit a reddiſh ſediment in the channel through which they flow. They are, however, much better when they have run ſome diſtance, than at their firſt breaking out on the ſurface of the earth.

BARREN-WORT, [*Epimedium*] this plant is ſo termed from the flowers being totally eclipſed or covered by the leaves; ſo that without proper inſpection, they appear to be wanting. If it be planted in a good border, the roots ſhould be every year reduced ſo as to keep them within bounds, otherwiſe it will ſpread its roots and interfere with the neighbouring plants.

BARS, the fleſhy rows that run acroſs a horſe's mouth, reaching almoſt to the palate. They are diſtinguiſhable in young horſes.

BARTH, a warm place, or paſture, for calves or lambs.

BARTON, or BARKEN, is a word uſed in the Weſt of England for the demeſne lands of a manor; ſometimes for the manor itſelf, and in ſome places it ſignifies the farm, in others the farm-yard.

BASIL, [*Ocymum*] the name of a plant, of which there are ſeveral ſpecies; but that which bears the largeſt leaves, eſpecially if they are of a purpliſh colour, are reputed the beſt.

Some of the ſpecies have ſeveral varieties, ſo that it would be almoſt impoſſible to enumerate them, eſpecially as the ſeeds of one plant will produce many varieties.

They are all annual and very tender plants, and muſt therefore be raiſed on a moderate hot-bed from ſeeds ſown in March. When the plants are come up, they ſhould be tranſplanted into another moderate hot-bed, obſerving to water and ſhade them until they have taken root; after which they ſhould have plenty of air in mild weather, otherwiſe they will draw up very weak. In May they ſhould be taken up with a ball of earth to their roots, and tranſplanted either into pots or borders, obſerving to ſhade them until they have taken root; after which, they will require no further care, but to clear them from weeds, and refreſh them with water in dry weather. Though theſe plants are only propagated from ſeeds, yet if you have any particular ſort which you are deſirous to increaſe, you may take off cuttings any time in May or June, and plant them on a moderate hot-bed, obſerving to water and ſhade them for about ten days; in which time they will take root, and in three weeks time be fit to remove either into pots or borders, with the ſeedling plants. In September theſe plants will perfect their ſeeds, when thoſe ſorts which appear the moſt diſtinct ſhould have their ſeeds preſerved ſeparate, for ſowing the following ſpring.

The leaves of baſil have a ſoft, ſomewhat warm taſte; and when rubbed, a ſtrong unpleaſant ſmell, which by moderate drying becomes more agreeable; hence, ſome powder the dried leaves and make them into ſnuff, which they think has a better effect than common ſnuff. They are ſaid to attenuate viſcid phlegm, promote expectoration and the uterine ſecretions; but have not for a long time been regarded by practice; they are much uſed by ſome cooks in their ſoups and ſauces.

BASON, a reſervoir for holding water either for the ornament or uſe of a garden.

Theſe reſervoirs are made in divers forms, ſome round, ſome oblong or oval,

oval, others ſquare, octangular, &c. but their moſt common form is circular; and if the ground will permit, the larger they are the better; and when they exceed in ſize they are called lakes, pieces of water, canals, fiſh-ponds, pools, &c.

In making them, care ought to be taken to avoid both extremes, and not to make them too big nor too little, that a water-work may not take up the beſt part of a ſmall piece of ground; nor to make too little a baſon in a large ſpot. This muſt depend entirely on the judgment of the deſigner of the garden. The following inſtructions with reſpect to the manual part, are given by Mr. Miller.

In making baſons, ſays he, particular regard muſt be had to the ſoil of the garden; for in looſe ſandy land great care will be neceſſary in making the clay walls ſo as to hold water; but where the ſoil is loamy or inclining to clay there will be little difficulty in making baſons, nor need the clay-wall be ſo thick. Where the ground is looſe the clay-walls at the bottom ſhould not be leſs than two feet thick, and thoſe on the ſides one and a half. The clay ſhould be well wrought over and trod when it is taken from the pit, before it is uſed in building the wall. The true ſign of good clay is, that it be cloſe and firm, without any mixture of ſand, and that it be tenacious and fat in handling. It ſhould be well worked before the clay is brought to the place, for if the clay be too long expoſed to the ſun and air, it will be leſs proper for uſe, eſpecially if it be laid in ſmall parcels.

The beſt time of the year for making baſons is in autumn, when the ſun is declining, and the weather temperate; for in the ſpring of the year, the drying eaſt and north-eaſt winds generally blow; ſo that the clay-walls, if not very carefully covered as faſt as they are made, often crack in many places, ſo that the water finds a paſſage through them. The ſame inconveniency happens from the violent heat of the ſun in ſummer; for when the clay dries very faſt, it will be very difficult, if not impoſſible, to prevent its cracking.

When the ground where the baſon is to be made, is dug out level, the clay muſt be brought in, and laid very carefully in the bottom, obſerving that no dirt or ſmall ſtones be mixed with it; ſome water muſt alſo, from time to time, be thrown on the clay, while the men are treading it cloſely with their naked feet; after which it muſt be very well ramm'd. When the bottom is finiſhed with clay, a layer of coarſe gravel about four or five inches thick ſhould be laid over it, which will greatly tend to ſecure the clay bottom, and render the water clear. But where the baſon is large, ſo that the clay bottom is long in making, it ſhould be covered with moiſt litter, to prevent its drying, which may be taken off when the whole is finiſhed to lay on the gravel; but if part of the ſide walls be finiſhed before this is done, it will be the better; becauſe there may then be ſome water let into the baſon, as ſoon as the gravel is laid, which will prevent the clay from cracking. After this the walls round the ſides of the baſon muſt be carried up with the ſame care as above directed for the bottom, obſerving alſo to cover the clay with litter well moiſtened while the work is carrying on, and afterwards to lay it with coarſe gravel; and as the walls are finiſhed round, the water may be let in to ſecure the walls from drying or cracking.

When the whole is finiſhed, a ſtratum of gravel four or five inches thick, ſhould be laid upon the clay, then a thin ſtratum of good earth, and the whole covered with turf. The ſand will prevent the graſs from rooting into the clay, and alſo keep out the froſt. The turf on the ſide of the baſon ſhould be laid as far down as the water is apt to fall, that no part of the clay may be wholly expoſed to the weather.

No trees or ſhrubs ſhould be ſuffered to grow near a baſon, for their roots will penetrate through the clay walls, and occaſion fiſſures, through which the water will find an eaſy paſſage.

In ſome countries where clay cannot be eaſily procured, the walls of theſe baſons are very frequently made with chalk, beaten into a ſoft powder, and made into a ſort of mortar, with which the walls are made, by ramming and working it very hard and firm. The baſons hold water very well, if never ſuffered to be dry any length of time; for whenever that happens the ſun and winds, by drying the chalk, cauſe

cauſe it to crack, and theſe cracks commonly extend through the thickneſs of the walls, ſo as to let out the water.

Others build the walls of their baſons with bricks laid in terraſs, which is a good method for ſuch places where the ground is looſe and ſandy; becauſe the walls, when well built, will ſupport the looſe earth from falling, or ſettling away from the ſides; but where terraſs is uſed, the walls ſhould not be long dry and expoſed; for the heat is apt to crack the terraſs.

Some make a cement of powdered tile and lime, two parts of the former to one of the latter, being very careful in the mixing it not to add too much water, but to labour it well in beating, which is a principal thing to be obſerved. With this cement they cover the ſurface of the walls of their baſons about two inches thick, laying on the plaiſter, and being careful that no ſticks, ſtraws, or ſtones, are mixed with it: this plaiſtering is generally performed in dry weather, and as ſoon as it is finiſhed, it is rubbed over with linſeed oil, or bullock's blood, and the water let into the baſon as ſoon as poſſible. This cement has the property of hardening under water, ſo as to be equal to ſtone, and will continue as long ſound.

But whatever materials are made uſe of in building the walls, great care muſt be taken to render them ſo ſtrong as to enable them to reſiſt the weight of the water; where, therefore, the ground about the baſon is not very ſolid, the walls ſhould be thicker, and ſupported on the back ſide by buttreſſes of the ſame materials, fixed at proper diſtances: or, if the walls are made of clay, planks ſupported by ſtrong timbers, at proper diſtances, ſhould be placed ſo as to ſuſtain them; otherwiſe there will be great danger of their being broken down, eſpecially where the baſons are large enough for the waves driven by the wind to daſh forcibly againſt the banks.

BASSE, among gardeners, a ſoft kind of ſedge or ruſh uſed in binding plants, &c.

Basse, a collar for cart-horſes, made of ſtraw, ſedges, ruſhes, &c.

BASTARD, a term frequently applied by botaniſts to plants that reſemble, but yet are diſtinguiſhed from the true ſpecies; hence we have

Bastard, or False Acacia See Acacia.

Bastard Acorns. See Flower de Luce.

Bastard Alaturnus, [*Phyſica*] of which there are three ſpecies, all natives of the Cape of Good Hope.

As theſe plants do not produce ſeeds in England, ſo they are propagated by cuttings, which, if properly managed, will take root freely. There are two ſeaſons for planting theſe cuttings, the firſt is the latter end of March, before the plants begin to ſhoot; if theſe are planted in pots, and plunged into a very moderate hot-bed, covering them cloſe with bell or hand-glaſſes, obſerving to ſhade them from the ſun in the middle of the day, and to refreſh them gently with water, they will put out roots in two months; then they ſhould be inured to the open air, and after they have obtained ſtrength, they ſhould be taken out of theſe pots, and each planted in a ſeparate ſmall pot, filled with ſoft loamy earth, and placed in a ſhady ſituation, until they have taken new root, when they may be removed to a ſheltered ſituation, where they may remain till autumn.

The other ſeaſon for planting of theſe cuttings, is about the beginning of Auguſt. At this time they may be planted in pots, which may be either plunged into an old hot-bed, or the full ground, covering them cloſe with bell or hand-glaſſes as before, and treating them in the ſame way; theſe will put out roots in about two months, but it will then be too late in the ſeaſon to tranſplant them, ſo they muſt remain in the ſame pots till ſpring.

Theſe plants are generally too tender to thrive in the open air in England, ſo they muſt be kept in pots, and houſed in winter; for altho' the firſt ſort will live through the winter in a warm ſheltered ſituation, when the ſeaſons prove favourable, yet when ſevere froſts happen, they are always deſtroyed: but they require no artificial heat to preſerve them, if they are ſheltered under a hot-bed frame in winter, when they are young, and after they are grown large, kept in a green-houſe where they may enjoy the free air in mild weather, and are treated in the ſame way as other hardy exotic plants

from

from the same country; in the summer they must be placed abroad in a sheltered situation; with which management the plants will thrive and continue several years, and as they flower in the winter, they make a good appearance in the green-house during that season.

BASTARD ALKANET, called also *Bastard* or *Field Gromill*, or *Salfarn*, [*Lythospermum*] a weed common among winter corn, especially rye. It may be easily known by its red roots, which yield a red tincture, and are used by the young girls in Sweden to colour their cheeks. From the root usually rises a single stem about a foot high, rough, and branching out at the top. The flowers are small and white, surrounded with five long, narrow, hairy leaves, forming what the botanists call the empalement of the flower cup, and succeed by four white rough seeds.

BASTARD AMERICAN SANICLE, [*Mitella*] There are two species, one from North-America, and the other from the northern parts of Asia. They are propagated by parting their roots in Autumn, which should be planted in a shady situation, and a soft loamy soil.

BASTARD ASARUM. See *Bastard* ASARUM.

BASTARD CEDAR, [*Theobroma*] This rows naturally in most of their islands in the West-Indies, where it rises to the height of 40 or 50 feet, having a trunk as large as a middle-sized man's body, covered with a dark brown furrowed bark, sending out many branches toward the top, which spread wide on every hand, garnished with oblong heart-shaped leaves, placed alternate, of a bright green on the upper side, and pale on their under, sawed on their edges, with a strong midrib, and several transverse veins, standing upon short foot-stalks. The flowers come out in bunches from the wings of the leaves; they are small, of a yellow colour, having five concave petals, which spread open circularly, and a great number of stamina, which at their base are joined in five bodies, terminated by roundish summits. In the center is situated a roundish germen, supporting a slender style the length of the stamina, crowned by a single stigma. The germen afterward turns to a roundish warted fruit, having five obtuse angles, and five cells, which contain several irregular seeds.

The wood of this tree is white and ductile, so is frequently cut into staves for casks. The fruit and leaves are good fodder for cattle, therefore when the planters clear the land from wood, they leave the trees of this sort standing for the seed, which is of great use in dry seasons, when the common fodder is scarce.

There are some plants of this sort in England preserved in the gardens of curious persons; it is propagated by seeds, which must be procured as fresh as possible, from the countries where the plants grow naturally. These should be sown upon a good hot-bed in the spring; and when the plants are fit to remove, they should be each planted in a separate small pot, and plunged into a hot bed of tanner's bark, observing to shade them from the sun till they have taken new root; then they should be treated in the same way as the coffee-tree, keeping them always in the tan-bed in the stove.

BASTARD DITTANY, [*Marrubium*] There are four species of this plant; two of them are natives of the islands in the Archipelago, and the others grow naturally in Spain, and are called Spanish Bastard Dittany.

The latter are only preserved in botanic gardens; the two former are propagated by cuttings, (for they rarely produce seeds in England) which if planted in a shady border about the middle of April will take root very freely. These plants will be luxuriant in good ground, and liable to be hurt by severe frosts; but, in poor soils they will be more hardy.

BASTARD, or *White* DITTANY, [*Fraxinella*] this root grows wild in the mountainous parts of France, Italy, and Germany; from whence the cortical part of the root, dried and rolled up in quills, is sometimes brought to us. This is of a white colour, a weak, not very agreeable smell; and a durable bitter, lightly pungent taste. It is recommended as an alexipharmac; but not regarded by common practice, or often kept in the shops.

BASTARD FEVERFEW, [*Parthenium*] There are two species of this plant. One sort grows wild, in great plenty in Jamaica, and in some other of the English settlements in the West-Indies, where

where it is called wild wormwood, and is uſed by the inhabitants as a vulnerary herb.

The ſecond ſort grows plentifully in ſeveral parts of the Spaniſh Weſt-Indies, from whence the ſeeds have been brought to Europe.

The firſt is an annual plant, which may be propagated by ſowing ſeeds on a hot-bed early in the ſpring; and when the plants are come up, they ſhould be tranſplanted on another hot-bed, at about five or ſix inches diſtance. When the plants have grown ſo as to meet each other, they ſhould be carefully taken up, preſerving a ball of earth to their roots, and each planted into a ſeparate pot, filled with light rich earth; and if they are plunged into a moderate hot-bed, it will greatly facilitate their taking freſh root; but where this conveniency is wanting, the plants ſhould be ſhaded from the ſun until they have taken new root; after which time they may be expoſed, with other hardy annual plants, in a warm ſituation, where they will flower in July, and their ſeeds will ripen in Auguſt and September.

The ſecond ſort is a perennial plant, which dies to the ground every autumn, and ſhoots up again the following ſpring. The ſeeds of this ſort were ſent over a few years ſince from South Carolina, where the plants grow wild. This may be propagated by parting of the roots in autumn, and may be planted in the full ground, where it will abide the cold of our ordinary winters very well. This ſort flowers in July, but ſeldom produces good ſeeds in England.

Theſe plants make no great appearance, ſo are ſeldom cultivated but for the ſake of variety.

Bastard Flower Fence, [*Adenanthera*] this is a native of India, from whence the ſeeds have been brought to England. The Indians perforate theſe ſeeds, and ſtring them for the young women, who wear them about their necks. It requires the ſame treatment as the tender ſorts of Acacia. See Agacia.

Bastard Hare's Ear, [*Simpla Noba*; *Phyllis*] grows naturally in the Canary iſlands, and riſes with a ſoft ſhrubby ſtalk about two or three feet high, which is ſeldom thicker than a man's finger, of an herbaceous colour and full of joints.

It is propagated by ſeeds, which muſt be ſown on a bed of freſh light earth the beginning of April; the plants will come up by the beginning of May; when they are fit to tranſplant, they ſhould be put into ſeparate pots, and placed in a ſhady ſituation until they have taken root; after which time they ſhould be placed in a ſheltered ſituation, where they may have the morning ſun, and in ſummer will require to be frequently watered. In winter they muſt be ſheltered from the froſt, but require to have as much free air as poſſible in mild weather; the ſecond year the plants will flower, ſo if in ſpring ſome of the plants are ſhaken out of the pots, and put into the full ground, they will perfect their ſeeds much better than thoſe which remain in the pots.

As theſe plants ſeldom continue in health above four or five years, it will be proper to raiſe a ſupply of young plants to ſucceed them.

Bastard Hellebore, [*Serapias*] of which there are many ſpecies which grow naturally in Great-Britain and Ireland; there are alſo a great number of them which grow naturally in the Weſt-Indies.

Theſe plants are rarely kept in gardens, being difficult to propagate, ſo there are few who have attempted them. They may be taken up from the places where they naturally grow, when their leaves begin to decay, and planted in a ſhady moiſt place, where they will thrive and flower.

Bastard Hemp, [*Datiſca*] there are two ſpecies, one with a ſmooth, and the other a rough ſtalk.

The firſt grows naturally in Crete, and the other in North America. They may be propagated by parting the roots (but not too ſmall) in autumn, when the ſtalks decay, which may be planted in any open beds, that are not under the drip of trees, and will require no other culture but to keep them clean from weeds; obſerving to let the latter ſort have a more ſhady ſituation and a moiſter ſoil.

Bastard Jasmine, [*Ceſtrum*] there are ſix ſpecies of this plant, 1. Ceſtrum Nocturnum; 2. Ceſtrum Diurnum; 3. Ceſtrum Nervoſum; 4. Ceſtrum Spicatum; 5. Ceſtrum Conſeſtum; 6. Ceſtrum Veneratum.

The firſt was many years paſt raiſed at Badmington in Gloceſterſhire, and

ſent from thence to other gardens, and likewiſe to Holland, where it paſſes under the title of the Badmington Jaſmine to this day. It grows naturally in the iſland of Cuba, from whence the ſeeds were ſent by the title of *Dama de Noche*, Lady of the Night, which appellation it is ſuppoſed was given it from the flowers (which are of a ſtrong herbaceous colour) emitting a ſtrong odour after ſunſet.

The ſeeds of the ſecond ſort were received from the Havannah by the title of *Dama de Dio*, Lady of the Day; which name was probably given from the flowers (which are very white) ſmelling ſo ſweet in the day-time.

The third and fourth came from Carthagena, and the ſixth from Jamaica.

As they all grow naturally in very hot countries, they cannot be procured in England without artificial heat, therefore require to be placed in a warm ſtove, eſpecially in the winter. The two firſt are hardier than the others; theſe I have kept ſeveral years in a dry ſtove, with a moderate ſhare of heat in winter, and in the middle of ſummer have ſet them in the open air, in a warm ſituation. With this management I have found them thrive, and produce flowers much better than when they have been placed in a greater heat; but I have often endeavoured to keep theſe plants through the winter in a green-houſe, or a glaſs-caſe, without fire, but could never ſucceed, for by the end of January they commonly decay.

Theſe plants may be propagated either by ſeeds, or cuttings. Thoſe which come from ſeeds are always the moſt vigorous, and ſtraiteſt plants; but as they do not produce ſeeds in England, ſo the other method is generally practiſed, becauſe their ſeeds are rarely brought hither.

The beſt time to plant theſe cuttings is about the end of June, by which time the ſhoots will have had time to recover their ſtrength, after their confinement during the winter ſeaſon. The ſhoots which come out from the lower part of the ſtalks, ſhould always be choſen for this purpoſe. Theſe ſhould be cut about four inches long, and five or ſix of them may be planted in one halfpenny pot, for the cuttings of moſt ſorts of exotic plants will ſucceed better when they are planted in theſe ſmall pots than they do in larger, as I have many years experienced. When the cuttings are planted the earth ſhould be preſſed pretty cloſe to them, and then gently watered; after which the pots muſt be plunged into a moderate hot-bed of tanners bark, and ſhaded from the ſun. With this management the cuttings will put out roots in a month or ſix weeks, when they ſhould be gradually expoſed to the ſun; and when they begin to put out ſhoots, they muſt have a greater ſhare of freſh air admitted to them, to prevent their drawing up weak. When they have made good roots, they ſhould be carefully ſhaken out of the pots, and each put into a ſeparate ſmall pot; then give them ſome water, to ſettle the earth to their roots, and plunge them again into the tan-bed, obſerving, if any of their leaves hang down, to ſhade them from the ſun in the middle of the day, until they have taken freſh root; after which they ſhould have a large ſhare of air in warm weather, to ſtrengthen them before winter.

In the autumn the plants muſt be removed into the bark-ſtove, and plunged into the tan-bed, where they muſt be treated in the ſame manner as other tender exotic plants; for although the two firſt ſorts may be treated otherwiſe when they have obtained ſtrength, yet in the firſt winter they may be managed in the ſame way as the others. There muſt be great care in watering of theſe plants in winter, for they are all (except the ſecond ſort) very impatient of moiſture; ſo that they are ſoon killed by being over watered.

If the ſeeds of theſe are procured from the countries where they grow naturally, they ſhould be ſowed in ſmall pots, and plunged into a moderate hot-bed of tanners bark, giving them now and then a little water. Sometimes the ſeeds will come up the ſame year, but they very often lie in the ground till the ſpring following: ſo that if the plants do not appear in ſix or ſeven weeks after the ſeeds are ſown, they will not come up that ſeaſon; in which caſe the pots may be plunged in the tan-bed in the ſtove between the other plants, where they will be ſhaded from the ſun, and but little water given them; in this ſituation they may remain till the following ſpring, when they ſhould be removed, and plunged into a freſh hot-bed,

hot-bed, which will bring up the plants in a ſhort time, provided the ſeeds were good.

Bastard Indigo, [*Amorpha*] This ſhrub grows naturally in Carolina, where formerly the inhabitants made a coarſe ſort of indigo from the young ſhoots, which occaſioned their giving it the title of Baſtard indigo.

It riſes with many irregular ſtems to the height of twelve or fourteen feet, with very long winged leaves in ſhape like thoſe of the common Acacia. At the extremity of the ſame year's ſhoots the flowers are produced in long ſlender ſpikes, which are very ſmall and of a deep purple colour. After the flowers are paſt the germen turns to a ſhort pod, having two kidney-ſhaped ſeeds, but theſe do not ripen in England.

This ſhrub is become very common in all the gardens and nurſeries near London, where it is propagated as a flowering ſhrub for the ornament of the ſhrubbery. It is generally propagated by laying down of the young branches, which in one year will make good roots, and may then be taken off and planted either in the nurſery, or in the places where they are deſigned to remain. The plants muſt have a ſheltered ſituation, otherwiſe their branches will be broken by the winds. As theſe ſhoots are large and ſoft, their upper parts are frequently killed by froſt in winter; but they put out ſhoots again in plenty below the dead part, the ſpring following.

Bastard or *Falſe* Ipecacoanha, [*Aſclepias Caraſſavica*] this plant riſes with upright ſtems, ſix or ſeven feet high, and has a white flower of a ſtar figure.

It is tender, and ſo muſt be preſerved conſtantly in the ſtove, and ſhould have very little wet, eſpecially in the winter.

The root which is of a poiſonous nature was brought from America for the true ipecacoanha, and ſometimes unhappily adminiſtered as ſuch. The two roots however may eaſily be diſtinguiſhed, that of the baſtard kind being compoſed of a great number of ſmall fibres; whereas the true plant has jointed fleſhy roots which run deep into the ground.

Bastard Locust, or *Locuſt Tree*, [*Hymenæa*] this is a very large ſpreading tree in the Weſt-Indies, where it grows in great plenty. The wood of this tree is eſteemed a good timber, and yields the fine clear reſin which is called Gum Anime in the ſhops. See Anime.

It is eaſily raiſed from the ſeeds if they are freſh, which ſhould be ſown in pots, and plunged into a hot-bed of tanners bark: there ſhould be but one ſeed put into each pot, or if there is more, when the plants appear, they ſhould be all drawn out but one ſoon after they come up, before their roots entangle, when it will be hazardous doing it; for if great care is not taken, the plants intended to be left may be drawn out with the other. As the roots of this plant are but ſlender, ſo they are very difficult to tranſplant; for unleſs a ball of earth is preſerved to them, they ſeldom ſurvive their removal, therefore they muſt be ſeldom tranſplanted from one pot to another. The plants muſt conſtantly remain in the tan-bed in the ſtove, and ſhould be treated in the ſame way with other tender plants of the ſame country, giving but little water to them, eſpecially in the winter. When theſe plants firſt appear, they make conſiderable progreſs for two or three months, after which time they are at a ſtand perhaps a whole year without ſhooting, being in their growth very like the Anacardium, or Caſhew Nut, ſo is very difficult to preſerve long in this country.

Bastard Lote. See Indian Date Plum.

Bastard Lychnis, [*Lychnidea*; *Phlox*] of which we have ſeven ſpecies, all from North America.

They are hardy plants, and ſo will thrive in the open air in England. They delight in a moiſt rich ſoil not too ſtiff, in which they will grow tall, and produce much larger bunches of flowers than in dry ground; for when the ſoil is poor and dry, they frequently die in ſummer, unleſs they are duly watered.

They are generally propagated by parting their roots, becauſe they do not often produce ſeeds in England. The beſt time for this is in autumn, when their ſtalks begin to decay. Theſe roots ſhould not be divided into ſmall heads, if they are expected to flower well the following ſummer; nor ſhould they be parted oftener than every other year, becauſe when they are often removed & parted, it will greatly weaken

roots, ſo that they will ſend out but few ſtalks, and thoſe will be ſo weak as not to riſe their uſual height; the bunches of flowers will alſo be much ſmaller.

Some of the ſorts propagate but ſlowly by parting their roots, therefore the beſt way is by cuttings. The moſt proper time to plant the cuttings is about the latter of April, or the beginning of May, when the ſhoots from the roots are about four inches high; theſe ſhould be cut off cloſe to the ground, and their tops ſhould be ſhortened; then they muſt be planted on a border of light loamy earth, and ſhaded from the ſun until they have taken root; or if they are planted cloſe together, and covered with bell or hand-glaſſes, ſhading them every day from the ſun, they will put out roots in five or ſix weeks; but when they begin to ſhoot, the glaſſes ſhould be gradually raiſed to admit the free air to them. As ſoon as they are well rooted, the glaſſes ſhould be taken off, and the plants inured to the open air; then they ſhould be ſoon after removed into a bed of good ſoil, planting them about ſix inches diſtance every way, obſerving to ſhade them from the ſun, and water them duly till they have taken new root; after which, if they are kept clean from weeds, they will require no other care till autumn, when they ſhould be tranſplanted into the borders of the flower-garden where they are deſigned to remain.

Bastard Mallow, [*Malope*] the whole plant has greatly the appearance of the Mallow, but differs from it in having the cells collected into a button, ſomewhat like a blackberry; the branches ſpread, & lie flat upon the ground, extending themſelves a foot or more each way. The flowers are produced ſingly upon long foot-ſtalks, from the ſetting of the leaves, which are in ſhape and colour like thoſe of the Mallow.

This is propagated by ſeeds, which ſhould be ſown upon a warm border in Auguſt, where the plants will come up before winter, which ſhould be planted in ſmall pots, and ſheltered under a hot-bed frame, for they are too tender to live in the open air in winter; but in ſummer they ſhould be placed with other hardy foreign plants in a ſheltered ſituation, where in warm ſeaſons they will produce ſeeds.

Bastard Medic, *Lucerne*, or *Snail Trefoil*, [*Medicago*] there are many ſpecies of this plant which grow naturally in the warm parts of Europe, and are preſerved in botanic gardens for the ſake of variety; a few of them are cultivated in other gardens, but not ſo much as formerly; the pod containing many kidney ſhaped ſeeds is twiſted in the form of a ſnail; hence its name *Snail-trefoil*.

Bastard Milk-Vetch, [*Phaca*] We have two ſpecies, one with a hairy ſtalk, and the other with a ſmooth one.

The firſt ſort is a native of Portugal and Spain. This has been long preſerved in ſome curious gardens in England, but the other is more rare at preſent.

The roots of the firſt ſort, which grows naturally in Portugal, will abide many years, and run very deep into the ground; but the branches decay every autumn, and the roots produce freſh ſtalks every ſpring, which will riſe near four feet high, and grow ligneous. The flowers are produced in ſhort ſpikes from the wings of the leaves; but unleſs the ſeaſon proves very warm, they rarely flower in England, for which reaſon the plants are not much eſteemed.

The ſecond ſort, which is a native of Siberia, hath ſmooth ſtalks, which do not riſe ſo high as the former; the flowers are ſmaller, the pods are much ſhorter, and hang downwards.

Both theſe ſorts are propagated by ſeeds, which ſhould be ſown in the place where the plants are to remain; for as they ſhoot their roots very deep into the earth, ſo it is very difficult to tranſplant them with any ſafety, eſpecially after they have remained any conſiderable time in the ſeed-bed. The plants of the firſt ſort ſhould be left about ſix feet aſunder, that there may be room to dig the ground between them every ſpring, which is all the culture they require, except the keeping them clean from weeds.

Bastard Muſtard, [*Cleome*] there are eight ſpecies of this plant, but being moſtly natives of warm countries they will not thrive in England without artificial heat. They ſhould therefore be raiſed upon a good hot-bed in the ſpring, and when they are fit to be taken up they ſhould be planted in ſeparate pots, and plunged into a freſh hot-bed, and ſhaded till they have taken root. As ſoon as they are fit they may be

be removed into an airy glaſs caſe, where they will flower and ripen their ſeeds.

Bastard Mithridate Mustard, [*Thlaſpi*] This grows naturally among the corn in divers parts of England, and alſo on the ſide of dry banks; it is a biennial plant, which periſhes ſoon after it has ripened its ſeeds.

The ſeeds (which are ſubſtituted for thoſe of *Treacle Muſtard* in the celebrated medicine called Venice Treacle) may be ſown thin upon beds of light ground, in the ſame way, and managed like onions, carrots, &c.

Bastard Tower Mustard, [*Arabis*] of which there are ſeveral ſpecies, all hardy plants, but they make no great ſhew, ſo are not much cultivated but for the ſake of variety. Their cultivation is extremely eaſy by ſowing the ſeed upon a good border; and as ſoon as the plants are fit, they may be removed to where they are to remain.

Bastard Orpine [*Andrachne*] this is a low trailing plant, found wild in Italy and the Archipelago; but having no great beauty is ſeldom cultivated except in botanic gardens.

If the ſeeds are ſown in common earth in autumn, the plants will appear in the following ſpring, and produce flowers and ſeeds. It ſhould be planted in pots and ſheltered from the froſt in winter, and ſhould have a light dry ſoil and a warm ſituation; but it ſeldom continues longer than two or three years.

Bastard Parsley [*Caucalis*] there are ſeveral ſpecies of this plant preſerved in botanic gardens; but being of little uſe or beauty, it will not be neceſſary to ſay any thing farther than that the beſt time to ſow the ſeed is in autumn, ſoon after it is ripe.

Bastard Stone Parsley, [*Siſon*] We have four ſpecies of this plant, to propagate which, nothing farther is neceſſary than to ſow their ſeeds ſoon after they are ripe in a moiſt ſhady ſpot of ground.

Baſtard ſtone parſley, the ſeeds of which are the common Amomum of the ſhops, grows on the ſide of ditches and moiſt ſhady banks in many parts of England; it is a biennial plant, which periſhes ſoon after the ſeeds are ripe. The ſeeds have a warm aromatic taſte, but conſiderably different from the true Amomum, and much weaker. They have been recommended as a carminative, aperient, diuretic, and emmenagogue; but they are at preſent little regarded in practice. It is remarkable that the tincture drawn from them with pure ſpirit is of a beautiful green colour.

Bastard Rhamnus. See Sea Buckthorn.

Bastard Rocket, [*Reſeda*] There are eight ſpecies of the roſeda; ſix of which having little uſe or beauty are ſeldom cultivated but for variety, and requiring no other cultivation than to ſow the ſeeds in autumn, and to keep the plants clean from weeds in the ſpring, it is unneceſſary to ſay any thing more about them.

That which is commonly called Sweet Roſeda, or Mignonette d'Egypt, ſhould have its ſeeds ſown on a moderate hot-bed in March, from which the plants ſhould be removed to another moderate hot-bed to bring them forward, and ſhould have a large ſhare of air in warm weather, or they will draw up weak; about the latter end of May they may be planted in pots or warm borders. It ſhould be obſerved that when the ſeed veſſels begin to ſwell, the plants are frequently infeſted with green caterpillers, which, if not deſtroyed, will eat off all the ſeed veſſels.

If the ſeeds are ſown on a bed of light earth in April, the plant will be larger (if they remain without being tranſplanted) than thoſe raiſed on the hot-bed, but they will not flower ſo early. The plants may be preſerved through the winter in a green-houſe, where they will continue flowering moſt part of the year; but they are not ſo vigorous the ſecond year as they are the firſt.

The other ſort of baſtard rocket is called Weld or Dyer's Weed. See Weld.

Bastard Saffron. See Safflower.

Bastard, or Wild Sena. See Cassia.

Bastard, or False Sensitive Plant, [*Aeſchynomene*] There are three ſpecies, which are all natives of warm countries.

They are rarely kept but in botanic gardens, having little uſe or beauty, and beſides they require a good ſtove to preſerve them in England.

BASUS. *Per baſum* to let um *capere*, to take toll by ſtrike, not by heap.

BAT,

BAT, in natural hiſtory, a kind of amphibious animal, partaking partly of the mouſe and partly of the bird kind; it is bred in moſt of the Aſian and European regions, and frequent in England in ſummer time, feeding upon gnats, flies, fleſh, candles, &c. It is naked of feathers, its wings whole or webbed together, after the manner of web-footed water-fowl. It flies abroad chiefly in the morning and evening, their vifory ſpirits being then moſt thin and lucid; their voice is loud and ſhrill, they breed in holes, have two young ones at a time, and have two teats.

BATABLE GROUND, this was land lying between England and Scotland, heretofore in queſtion, when diſtinct kingdoms, to which it belonged. It is as much as if you ſhould ſay litigious ground.

BATCHELOR's BUTTONS. See BACHELORS BUTTONS.

BATE, a term uſed in falconry, when a hawk fluttereth with her wings, from pearch to fiſt, as it were ſtriving to get away.

BAT-FOWLING, is a way to take birds in the night time that rooſt on perches, or in trees, or hedge-rows, and is performed thus: Being arrived at the place where the ſport is expected, ſome ſtraw or torches are to be lighted, and the buſhes or hedges beaten, and the birds will preſently fly towards the flames, where they may be taken with nets or the ends of poles, or beat down with buſhes made with boughs at the end of poles, or by carrying large boughs lined with bird-lime to entangle them. The uſual time for putting this ſport in practice is when the night is extreme dark, and with great ſilence till the lights are burning, at which they are amazed, and being every way elſe very dark, fly to the flames.

BATH, [*Balneum*] a ſufficient quantity of water collected in ſome convenient receptacle, for people to waſh in, either for health or pleaſure.

Baths are diſtinguiſhed into natural and artificial, and natural again into hot and cold.

Hot BATHS, called by the antients thermæ, owe their origin partly to the admixture of ſulphureous particles, while the water is paſſing through its ſubterraneous canals, and partly to the fumes and vapours exhaling through the pores of the earth, where ſulphur is either pure or impure, as in coals, amber, iron, nitre, &c. The chief hot baths in our country are thoſe at Bath, in Somerſetſhire; and thoſe at Buxton and Matlock, in Derbyſhire.

In the city of Bath are four public, and one ſet of private Baths, the former belong to the Corporation, and are called the King's, Queen's, Hot, and Croſs Baths; the latter were built by the late Duke of Kingſton, and are called by his name. The King's Bath is ſupplied by ſeveral hot-ſprings which riſe in it, the Queen's has no ſprings of its own, but communicates by an arch with the King's; the Hot and Croſs Baths have ſprings of their own and riſe at a conſiderable diſtance from the King's.—The heat of the waters according to ſome late experiments, as drank at the ſeveral pumps, is nearly as follows:

King's Bath,	116	Farenheit's thermometer
Hot Bath,	117	
Croſs Bath,	112	
Duke of Kingſton's,	105	

When uſed as Baths their heat is about ſix degrees leſs.

Theſe waters are impregnated with ſulphur, common ſalt, and ſelenites, iron, and a ſubtle volatile aërial ſubſtance, which philoſophers have diſtinguiſhed by the name of fixible air.

The Bath waters may be conſidered in a medical view in two lights, viz. as taken inwardly, and with reſpect to their external application. Many caſes are adapted to both of theſe; but ſome are more peculiarly ſuited to one of them only.

Inwardly taken they are of ſervice in the gout, in bringing the paroxyſms to a happy criſis, and fixing them in the extremities; in the decline of a fit of the gout, bathing in theſe waters has been found very ſerviceable;—in palſy, bowel and ſtomach diſorders, leproſy, ſcurvy, rheumatiſm, jaundice, bilious diſorders, gravel, obſtinate chronic diſeaſes, &c. &c. they are very efficacious.

Of the three hot European waters of note, viz. Aix-la-Chapelle, Bourbon, and Bath, the firſt abounds more eminently in ſulphur, which makes its heat, naſeouſneſs, and purgative faculty ſo great, that few ſtomachs can bear its heat and naſeouſneſs, and fewer weak conſtitutions the violence of its purging.

The

The Bourbon are of a middle nature, between the Aix-la-Chapelle and the Bath waters; being leſs hot, nauſeous, and purgative than thoſe of Aix-la-Chapelle; but more ſo than the Bath waters. The Bath waters partake leſs of the ſulphur, and more of the ſteel, than thoſe two, and of conſequence by far the moſt pleaſant and moſt effectual.

Cold BATHS were, by the antients, held in the greateſt eſteem: and tho' they were long baniſhed out of medicine, the preſent age can boaſt of abundance of noble cures performed by them, and ſuch as were long attempted in vain by the moſt powerful medicine.

The cold bath is ſerviceable in moſt chronic diſorders; it always acts the part of a diuretic, and will do more, eſpecially plunging over head in ſea water, in the cure of melancholy, madneſs, and particularly that occaſioned by the bite of a mad dog, than any other medicine. There is nothing of greater uſe in the cure of frigidity, when occaſioned by exceſs of venery, than the cold bath. It contributes much to the cure of a gonorrhœa, and fluor albus; and is ſucceſsful in a palſy.

Artificial BATHS are various, according to the various occaſions: as aqueous baths, vaporous baths, dry baths, &c. Aqueous baths are made from common plants, and other emollient, reſolvent, and nervine ſubſtances; conſiſting ſometimes of milk and emollient herbs, with roſewater, &c. when the deſign is to humectate, or when it is only to cleanſe, it conſiſts of bran and water alone; and when it is for an exceſſive pain or tumour, &c. in theſe caſes it conſiſts of a decoction of roots, plants, and ſome ſpirit of wine.

In vapour-baths, the deſign of which is to promote a perſpiration, the ſteam or fume of ſome decoction is received upon ſome part of the body for that purpoſe. In theſe baths, there is no part of the patient's body plunged into the decoction, only thoſe parts which require it, are properly diſpoſed to receive the ſteams of ſome proper fomentation. Of this kind are the bagnios, where perſons are made to ſweat by the heat of a room, and pouring on of hot water.

Vapour-baths are of ſingular ſervice in cold diſtempers, anaſarcas, œdematous tumours, paralytic caſes, ſwellings of the teſticles, &c.

Dry baths are made of aſhes, ſalt, ſand, ſhreds of leather, &c. This bath is ſucceſsful in provoking ſweat in a plentiful manner, the patient being placed conveniently for the reception of the fumes: it is found uſeful in removing old obſtinate pains, and is very effectual in venereal complaints.

BATH, among chemiſts, ſignifies a veſſel with ſome matter, as ſand, water, or the like, in which another is placed that requires a more gentle heat than the naked fire. Thus *balneum arenoſum*, called alſo *balneum ſiccum*, and ſand heat, is when the cucurbit is placed in ſand, in aſhes, or filings of ſteel. *Balneum mariæ*, or *maris*, is when the veſſel containing the ingredients to be diſtilled, &c. is put into a veſſel of water, which is made to boil; ſo that no greater heat than that of boiling water can be communicated to the ſubſtance to be treated. And *balneum vaporis*, or *vaporarium*, is when two veſſels are diſpoſed in ſuch a manner, that the vapour raiſed from the water contained in the lower, heatrs the matter contained in the upper.

BATH, in hebrew antiquity, a meaſure of capacity, containing the tenth part of an omer, or ſeven gallons and four pints, as a meaſure for things liquid: or three pecks and three pints, as a meaſure for things dry.

BATH, in architecture, ſuperb buildings erected for the ſake of bathing.

Theſe buildings, among the antients, were moſt pompous and manificent; ſuch were thoſe of Titus, Paulus Emilius, and Dioclefian, whoſe ruins are ſtill remaining.

BATHING, the waſhing, ſoaking, ſuppling, refreſhing, moiſtening, &c. the body or any part thereof, in water, liquor, &c for pleaſure, or health.

Tho' bathing hath been uſed with advantage in moſt caſes, yet there is ſcarce any, but, in ſome circumſtances, it would be prejudicial; ſo that to apply it with the greateſt advantage, it will be neceſſary to enquire what alterations are made by it in a human body. It is well known that heat relaxes, and that cold, on the contrary, contracts and braces the bodies it is applied to: the effects of cold bathing is attributed not only to its chilneſs, and conſtringing power, but in ſome meaſure to the weight of the water. For ſuppoſe a perſon immerged two feet, and the area of his ſkin fifteen

fifteen feet, he ſuſtains a weight of water, added to that of the air, equal to 228lb. troy. Beſides, the water in bathing, enters the body, mixes with the blood, and dilutes all the juices.

BATTLE-ROYAL; a term in cock-fighting, which implies a fight between either three, or five, or ſeven cocks all together, he that ſtands longeſt gets the day

BATTATA, *Potatoe*, which ſee.

BAVINS. Faggots made with the bruſh at length.

BAUM, or BALM, [*Meliſſa*] a plant very common in the Engliſh gardens. It is raiſed either from ſeeds, or propagated by ſlips from its roots, which are perennial, though its ſtalks are annual. The ſeeds ſhould be ſowed in the ſpring; but the ſlips planted in October, that they may have time to get ſtrength before the froſts come on. The roots alſo of this plant may be parted into ſmall pieces, with three or four buds to each. Theſe ſhould be planted about two feet aſunder in beds of common garden earth, where they will ſoon ſpread ſo as to meet each other. The only culture they require is to water them till they have taken root, to keep the plant clean from weeds, and to cut off the dry ſtalks in autumn; ſtirring the ground betweeen the roots.

See Balms.

Baum, when in perfection, has a pleaſant ſmell, ſomewhat of the lemon kind; and a moderately aromatic ſubacrid taſte. The young ſhoots have the ſtrongeſt flavour: the flowers, the herb itſelf when old, or produced in very moiſt rich ſoils or rainy ſeaſons, are much weaker both in ſmell and taſte. Balm is appropriated by the writers on the materia medica, to the head, ſtomach, and uterus; and in all diſorders of theſe parts is ſuppoſed to do extraordinary ſervice. So high an opinion have ſome of the chemiſts entertained of balm, that they have expected to find in it a medicine which ſhould prolong life beyond the uſual period. The preſent practice however holds it in no great eſteem, and ranks it (where it deſerves to be) among the weaker aromatics: in diſtillation, it yields an elegant eſſential oil, but in exceeding ſmall quantities; the remaining decoction taſtes roughiſh. Strong infuſions of the herb, drank as tea, and continued for ſome time, have done ſervice in a weak lax ſtate of the viſcera: theſe liquors, lightly acidulated with juice of lemons, turn of a fine reddiſh colour, and prove an uſeful, and to many a very grateful drink, in dry parching fevers.

Moldavian BAUM. See *Moldavian* BALM under the article BALM.

Molucca BAUM [*Molaccella*] there are two ſpecies, the ſmooth, & the prickly.

The firſt grows naturally in Syria, and has, to ſome people, a very pleaſant ſmell, though to others it is very diſagreeable. The other ſort is a native of the Molucca iſlands; hence its name. They are both annuals, but being natives of warm countries they will not perfect their ſeeds here if ſown in the ſpring. The beſt way therefore is to raiſe the plants in autumn, and then put them in pots and give them the benefit of a hot-bed frame in winter, but where they may have free air in mild weather: they may be tranſplanted into warm borders in the ſpring where they are to remain, and by this means good ſeed may be expected.

BAUME DE COMMANDEUR, [*Commander's Balſam.*]

Take of dry Peruvian balſam, one ounce;
Storax in the tear, two ounces;
Benjamin, three ounces;
Socotorine aloes,
Myrrh,
Olibanum,
Angelica roots,
St. John's wort flowers, each half an ounce;
Spirit of wine, two pounds eight ounces by weight.

Let them ſtand together in the ſun during the dog-days, in a glaſs veſſel, cloſely ſtopt; and afterwards ſtrain out the balſam thro' a linen cloth.

This balſam has been inſerted, with little variation, in ſome foreign pharmacopœias, and likewiſe kept a ſecret in private hands, under the titles of *Balſamum Perſicum*, *balſam of Berne*, *Wade's balſam*, *Friars balſam*, *Jeſuits drops*, *&c.* The form above is taken from the originpl receipt, publiſhed by Pomet. It ſtands greatly recommended, externally, for cleanſing and healing wounds, and ulcers even of the cancerous kind, for diſcuſſing cold tumours, allaying gouty, rheumatic, and other cold pains and aches; and likewiſe internally, for warming and ſtrengthening

ſtrengthening the ſtomach and inteſtines, expelling flatulencies, and relieving colicky complaints. Outwardly, it is applied cold on the part with a feather; inwardly, a few drops are taken at a time, in wine or any other convenient vehicle.

BAY. In hunting, when the deer is hard run, and turns his face againſt the dogs, and keeps them off with his horns, he is ſaid to ſtand *at bay*.

BAY, a part of the barn on the ſide of the floor deſtined for the laying corn in the ſtraw ready for threſhing.

BAY, among ſeamen an opening into the land where the water is encloſed all round except at the entrance.

BAY, a bank or dam to pen water.

BAY, among horſemen, ſignifies a colour, inclining to a chefnut, and this colour is various, either a *light bay* or *dark bay*, and we have alſo *dappled bays*; all *bay* horſes have black tails & manes.

BAY, [*Laurus*] a well known tree, of which there are ſeveral ſpecies, as, 1ſt, the common broad-leaved bay; 2d, the common bay with waved leaves; 3d, the narrow-leaved bay; 4th, the Indian bay; 5th, the Carolina bay with pointed leaves and blue berries upon long red footſtalks; 6th, the American Benjamin tree; 7th, the Saſſafras; 8th, the Camphire tree. The firſt five ſorts may all be propagated by layers or ſeeds, which latter is by much the better method. The beſt way is to ſow the berries in pots, and plunge them into a moderate hot-bed, which will bring up the plants much ſooner than if they were ſown in the full ground, ſo they will have a longer time to get ſtrength before winter; but the plants muſt not be forced with heat, therefore they ſhould be inured to bear the open air the beginning of June, into which they ſhould be removed, where they may remain till autumn; then the pots ſhould be placed under a common frame, that the plants may be protected from hard froſt, but in mild weather may enjoy the free air; for while the plants are ſo young, they are in danger of ſuffering in hard froſt, even the common ſort of bay. The ſpring following, thoſe plants which will not live in the open air, ſhould be each tranſplanted into ſeparate pots; but the common ſort may be planted in nurſery-beds ſix inches aſunder each way, where they may grow two years, by which time they will be fit to plant where they are deſigned to grow. The other ſorts, which require protection, ſhould be planted in pots, and placed in a ſheltered ſituation till autumn, when they ſhould be placed in the green-houſe.

The common bay will make a variety in all ever-green plantations, and as it will grow under the ſhade of other trees, where they are not too cloſe, ſo it is very proper to plant in the borders of woods, where it will have a good effect in winter.

The ſixth ſort grows naturally in North America, where it riſes to the height of eight or ten feet, dividing into many branches, garniſhed with oval ſpear-ſhaped leaves, ſmooth on their upper ſurface, but with many tranſverſe veins on their under ſide; theſe leaves fall off in the autumn, like other deciduous trees.

The Saſſafras-tree is alſo very common in moſt parts of North America, where it ſpreads greatly by its creeping roots, ſo as to fill the ground with ſuckers wherever they are permitted to grow. In America it is only a ſhrub, ſeldom riſing more than eight or ten feet high; the branches are garniſhed with leaves of different ſhapes and ſizes, ſome of them are oval and entire, about four inches long and three broad; others are deeply divided into three lobes; theſe are ſix inches long, and as much in breadth from the extremity of the two outſide lobes; they are placed alternately upon pretty long foot-ſtalks, and are of a lucid green; the flowers appear in the ſpring juſt below the leaves, upon ſlender foot-ſtalks, each ſuſtaining three or four ſmall yellow flowers, which have five oval concave petals, and eight ſtamina in the male flowers, which are upon different plants from the female; theſe have an oval germen, that afterwards becomes an oval berry, which, when ripe, is blue.

The Camphire-tree grows naturally in Japan, and in ſeveral parts of India, where it riſes to a tree of middling ſtature, dividing into many ſmall branches, garniſhed with oval ſpear-ſhaped leaves, ſmooth on their upper ſide, having three longitudinal veins which unite above the baſe; if theſe are bruiſed, they emit a ſtrong odour of Camphire, as alſo the branches when broken. Theſe have male and female

flowers on different trees; the male has been known to flower plentifully in England; the flowers indeed were ſmall, and compoſed of five concave yellow petals, very like thoſe of the Saſſafras-tree, which were produced by threes or fours upon each footſtalk in like manner.

The Saſſafras-tree is commonly propagated by the berries, which are brought from America; but theſe berries generally lie in the ground a whole year, and ſometimes two or three years before they grow, when they are ſown in the ſpring; therefore the ſureſt method of obtaining the plants will be, to get the berries put into a tub of earth ſoon after they are ripe, and ſent over in the earth; and as ſoon as they arrive, to ſow the berries on a bed of light ground, putting them two inches in the earth; and if the ſpring ſhould prove dry, the bed muſt be frequently watered, and ſhaded from the great heat of the ſun in the middle of the day. With this management many of the plants will come up the firſt ſeaſon; but as a great many of the berries will lie in the ground till the next ſpring, ſo the bed ſhould not be diſturbed, but wait until the ſeaſon after, to ſee what will come up: the firſt winter after the plants come up, they ſhould be protected from the froſt, eſpecially in the autumn; for the firſt early froſt at that ſeaſon is apt to pinch the ſhoots of theſe plants, which are tender and full of ſap, and do them more injury than the ſevere froſt of the winter; for when the extreme part of the ſhoots are killed, it generally affects the whole plant.

When the plants have grown a year in the ſeed-bed, they may be tranſplanted into a nurſery, where they may ſtand one or two years to get ſtrength, and may then be tranſplanted into the places where they are to remain for good.

There have been ſome of the plants propagated by layers, but theſe are commonly two, and ſometimes three years before they put out roots; and if they are not duly watered in dry weather, they rarely take root; ſo that it is uncertain whether one in three of theſe layers do ſucceed, which makes theſe plants very ſcarce in England at preſent.

The Benjamin-tree, as it is falſly called, may be propagated in the ſame manner as the Saſſafras, by ſowing of the berries; theſe generally lie long in the ground, ſo that unleſs they are brought over in earth, in the ſame way as before directed, they often fail, or at leaſt remain long in the ground; but this ſhrub is now frequently propagated by layers in England, which put out roots pretty freely, when the young ſhoots are choſen to make layers.

The Camphire-tree is very near akin to the Cinnamon-tree, from which it differs in the leaves, thoſe of the cinnamon-tree having three ribs running longitudinally from the foot-ſtalk to the point, which are remarkably large: whereas the ribs of the leaves of this tree are ſmall, and extend towards the ſides, and unite before they meet the footſtalks; the leaves have a ſmooth ſhining ſurface; they have male and female flowers in different trees, ſo that there is a neceſſity for both ſexes to ſtand near each other, in order to have good ſeeds.

In Europe this tree is propagated by layers, which are two years, and ſometimes longer, before they take root, ſo that the plants are very ſcarce; and as all thoſe which I have ſeen flower are male trees, ſo there can be no hopes of procuring ſeeds from them here; but if the berries of this, and alſo of the cinnamon-tree, were procured from the places of their growth, and planted in tubs of earth, as hath been directed for the Saſſafras-tree, there may be a number of theſe plants produced in England: and if they were ſent to the Britiſh colonies in America, they might be there cultivated, ſo as to become a public advantage; eſpecially the cinnamon-tree, which will grow as well in ſome of our iſlands in the Weſt-Indies, as it doth in the native places of its growth; and in a few years the trees might be had in plenty, for they propagate eaſily by the berries. The Portugueze brought ſome of the cinnamon-trees from the Eaſt-Indies, and planted them on the iſland of Princes, on the coaſt of Africa, where they now abound, having ſpread over a great part of the iſland; there is alſo one of the trees growing at the Madeiras, and I am credibly informed there are many trees in the Brazils.

The Camphire-tree does not require any artificial heat in winter, ſo that if they

they are placed in a dry green-houſe, they will thrive very well. During the winter ſeaſon they muſt be ſparingly watered, and in the ſummer they ſhould be placed in a warm ſituation, where they may be defended from ſtrong winds, and not too much expoſed to the direct rays of the ſun; and during this ſeaſon, they muſt be frequently refreſhed with water.

They may be propagated by cuttings, which ſhould be planted in pots, and plunged into a moderate hot-bed, covering them cloſe with a hand-glaſs, and ſhading them in the heat of the day.

BAY *of Alexandria*, [*Ruſcus*]. See *Butchers Broom*.

BAYARD, a bay horſe.

BDELLIUM, [*Bdellium*] a concrete reſinous juice, brought from Arabia and the Eaſt-Indies; it is recommended internally as a ſudorific, diuretic, and uterine; and in external applications for maturating ſwellings, &c. but is little regarded in preſent practice.

BEAD-TREE, [*Azederach, Melia*] This is a kind of Sycamore or wild Aſh; the flowers conſiſt of five leaves which ſpread like a roſe. The fruit is roundiſh and fleſhy, containing a hard furrowed nut, divided into five cells, each containing one oblong broadiſh ſeed. The outſide pulp of the fruit in ſome countries is eaten, but the nuts are by religious perſons in popiſh countries bored through and ſtrung as beads. It is a native of Syria, but flouriſhes well in Portugal, Spain, and Italy.

BEAGLE, a kind of hunting dog, of which there are ſeveral ſpecies, the ſouthern beagle, which is ſlow of foot, the northern fleet beagle, and the ſmall beagle.

BEAM, is the largeſt piece of wood in a building which lies acroſs, into which the principal raſters are framed. No building has leſs than two of theſe beams, one at each end; the girders of the upper floor are framed into them, as alſo the teazle tenons of the poſts, if the building be of timber.

The proportion of the beams in and near London has been fixed by ſtatute as follows: A beam fifteen feet long, muſt be ſeven inches by five; ſixteen feet long muſt be eight by ſix; and ſeventeen feet, ten inches by ſix.

BEAM *of a Plough*, the largeſt piece of timber in a plough, to which all the parts of the plough tail are fixed.

BEAM-TREE, a ſpecies of ſervice. See SERVICE.

BEAN, [*Faba.*] The bean was well known to, and much eſteemed by the antients; but Mr. Ray obſerves it is diſputed amongſt the botaniſts, whether their bean was the ſame which is now uſually ſowed with us; ſince it is very certain, from many places both of Theophraſtus and Dioſcorides, that the bean of the antients was ſmall and round. *like the modern black Tick*

Yet, as he obſerves on the other ſide, it ſeems incredible, that a pulſe ſo common, and of ſuch daily uſe, ſhould be utterly diſuſed, or change its name, and have another ſubſtituted in its place, without any one taking notice of it.

But if a conjecture may be allowed in this caſe, the bean of the antients, as deſcribed by Mr. Ray to be ſmall and round, and which was formerly ſo much eaten, ſeems more like what is now called the mazagan bean, after mentioned, than that we moſt commonly ſow. And as to the uſe of it being loſt, or the name being changed without any particular notice taken of it, ſo many things of that kind have happened, in the ſucceſſion of ages, that it cannot occaſion much wonder.

The ſorts of beans are principally two: the common field, or horſe beans; and the great garden beans of various ſorts and colours, for the moſt part white, but ſometimes red.

The bean has a papilionaceous flower, which is followed by a long pod, filled with large ſeeds, the ſtalks are firm and hollow, and the leaves grow by pairs, and are faſtened to a middle rib.

The common farmers ſeldom ſow any but the ſmall or horſe beans in the open fields: but as many of thoſe called garden beans are now much cultivated in the fields, as well near London, and in ſeveral other places, and are equally capable of being managed after that manner, and that with greater advantage to the owner, the one as well as the other deſerves a place in ſuch a general undertaking as this, for the farmer's intereſt, whoſe advantage ought to be particularly regarded in every point.

It was very common to plant Liſbon or Portugal beans very early under walls, that they might have the benefit of the ſun: but thoſe ſituations are frequently fatal, and therefore moſt now rather chuſe to ſet them againſt hedges, or reed hedges run along the garden for that purpoſe. And yet with the greateſt care, and the deſired ſucceſs, they will only be found about a week or ten days earlier than thoſe ſet in the ſpring, and are not to be eſteemed of the beſt kind.

The ſmall Spaniſh bean comes in quickly after the Liſbon bean, and is a ſweeter, and will conſequently be preferred to the other.

The broad Spaniſh bean is a good bearer, and coming in before the common ſorts, is valuable upon that account.

The Sandwich bean ſucceeds ſoon after the Spaniſh, and is almoſt as big as the Windſor; is a plentiful bearer, and a hardy bean; and conſequently may be ſown much ſooner by a month.

The Toker bean is a great bearer, and comes in about the ſame time with the Windſor.

The Bloſſom beans, black and white, are very green when boiled, and very ſweet; but the ſeed is ſubject to degenerate.

The Windſor bean is undoubtedly the beſt of all for the table; and, when gathered young, is the ſweeteſt and beſt taſted of all; and when they have room and a good ſoil, they are plentiful bearers, and very large.

Theſe are ſeldom planted till Chriſtmas, becauſe they bear not the froſts ſo well as ſome of the others, ſo they generally come in June and July in abundance.

The Mazagan bean is eſteemed the firſt and beſt ſort of early beans now known. The ſeeds are much ſmaller than thoſe of Horſe beans; and, conſequently, ſeem more agreeable to the ſort mentioned by the antients.

If theſe are ſown in October under a warm hedge, pale, and ſo on, and earthed up as they riſe, they will be ready in May, and bear plentifully.

Theſe ſeeds were brought from the coaſts of Africa by the Portugueſe, and from them to us, and brought hither as wanted. When the ſeed is ſaved here they grow larger, but ripen not ſo ſoon.

Beans when about two inches high, ſhould be carefully earthed up, and ſo as they riſe two or three times; and in very ſevere weather, ſhould be covered with fern, peaſe-haulm, or ſome light covering, but to be taken off in mild weather.

Theſe plantings of beans may be repeated once in three weeks, and the leſs care is neceſſary as they come later, and the leſs ſeed. The ſetting them at the greater diſtance will do as they are ſet later. The Windſor beans may be ſet in rows at a yard diſtance, and at three inches in the rows, or rather farther off.

The after crops ſhould be planted about a fortnight diſtance after each other, from February to the middle of May, kept clear from weeds, and 'tis well to keep earthing them up; and when they are in bloſſom to cut off the tops of all, which will help to increaſe the pods, and alſo to deſtroy thoſe flies, ſo pernicious to them: the later the beans are ſown, the moiſter ground they require; and it is proper to take off the ſuckers, when the beans are about a foot high. A3.

There may be ſaid to be four ways of ſowing, or planting of beans.

The old way of ſowing them in the field was generally to plow the ground, and let it lie ſome time: then to ſow them in the broad caſt way, and harrow them in, which was ſeldom found to anſwer well; the ſeed being too much expoſed to be eaten by fowls, or burnt up in ſummer by heat, for want of a proper depth of earth.

But of late they have generally ſowed the beans under furrow, by plowing them in with as thin a caſt as poſſible; and, in very ſtiff lands, they harrow the ground after a ſhower, when the beans begin to peep, which helps to break the clods, and let out the tops. But great care ſhould be taken not to plough too deep, for fear of burying the ſeed; and to lay the turf flat, not edge-ways, that the beans may be covered with mould; ſince if they lie hollow, they will be ſubject to grow mouldy and decay.

The ſecond way is by the drill plough, of which ſort of huſbandry the beans are ſomewhat capable; though a very ſtiff ſoil, and the make of the bean does not ſuit it well.

The third method is the ſetting the beans

beans by hand, in rows, in holes, at about three inches diſtance, when the ground is properly prepared, which the women will do in many places for three-pence the peck. This is a very moderate expence; and will be ſaved in the ſeed beans uſed this way, in compariſon of what are uſed in the common method of ſowing.

The fourth way is by ſowing them in drills made by the hand-hoe, or by the common plough, which method is uſed by gardeners, who (being very expert at the hand-hoe) will diſpatch a great deal in a ſhort time, and plant the rows at any deſired diſtances, either to have the interſtices left open for other vegetables to grow betwixt them, or for the beans to ſpread, as for the hoeing them after by the hand or Dutch hoe, or by the late contrivance of running a ſmall plough betwixt the rows; or, laſtly, for letting ſheep into the beans in the fields to eat the weeds, which they will do at proper times without prejudicing the beans.

This method of ſowing or planting the beans, ſeems to have every advantage that can be obtained both in reſpect of the depth and diſtance they are to be placed at; and alſo in regard to their being incloſed by mellow ſoil, into which they may freely ſtrike every way.

The uſual quantity of ſeed for an acre is about three buſhels in the common way, which is now found more than neceſſary; ſince experience ſhews, that when they have more room, they bear much better both on account of their having opportunity to ſpread in a freer air, and more ſun to refreſh them.

It may not be amiſs to remind the farmer to take care frequently to change his ſeed, which is very neceſſary to be done ſometimes, in all ſorts of beans; and not to ſow beans in the ſame ground ſoon. The beſt method of changing is, by bringing ſeed from ſtiff land to that which is lighter, and from the lighter to the ſtiffer.

The ſeaſon uſual for the ſowing of field beans is, from the middle of February to the end of March: the ſtrongeſt and the wet land ſhould be ſown the lateſt, and the other ſorts proportionably ſooner: ſome regard is alſo to be had to the weather.

A ſtrong moiſt ſoil ſuits the bean the beſt, and it proſpers better in an open expoſure than when confined in ſmall incloſures; where it is moſt ſubject to blights, and the pernicious fly.

As to the preparing the ground for beans, there are two things to be conſidered: When the ground is only juſt broke up for them; and when according to the courſe of tillage, it is to be prepared for, and ſet or ſowed with beans.

In the firſt caſe the ground is ſuppoſed to be in a proper condition for a good crop, and then ſuch a produce is expected. Alſo, that it ſhould be uſeful in making the land mellow for an after crop of corn; and likewiſe to keep down the weeds. We are told by a very ingenious modern writer, that theſe ends, and much the greateſt produce will be obtained, if the drill and horſe plough be uſed to ſtir the ground betwixt the rows of beans.

The ſtrong objection againſt the horſe plough in this caſe is, that it turns the weeds toward the beans, and that it is then more trouble to get them out there, than the hoeing the whole with the hand hoe.

In caſe any improvement is found proper to be added to them, during the time of their growth, almoſt any compoſt may be ſpread amongſt them; and will preſently incorporate with the ſoil, on the looſening it either by the horſe plough or hand hoe; but he muſt be a bad farmer who has not his ground in common good heart for beans.

Beans cannot be ſaid always to be a profitable crop to the farmer, but in ſtrong land they mellow the ground and prepare it in ſome degree for wheat, oats, barley, &c.

Another advantage of beans is, that they give an opportunity of planting or ſetting other roots betwixt the rows, which will not hinder the growth of the beans, and may bring in a conſiderable profit; and whoever looks into a good gardener's ground, will ſoon ſee ſuch varieties of this kind, as to give him ſufficient choice of this ſort. This the gardeners call, under cropping, and great variety of vegetables, as carrots, lettuce, and many more of the ſame nature, may be ſowed or ſet in the interſtices.

Peaſe have frequently been ſown, and are thought to do tolerably well with beans, and it is ſaid may be advantageouſly

vanteouſly ſupported by the beans, but I apprehend that wherever they claſp round the beans, there can be no expectation of any pods from the beans as far as the pea reaches; however, peaſe may be ſafely ſowed betwixt them, when the beans are ſet in rows two feet aſunder: Which diſtance the beſt modern writers allow as producing the beſt crop, where there is tolerable compaſs of ground, which is the caſe when beans are ſowed in the fields, which we are now upon.

Turnips ſowed betwixt the beans would be found to anſwer well, both as a crop of turnips, and for the keeping down the weeds, which would be here a conſiderable article.

Beans are uſually reaped with hooks, after the ſame manner as peaſe, or ſhorn after the manner of white corn; and in both ways after bound up in ſheaves, and ſet on an end together, as wheat is in the ſouth.

They are commonly bound with ſtraw bands, but the better farmers buy a coarſe ſort of hemp twine by the hundred weight at a ſmall expence, and cutting them into proper lengths, bind up the bean ſheaves with them; and this makes every thing after eaſy and commodious in the management of them; and by allowing about three inches more than neceſſary the firſt year, for the loſs of cutting them open when laid on the floor for threſhing, they will ſerve two years very well.

The beans ſhould lie in the mow or rick to ſweat before they are threſhed out; for as the haulm is very large and ſucculent, ſo it is very apt to grow moiſt, but there is no danger of the beans if they were ſtacked tolerably dry, becauſe the pods will preſerve them from injury, and they will be much eaſier to threſh after they have ſweated; they will handle better and come better to market, and when they have once ſweated and are dry they will not grow moiſt again.

Kidney BEAN or *French* BEAN, [*Phaſeolus*] There are a great number of ſorts too well known to need a particular deſcription, and are all propagated by ſeeds; they are too tender to bear the open air before the middle or end of April; for if the weather be cold or wet after they are in the ground, they will ſoon rot; or if the morning froſt ſhould happen after the plants come up, they will be deſtroyed; therefore the beſt way to have early Kidney beans, where there is no conveniency of frames for raiſing them, is to ſow the ſeeds in rows pretty cloſe, upon a moderate hot-bed, the latter end of March or the beginning of April. If the heat of the bed is ſufficient to bring up the plants, it will be enough; this bed ſhould be arched over with hoops, that it may be covered with mats every night, or in bad weather. In this bed the plants may ſtand till they have put out their trifoliate leaves, then they ſhould be carefully taken up, and tranſplanted in warm borders near hedges, pales, or walls. If the ſeaſon prove dry at the time of removing them, the plants ſhould be gently watered to forward their taking new root, and afterward they muſt be managed in the ſame way as thoſe which are ſown in the full ground. Theſe tranſplanted beans will not grow ſo ſtrong as thoſe which are not removed, nor will they continue ſo long in bearing, but they will come at leaſt a fortnight earlier than thoſe which are ſown in the full ground.

The firſt crop intended for the full ground, ſhould be put in about the middle of April; but theſe ſhould have a warm ſituation and a dry ſoil, otherwiſe the ſeeds will rot in the ground; or if the weather ſhould prove ſo favourable as to bring up the plants, yet there will be danger of their being killed by the morning froſts, which frequently happen the beginning of May.

The ſecond crop ſhould be ſown about the middle of May. Theſe will come into bearing before the early kinds are over, and if they are of the ſcarlet ſort, will continue fruitful till the froſt deſtroys the plants in the autumn, and theſe will be good as long as they laſt. The manner of planting them is, to draw ſhallow furrows with a hoe, at about four feet diſtance from each other, into which you ſhould drop the ſeeds about two inches aſunder; then with the head of a rake draw the earth over them, ſo as to cover them about an inch deep.

If the ſeaſon is favourable, the plants will begin to appear in about a week's time after ſowing, and ſoon after will raiſe their heads upright; therefore, when the ſtems are advanced above ground, you ſhould gently draw a little earth

earth up to them, obſerving to do it when the ground is dry, which will preſerve them from being injured by ſharp winds; but you ſhould be careful not to draw any of the earth over their ſeed leaves. After this, they will require no farther care but to keep them clear from weeds, until they produce fruit, when they ſhould be carefully gathered two or three times a week; for if they are permitted to remain upon the plants a little too long, the beans will be too large for eating, and the plants would be greatly weakened thereby.

The large ſorts of Kidney-beans muſt be planted at a greater diſtance row from row; for as theſe grow very tall, ſo if the rows are not at a farther diſtance, the ſun and air will be excluded from the middle rows, therefore theſe ſhould not be leſs than five feet diſtant row from row; and when the plants are about four inches high, the poles ſhould be thruſt into the ground by the ſide of the plants, to which they will faſten themſelves, and climb to the height of eight or ten feet, and bear plenty of fruit from the ground upward. The Dutch and French preſerve great quantities of the large Dutch beans for winter uſe, which they ſtew and make good with gravy and other ſauces.

There are ſome perſons who raiſe theſe in hot-beds, in order to have them early. The only care to be taken in the management of theſe plants, when thus raiſed, is to allow them room, and give them as much air as can be conveniently, when the weather is mild, as alſo to let them have but a moderate heat; for if the bed be over hot, they will either burn, or be drawn up ſo weak as never to come to good.

The beſt way of ſaving the ſeeds of theſe plants, is to let a few rows of them remain ungathered in the height of the ſeaſon; for if you gather from the plants for ſome time, and afterwards leave the remaining for ſeed their pods will not be near ſo long and handſome, nor will the ſeed be ſo good. In autumn, when you find they are ripe, you ſhould in a dry ſeaſon pull up the plants, and ſpread them abroad to dry; after which you may threſh out the ſeed, and preſerve it in a dry place for uſe.

Bean Caper, [*Fabago*] the leaves are produced by pairs on the ſame footſtalk, and the footſtalks grow oppoſite at the joints of the ſtalks; the cup of the flower conſiſts of five leaves like a roſe; the fruit is cylindrical, five cornered and divided into five cells, each containing many flat ſeeds.—There are four ſorts, one a native of Syria, and the other three brought from the Cape of Good Hope.

The ſeeds of the firſt ſort ſhould be ſowed in ſpring on a moderate hot-bed; when they come up they may be by degrees brought to the open air, but towards winter ſhould be taken in and ſheltered from the froſt; after the firſt year they will bear the open air without aſſiſtance; the ſtalks die at winter and ſhoot out afreſh at ſpring.

The other three ſorts are too tender to bear the open air in winter, ſo ſhould be houſed in autumn: they are propagated by ſeeds or cuttings.

Bean Trefoil, [*Cytiſus, Laburnum*] Of this plant there are ſeveral ſorts, all propagated by ſeed, and which bear the winters of England except two, one a native of the Canary iſlands, which ſhould be kept in the green-houſe in winter; the other a native of the Weſt-Indies, and called the pigeon pea plant, cannot be preſerved in England except it is placed in a warm ſtove.

Bean Tree, [*Ceratia ſiliqua, Ceratonia*] the carob-tree or St. John's bread. This tree is common in Spain and ſome parts of Italy, where it grows in the hedges, and produces a great number of long flat brown-coloured pods, which are ſometimes eaten by the poorer ſort of people. It is an evergreen, and forms a variety with myrtles, oranges, &c. It is propagated by ſeeds, which ſhould be taken out of the pods and ſown in the ſpring in a moderate hot-bed, inuring them to the open air by degrees; in winter they muſt be kept in the green-houſe.

BEAR or BERE, a ſpecies of barley, called alſo winter barley, ſquare barley, and bigg.—It is principally cultivated in Scotland and the northern parts of England, and yields a large increaſe, but is not eſteemed ſo good for malting as other barley.

BEARBIND, [*Sepium*] a ſpecies of bindweed or convolvulus.

BEARD, [*Ariſta*] a needle-like proceſs, which grows to the end of barley, oats, &c. Beard

Bearded or Clog Wheat.
See Blue-Bull -

BEARD of a horſe, the hairs ſcattered on his under lip.

Old Man's BEARD, a ſpecies of Clematis or virgin's bower.

BEAR's-BREECH, or *Brankurſine*, [*Acanthus*] All the ſorts of Acanthus may be raiſed by ſeeds or offsets; the ſeeds ſown in the ſpring generally come up in about ſix weeks, and ſhould be kept free from weeds; the firſt winter they ſhould be defended from the froſts, and about March following tranſplanted where they are to remain; the only care required is to keep them clean from weeds, and to ſupport their ſtalks with ſtakes to prevent their being blown down by the wind; it is a beautiful plant and a native of the warmer parts of Europe.

BEAR's-EAR, the ſame as *Auricula*.

BEAR's-FOOT, a ſpecies of Hellebore.

BEAR's-WORT. See SPIGNELL.

BEAST, a general name for four-footed animals.

BEASTS *of burden*, all four-footed animals employed in carrying loads, as dromedaries, camels, elephants, horſes, mules, aſſes, &c.

BEASTS *of chace*, are the buck, the doe, the fox, the roe, and the martin or martern.

BEASTS *of the foreſt*, the hart, the hind, the boar, and the wolf.

BEASTS *of the warren*, the hare and the rabbit.

BEC or BECK, a little river.

BEDINJAN, the egg plant.

BEDSTRAW, [*Gallium*] This has a ſlight ſubſaline taſte, with a very faint, not diſagreeable ſmell: the juice changes blue vegetable infuſions of a reddiſh colour, and coagulates milk, and thus diſcovers ſome marks of acidity. It ſtands recommended as a mild ſtyptic; but has never been much in uſe.

BEE, [*Apis*] The Bee is a creature which has this great recommendation to the farmer's notice, of being kept with very little expence, and leſs trouble; and which at the ſame time yields him two commodities that are always marketable, and always bear a conſiderable price, wax and honey.

Volumes have been written on the bee before its nature was ſo well underſtood as it is at preſent: volumes therefore might be added, for with the more perfect knowledge of its nature, we have arrived at the diſcovery of many other of its properties: but we do not in this work intend any where to expatiate for the ſake of an idle curioſity. That it is the intereſt of the induſtrious huſbandman to keep bees is plain, becauſe they will bring him profit, and naturally fall in the way of his profeſſion; this therefore we recommend to him: and that he may be able to do it in the moſt advantageous manner, we ſhall, as on all other occaſions, lay down the beſt rules experience has ſhewn for that purpoſe.

In the generation of inſects, nature obſerves this conſtant method, that all ſuch as have no wings, are produced from the eggs of their parents, or brought forth alive in their own forms, whereas all thoſe which have wings undergo a kind of change. Theſe are hatch'd from the eggs of their winged parents, in form of caterpillars, worms, or maggots; in which they live a certain time, and then fall into a ſtate of reſt, covering themſelves with a web or caſe of their own making; or ſhrinking into their ſkins which harden for that purpoſe: and after they have lain a certain time thus, they break forth in the winged form like their parents.

This has been ſuppoſed to be much more wonderful than it is; the vulgar have thought that it was a change of one creature into another; and the learned have adopted the folly, as it were, under the hard word metamorphoſis of inſects. But the truth is, the butterfly is in the caterpillar, and only takes that time to grow to its due perfection.

As this is the caſe with all winged inſects, the bee, being one of them, muſt have its origin in the ſame manner, and the method is this. When the combs are made, a female parent lays an egg in every cell, theſe eggs hatch into a kind of white maggots, and after theſe have lived their time, they fall into a ſtate of reſt within the cell, and in due ſeaſon the bee burſts forth, and takes its flight.

There is this very ſingular in bees, that they are of three kinds. In the generality of animals there is a male and female ſex, and no other difference; but among bees, there are males, females, and others of no ſex at all.

Theſe laſt are the greater number, and go through all the drudgery. The males

males are but a moderate proportion, and when they have performed their office in impregnating the females, they are driven out of the hives to periſh. The females are very few, but each lays a vaſt number of eggs, and they are always taken great care of in the ſwarm. They are diſtinguiſhed from the others by their ſize and ſhape, and have been called by the names of Kings and Queens of the ſwarm.

The two valuable ſubſtances with which the bees ſupply the farmer, wax and honey, are both extracted from the flowers of plants. The wax is ſomewhat altered by the creature to bring it to that ſtate, but the honey they find in its own form.

In the flowers of plants there ſtand up certain ſlender threads, with little lumps upon their tops. Theſe are in ſome more, in others fewer, and upon the number of them is founded the preſent faſhionable method of claſſing plants. Theſe lumps or knobs which ſtand thus in the centre of the flowers, contain a fine duſt, which ſerves to impregnate the ſeeds of the plant: but as nature frequently provides for many purpoſes in the ſame thing, this powder or duſt which is formed in a much greater quantity than it is wanted for the ſervice of the herb, aſſiſts the bee for its combs, in which to depoſit its honey and its young, furniſhing the materials of which wax is fabricated by the creature.

Toward the bottoms of ſome flowers, and at the bottoms of others, there are alſo certain cells, or lodgments of different kinds, ſhapes, and forms, in the which is held a ſweet juice; this is honey. This the bee takes out, and has nothing more to do than to remove or carry it to its cells.

This is the real and certain origin of wax and honey. The bee feeds upon the duſt which is found in theſe lumps in the centre of flowers, and afterwards diſgorges it for the ſervice of the hive. It affords ſome nouriſhment to the little body of the inſect, and after that is carried off, and the reſidue has undergone the operation of the creature's ſtomach, it is wax. With this the combs are formed of that beautiful and uſeful figure, and in the cells of theſe is depoſited the ſweet juice, which they collect from the bottoms of flowers, and which, without any aſſiſtance from them, is honey.

There have been many contrivances of late to ſave the bees when the honey is taken; but theſe are not neceſſary; for a proper management with the common hives, placing one over another for the reception of the creature, will anſwer all the ſame purpoſes. We do not ſay that this will anſwer all the purpoſes that are pretended to be anſwered by the others: but all that they really effect.

The form and faſhion of the common ſtraw hives is ſufficiently known; but they are often made too high for their width. The beſt ſize is ſuch as would hold about ſix gallons, and the huſbandman will do well to order theſe to be made a little more ſquat than the common practice allows.

The hives muſt be trimmed as ſmooth and even as may be, cutting off all ſtaring ſtraws, and the ſpleets are to be then put in, three or four deſcending from the top to near the edge, and a couple of others to ſupport the opening or door, and two more behind: theſe laſt are to be thruſt firmly into the ſubſtance of the hive, to keep it from ſinking when it is full.

Let a ſpot be choſen not far from the houſe, and well defended from winds every way. The beſt ſecurity of this kind is by proper hedges; and theſe ſhould be ſo contrived as not to keep out the ſun; for the bee requires warmth, as well as ſtillneſs. The place muſt be well defended againſt cattle, both for the bees ſake and their own; for theſe little creatures hate diſturbance, and they generally reſent it very ſeverely. The beſt ſituation is when the houſe, or ſome large building, ſtands to the North, that it may be perfectly defended on that quarter, and the opening is to the ſouth, to let in the beſt rays of the ſun. There ſhould be alſo ſome trees pretty near to receive them at the times of their ſwarming.

The place being thus choſen, let there be ſet up a parcel of ſtools for the hives to ſtand upon. The uſual method is to ſet ſeveral together on a bench, but it is not ſo well. It occaſions a great deal of confuſion among the bees, who often miſtake one hive for another, and in winter they will quarrel about it, and do one another a great deal of miſchief.

For yet farther ſecurity, theſe ſtools, with the hives upon them, may be in-

cloſed in a little boarded building, either ſingly, or ſeveral of them together; which may have a tiled covering to keep off wet, and doors to ſhut or open according to the ſeverity or mildneſs of the ſeaſon.

The winter is the ſeaſon in which bees are moſt liable to injuries; but theſe they in a great meaſure eſcape if their hives be well made, and well defended, and they will keep within them. Any thing of a building about the hives ſerves to darken as well as to ſhelter them; and this in winter is of great ſervice, for it prevents their going out at every time when the ſun happens to ſhine a little, which they otherwiſe are too apt to do, and ſo are killed by the cold while they are abroad.

It is for this reaſon the greateſt number of bees periſh in the mildeſt winters. This ſounds odd, but they keep within the hives in very ſevere ſeaſons, and are there ſafe, whereas they go out in theſe mild days and periſh.

When bees are thus kept duſky and ſheltered during winter, the doors are to be thrown open early in Spring, to promote their induſtry and their breeding.

At the time of the bees ſwarming, the hives intended to be uſed are to be rubbed with thyme, hyſſop, or bean tops, which will pleaſe the bees, and it is a good method to rub a little honey on the inſide.

The hives are to be plaiſtered down to the ſtools with a mixture of cowdung, ſand, and a little lime; this muſt be carried round the edges to keep all cloſe, and fence out the wind; and in the winter the door of the hive ſhould be ſtopped with a ſmall piece of board that has two or three notches in it, to let the bees through, and not large enough to let in any thing that would hurt them.

When the bees increaſe, ſo that they are too many for the hive, they naturally ſwarm. The time of doing this is the beginning of ſummer, and this is a ſeaſon at which the owner is to watch them with a particular care, for the increaſe of his ſtock, and his profit, depend principally upon his management at this juncture.

Toward the middle of May, if the ſeaſon favour, the owner is to watch the hives to be prepared for their ſwarming. When the drones are thrown out early, it is a ſign the hive is full; and when, after this, the bees are ſeen continually in cluſters about the door, and often lie out; and when there is ſome moiſture about the foot of the hive, at times, and they hover in great numbers together round the door, it is always a ſign of ſwarming. When there happens a warm gleam of ſun, after a ſlight ſhower in the middle of a calm day, they may be expected to take that opportunity of riſing; and if, juſt after this, they be ſeen hanging in cluſters, about the door of the hive, it is to be immediately expected.

Sometimes one ſwarm of bees will caſt another in the ſame year; this is an article of which the huſbandman cannot be ſo well aware, as of the firſt and more certain ſwarming; but he is to watch as ſoon as he ſees the firſt ſigns of it, and follow them in all reſpects as the firſt ſwarms.

According to the bigneſs of the ſwarm the owner is to chuſe a larger or ſmaller hive, and his great care is to get them properly into it. The bee is a creature that will bear ſome diſturbance without reſentment, but they muſt not be too far ruffled; when they are angry their ſting is a very ſevere weapon. It may always happen that ſome of them may be provoked in this great article of hiving, and for that reaſon the perſon who undertakes it ſhould be prepared againſt the danger. Let him have a net wove, with the meſhes ſo ſmall that the bee cannot get through them, and large enough to be put on over his hat, and fall down upon his ſhoulders. His face and neck will be thus perfectly defended, and he will be able all the while to ſee what he is doing; let him put on a thick pair of woollen ſtockings, and a pair of gloves of the ſame ſtuff, which it will be beſt to draw up pretty high upon his arm. When he is thus defended, let him go to work ſoftly and ſedately, for any haſty motion diſturbs and angers the bees.

Let a cloth be ſpread upon the ground near where the bees are ſettled, and the hive laid upon it. Their common place of alighting is the bough of a tree, and if this be a ſmall one, let the huſbandman approach ſoftly to it, and gently cut it off; let him take

it

it down quietly and lay it upon the cloth, and ſet the hive over it. This is the moſt familiar and eaſy way, and none ſucceeds ſo well: when the bees have ſettled upon a larger bough, or otherwiſe diſpoſed themſelves, ſo that this method cannot be taken, the huſbandman is to ſhake them off into the hive, and then to ſet it upon the cloth ſpread for that purpoſe. If they happen to light near the ground, the beſt way is to draw the cloth under them, and then ſhaking them off, cover them with the hive. When any number gather at ſome little diſtance from the hive, he is to move them gently toward it with a bruſh; and if they take to any other place, he is to wipe them off with a bruſh, and rub the place with ſomething diſagreeable to them, as wormwood, or ſtinking mayweed.

Finally, the ſwarm is to be ſet as near as can be to the lighting place, and all left to be quiet.

When an old ſtock of bees is to be removed from one place to another, a proper ſeaſon, and a proper day are to be choſen for that purpoſe, and it is to be done with a great deal of caution. The beginning of October is the beſt time, but it may be done in February, or any time in the winter; but fair and ſtill weather ſhould be choſen for the doing it; and an evening is the beſt time, when the bees are quiet.

The bees, for the greateſt part of the year, provide perfectly well for themſelves; but in hard ſeaſons they are to be aſſiſted, and they will repay the owner's trouble with intereſt. The food he is to give them is not expenſive, and the beſt way of doing this, is by conveying the food in a cane, or little trough, into the hive. Many kinds of food have been contrived for them, but the beſt found on repeated experience, is a mixture of honey with ſweet wort, or new beer, and a little bay ſalt; this not only gives them the needful ſupply of nouriſhment, but always makes them healthy and vigorous. Some give bread ſopped in ale, and they will eat it greedily: the honey is, however, certainly the beſt, becauſe it is the moſt natural food.

Quiet is a great article in the care of bees, therefore all noiſe and diſturbance are to be as much as poſſible kept from them. We have already directed that cattle ſhould be kept away by good fences, and for this reaſon the place of their ſetting them ſhould be far from public roads, or cartways.

Smoak is very deſtructive of them, and they are always to be carefully defended from it, eſpecially that ſmoak which riſes from the burning any thing upon the ground, for it is eaſily driven by the leaſt wind juſt upon them, being on their level, and it choaks and deſtroys them. All bad ſmells alſo do them harm, and render their habitation diſagreeable.

In years wherein waſps and hornets are numerous, they do great miſchief, entering the hives, and plundering them of the honey; but it is eaſy to guard againſt theſe, by ſetting vials of ſweeten'd cyder near the hive, nothing tempting the hornet and the waſp ſo much.

All the ſummer they are collecting honey; in Auguſt the combs are fulleſt, and from that time the bees often eat more than they get, ſo that the quantity decreaſes. This points out the end of Auguſt very plainly, as the time at which there is moſt honey in the hive: that therefore is the proper ſeaſon for taking it.

The old way is to kill the bees, and take the produce at this ſeaſon; but many methods have been invented for ſaving them. However, as there is not any great purpoſe anſwered by preſerving them when their food is taken away, unleſs more care and trouble be taken about them than it is worth the farmer's while to beſtow; I ſhall adviſe him to follow the old method, and deſtroy the ſwarm when he has taken their ſtores. This practice is not ſo cruel as it appears, for the life of the bee is very ſhort naturally; and with the beſt management they paſs but an uncomfortable winter after they are robbed of their natural proviſion.

At the end of Auguſt therefore let the huſbandman conſider what he will keep, and what he will kill. In this he is to be directed in a great meaſure by the age of the ſwarm, the beſt to keep being thoſe of one or two years ſtanding; or thoſe of three or four years, which, by reaſon of their ſwarming the laſt ſummer, are full of bees, and are the moſt likely to be good. The ſwarms of three or four years old which have caſt hives are to be killed,

becauſe they are not like to continue; as are alſo thoſe poor ſwarms that are not worth the feeding; and all light ſtocks, and ſuch as do not carry out their droſs, or drive away the drones in good time. Theſe are the principal rules for the farmer's conduct in this matter, and to theſe may be added, that he ſhould take for killing all ſuch as are three years old or upwards, that have miſſed ſwarming the two preceding years, and ſuch as are weak and eaſily plundered. Theſe are the directions he is to follow in the taking them, and he is not to omit the temptation of a large ſtore, whatever be the condition of the hive: therefore if he perceive any to be very full, as they will ſometimes in good years be down to the bottom, he muſt take theſe, for they never can be better, and often one ſuch hive is worth three.

When the hives that are to be taken for the honey are marked, let there be a hole dug in the ground of about nine inches deep, and nearly of the bigneſs of the bottom of the hive, with the fine mould piled up round the brim. Having this hole prepared, about two hours before ſun ſet, take a brimſtone match, as long and thick as a large ſkewer, fix it in the ſlit of a ſmall cleft ſtick, with a ſharp point. Stick this in the ground at the bottom of the hole, ſo that the top of the match may come within an inch of the level of the rim: if one be not ſufficient, another may be added, prepared in the ſame manner. Let the top of each match be lighted, and then ſet the hive over the hole. Draw the fine mould about the edges to keep in the ſmoak, and thus let it ſtand a quarter of an hour. In that time the bees will be all dead.

The hive is now to be taken into the houſe, and the combs are to be carefully ſeparated, taking them out one by one. The dead bees are to be bruſhed off with a feather, and when that is done, the combs are to be broke each into three pieces.

There will a good deal of honey flow naturally out of theſe, and this is to be kept by itſelf. It is called virgin honey: but the ſame name is alſo given to the firſt honey of any ſwarm. Let this honey be put in a pot, and ſet by two or three days; in this time if there be any mixture of wax or other foulneſs among it, that will work to the top in a kind of ſkum, and is to be taken off.

After the combs will run no longer, they are to be preſſed, and this way they afford a large quantity of what is called common honey. The combs after they have been thus preſſed, are to be waſhed, and when all the ſweetneſs is out of them, they are to be worked for wax. The liquor in which they are waſhed, and the coarſer part of the honey, are uſually made into a kind of mead.

The waſhed combs are to be ſet over a fire in a large kettle of water, and boiled, ſtirring it continually about to prevent burning to the bottom or ſides of the kettle. When the wax is well melted, pour all into a ſtrainer, and immediately put it into a preſs, ſetting a veſſel of cold water under it; into this let the wax fall; and let the preſſing be continued as long as any wax can be forced out.

When all is thus got that will come, let it be taken out of the water, and moulded and worked up into balls in the hands; and after this let theſe balls be broken to pieces, and ſet over a gentle fire to melt. Let the wax be ſkimmed as the froth riſes, and when thoroughly melted, and well ſkimmed, let it be ſtrained ſlowly through a canvaſs bag, and received in an earthen pan, or other mould, which is to be firſt rubb'd over with a little honey.

When all the wax is run through, this is to be ſet to cool very gently in a tolerably warm room, and when thoroughly cold, and taken out, the bottom is to be pared off, and it is ready to be ſold.

This is the plain and uſeful way of managing bees, and making the moſt of their produce. A great many very ingenious contrivances have been made for the curioſity of perſons of ſpeculation; but nothing more than this need be regarded in practice, when the profit and advantage are the objects of the attention.

Leaf-cutting BEES. Make their neſt, and lay their eggs among bits of leaves placed in holes of the earth, of the length of a tooth-pick caſe.

Wall BEES, Make their neſts in walls; the male and female are of a ſize, and the former has no ſting.

Wood BEES, are rather larger than common

common bees, and make their nests in wood half rotten.

Mason Bees, build their nests against a wall, where they make their cells, and produce their young.

Ground Bees, make their habitation in the earth five or six inches deep.

BEECH, [*Fagus*] This is a beautiful as well as valuable tree, the leaves are of a pleasant green; it may be planted either in woods or open fields, in both which places it grows to a considerable height, and carries with it a proportionable thickness.

The common method of raising these plants, is, sowing their seeds in beds, very thick, early in the spring, and letting them stand two years; or, by drawing a part of them the first and second year, leaving the remainder till three years old: But this, however general, is a very bad practice, as the plants thus drawn have most of their tender fibres torn away, (an injury they will not soon recover) and what remains, will be carrot-rooted, and suffer much, by the necessity of shortening these roots (then hard and woody) before transplanting them. Mr. Boutcher directs the following practice as what he has found most successful in the culture of this tree, and bringing it soonest to perfection:

Being provided with mast from the straightest and freshest trees, as soon in autumn as the husks are quite dry, mix them with sand, and lay them under an old frame, or other covering, to protect them from frost and wet. This will prepare the seeds for vegetation, and disappoint the mice, who generally have a large share of them when early sown.

In the beginning of March, sow them thin in shallow drills, about eighteen inches asunder; and if the season is dry, and water at no great distance, give them frequent but moderate waterings, from their beginning to appear above ground, till the middle of August, which will much forward the growth of the plants.

In March, next season, with a spade made very sharp for the purpose, undermine the roots as they stand in the drills, and cut them over between four and five inches under ground.

The following autumn, or spring, you may either raise the whole, or give them another cutting below ground, when gently raising such as are too thick, leave the remainder, at proper distances, to stand another season. This manner of cutting the roots dexterously has, in a great measure, the same effect as transplanting.

Those you have raised, after smoothing the bruised and broken roots, and cut away some of the small hairy fibres, must be planted in lines two feet asunder, and nine or ten inches in the line: and if the soil is good, and the plants have grown vigorously, they should remain here only two years, but in poor land they may continue three.

Those left in the drills where sown, are, next autumn, or spring, to be treated as these.

From this nursery they may be removed to another, and planted in lines three feet and a half asunder, and eighteen inches in the line, where they may remain, if in good soil, three, but in poor land four years; observing always to prune moderately at removal, and leave abundance of small branches to increase their bodies.

At this period, these plants will be fit for common and extensive plantations; but such as are designed for removal, when large trees, must undergo more discipline.

These must now be removed to another nursery, and planted in lines five feet asunder, and at two feet distance in the line, to remain in good ground three, but in poor four years.

From this remove them again, and plant them eight feet asunder line from line, and six feet in the line, to remain four years.

From this nursery, if required of a larger size, remove them to fields, planting them ten feet asunder every way, to be ready for your future designs.

No deciduous tree agrees worse than this with pruning at removal, to which may be added, wounding them, by cutting off large branches, the best method of treating them, is to reduce them to their proper form by regular prunings in the nursery, particularly the season before they are transplanted; by regularly observing which, and keeping them in a proper degree of moisture, they will not be sensibly retarded in their future growth.

The sorts with variegated leaves, are propagated by budding them on the common kind.

The

The beech naturally delights in a chalky or ſtony ground, and although the timber is not ſo valuable, yet from its thriving in ſoil where few other trees will grow, the propagation ſhould be encouraged; beſides this it affords an agreeable ſhade, and is an excellent ſhelter to defend any thing from the ſeverity of the winds.

BEECH *maſt*, the ſeed of the beech-tree.

This maſt is very good for feeding ſwine; ſo that in ſome counties of England, where there are large woods of beech-trees, the hogs are fed for months together on the maſt only. They thrive prodigiouſly on this food only, ſo that many porkers are killed in a year fatted with beech-maſt, without the aſſiſtance of any other food. It is, however, the better way to take them up, and give them either pollard, barley-meal, or peaſe, for a month or five weeks, when they will be fit for the tub.

But Beech-maſt, like acorns, are apt to give the hogs a diſtemper called the garget; which may be effectually prevented, if a few peaſe or beans moiſtened with water, and ſprinkled over with antimony finely powdered, be given them every other day for a fortnight or three weeks.

BEE-FLOWER, a ſpecies of Orchis.

BEER. A common and well-known liquor, made of malt and hops, and uſed in various parts of Europe, particularly in thoſe where the vine will not flouriſh, and where cyder is ſcarce.

The grounds, or ſettlings of beer, &c. form a very rich manure.

BEER-MEASURE. Two pints, one quart; two quarts, one pottle; two pottles, one gallon; nine gallons, one firkin; two firkins, one kilderkin; two kilderkins, one barrel; one barrels and half, one hogſhead.

BEESNEST, or BIRDSNEST. See Wild Carrot.

BEESTINGS. The firſt milk of cows after calving.

BEET. [*Beta*] Of this there are three ſorts, the white beet, red beet, and ſea beet: They are propagated for culinary purpoſes, and eaſily raiſed by ſeed, keeping them clear from weeds, and ſeparated by the hoe to a proper diſtance, that they may have room to ſpread.

BEETLE. [*Malleus*] A wooden inſtrument employed in driving wedges, piles, ſtakes, &c.

BEETLE, is alſo the name of a flying inſect, of which there are a great variety of ſpecies; ſome large with horns, others ſmall without horns; but they have all of them caps over their wings to defend them from hard bodies.

BEEVE. The general name of oxen, or black cattle.

BEHEN, or BEN, in pharmacy, a name appropriated to two roots, very different from one another in ſhape, colour, and their whole external appearance, and diſtinguiſhed by the names of white and red behen.

We have them both from the Levant, and they ſeem to be produced in many parts of the Eaſt; but no where in ſuch plenty as about the foot of Mount Lebanon.

The ſame virtues are attributed to both kinds of behen, but the white is ſuppoſed to poſſeſs them in the greateſt degree; they are ſaid to be great cordials and reſtoratives, and to be good in nervous complaints.

BELLFLOWER. [*Campanula*] Of this are divers ſorts in the gardens, which may eaſily be propagated by parting the ſorts, or ſowing the ſeeds.

BELL-MUSK. Syrian mallow.

BELLING *of Hops*. Denotes their opening and expanding their flowers, which is generally about the beginning of Auguſt.

BELLONIA. A plant common in the warmer iſlands of America, riſing with a woody ſtem to the height of ten or twelve feet, ſending out ſeveral lateral branches, garniſhed with oval leaves; the flowers come out from the wings of the leaves in looſe panicles of a wheel ſhape, and divided into five parts: It is propagated by ſeeds, but requires the aſſiſtance of a ſtove to preſerve it.

BELL-PEPPER. See CAPSICUM.

BELLY-ACHE-WEED. [*Staphiſagrifolia*] A ſpecies of Caſſada, ſo called in America, and the Weſt-Indies, being ſuppoſed a remedy for that diſeaſe.

BELT, a diſeaſe in ſheep, when the heat of the dung ſcattered on the tail, ſcalds and breeds a ſcab.—The cure is effected by cutting away all the tags and cleaning the ſore, then ſhaking a little

little bole armoniac on the part, and then dreſſing it with tar and greaſe mixed together.

BELVEDERE, [*Scoparia*] a ſpecies of gooſe-foot, called alſo ſummer cypreſs.

BENJAMIN-TREE. See Bay.

BENT-GRASS, graſs common in paſture grounds, of which there are ſeveral ſorts.

BERE, Bear, or Big, Is a ſpecies of barley, chiefly confined to Scotland, of conſiderable produce, but inferior in quality to the other barleys cultivated in the ſouthern parts of Britain; there are two ſorts of this barley, the one with four rows of grain, the other with ſix, the latter is named *barley-big*. The grain is plump and large, but the rind being coarſe it is not ſo well ſuited to malting.

Both ſorts are generally ſown in the autumn, about the time of ſowing wheat, ſometimes in January, February, or even March; ſucceeds well after early turnips, ſown about Chriſtmas a little before or after.

BERGAMOT, a ſpecies of pear. Alſo the name of an eſſence brought from Italy, extracted from a fruit produced by ingrafting a branch of a lemon tree on a pear ſtock.

BERRY, [*Bacca*] Defined by Linnæus to be a pulpy pericarpium, or ſeed-veſſel, without a valve, incloſing ſeveral ſeeds which are naked, or have no other covering. The ſeeds are ſometimes diſperſed promiſcuouſly through the pulp, as in the water-lilly; but are generally placed on receptacles, or foot-ſtalks, within the pulp, as in the currant, gooſeberry, raſpberry, &c.

In the leſſer burdock, the ſeed-veſſel, which is called by Linnæus, tho' improperly, a berry, is dry, and contains within it, a nut furniſhed with two cells.

The ſeed-veſſel, or fruit, of the capſicum, which the ſame author alſo improperly ſtiles a berry, has no pulp, and is hollow within.

From theſe and other inſtances which might be produced, we may ſafely affirm, either that the definition of a berry juſt now given, is imperfect, or that the ſeed veſſels of a great number of plants are, in the genera plantarum, wrongly denominated berries. To ſay truth, it is ſometimes difficult to refer a pericarpium to the head of bacca or drupa, as defined by Linnæus. The only difference betwixt theſe ſeed-veſſels conſiſts in the nature of ſeeds incloſed within the pulp. In the latter is incloſed a nut, or ſtone; in the former, a number of naked ſeeds. Theſe definitions being eſtabliſhed, to what head are we to refer the leſſer burdock, which, as we have ſeen, contains a nut within a dry pericarpium? Why, certainly, to the head of drupa, as well as the wallnut, and many other plants which have a dry ſeed-veſſel incloſing a ſtone, or nut. On the other hand, we may refer the wallnut, and other dry pericarpiums, which incloſe a nut, with equal propriety, to the head of bacca, as the leſſer burdock, the ſeed-veſſel of which is denominated, by Linnæus, a berry.

The very different fruits, or, to ſpeak more properly, ſeed-veſſels of the ſumach, night-ſhade, ſow-bread, medlar, orange, and pine-apple, are all denominated berries.

The berry is commonly round, or oval, and frequently furniſhed, like the apple, and other fruits of that kind, with an umbilicus, or ſmall cavity, at the end oppoſite to the foot-ſtalk.

A berry is ſaid to be proper, when it is formed of the pericarpium, or ſeed-veſſel; improper, or ſingular, when it is formed of any of the other parts.

The latter ſpecies of formation is frequent, and admits of numerous varieties.

The following are the moſt conſiderable:

In the mulberry, roſe, blite, and myrtle-leaved ſumach, a large, fleſhy, and ſucculent calix becomes a berry.

In the ſtrawberry and caſhew nut, a berry is formed of the common receptacle.

In the raſpberry and adonis, of a ſeed.

In marvel of Peru, of the nectarium.

In garden-burnet, of the tube of the corolla, which hardens and ſhuts for that purpoſe.

In ſpindle-tree, of a ſucculent arillus, or proper ſeed-covering.

The berry does not naturally gape, or burſt; the diſperſion of the ſeeds within the pulp being deſigned to be performed by means of animals.

BESIDARY, the name of a pear.

BESLERIA, in botany, a genus of didynamious plants, whoſe flower conſiſts

fifts of a monoplous calix, which contains a fingle labiated petal, quinquefid and round; the filaments are four in number, two of which are longer than the others; the ſtyle is awl-ſhaped, and reſts on a globoſe germen, which afterward becomes a round berry of one cell, containing many round ſmall ſeeds.

Theſe plants (of which there are three ſpecies) grow naturally in the warm parts of America, from whence the ſeeds have been brought to Europe, and cultivated in ſome curious botanical gardens. They are ſown on a hot-bed in the ſpring, and kept in the ſtove in winter.

BETEL, an Indian plant in great eſteem in the Eaſt, uſed by the natives to rub their lips and teeth, the latter of which it makes black, and the former red.

BETONY, [*Betonica*] This is a low plant, growing in woods and ſhady places, in ſeveral parts of England: the flowers come forth in June and July; they are of a purpliſh colour, and ſtand in ſpikes on the tops of the ſtalks. The leaves and flowers have an herbaceous, roughiſh, ſomewhat bitteriſh taſte, accompanied with a very weak aromatic flavour.—This herb has long been a favourite among writers on the materia medica, who have not been wanting to attribute to it abundance of good qualities. Experience does not diſcover any other virtue in betony than that of a mild corroborant: as ſuch, an infuſion, or light decoction of it, may be drank as tea, or a ſaturated tincture in rectified ſpirit, exhibited in ſuitable doſes, in laxity and debility of the viſcera, and diſorders proceeding from thence. The powder of the leaves, ſnuffed up the noſe, provokes ſneezing; and hence betony is ſometimes made an ingredient in ſternutatory powders: this effect is not owing, as is generally ſuppoſed, to any peculiar ſtimulating quality in the herb, but to the rough hairs which the leaves are covered with. The roots of this plant differ greatly in quality from the other parts: their taſte is bitter and very nauſeous: taken in a ſmall doſe, they vomit and purge violently, and ſeem to have ſomewhat in common with the roots of hellebore. It is pretty ſingular, if true, that betony affects thoſe who gather any conſiderable quantity of it, with a diſorder reſembling drunkenneſs; Simon Pauli and Bartholinus are the vouchers.

Paul's BETONY, [*Veronica mas*] This is a low rough plant, met with on dry commons or ſandy grounds; in taſte, ſmell, and medical virtues it is ſimilar to Betony. It is called alſo *Male Speedwell* or *Fluellin*.

BIDALE or BIDALL, is an invitation of friends to drink ale at the houſe of ſome poor man, who thereby hopes a charitable contribution for his relief; it is ſtill in uſe in the Weſt of England, and in ſome copies falſly written Bildale.

BIENNIAL, laſting two years.

BIG, the ſame with BEAR, BERE, or Square BARLEY. *See*.

BIGGE, a pap or teat.

BILL, a crooked inſtrument of iron, with a handle to cut with.—When it has a ſhort handle it is called ſimply a *bill*; when a long handle it is called a *hedging-bill*.

BILLETWOOD. Statutable billet ſhould hold three feet in length, and ſeven inches and half in compaſs.

BIFOIL or TWYBLADE, [*Ophrys*] There are ſeveral ſorts growing naturally in England, in woods, and meadows, and others upon hills and dry paſtures. They all 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 places, 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

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.

BILLBERRY, [*Vaccinium*] otherwiſe Whortleberry or Cranberry. There are ſeveral ſorts growing in different parts of the kingdom, and the fruit is much uſed in tarts. They are ſeldom propagated in gardens, as ſome ſorts only love ſandy heaths, and others only bogs and moors.

BIN, a cheſt to hold corn.

BINDWEED, [*Convolvulus*] There are an abundance of ſorts of this plant found in the gardens, all which are propagated by parting the roots, and ſowing ſeeds. Among this genus are included Scammony, Soldanella, Turbith, and Jalap.

The *Scammony* or *Syrian Bindweed*, is a native of Syria, where the roots of the plants are wounded, and ſhells placed under the wounds to receive the milky juice which flows out, which is inſpiſſated, and afterwards put up and exported: this is what they call Scammony in the ſhops: it is a very hardy plant, and will thrive very well in the open air in England, provided it is on a dry ſoil. The roots are thick, run deep into the ground, and are covered with a dark bark. The branches extend themſelves on every ſide to the diſtance of ten or twelve feet; they are ſlender and trail on the ground, and are garniſhed with narrow arrow-pointed leaves. The flowers are of a pale yellow, and come out from the ſide of the branches, two ſitting upon each long foot ſtalk; theſe are ſucceeded by roundiſh ſeed-veſſels, having three cells, filled with ſeeds ſhaped like thoſe of the former ſort, but ſmaller. If the ſeeds of this ſort are ſown in the ſpring on a border of light earth, the plants will come up, and require no other culture but to keep them clean from weeds, and thin the plants where they grow too cloſe; for as the branches extend very far, the plants ſhould not be nearer than five feet aſunder. The ſtalks decay in autumn, but the roots will abide many years.

Scammony is an efficacious and ſtrong purgative. Some have condemned it as unſafe, and laid ſundry ill qualities to its charge; the principal of which is, that its operation is uncertain, a full doſe proving ſometimes ineffectual, whilſt at others a much ſmaller one occaſions dangerous hypercatharſes. This difference however is owing entirely to the different circumſtances of the patient, and not to any ill quality, or irregularity of operation, of the medicine: where the inteſtines are lined with an exceſſive load of mucus, the Scammony paſſes through, without exerting itſelf upon them; where the natural mucus is deficient, a ſmall doſe of this or any other reſinous cathartic, irritates and inflames. Many have endeavoured to abate the force of this drug, and correct its imaginary virulence, by expoſing it to the fume of ſulphur, diſſolving it in acid juces, and the like; but this could do no more than deſtroy as it were a part of the medicine, without making any alteration in the reſt. Scammony in ſubſtance, judiciouſly managed, ſtands not in need of any corrector: if triturated with ſugar or with almonds, it becomes ſufficiently ſafe and mild in operation. It may likewiſe be conveniently diſſolved, by trituration, in a ſtrong decoction of liquorice, then poured off from the fæces: the college of Wirtemberg aſſures us, that by this treatment it becomes mildly purgative, without being attended with gripes or other inconveniences; and that it likewiſe proves inoffenſive to the palate. The common doſe of ſcammony is from three to twelve grains.

Soldanella, *Sea-Colewort*, or *Scotch Scurvy-Graſs*, is a trailing plant, growing on the ſea-beach in many parts of the North of England. The root, leaves, and ſtalks yield a milky juice. Soldanella is a ſtrong cathartic, operating very churliſhly, and hence deſervedly rejected from practice. Thoſe who recommend its uſe differ conſiderably with regard to the doſe; ſome direct half a dram, others three drams, and others a whole handful.

Turbith grows naturally in the iſland of Ceylon; this is a perennial plant, having thick fleſhy roots which ſpread far in the ground, and abound with a milky juice, which flows out when the roots are broken or wounded, and ſoon hardens into a reſinous ſubſtance when expoſed to the ſun and air. From the

root ſhoot forth many twining branches, which twiſt about each other or the neighbouring plants like the common Bindweed. They are garniſhed with heart-ſhaped leaves, which are ſoft to the touch, like thoſe of the marſh-mallow. The flowers are produced at the joints on the ſide of the ſtalks, ſeveral ſtanding together on the ſame foot-ſtalk; they are white, and ſhaped like thoſe of the common great Bindweed, and are ſucceeded by round capſules, having three cells, which contain two ſeeds in each.

The roots of this plant, which is uſed in medicine, are brought to us from India; it is titled Turpethum, or Turbith, in the ſhops. This plant is tender, ſo will not thrive in the open air in England.

This root is a cathartic, not of the ſafeſt, or moſt certain kind: the reſinous matter, in which its virtue reſides, appears to be very unequally diſtributed, inſomuch that ſome pieces, taken from a ſcruple to a dram, purge violently; whilſt others, in larger doſes, have ſcarce any effect at all. An extract made from the root is more uniform in ſtrength, though not ſuperior, or equal, to purgatives more common in the ſhops.

Jalap grows naturally in the Spaniſh Weſt Indies, between La Vera Cruz and Mexico, and being a native of a warm climate will not bear the open air of England, unleſs preſerved in a ſtove. As a medicine, ſuch pieces ſhould be choſen as are compact, hard, weighty, dark coloured, and abound moſt with black circular ſtriæ. Slices of briony root are ſaid to be ſometimes mixed with thoſe of jalap: theſe may be eaſily diſtinguiſhed by their whiter colour, and leſs compact texture. This root has no ſmell, and very little taſte upon the tongue; but, when ſwallowed, affects the throat with a ſenſe of heat, and occaſions a plentiful diſcharge of ſaliva.

Jalap, in ſubſtance, taken in a doſe of about half a dram (leſs or more, according to the circumſtances of the patient) in plethoric or cold phlegmatic habits, proves an effectual, and in general a ſafe purgative, performing its office mildly, ſeldom occaſioning nauſea or gripes, which too frequently accompany the other ſtrong cathartics. In hypochondriacal diſorders, and hot bilious temperaments, it gripes violently, if the jalap be good; but rarely takes due effect as a purge. An extract made by water purges almoſt univerſally, but weakly; and at the ſame time, has a conſiderable effect by urine: the root remaining after this proceſs, gripes violently. The pure reſin prepared by ſpirit of wine occaſions moſt violent gripings, and other terrible ſymptoms, but ſcarce proves at all cathartic; triturated with ſugar, or with almonds into the form of an emulſion, or diſſolved in ſpirit, and mixed with ſyrups, it purges plentifully in a ſmall doſe, without occaſioning much diſorder: the part of the jalap remaining after the ſeparation of the reſin, yields to water an extract, which has no effect as a cathartic, but operates powerfully by urine.

Frederick Hoffman particularly cautions againſt exhibiting this medicine to children, and aſſures us, that it will deſtroy appetite, weaken the body, and perhaps occaſion even death. In this point, this celebrated practitioner was probably deceived: children, whoſe veſſels are lax, and the food ſoft and lubricating, bear theſe kinds of medicines, as Geoffry obſerves, better than adults.

BIRCH. The ſpecies of this tree are, 1. The common Birch tree. 2. The Poplar-leav'd Birch tree. 3. The Canada Birch tree.

The common birch may be propagated either from ſeeds or ſuckers taken from the roots of old trees, but the ſeedlings make the handſomeſt and beſt-rooted plants. We ſhall therefore firſt direct their culture in that way, which, though one of the hardieſt and moſt common trees our climate produces, (of which it is a native) yet is it ſeldom ſucceſsfully raiſed from ſeeds, which is generally owing to too much covering, and which it will by no means bear, as the plants, when they firſt vegetate, are very delicate, and unable to force their way through any conſiderable depth of ſoil; but by obſerving the following ſimple practice, you will procure them in abundance:

The ſeeds of the Birch are ripe about the end of September or beginning of October, when, having gathered them in a fair clear day, ſpread them thin on a loft floor till dry; after which, mix them with looſe ſand, and keep them in

in an airy place till the beginning of the following March. The ground for ſowing them, which ought to be freſh and light, having been trenched or dug the preceding autumn, point it over again, making it as looſe as poſſible, and raking it very fine; divide it in beds, three feet and a half wide; ſow the ſeeds, and clap them into the ground with the back of a ſpade, without any earth thrown over them. If the weather is moiſt and mild, no further care is neceſſary; but if dry and froſty, which is often the caſe at this ſeaſon, throw a little peaſe haulm over the beds, for three or four weeks, till the ſeeds begin to vegetate, which will keep the ground moderately moiſt, and defend them from being injured by froſt, or deſtroyed by birds, who are very fond of them. About this time uncover the beds, keep the ground quite clean, and give them three or four gentle waterings about noon, from the middle to the end of April, the weather being mild and dry; which repeat more plentifully and frequently from thence till the middle of June, in mild evenings, when they will require no further attention.

The following March, remove theſe plants from the ſeminary to the nurſery, ſhortening their top-roots, and plant them in lines, two feet and a half diſtant, and about ten or twelve inches aſunder in the lines; to ſtand two years, if the land is good, and the plants have grown freely; but in poor thin ſoil, where their progreſs has been ſmall, they may continue three years; in which caſe, after the ſecond year's growth, cut over ſuch of them as are leaſt thriving or crooked, cloſe by the ground, in March, which will give them ſtraighter and more vigorous ſhoots.

Thoſe taken from the roots of old trees, or ſeedlings grubbed up from the woods, cannot have ſo good roots or free ſhoots as plants raiſed in a clean well cultivated nurſery bed, and therefore will of courſe require more time and attention to make them equally good trees: For this purpoſe, having procured the plants with all the roots poſſible, ſhorten ſuch of them as incline to run downward; cut away ſuch as are broken or bruiſed, with all the muſty parts naturally contracted in the woods for want of air; reduce likewiſe the tops of ſuch as are too tall or heavy-headed, and lay them in drills cut down with the ſpade, at the ſame diſtances directed for the ſeedlings, in depth proportioned to the ſize of the plants, the moſt certain rule for which, in this and all other trees, is placing them as deep only as they have naturally ſtood before; water them at planting, keep the ground clean, and dig between the lines in the ſpring. Having ſtood here two years, cut them all over by the ground, and let them remain two years longer, when they may be removed for good.

The ſecond and third ſorts will bear our winters well enough, when mixt with and ſheltered by other plants: They may be propagated either by layers or budding them on the common kind; but it is uncertain raiſing them by ſeeds from America, which do not vegetate, if kept long out of the ground.

The Birch is a handſome plant; and though the wood is not amongſt the moſt valuable, yet it is uſeful for various purpoſes; and no tree is more required by the country people, for their houſes, or for ploughs, and otherinſtruments of huſbandry.—*Boutcher.*

In ſome places theſe trees are tapped in the ſpring, and the ſap drawn out to make birch wine, which has been recommended for the ſtone and gravel, as is alſo the ſap unfermented. The bark of the birch tree is almoſt incorruptible. In Sweden the houſes are covered with it, where it laſts many years. It frequently happens, that the wood is entirely rotten, and the bark perfectly ſound and good.—*Miller.*

The beſt method of obtaining the ſap of the birch-tree for making wine, &c. is to bore a hole ſlanting upwards with a middle ſized augre to a moderate depth in the tree, and to faſten a bottle to the orifice, by which means, a large quantity of the ſap may be ſpeedily procured. Or many gallons in a day may be gathered from the boughs of the trees by cutting them off, leaving their ends fit to go into the mouths of the bottles, and ſo by hanging many bottles on ſeveral boughs, the liquor will diſtil into them very plentifully.

The ſeaſon for this work is from the end of February to the end of March, whilſt the ſap riſes, and before the leaves ſhoot out from the tree; for when the ſap is forward, and the leaves

begin to appear, the juice by a long digeſtion in the branch, grows thick and coloured, which before was thin and limpid. Nor will the ſap diſtil either in the night, or in cold weather, while the north and eaſt winds blow; but very well and freely, when the ſouth-weſt winds blow, or the ſun ſhines warm.

The liquor is beſt that proceeds from the branches, having had a longer time in the tree, and thereby better digeſted, and acquiring more of its flavour than if it had been extracted from the trunk. *Mortimer's Huſbandry.*

In order to have enough of this liquor to ſet about making wine with it, many trees ſhould be tapped at the ſame time, ſo that a ſufficient quantity of ſap may be obtained in a few days; for it will not keep long, without a tendency to putrefaction. To prevent this, ſome authors adviſe ſetting that which is firſt drawn in bottles, or other proper veſſels in the ſun, till the reſt be ready, and to put into it a hard toaſt of rye-bread cut thin, to make it ferment. But as it is neceſſary to mix with this juice either ſugar or raiſins, in order to give it a body, to enable it to undergo a regular fermentation, which alone can render it fit for keeping, and for want of which it is that this wine is ſo apt to burſt the bottles, into which it is put, that firſt fermentation will certainly be found hurtful. When therefore the huſbandman has not a ſufficient number of trees to obtain ſap enough for his purpoſe in two or three days, the moſt adviſeable way will be to put the ſap into very ſweet veſſels, and place them in a cool cellar; for it will keep there perfectly ſound, for a much longer time, eſpecially if it be covered with oil, or bunged up cloſe.

The proportion of ſugar may be varied according to the taſte and intention of the brewer: but, in general, a pound of ſugar is thought to be the proper allowance for a gallon of this liquor. The ſap and ſugar muſt be thoroughly united by a heat juſt ſufficient to make them boil; but the long boiling, which is generally adviſed, can anſwer no good purpoſe; on the contrary, it will render the liquor leſs diſpoſed to ferment kindly, and likewiſe deprive it of a conſiderable part of the peculiar fragrance and flavour of the tree from whence it was taken. It ſhould therefore be carefully remembered, that the ſole purpoſe of boiling this liquor is, to make a thorough diſſolution of the ſugar in it. Some people ſubſtitute honey inſtead of ſugar; in this caſe a quart of honey is eſteemed equal to a pound of ſugar. With regard to various ſpices ordered by different writers, they muſt be left to the taſte and option of the maker.

It is generally found neceſſary in order to ferment this liquor, to put into it a little yeaſt, a bit of dough, or a thin toaſt of leavened bread; after which it is treated in all reſpects like other vinous liquors.

BIRD-GRASS, or FOWL MEADOW-GRASS. A very excellent graſs brought originally from Virginia.

BIRD-LIME, is made thus: Peel a good quantity of Holly-bark about Midſummer, fill a veſſel with it, put ſpring-water to it, boil it till the grey and white barks riſe from the green, which will require twelve hours boiling; then take it off the fire, drain the water well from it, ſeparate the barks, lay the green bark on the earth in ſome cool vault or cellar, covered with any green rank weeds, ſuch as dock-thiſtles, hemlock, &c. to a good thickneſs, let it lie ſo fourteen days, by which time it will be a perfect mucilage; then pound it well in a ſtone mortar, till it be a tough paſte, and till none of the bark be diſcernible; waſh it well next in ſome running ſtream, as long as you perceive the leaſt motes in it, then put it in an earthen pot to ferment, ſcum it for four or five days as often as any thing ariſes, and when no more comes, change it into a freſh earthen veſſel, and preſerve it for uſe, thus; take what quantity you think fit, put it in an earthen pipkin, add a third part of Capon's, or Gooſe-greaſe to it, well clarified, or oil of walnuts, which is better, incorporate them on a gentle fire, and ſtir it continually till cold; and thus it is finiſhed. To prevent froſt, take a quarter of as much oil of petrolium, as you do greaſe, and no cold will congeal it. The Italians make theirs of the berries of the miſſetoe tree, heated after the ſame manner, and mix it with nut-oil, an ounce to a pound of lime, and taking it from the

the fire, add half an ounce of turpentine; which qualifies it alſo for the water: great quantities of birdlime are brought from Damaſcus, ſuppoſed to be made of ſebeſtens, becauſe we ſometimes find the kernels; but it is ſubject to froſt, impatient of wet, and will not laſt above a year or two good: There comes of it alſo from Spain, which reſiſts water, but is of an ill ſcent. It is ſaid the bark of our Lantona, or way-faring ſhrub, will make as good bird-lime as any.

BIRD CHERRY. [*In Scotland called the Hagberry.*] Though in catalogues, this is placed in the third or loweſt growing claſs of trees, that is, from fifteen to thirty feet high, yet it is ſometimes raiſed above forty feet, and Mr. Boutcher tells us, he has frequently raiſed them above thirty feet, at ſixteen years old. It is a plant of extraordinary beauty when in bloom, the bloſſoms being ſo thick as to cover the leaves, when the whole tree is as white as ſnow, and has an admirable effect amongſt other flowering plants.

It grows freely from cuttings, which ought to be planted in February, in a ſhady border, in drills cut down with the ſpade, about eight inches deep, and two buds of the cutting left above ground; let the lines be two feet diſtant, and the plants nine or ten inches in the line; where keeping them clear of weeds, and digging the ground between them, they may continue two years. After that time, remove them to another ſpot, cutting away the ſuperfluous roots and branches, and plant them in lines, three and a half feet diſtant, and eighteen inches aſunder in the line; clean and dig the ground as before, and let them remain two or three years longer, when they will be of proper ſize to plant where they are to remain.

This plant is extremely hardy, and will grow in almoſt any ſoil, but chiefly affects a deep, moiſt, feeding mould, where it will make great advances ſuddenly. The wood of it is uſeful for many different purpoſes in huſbandry.

BIRDSNEST. See Wild Carrot.

BIRDS *of the Warren*, are pheaſants and partridges.

BIRDSFOOT. [*Ornithopus.*] The ſpecies are, 1. Birdsfoot with winged leaves, and compreſſed pods a little arched. 2. Birdsfoot with the winged leaves and pods growing in cluſters upon footſtalks. 3. Birdsfoot with linear winged leaves, and compreſſed arched pods growing in pairs. 4. Birdsfoot with trifoliate leaves ſitting cloſe to the ſtalk, having appendages, and the middle lobe very large. The ſecond ſort is common in England, the others are natives of Spain and Italy.

Theſe plants are propagated by ſowing their ſeeds in the ſpring upon a bed of light freſh earth, where they are to remain, (for they ſeldom do well when they are tranſplanted) and when the plants come up, they muſt be carefully cleared from weeds, and where they are too cloſe, ſome of the plants ſhould be pulled out, ſo as to leave the remaining ones about ten inches aſunder. In June theſe plants will flower, and the ſeeds will ripen in Auguſt. There is no great beauty in theſe plants, but, for the variety of their jointed pods, they are preſerved by ſome curious perſons in their pleaſure-gardens, where, if their ſeeds are ſown in patches in the borders, each ſort diſtinctly by itſelf, and the plants thinned, leaving only two at each patch, they will require no farther care, and will add to the variety, eſpecially where the ſnail and caterpillar plants are preſerved, which are very proper to intermix with them. They are moſt of them annual plants, which periſh ſoon after the ſeeds are ripe.

BIRDSFOOT TREFOIL. [*Lotus*] A genus of plants producing papilionaceous flowers; the ſtandard is roundiſh, bent backward with an oblong concave unguis; the wings are broad, roundiſh, and ſhorter than the ſtandard, cloſing together at the top; the keel is gibbous underneath, and ſhut above; the fruit is a cylindric pod, conſiſting of two valves, having many tranſverſe partitions, in each of which is placed a roundiſh ſeed. All the ſorts, of which there are many, as well natives of England as of the iſlands of Sicily, Crete, and the ſouthern parts of France and Italy, are propagated by ſeeds ſown on a bed of light earth in the ſpring.

BIRD-PEPPER. A ſpecies of Capſicum.

BIRTHWORT. [*Ariſtolochia*] The ſpecies are round, long, and ſlender; they are natives of Italy, Spain, and the

the ſouthern parts of France; they are propagated by ſeeds, which ſhould be ſown in the autumn, in pots filled with light earth, and placed under a frame to be ſkreened from the froſt. If theſe pots are put into a gentle hot-bed in March, it will bring up the plants much ſooner than they otherwiſe would riſe. When the plants come up, they ſhould be inured by degrees to bear the open air; in ſummer they muſt have gentle refreſhings of water in dry weather, but in the autumn, when their ſtalks begin to decay, they muſt have little wet: in the winter the pots muſt be ſheltered under a frame, and in March, before the roots begin to ſhoot, they ſhould be tranſplanted into ſeparate ſmall pots filled with light earth, when they may be removed into the open air, and treated in the ſame manner as in the former ſummer, and ſheltered alſo the following winter. The next ſpring they may be turned out of the pots, and planted in a warm border; where, in the autumn, when their ſtalks are decayed, if the border is covered with old tanners bark to keep out the froſt, the roots will be ſecured; but where this care is not taken, the roots are frequently killed by froſt.

The ſmell of the roots is ſomething aromatic, their taſte warm and bitteriſh. Authors in general repreſent them as extremely hot and pungent: ſome ſay they are the hotteſt of all the aromatic plants; but as uſually met with in the ſhops, they have no great pungency. The long and round ſorts, on being firſt chewed, ſcarce diſcover any taſte, but in a little time prove nauſeouſly bitteriſh; the long ſomewhat the leaſt ſo. The other ſort inſtantly fills the mouth with an aromatic bitterneſs which is not ungrateful. Their medical virtues are, to heat, ſtimulate, attenuate viſcid phlegm, and promote the fluid ſecretions in general: they are principally celebrated in ſuppreſſions of female evacuations. The doſe in ſubſtance is from a ſcruple to two drams. The long ſort is recommended externally for cleanſing and drying wounds and ulcers, and in cutaneous diſeaſes.

BISANNUAL. A name given to ſuch plants as do not flower till the ſecond year.

BISERRULA. An annual plant which grows naturally in Italy, Sicily, and Spain. It ſends out many angular ſtalks, which trail on the ground, and are ſub-divided into many branches, garniſhed with long winged leaves, compoſed of many pairs of lobes, and terminated with an odd one; toward the upper part of the branches come out the pedicle of the flowers, which ſuſtain ſeveral ſmall butterfly flowers, of a purpliſh colour, collected together, and are ſucceeded by plain pods, indented on both ſides the whole length, containing two rows of kidney-ſhaped ſeeds.

It is propagated by ſeeds, which in this country ſhould be ſown in the autumn, on a bed of light earth, where the plants are to remain, for they will live in the open air very well. When the plants are come up, they will require no other care; but where they are too near they ſhould be thinned to about a foot diſtance from each other. It flowers in June, and the ſeeds ripen in September.

BISHOPING, a cant term made uſe of by horſe-jockies, implying the unfair practices they make uſe of to conceal the age of an old horſe, or the ill properties of a bad one. *See.*

BISHOP's WEED [*Ammi*] There are two ſpecies, one an annual, the other a perennial, both which may be propagated by ſeeds, which ſhould be ſown in the autumn. Theſe ſeeds ſupply the place of the true ſeeds which are brought from Egypt.

BISTORT. [*Biſtorta*] *Snakeweed.* This plant grows wild in moiſt meadows, in ſeveral parts of England; but is not very common about London. The root is about the thickneſs of the little finger, of a blackiſh brown colour on the outſide, and reddiſh within: it is writhed or bent vermicularly (whence the name of the plant) with a joint at each bending, and full of buſhy fibres; the root of the ſpecies here intended has for the moſt part only one or two bendings; the others have three or more. All the parts of biſtort have a rough auſtere taſte, particularly the root, which is one of the ſtrongeſt of the vegetable aſtringents. It is employed in all kinds of immoderate hæmorrhages and other fluxes, both internally and externally, where aſtringency is the only indication. It is certainly a very powerful ſtyptic, and

and is to be looked on ſimply as ſuch: the ſudorific, antipeſtilential, and other like virtues attributed to it, have no foundation. The largeſt doſe of the root in powder is one dram.

BIT. The iron part of the bridle which goes into a horſe's mouth; alſo the iron part of a piercer, auger, &c.

BITTER APPLE. [*Colocynthis*] A ſpecies of gourd, growing in Barbary. The fruit is about the ſize of an orange; its medullary part, freed from the rind and ſeeds, is alone made uſe of in medicine: this is very light, white, ſpongy, compoſed of membranous leaves: of an extremely bitter, naufeous, acrimonious taſte. Colocynth is one of the moſt powerful and moſt violent cathartics. Many eminent phyſicians condemn it as dangerous and deleterious: others recommend it not only as an efficacious purgative, but likewiſe as an alterative in obſtinate chronical diſorders. Thus much is certain, that colocynth, in the doſe of a few grains, acts with great vehemence, diſorders the body, and ſometimes occaſions a diſcharge of blood. Many attempts have been made to correct its virulence by the addition of acids, aſtringents, and the like: theſe may leſſen the force of the colocynth, but no otherwiſe than might be equally done by the reduction of the doſe. The only method of abating its virulence, without diminiſhing its purgative virtue, is to enlarge its volume, by triturating it with ſugar, teſtaceous ſubſtances, or the like, which, without making any alteration in the colocynth itſelf, prevent its reſinous particles from cohering, and ſticking upon the membranes of the inteſtines ſo as to irritate, inflame, or corrode them.

BITTERSWEET. [*Dulcamara*] A ſpecies of night-ſhade.

BITTERVETCH. [*Orobus*] There are ſeveral ſpecies of this plant natives of different countries; they may all be propagated by ſeeds ſown in autumn; three ſorts brought from La Vera Cruz, muſt be kept in a ſtove, elſe they will not bear the cold of England. The ſeeds of the orobus were recommended in nephritic complaints, but are not uſed in the preſent practice.

BITTERWORT. See GENTIAN.

BLACK. A colour.

BLACK BRYONY, [*Tamus*] Grows wild in the hedges in many parts of England.

BLACK BERRY. [*Rubus Fruticoſus*] The *common Bramble*; it grows on the ſides of banks, and in hedges, in moſt parts of England, ſo is not cultivated in gardens; this is ſo well known as to need no deſcription. Of this there are the following varieties:

1. The common bramble with white fruit, which was found in a hedge near Oxford by Mr. Jacob Bobart. The branches of this ſort are covered with a light green bark; the leaves are of a brighter green than the common ſort, and the fruit is white, but it ſeldom produces fruit in gardens.

2. The bramble without thorns; this is in every reſpect like the firſt, but the branches and footſtalks have no thorns.

3. The bramble with elegant cut leaves; this differs from the firſt, by having the leaves more finely cut.

4. The bramble with double flowers; this differs from the firſt in having very double flowers, ſo is frequently planted in gardens for ornament.

5. The bramble with variegated leaves; this is by ſome preſerved in gardens, but it is very apt to become plain, if planted in good ground.

Theſe ſorts are eaſily propagated by laying down their branches, which will put out roots at every joint very freely. They may be tranſplanted any time from September to March, and will grow in almoſt any ſoil or ſituation.

BLACK GRASS. A ſpecies of graſs originally brought from America, and now pretty generally known in England. It principally delights in chalky ground, or where the land has been chalked.

BLACKLEGS. A diſeaſe in ſheep called ſo in ſome countries; in others *Wood-Evil*. It is a diſeaſe in the joints ſimilar to the ſcrophula; a jelly is formed in the joints, and ſettles in the legs, and often in the neck, between the ſkin and fleſh. Bathe the parts with oil and vinegar; give the ſheep a large ſpoonful of the juice of cinque-foil. If it attacks the bowels, it is fatal.

BLACK OATS. See OATS.

BLACK THORN, or SLOE TREE. [*Prunus ſylveſtris*] This is very common in hedges almoſt every where, and being quick of growth is very proper for fences. *See Acacia Germanica*

BLADDER-NUT. [*Staphylea*] There

are

are two ſorts of bladder-nut, one a native of England, the other of North America; they are propagated by ſeeds, layers, or cuttings.

African BLADDER-NUT. [*Royena*] The ſpecies are, 1. Royena with oval rough leaves. 2. With ſmooth ſpear-ſhaped leaves, and, 3. With hairy, ſpear-ſhaped leaves.

Theſe plants are too tender to live through the winter in the open air in England, therefore they muſt be removed into the green-houſe in autumn, and treated in the ſame way as orange-trees, with which culture the plants will thrive.

The firſt and third ſorts are difficult to propagate here, for the branches which are laid down ſeldom put out roots, and thoſe which do, are two years before they will have made roots ſufficient to tranſplant, and their cuttings very rarely ſucceed; theſe are the only methods by which they can be increaſed in thoſe countries where they do not produce ſeeds. The beſt time to plant the cuttings is in September; theſe ſhould be planted in ſmall pots, and plunged into a very moderate hot-bed. The pots ſhould be cloſely covered down with hand-glaſſes to exclude the external air, and the cuttings refreſhed with a little water every eighth or tenth day, according as the earth becomes dry, for much moiſture will kill them. If the cuttings ſhoot, they muſt be gradually inured to bear the open air, and when they are well rooted, they ſhould be each planted in a ſeparate ſmall pot, and afterwards treated as the old plants.

If the plants put out any young ſhoots from the bottom, they ſhould be carefully laid down in the ground while young, becauſe when the ſhoots are tender they are more apt to put out roots than after they are become woody and hard; theſe branches ſhould be ſlit in the ſame manner as is practiſed in laying of carnations; they muſt be frequently, but gently watered, during the warm weather in ſummer, but in cold weather it muſt be ſparingly given them; when theſe are rooted, they may be taken off, and treated in the ſame way as the cuttings.

The ſecond ſort is very apt to ſend up ſuckers from the roots, which may be taken off with the roots, and thereby increaſed; or thoſe which do not put out roots, may be laid down in the ſame manner as the former; and the cuttings of this more frequently ſucceed than thoſe of the other, ſo that this ſort is much eaſier propagated.

BLADDER SENA. [*Colutea*] The ſorts are: 1. Common bladder ſena. 2. Shrubby bladder ſena, with oval leaves entire. 3. Eaſtern bladder ſena, with blood-coloured flowers. 4. Ethioiean bladder ſena, with a ſcarlet flower. 5. American. 6. African. 7. Bladder ſena with trailing ſtalks, and oval, narrow, woolly leaves.

The three firſt ſorts are hardy ſhrubs, and bear the open air very well; theſe are propagated by ſowing the ſeeds in the ſpring, and when the plants come up are to be kept free from weeds, and at Michaelmas tranſplanted into nurſery rows, or where they are to remain.

The other ſorts are more tender, and require to be ſheltered in the winter; the ſeeds ſhould be ſown on a moderate hot-bed, and when the plants come up, ſhould gradually be brought to the open air.

BLADE. The ſhoots of corn or graſs.

BLAIN. Is a diſtemper that befals the tongues of beaſts, being a certain bladder growing above on the root of the tongue againſt the pipe, which grief at length in ſwelling will ſtop the wind, and comes at firſt by ſome great chafing and heating of the ſtomach, whereby, as ſome judge, it ſtill grows and increaſes by more heat, for commonly it comes in the ſummer, and not in the winter; for when the beaſt is hot and has been chafed, it will riſe and ſwell full of wind and water, ſo that when it is full and grown big, it will ſtop the beaſt's wind, which may be perceived by his gaping and holding out his tongue, and foaming at the mouth, for the curing of which, 1. Caſt him and take forth his tongue, then ſlitting the bladder, or breaking it thereon, ſoftly waſh it with vinegar and a little ſalt. 2. Others prick them (for ſome beaſts will have many of them under their tongues) with an awl, if you have no other tool; then chafe them ſo with your hand as to break them all.

BLANQUET. A ſpecies of pear.

BLAZE. A white mark in a horſe's face.

Blast. See Blight. Mildew.

BLEA, that part of a tree which lies immediately under the bark, or between that and the hard wood, and is the firſt progreſs of the alteration of the bark into wood, by the natural growth, and ſtrengthening of the fibres.

BLEEDING, an operation frequently neceſſary among all kinds of cattle, particularly horſes; and conſiſts in opening a vein by means of an inſtrument called a fleam.

But the caſes that require bleeding moſt, are colds, fevers of almoſt all kinds, falls, and bruiſes, which are ſometimes dangerous to horſes, becauſe of their great weight. Hurts and wounds of the eyes, ſtrains in hard riding, or drawing, and all other accidents where a ſtagnation of the blood may be ſuddenly expected, or where the ſmall veſſels may be broke, and the blood extravaſated.

BLEMISH, a mark of deformity; a fault, a diminution of beauty.

BLENDWATER, a diſeaſe in cattle, when they piſs bloody corrupted urine, which has often a fatal event after the yellows; if after change of paſture only, it is not ſo dangerous. Take caſtile ſoap, bole armenic, and oak bark in powder, each half an ounce, make into a ball with honey, and give night and morning.

BLEYME, an inflammation in a horſe's foot, the blood putrefying in the inner part of the coffin towards the heel, between the ſole and the coffin bone.

To know when there is a bleyme, you muſt unſhoe the diſordered horſe, and pare his foot very neatly. Upon one of the inner quarters, near the frog, you will ſee a red ſpot, like corrupted blood, which will ſometimes bleed with the very paring. This is a ſign that the bleyme is very violent, and let ſuch a horſe work ever ſo little, eſpecially if it be in ſummer, he becomes lame: But keep him ſome time idle in the ſtable, and he will not limp, unleſs he has been newly ſhod. Few old horſes are ſubject to this accident: Nor is the caſe very dangerous, when viſible as here deſcribed: But when it is ſo forward, that you can hardly ſee it, and has no room outwardly, you muſt divide the ſide of the hoof, agreeable to what was before ſaid. Many farriers pretend to cure a bleyme by paring the hoof, and digging it down with their buttreſs; applying afterwards certain remedies to prevent an inflammation that may enſue. Mr. Brindley ſays, that a horſe, after this ceremony, may ſeem to be relieved for the preſent; but when he has continued ſome time without being ſhod, he begins to limp again; and let him work ever ſo little, the bleyme is as bad as before. There have been people ſo ignorant as to unſole a horſe in this caſe, without operating on the ſeat of the bleyme; but in ſuch a horſe too the bleyme ſoon grows as violent as ever: Whereas the following remedy is infallible, and will make a perfect cure:

Take cow-dung, pork-fat, turpentine, and roſin, of each half a pound; a quarter of a pound of linſeed, and half a pint of oil, of any ſort you can get; melt the whole together in a pot, and apply ſome of this compoſition, as warm as he can bear it, to the horſe's foot, binding it on with tow and ſplinters. Repeat this every twenty-four hours till the horſe limps no longer, which probably may be twelve days or a fortnight. You will then never ſee any more of the bleyme.—*Brindley.*

BLIGHT, a general name for various diſtempers incident both to corn and fruit trees. *See Blaſting &c.*

There is nothing ſo deſtructive to a fruit-garden as blights: nor is there any thing in the buſineſs of gardening which requires more of our ſerious attention, than the endeavouring to prevent or guard againſt this great enemy of gardens.

In order, therefore, to remedy this evil, it will be neceſſary firſt to underſtand the true cauſes of blights; and, although many curious perſons have attempted to explain the cauſes of them, yet very few of them have yet come near the truth, except the reverend and learned Dr. Hales, who hath, in his curious book, intitled, Vegetable Statics, given us ſome accurate experiments upon the growth and perſpiration of plants; together with the various effects the air has upon vegetables; ſo that, by carefully attending thereto, together with diligent obſervations, we need ſeldom be at a loſs how to account for the cauſes of blights, whenever they may happen.

Blights are often cauſed by a continued eaſterly wind, for ſeveral days together,

gether, without the intervention of ſhowers or any morning dew, by which the perſpiration of the tender bloſſoms is ſtopped; ſo that, in a ſhort time, their colour is changed, and they wither and decay: and if it ſo happens, that there is a long continuance of the ſame weather, it equally affects their tender leaves; for their perſpiring matter is hereby thickened, and rendered glutinous, cloſely adhering to the ſurfaces of the leaves, and becomes a proper nutriment to thoſe ſmall inſects, which are always found preying upon the leaves and tender branches of fruit-trees, whenever this blight happens.

The beſt remedy for this diſtemper that I have yet known to ſucceed, is, to gently waſh and ſprinkle over the trees, from time to time, with common water, (that is, ſuch as hath not had any thing ſteeped in it) and the ſooner this is performed (whenever we apprehend danger) the better; and if the young and tender ſhoots ſeem to be much infected, waſh them with a woollen cloth, ſo as to clear them, if poſſible, from all this glutinous matter, that their reſpiration and perſpiration may not be obſtructed; and if we place ſome broad flat pans or tubs of water near the trees, that the vapours exhaled from it may be received by the trees, it will keep their tender parts in a ductile ſtate, and greatly help them; but, whenever this operation of waſhing the trees is performed, it ſhould be early in the day, that the moiſture may be exhaled before the cold of the night comes on; eſpecially if the nights are froſty: nor ſhould it be done when the ſun ſhines very hot upon the wall, which would be ſubject to ſcorch up the tender bloſſoms.

Another cauſe of blights in the ſpring is, ſharp hoary froſts, which are often ſucceeded by hot ſunſhine in the day-time; which is the moſt ſudden and certain deſtroyer of fruits that is known: for the cold of the night ſtarves the tender parts of the bloſſoms, and the ſun riſing ſun hot upon the walls before the moiſture is dried from the bloſſoms (which being in ſmall globules, collects the rays of the ſun) a ſcalding heat is thereby acquired, which ſcorches the tender flowers, and other parts of the plants.

But there is another ſort of blight, againſt which it is very difficult to guard our fruit-trees; this is ſharp pinching froſty mornings, which often happen at the time when the trees are in flower, or while the fruit is very young, and occaſion the bloſſoms or fruit to drop off; and, ſometimes, the tender parts of the ſhoots and leaves are greatly injured thereby.

The only method yet found out to prevent this miſchief, is by carefully covering the walls, either with mats, canvas, reeds, &c. which being faſtened ſo as not to be diſturbed with the wind, and ſuffered to remain on during the night, by taking them off every day, if the weather permits, is the beſt and ſureſt method that hath yet been uſed in this caſe; which, although it has been ſlighted, and thought of little ſervice by ſome, yet the reaſon of their not being ſo ſerviceable, as has been expected, was, becauſe they have not been rightly uſed, by ſuffering the trees to remain too long covered: by which means, the younger branches and leaves have been rendered too weak to endure the open air, when they are expoſed to it; which has often proved of worſe conſequence to trees, than if they had remained entirely uncovered.

Whereas, when the covering before mentioned has been performed, as it ought to be, it has proved very ſerviceable to fruits; and many times, when there has been almoſt a general deſtruction of fruits, in the neighbouring gardens, there has been a plenty of them in ſuch places where they have been covered; and, though it may to ſome ſeem very great trouble, yet, if theſe coverings are fixed near the upper part of the wall, and are faſtened to pullies, ſo as to be drawn up, or let down, it will be ſoon and eaſily done; and the ſucceſs will ſufficiently pay the trouble.

But there is another ſort of blight, that ſometimes comes later in the ſpring, viz. in April or May, which is often very deſtructive to orchards, and open plantations, againſt which we know no remedy. This is what is called a fire-blaſt, which, in a few hours, hath not only deſtroyed the fruit and leaves, but many times parts of trees, and, ſometimes, whole ones have been killed by it.

This is ſuppoſed to be effected by volumes of tranſparent flying vapours, which, among many forms they revolve into, may ſometimes approach ſo near

to

to a hemiſphere, or hemi-cylinder, either in their upper or lower ſurfaces, as thereby to make the beams of the ſun converge enough to ſcorch the plants or trees they fall upon, in proportion to the greater or leſs convergency of the ſun's rays.

The learned Boerhaave, in his Theory of Chemiſtry, obſerves, that thoſe white clouds, which appear in ſummer time, are, as it were, ſo many mirrors, and occaſion exceſſive heat; theſe mirrors are ſometimes round, ſometimes concave, polygonous, &c. and therefore when the face of the heavens is covered with ſuch white clouds. the ſun, ſhining among them, muſt of neceſſity produce a vehement heat; ſince many of his rays, which would otherwiſe, perhaps, never touch our earth, are by that means reflected to us; thus, if the ſun be on one ſide, and the clouds on the oppoſite, they will be perfectly burning glaſſes.

I have ſometimes, continues he, obſerved a kind of hollow clouds, full of hail and ſnow in this poſition; during the continuance of which, the heat was extreme; ſince by ſuch condenſation they were enabled to reflect more ſtrongly: after this came a ſharp cold, and then the clouds diſcharged their hail in great quantities; to which ſucceeded a moderate warmth. Frozen concave clouds therefore, by this great reflection, produce a vigorous heat; and the ſame, when reſolved, exceſſive cold. Whence, as Dr. Hales obſerves, we ſee, that blaſts may be occaſioned by the reflections of the clouds, as well as by the above-mentioned refraction of denſe tranſparent vapours.

Againſt this enemy to fruits, &c. as has already been obſerved, there is no guard to our plantations, nor any remedy to cure it: but as this more frequently happens in cloſe plantations (where the ſtagnating vapours from the earth, and the plentiful perſpiration from the trees, are pent in for want of a free air to diſſipate and diſpel them; which are often obſerved, in ſtill weather, to aſcend in ſo plentiful a manner, as to be ſeen by the naked eye, but eſpecially with a reflecting teleſcope, ſo as to make a clear and diſtinct object become dim and tremulous) than thoſe which are planted at a greater diſtance, or are not ſurrounded with hills or woods; this directs us in the firſt planting of orchards, &c. that we ſhould allow a greater diſtance between the trees; and make choice of clear healthy ſituations, that the air may paſs freely between the trees, to diſſipate thoſe vapours before they are formed into ſuch volumes, whereby the circumambient air will be clear, and leſs ſubject to injuries: as alſo the fruits, which are produced in this clearer air, will be much better taſted than thoſe that are ſurrounded with a thick rancid air; for, as fruits are often in a reſpiring ſtate, ſo they, conſequently, by imbibing a part of theſe vapours, are rendered crude, and ill-taſted; which is often the caſe with a great part of our fruits in England.

Miller.

'Tis obſervable, that after a wet ſummer, corn is apt to be blighted; the reaſon of which is, that the overmuch moiſture that lies continually at the roots of the corn, maketh it run much to ſtraw, and little to corn; and at ſuch time as the corn ſhould kern, the moiſt vapours, exhaled by the ſun from the wet ground, do in the nature of a mill-dew, prevent the due growth of the grain in the ear.

'Tis obſerved, that when theſe mill-dews ariſe, or blights fall, they infect one ſort of grain generally, as ſometimes only wheat, ſometimes oats, &c. the like happens among fruits; ſometimes apples are generally blaſted; ſometimes only pears, ſometimes only cherries, walnuts, filberts, plumbs, &c.

Mortimer.

Wheat is blighted at two ſeaſons; firſt, when in the bloſſom; and then its generation is prevented and many of the huſks are empty in the ear, the grains not being impregnated.

Secondly, Wheat is blighted, when the grains are brought to the time of their maturity, but are light, and of little value for making of bread; becauſe they are not well filled with flour.

The firſt cannot happen in England by the froſt, becauſe the winters do not ſuffer it to grow ſo much, as to come into bloſſom before the month of June; but they are long continual rains that rot or chill the bloſſoms, and prevent their fertility. Yet this is what ſeldom happens to any great degree. Wheat that grows in open fields has ſome advantage from the wind, that diſlodges the water ſooner

from the ears, than it can do in ſheltry places; and lammas wheat does not hold the drops of rain ſo long as the bearded (or cone) wheat, which received very great damage by this ſort of blight in the year 1725, the like never having been heard of before.

The ſecond ſort of blight, viz. from light ears, is that which is moſt frequent, and more general: This brings the greateſt ſcarcity of wheat. The cauſe is plainly want of nouriſhment to perfect the grain, by whatever means that want is occaſioned.

Several accidents kill the plants, or injure their health, and then the grains are not filled; as lightning, the effects whereof may be obſerved by the blackiſh ſpots and patches in fields of wheat, eſpecially in ſuch years as have more of it than uſual. Againſt this there is no defence.

The other cauſes of the blight, which are moſt general, and do the moſt damage, may, in ſome meaſure, be prevented.

One cauſe is the lodging or falling of corn; for then the ſtalks are broken near the ground, whereby many of the veſſels are ſo preſſed, that the juices cannot paſs them; and then the free circulation is hindred; the chyle cannot mount in ſufficient quantity to be purified, and turned into ſap; the defect whereof makes the plants become languid, and only juſt able to live; they have ſtrength enough to linger on to the time of their period, as in very old age, but not to bring their fruit, which is the grain, to its natural bulk, nor to fill it with flour: and the ſooner the ſtalks fall, the leſs and thinner the grain will be.

Hence it often happens, that when tillage, dung, and good land, have brought a crop of wheat, that in the months of April and May promiſe to yield the owner five or ſix quarters on an acre, then in June it falls down, and ſcarce affords five or ſix buſhels; and that perhaps is ſo thin and lank, that the expence of reaping and threſhing it may overbalance its value.

That the falling down of wheat does cauſe the ruin of the crop, is well-known; but what cauſes it to fall, is not ſo plain. And without knowing the true cauſes, 'tis not likely that a remedy ſhouldbe found againſt the diſeaſe. I take this weakneſs of the ſtalks, which occaſions their falling, to proceed from want of nouriſhment, want of air, want of the ſun's rays, or of all three.

One argument, that it lodges for want of nouriſhment, is, that a rich acre has maintained a crop of five quarters ſtanding, when another poorer acre was not able to ſupport a crop from falling, which was but large enough to have brought three quarters, if it had ſtood; and this in the ſame year, and on the ſame ſituation: And 'tis very plain, that if one acre was twice as rich as the other, it muſt be able to nouriſh five quarters better than the other could nouriſh three quarters.

Air is neceſſary to the life and health of all plants, tho' in very different degrees: Aquatics, which live under water, are content with as little air, as their companions the fiſhes.

But wheat, being a terreſtrial plant, (tho' in winter it will live many days under water, whilſt the ſlow motion of its ſap gives it little or no increaſe) requires a free open air, and does not ſucceed ſo well in low ſheltry places, as upon higher and opener ſituations; where the air has a greater motion, and can more eaſily carry off the recrements from the leaves, after it has ſhaken off the dews and rains, which would otherwiſe ſuffocate the plants; and therefore the leaves are made ſo ſuſceptible of motion from the air, which frees them from the dews, that would ſtop in the recrements at the veſiculæ of the leaves, but ſhaken down will nouriſh the plants at the roots: The want of this motion weakening the wheat, 'tis (as animals in the like ſickly caſe are) the more unable to ſtand, and the more liable to be preſſed down by the weight of rain-water, and more unable to riſe up again when down: all which evils are removed by the free motion of the air, which ſhakes off both dews and rains, and thus contributes to prevent the falling (or lodging) of wheat.

A great quantity alſo of the ſun's rays is neceſſary to keep wheat ſtrong, and in health; and in Egypt, and other hot countries, it is not ſo apt to fall, as it is when ſown in northern climates, tho' the produce of the ſouth be the greateſt. This proves that the crop doth not lodge on account of its bigneſs.

It may be obſerved, that every leaf is inſerted into a ſort of knot, which probably delivers the ſap to be depurated at the veſiculæ of the leaves, and then receives it back again for the nouriſhment of the plant, doing for that purpoſe the office of an heart: but the ſun with his rays ſupplies the part of pulſe, to keep the ſap in motion, and carry on its circulation, inſtead of the heart's ſyſtole and diaſtole. Wheat, being doubtleſs originally a native of a hot country, requires by its conſtitution a conſiderable degree of heat to bring it to perfection; and if much of that degree be wanting, the wheat will be the weaker; and when the ſolar rays cannot reach the lower parts of the ſtalks, the loweſt leaves and knots cannot do their office; for which reaſon the chyle muſt mount higher before it be made into ſap, and there muſt be then a greater mixture of crude chyle next to the ground, as by the white colour it appears. By this means that part, which, if it had a due ſhare of the ſun's influence, would be hardened like a bone or ſpring, for the ſupport of the ſtalks, for lack of that, becomes more like to a cartilage, ſoft and weak, unable to ſuſtain the weight of the bending ear, which, having its greateſt impetus againſt this part, which is moſt feeble to reſiſt it, it yields, and lets it fall to the ground; and then the grain will be blighted.

There is alſo another cauſe of the blight; and that is, the wheat's coming too late into bloſſom. The uſual time is the beginning of June; and if it be later, the days ſhorten ſo faſt after the ſolſtice, that the autumn of the year haſtening the autumn of the wheat's life, the full time of its pregnancy is not accompliſhed; and then its fruit, which is the grain, becomes as it were abortive, and not full-grown. This time betwixt the generation, bloſſoming, and maturity of the grain, is, or ought to be, about two months.

Therefore it is advantageous to haſten, what we can, the time of bloſſoming, and to protract the time of ripening: and it is obſerved, that the earlieſt ſown wheat generally eſcapes the blight the beſt, becauſe it comes firſt into bloſſom.

Feeding down the wheat with ſheep prevents the blight, by doing what the blight would do, if the wheat fell down, *i. e.* cauſes the ears to be light.*

And we find, that thoſe who practiſe this method of feeding their wheat with ſheep in the ſpring, to prevent the lodging of it, have moſt commonly their ſtraw weak, and ears light.

Theſe, inſtead of making the ſtalks ſtrong enough to ſupport heavy ears, make the ears light enough to be ſupported by weak ſtalks. They know that heavy ears make the greateſt crop; and yet they ſtill hope to have it from light ones.

They cauſe the blight by the very means they make uſe of to cure it.

This feeding of wheat much retards the time of its bloſſoming; and that it may bloſſom early, is one chief end of ſowing it early, to prevent the blight. But when it is fed, what the plants ſend up next is but a ſort of ſecond or latter crop, which has longer to ſtand than the firſt would have required, and is always weaker than the firſt crop would have been; and the longer time it has to continue on the ground, the more nouriſhment is required to maintain it; and yet, as has been ſhewn, the longer it has been ſown, the more the earth has loſt of its nouriſhment; and conſequently, the crop will be yet weaker, and in more danger of the ſtarving blight.

The moſt effectual remedy againſt the blight is that which removes all its cauſes; (except ſuch extraordinary ones as lightning) as,

Firſt, *Want of Nouriſhment.*

The horſe-hoe will, in wide intervals, give wheat, throughout all the ſtages of its life, as much nouriſhment as the diſcreet hoer pleaſes.

Secondly, *Want of Air.*

Air, being a fluid, moves moſt freely in a right or ſtrait line; for there the feweſt of its parts meet with any reſiſtance; as a ſtrait river runs ſwifter than a crooked one, from an equal declivity; becauſe more of the water ſtrikes againſt the banks at the turnings, and is there ſomewhat retarded: and the reſt moving no faſter than in the ſtrait river, the whole ſtream of the

* *Heavy ears never fall. If they did, that would not make them light. Wheat falls ſometimes whilſt it is in graſs, and before it comes into ear; ſo far are the ears from cauſing it to fall.*

the crooked muſt be ſlower in its courſe, than that of the ſtrait river.

The air cannot paſs thro' ſown corn in a direct line, becauſe it muſt ſtrike againſt, and go round every plant, they ſtanding all in the way of its courſe, which muſt ſtop its current near the earth.

And the air amongſt ſown corn is like water amongſt reeds or oſiers in the ſide of a river; it is ſo ſtopped in its courſe, that it almoſt becomes an eddy; and ſince air is about eight hundred times lighter than water, we may ſuppoſe its current thro' the corn is more eaſily retarded, eſpecially near the earth, where the corn has occaſion for the greateſt quantity of air to paſs: For, tho' the upper part of the wheat be not able to ſtop a ſlow current of air, yet it does ſo much raiſe even a ſwift one, as to throw it off from the ground, and hinder it from reaching the lower parts of the ſtalks, where the air muſt therefore remain, in a manner, ſtagnant; and the thicker the wheat is, where it ſtands promiſcuouſly, the leſs change of air can it have, tho' the greater the number of the ſtalks is, the more freſh air they muſt require.

But the confuſed manner in which the plants of the ſown wheat ſtand, is ſuch, that they muſt all oppoſe the free entrance of air amongſt them, from whatever point of the compaſs it comes.

Now it is quite otherwiſe with wheat drilled regularly with wide intervals; for therein the current of air may paſs freely (like water in a ſtrait river, where there is no reſiſtance), and communicates its nitre to the lower as well as upper leaves, and carry off the recrements they emit, not ſuffering the plants to be weakened, as an animal is, when his lungs are forced to take back their own expirations, if debarred from a ſufficient ſupply of freſh untainted air. And this benefit of freſh air is plentifully, and pretty equally, diſtributed to every row in a field of hoed wheat.

Thirdly, *Want of the Sun's Rays.*

Sown wheat-plants, by their irregular poſition, may be ſaid to ſtand in one another's light, for want of which they are apt to fall.

It is true the whole field of plants receives the ſame quantity of ſun-beams amongſt them, whether they ſtand confuſedly, or in order: But there is a vaſt difference in the diſtribution of them; for none or the very leaſt ſhare of beams is obtained by thoſe parts which need the greateſt ſhare, in the confuſed plants. And when the crural parts, that ſhould ſupport the whole body of every plant, are deprived of their due ſhare of what is ſo neceſſary to ſtrengthen them, the plants (like animals in the ſame caſe) are unable to ſtand.

But in drilled wheat, where the plants ſtand in a regular order, the ſun-beams are more duly diſtributed to all parts of the plants in the ranks; for which way ſoever the rows are directed, if they be ſtrait, the rays muſt, ſome time of the day, fall on the intervals, and be reflected by the ground, whence the lower parts of the wheat-ſtalks muſt receive the greater ſhare of heat, being neareſt to the point of incidence, having no weeds to ſhadow them.

As to that cauſe of the blight, viz. the wheat's dying before the full time of its pregnancy be accompliſhed; the hoe removes all the objections againſt planting early, and then it will bloſſom the earlier: And it has viſibly kept wheat green a whole week longer, than unhoed wheat adjoining to it, planted the ſame day.

But the moſt general blight that happens to wheat in cold climates, is cauſed by inſects, which (ſome think) are brought in the air by an eaſt wind accompanied with moiſture, a little before the grain is filling with that milky juice, which afterwards hardens into flour. Theſe inſects depoſit their eggs within the outer ſkin (or rind) of the ſtalks; and when the young ones are hatched, they feed on the parenchyma, and eat off many of the veſſels which ſhould make and convey this juice; and then the grain will be more or leſs thin, in proportion to the number of veſſels eaten, and as the inſects happen to come earlier or later; for ſometimes they come ſo late, that the grain is ſufficiently filled with the ſaid milky juice before the veſſels are eaten; and then, though the ſtraw appear through a microſcope to have its veſſels very much eaten and torn, and to be full of black ſpots (which ſpots are nothing elſe but the excrements

excrements of thoſe young inſects) yet the grain is plump, and not blighted, there being an obſervation, that the early ſown wheat generally eſcapes this blight. And it has been ſeen, where one part of a field is ſown earlier than the other part, without any other difference than the time of ſowing, that the grain of the lateſt ſown has been much blighted, and the grain of the earlier has eſcaped the blight, though the ſtraw of both were equally eaten by the inſects. Hence it may be inferred, that the milk in the one had received all the nouriſhment neceſſary to its due conſiſtence, before the veſſels were deſtroyed; but, in the other, the veſſels, which ſhould have continued the ſupply of nouriſhment for thickening the milk, being ſpoiled before they have finiſhed that office, it remains too thin; and then the grain, when it hardeneth, ſhrinks up, and is blighted; yet the grain of one and the other are equally plump until they become hard: the difference therefore is only in the thickneſs of the milk, that in the blighted being more watery than the other.

The chief argument to prove, that theſe inſects are brought by an eaſt wind, is, that the wheat on the eaſt ſides of hedges are much blighted, when that on the weſt ſides is not hurt: And as to the objection, that they are bred in the earth, and crawl thence up the ſtalks of the wheat, becauſe ſome land is much more ſubject to produce blighted wheat than other land is; perhaps this difference may be chiefly owing to the different ſituation of thoſe lands, as they are oppoſed to the eaſt, or to the weſt.

Another cauſe why ſome wheat is more blighted than other wheat on the ſame land, is, the different condition in which the inſects find it; for the rind of that which is very ſtrong and flouriſhing is ſoft and tender; into this they can eaſily penetrate to lay their eggs; but the wheat that is poor and yellow, has a hard tough ſkin (or rind) into which the inſects are not able to bore for the intromiſſion of their eggs, and therefore can do it no miſchief. It would be in vain to adviſe to prevent the blight, by ſtriving to make the wheat poor; for though poverty may preſerve wheat from blight, as well as it does people from the gout, yet that is a remedy which few take willingly againſt either of theſe diſeaſes: But this, I think might be remedied, if we could, from the ſtrongeſt wheat, take away ſo much nouriſhment as to turn its colour a little yellowiſh juſt before the inſects come, which is ſuppoſed to be in June, after the ear is out, or at leaſt fully formed.

Yet this can only be done in wide intervals; for, unleſs the fine earth can be thruſt to ſome conſiderable diſtance from the roots after they are cut off, they will ſoon ſhoot out again, and reach it, becoming more vigorous thereby.

In dry ſummers this misfortune ſeldom happens, much heat, and very little moiſture, being moſt agreeable to the conſtitution of wheat; for then its rind is more firm and hard, as it is, on the contrary, made more ſoft and ſpongy by too much moiſture.

The moſt eaſy and ſure remedy that I have yet found againſt the injury of theſe inſects, is, to plant a ſort of wheat that is leaſt liable to be hurt by them, viz. the white-cone (or bearded) wheat, which has its ſtalk or ſtraw like a ruſh, not hollow, but full of pith (except near the lower part, and there it is very thick and ſtrong): It is probable it has ſap-veſſels that lie deeper, ſo as the young inſects cannot totally deſtroy them, as they do in other wheat: For when the ſtraw has the black ſpots, which ſhew that the inſects have been there bred, yet the grain is plump, when the grey cone and lammas wheat mixt with it are blighted. This difference might have been from the different times of ripening, this being ripe about a week earlier than the grey-cone, and later than the lammas: But its being planted together both early and late, and at all times of the wheat-ſeed time, and this white-cone always eſcaping with its grain unhurt, is an argument that it is naturally fortifyed againſt the injury of theſe inſects, which in wet ſummers are ſo pernicious to other ſorts of wheat; and I can impute it to no other cauſe than the different deepneſs of the veſſels, the ſtraw of other wheat being very much thinner, and hollow from top to bottom; this having a ſmall hollow at bottom, and there the thickneſs betwixt the outer ſkin and the cavity is more than double to that

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in other ſorts of wheat; ſo that I imagine the inſects reach only the outermoſt veſſels, and enough of the inner veſſels are left untouched to ſupply the grain.

This wheat makes very good bread, if the miller does not grind it too ſmall, or the baker make his dough too hard, it requiring to be made ſofter than that of other flour.

A buſhel of this white-cone wheat will make more bread than a buſhel of lammas, and of the ſame goodneſs; but it gives a little yellow caſt to the bread.

Another ſort of lodging blight there is, which ſome call moor-loore, and moſtly happens on light land: This is when the earth, ſinking away from the roots, leaves the bottom of the ſtalk higher than the ſubſided ground; and then the plant, having only theſe naked roots to ſupport it (for which they are too weak) falls down to the earth.

To remedy this, turn a ſhallow furrow againſt the rows, when they are ſtrong enough to bear it, and when the mould is very fine and dry; then the motion of the ſtalks by the wind will cauſe ſuch earth to run through the rows, and ſettle about the roots, and cover them.

Drilled wheat is not ſo much ſpoiled by falling, as ſown wheat ſometimes is. The drilled never falls ſo cloſe to the ground, but that the air enters into hollows that are under it, and the wind keeps the ears in motion. Notwithſtanding all the precaution that can be uſed, in ſome unſeaſonable years wheat will be blighted: I have known ſuch a general blight; when ſome of my lammas wheat, planted late on blighting land, was blighted, amongſt the reſt of my neighbours, by the inſects, but the grain of the ſown wheat was vaſtly more injured than that of the drilled: The former was ſo light, that the greateſt part was blown away in winnowing, and the remainder ſo bad, that it was not fit to make bread: The drilled made as good bread, and had as much flour in it, as the ſown wheat had, that was not blighted; for the grains of the drilled were much larger than thoſe of the ſown; being formed to have been twice as big as the grains of wheat generally are, had they not been blighted. *Tull.*

BLINDNESS, deprived of the ſenſe of ſight.

Moon-BLIND, or *lunatic*, a diſeaſe to which horſes are ſubject, the ſymptoms of which are no other than the forerunners of cataracts, and generally end in blindneſs.

Mr. Brindley ſays, a moon-eyed horſe is known by his weeping, and keeping his eyes almoſt ſhut at the beginning of the diſtemper. As the moon changes he gradually recovers his ſight; and in a fortnight or three weeks ſees as well as before. Your dealers, when they have ſuch a horſe to ſell at the time of his weeping, always tell you that he has got a bit of ſtraw or hay in his eye, or that he has received ſome blow. They alſo take great care to wipe away the humour, to prevent its being ſeen. But a man ſhould truſt only himſelf in buying of horſes, and above all be very exact in examining the eyes. In this he muſt have regard to the time and place where he makes the examination. Bad eyes may appear good in winter, when the ſnow is upon the ground; and often good ones appear bad, according to the poſition of the horſe. Never examine a horſe's ſight by the ſide of a white wall, where the dealers will chuſe to ſhew one that is moon-eyed. The ſureſt way is to take him juſt at the ſtable door, when only his head peeps out, and all his body is ſtill within; or to examine him in a dark ſtable, with a candle. If the white of the eye appears reddiſh at bottom, or the colour of a withered leaf, I would not adviſe you to purchaſe that horſe.

A moon-eyed or lunatic horſe has always one eye bigger than the other, and above his lids you may diſcover wrinkles or circles.

If he has been attacked but twice or three times with this diſorder, there are ſome hopes of a cure, by purſuing the following directions. At leaſt you have a chance to ſave one eye, and prevent the deformity of the other. If you take him at his being firſt affected, both eyes will become as good as ever. This diſtemper proceeds from different cauſes, which every one is not acquainted with.

When young colts have eat too much oats, or other grain, they are apt to ſtrain the veſſels which feed the eye. Others have the eyes diſeaſed by being rid and fatigued too young; and o-

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thers owe it to the ſoil where they were brought up. Fat, humid, or marſhy ground, which breeds a very juicy graſs, may cauſe the head to ſwell with humours, and weaken the ſight. Grey, iſabel, whitiſh, or flea-bitten horſes, are more ſubject than others to theſe diſorders. Not that any colour is exempt from it, or that any paſture may not produce it.

The manner of treating a moon-eyed horſe.

Put him firſt to a bran diet, and give him no oats during the whole courſe. Make an inciſion along the vein that paſſes from the temple to the corner of the eye, and a little above it. Having opened the ſkin with a delicate hand, take a ſmall wild goat's horn, and an inciſion-knife, and divide all the fleſh from the artery without cutting it. As you go on, paſs the goat's horn underneath; and then with a needle and ſtrong double ſilk, well waxed, make a ligature on the upper ſide of the artery; then open the vein longways, without cutting it, and let it bleed for ſome time. When you have drawn away blood enough, which will be in a quarter of an hour, paſs the goat's horn again under the artery, and in the ſame manner make another ligature next to the eye. Then cut the artery between the two ligatures, clip off the ſilk pretty cloſe to the knots, and fill up the wound with a quartern of butter, mixed with about an ounce of ſalt. Do the ſame on the other ſide of the head. Dreſs the wounds afterwards twice a day, for about a week; and then continue to foment them three times a day with hot wine, ſweetened with fine ſugar, till the cure is compleated. This operation is properly called cutting the temporal arteries, and not tying-up the veins, as it has hitherto been ignorantly named by the farriers and grooms who know no difference between an artery and a vein.

Some perform it in another manner, by running a hot wire acroſs; but this way is not always ſucceſsful, and the other is moſt proper for thoſe who have not a very nice hand. A month after this operation, the horſe muſt be unnerved. The wounds here muſt be dreſſed with ſalt butter, as before: and obſerve to uſe no waters nor powders to moon-eyes, becauſe the diſeaſe is within the eye, and not upon the cornea.

T *Brindley.*

Mr. Liſle, in his Huſbandry, ſays, The ſheep in ſome parts of Wiltſhire are troubled with a blindneſs, and are cured by anointing their eyes with gooſe-dung.

BLITE, [*Blitum*] *Strawberry Blite*, or *Strawberry Spinach*. This annual plant grows naturally in Spain and Portugal not unlike ſpinach; it has long been known in England, and bears a fruit not unlike wood ſtrawberries, very ſucculent and full of a purple juice, which ſtains the hands of a purple colour. There are two ſorts not much unlike, they are propagated by ſowing the ſeeds in March or April, and in July they will ſhew forth their berries.

BLOOD, [*Sanguis*] the liquor which circulates through the veins and arteries of the animal body.

BLOODWORT, [*Rumex Sanguineus*] a ſpecies of dock with red bloody coloured veins.

BLOODFLOWER, [*Hæmanthus*] of this there are three ſorts all brought from the Cape of Good Hope; they are propagated by parting the roots, or by the ſeed, which ſhould be ſown in pots ſoon after they are ripe, and kept in the ſtove all the winter; if theſe pots are plunged into the tan-bed in the bark-ſtove, in the vacancies between the plants, the ſeeds will be ſooner prepared to vegetate in the ſpring, when the pots may be taken out of the ſtove and plunged into a moderate hot-bed, which will bring up the plants in a little time; ſoon after they are up, they muſt have air admitted to them every day in mild weather, to prevent their drawing up weak; and when they are fit to remove, they may be each planted in a ſeparate ſmall pot filled with light earth, and plunged into the hot-bed again to promote their taking new root; then they muſt be gradually hardened, and afterwards may be removed into the dry ſtove, where they ſhould conſtantly remain, otherwiſe the plants will not thrive and flower in this country. In the winter ſeaſon they muſt not have too much wet, for as their roots are fleſhy and ſucculent, ſo they are apt to rot with moiſture. In the ſummer they muſt have a large ſhare of air in warm weather, and require to be frequently watered, eſpecially during the time of their flowering.

BLOODSPAVIN, a kind of varix

or ſwelling of the vein that runs along the inſide of the hock, forming a little ſoft ſwelling in the hollow part, and is often attended with a lameneſs of the leg. For the cure, bathe the part with Vegeto-mineral water warm, twice or thrice a day; if this has no effect, open the ſkin and tie up the vein both below and above the ſwelling, and cut away or open the intermediate part, dreſs it with Goulard's cerate, or vegeto-mineral water.

BLOOD-WOOD, [*Hæmatoxylum*] Logwood.

BLOSSOM, the flower of a plant, particularly of trees.

BLOWING *of a flower*, an artificial proceſs, in order to make the flower diſplay itſelf to greater advantage than it would naturally.

BLOWMILK, ſkimmed milk.

BLOWN, SWELLED, or HOVED. A diſeaſe in cattle, cauſed by eating clover too greedily, ſwallowing more than they can degorge to chew again. As ſoon as the diſorder is diſcovered, let a hollow pipe of elder be thruſt up the fundament, and let the beaſt be driven about and not lie down on any account; if, notwithſtanding this, the wind be not diſcharged, an incition muſt be made into the flank of the beaſt by a ſharp-pointed pen-knife as far as poſſible.

BLUEBALL, a provincial name for cone wheat.

BLUEBOTTLE, [*Cyanus*] the name of a weed common in corn fields, and of late years taken into the gardens, where it forms a variety; it ſhould be ſown in the ſpring, it flowers in July, and ſheds its ſeeds in autumn.

BOAR, the male hog.

BOG. Boggy lands are of two ſorts, firſt, thoſe that lie between hills, which commonly have deſcent enough to drain them. Secondly, thoſe which lie in flat levels and fens. That which feeds boggy lands, is, ſprings pent up by a weight of earth that dams up the water, and cauſes it to ſpread in the ground ſo far as the earth is ſoft. Therefore you muſt obſerve where your loweſt place is, and what deſcent you have, that ſo you may cut through the earth deep enough to take all the water away from the bottom of the bog, a ſpit below the ſprings, or elſe your work will be but of little value. In ruſhy grounds the ſprings are commonly found at the firſt or ſecond ſpit moſt frequently, where any thing of ſmall gravel or ſtonyneſs is to be found, and ſometimes lower in a hungry gravel: But it is always lower in boggy land than ruſhy, and is deep according to the weight of earth that pens it in. The beſt way is to begin the drain at the loweſt place, and ſo to carry it into the bog towards the ſpring head, where you muſt make ſuch trenches either round or croſs the bog as you ſhall find neceſſary to drain it thoroughly. If your drains be deep that you fear cattle falling into them, fling in ſtones and brickbats, and cover them with wood, flags, turf, &c. laying the earth upon it again, and the water will drain between the ſtones: But whatſoever drains or trenches you make that you leave open, never lay your earth on heaps by the ſides of them as moſt do; but let the earth be flung as far from it as you can, eſpecially if any low places be near, and that your trenches are ſmall. But where large, if the work be not too great, carry it away in wheelbarrows or carts, where the ground will allow of it.——*Mortimer.*

BOCCONIA. A plant common in Jamaica, and ſeveral other parts of America, where it grows to the height of ten or twelve feet, having a ſtrait trunk as large as a man's arm, which is covered with a white ſmooth bark. At the top it divides into ſeveral branches, on which the leaves are placed alternately. Theſe leaves are eight or nine inches long, and five or ſix broad, deeply ſinuated, ſometimes almoſt to the midrib, and are of a fine glaucous colour. The whole plant abounds with a yellow juice, like the greater Celandine, which is of an acrid nature; ſo that it is uſed by the inhabitants of America, to take off warts and ſpots from the eyes.

It is propagated by ſeeds, which ſhould be ſown in a pot filled with light freſh earth early in the ſpring, and plunged into a hot-bed of tanners bark. When the plants are come up, they ſhould be each tranſplanted into ſmall ſeparate pots, and plunged into the hot bed again, obſerving to ſhade the glaſſes in the heat of the day until the plants have taken root, then they ſhould have a large ſhare of air, by raiſing the glaſſes of the hot-bed. When the plants

plants have filled theſe ſmall pots with their roots, they ſhould be ſhaken out of them, and planted into pots one ſize larger, and plunged into the bark ſtove, where they ſhould have a good ſhare of freſh air in warm weather. Theſe plants muſt be conſtantly kept in the ſtove being too tender to thrive in this country in any other ſituation. The ſingular beauty of this plant renders it worthy of a place in every curious collection; and it ſeems the Indians were very fond of it, for Hernandez tells us, the Indian Kings planted it in their gardens.

BOIL. In beaſts apply a diachylon plaſter or when broke waſh with Goulard's vegeto-mineral water.

BOLE, the trunk of a tree.

BOLING-TREES. Pollards.

BOLL, a ſeed-pod of *poppies*, a ſtalk of *flax*.

BONE-SPAVIN. When the bone-ſpavin happens to a horſe in one leg only, it makes him lame; but when it ſeizes both, either behind or before, he does not limp at all. His joints however are not free, and conſequently he cannot be ſure-footed. The motion of the joint between the hoof and the fetlock being impeded, it can be of no great ſervice: And when the diſorder is alike in both legs, and the horſe is not lame, many people are ignorant how that joint is formed, and what uſe it is of in walking. They buy ſuch horſes without knowing them, and are not convinced of their error till too late. You ſhould examine a horſe thoroughly therefore before you buy him, and in particular ſee if all the joints of his fore-legs move with equal freedom. Moſt horſes that have the bone-ſpavin are very apt to ſtart when you go to take up their legs, and will hardly let you touch them with your hand. Examine them well therefore with your eye, and ſee if between the fetlock and the crown the leg deſcends even and ſmooth; for if you ſee any protuberance between the fleſh and the ſkin, that looks like a ſort of knot or kernel, you have found the defect. If the tumour be yet ſoft, it will be the more eaſily cured; but in time it grows very hard and callous, and conſequently very obſtinate. A man that has cured twenty of theſe in his life-time, cannot fairly promiſe for the twenty-firſt; for the leg perhaps may be never the better, after all the good treatment in the world. But if you have the good fortune to take it in hand at firſt, before the ſwelling is grown hard, you muſt ſhave off the hair upon it, and apply once every day, ſome of the following ointment: Take black hellebore, euphorbium, and Spaniſh flies, each 2 ounces in powder, and mix them with 4 ounces of oil of bays. Continue this for about a fortnight; after which, apply marſhmallows root, well boiled and pounded, once a day, for a fortnight or three weeks, faſtening it on with a bandage. One muſt not expect, however, that this method will cure an old bone-ſpavin; for that you muſt unſole your horſe, as the farriers know how; and the ſole being raiſed, bleed him in the foot, and then dreſs the ſole with turpentine a little warm, and bind it faſt down with tow and ſplinters. The foot being dreſſed, give him the gooſe-foot fire; that is, draw a line upon the middle of the joint, from before the fetlock to the fore part of the crown; and then draw three others on each ſide, encircling the joint with them all round as they deſcend. The fire ſhould be given more fiercely here than for windgalls: But the firſt line ſhould not be ſo ſtrong as the others, becauſe it ſerves only for a guide to make the others by. When you have given the fire according to art, in the manner here ſet down, you have room to hope the diſorder will go away, and the horſe become pretty free in the joints: But you ought not to expect as much ſervice from him as if he had never any defect: He may be fit for ſhort excurſions, by way of pleaſure, but not for any long journey.

BOOSE, a ſtall or ſtand.

BORAGE, [*Borago*] The ſpecies are 1ſt, the common officinal borage; 2d, the oriental, growing near Conſtantinople; 3d, Indian; 4th, African. The firſt is common and well known, the flowers are ſuppoſed to be cardiac, and are much uſed in cool tankards. The ſecond is a perennial plant flowering in March, and the ſeeds ripen in May. The flowers of the third ſort are pale blue, the fourth white; they are both annuals, their ſeeds ſhould be ſown in autumn.

BORBONIA, a ſpecies of plants which grow naturally at the Cape of Good Hope, where they grow to the height

height of ten or twelve feet. They may be propagated by layers or ſeeds, firſt in a hot-bed, and afterwards by degrees brought into the open air about June. They bear a kind of butterfly flower, which produces a kidney-ſhaped ſeed.

BORDHALFPENNY, toll-money paid in markets or fairs.

BORDERS, beds wrought for the purpoſe of planting flowers, &c.

BORD-LANDS, the demeſnes which lords keep in their hands for the maintenance of their board or table.

BORD-LODE, a ſervice required of tenants to carry timber out of the woods of the lord to his houſe. It is alſo uſed to ſignify the quantity of proviſion which the bordarii or bordmen paid for their bord-lands.

BORD-SERVICE, the tenure of bord-lands, by which ſome lands in certain places are held of the Biſhop of London, and the tenants now pay 6d. per acre, in lieu of the ancient cuſtom of finding proviſions for their lord's table.

BORECOLE, [*Braſſica ſimbriata*] A ſpecies of cabbage of which there are three ſorts, namely, the common borecole, the green borecole, and the Siberian borecole, which is the curled colewort, by ſome called Scotch kale. All theſe are for winter uſe, but the laſt is moſt eſteemed. The two former are ſown about the middle of April, and are fit for tranſplanting in about two months after. When this is done, the plants of either of theſe ſorts ſhould be ſet a foot aſunder in rows two feet diſtant from each other. They ſhould not be eaten before the froſt has rendered them tender; for till then they are tough and bitter. The Siberian borecole, which is extremely hardy, never injured by froſt, and always ſweeter in ſevere winters than in mild ones, need not be ſown till the middle of July, and when the plants are ſtrong enough for removing, that is, when they have ſix or eight leaves, they ſhould alſo be ſet in rows; the diſtance between which ſhould be about two feet, and that between the plants, ten inches. Theſe will be fit for uſe ſoon after Chriſtmas, and continue good till April. The ſoil for borecole ſhould be a good, freſh, deep-looſened earth.

BORING, in a general ſenſe, the art of perforating or making a hole through any ſolid body.

BORING, in farriery, an operation in uſe for the cure of wrenched ſhoulders in horſes. It is this: having cut a hole in the ſkin, over the part affected, they blow it up with a tobacco-pipe, as a butcher does a ſhoulder of veal: after which they thruſt a cold flat iron, like the point of a ſword blade, eight or ten inches up between the ſhoulder-blade and the ribs: this they call boring.

BOSQUETS, a ſmall grove of trees.

BOSCAGE, a grove, a ſmall wood.

BOSIA. This plant is a native of the iſland of Canaries, and it hath alſo been ſince found in ſome of the Britiſh iſlands in America; it was firſt brought into England from the Canaries, and has long been an inhabitant of the Engliſh gardens; but I have not as yet ſeen any of theſe plants in flowers, though I have had many old plants under my care more than forty-ſix years: it makes a pretty ſtrong woody ſhrub, growing with a ſtem as large as a midling perſon's leg; the branches come out very irregular, and make conſiderable ſhoots in ſummer, which ſhould be ſhortened every ſpring. Theſe branches retain their leaves till toward the ſpring, when they fall away, and new leaves are produced ſoon after: it may be propagated by cuttings planted in the ſpring, and the plants muſt be houſed in winter, being too tender to live through that ſeaſon in the open air in this country.

BOTANY, the ſcience of plants, their forms, kinds, virtues and uſes.

BOTTS, a name given to a ſpecies of worms infeſting horſes and other cattle.

The botts which breed in the ſtomachs of horſes, and which are ſometimes the cauſe of convulſions, appear to be very large maggots compoſed of circular rings, with little ſharp prickly feet along the ſides of their bellies (like the feet of hog-lice) which by their ſharpneſs, equal to that of the fineſt needle, ſeem to be of uſe to faſten them to the part where they breed, and from whence they draw their nouriſhment, and alſo to prevent their being looſened from ſuch adheſion, before they come to maturity. The eggs from whence theſe botts are produced, are diſpoſed in cluſters round the lower orifice of the ſtomach, and are laid under the inner coat, their

breech

breech and tail ſtrait outwards, and their trunks ſo fixed into the muſcular or fleſhy coat of the ſtomach, that it ſometimes requires a good pull to diſengage them: from the blood of this laſt coat they draw their nouriſhment, which they ſuck like ſo many leeches, every one ulcerating and purſing up the part where it fixes, like a honeycomb; and they often make ſuch quick havock as to deſtroy the horſe.

The botts, which many horſes are troubled with in the beginning of ſummer, are always ſeen ſticking to the ſtrait gut, and are often thruſt out with the dung, together with a yellowiſh coloured matter reſembling melted ſulphur; they are no ways dangerous there, but are apt to make a horſe reſtleſs and uneaſy, and rub his breech againſt the poſts. The ſeaſon of their coming is in the months of May and June, after which they are ſeldom to be ſeen, and rarely continue in any one horſe above a fortnight or three weeks. And the creature may be eaſily cured when they are only in the ſtrait gut, by giving him a ſpoonful of ſavin cut very ſmall, once or twice a day in his oats, or bran, moiſtened: three or four cloves of garlick may alſo be added to advantage. The following purge ſhould likewiſe be given:

Take fine ſuccotrine aloes ten drams; freſh jalap one dram; birthwort and myrrh powdered, of each two drams; oil of ſavin and amber, of each one dram; ſyrup of buckthorn enough to form the whole into a ball.

But the botts, which take their lodgment in the ſtomach, are, as has been already obſerved, extremely dangerous, by cauſing convulſions, and are ſeldom diſcovered by any previous ſigns before they come to life, when they throw the horſe into violent agonies. The only cure for theſe is mercurial medicines; the following will anſwer the intention:

Take quickſilver two drams: Venice turpentine half an ounce; rub the quickſilver till no gliſtening appears; then take an ounce of aloes, a dram of grated ginger, thirty drops of oil of ſavin, and ſyrup of buckthorn enough to make the whole into a ball.

One of theſe balls may be given every ſix days, with the uſual precautions with regard to mercurial phyſic: and the following powders immediately:

Take powdered tin and Æthiops mineral, of each an ounce; and give it every night in a maſh, or in his corn.

Theſe medicines, or any of the various preparations of antimony and mercury, ſhould be continued ſeveral weeks together, in order to free the animal entirely from theſe vermin.

Bartlet's Farriery.

BOUCHET, a pear ſo called.

BOWER, an arbour, a ſhady place under the cover of trees.

BOX, [*Buxus*] The ſpecies are, 1ſt, Box-tree with oval leaves; 2d, Narrow-leaved box; 3d, Dwarf or Dutch box.

The two ſorts of tree box have been frequently raiſed from ſeeds, and conſtantly produced plants of the ſame kind from thoſe the ſeeds were taken; and the dwarf box will never riſe to any conſiderable height with any culture, nor have I ever ſeen this ſort flower, where the plants have been encouraged to grow many years in the greateſt luxuriancy. There are two or three varieties of the firſt ſort, which are propagated in the gardens, one with yellow, and the other white-ſtriped leaves. The other hath the tops of the leaves only marked with yellow, which is called tipped box.

The firſt and ſecond ſorts grow in great plenty upon Box-hill near Dorking in Surry, where were formerly large trees of theſe kinds, but of late they have been pretty much deſtroyed; yet there are great numbers of the trees remaining, which are of a conſiderable bigneſs.

The tree or large box are proper to intermix in clumps of evergreens, &c. where they add to the variety of ſuch plantations; theſe may be propagated by planting the cuttings in autumn in a ſhady border. When they are well rooted, they may be tranſplanted into nurſeries till they are fit for the purpoſes intended. The beſt ſeaſon for removing theſe trees is in October, tho' indeed, if care be uſed to take them up with a good ball of earth, they may be tranſplanted almoſt at any time, except in the middle of ſummer: theſe trees are a very great ornament to cold and barren ſoils, where few other things will grow.

The

The dwarf kind of box is uſed for bordering of flower-beds or borders; for which purpoſe it far exceeds any other plant, it being ſubject to no injuries from cold or heat, and is of long duration, is very eaſily kept handſome, and by the firmneſs of its rooting keeps the mould in the borders from waſhing into the gravel-walks, more effectually than any plant whatever. This is increaſed by parting the roots, or planting the ſlips; but as it makes ſo great an increaſe of itſelf, and ſo eaſily parts, it is hardly worth while to plant the ſlips that have no roots.

Box *of a wheel*, the opening in which the end of the axle turns.

Box *of a plough*, the croſs piece in the head of a plough which ſupports the two crow ſtaves.

BOXTHORN, [*Lycium*] the ſpecies are, 1ſt, Boxthorn with longer linear leaves; 2d, Boxthorn with ſhorter linear leaves; 3d, Boxthorn with wedge-ſhaped leaves; 4th, Boxthorn with ſpear-ſhaped thick leaves; 5th, Boxthorn with oval ſpear-ſhaped leaves; 6th, Boxthorn with ſpear-ſhape acute leaves; 7th, Boxthorn with oblong, oval, thick leaves; 8th, Boxthorn with linear ſpear-ſhaped leaves growing in cluſters; 9th, Smooth Boxthorn with with ſpear-ſhaped evergreen leaves placed alternate; 10th, Lycium with oval heart-ſhaped leaves placed oppoſite, which are evergreen, and ſit cloſe to the ſtalks, with thick double ſpines, and flowers growing in cluſters.

The firſt ſort grows naturally in Spain, Portugal, and at the Cape of Good Hope. It may be propagated either by ſeeds, cuttings, or layers. If by ſeeds, they ſhould be ſown in the autumn ſoon after they are ripe, for if they are kept out of the ground till ſpring, they ſeldom come up the firſt year. If the ſeeds are ſown in pots, the pots ſhould be plunged into ſome old tan in the winter, and in very ſevere froſt covered with peaſe-haulm or ſtraw, but in mild weather ſhould be open to receive wet; in the ſpring the pots ſhould be plunged into a moderate hot-bed, which will ſoon bring up the plants; theſe muſt be inured to bear the open air as ſoon as the danger of the froſt is over, and when they are three inches high, they may be ſhaken out of the pots, and each planted in a ſmall ſeparate pot, and placed in the ſhade till they have taken new root, when they may be removed to a ſheltered ſituation, where they may remain till the autumn; then they ſhould be either removed into the green houſe, or placed under a hot-bed frame to ſhelter them from hard froſt; for theſe plants are too tender to live in the open air in England, ſo they muſt be kept in pots, and treated in the ſame way as myrtles, and other hardy green-houſe plants; but when the plants are grown ſtrong, there may be a few of them planted in the full ground in a warm ſituation, where they will live in moderate winters, but in hard froſts they are commonly deſtroyed. If the cuttings of theſe plants are planted in a ſhady border in July, and duly watered, they will take root, and may then be treated in the ſame way as the ſeedling plants.

The ſecond, ſeventh, and tenth ſorts are natives of the Cape of Good Hope.

The third ſort grows naturally in the ſouth of France, in Spain and Italy, and may be propagated by cuttings or layers.

The fourth ſort was brought from Africa, but is too tender to bear the open air in winter.

The fifth, ſixth, and ninth, grow naturally in China.

The eighth is like the firſt.

BRACTEA, the floral leaf.

BRAKE. Fern.

BRAMBLE. See BLACKBERRY.

BRAN, the huſks of corn ſeparated from the flour.

BRANCURSINE. Bearſbreech.

BRANCH, an arm of a tree, or a part which, ſprouting out from the trunk, helps to form the head or crown thereof. They often riſe without order, and in confuſion, from the trunk, as in the oak, elm, and others; but more regular in the fir, &c.

BRAWN, the fleſh of a boar, boned, rolled up, or collared, boiled, and laſtly pickled.

Brawn is made only of the flitches, without the legs; the oldeſt boars are choſen for this uſe, it being a rule, that the older the boar the more horny the brawn.

The method of making it is as follows: the bones being taken out of the flitches, the fleſh is ſprinkled with ſalt, and laid in a tray, that the blood may drain off; after which it is ſalted

ed a little, and rolled up as hard as poſſible. The length of the collar of brawn ſhould be as much as one ſide of the bone will bear; ſo that when rolled up it may be nine or ten inches in diameter.

The collar being thus rolled up, it is boiled in a copper or large kettle, till it is ſo tender that you may run a ſtraw through it; when it is ſet by till thoroughly cold, and then put into the following pickle. To every gallon of water add two handfulls of ſalt, and as much wheat-bran: boil them together, drain the liquor as clear as poſſible from the bran, and when the liquor is quite cold, put the brawn into it.

BREAD, a well-known food, chiefly divided into white, wheaten, and houſhold; differing only in degrees of purity. In the firſt, all the bran is ſeparated; in the ſecond, only the coarſer; in the third, none at all; ſo that fine bread is made only of flour; wheaten bread of flour, with a mixture of fine bran; and houſhold, of the whole ſubſtance of the grain, without taking out either the coarſe bran or fine flour.

We alſo meet with ſymnel bread, manchet or roll bread, and French bread: which are only ſo many denominations of the fineſt or whiteſt bread, made of the pureſt flour; except that in roll bread there is an addition of milk, and, in French bread, of eggs and butter alſo. To which may be added, ginger-bread, made of white-bread, with almonds, liquorice, anniſeed, roſe-water, and ſugar; and maſlin bread, made of wheat and rye, or ſometimes of wheat and barley.

The proceſs of making houſhold bread amongſt us, is thus: to a peck of meal they add a handful of ſalt, a pint of yeaſt, and three quarts of water, cold in ſummer, hot in winter, and temperate between the two; the whole, being kneaded in a bowl or trough by the fire in winter, from it in ſummer, and a little yeaſt added, will riſe in about an hour; they then mould it into loaves, and put it into the oven to bake.

For leavened bread, part of the flour intended for it, being made into dough with warm water and a little ſalt, is laid in the reſt of the flour an hour or more, in which time it riſes to three times the bulk; then they mix and knead the whole with more water, till it be brought into a ſtiff dough; which being formed into loaves, is baked in the oven: though the more uſual way is to take a piece of dough kneaded, and leave it in the tub till next time, when they break it ſmall, and mix it with the meal, adding ſome yeaſt.

For French bread, they take half a buſhel of fine flour, ten eggs, and a pound and half of freſh butter, into which they put as much yeaſt, with manchet; and, tempering the whole maſs with new milk, pretty hot, let it lie half an hour to riſe; which done, they make it into loaves or rolls, and waſh it over with an egg beaten with milk: care is taken that the oven be not too hot.

BREADFRUIT-TREE. The tree that bears the breadfruit is about the ſize of a horſe-cheſnut, the fruit is not unlike the Cantalupe melon either in ſize or ſhape.

BREAST-PLOUGH, a plough that a man can ſhove before him. *See Plough.*

BREWING, the art of making malt liquor.

The beſt months in the year for brewing beer to keep long are, March and October, becauſe the air is then generally moſt temperate, and the drink works or foments the better, which chiefly promotes its preſervation and good keeping. In very cold weather, unleſs the cellar be warm whilſt new drink is working it will not clear itſelf as it ought; and in very hot weather, it will grow muddy and ſour, and never recover itſelf, unleſs the cellar be in a temperate ſtate. Where cellars are damp, it is adviſeable to brew rather in March than October, becauſe ſuch cellars may be kept temperate in the ſummer, and the beer brewed then will have time to ſettle before the cold can affect it. Cellars ſhould admit as little external air as poſſible, becauſe the variation of the air, (if there is free admiſſion for it) will alter the ſtate of the liquor, and keep it perpetually diſturbed and unfit for drinking.

Many gentlemen, who are curious in their beer, have double doors to their cellars, to exclude the outward air; and their liquor is always good. Such cellars, if dry, preſerve the ſame temperature of heat in winter as in ſummer;

ſummer; and a cellar ſhould be thus diſpoſed if we expect good drink.—— As every perſon has a method of brewing peculiar to himſelf, we forbear giving inſtructions in that reſpect, and ſhall only touch upon water, malt, hops, and the keeping liquors.

The beſt water is in general river water, ſuch as is ſoft and has partook of the air and ſun, for this eaſily inſinuates itſelf into the malt, and extracts its virtue, whereas hard waters aſtringe and bind the parts of the malt, ſo that its virtue is not freely communicated to the liquor. It is a rule with ſome intelligent perſons, that water which will mix with ſoap is fit for brewing, and no other; and it has been proved, that where the ſame quantity of malt and hops has been uſed to a barrel of river, as to a barrel of ſpring water, the brewing of river water has excelled the other in ſtrength above five degrees in twelve months, and was preferable in taſte, although they both underwent the ſame proceſs in every reſpect.

It frequently happens in the ſame town, where gentlemen uſe the ſame malt, hops, water, and brewer, have brewed in the ſame month, and kept their liquor to the ſame age, that the flavour of each is very different: For this difference, three probable reaſons may he adduced: 1. The different ſtate of the weather in the ſame month may make an alteration in the working of the liquors: 2. The yeaſt or barm may be different of which the liquors were worked: And 3. The cellars may not be equally good; for the goodneſs of drink that is kept, depends on the goodneſs of cellars where kept. Where cellars are dry and good, and the ſame method of brewing is uſed, beer will almoſt invariably be of the ſame taſte; and ſuch cellars only which will cloſe a temperate air, will ripen beer, and make it mellow; all others that are ſubject to heat and cold, make it ſubject to grow ſtale and ſharp.

The Dorcheſter beer, which is eſteemed preferable to moſt of the malt-liquor in England, is for the moſt part brewed of chalky water, and the cellars being dug in that dry ſoil contributes to the good keeping of their drink, it being of a cloſe texture, and of a drying quality, ſo as to diſſipate damps; for damp cellars are injurious to keeping liquors, as well as deſtructive to the caſks. The malt of this county is of a pale colour.

In proportion to the quantity of liquor, which is incloſed in one caſk, ſo will it be a longer or a ſhorter time in ripening. A veſſel which contains two hogſheads of beer, will require twice as much time to perfect itſelf as one hogſhead; and there ſhould be no veſſel uſed for ſtrong beer, which we deſign to keep, leſs than a hogſhead; for one of that quantity, if it be fit to draw in a year, has body enough to ſupport it two, three, or four years, if it has ſtrength of malt and hops in it.

When once a veſſel is broached, we ought to have regard to the time in which it will be expended; for if there happens to be a quick draught for it, then it will laſt good to the very bottom; but if there is likely to be a ſlow draught, then do not draw off quite half before you bottle it, or elſe your beer will grow flat, dead, or ſour.

One great piece of œconomy, is the good management of ſmall beer; for if that is not good, the drinkers of it will be feeble in ſummer time, and incapable of ſtrong work, and will be very ſubject to diſtempers. The uſe of drink, as well as meat, is to nouriſh the body; and the more labour a man does, the more ſubſtantial ſhould be his diet. In time of harveſt may be ſeen the bad effects of ſmall beer among the workmen; and in great families, where that article has not been taken care of, the apothecaries bills have amounted to twice as much more as the malt would have come to, that would have kept the ſervants in ſtrength and good health; beſides one thing more, good wholeſome drink is ſeldom flung away by the ſervants, ſo that the ſparing of a little malt ends in loſs to the maſter. Where there is good cellaring, therefore, it is adviſeable to brew a ſtock of ſmall beer, either in March or October, or in both months, and to be kept in hogſheads if poſſible: The beer brewed in March to begin drawing in October, and that brewed in October to begin in March, for ſummer drinking.

Water of a hard nature may be ſoftened, by ſetting it expoſed to the air and ſun, and putting into it ſome pieces of ſoft chalk to infuſe; or elſe when the water is ſet on to boil, for pouring

ing upon the malt, put into it a quantity of bran, which will help a little to ſoften it.

The general diſtinction between one malt and another malt, is only that one is high dried, the other low dried: the former produces a liquor of a deep brown colour, the latter a pale-coloured liquor. The firſt is rather ſcorched than dried, and the liquor made of it will ſooner grow ſtale and ſharp that that made of pale malt; when brewed with courſe water, it makes very good ale, but will not keep above ſix months. If ſtrong beer is brewed with it, and if ever ſo much hopped, it will never drink ſoft and mellow like that brewed with pale malt. There is an acid quality in it, which occaſions the heartburn; and thoſe who drink it to exceſs, are frequently afflicted with the gravel and ſtone.

All malt liquors, however well brewed, may be ſpoiled by bad cellaring; and by fermenting in the caſk, will turn thick and ſour. To remedy this, the bung of the caſk ſhould be opened for two or three days, and if that does not ſtop the fermentation, put into it, two or three pounds of oyſter ſhells, waſhed and dried well in an oven and then powdered; and ſtirring it a little, it will ſoon ſettle the drink, make it fine, and take off its ſharp taſte. As ſoon as that is done, draw it off into another veſſel, and put about three pints of wheat or wheat malt it, or more if the veſſel requires it. Sometimes ſuch fermentation will happen by bad weather, and the drink will grow fine of itſelf.

High-dried malt ſhould not be uſed till it has been ground ten days or a fortnight, but it muſt be kept dry. Pale malt muſt not be ground above a week before it is uſed.

The neweſt hops are the beſt; after two years, they begin to loſe their flavour, unleſs kept in great quantities, and in a dry place; and ſo cautious ought perſons to be in the choice of this article, that where the water, the malt, the brewer, and the cellars, are good, a bad hop will ſpoil all. The yeaſt or barm ſhould be alſo attended to, or a good brewing may be ſpoiled, and it ſhould be provided before brewing, that the wort may not ſtay for it.

In ſome places it is practiſed to dip whiſks into yeaſt, and beat it well, and ſo hang up the whiſks with the yeaſt in them to dry; and if there is no brewing till two months afterwards, the beating and ſtirring one of theſe whiſks in new wort, will raiſe a working or fermentation in it. All drink ſhould be worked well in the tun, or keel, before it be put into the veſſel, for elſe it will not eaſily grow fine. Some beat down the yeaſt pretty often while in the tun, and keep it there working for two or three days, obſerving to put it in the veſſel juſt when the yeaſt begins to fall. This drink is commonly very fine, whereas that which is put into the veſſel quickly after 'tis brewed, will not be fine in many months.

With relation to the ſeaſon for brewing of drink for keeping, if the cellars are ſubject to the heat of the ſun, or warm ſummer air, it is beſt to brew in October, that the drink may have time to digeſt before the warm ſeaſon comes on: And if cellars are inclinable to damps, and to receive water, the beſt time is to brew in March; and ſome brewers always chuſe the brewing of pale malt in March, and the brown in October; for pale malt being made with a leſſer degree of fire than the other, wants the ſummer ſeaſon to ripen it; and the brown having had a larger ſhare of fire to dry it, is more capable of defending itſelf againſt the cold of the winter ſeaſon. But how far theſe reaſons may be juſt we do not pretend to determine.

When care has been taken in all the above particulars, if the caſks are not in good order, ſtill the brewing may be ſpoiled. New caſks are apt to give drink an ill-taſte, if not well ſcalded and ſeaſoned ſeveral days ſucceſſively, before they are uſed; and old caſks, if they ſtand any time out of uſe, are apt to grow muſty; unſlacked lime, about a gallon to a hogſhead, with about ſix gallons of water put in with it, and the hogſhead preſently ſtopped up, will clear it of its taint, if repeated four or five times; or burning of linen dipped in brimſtone, cloſe ſtopped in a caſk, three or four times, will do the ſame.

Little more need be ſaid about the management of drink, and that is concerning the bottling of it. The bottles firſt muſt be well cleaned and dried; for wet bottles will make the drink

turn mouldy, or mothery: the corks muſt be new and ſound; for if the air can get into the bottles, the drink will grow flat, and will never riſe. If bottles are corked as they ſhould be, it is hard to pull out the corks without a ſcrew, and to be ſure to draw the cork without breaking, the ſcrew ought to go through the cork, and then the air muſt neceſſarily find a paſſage where the ſcrew has paſſed, and therefore the cork is good for nothing; or if a cork has once been in a bottle, and has been drawn without a ſcrew, yet that cork will turn muſty as ſoon as 'tis expoſed to the air, and will communicate its ill flavour to the bottle where it is next put, and ſpoil the drink that way.

In the choice of corks, chuſe thoſe that are ſoft, and clear from ſpecks, and let them lay in water a day or two before you uſe them; but let them dry again before you put them in the bottles, leſt they ſhould happen to turn mouldy.---To prevent your bottles from burſting, take the peg or bung out of the caſk a day or two before bottling it; and this ſhould always be done, unleſs the liquor be flat without ſo doing.

In the bottling of drink, you may alſo obſerve, that the top and middle of the hogſhead is the ſtrongeſt, and will ſooner riſe in the bottles than the bottom: And when once you begin to bottle a veſſel of any liquor, be ſure not to leave it till all is completed, for elſe you will have ſome of one taſte, and ſome of another.

If a veſſel of drink begins to grow flat, whilſt in common draught, bottle it, and into every bottle put a piece of loaf ſugar, about the quantity of a walnut, which will make the drink riſe and come to itſelf; and to forward its ripening, you may ſet ſome bottles in hay in a warm place; but ſtraw will not aſſiſt its ripening.

If there has been opportunity of brewing a good ſtock of ſmall beer in March and October, ſome of it may be bottled at ſix months end, putting into every bottle a lump of loaf ſugar as big as a walnut; this eſpecially will be very refreſhing drink in the ſummer: Or if you happen to brew in ſummer, and are deſirous of briſk ſmall beer, bottle it as above, as ſoon as it has done working.

BRIAR, [*Cynoſbatos*] The dog-roſe, or hip tree. This buſh grows wild in hedges throughout England. The flowers have a pleaſant ſmell; but ſo weak, that Parkinson, and others, have named the plant *roſa ſylveſtris inodora*: a water diſtilled from them ſmells agreeably. The fruit or hips contain a ſouriſh-ſweetiſh pulp; with a rough prickly matter incloſing the ſeeds, from which the pulp ought to be carefully ſeparated before it is taken internally: the Wirtemberg college obſerves, that from a neglect of this caution, the pulp of hips ſometimes occaſions a pruritus, and uneaſineſs about the anus; and I have known the conſerve of it to excite a violent vomiting.

BRIDLE, a contrivance made of iron and leather to keep the horſe in ſubjection.

BRIONY, [*Bryonia*] There are ſeveral ſpecies of this plant, ſome annual and ſome perennial: that which is uſed in medicine is a rough plant growing in hedges, and climbing upon the buſhes. The roots are large, ſometimes as thick as a man's thigh: their ſmell when freſh is ſtrong and diſagreeable; the taſte nauſeouſly bitter, acrid, and biting; the juice is ſo ſharp as in a little time to exulcerate the ſkin: in drying, they loſe great part of their acrimony, and almoſt the whole of their ſcent. Briony root is a ſtrong irritating cathartic; and as ſuch has been ſometimes ſucceſsfully exhibited in maniacal caſes, in ſome kinds of dropſies, and in ſeveral chronical diſorders where a quick ſolution of viſcid juices, and a ſudden ſtimulus on the ſolids, were required. An extract prepared by waters act more mildly, and with greater ſafety than the root in ſubſtance: given from half a dram to a dram, it proves a gentle purgative, and likewiſe operates powerfully by urine.

Brick-earth Woodcock soil. See Pasture Land.

BRIZE, ground which has laid long untilled. See Fallow-

BRITE, a term when hops ſhatter.

BROCOLI, [*Braſſica, Italica*] a ſpecies of cabbage, of which there are ſeveral varieties.

Brocoli requires a very good and pretty light ſoil, rather deep than otherwiſe. The proper time for ſowing it is from the latter end of April, till the beginning of June; and the manner the ſame as for cabbage. When the plants are about a fortnight or three

Brimony Wheat. See Limeing-

three weeks old, that is when they have got ſeven or eight leaves, they ſhould, like all others of the cabbage kind, be tranſplanted into beds of well prepared mould, and towards the end of July they will be fit to be tranſplanted into beds where they are to remain. This ſhould be a well ſheltered ſpot, but not under the drip of trees. The plants ſhould here be ſet in rows at leaſt two feet aſunder, but two feet and a half, or even three feet, will be ſtill better; and at the diſtance of a foot and a half, or rather two feet from each other in the rows. Towards the end of December, if the weather be not very ſevere, they will begin to ſhew their ſmall heads, which, eſpecially at their firſt appearance, are not unlike thoſe of cauliflowers. Theſe heads ſhould be cut off before they run up to ſeed, with about four or five inches of the ſtalks, and a great number of ſide ſhoots, produced from the ſtem, will ſucceed them, and continue fit for eating till the middle of March. They will not indeed be ſo large as the former, but they will be equally well taſted. The ſkin of the ſtalks ſhould be taken off before they are boiled.

There are three ſorts of brocoli cultivated in our kitchen gardens, viz. the Roman or purple brocoli; the Naples, or white brocoli; and the brown or black brocoli. The firſt of theſe is the fineſt flavoured, and continues longeſt in ſeaſon; and therefore is moſt eſteemed. The ſecond, or white brocoli, has ſo nearly the taſte of cauliflower, that it is not always eaſy to diſtinguiſh them. The brown or black ſort is the leaſt delicate, but the hardieſt, and grows to the largeſt ſize.

For a ſecond crop to ſupply the table after the firſt is gone, Mr. Miller adviſes the ſowing of brocoli again in the beginning of July; but Mr. Switzer thinks it wrong to ſow this plant even ſo late as Midſummer, becauſe their ſtems will not be ſtrong enough before the winter to produce that number of ſprouts they otherwiſe would do, if ſown ſooner. He therefore directs the plants to be divided into three parts, and to cut their heads off entirely within a foot and a half, or two feet of the ground; beginning to do this to one parcel about a fortnight or three weeks before Michaelmas, to the next about a month after, and to the laſt about a fortnight or three weeks before Chriſtmas: by which means a continued ſucceſſion of ſprouts will iſſue from the ſides of the remaining ſtems. Either directions may be followed; but the largeſt heads will be produced by Mr. Miller's method, and the greateſt number by that of Mr. Switzer.

BROKEN-WIND, a very fatal diſeaſe to which horſes are too often ſubject.

This diſorder hitherto ſeems to have been little underſtood; but Mr. Gibſon is inclined to think, that the ſource of it is frequently owing to the injudicious, or haſty feeding young horſes for ſale; by which means the growth of the lungs, and all the contents within the cheſt, are ſo increaſed, and, in a few years, ſo preternaturally enlarged, that the cavity of the cheſt is not capacious enough for them to expand themſelves, and perform their functions.

A narrow contracted cheſt with large lungs may ſometimes naturally be the cauſe of this diſorder: and it has been obſerved, that horſes riſing eight years old, are as liable to this diſtemper, as at a certain period of life, men fall into aſthmas, conſumptions, and other chronic diſeaſes.

The reaſon why this diſorder becomes more apparent at this age may be, that a horſe comes to his full ſtrength and maturity at this time: at ſix he commonly finiſhes his growth in height; after which he lets down his belly, and ſpreads, and all his parts are grown to their full extent; ſo that the preſſure on the lungs and midriff is now more increaſed.

But how little weight ſoever theſe reaſons may have, repeated diſſections have given ocular proofs of a preternatural largeneſs, not only of the lungs of broken-winded horſes, but of their heart and its bag; and alſo of the membrane which divides the cheſt; as well as of the remarkable thinneſs of the diaphragm or midriff

This diſproportion has been obſerved to be ſo great, that the heart and lungs have been almoſt of twice their natural ſize; perfectly ſound, and without any ulceration whatever, or any defect in the wind-pipe or its glands.

Hence it appears, that this enormous

mous size of the lungs, and the space they occupy, by hindering the free action of the midriff, is the chief cause of this disorder; and as the substance of the lungs was found more fleshy than usual, they must of course have lost much of their spring and tone.

This fleshiness and size of the lungs may, in a great measure, be the cause, why the inspirations in broken-winded horses are disproportionately slow; for we may observe that they draw their in breath slowly, their flanks filling up, and rising with difficulty: but that their flanks fall suddenly, and their breath bursts forth with violence, both from mouth and nostrils; insomuch, that a man in the dark, by holding his hands on the horse's mouth and nose, may easily discover if he is broken-winded.

Whoever considers a broken-wind in this light, must own that it may be reckoned among the incurable distempers of horses; and that all the boasted pretensions to cure, are vain and frivolous, since the utmost skill can amount to no more than now and then palliating the symptoms, and mitigating their violence.

We shall therefore lay down such methods as may probably prevent this disorder, when pursued in time; but if they should not succeed, we shall offer some remedies and rules to mitigate its force, and to make a horse as useful as possible under this malady.

It is usual before a broken-wind appears, for a horse to have a dry obstinate cough, without any visible sickness or loss of appetite; but, on the contrary, a disposition to foul feeding, eating the litter, and drinking much water.

In order then to prevent, as much as possible, this disorder, bleed him, and give him two drams of calomel, mixed up with an ounce of diapente, for two nights successively, keeping him cloathed and well littered; and feeding him with scalded bran and warm water.

The following balls are then to be taken for some time, which have been found extremely efficacious in removing obstinate coughs:

Take gum ammoniacum, galbanum, and assafœtida, of each two ounces; squills, four ounces; cinnabar of antimony, six ounces; saffron, half an ounce: make the whole into a paste with honey; and give a ball about the size of a pullet's egg every morning.

Broken-winded horses should eat sparingly of hay, which, as well as their corn, may be wetted with chamber-lye, or fair water; as this will make them less craving after water.

The volatile salts in the urine may render it preferable to water, and may be the reason why garlic is found so very efficacious in these cases; two or three cloves given at a time in a feed, or three ounces of garlic bruised, and boiled in a quart of milk and water, and given every other morning for a fortnight, having been found very serviceable; for by warming and stimulating the solids, and dissolving the tenaceous juices, which choak up the vessels of the lungs, these complaints are greatly relieved.

Careful feeding and moderate exercise has greatly relieved broken-winded horses; and though for the first summer they have not been able to endure much labour, yet many have been found less oppressed the second, and some scarce perceptibly affected the third; and even able to bear great fatigue: and could a horse be kept constantly in the field, and taken up only when used, he might, by this management, do good service for many years.

But whoever expects to cure his horse by sending him out to grass, will find himself disappointed, especially if he remains abroad after the spring grass; for on his return to the stable and dry meat, he will be more oppressed and short breathed than before, for want of the open air, and the moist food he has been accustomed to.

Horses sent to grass in order to be cured of an obstinate cough, have often returned completely broken-winded, where the pasture has been rich and succulent, so that they have had their bellies constantly full. As the ill consequence therefore is obvious, where you have not the convenience of turning out your horse for a constancy, you may soil him for a month or two with young green barley, tares, or any other young herbage.

To purfive, thick winded-horses, Barbadoes and common tar have often been given with success, to the quantity

tity of two ſpoonfuls mixed with the yolk of an egg, diſſolved in warm ale, and given faſting two or three times a week, eſpecially on thoſe days you hunt or travel.

But in order to make all theſe ſorts of horſes of any real ſervice, the grand point is to have a particular regard to their diet, obſerving a juſt œconomy both in that and their exerciſe; giving them but a moderate quantity of hay, corn, or water, at a time, and moiſtening the former to prevent their requiring too much of the latter, and never exerciſing them but with moderation, as has been before obſerved.

The following ball may be given once a fortnight or three weeks; and as it operates very gently, and requires no confinement, except the days it is given (when warm meat and water will be neceſſary) it may be continued for two or three months.

Take ſuccotrine aloes, ſix drams; myrrh, galbanum, and ammoniacum, of each two drams; bay berries, half an ounce; oil of amber, a ſpoonful: make the whole into a ball with a ſufficient quantity of ſyrup of buckthorn.

BROOD, the produce of a neſt.

BROODING, the act of a hen, or other bird, ſitting on a number of eggs, to keep them warm, till they hatch, or produce young ones.

BROOKLIME, [*Becabunga*] This is a low plant, common in little rivulets and ditches of ſtanding water: the leaves remain all the winter, but are in greateſt perfection in the ſpring. Their prevailing taſte is an herbaceous one, accompanied with a very light bitteriſhneſs.—Becabunga is ſuppoſed to have a ſaponaceous detergent virtue, and to attenuate viſcid humours without pungency or irritation: Hence it is directed in the ſpecies of ſcurvy called hot, where the cochlearia, and other acrid antiſcorbutics are leſs proper. In this diſeaſe, and where the animal juices are diſpoſed to a putrid alcaleſcent ſtate, it may be given along with the ſorrels, orange juice, or other vegetable acids; or employed for abating the acrimony of the ſcurvy graſſes and naſturtia.

BROOM, [*Geniſta*] There are ſeveral ſorts all propagated by ſeeds, which ſucceed better in autumn than in ſpring; the leaves have a nauſeous bitter taſte: they are ſaid to purge both by ſtool and urine, and hence ſtand recommended in hydropic caſes. The flowers are alſo ſaid to prove cathartic in decoction, and emetic in ſubſtance, though in ſome places, as Lobel informs us, they are commonly uſed, and in large quantity, in ſallads, without producing any effect of this kind. The qualities of the ſeeds are little better determined: ſome report, that they purge almoſt as ſtrongly as hellebore, in the doſe of a dram and half; whilſt the author above-mentioned relates that he has given a decoction of two ounces of them as a gentle emetic.

BROWALLIA. There are two ſorts, one with only a ſingle flower on each footſtalk; the other with one or many flowers on each footſtalk. The firſt is a native of Panama, the plants are annual, ſo periſh in autumn; the ſeeds muſt be ſown upon a hot-bed in the ſpring, and the plants brought forward on another, otherwiſe they will not perfect their ſeeds in England. Some of theſe plants may be tranſplanted in June, into the borders of the flower-garden, where, if the ſeaſon proves warm, they will flower and perfect ſeeds; but leſt theſe ſhould fail, there ſhould be a plant or two kept in the ſtove to ſecure ſeeds. They uſually grow about two feet high, and ſpread out into lateral branches on every ſide the ſtalk, garniſhed with oval leaves which are entire, and have ſhort footſtalks. Toward the end of the branches the flowers are produced ſingly upon pretty long foot-ſtalks, ariſing from the wing of the leaf. Theſe have a ſhort empalement of one leaf, which is cut into five parts; out of the center of the empalement the flower ariſes, which is crooked and bent downward; the top of the tube is ſpread open, and the brim, or open part of the flower, has ſome reſemblance to a lip-flower, being irregular; it is of a light blue colour, ſometimes inclining to a purple or red, and often there are flowers of three colours on the ſame plant. When theſe fall away, the germen in the center becomes an oval capſule of one cell, filled with ſmall, angular, brown ſeeds. It flowers in July, Auguſt, and September, and the ſeeds are ripe in five or ſix weeks after.

The ſecond ſort grows naturally in Peru: the ſtalk of this plant is twice the

the ſize of that of the firſt, and appears ſomewhat ſhrubby; the leaves upon the flower branches are ſmooth: the foot-ſtalks have ſome with one flower, others have three, and ſome five flowers, which are of a deep violet colour, and are ſucceeded by ſeed-veſſels like thoſe of the firſt ſort. This requires the ſame culture as the former.

BRUNSFELSIA. This plant riſes with a woody ſtem to the height of eight or ten feet, ſending out many ſide branches, which are covered with a rough bark, and garniſhed with oblong oval leaves. At the extremity of the branches the flowers are produced, generally three or four together. Theſe are almoſt as large as thoſe of the greater bindweed, but have very long narrow tubes, which are hairy. After the flower is paſt, the empalement turns to a round ſoft fruit, incloſing many oval ſeeds, which are ſituated cloſe to the cover or ſkin, to which they adhere.

This plant grows naturally in moſt of the ſugar iſlands in America; it may be propagated from ſeeds, which ſhould be ſown early in the ſpring in pots, and plunged into a hot-bed of tanners bark. When the plants are come up and fit to remove, they ſhould be tranſplanted each into a ſeparate ſmall pot, and plunged into the hot-bed again, obſerving to water and ſhade the plants until they have taken root. When the plants have advanced ſo high as not to be contained in the frames, they ſhould be removed into the bark-ſtove, where, during the ſummer months, they ſhould have a large ſhare of free air, but in the winter they muſt be kept very cloſe. Theſe plants may alſo be increaſed by planting their cuttings in the ſpring before they ſhoot, in pots filled with freſh light earth, and plunged into a hot-bed of tanners bark.

BRUTE, an irrational animal.

BUCKBEAN, [*Trifolium paludoſum*,] Marſh trefoil. This plant grows wild in moiſt marſhy places: it has three oval leaves, ſtanding together, upon one pedicle which iſſues from the root; their taſte is very bitter, and ſomewhat nauſeous. Marſh trefoil is an efficacious aperient and deobſtruent, promotes the fluid ſecretions, and, if liberally taken, gently looſens the belly. It has of late gained great reputation in ſcorbutic and ſcrophulous diſorders: and its good effects in theſe caſes have been warranted by experience; inveterate cutaneous diſeaſes have been removed by an infuſion of the leaves, drank to the quantity of a quart a day, at proper intervals, and continued for ſome weeks. Boerhaave relates, that he was relieved of the gout by drinking the juice mixed with whey.

BUCKSHORNTREE, [*Coronopus*] of the coronopus, or buckſhorn plantain; there are two varieties growing in England, viz. the common buckſhorn, which grows plentifully on heaths every where, and the narrow-leaved Welſh ſort, which is found upon many of the Welſh mountains. The firſt of theſe was formerly cultivated as a ſallad herb in gardens, but has been long baniſhed from thence for its rank, diſagreeable flavour; it is ſometimes uſed in medicine. There has been one ſpecies of pſyllium or fleawort, found growing naturally in England, which is the ſort uſed in medicine; this was found in the earth, thrown out of the bottom of the canals, which were dug for the Chelſea water-works, where it grew in great plenty. The ſeeds of this muſt have been buried there ſome ages, for no perſon remembers any of the plants growing in that neighbourhood before. The ſeeds of this are ſometimes uſed, which are imported from the ſouth of France.

BUCKTHORN, [*Rhamnus*] This tree is common in hedges: it flowers in June, and ripens its fruit in September or the beginning of October. In our markets, the fruit of ſome other trees, as the frangula or black berry bearing alder, and the cornus fœmina or dog-berry tree, have of late years been frequently mixed with, or ſubſtituted for, thoſe of buckthorn. This abuſe may be diſcovered by opening the berries: thoſe of buckthorn have almoſt always four ſeeds, the berries of the frangula two, and thoſe of the cornus fœmina only one. Buckthorn berries, bruiſed on white paper, give it a green tincture, which the others do not. Thoſe who ſell the juice to the apothecaries, are ſaid to mix with it a large proportion of water.

Buckthorn berries have a faint diſagreeable ſmell, and a nauſeous bitter taſte. They have long been in conſi-

derable

derable eſteem as cathartics; and celebrated in dropſies, rheumatiſms, and even in the gout; though in theſe caſes, they have no advantage above other purgatives, and are more offenſive, and operate more churliſhly, than many which the ſhops are furniſhed with; they generally occaſion gripes, ſickneſs, dry the mouth and throat, and leave a thirſt of long duration. The doſe is about twenty of the freſh berries in ſubſtance, and twice or thrice this number in decoction, an ounce of the expreſſed juice, or a dram of the dried berries. A ſyrup prepared from the juice is kept in the ſhops; in this preparation, the nauſeous flavour of the buckthorn is ſomewhat alleviated, by the ſugar and the addition of aromatics.

BUCKWHEAT, the name of a plant generally conſidered as a ſpecies of corn, though not ſuch in fact; nor does it grow like any of the eſculent grains. Its leaf, from being roundiſh at firſt, takes nearly the ſhape of that of ivy, but longer pointed, and much ſofter. Its ſtalk is round, hollow, and weak, ſometimes reddiſh, but moſt commonly green, and growing to the height of about two feet and a half. Lateral branches, which ſhoot out almoſt at every joint, are terminated by purpliſh flowers, which are ſucceeded by ſmall triangular ſeeds, black on the outſide, and white within.

Buck-wheat will grow on the moſt barren lands, and this is one of its great uſes to the farmer. The dryeſt and worſt will afford it nouriſhment. If he have a piece of almoſt heathy land, or of naked gravel, or in the ſtone countries, one of thoſe lands where chips and fragments of ſtone make up, in a manner, the whole ſurface, buckwheat will grow on any of them. It requires little preparation, and needs not be ſown till very late; ſo that every way it recommends itſelf to his regard.

When he has fixed upon a piece of ground, ſo poor that it will bear nothing elſe; or one that may, by this means be rendered fit for ſomething better, his next thing is to ſeek for good ſeed.

He is to chuſe the faireſt and ſoundeſt he can get, ſuch as is dry and of a bright colour is beſt; but this is in general a ſeed in which there is leſs hazard than moſt others.

The quantity is to be very different according to the deſign of ſowing; for when buck-wheat is raiſed for ſeed, a ſmall number of plants well nouriſhed is what the farmer is to deſire; but when it is ſown only to be ploughed in as a manure, the ſeed being not at all concerned in this matter, the larger a quantity there is upon the ground the better.

When buck-wheat is raiſed for the ſeed a buſhel is ſufficient for an acre; but on the other hand, when it is meant by way of preparation for another crop, four buſhels to the acre is not at all too much. The time of ſowing buck-wheat as already obſerved, is later than that of almoſt any other crop. The beginning of May is the earlieſt it ſhould be put into the ground: the middle of that month is a better time, and it will do to the very latter end. Buck-wheat being a native of very warm climates, does not bear cold, and it is ſo quick a grower that it needs not be ſown early in the ſeaſon; for when got into the ground toward the end of May, it will very well ripen during the ſummer ſeaſon.

After buck-wheat is in the ground, there requires no particular care to be taken of it. The common and familiar method of ploughing and harrowing, and that in the ſlighteſt manner, covers it, and it will ſhoot at its own time, let the weather be what it will: Rain or dry makes very little difference.

When once cut up it grows apace. The ſort of grounds allowed to it does not favour the growth of weeds, like richer land, nor do they grow ſo quick upon it; ſo that the buck-wheat thriving apace, quickly gets the better of them. In this condition it will continue growing up till it comes to flowering, unleſs the intent of the farmer be to plough it in ſooner.

Beſide the two uſes of buck-wheat in the ſeed, and in ploughing into the ground, it has another very conſiderable one, which is, the being eaten by cattle. This is the more important, becauſe it comes in at a time when other provender is ſcarce, the graſs being burnt up by the heat; and the horned cattle at this time, toward the end of ſummer, being generally in great want of good freſh food. The buck-wheat being then juſt coming into bloſſom, the cows are very fond of it; and it is an

an excellent nouriſhment, rich and wholeſome, making them yield a great quantity of milk, and not giving it any diſagreeable taſte. There is no better butter or cheeſe than ſuch as is made of their milk when they have fed in this manner.

If the farmer intends his crop for this uſe, he muſt ſow it thicker than for ſeed, but not ſo thick as when he intends it for ploughing in; two buſhels and a half of ſeed to an acre will yield a very good growth for this purpoſe.

After the cows have eaten it down, the ſtubble may be ploughed in, and the land will do for a crop of corn. It is not ſo well as when the large full grown crop, ſown for that purpoſe, is ploughed in entire, that being the beſt method of making this crop proper for wheat.

When this has been the intent of ſowing, the crop is to ſtand till full grown and in flower, but not till the ſeed is formed. Juſt before that it is in the richeſt condition for manure, and that opportunity is to be taken.

When the ſeed is the point in view, and the field has been ſown ſparingly for that purpoſe, the plants will be much ſtronger, and they will ripen a great deal.

At this time the farmer is to watch when moſt is ripe and none fallen, and then he is to get in his harveſt.

Buck-wheat may ſtand longer than almoſt any kind of crop for this purpoſe, for none holds the ſeed ſo firmly. But ſtill there is to be ſome regard to the ripeneſs; and when but little is left that can come to good, the whole is to be cut, that more than its value be not loſt in waiting for it.

The way of gathering it is by mowing; and when down it is to lay ſome days in the air before it is houſed; there is no great danger of accidents during this time, for ſcarce any thing is ſo hardy. When the ſtalks are grown limber, and the grain firm, it is to be carried in and thraſhed. The produce is very great. Fifty buſhels for an acre may be had from very moderate land, and much more is common from ſuch as is any thing rich.

The uſes of the ſeed are many, it ſerves excellently for hogs, who are fond of it, and fatten very well upon it: many kinds of poultry alſo like it; and in ſome countries it is eaten by the poorer people, made into a kind of pancake, with ſome wheat flower among it. It is a thriving food for horſes. But it ſhould be broke in a mill before they have it, otherwiſe the ſkin is ſo tough it paſſes through them without doing them any good. Cattle will alſo eat the ſtraw, but it is not nearly ſo nouriſhing as the grain.

BUD, that part of the ſeed which firſt begins to ſprout, or rather the leaves which firſt appear.

Bud, alſo ſignifies the ſprout from whence the branch ariſes. Theſe buds in ſome meaſure reſemble ſeeds, as under a number of ſcaly coverings the rudiments of the young branch are ſeen: but neither the lobes nor the young root are met with; becauſe this tender item is connected with a tree, which ſupplies it with the neceſſary food.

Bud is likewiſe uſed in ſome counties of England for a weaned calf of the firſt year; becauſe the horns are then in the hud.

BUDDLEJA. Theſe plants grow naturally in Jamaica and Carthagena, they may be propagated by ſeeds, which ſhould be brought over in their capſules or pods, for thoſe which are taken out before they are ſent to England ſeldom grow. They ſhould be ſown in pots as ſoon as they arrive, and very lightly covered; for as the ſeeds are ſmall, ſo if they are buried deep in the ground they will periſh. The pots ſhould be plunged into a moderate hot-bed. If the ſeeds are freſh and good, the plants will come up in about ſix weeks; and if they grow kindly, will be large enough to tranſplant in about a month after. Then they ſhould be carefully ſeparated, and each planted into a ſeparate ſmall pot, and plunged into the hot-bed again, obſerving to ſhade them from the ſun until they have taken new root. After the plants have taken freſh roots in the pots, there ſhould be freſh air admitted to them every day, in proportion to the warmth of the ſeaſon; they muſt alſo be frequently, but moderately refreſhed with water. When the plants have filled theſe ſmall pots with their roots, it will be propor to ſhift them into pots one ſize larger, that they may have time to take good root again before the cold weather comes on. When theſe are

new

new potted, the tan ſhould be turned over to renew the heat, and if it is wanted, ſome freſh tan muſt be added to the bed, to encourage the roots of the plants. In this bed they may remain till autumn, when they muſt be removed into the ſtove, and plunged into the tan-bed, where they muſt conſtantly remain, for they are too tender to thrive in this country if they are not ſo treated. During the winter they muſt have but little water, and ſhould be kept warm; but in ſummer they ſhould have freſh air admitted to them conſtantly when the weather is warm, and be frequently ſprinkled all over with water. With this management, the plants will flower the third or fourth year from ſeeds, and continue ſo to do every year after, and will make a good appearance in the ſtove.

BUGLE, [*Bugula*] *Middle Conſound.* There are ſeveral ſorts of this plant, growing in woods in England, on the Alps, and ſeveral parts of France and Germany; they may be propagated by ſeeds or by ſide ſhoots. The leaves have at firſt a ſweetiſh taſte, which gradually becomes bitteriſh and ſtyptic. They are recommended as vulnerary medicines, and in all caſes where mild aſtringents are proper.

BUGLOSS, [*Bugloſſum*] This is a rough, hairy plant, reſembling borage, but leſs prickly: a wild ſort is commonly met with in hedges, and among corn, which differs from the garden only in being ſmaller. Bugloſs has a glutinous, ſweetiſh taſte, accompanied with a ſenſe of coolneſs: the roots are the moſt glutinous, and the flowers the leaſt ſo. The qualities point out its uſe in hot, bilious, or inflammatory diſtempers, and a thin acrimonious ſtate of the fluids. The flowers are one of the four called cordial flowers: the only quality they have that can entitle them to this appellation, is, that they moderately cool and ſoften, without offending the palate or ſtomach; and thus in warm climates, or in hot diſeaſes, in ſome meaſure refreſh the patient.

BULB, or BULBOUS ROOT, among gardeners, ſignifies a root of a roundiſh form, and commonly furniſhed with fibres at its baſe. An uniform bulb, is when it is compoſed of the ſame matter throughout, without any lines intervening; a truncated bulb conſiſts of many coats ſurrounding each other, as in the narciſſus, tulip, onion, &c. A ſquamous bulb conſiſts of many ſcales lying over each other like the tiles on a houſe, or the ſcales of fiſhes, as the roots of the lily, martagon, &c.

BULBOCODIUM. The ſpecies are, 1ſt, Bulbocodium with narrow-ſhaped leaves, growing naturally on the Alps, and Snowdon Hill in Wales; the 2d, with ſpear-ſhaped leaves, is a native of Spain. They are both bulbous roots, and are propagated by off-ſets, in the ſame manner as other bulbous-rooted flowers. The time to remove them is ſoon after their leaves decay, but the roots may be kept out of the ground two months without prejudice at that ſeaſon. They ſhould not be removed oftener than every third year, for their roots do not multiply very faſt, ſo by ſuffering them to remain, they will flower much ſtronger, and make a greater increaſe than if they are often taken up.

BULL, the male of the cow. For the ſhape of your bull, he ſhould be one of a ſharp, quick countenance, his forehead broad and curled, his eyes black and large, his horns long, his neck fleſhy, his belly long and large, his hair ſmooth like velvet, his breaſt big, his back ſtraight and flat, his buttocks ſquare, his thighs round, his legs ſtraight, and his joints ſhort. This ſort of bull is the beſt for breed, and makes the beſt oxen for draught.

BULLACE-TREE. A wild plumb, growing in many parts of England, of which there are two ſorts, one white, the other black.

BULLEN, hemp ſtalks ſtripped of the bark.

BULLS-FOOT. COLTS-FOOT.

BULLWEED, GREAT KNAP-WEED, or MATFELLON, the name of a perennial weed common among corn: it riſes to about two feet high: the ſtalks are round, ſtreaked, and hoary: the bottom leaves are oblong and undivided, but thoſe which grow on the ſtalk are cut and divided. The flowers reſemble thoſe of the blue-bottle in ſhape, but are of a red colour. The ſeed is ſmall, oblong, reddiſh, and hairy in the upper part.

BUNIAS. There are two or three ſorts of this plant, brought from the

Levant and South of France. They are all propagated by seed.

BURNBAKING, or BURNBEATING, burning of land for corn. This art, usually called Denshiring, *quasi* Devonshiring, or Denbighshiring, (as being there most used or invented) is not applicable or necessary to all sorts of lands, but that which is barren, sour, heathy, or rushy, being either hot or cold, wet or dry, insomuch that most of them will yield in two or three years after such burning, more above charges than the inheritance was worth before. The common method for it is, with a breast-plough to pare off the turf, turning it over as it is cut that it may dry the better, which it yet need not in a hot season, but otherwise the turf must be turned and set a little hollow, that it may dry the better; and when it is thoroughly dry, let them be laid on small heaps, about two wheelbarrow load together, and then, if the turf be full of fibrous roots, or hath a good head upon it, it will burn without any additional fuel; if not, the heap must be raised on a small bundle of ling, gors, fern, or the like, that will set the whole on fire; and when reduced to ashes, let them lie till they be a little soddened with rain before they are spread, or else take a still time, that the wind may not waste the ashes, nor hinder their equal scattering. Care must be had that the turf be not over burnt; for if it be reduced into white ashes, the nitrous salt will be wasted, and the flower the fire is, the better the salt is fixt; the ground also under the hills must be pared somewhat lower than the surface of the earth, to abate the over-fertility caused by the fire there; neither must the land be ploughed but shallow, and not above the usual quantity of seed sown in an acre, and that also late in the year, (if wheat, towards the end of October) to prevent the excessive rankness or greatness of the corn, whereby the advantage of burning land may be judged, and this also on the poorest plains or heaths.

Some with the parings of the earth burn the roots of their gors, broom, and the like, which they have stubbed up, as others do the stubble they can rake up; another way is to pare off the heath or turf, and having made them into little hills, fire and burn them into ashes, and into every one to put a peck of unslacked lime, which is to be covered over with the ashes, and so let to stand till rain comes and slackens the lime, after which both are to be mingled together and spread over the land.

BURNING *of meadows or pasture land.* In several parts, where the ground is moist, cold, clayey, rushy, or moist, or subject to such inconveniences that the pasture or hay is short, sour, and not improveable, it is very good husbandry to pare off the turf about July or August, and burn the same after the manner specified in burning of land for corn, and then let it be plowed up immediately, or the following spring, and sowed with hay-dust, or with corn and hay-dust together; whereby that acid juice which lay on the surface of the earth that was of a sterile nature, and hindered the growth of the vegetables, will be evaporated away, and also the grass which had a long time degenerated, by standing in a poor soil, be totally destroyed, and the land made fertile and capable to receive a better species of seed, brought from other fertile meadows.

BURR-TREE. The ELDER-TREE.

BURDOCK, [*Arctium*] As these plants are seldom admitted into gardens, so it is needless to say any thing of their culture; but where they are troublesome weeds, it may not be amiss to mention that their roots last but two years, so they may be destroyed with less trouble than such as have abiding roots; for the plants which come up from seed do not flower till the second year, and when the seeds are perfected their roots decay.

BURNET, [*Pimpinella, Tragoselinum*] Of this plant are three sorts, 1. the greater burnet, with a white umbel. 2. Another greater burnet. 3. The lesser burnet. They are all hardy plants, and natives of this island.

The discovering a winter pabulum for cattle, was thought to be an object highly meriting the attention of the Society for the encouragement of arts, &c. Their secretary was directed to write to the persons distinguished for knowledge in matters of this kind in every part of Europe, to enquire what was the practice in their respective countries as to this point, and likewise to beg their own private opinions regarding

garding it. Their anſwers ſupplied but little light, by no means affording the ſo much wiſhed for information.

The late Mr. Rocque, a gardener, offered burnet, as being peculiarly ſuited to this purpoſe, from its hardineſs in retaining its vegetation in winter, its early growth in the ſpring, and its copious product in ſummer. The Society having ſeen ſpecimens of the plant at different ſeaſons of the year, were led to believe that burnet would prove a winter food for cattle, and accordingly offered premiums for the cultivating of it. Theſe premiums had the deſired effect, and burnet was cultivated both in drill and broad-caſt, in many parts of the kingdom.

Farmers are however much more likely to adopt the broad-caſt than the drill; and this or any other plant can be of little advantage to the nation till its cultivation be generally adopted by farmers.

The land on which it is ſown ſhould be in fine order, laid down very ſmooth, and as free as poſſible from weeds, eſpecially couch-graſs. It ſhould be well harrowed with a cloſe-tined harrow, and care taken to extirpate all weeds. About fourteen pounds of burnet ſeed are uſually ſown on an acre. Half this quantity would be nearly or quite ſufficient if the ſeed was good, which it ſeldom is. It may be ſown at any time from April to Auguſt, and then covered with a light harrow. But Auguſt is in general the beſt time, as it will not require to be weeded ſo often, and will cover the ground like a carpet by Chriſtmas, and be early for paſture the next ſpring; beſides, its growth is more uncertain when ſown in the ſpring. It preſerves its verdure all the winter, continuing to grow (though ſlowly) without receiving any injury from froſt or ſnow, however ſevere. There is a wild burnet, that does not live through the winter, which ſome have miſtaken for this plant. Great care muſt be taken to keep it free from weeds the firſt year; the ſecond year it will be ſo luxuriant and buſhy, as to keep itſelf free from weeds, by choaking them.

Its cultivation is neither hazardous nor expenſive; it grows faſt even in dry weather, and will certainly perfect its ſeed twice in one ſummer, and commonly laſts ſix years.

From various trials it appears, that burnet may be ſown with ſpring corn, without any injury to the crop, and is thereby kept much freer from weeds; hence it opens a very profitable method of procuring a quantity of excellent winter food for ſheep or neat cattle; and there is perhaps no graſs cultivated which conduces more to preſerve ſheep from the rot, or to cure them when juſt tainted, than burnet; of which we could give well-atteſted proofs.

The moſt proper time to cut it for hay, is as ſoon as the plant is in bloom; for the ſtalks, when it ſtands for ſeed, become dry, hard, and ſticky, and of courſe the hay muſt be but indifferent, when compared with that which is made while the ſtalk is tender and juicy.

Burnet is very wholeſome and nouriſhing for horſes, ſheep, cows, and pigs, and affords both corn and hay, the ſeeds being little, if at all, inferior to ſome of the Welſh oats. It makes good butter, and never blows or hoves cattle. It will flouriſh on light, ſtony, gravelly, flinty, or chalky ſoils. It may likewiſe be tranſplanted like lucerne, and will grow faſt after tranſplantation, even if the weather ſhould prove to be dry.

It very frequently happens that every farmer who ſows many acres with turnips, has ſeveral worth little or nothing; the fly, the dolphin, the black caterpillar, the dry weather, or ſome unknown cauſe, often defeating the induſtry and expence of the moſt ſkilful farmer. It would be adviſeable for him to ſow it with burnet, and in March and April following, he will have a fine paſture for his ſheep and lambs.

Burnet is a native of England, and will certainly perfect its ſeed twice in one ſummer; and a farmer, with a ſmall plantation, may ſupply himſelf with ſeed of his own growth at a very little or no expence. He may then be encouraged to make experiments on various ſeaſons, without much loſs or damage.

When it is thought proper to feed it, we would earneſtly recommend the farmer to hurdle it off, or to turn in a large ſtock to eat it off in a ſhort time; otherwiſe the ſheep or cattle will feed on the young and tender ſhoots,

and do great injury to the crop by trampling on it; this hint ſhould be adopted in all ſimilar caſes, for the graſs will ſhoot again much ſooner by being fed off quick and cloſe.

It muſt not however be diſſembled, that in ſome places both horſes, cattle, and ſheep, abſolutely refuſe to touch burnet, and will ſooner ſtarve than eat it; while in others they will eat it very greedily. It may therefore be proper to intimate, that an experiment ſhould be tried upon a ſmall plot of land before the farmer engages too far in its cultivation. This extreme fondneſs or diſlike in cattle, is hitherto unaccounted for; but is generally ſuppoſed to be owing to the plants imbibing a diſagreeable taint from the ſoil in which it grows.

Though it may be preſumed in general, that animals, by inſtinct, chuſe thoſe plants which are ſalutary, and reject the hurtful ones, yet experience ſufficiently ſhews, that this rule is not invariable, nor is inſtinct always infallible, among domeſtic animals at leaſt; which having but little freedom of choice in their food, have their taſte in all probability depraved as much as that of the human ſpecies. Every farmer knows that ſome cows will not at firſt touch turnips, and that many take to them with reluctance; and yet it is equally well known, that there is ſcarcely any kind of green food more nouriſhing, or more palatable, to both ſheep and cattle, after they have been once accuſtomed to eat them.

On the other hand, their freely eating plants which are at firſt offered them, does not in every inſtance afford a certain proof of the plant's being either wholeſome, or even innocent. Linnæus obſerves, that animals which have been uſed to feed in the open fields, are commonly hurt when put into woodlands, by eating plants that are pernicious, which the cattle that were bred in them have learned by experience to avoid. Here then it is experience and not inſtinct that guards from danger.

BURNT-GRAIN, a diſtemper common to corn, and too often confounded with ſmut, though it is, in fact, very different, and much more dangerous.

The ſmut, properly ſo called, occaſions the total loſs of the diſtempered ears; but as the black duſt is very fine, and the particles of it have no coheſion, the wind and rain carry it off, ſo that ſcarcely any thing is houſed in the barn, &c.

The burnt-grain is, on the contrary, often laid in the granary with that which is ſound, to which it communicates a contagious diſtemper, and alſo darkens the flour, and gives it a bad ſmell.

The characters of this diſtemper are,

1. The plants that produce burnt ears are ſtrong and vigorous.

2. The infected ears are not at firſt diſtinguiſhable from thoſe that are healthy; but when they are paſt their bloom, they appear of a deep green colour, approaching to blue; they afterwards become whitiſh, and are then eaſily known. As this change of colour is effected by the ſun, when a number of white ears have been ſuddenly perceived in looking over a wheat-field, the ſun's heat has been often thought to cauſe this diſtemper, or a fog preceding the heat.

3. Though all the ears produced from one grain are commonly infected, yet M. Tillet, Aimen, and others have met with ſound ears on plants that had produced others which were infected. They have even found ears, part of which only were vitiated, and finally ſome grains incloſing partly a white flour, the remainder black duſt.

4. In burnt ears, the chaff, or outward coat, was commonly found, with this ſingle difference, that when the ears were near ripe, it appeared more withered and dry than in the healthy ears.

5. The bran which immediately incloſed the grain, is not deſtroyed, as it is in the ſmut, properly ſo called; but has conſiſtence enough for the grain to preſerve nearly its natural form, with a whitiſh look.

6. The burnt-grains are ſhorter, rounder, and lighter than ſuch as are uninfected: they are ſometimes larger, ſometimes ſmaller. The furrow which runs the length of a grain of wheat is ſometimes totally effaced, at others is viſible: the piſtils at the extremity of the grains are dried up.

7. The bud of burnt-grains is not viſible.

8. Till the blooming ſeaſon, there is very little difference betwixt the burnt-grain and that which is healthy: they are

are only a little more ſwelled. But in the blooming ſeaſon the infected ears aſſume a bluiſh colour; the chaff is more or leſs ſpecked with ſmall white ſpots: the grains are of a deeper green, and larger than in a ſtate of nature; and, as long as they preſerve that colour, they adhere ſtrongly to the chaff. The diſtemper has often attacked very young ears, while yet encloſed in the ſheath. The ſtamina on the ſides of the grain are then dried up and ſickly; the embrio in part takes the deep green colour above mentioned; the infected ears have not the conſiſtence of thoſe that are healthy: in the ſame meaſure the diſtemper advances, the chaff becomes dry and whitiſh.

9. The grains have ſome degree of firmneſs. On opening them, which may eaſily be done with the nail, there appears an unctuous, dark, brown, ſtinking ſubſtance, not at all reſembling the light duſt of ſmutty ears; the duſt of burnt-grain has ſome coheſion, and through a microſcope appears to conſiſt of larger particles than that of the ſmutty ears.

10. Some time before the blooming ſeaſon, the grains appear to be filled with a whitiſh ſubſtance, a little burnt towards the bottom, and this colour extends by degrees over the whole ear: the grain then appears divided, as it were, into equal quarters by furrows; which diſappear as the grain increaſes in ſize.

11. By what has been ſaid, it is evident that ſmut infects corn much ſooner than the burnt-grain.

12. Grains that are much burnt are evidently incapable of ſprouting. But ſome ſound grains have been taken from an ear greatly burnt, which, in a kitchen garden, have produced very ſtrong plants; and though the birds diſturbed the experiments, it appeared clearly that there were ſome found ears amongſt many more that were infected.

13. A part of the burnt-grain is bruiſed by the flail, and their black duſt is ſcattered over the ſound grain; this unctuous duſt chiefly ſticks to the hairy extremity of the grain near the bud; it there forms a black ſpot. Corn ſo affected, is called *ſpotted grain*: many of the grains which eſcape the flail remain entire, on account of their lightneſs; a great deal is ſeparated by throwing, but the ſpotted grain remains as well as many that are burnt; and this is enough to darken the flour, and give it a bad taſte.

14. To remedy this inconvenience, and make the beſt bread, they paſs the corn through the drum-ſieves, (*cribles a tambour*) made of pierced iron-plates, like the graters with which they raſp tobacco; the corn is then waſhed, and all the light grains that ſwim, ſkimmed off, which are moſtly burnt. The water takes off the ſpots, which are but ſuperficial; for if a ſpotted grain is wiped, the ſpot immediately diſappears.

With reſpect to the cauſe of this diſtemper, we are hitherto as much at a loſs as in the caſe of ſmut. Some have attributed it to dung; others to fogs; many to the heat of the ſun; ſome to inſects; others to the moiſture of the land; and not a few to the ſeed not being ripe: but theſe opinions are confuted by good obſervations, and by experiments very carefully made.

It may ſeem improbable that a mere ſuperficial duſt, that only ſticks to the bran, without penetrating the grain, ſhould be ſo contagious as to infect all the grain it touches with a diſtemper; what is more ſurpriſing is, that it ſhould injure the organs of fructification only. Yet, however improbable this may appear, the experiments made by Monſ. Tillet put it paſt a doubt; they ſhew that the farmers are not without reaſon cautious in avoiding to ſow ſpotted grain.

As it would take up too much room to mention, at large, all the experiments made by M. Tillet, which are to be found in the papers publiſhed by him on that ſubject, we ſhall content ourſelves with relating the reſult of theſe experiments, and the inferences this able naturaliſt draws from them.

Several writers having mentioned dung as the immediate cauſe of this diſtemper, and others having aſſerted that it was hereditary, all M. Tillet's experiments were calculated to clear up theſe two points. He was at the ſame time in hopes, by means of the ſame experiments, of finding ſome method of guarding againſt this terrible diſtemper.

1. The ſeveral kinds of dung had no viſible effect in producing burnt-grain. The infected ſeed produced as much

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burnt-grain in the ground that was not dunged as in that which was. He did not find that dung had any effect, either in favour of, or againſt the diſtemper.

2. Dung made of ſtraw of the infected grain did not ſeem to communicate the diſtemper; but the infected ſtraw unrotted ſeemed to communicate it. Yet the effect was moſt viſible when the duſt of burnt-ears was mixed with the earth.

3. All grain naturally ſpotted, whether it grew on the land, or was brought from another place, bearded-wheat, ſummer-wheat, and wheat without awns, produced a great deal of burnt-grain.

4. Picked wheat, taken from the fineſt ears, and carefully ſelected grain by grain, that none of it might be infected, being ſowed, ſome in dunged, and the reſt in undunged beds, without having received any preparation, yielded little or no burnt-grain.

5. Some of this ſame picked wheat being ſprinkled with the duſt of burnt-grain, produced as many diſtempered ears as that which was naturally ſpotted.

6. The picked wheat, being prepared with lime and a ſolution of ſea-ſalt, yielded ſtill fewer infected ears than when unprepared.

7. There were ſtill fewer from what was prepared with lime and nitre.

8. Early or late ſowing ſeemed to be a matter of indifference.

9. It appears by M. Tillet's experiments, ſeveral times repeated, that the duſt of burnt ears is contagious, ſince ſound wheat ſprinkled with it, or ſowed in rills in which that duſt had been put, produced a great number of infected ears. He alſo found that this duſt, though expoſed to a ſtrong heat, as of ſixty degrees, is ſtill contagious, unleſs it is abſolutely burnt by the fire, when it has not that effect. Though it is kept for years, its infectious quality continues as ſtrong as ever.

10. Some farmers waſh the ſack in which they put their ſeed. And it appears by M. Tillet's experiments, that they are in the right; for if the ſacks had any of the duſt on them, it would certainly infect ſome of the ſeed corn.

11. M. Tillet thinks he has obſerved, that the infected plants are more ſuſceptible of injury from froſt than others.

If this is the caſe, hard froſts muſt be ſerviceable, ſince by deſtroying the infected plants, they would have the ſame effect, as if ſuch plants had all been pulled up. The land being cleared of theſe uſeleſs plants, would be better able to ſupply ſuch as are found with nouriſhment, and the crop would be exempt from infected ears, which are a great hurt to it.

12. The black duſt ſo contagious, is not ſo to rye or bere; but the duſt of darnel is pernicious to wheat.

13. Smyrna wheat is leſs ſubject to this diſtemper than other grain; but ſummer wheat is greatly injured by it.

It muſt be allowed that the knowledge which has been acquired of the cauſe of this diſtemper, has put the curious obſervers in a train of finding proper preſervatives. In fact, as the duſt of burnt-grain infects all the grain it touches, it is probable that every method ſhould be deemed efficacious, that is capable of taking away this duſt, provided the virus has not from its firſt contact affected the interior part of the ſeed intended to be ſowed. In this caſe the ſeveral ſieves which we have recommended to be uſed in the preſervation of corn, and the waſhings with fair water, which in many places is uſed on ſpotted grain, may be mentioned as efficacious preſervatives, as well as lime-water which our farmers uſe, the ſtrong brine uſed in ſome provinces in France, and the ſolution of arſenic, of which ſome perſons have made ſuch a ſecret. All theſe preparations ſhould be of ſervice; and, according to M. Tillet's experiments, they are ſo: yet they are often inſufficient. This point, therefore, merited to be cleared up by particular experiments, and with all neceſſary care, M. Tillet ſet about it with ſpirit, and the following are the inferences that may be drawn.

1. The effect of the black duſt on the ſeed is only ſuperficial till it is put into the earth, not at all affecting the interior parts.

2. Therefore every means that can tend to clear them of the duſt, muſt be of ſervice to keep them healthy, and free from the diſtemper.

3. Grain perfectly free from this, and

and from rottenneſs, will yield no diſtempered plants.

4. Grain blackened with this infectious duſt, may be made healthy by clearing it of ſuch duſt.

5. Sifting ſeed, and waſhing it in ſeveral waters, leſſen, it is true, the effects of the contagion; but this is not ſufficient, as many infected plants will be produced, though the ſeed was waſhed in ſeveral waters.

6. Lime, which is more efficacious than water, is not always enough ſo. We ſhall obſerve on this occaſion, that ſeed was formerly limed in a manner different from what it is now. The ſeed was then put into baſkets, which were plunged into lime water very hot. The ſeed was ſtirred in the baſkets, and all that ſwam on the water was taken out with a cullender; by this means they got rid of the infected grain; and the good ſeed was better cleaned, than by only throwing, as they do now, lime-water on a heap of ſeed, which is then ſtirred with a ſhovel, or by only mixing the ſeed with ſlacked lime reduced to powder.

One of our farmers, a careful man, being obliged one year to ſow ſpotted ſeed, he limed it by immerſion, in the manner above deſcribed; and the year following had no burnt grain.

Some experiments made in the country of Caux, by M. de Gouſreville, have been publiſhed; they evince the good effects of lime uſed in the manner we have mentioned. And what is ſtill a farther confirmation of this is, that whenever our farmers ſow ſeed that has not been limed, their fields are amazingly infected.

7. It is a good precaution to waſh ſpotted grain in ſeveral waters; but it ſhould be ſoaked in brine, and this brine ſhould be abſorbed by lime, by immerſion, as we have deſcribed.

A ſtrong brine of ſea-ſalt is very good, and may be employed to great advantage in countries where ſalt is a merchandize.

9. One part of nitre to nine parts water is more efficacious than ſea-ſalt; this, therefore, ſhould be uſed where nitrous earths abound.

10. Strong alkaline lyes are ſtill better; ſalt-wort, pot-aſh, aſhes of tartar, lyes of common aſhes much impregnated with ſalt and human urine, or cows urine alkaliſed by putrefaction: of theſe various articles, ſuch may be choſen as are moſt common. For inſtance, in Normandy aſhes of ſea-wreck, which are very cheap there, may be uſed. This, which is rejected for dying and lyes, as being more impregnated than alkaline with ſea-ſalt, may be advantageouſly uſed in the preparation of ſeed.

11. As it is evident that ſeed picked with care yields very few infected grains, it muſt, of courſe, where a farmer has ſpotted grain, be of great advantage to him to change his ſeed, in order to procure what is uninfected.

12. M. Tillet's proceſs may be comprehended in what follows: if the ſeed is ſpotted, it ſhould firſt be waſhed in ſeveral clear waters, till the black is quite got off; it ſhould then be put into the ſteep. If it is not ſpotted, ſoaking it in the following liquor will be enough. Make ſome lye, ſuch as is uſed for linen, in a bucking-tub, putting four pound of water to every pound of aſhes. If one hundred pounds of aſhes are uſed, and four hundred pounds of water, there will be two hundred and forty pounds of lye, to which muſt be added fifteen pounds of lime, which will be enough to prepare ſixty French buſhels of wheat (between ſixteen and ſeventeen buſhels Engliſh meaſure). When this ſteep is to be uſed, it muſt be heated as hot as you can bear your hand in it; the ſeed being put into baſkets, muſt be plunged into it, and ſtirred with a ſtick; the baſkets muſt then be raiſed and kept up by ſticks on the edge of the bucking-tub for the lye to drain; the ſeed being thus prepared muſt be laid on the floor of the granary till it is dry enough to ſow. If it is prepared long before it is wanted, it muſt be, from time to time, ſtirred with a ſhovel to prevent its heating; with this precaution it may be kept a month, or even a whole year.

Some ſeed was prepared in this manner at M. Taponat's, near Rochefoucault in 1760; and in 1761, the corn ſo prepared was uninfected; whilſt in the neighbouring fields what was unprepared, a fourth, a third, and even half the crops were ſpoiled by this diſtemper.

All the trials that have been made evince, that acrid ſubſtances are proper remedies for this diſtemper: We alſo believe all the ſteeps to be good; but prefer M. Tillet's, as being more acrid,

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and leaſt coſtly. We imagine lye that had been uſed for linen might do, only ſtrengthening it with ſome ſea-wreck, and putting twice as much lime. We know this lye to be very acrid, but cannot anſwer for its efficacy in preſerving corn from being burnt, becauſe for ſeveral years paſt, we have ſcarcely had any of our grain ſo much infected.

13. Several farmers in different provinces have uſed a ſolution of arſenic to prepare their ſeeds. Great complaints have been made in all quarters of it. Among others, a phyſician publiſhed an eſſay to ſhew of how much importance it was to prohibit the uſe of this poiſonous ſteep. He there enumerates all the accidents that have happened to the ſowers, and to the men that made the preparation, of which himſelf was a witneſs. Since M. Tillet has given us a method ſimple and innocent in itſelf, but little coſtly, and of great efficacy to clean ſpotted grain; it is to be preſumed that nobody will uſe this pernicious drug, from which ſuch melancholy conſequences may enſue, if by accident any of it ſhould be mixed with the meal, and if the light corn is given to the poultry or cattle; beſides, this poiſoned ſeed muſt kill the partridges and pigeons that eat the uncovered grain.

As ſome people are fond of making objections, it may, perhaps, be urged, that if the black duſt was ſo infectious, this diſtemper would make from year to year ſuch progreſs, that in the end we ſhould have nothing but burnt-grain. But we need not be apprehenſive in this reſpect: and a year in which much corn is infected, ſucceeds one in which ſcarcely any burnt-grain was to be met with. Scarcely any was to be found in the crops of 1754, 1760, and 1761.

In reflecting on this objection, which has ſome weight, I think I have found an anſwer to it in M. Tillet's obſervations, which is, that hard winters, paſt all doubt killing the diſtempered plants, ſtop its progreſs.

It may alſo be ſaid, that if this diſtemper is only cauſed by the infectious duſt, how can it at firſt get footing in a province that was before unacquainted with it?

It is readily allowed that this diſtemper may be attributed to other cauſes beſides the black duſt: but M. Tillet's experiments inconteſtibly prove this duſt to be contagious: and his reſearches ſupply us with the means of leſſening conſiderably, if not entirely extirpating this diſtemper: thus we may have larger crops, better bread, and corn more proper for keeping. What a ſatisfaction muſt it be to a man to have made a diſcovery ſo uſeful to his fellow-creatures, whoſe chief food is the ſeveral ſorts of grain? We ſhall ſoon ſee whether habit, ſupineneſs, and ill-judged œconomy in the farmers, will not prevent them from reaping any benefit from M. Tillet's labours, who yet propoſes to them ſimple and cheap methods of attaining an end which to them ought to be of infinite conſequence.

BUSH, in botany, a term uſed for divers ſorts of low growing ſhrubs; thus we ſay a gooſeberry-buſh, a currant-buſh, a furze-buſh, &c. it is alſo uſed when there is an aſſemblage of branches growing interwoven, or mixed together.

BUSHEL, Wincheſter meaſure, is eight gallons, in ſome counties nine, and in others twelve.

BUTCHERS-BROOM, [*Ruſcus*]. See *Bay of Alexandria*.

BUTTER, [*Butyrum*] is the oily or fat part of the milk, which firſt ſeparates of itſelf in form of cream, and after that needs but little trouble, at leaſt but little art to bring it into the condition of an elegant, ſolid, yet ſoft ſubſtance, pleaſant to the taſte, and fitted for many purpoſes.

Butter is made from cream by the aſſiſtance of motion only: this may be given it any way, and provided it be in a proper degree, the effect will be produced. This motion in the common way of performing it is called churning: and the uncertainty of that has led the ingenious to contrive many methods of ſupplying the place of beating by the repeated labour of the hand; ſome of theſe are much worſe than the old plain way, and there are others that really deſerve the name of improvements.

There are certain particularities relating to butter, much better known than underſtood: it will be very well worth while for thoſe who have the convenience of being upon the ſpot,

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to endeavour to diſcover the reaſons. In the mean time all we can do is to mention the facts.

Suffolk butter is famous for keeping, which is a quality of ſo much importance, that every method is to be taken in hope of finding the cauſe of it. Indeed there are methods of making any butter keep longer than may at firſt be imagined practicable; if good butter be made up in lumps of forty pounds weight, and a little more ſalt be put in than is uſually allowed, and they be afterwards put into a large bin of flour, they will keep the year round without damage.

Toward the end of autumn butter is apt to taſte bitter. This is one of thoſe things better known than its cauſe; it has been ſaid that the reaſon is, that graſs beginning to grow bare at that time, the cows eat the leaves that fall from the trees; but however true it may be that cows will feed in this manner, it is not true that this is the cauſe of the butter's being bitter; becauſe in the fen countries, where there are no trees, and where ditches ſerve inſtead of hedges for incloſing, the ſame thing is apt to happen at the ſame ſeaſon, as in places where there is ever ſo great plenty of wood.

Though we cannot abſolutely aſſign the cauſe of this, we can tell the houſewife how to prevent the damage, which is enough for uſe if not for curioſity. There needs no more to this than to ſkim the cream after a ſhorter time ſtanding. When milk ſtands too long the cream hardens on the top of it, and the butter made from ſuch cream is bitter; this ſhews that too long ſtanding alone may be a cauſe of bitterneſs in the butter, and for that reaſon, where there is danger of the ſame accident from any other cauſe, one would take care to prevent this from joining to make it worſe: on this principle has been founded the practice of ſkimming milk earlier at that ſeaſon of the year; and the conſequence has ſhewn that this alone will prevent the bitterneſs of the butter, whatever elſe was the cauſe that would have made it ſo.

In Devonſhire, and ſome other places, they make a particular kind of butter, which from the manner of ordering the cream, is called ſcalded butter. The advantage of this is not only its being particularly well taſted, but that it will keep a month without damage. The way they raiſe their cream for this purpoſe is the ſame the chemiſts uſe when they have a mind to give any thing a gentle heat, without burning it to the veſſels, and which they call a *balneum mariæ* or water heat.

It is done in the ſcalding the Devonſhire cream thus.

They ſtrain the milk into veſſels as is uſual, and ſet it by for the cream to riſe. Ten hours afterwards, when the cream is riſen in the common way, they ſet the veſſel with the cream, milk and all, over ſome water in another veſſel, ſo that the water reaches half way up that wherein the cream is: this done they ſet the veſſel of water over a ſtove, and gently heat it till the cream is thoroughly and perfectly riſen, and the milk underneath is quite thin and blue. The gradual and ſoft heat does this, throwing up the whole cream perfectly, and at the ſame time doing it a great deal of ſervice, for the article of keeping by the heat.

When it is in this condition the cream is ſkimmed off with a ſkimming diſh full of holes, and the blue milk is let to run perfectly away from it.

In this condition it is a kind of clouted cream, the fire ſo gently conveyed to it has done it great ſervice; and it may be kept with proper care ſeveral days, ſo that enough of it may eaſily be got together for churning. All that is needful for preſerving it during this time, is ſhifting it once in four and twenty hours into a freſh and perfectly clean veſſel. This is one of theſe inſtances wherein we ſee the value and advantage of cleanlineſs, but it is not particular, its good effects are univerſal. As to the churning of this cream no difference is to be uſed from the common method.

The cream is now ready for the churn, whether freſh or kept according to the rules we have given for that purpoſe, and we ſuppoſe the time arrived when convenience calls for the making of the butter. We ſhall conſider firſt the common way of making it with the old faſhioned and long uſed churn. This is a veſſel of wood, tall and deep, wideſt at the bottom and

narrower to the top, where it has a cover that falls in close, and has a hole in its middle. Through this hole is let the handle of the inſtrument, wherewith the cream is to be beat; this conſiſts only of that handle, and a round board, like a broad thick trencher at the bottom, in ſize ſuited to the middle of the churn. When this is put in, the handle is let through the hole of the cover, and that is then put on and faſtened down. This is the whole contrivance of this familiar and uſeful inſtrument; all that is required for making of butter is well beating of the cream. And it is very well done by this inſtrument, for the cream being in the churn, the working of the handle up and down in the hole of the lid naturally agitates and beats the cream, and the faſtening of the cover prevents its riſing out.

This churn, which is the good houſewife's old implement, is to be made clean with all poſſible care, by thoroughly waſhing and ſcalding, and then expoſing it to the air to ſweeten and purify. When every part belonging to it is thus perfectly cleaned, it is to be brought into a proper part of the dairy, and this differs according to the ſeaſon, for which reaſon there can be no particular fixed place for its ſtanding.

All niceties are to be obſerved in churning, for it is well known to the houſewife, to be a very precarious article; and often when all the care poſſible is uſed, the work goes on very vexatiouſly, and the butter will not, as they expreſs it, of a long time come.

A moderate temperature of the air is the moſt favourable for the working of butter; wherefore, according to the ſeaſon of the year, this muſt be favoured by the place of the churn. In every dairy there are ſome places warmer and ſome cooler than others. Now in winter the churn muſt be ſet in the warmeſt place; and in ſummer on the contrary it muſt ſtand in the cooleſt, for the ſucceſs of the work.

In the ſame manner the time of churning muſt be varied according to the weather. In the heat of ſummer, the weather being naturally too hot for the making of butter, no hours are proper but either very early in the morning, or very late in the evening, becauſe then only the air is in that temperate way, ſo eſſential to this buſineſs; on the other hand, as the air is too chill and cold in winter, the ſame caution muſt be uſed in an oppoſite manner of choice, that is, the middle of the day, and no other time is to be taken; becauſe it is at the noon time alone, in theſe ſeaſons, the air is any thing like temperate.

The hour and the place of the churn being fixed, the houſewife has nothing to do but to go to the work. She is firſt to ſtretch a coarſe, ſtrong, and very clean cloth acroſs the top of her churn, and through this to pour the cream. Cleanlineſs we have all along preſcribed as the firſt virtue of the dairy, but here it is ſo very eſſential, that the admixture of the leaſt particle of dirt might prevent the whole buſineſs, and all the labour be done in vain. When the cream is ſtrained and preſſed through this cloth, the churn is to be covered in with the whole preparation, and the maid is to go to work.

There is great uncertainty as to the time of the butter coming, but this depends more upon the manner of beating, than any of thoſe fantaſtical cauſes to which it has been aſſigned. Thus a heavy, tedious, dull manner of beating gives the cream time to gather again between ſtroke and ſtroke, when it was about to break; and on the contrary, the ſwifteſt work does the moſt buſineſs. Therefore let the miſtreſs firſt examine the manner of working of thoſe who complain, ſhe will commonly find lazineſs is the devil in the churn, that ſets his ſpell upon the butter. Let her overſee the work at firſt, and ſee it is done briſkly, with ſwift, ſharp ſtrokes, and tell the people, for their own ſakes, to continue it in the ſame manner.

She will know by the ſound of the ſtrokes how the work goes on. At firſt the noiſe is a deep and heavy ſound; but after a time, the ſooner the ſharper the ſtrokes, it will begin to be higher and ſharper. This is a proof the cream begins to ſeparate from the thinner part that yet remained with it, or as they commonly expreſs it, that the butter comes: the work is now to be continued with the ſame ſpirit and earneſtneſs, and the effect will ſoon follow. The ſtaff will be perceived to work

work lighter; and ſoon after this, upon opening the churn, and examining the top of the lid on the inſide, there will be found drops ſticking to it that look yellow. The butter is now coming, and there will ſoon be an end of the labour, for theſe drops are abſolute butter, and when the change is thus perfect in one part, it will not be long before it be ſo throughout; after a few ſtrokes more let the churn be again opened, and there will be found butter on the ſides as well as lid, and every where, ſo far as the ſplaſhing can reach.

The butter is now made, and is only to be got together. For this purpoſe the lid and inſide of the churn muſt be ſcraped clean, and the butter, which is got off from them, muſt be put down among the reſt into the body of the churn; then all is to be covered up again, and the work continued, but not with hard downright blows, but with a kind of ſlight rounding ſtrokes; for all that is to be done now is to get the butter together into a lump in the churn, that none of it may remain in ſeparate pieces. When this is done the butter is finiſhed, and is to be taken out of the churn.

This is the general method; and theſe which we have named are the cautions always to be obſerved: but having thus far explained theſe, we ſhall now enter upon thoſe particulars which promote or retard the formation of the butter in the churn, that the houſewife being aware of what will prevent her ſucceſs, may guard againſt it; and knowing what will forward it, may purſue it.

The temper of the air we have named already, as a very great article, and are to repeat the ſame here on another occaſion; for it not only may retard the coming of the butter, but may ſpoil it when it is made.

Over hot weather not only makes churning difficult, but the butter, when it is made, is ſo far influenced by the weather, unleſs properly guarded againſt, that it is whitiſh, brittle, and bitter; we have ſhewn how to avoid theſe accidents, by taking an early or late hour and a cool place. The early hour is better than the late, for the air is cooler in the morning before the ſun riſes, than it can be in the evening, after it is ſet, becauſe in one caſe it has been heated all the day, and in the other it has been all the night cooling; as to the place, the hotter the ſeaſon, the cooler that muſt be.

In ſummer, as the heat of the air is the occaſion of the difficulty in bringing the butter, the houſewife muſt take all poſſible means to prevent adding to the natural heat of her cream, and to cool it gradually.

We have adviſed very briſk working of the ſtaff in general, but here muſt be a kind of exception, for too much motion will occaſion heat; and therefore in extream ſultry times it will be better to manage the blows accordingly, making every blow ſmart and ſure, but not repeating them ſo quick upon one another.

There is ſome myſtery and art in churning at any time, but it is at this that the main difficulty occurs; and if it be not managed according to theſe directions, there will be a great deal of perplexity and plague.

In the next place, let the houſewife take care that ſhe does not add to the heat occaſioned by the weather, by any heat in the churn itſelf; and farther let her abate the heat when it is naturally ſo much that nothing can be done by cooling it.

With reſpect to the firſt article, as her churn is to be ſcalded in order to make it perfectly clean and ſweet for the uſe, let her take care that it be thoroughly cooled, before ſhe puts her cream into it. Scalding water gives a great deal of heat, and wood keeps it a long time: therefore let the ſcalding of the churn be the firſt thing done in the preparation for the work, and let the churn be thoroughly examined by the hand half an hour at leaſt before it is uſed, that it may be cool. Wood will retain heat when the hand does not feel it, but half an hour's cooling, after no more is perceived, will ſet it right. In very hot weather it will be well to wet the churn with pump water freſh pumped, a little before the putting in the cream.

Under theſe cautions, and uſing the proper hours, there is reaſon to hope the butter may come without much difficulty; but if, after a moderate time, there be no appearance of it, as nothing can be reaſonably ſuppoſed to be the cauſe but heat, let a waſhing tub be a third part filled with freſh

pumped water, and brought to the place where the maid is churning; let the churn be placed into this, and if the water do not reach as high up the outside of it as the cream rises within, then let more be added till it does: let the work be now carefully continued, and commonly, as soon as the effect of the water is felt through the wood, the butter will begin to come. It is not only that the cream is thus brought to that condition of warmth, in which the butter comes best, but the sudden change is of great assistance.

These then are the little particulars by which the housewife will be able to assist herself, in cases when the too great heat of the weather prevents her success; on the contrary, when her difficulties are owing to too cold an air, she must, in the same manner, assist nature by giving a little warmth.

We have advised her, in the other case, to be very careful to see the churn be cool from the scalding, but in this she will do well to examine the vessel how it cools by degrees, and to strain in her cream while there is yet some warmth remains in the churn, from the water that cleaned it. This will give a little help to the cream; and the maid must be ordered to work it more briskly than ordinary; indeed the coldness of the weather usually puts her in mind of this, and the less admonition is needful.

If with this assistance the butter do not come, let the churn be taken into the kitchen, and placed not within the reach of the fire directly, but in the air of it, this will by degrees bring the cream to the due temper. Then the work of churning is to be continued briskly, and it will not be long before there come good butter.

There is generally more trouble in getting butter in very cold weather, than at any other time, but by these little assistances it will be greatly alleviated; and there is nothing in all this that will be at all prejudicial to the taste or colour.

The butter being now formed in the churn, and by the last strokes worked together into one large lump, is to be taken out and finished by a gentler operation; the strokes of the churn would be now too harsh, it must be moulded in the hands into a better consistence.

The lump of butter in the churn is to be taken up with both hands, and removed out of the liquor. In this there comes a consideration, which is only to be determined by the time the butter is intended to be kept: if that be short, that is, if it be made for immediate use it is to be thrown into water immediately, on taking it out of the churn, if otherwise not.

Therefore which ever be the case, let a very clean pan of earthen ware glazed, be set ready by the churn, and if the butter be designed for use immediately, let this be half full of clean fresh water; if not let it be empty.

The lump of butter being lifted out of the churn must be put into this pan, and there worked thoroughly to and fro in the water, or without, labouring it with both hands, and moving it frequently about; by this means the buttermilk that remained in it after the churning will be thoroughly washed out, and the butter will be pure and of a firm and good consistence: the well working, turning, and tossing the lump at this time of the operation is a very material article, for to that alone the butter owes its purity, its good consistence, and in a great measure its colour, at many times of the year.

The buttermilk being thus perfectly separated, one of the two points intended by the working in the finishing of it up, is obtained; the other is the perfectly cleaning of it.

The last thing to be done is the salting. We are not here speaking of the salting that is to prepare butter for long keeping, but just of that which is done to give it a relish. Butter is very insipid when it is made up entirely without salt, so that the freshest should always have some. It is to be worked into it in this manner. The butter that has been cut and cleaned is to be spread out thin with the hand, in the bottom of a broad shallow dish; and then a very little salt is to be sprinkled carefully over it, the design being to mix it as equally as possible in the whole quantity; it is then to be worked up well in the hands, and is done: it may be wrought up into rolls, lumps, or dishes, or formed in any shape most saleable at market, or most convenient in the family. Having thus gone through the whole work

of

of making butter, and making it up freſh, we ſhall proceed to the ſalting of it, that being a very eſſential part in the farmer's traffic in ſome places. But here, as we have named only the plain good old family way of churning, it may not be amiſs to obſerve that there are others which have their uſe.

The ſweep is a kind of churn which works in the manner of a pump, and is uſed with a great deal of eaſe and advantage in many places: in other parts of England they prefer the barrel churn, and it alſo anſwers very well; theſe inſtruments are to be had at the turner's, therefore we ſhall ſay no more of them here, as we ſhall not take upon us to recommend them, though we allow they are good in their kinds; the other always, ſo far as we have ſeen, very well anſwering its purpoſe.

The greateſt preference that is made for uſing theſe, is the quantity they can manage, and the expedition of the work; but twenty gallons of cream may be wrought at once in a common churn, big enough to hold thirty. When the quantity is ſo large a woman alone is not able to manage it, but a man and maid do it perfectly well.

In hot weather butter, though very well made, will ſometimes continue too ſoft; and this will be a great diſadvantage in reſpect of the carriage to market, and ſometimes hurt the ſale. In this caſe, as the cauſe is known, the remedy is eaſy. Too much heat being the occaſion, a little additional cold will ſet all to rights. This may be done with great eaſe by the help of a well, which is a convenience few farms want. Let the butter, when it is thoroughly made, and properly ſalted, be rolled into lumps, pounds, or half pounds, according to the demand there is expected for thoſe ſeveral ſizes, and put carefully into a baſket: let a long rope be faſtened to the handle of this baſket, and let it be let down into the well till it come within two foot of the water. In this way let it hang all night, taking care no accident happen to it by thieves or careleſſneſs of ſervants, and in the morning let it be drawn up, and ſent to market. The cold air that lies juſt above the water in the well, will have the ſame effect as the natural cold of winter, and it will be as hard as butter commonly is in November.

With reſpect to the ſalting of freſh butter, the particular fancy, and taſte, and cuſtom of the country, are to be ſo far conſidered, that it is very difficult to eſtabliſh any general rule; but in a moderate way we may ſay, that a pint of ſalt will ſerve for twenty pounds of butter; ſome go as far as a pint and half for that quantity, but 'tis too much, for only the flavour of the ſalt is wanted, to take off the inſipidity of the butter: therefore the leaſt that will do is beſt; but thoſe who go much under a pint to twenty pounds do not anſwer their purpoſe, for the ſalt is not ſo much as taſted when ſo little.

Whey BUTTER. Whey butter is a thing little known in London, but 'tis often made in the country, for the ſervice of farmer's families. It is like other butter, but poorer and rank; and made from a cream got out of whey, as the other is from the cream of new milk.

A kind of ordinary cheeſe is made from the buttermilk, when new milk is churned for butter inſtead of cream; and in the ſame manner in this inſtance, a poor kind of butter is made from the whey of curds made from new milk. *See other Side.*

The method of making it is thus. When curds have been made from new milk, the whey which is drained off is to be ſet in large pans, or other broad and ſhallow veſſels, and placed in a quiet part of the dairy, juſt as new milk would be for cream; there will riſe a cream upon this, though not like that from new milk, and it is to be ſkimmed off and churned in the ſame manner.

Beſide the inferior quality of the whey butter, its quantity in proportion to the cream, is but poor. The ſame meaſure of whey cream yielding but about half as much butter as the other: neither will the whey butter ever come to a good conſiſtence, nor will it keep; ſo that at the beſt it is but a very poor matter: however, it may be worth the farmer's while, in moſt caſes, to make it.

BUTTERFLY-FLOWERS, in botany, the ſame as papilionaceous-flowers; they compoſe the ſeventeenth claſs in

in the Linnean ſyſtem of botany; ſuch are the bloſſoms of the pea, bean, broom, lupine, and various others.

BUTTER-MILK, the reſiduum or liquor left after making butter.

BUTTER-BUR, or *peſtilent-wort*, the name of a weed reſembling colt's-foot in many reſpects; but the flowers are purple, and grow in a thirſe. The leaves come ont after the flowers decay; and are like thoſe of colt's-foot in ſhape; but three or four times as big. It infeſts meadows and paſture grounds, where it proves a very troubleſome weed. *See the artelle* COLT'S FOOT.

BUTTER-WORT, [*Pinguicula*]. This plant is found growing upon bogs in many parts of England, but is never cultivated in gardens, ſo we ſhall paſs it over with barely mentioning it.

BUTTON-TREE, [*Conocarpus*]. There are two ſorts of this tree preſerved in ſome curious gardens, but are plants of no great beauty, they are natives of the Weſt-Indies, and too tender to live in England, unleſs conſtantly kept in a ſtove.

BUTTON-WEED, [*Spermacoce*]. There are two ſpecies of this plant both natives of Jamaica, they are propagated by ſeeds, but will not bear the open air of England.

BUTTON-WOOD, [*Cephalanthus*]. This plant grows naturally in North America, from whence the ſeeds are annually ſent to Europe, and of late years great numbers of the plants have been raiſed in the gardens of the curious.

BUTCHERS-BROOM, [*Ruſcus*]. Bay of Alexandria, Kneeholly; this is a prickly ever-green ſhrub, found in many parts of England, growing wild in the woods. The root has a ſoft ſweetiſh taſte, which is followed by a bitteriſh one: it is one of the five aperient roots: and in this intention is ſometimes made an ingredient in apozems and diet drinks, for opening ſlight obſtructions of the viſcera, purifying the blood and juices, and promoting the fluid ſecretions.

The green ſhoots are cut, bound into bundles, and ſold to the butchers, who uſe it as beſoms to ſweep their blocks, from whence it had the name of butchers broom.

BUCKRAMS, [*Allium Sylveſtre*]. Wild garlic, or crow garlic.

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CABBAGE, [*Braſſica*]. The generel name of a very uſeful ſpecies of vegetables; the kinds are, 1ſt, The common white cabbage. 2d, The turnip rooted cabbage: 3, The cauliflower; 4, Taller, ſhrubby, branching ſea cabbage; 5, Cabbage with entire, oval, ſpear ſhaped, ſmooth leaves, which are indented; 6, Champaign colewort with a thorough-wax leaf, and a purple flower; 7. Eaſtern perfoliated colewort, with a white flower and a quadrangular pod; 8, The wild navew or cole ſeed. The varieties of the firſt ſort are, 1, The Savoy cabbage, commonly called Savoy; 2, The red cabbage; 3, The ſugar-loaf cabbage; 4, The early cabbage; 5, Foreign muſk cabbage; 6, Small Ruſſia cabbage; 7, The large-ſided cabbage; 8, The green Savoy; 9, The borecole; 10, Green borecole; 11, Siberian borecole, called by ſome Scotch-kale. The varieties of the third ſort are, Purple broccoli; 2, White broccoli.

The ſecond ſort grows naturally on the ſea-ſhore near Dover. It hath a perennial branching ſtalk, in which it differs from all the other ſpecies.

In very ſevere winters, when the other ſorts are deſtroyed, this is a neceſſary plant, for the moſt ſevere froſts do not injure it. The flower-ſtalks grow from the end of the branches, and ſpread out horizontally; but thoſe which ariſe from the centre of the plants grow erect, and ſeldom put out branches.

The two ſorts of broccoli ſeem to be only varieties of the cauliflower. The cauliflower has been much more improved in England than in any other part of Europe. In France they rarely have cauliflowers till Michaelmas, and Hollan-

See Angon Cabbage

Holland is generally supplied with them from England. In many parts of Germany there was none of them cultivated till within a few years past, and most parts of Europe are supplied with seed from hence.

The eighth sort, which is generally known by the title of Rape or Cole Seed, is much cultivated in the isle of Ely, and some other parts of England, for its seed, from which the Rape-oil is drawn; and it hath also been cultivated of late years, in other places, for feeding of cattle, to great advantage.

The Cole Seed, when cultivated for feeding of cattle, should be sown about the middle of June. The ground for this should be prepared for it in the same manner as for turneps. The quantity of seeds for an acre of land is from six to eight pounds, and as the price of the seed is not great, so it is better to allow eight ponnds; for if the plants are too close in any part, they may be easily thinned when the ground is hoed, which must be performed in the same manner as is practised for turneps, with this difference only, of leaving these much nearer together; for as they have fibrous roots and slender stalks, so they do not require so much room. These plants should have a second hoeing, about five or six weeks after the first, which, if well performed in dry weather, will entirely destroy the weeds, so they will require no more culture. Where there is not an immediate want of food, these plants had better be kept as a reserve for hard weather, or spring seed, when there may be a scarcity of other green food. If the heads are cut off, and the stalks left in the ground, they will shoot again early in the spring, and produce a good second crop in April, which may be either fed off, or permitted to run to seeds, as is the practice where this is cultivated for the seeds: but if the first is fed down, there should be care taken that the cattle do not destroy their stems, or pull them out of the ground. As this plant is so hardy as not to be destroyed by frost, so it is of great service in hard winters for feeding of ewes; for when the ground is so hard frozen as that turneps cannot be taken up, these plants may be cut off for a constant supply. This will afford late food after the turneps are run to seed; and if it is afterward permitted to stand for seed one acre will produce as much as, at a moderate computation, will sell for five pounds, clear of charges.

Partridges, pheasants, turkeys, and most other fowl, are very fond of this plant; so that wherever it is cultivated, if there are any birds in the neighbourhood, they will constantly lie among these plants.

The seeds of this plant are sown in gardens for winter and spring sallads, this being one of the small sallad herbs.

The common white, red, flat, and long-sided cabbages are chiefly cultivated for autumn and winter use; the seeds of these sorts must be sown the beginning or middle of April, in beds of good fresh earth; and when the young plants have about eight leaves, they should be pricked out into shady borders, about three or four inches square, that they may acquire strength, and to prevent their growing long shanked.

About the middle of June you must transplant them out, where they are to remain for good (which in the kitchen-gardens near London is commonly between cauliflowers, artichokes, &c. at about two feet and a half distance in the rows;) but if they are planted for a full crop in a clear spot of ground, the distance from row to row should be three feet and a half, and in the rows two feet and a half asunder: if the season should prove dry when they are transplanted out, you must water them every other evening until they have taken fresh root; and afterwards, as the plants advance in height, you should draw the earth about their stems with a hoe, which will keep the earth moist about their roots, and greatly strengthen the plants.

These cabbages will some of them be fit for use soon after Michaelmas, and will continue until the end of February, if they are not destroyed by bad weather; to prevent which, the gardeners near London pull up their cabbages in November, and trench their ground up in ridges, laying their cabbages against their ridges as close as possible on one side, burying their stems in the ground: in this manner they let them remain till after Christmas, when they cut them for the market; and although the outer part of the cabbage be

be decayed (as is often the caſe in very wet or hard winters,) yet, if the cabbages were large and hard when laid, the inſide will remain ſound.

The Ruſſian cabbage was formerly in much greater eſteem than at preſent, it being now only to be found in particular gentlemen's gardens, who cultivate it for their own uſe. This muſt be ſown late in the ſpring of the year, and managed as thoſe before directed, with this difference only, that theſe muſt be ſooner planted out for good, and muſt have an open clear ſpot of ground, and require much leſs diſtance every way, for it is but a very ſmall hard cabbage. This ſort will not continue long before they will break, and run up to ſeed.

The early and ſugar-loaf cabbages are commonly ſown for ſummer uſe, and are what the gardeners about London commonly called Michaelmas cabbages. The ſeaſon for ſowing of theſe is about the end of July, or beginning of Auguſt, in an open ſpot of ground; and when the plants have got eight leaves, you muſt prick them into beds at about three or four inches diſtance every way, that the plants may grow ſtrong and ſhort ſhanked, and toward the end of October you ſhould plant them out for good: the diſtance that theſe require is, three feet row from row, and two feet and a half aſunder in the rows. The ground muſt be kept clean from weeds, and the earth drawn up about your cabbage plants.

In May, if your plants were of the early kind, they will turn in their leaves for cabbaging: at which time, the gardeners near London, in order to obtain them a little ſooner, tie in their leaves cloſe with a ſlender oſier-twig to blanch their middle; by which means, they have them at leaſt a fortnight ſooner than they could have if they were left untied.

The early cabbage being the firſt, we ſhould chuſe (if for a gentleman's uſe) to plant the fewer of them, and a greater quantity of the ſugar-loaf kind, which comes after them; for the early kind will not ſupply the kitchen long, generally cabbaging apace when they begin, and as ſoon grow hard and burſt open; but the ſugar-loaf kind is longer before it comes, and is as ſlow in its cabbaging; and being of an hollow kind, will continue good for a long time.

Although we adviſe the planting out of cabbages for good in October, yet the ſugar-loaf kind may be planted out in February, and will ſucceed as well as if planted earlier; with this difference only, that they will be later before they cabbage. You ſhould alſo reſerve ſome plants of the early kind in ſome well ſheltered ſpot of ground, to ſupply your plantation, in caſe of a defect; for in mild winters many of the plants are apt to run to ſeed, eſpecially when their ſeeds are ſown too early, and in ſevere winters they are often deſtroyed.

The Savoy cabbages are propagated for winter uſe, as being generally eſteemed the better when pinched by the froſt: theſe muſt be ſown about the end of April, and treated after the manner as was directed for the common white cabbage; with this difference, that theſe may be planted at a cloſer diſtance than thoſe; two feet and a half ſquare will be ſufficient. Theſe are always much better when planted in an open ſituation, which is clear from trees and hedges; for in cloſe places they are very ſubject to be eaten almoſt up by caterpillars and other vermin, eſpecially if the autumn prove dry.

The borecole may be alſo treated in the ſame manner, but need not be planted above one foot aſunder in the rows, and the rows two feet diſtance: theſe are never eaten till the froſt hath rendered them tender, for otherwiſe they are tough and bitter.

The ſeeds of the broccoli (of which there are ſeveral kinds, viz. the Roman or purple, the Neapolitan or white, and the black broccoli, with ſome others, but the Roman is chiefly preferred to them all,) ſhould be ſown about the latter end of May, or beginning of June, and when the plants are grown to have eight leaves, tranſplant them into beds (as was directed for the common cabbage;) and towards the latter end of July they will be fit to plant out for good, which ſhould be into ſome well-ſheltered ſpot of ground, but not under the drip of trees: the diſtance theſe require is about a foot and a half in the rows, and two feet row from row. The ſoil in which they ſhould be planted ought to be rather light than heavy, ſuch as are the kitchen-gardens near London: if your plants ſucceed well (as there will be little reaſon to doubt,

doubt, unleſs the winter prove extreme hard,) they will begin to ſhew their ſmall heads, which are ſomewhat like a cauliflower, but of a purple colour, about the end of December, and will continue eatable till the middle of April.

The brown or black broccoli is by many perſons greatly eſteemed, though it doth not deſerve a place in the kitchen-garden where the Roman broccoli can be obtained, which is much ſweeter, and will continue longer in ſeaſon: indeed, the brown ſort is much hardier, ſo that it will thrive in the coldeſt ſituations, where the Roman broccoli is ſometimes deſtroyed in very hard winters. The brown ſort ſhould be ſown in the middle of May, and managed as hath been directed for the common cabbage, and ſhould be planted at the ſame diſtance, which is about two feet and a half aſunder. This will grow very tall, ſo ſhould have the earth drawn up to their ſtems as they advance in height. This does not form heads ſo perfect as the Roman broccoli; the ſtems and hearts of the plants are the parts which are eaten.

The Roman broccoli (if well managed) will have large heads, which appear in the center of the plants like cluſters of buds. Theſe heads ſhould be cut before they run up to ſeed, with about four or five inches of the ſtem; the ſkin of theſe ſtems ſhould be ſtripped off before they are boiled. After the firſt heads are cut off, there will be a great number of ſide ſhoots produced from the ſtems, which will have ſmall heads to them, but are full as well flavoured as the large.

The Naples broccoli hath white heads very like thoſe of the cauliflower, and eats ſo like it as not to be diſtinguiſhed from it.

Beſides this firſt crop of broccoli (which is uſually ſown in the end of May,) it will be proper to ſow another crop the beginning of July, which will come in to ſupply the table the latter end of March and the beginning of April; and being very young, will be extremely tender and ſweet.

In order to ſave good ſeeds of this kind of broccoli in England, you ſhould reſerve a few of the largeſt heads of the firſt crop, which ſhould be let remain to run up to ſeed, and all the under ſhoots ſhould be conſtantly ſtripped off, leaving only the main ſtem to flower and ſeed. If this be duly obſerved, and no other ſort of cabbage permitted to ſeed near them, the ſeeds will be as good as thoſe procured from abroad, and the ſort may be preſerved in perfection many years.

The turnep-rooted cabbage was formerly more cultivated in England than at preſent, for ſince other ſorts have been introduced which are much better flavoured, this ſort has been neglected. There are ſome perſons who eſteem this kind for ſoups, but it is generally too ſtrong for moſt Engliſh palates, and is ſeldom good but in hard winters, which will render it tender and leſs ſtrong.

At the end of June the plants ſhould be tranſplanted out where they are to remain, allowing them two feet diſtance every way, obſerving to water them until they have taken root; and as their ſtems advance, the earth ſhould be drawn up to them with a hoe, which will preſerve a moiſture about their roots, and prevent their ſtems from drying and growing woody, ſo that the plants will grow more freely; but it ſhould not be drawn very high, for as it is the globular part of the ſtalk which is eaten, ſo that ſhould not be covered. In winter they will be fit for uſe, when they ſhould be cut off, and the ſtalks pulled out of the ground and thrown away, being good for nothing after the ſtems are cut off.

The curled colewort or Siberian borecole is now more generally eſteemed than the former, being extremely hardy, ſo is never injured by cold, but is always ſweeter in ſevere winters than in mild ſeaſons. This may be propagated by ſowing of the ſeeds the beginning of July; and when the plants are ſtrong enough for tranſplanting, they ſhould be planted in rows about a foot and a half aſunder, and ten inches diſtance in the rows. Theſe will be fit for uſe after Chriſtmas, and continue good until April, ſo that they are very uſeful in a family.

The muſk cabbage. This may be propagated in the ſame manner as the common cabbage, and be allowed the ſame diſtance: it will be fit for uſe in October, November, and December; but, if the winter proves hard, theſe will be deſtroyed much ſooner than the common ſort.

The common colewort or Dorſetſhire kale, is now almoſt loſt near London,

where their markets are uſually ſupplied with cabbage plants inſtead of them. Indeed, where farmers ſow coleworts to feed their milch cattle in the ſpring, where there is a ſcarcity of herbage, the common colewort is to be preferred, as being ſo very hardy that no froſt will deſtroy it. The beſt method to cultivate this plant in the fields is, to ſow the ſeeds about the beginning of July, chuſing a moiſt ſeaſon, which will bring up the plants in about ten days or a fortnight: the quantity of ſeed for an acre of land is nine pounds; when the plants have got five or ſix leaves they ſhould be hoed, as is practiſed for turneps, cutting down all the weeds from amongſt the plants, and alſo thinning the plants where they are too thick; but they ſhould be kept thicker than turneps, becauſe they are more in danger of being deſtroyed by the fly: this work ſhould be performed in dry weather, that the weeds may be killed. About ſix weeks after, the plants ſhould have a ſecond hoeing, which, if carefully performed in dry weather, will entirely deſtroy the weeds, and make the ground clean, ſo that they will require no farther culture: in the ſpring they may either be drawn up and carried out to feed the cattle; or they may be turned in to feed upon them as they ſtand; but the former method is to be preferred, becauſe there will be little waſte; whereas, when the cattle are turned in amongſt the plants, they will tread down and deſtroy more than they eat, eſpecially if they are not fenced off by hurdles.

The two laſt ſorts of cabbage are varieties fit for a botanic garden, but are plants of no uſe. They are annual plants, and periſh when they have perfected their ſeeds.

The beſt method to ſave the ſeeds of all the beſt ſorts of cabbage is, about the end of November you ſhould make choice of ſome of your beſt cabbages, which you ſhould pull up, and carry to ſome ſhed or other covered place, where you ſhould hang them up for three or four days by their ſtalks, that the water may drain from between their leaves; then plant them in ſome border near a hedge or pale, quite down to the middle of the cabbage, leaving only the upper part of the cabbage above ground, obſerving to raiſe the earth about it, ſo that it may ſtand a little above the level of the ground; eſpecially if the ground is wet, they will require to be raiſed pretty much above the ſurface.

If the winter ſhould prove very hard, you muſt lay a little ſtraw or peaſe-haulm lightly upon them, to ſecure them from the froſt, taking it off as often as the weather proves mild, leſt by keeping them too cloſe they ſhould rot. In the ſpring of the year theſe cabbages will ſhoot out ſtrongly, and divide into a great number of ſmall branches: you muſt therefore ſupport their ſtems, to prevent their being broken off by the wind; and if the weather ſhould be very hot and dry when they are in flower, you ſhould refreſh them with water once a week all over the branches, which will greatly promote their ſeeding, and preſerve them from mildew.

When the pods begin to change brown, you will do well to cut off the extreme part of every ſhoot with the pods, which will ſtrengthen your ſeeds; for it is generally obſerved, that thoſe ſeeds which grow near the top of the ſhoots, are very ſubject to run to ſeed before they cabbage; ſo that by this there will be no loſs, but a great advantage.

When your ſeeds begin to ripen, you muſt be particularly careful that the birds do not deſtroy it, for they are very fond of theſe ſeeds. The beſt method I know to prevent this, is to get a quantity of birdlime and daub over a parcel of ſlender twigs, which ſhould be faſtened at each end to ſtronger ſticks, and placed near the upper part of the ſeed in different places, ſo that the birds may alight upon them, by which means they will be faſtened thereto; where you muſt let them remain, if they cannot get off themſelves: and although there ſhould not above two or three birds be caught, yet it will ſufficiently terrify the reſt, that they will not come to that place again for a conſiderable time after.

When your ſeeds are fully ripe, you muſt cut it off; and after drying, threſh it out, and preſerve it in a bag for uſe.

But in planting of cabbage for ſeed, never plant more than one ſort in a place, or near one another: as for example, never plant red or white cabbage near each other, nor ſavoy with white

white or red cabbages; for they will, by the commixture of their effluvia, produce a kind of mixture; and it is wholly owing to this neglect, that the gardeners rarely ſave any good red cabbage ſeed in England, but are obliged to procure freſh ſeeds from abroad, as ſuppoſing the ſoil or climate of England alters them from red to white, and of a mixed kind between both; whereas, if they ſhould plant red cabbages by themſelves for ſeeds, and not ſuffer any other to be near them, they might continue the kind as good in England as in any other part of the world.

Cauliflowers have of late years been ſo far improved in England, as to exceed in goodneſs and magnitude what are produced in moſt parts of Europe, and by the ſkill of the gardener are continued for ſeveral months together; but the moſt common ſeaſon for the great crop is in May, June, and July. We ſhall therefore begin with directions for obtaining them in this ſeaſon.

Having procured a parcel of good ſeed, you muſt ſow it about the 21ſt of Auguſt, upon an old cucumber or melon-bed, ſifting a little earth over the ſeeds, about a quarter of an inch thick; and if the weather ſhould prove extreme hot and dry, you ſhould ſhade the bed with mats, to prevent the earth from drying too faſt, and give it gentle waterings as you may ſee occaſion. In about a month's time after ſowing, your plants will be fit to prick out; you ſhould therefore put ſome freſh earth upon your cucumber or melon-beds, or where theſe are not to be had, ſome beds ſhould be made with a little new dung, which ſhould be trodden down cloſe, to prevent the worms from getting through it; but it ſhould not be hot dung, which would be hurtful to the plants at this ſeaſon eſpecially if it proves hot; into this bed you ſhould prick your young plants at about two inches ſquare, obſerving to ſhade and water them at firſt planting; but do not water them too much after they are growing, nor ſuffer them to receive too much rain if the ſeaſon ſhould prove wet, which would be apt to make them black ſhanked (as the gardeners term it, which is no leſs than a rottenneſs in their ſtems,) and is the deſtruction of the plants ſo affected.

In this bed they ſhould continue about the 30th of October, when they muſt be removed into the place where they are to remain during the winter ſeaſon, which, for the firſt ſowing, is commonly under the bell or hand-glaſſes, to have early cauliflowers, and theſe ſhould be of an early kind: but in order to have a ſucceſſion during the ſeaſon, you ſhould be provided with another more late kind, which ſhould be ſown four or five days after the other, and managed as was directed for them.

In order to have very early cauliflowers, you ſhould make choice of a good rich ſpot of ground that is well defended from the north, eaſt, and weſt winds, with hedges, pales, or walls; but the firſt is to be preferred, if made with reeds, becauſe the winds will fall dead in theſe, and not reverberate as by pales or walls. This ground ſhould be well trenched, burying therein a good quantity of rotten dung; then level your ground, and if it be naturally a wet ſoil, you ſhould raiſe it up in beds about two feet and a half, one three feet broad, and four inches above the level of the ground; but if your ground is moderately dry, you need not raiſe it at all: then plant your plants, allowing about two feet ſix inches diſtance from glaſs to glaſs in the rows, always putting two good plants under each glaſs, which may be at about four inches from each other; and if you deſign them for a full crop, they may be three feet and a half row from row: but if you intend to make ridges for cucumbers between the rows of cauliflower plants, (as is generally practiſed by the gardeners near London) you muſt then make your rows eight feet aſunder; and the ground between the rows of cauliflowers may be planted with cabbage plants, to be drawn off for coleworts in the ſpring.

When you have planted your plants, if the ground is very dry you ſhould water them a little, and then ſet your glaſſes over them, which may remain cloſe down over them until they have taken root, which will be in about a week or ten days time, unleſs there ſhould be a kindly ſhower of rain; in which caſe you may ſet off the glaſſes, that the plants may receive the benefit of it; and in about ten days after planting, you ſhould be provided with

a parcel of forked ſticks or bricks, with which you ſhould raiſe your glaſſes about three or four inches on the ſide toward the ſouth, that your plants may have free air: in this manner your glaſſes ſhould remain over the plants night and day, unleſs in froſty weather, when you ſhould ſet them down as cloſe as poſſible; or if the weather ſhould prove very warm, which many times happen in November, and ſometimes in December, in this caſe you ſhould keep your glaſſes off in the day time, and put them on only in the night, leſt, by keeping the glaſſes over them too much, you ſhould draw them into flower at that ſeaſon; which is many times the caſe in mild winters, eſpecially if unikilfully managed.

Toward the latter end of February, if the weather proves mild, you ſhould prepare another good ſpot of ground to remove ſome of the plants into from under the glaſſes, which ſhould be well dunged and trenched (as before;) then ſet off your glaſſes, and, after making choice of one of the moſt promiſing plants under each glaſs, which ſhould remain for good, take away the other plant, by raiſing it up with a trowel, &c. ſo as to preſerve as much earth to the root as poſſible; but have a great regard to the plant that is to remain, not to diſturb or prejudice its roots: then plant the plants which you have taken out at the diſtance before directed, viz. If for a full crop, three feet and a half, row from row; but if for ridges of cucumbers between them eight feet, and two feet four inches diſtance in the rows: then, with a ſmall hoe, draw the earth up to the ſtems of the plants which were left under the glaſſes, taking great care not to let the earth fall into their hearts; and ſet your glaſſes over them again, raiſing your props an inch or two higher than before, to give them more air, obſerving to take them off whenever there may be ſome gentle ſhowers, which will greatly refreſh the plants.

In a little time after, if you find your plants grow ſo faſt as to fill the glaſſes with their leaves, you ſhould then ſlightly dig about the plants, and raiſe the ground about them in a bed broad enough for the glaſſes to ſtand, about four inches high, which will give your plants a great deal of room, by raiſing the glaſſes ſo much higher when they are ſet over them; and by this means they may be kept covered until April, which otherwiſe they could not, without prejudice to the leaves of the plants: and this is a great advantage to them, for many times we have returns of ſevere froſts at the latter end of March, which prove very hurtful to theſe plants, if expoſed thereto, eſpecially after having been nurſed up under glaſſes.

After you have finiſhed your beds, you may ſet your glaſſes over your plants again, obſerving to raiſe your props pretty high, eſpecially if the weather be mild, that they might have free air to ſtrengthen them; and in mild ſoft weather ſet off your glaſſes, as alſo in gentle ſhowers of rain: and now you muſt begin to harden them by degrees to endure the open air; however, it is adviſeable to let your glaſſes remain over them as long as poſſible, if the nights ſhould be froſty, which will greatly forward your plants; but be ſure do not let your glaſſes remain upon them in very hot ſhun-ſhine, eſpecially if their leaves preſs againſt the ſides of the glaſſes; for it is often obſerved in ſuch caſes, that the moiſture which hath riſen from the ground, together with the perſpiration of the plants, which, by the glaſſes remaining over them, hath been detained upon the leaves of the plants, and when the ſun hath ſhone hot upon the ſides of the glaſſes, hath acquired ſuch a powerful heat from the beams thereof, as to ſcald all their larger leaves, to the no ſmall prejudice of the plants: nay, ſometimes large quantities of plants have been ſo affected therewith, as never to be worth any thing after.

If your plant have ſucceeded well, toward the end of April ſome of them will begin to fruit: you muſt therefore look over them carefully every other day, and when you ſee the flower plainly appear, you muſt break down ſome of the inner leaves over it to guard it from the ſun, which would make the flower yellow and unſightly if expoſed thereto; and when you find the flower at its full bigneſs (which you may know by its outſide parting as if it would run) you muſt then draw it out of the ground, and not cut them off

off, leaving the ſtalk in the ground, as is by ſome practiſed; and if they are deſigned for preſent uſe, you may cut them out of their leaves; but if deſigned to keep, you ſhould preſerve their leaves about them, and put them into a cool place: the beſt time for pulling of them is in a morning, before the ſun hath exhaled the moiſture; for cauliflowers pulled in the heat of the day, loſe that firmneſs which they naturally have, and become tough.

But to return to our ſecond crop (the plants being raiſed and managed as was directed for the early crop, until the end of October,) you muſt then prepare ſome beds, either to be covered with glaſs frames, or arched over with hoops, to be covered with mats, &c. Theſe beds ſhould have ſome dung laid at the bottom, about ſix inches or a foot thick, according to the ſize of your plants; for if they are ſmall, the bed ſhould be thicker of dung to bring them forward, and ſo vice verſa: this dung ſhould be beat down cloſe with a fork, in order to prevent the worms from finding their way through it; then lay ſome freſh earth about four or five inches thick thereon, in which you ſhould plant your plants about two inches and a half ſquare, obſerving to ſhade and water them until they have taken new root: but be ſure do not keep your coverings cloſe, for the warmth of the dung will occaſion a large damp in the bed, which, if pent in, will greatly injure the plants.

When your plants have taken root, you muſt give them as much free open air as poſſible, by keeping the glaſſes off in the day time as much as the weather will permit; and in the night, or at ſuch times as the glaſſes require to be kept on, raiſe them up with props to let in freſh air, unleſs in frofty weather; at which time the glaſſes ſhould be covered with mats, ſtraw, peaſe-haulm, &c. but this is not to be done but in very hard frofts: you muſt alſo obſerve to guard them againſt great rain, which in winter time is very hurtful to them, but in mild weather, if the glaſſes are kept on, they ſhould be propped to admit freſh air; and if the under leaves grow yellow and decay, be ſure to pick them off; for if the weather ſhould prove very bad in winter, ſo that you ſhould be obliged to keep them cloſe covered for two or three days together, as it ſometimes happens, theſe decayed leaves will render the incloſed air very noxious; and the plants perſpiring pretty much at that time, are often deſtroyed in vaſt quantities.

In the beginning of February, if the weather be mild, you muſt begin to harden your plants by degrees, that they may be prepared for tranſplantation: the ground where you intend to plant your cauliflowers out for good (which ſhould be quite open from trees, &c. and rather moiſt than dry,) having been well dunged and dug, ſhould be ſown with radiſhes a week or fortnight before you intend to plant out your cauliflowers: the reaſon why I mention the ſowing of radiſhes particularly, is this, viz. that if there are not ſome radiſhes amongſt them, and the month of May ſhould prove hot and dry, as it ſometimes happens, the fly will ſeize your cauliflowers, and eat their leaves full of holes, to their prejudice, and ſometimes their deſtruction; whereas, if there are radiſhes upon the ſpot, the flies will take to them, and never meddle with the cauliflowers ſo long as they laſt: indeed, the gardeners near London mix ſpinach with their radiſh ſeed, and ſo have a double crop; which is an advantage where ground is dear, or where a perſon is ſtraitened for room: otherwiſe it is very well only to have one crop amongſt the cauliflowers, that the ground may be cleared in time.

Your ground being ready and the ſeaſon good, about the middle of February you may begin to plant out your cauliflowers: the diſtance which is generally allowed by the gardeners near London (who plant other crops between their cauliflowers to ſucceed them, as cucumbers for pickling, and winter cabbages) is every other row four feet and a half apart, and the intermediate rows two feet and a half, and two feet two inches diſtance in the rows; ſo that in the latter end of May or beginning of June (when the radiſhes and ſpinach are cleared off,) they put in ſeeds of cucumbers for pickling, in the middle of the wide rows, at three feet and a half apart; and in the narrow rows plant cabba-

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ges for winter uſe, at two feet two inches diſtance, ſo that theſe ſtand each of them exactly in the middle of the ſquare between four cauliflower plants; and theſe, after the cauliflowers are gone off, will have full room to grow, and the crop be hereby continued in a ſucceſſion through the whole ſeaſon.

There are many people who are fond of watering cauliflower plants in ſummer, but the gardeners near London have almoſt wholly laid aſide this practice, as finding a deal of trouble and charge to little purpoſe; for if the ground be ſo very dry as not to produce tolerable good cauliflowers without water, it ſeldom happens that watering of them renders them much better; and when once they have been watered, if it is not conſtantly continued, it had been much better for them if they never had any; as alſo, if it be given them in the middle of the day, it rather helps to ſcald them: ſo that, upon the whole, if care be taken to keep the earth drawn up to their ſtems, and clear them from every thing that grows near them, that they may have open air, you will find that they will ſucceed better without than with water, where any of theſe cautions are not ſtrictly obſerved.

But in order to have a third crop of cauliflowers, you ſhould make a ſlender hot-bed in February, in which you ſhould ſow the ſeeds, covering them a quarter of an inch thick with light mould, and covering the bed with glaſs frames. When the plants are come up, and have gotten four or five leaves, you ſhould prepare another hot-bed to prick them into, which may be about two inches ſquare; and in the beginning of April harden them by degrees, to fit them for tranſplanting, which ſhould be done the middle of that month, at the diſtance directed for the ſecond crop, and muſt be managed accordingly: theſe (if the ſoil is moiſt where they are planted, or the ſeaſon cool and moiſt) will produce good cauliflowers about a month after the ſecond crop is gone, whereby their ſeaſon will be greatly prolonged.

There is alſo a fourth crop of cauliflowers, which is raiſed by ſowing the ſeed about the twenty-third of May; and being tranſplanted, as hath been before directed, will produce good cauliflowers in a kindly ſeaſon and good ſoil after Michaelmas, and continue through October and November, and, if the ſeaſon permit, often a great part of December.

The reaſon why we fix particular days for the ſowing of this ſeed, is becauſe two or three days often make a great difference in their plants; and becauſe theſe are the days uſually fixed by the gardeners near London, who have found their crops to ſucceed beſt when ſown at thoſe times, although one day, more or leſs, will make no great odds.

Sea CABBAGE, [*Crambe*]. A genius of plants growing wild on the ſea-ſhore in divers parts of England, but particularly in Suſſex and Dorſetſhire in great plenty, where the inhabitants gather it in the ſpring to eat, preferring it to any of the cabbage kind, as it generally grows upon the gravelly ſhore, where the tide flows over it, ſo the inhabitants obſerve where the gravel is thruſt up by the roots of this plant; they open the gravel, and cut the ſhoots before they come out, and are expoſed to the open air, whereby the ſhoots appear as if they were blanched; and when they are cut ſo young, they are very tender and ſweet, but if they are ſuffered to grow till they are green, they become tough and bitter.

This plant may be propagated in a garden, by ſowing the ſeed ſoon after it is ripe in a ſandy or gravelly ſoil, where it will thrive exceedingly, and increaſe greatly by its creeping roots, which will ſoon overſpread a large ſpot of ground, if encouraged, but the heads will not be fit to cut until the plants have had one year's growth; and in order to have it good, the bed in which the plants grow ſhould at Michaelmas be covered over with ſand or gravel about four or five inches thick, which will allow a proper depth for the ſhoots to be cut before they appear above ground; and if this is repeated every autumn, in the ſame manner as is practiſed in earthing of aſparagus-beds, the plants will require no other culture.

The other ſorts are only preſerved in curious gardens of plants for variety, but are not of any uſe or beauty. The perennial ſort may be propagated in the ſame manner as the firſt.

CABBAGE-TREE, [*Palma gracilis*]. A ſpecies of the palm tree, which grew very common in the Weſt-Indies.

CAJOU, *ſee* ACAJOU.

CALABASH-TREE, [*Creſcentia*]. A tree common in Jamaica and the Leeward Iſlands, growing from 20 to 30 feet in heigth, dividing at the top into many branches, forming a large regular head, garniſhed with irregular leaves, about ſix inches long, of a lucid green, and ſhort footſtalks; they produce flowers, which afterwards turn to fruit of different forms and ſize, of the ſhells of which they make drinking cups and other veſſels. They are too tender to live in England, except in warm ſtoves; they are eaſily propagated by ſowing the ſeeds, on a hot bed in the ſpring.

CALAMBAC WOOD. A kind of aloe.

CALAMIFEROUS, [*Calamus fero.*] an epithet applied to ſuch plants as have a ſmooth upright jointed ſtalk, as wheat, &c.

CALAMINE, [*Lapis Calaminaris*] is a mineral found plentifully in England, Germany, and other countries, either in diſtinct mines, or intermingled with the ores of different metals. It is uſually of a greyiſh, browniſh, yellowiſh, or pale reddiſh color; conſiderably hard, though not ſufficiently ſo to ſtrike fire with ſteel. It has been looked upon by ſome as a ſimple earth, by others as an iron ore: but later experiments have diſcovered it to be actually an ore of zinc. Calamine is generally roaſted or calcined before it comes into the ſhops, in order to ſeparate ſome ſulphurous or arſenical matter, and to render it more reducible into a fine powder. In this ſtate it is employed in collyria againſt defluxions of thin acrid humors upon the eyes; for drying up moiſt, running ulcers; and healing excoriations.

CALAMINT, [*Calamintha.*] This is a low plant growing wild in hedges and highways, and in dry ſandy ſoils, the leaves have a quick ſtrong ſcent, and ſmell ſtrong of penny-royal: in virtues it is ranked with ſpear-mint; but is ſuppoſed to have rather ſuperior virtues in hyſteric diſorders, being ſomething hotter, and of a leſs pleaſant ſmell; there are two ſorts found in England, the wild Calamint, and the common Calamint; the former is preferred in medicine in general before the other.

CALCARIOUS, partaking of the nature of lime.

CALCINATION, Act of burning.

CALEFACTION, the act of making hot.

CALF, [*Vitulus*]. The young of the cow. In different counties various methods are uſed in raiſing of calves, according to the nature of the demand for them; many means being employed to ſuit their fleſh to the taſte and eye in the markets, of which we ſhall treat hereafter. There are two ways of breeding thoſe which the huſbandman intends to rear. The one is to let run to the dam all the year; and the other is, that of taking them from the cow when they have ſucked a fortnight.

In the cheap breeding counties, the firſt way is the moſt uſual; and it is commonly allowed that it produces the faireſt, ſtouteſt, and the beſt cattle, and is done with leaſt trouble to the owner. Theſe are inducements of ſome conſequence, but there are in many inſtances others in the oppoſite ſide that outweigh them.

When the calf is taken from its dam at a fortnight old, a great care is required in raiſing it: but in thoſe places where it is the common method, all this becomes familiar and eaſy by uſe. They firſt of all warm a quantity of ſlet milk, and wetting a finger give it to the calf to ſuck, by this means teaching them at length to drink it. There is a great caution neceſſary to be uſed in the degree of heat they give the milk. It ſhould be as near as poſſible the ſame heat as milk juſt drawn from the cow, if much hotter or colder, it will do harm.

The calf, if rightly managed, in a little time gets ſome ſtrength and hardineſs, but when firſt weaned, is very weak and tender.

When thus weaned it is to have milk given to it for a quarter of a year adding ſometimes a little water thickened with a ſmall quantity of bean flour or oatmeal; and at the end of that time leſſen the milk, till by degrees it be only water, ſerving for drink, not merely for nouriſhment.

Before it be brought to this, the calf muſt be taught to eat dry food, which is to be done by putting ſome fine hay into

into a ſplit ſtick, and hanging it within his reach. This hay ſhould be firſt put before him when he is about five weeks old, and he will ſoon take to it, ſo that by the time it is proper to wean him from milk, he will naturally feed on hay.

When the calves have got ſome ſtrength and hardineſs, the huſbandman is to take his opportunity in fair weather, in the middle of the day, to turn them out to graſs; they are to be taken in at night for about a week, and ſome milk and water given them warm; and it is a good cuſtom to ſet a little to them ſometimes in a pail in the field: this may be done occaſionally, till they are able to feed and take care of themſelves.

Great caution is to be uſed in the firſt turning calves out to graſs, not only that it be a favourable ſeaſon, but a proper kind of paſture. It ſhould have a ſhort ſweet graſs, with a good body, but no rankneſs.

The beſt way is to wean the calves at graſs, for when they are weaned in the houſe by means of hay and water, they generally become ſubject to diſorders. The other is the moſt natural method, and every way the beſt.

At about three years old, ſuch of the male calves as are intended for oxen, ſhould be gelt. This is the time at which they ſuffer leaſt from it.

In places where there is a quick demand, the beſt method is to fat all the calves for the butcher, except ſuch as ſhall be neceſſary to keep up the ſtock. This demand is commonly largeſt near great towns, where the price of the calf is high, and where the grounds are not profitable to breed upon, ſo that it is a particular circumſtance; cheaper countries being fitter for breeding.

As the price of the calf in theſe places depends upon the fatneſs and colour of the fleſh, the great care of the owners is to be turned to theſe two articles; in which, if he ſucceed perfectly, his calf will fetch as large a price as a good heifer. In order to make the calf fatten, and have a white fleſh, the common method is this: They keep them extremely clean, giving them freſh litter every day, ſpreading the new upon the old; and always keeping a crumble of large lumps of chalk hung up in corners of the coop, in their reach; and where they cannot foul it by treading upon it, or by their dung or urine.

The calf will be continually licking theſe chalk ſtones, and their whiteneſs communicates itſelf to the fleſh throughout his whole body.

Another care is, the proper building of the coops in which calves are to be fattened. The two great conſiderations in theſe are, the keeping them cool and dry. For the firſt purpoſe they build them in places where there is little ſun; and for the other, they raiſe them three feet from the ground, ſo that the urine and all other moiſture naturally runs out.

When the calf is in this keeping, well fed, and carefully looked after in every reſpect, it is twice at leaſt blooded: once of theſe times it is about five weeks old, and the other time a little before it is killed.

When a calf purges, the cuſtom is not to let it ſuck altogether, for the milk of the dam often throws it into this diſorder, which certainly waſtes its fleſh. In this caſe they give it milk with chalk ſcraped into it, which has a double effect, ſtopping the purging, and throwing more of the whitening matter into the fleſh. They ſcrape the chalk very fine for this purpoſe, and after mixing it well with the milk, they pour it down the calf's throat with a horn.

Often it happens that this will not remedy the diſorder, and the calf is like to be ſpoiled. In this caſe they uſe the cold bath for it; and give it ſome bole armenick, and chalk mixed up with milk into balls.

If this does not anſwer, give a ſmall doſe of diaſcordium made without honey, mixed with port wine and water made warm, with a horn. The calf muſt not have any milk for three quarters of an hour before, nor an hour after this drench, but it may lick chalk as much as it pleaſes. If this does not anſwer in the firſt doſe, another may be given twelve hours afterwards, and this rarely fails. The quantity to be given each time is a dram. This never hurts the colour or taſte of the fleſh.

This purging is the moſt common diſorder the calf falls into, but it may be diſordered in the other extreme, and that is full as bad. If it be coſtive, the fleſh of it will never be delicate. When any tendency to this is obſerved, the

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proper method is to give a little manna; and the beſt way of giving it is this: buy about an ounce of ordinary manna, which they ſell at a ſmall price at every druggiſt's; diſſolve it in a quarter of a pint of water, and add a ſpoonfull of brandy. Thicken up this liquor with fine wheat flour, and make it into crams; give the calf three or four of theſe every morning after he has been ſucking, and dip them in milk to make them go down. Repeat this till the calf is right in this great reſpect; and then leave it off.

The manner of bleeding calves is this. The firſt time it ſhould be done in the neck, and care muſt be taken not to draw too much. The ſecond time it is beſt done by cutting off a piece of the tail, and if this do not bleed ſo much as might be expected, it may be repeated at two or three day's diſtance, by cutting off another piece, which will bleed juſt as the former.

One very uſeful effect the chalk given to calves has, beſide the whitening, which is, preſerving the fleſh, for it keeps it dryer than it would otherwiſe be, and wetneſs makes it ſo ſoon taint.

Young calves are apt to be attacked by inſects, which diſturb and torment them, and, at the ſame time, prevent their fattening. In order to preſerve them from theſe inſects, and even cure them when they are attacked, it will be proper to prepare an ointment of melted hogs-lard and quickſilver, well rubbed together in a marble or iron mortar. Spread this ointment upon a linen cloth, which wrap up in three folds, and ſtitch it for a collar to the calves. It will not only cure them, but alſo diſperſe the inſects.

CALF. Among ſportmen, the young of the ſtag and hind.

CALF'S-SNOUT, (*Antirrhinum.*) A plant otherwiſe called Snap-dragon, of which there are ſeveral ſorts growing in ſeveral parts of England, and the iſlands of the Archipelago; they are propagated by ſeeds, ſlips, and cuttings.

CALVES-FOOT, (*Arum.*) Wake-robin. See ARUM.

CALLACARPA, (*Johnſonia.*) A ſhrubby plant growing plentifully in the woods near Charles-Town, South-Carolina; it may be propagated by ſowing the ſeeds in a moderate hot-bed and taking care to ſhield them from the ſeverity of the winter, and inuring them by degrees to the open air.

CALLOSITY, (*Calloſitas.*) Any hardneſs, particularly of the bones or fibres.

CALLOUS. Hard, indurated.

CALLUS. The cement or union formed in a fractured limb. Induration, hardneſs.

CALIX. The cup of the flower.

CALKINS. Horſeſhoes for froſty weather.

CALTROPS, (*Tribulus.*) A weed common among corn, in the ſouth of France, in Spain and Italy, producing a fruit armed with ſtrong prickles, which are troubleſome to cattle; it obtained its name of Caltrops from the likeneſs the fruit bore to an ancient inſtrument ſo called, thrown among th enemies horſes; there are ſeveral varieties in botanic gardens.

CALX. Any thing reducible to powder by burning; as lime, &c.

CAMERY, or FROUNCE, are ſmall warts or pimples in the midſt of the palate of an horſe's mouth, which are very ſoft and ſore, and are bred ſometimes in his lips and tongue: It is occaſioned many ways, ſometimes by eating of wet hay, whereon rats or other vermin had piſſed; ſometimes by drawing frozen duſt amongſt the graſs into his mouth, and ſometimes by licking up of venom: The ſigns are the appearing of theſe pimples and whelks, and foreneſs of them, with the unſavorineſs of his food that he hath eaten before, and his falling from his meat. They are cured by letting him blood in the two greateſt veins under his tongue, and waſhing the ſore with vinegar and ſalt, or burning the pimples on the head, and waſhing them with ale and ſalt till they bleed.

CAMELS HAY, [*Juncus odoratus.*] Sweet-ruſh or camels-hay. This is a dry ſmooth ſtalk, brought to us along with the leaves, and ſometimes the flowers, from Turkey and Arabia, tied up in bundles about a foot long. The ſtalk, in ſhape and colour, ſomewhat reſembles a barley ſtraw: it is full of a fungous pith, like thoſe of our common ruſhes: the leaves are like thoſe of wheat, and furround the ſtalk with ſeveral coats, as in the reed: the flowers are of a carnation colour, ſtriped with a lighter purple. The whole plant, when in perfection, has a hot, bitteriſh, not unpleaſant, aromatic taſte, and a very fragrant ſmell; by

long keeping, it loſes greatly of its aromatic flavour. Diſtilled with water, it yields a conſiderable quantity of eſſential oil. It was formerly often uſed as an aromatic, and in obſtructions of the viſcera, &c. but at preſent is ſcarce otherwiſe employed than as an ingredient in mithridate and theriaca.

CAMMOCK, [*Ononis.*] A very troubleſome weed growing in different countries of Europe, there are four ſorts in England growing wild. It is called alſo *pettywhin* or *reſtharrow*. A prickly kind with blue flowers is recommended in medicine, and the root is ſaid to be aperient and diuretic—the roots of theſe plants ſpread ſo far and ſo deep in the ground as often to ſtop the plough.

CAMOMILE, [*Chamæmelum, Anthemis.*] It is a trailing perennial plant, which puts out roots from the branches as they lay on the ground, whereby it ſpreads and multiplies greatly; ſo that whoever is willing to cultivate this plant, need only procure a few of the ſlips in the ſpring, and plant them a foot aſunder, that they may have room to ſpread, and they will ſoon cover the ground. The flowers of this ſort are ordered for medicinal uſe, but the market people generally ſell the double flowers, which are much larger but not ſo ſtrong as the ſingle. The double ſort is equally hardy, and may be propagated in the ſame manner.

There are ſeveral ſorts preſerved in the botanic gardens, are all propagated by ſeeds, and may be ſown on a bed of common earth in the ſpring, when the plants are large enough they may be tranſplanted into large borders near trees or ſhrubs, where they may have room to grow. The flowers are accounted ſtimulating, carminative, &c. an infuſion of them drank warm incites the operation of an emetic, while a cold infuſion is a good ſtomachic in ſome caſes.

Stinking CAMOMILE, [*Cotula Fœtida.*] Mayweed, a wild ſpecies of camomile, a trailing perennial plant, which puts out roots from its branches as they lie on the ground. By this means and by ſcattering its ſeeds long before the corn is ripe, it ſpreads and multiplies greatly. It flowers in May, and thence has acquired the name of may-weed.

The means of extirpating it are, ſummer fallows, repeated good harrowing, and burning the collected roots, as is uſual in this and in ſimilar caſes, or which will be found ſtill more effectual, frequent and careful horſe-hoeings. What eſcapes theſe clearings ſhould be very carefully pulled up by hand; for the common weeding hook will not go deep enough to take out the whole of the long ſlender tap-root of this plant, of which every remaining bit that has a knot in it will produce new ſhoots. Nor ought the farmer to regret this ſmall additional expence, to get rid of one of the moſt fatal enemies his corn can have. Mr. Leſlie aſſures us, that as good a crop of wheat as one would wiſh to ſee all the winter time was, to his knowledge, ſo deſtroyed by the coming up of may-weeds and poppies in the ſpring and ſummer, that it did not at laſt yield ſo much as the ſeed.

CAMPANULATE. Made like a bell.

CAMPHIRE or CAMPHOR, [*Camphora.*] ſee BAY.

CAMPION, [*Lychnis.*] A perennial plant which may be propagated by parting the roots, or ſeeds. There are ſeveral ſpecies, as the *ſcarlet lychnis, batchelor's buttons, catch-fly*, &c.

CANAL. An artificial river or paſſage for water.

CANARY SEED, a ſmall ſeed cultivated for birds, &c. It is ſown about the beginning of March on land that is tolerably clean and freſh, about three pecks to an acre in drills or furrows; and as the plants come up, they muſt be kept clean by hoeing or weeding.

They ſow ſucceſſive crops on the ſame land for eight or ten years; and ſowing canary ſeed would be a very great improvement to lands which lie convenient for water carriage to London markets, was it not a crop the farmer ought by no means to depend upon, not only becauſe the return, or quantity it yields, varies greatly, but alſo on account of the fluctuation in the price of this ſeed in the London markets, where the greateſt and almoſt the whole demand is.

CANKER. A diſeaſe in trees proceeding chiefly from the nature of the ſoil, for the curing whereof it muſt be picked clean off, and ſome clay well mixt with hay, bound about the canker'd place: Sometimes the ground itſelf (as well as after grafting, or ſome other wound, the rain does) ingenders the

the canker in fruit-trees, and the nature of the fruit often happens to be ſuch, that its trees will be cankery in ſome ſorts of land more than others: in which caſes, as much of the cankery boughs are to be cut off as may be, and the roots uncovered, and ſo left open until the ſpring, when well-tempered ſwine's dung muſt be applied, and that in great quantity, to the roots: and this has been found to have wrought an effectual cure; but when the cutting off the canker or cankered branches, and the ſaid application will not do, and that the tree be much infected, the beſt way will be to place a better in the room of it.

CANKER. In farriery, is a very loathſome diſeaſe, which, if it continue long uncured, will ſo feſter and putrify the place where it is, that it will eat to the very bone; and if it happens to come upon the tongue, will eat it aſunder; lighting upon the noſe, it devours the griſtle through; and if it comes upon any part of the fleſh, it frets and gnaws it in great breadth: It may be eaſily known, for where it is, the places will be raw and bleed often, and many times a white ſcurf will grow upon the place infected therewith. It proceeds many ways, either by melancholy and filthy blood engendred in the body, by unwholeſome meat, or by ſome ſharp and ſalt humours, coming by cold, not long before taken, which will make his breath to ſtink very much. When this diſeaſe is in the mouth, it will be full of bliſters, and the beaſt cannot eat his meat, and it muſt proceed from crude and undigeſted meat, rankneſs of food, or unnatural heat coming from the ſtomach, and ſometimes from cold taken in the head, where the rheum binds upon the roots and kernels of the tongue, which hath, as it were, ſtrangled and made ſtreight the paſſages of the ſtomach; and when the eyes are infected with it, which proceeds from a rank blood deſcending from the head into them, where it breeds a little worm like a piſmire, that grows in the corner next his noſe, and will eat it in time, &c. It may be known by the great and ſmall pimples within and without the eyelids.

There are many things in general good for the killing of this diſtemper in any part of the beaſt's body; but more particularly, firſt, for that in the mouth and noſe, take white-wine half a pint, roch allum the quantity of a walnut, bay-ſalt half a ſpoonful, Engliſh honey one ſpoonfull, red ſage, rue, rib-wort, bramble-leaves, of each alike; let them be boiled in the white wine till a quarter be conſumed, and inject this water into the ſore: Or if it be in the mouth, let the place be waſhed with a cloth faſtened to a ſtick, and dreſs him therewith twice a day or oftner. 2. Take the juice of plantane, as much vinegar, and the ſame weight of the powder of allum, with which anoint the ſore twice or thrice a day or oftner. 3. A like quantity of ginger and allum, made into fine powder, and mixed with honey, till they be very thick like a ſalve, will ſerve to anoint the place, after it has firſt been very well waſhed with allum and vinegar. 4. Half a pound of allum, a quarter of a pint of honey, columbine and ſage leaves, a handful of each, boiled together in three pints of running-water, till a pint be conſumed, is good for the canker in the mouth particularly, which muſt be waſhed morning and night therewith.

This diſorder often attacks the foot of a horſe, and generally proceeds from thruſhes, when they prove rotten and putrid, though many other cauſes may produce this diſorder. The method uſed by farriers for the cure is generally with hot oils, ſuch as vitriol, aqua fortis, and butter of antimony, which are very proper to keep down the riſing fleſh, and ſhould he uſed daily till the fungus is ſuppreſſed, when once in two days will be ſufficient, ſtrewing red precipitate powder over the new grown fleſh, till the ſole begins to grow.

There is one great error committed often in this cure, which is, in not having ſufficient regard to the hoof; for it ſhould not only be cut off, wherever it preſſes upon the tender parts, but ſhould be kept ſoft with linſeed oil; and as often as it is dreſſed, bathe the hoof, all round the coronet, with chamber-lye. Purging is very proper to complete the cure.

CANDLEBERRY TREE, [*Myrica.*] Of this plant, there are ſeveral ſpecies growing naturally in boggy places in England, America, and other parts of the globe: In ſome parts of North America they extract from the berries

a kind of wax, of which they make candles.

CANDY CARROT. See *Candy* CARROT, under the article CARROT.

CANDYTUFT, [*Iberis umbellata.*] An annual plant, which ſown in patches along borders, will have a pretty effect from its variety, and by ſowing at two or three different ſeaſons there may be a ſucceſſion continued in flowers till Autumn.

CANDYTUFT *Tree*, [*Iberis ſemperflorens.*] This is a low ſhrubby plant, which ſeldom riſes above a foot and a half high, it flowers in autumn, and the leaves continue green all the year.

It is ſomewhat tender, and therefore beſt preſerved in the green-houſe in winter. It is propagated by cuttings, which if planted during any of the ſummer months, and ſhaded from the ſun, will take root in two months. There are two or three varieties.

CANE, [*Canna.*] Indian cane, of this there are four ſorts. 1ſt. The common broad-leaved flowery cane. 2. The Indian flowering cane with a pale red flower. 3. Indian cane with glaucous leaves, a very large flower, and the appearance of the marſh iris. 4. Yellow Indian reed.

The firſt ſort grows naturally in both Indies: the inhabitants of the Britiſh iſlands in America call it Indian ſhot, from the roundneſs and hardneſs of the ſeeds.

As this ſort is a native of the warmeſt parts of America, ſo it requires to be placed in a moderate ſtove in winter, where they always flower in that ſeaſon, at which time they make a fine appearance; and in the ſummer place them abroad in a ſheltered ſituation with other tender exotic plants, where they generally flower again, and produce ripe ſeeds annually.

The ſecond ſort grows naturally in Carolina, and ſome of the other northern provinces of America. The leaves of this ſort are longer than thoſe of the former ſort. If the roots of this ſort are planted in warm borders and a dry ſoil, they will live through the winter, if mild, in the open air without cover, and flower well every year.

The ſeeds of the third were brought from Carthagena in New Spain, in the year 1733, which produced very ſtrong plants the firſt year, ſome of which flowered the ſame autumn. The roots of this are much larger than either of the former ſorts, and ſtrike down ſtrong fleſhy fibres deep in the ground. The ſtalks riſe in good earth ſeven or eight feet high. The leaves are near two feet long, narrow, ſmooth, and of a ſea green colour. The flowers are produced in ſhort thick ſpikes at the extremity, which are large, and of a pale yellow colour; the ſegments of the petal are broad, but their ſhape like thoſe of the other ſorts, but contain fewer ſeeds, which are very large.

All the ſorts are propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be tranſplanted into ſeparate ſmall pots, and plunged into a moderate hot-bed of tanner's bark, obſerving to ſhade them till they have taken root; after which they ſhould have a large ſhare of free air, admitted to them every day in warm weather. As theſe plants will make great progreſs in their growth, ſo they muſt be ſhifted into larger pots, and part of them plunged into the hot-bed again; the others may be placed abroad in June, with other exotic plants, in a warm ſituation. Thoſe which are placed in the hot-bed, will be ſtrong enough to flower well in the ſtove the following winter: they may remain abroad till the beginning of October, when they muſt be removed into the ſtove, and treated in the ſame manner as the old plants. Theſe plants will continue many years with proper management, but as young plants always flower better than the old roots, ſo it is ſcarce worth while to continue them after they have borne good ſeeds.

The ſeeds of the fourth ſort came from Braſil; this hath much the appearance of the firſt, but the leaves are longer, the flower-ſtalks riſe much higher, and the flowers are larger, and of a deeper crimſon colour, ſo make a more noble appearance. This ſhould be treated as the firſt.

CANDIA LIONS FOOT, [*Catananche*] There are two ſpecies of this plant, one of which is perennial and may be propagated by ſeeds or ſlips; the other annual, and propagated by ſeeds only; they flower in June, and ſeeds ripen in Auguſt and September.

CANTERBURY BELLS, ſee BELL FLOWER.

CAPERBUSH,

CAPER BUSH, [*Capparis.*] This is a low prickly ſhrub, found wild in Italy, and ſeveral parts of the Mediterranean: it is raiſed with us by ſowing the ſeeds upon old walls, where they take root betwixt the bricks, and endure for many years. The bark of the root is pretty thick, of an aſh colour, with ſeveral tranſverſe wrinkles on the ſurface: cut in ſlices and laid to dry, it rolls up into quills. This bark has a bitteriſh acrid taſte: it is reckoned aperient and diuretic; and recommended in ſeveral chronic diſorders, for opening obſtructions of the viſcera. The buds, pickled with vinegar, &c. are uſed at table; and are imported from Italy in pickle. They are ſuppoſed to excite appetite, and promote digeſtion; and to be particularly uſeful, as detergents and aperients, in obſtructions of the liver and ſpleen. Their taſte and virtues depend more upon the ſaline matter introduced into them, than on the caper buds.

Indian CAPERS, [*Capparis Badducea.*] A native of Carthagena growing to the height of twelve feet.

Tree CAPER, [*Capparis Arborreſcens.*] This is a native of Carthagena, and grows to the height of twenty feet.

CAPIVI *Tree*, [*Copaifera*] This tree grows near a village called Ayapel, in the province of Antiochi, in the Spaniſh Weſt Indies, which is about ten days journey from Carthagena. There are great numbers of theſe trees in the woods about this village, which grow to the height of fifty or ſixty feet. Some of theſe trees do not yield any of the balſam; thoſe which do, are diſtinguiſhed by a ridge which runs along their trunks: theſe trees are wounded in their center, and they place calabaſh ſhells, or ſome other veſſels to the wounded part, to receive the balſam, which will all flow out in a ſhort time. One of theſe trees will yield five or ſix gallons of balſam: but though theſe trees will thrive well after being tapped, yet they never afford any more balſam.

The balſam of copaiba is an uſeful corroborating detergent medicine, accompanied with a degree of irritation. It ſtrengthens the nervous ſyſtem; tends to looſen the belly, and in large doſes proves purgative, promotes urine, and ſometimes the expulſion of gravel; cleanſes and heals ulcerations in the urinary paſſages, which it is ſuppoſed to perform more effectually than any of the other balſams. Fuller obſerves, that it gives the urine an intenſely bitter taſte, but not a violet ſmell as the turpentines do.—This balſam has been principally celebrated in gleets and the fluor albus, and externally as a vulnerary. The author above mentioned recommends it likewiſe in dyſenteries, in ſcorbutic cachexies, in diſeaſes of the breaſt and lungs, and in an acrimonious or putreſcent ſtate of the juices: He ſays he has known very dangerous coughs, which manifeſtly threatened a conſumption, cured by the uſe of this balſam alone; and that notwithſtanding its being hot and bitter, it has good effects even in hectic caſes.—The doſe of this medicine rarely exceeds twenty or thirty drops, though ſome direct ſixty or more. It may be conveniently exhibited in the form of an elæoſaccharum; or triturated with almonds into an emulſion; or agitated with milk, which it thus readily unites with; It imperfectly mingles, by agitation, with water alſo.

CAPON, [*Capo.*] A gelded cock-chicken, which is gelded as ſoon as the dam has left him, that being the beſt time, if his ſtones be come down, or elſe as ſoon as they begin to crow: They are of two uſes, 1. The one is to lead chicken, ducklings, young turkeys, pea-hens, pheaſants, and partridges, which a capon will do all together, both naturally and kindly, and through the largeneſs of his body, will eaſily brood or cover thirty or five and thirty of them; nay, he will lead them forth more ſafely, and defend them much better againſt kites and buzzards than the hen, wherefore the way to make him like them, is, with a fine ſmall brier, or elſe ſharp nettles, at night beat and ſting all his breaſt and nether parts, and then in the dark to ſeat the chicken under him, whoſe warmth takes away the ſmart, ſo that he will much fall in love with them. 2. The other uſe is to feed for the diſh, as either at the barn door with craps or corn, or the ſhavings of pulſe; or elſe in pens in the houſe, by cramming them, which is the moſt dainty; and the beſt way of doing it is, to take barley meal reaſonably ſifted, and mixed with new milk, made firſt into a good ſtiff dough, then into long crams, biggeſt in the middle, and ſmall at both ends

ends, and then wetting them in luke-warm milk, give the capon a full gorge thereof three times a day, morning, noon, and night, and he will in a fortnight or three weeks be as fat as any man need to eat, and be ſure give not the capon new meat till the firſt be digeſted, and upon finding him ſomething hard of digeſtion, you muſt fitt the meal finer, for it will then ſooner paſs through their bodies.

CAPRARIA. This plant grows in the warm parts of America, where it is often a troubleſome weed in the plantations; it riſes with an angular green ſtalk about a foot and a half high, ſending out branches at every joint, which ſometimes come out by pairs oppoſite, but often there are three at a joint ſtanding round the ſtalk; the leaves are alſo placed round the branches by threes; theſe ſtand upon ſhort foot-ſtalks, are oval, hairy, and a little indented on their edges. The flowers are produced at the wings of the leaves, coming out on each ſide the ſtalk, each foot-ſtalk ſuſtaining three flowers; they are white and ſucceeded by conical capſules compreſſed at the top, opening in two parts, and filled with ſmall ſeeds.

CAPRIFOIL, ſee HONEY-SUCKLE.

CAPSICUM, Guinea-Pepper; there are ſeveral ſorts of this plant which are propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring, and when the plants have ſix leaves, they ſhould be tranſplanted on another hot-bed at four or five inches diſtance, ſhading them in the day-time from the ſun until they have taken root; after which they muſt have a large ſhare of air admitted to them in warm weather, to prevent their drawing up weak. Toward the end of May the plants muſt be hardened by degrees to bear the open air, and in June they ſhould be carefully taken up, preſerving as much earth about their roots as poſſible, and planted into borders of rich earth, obſerving to water them well, as alſo to ſhade them until they have taken root; after which time, they will require no other management but to keep them clean from weeds, and in very dry ſeaſons to refreſh them two or three times a week with water. Theſe directions are for the culture of the common ſorts of capſicum, which are generally planted by way of ornament. But the plants of that ſort, which are propagated for pickling, ſhould be planted in a rich ſpot of ground, in a warm ſituation, about a foot and a half aſunder, and ſhaded till they have taken root, and afterwards duly watered in dry weather, which will greatly promote their growth, and cauſe them to be more fruitful, as alſo enlarge the ſize of the fruit. By this management there may be three or four crops of fruit for pickling obtained the ſame year, provided the ſeaſon proves not too cold.

CARAWAY, [*Carum.*] This is an umbelliferous plant, cultivated with us in gardens, both for culinary and medicinal uſe. The ſeeds have an aromatic ſmell, and a warm pungent taſte. Theſe are in the number of the four greater hot ſeeds; and frequently employed as a ſtomachic and carminative in flatulent colics, and the like.

The beſt ſeaſon for ſowing the ſeeds of this plant is in autumn, ſoon after they are ripe, when they will more certainly grow than thoſe ſown in the ſpring; and the plants which riſe in the autumn generally flower the following ſeaſon, ſo that a ſummer's growth is hereby ſaved.

CARDAMOM, [*Cardamomum.*] A medicinal ſeed brought from the Eaſt-Indies, of two kinds, the greater and the leſſer; the latter is chiefly uſed in medicine. Cardamom ſeeds are a very warm, grateful, pungent aromatic, and frequently employed as ſuch in practice: they have this peculiar advantage, that notwithſtanding their pungency, they do not, like thoſe of the pepper kind, immoderately heat or inflame the bowels. Both water and rectifyed ſpirit extract their virtues by infuſion, and elevate them in diſtillation; with this difference, that the tincture, and diſtilled ſpirit, are conſiderably more grateful than the infuſion and diſtilled water: the watery infuſion appears turbid and mucilaginous; the tincture made in ſpirit limpid and tranſparent. The huſks of theſe ſeeds, which have very little ſmell or taſte, may be commodiouſly ſeparated, by committing the whole to the mortar, when the ſeed will readily pulverize, ſo as to be freed from the ſhell by the ſieve: this ſhould not be done till juſt before uſing them; for if kept without the huſks, they ſoon loſe conſiderably of their flavour.

CARDI-

CARDINALS FLOWER, [*Rapuntium.*] There are ſeveral varieties of this flower cultivated in gardens; the time of flowering is in July and Auguſt, and if the weather proves favourable they will ſometimes produce good ſeeds in England. Theſe plants are natives of Virginia and Carolina, where they grow by the ſides of rivulets, and make a moſt beautiful appearance, from whence the ſeeds are often ſent to England. Theſe ſeeds commonly arrive here in the ſpring; at which time they ſhould be ſown in pots of light earth, and but juſt covered over, for if the ſeeds are buried deep they will not grow: Theſe pots ſhould be placed under a frame to defend them from cold until the ſeaſon is a little advanced, but they ſhould not be placed on a hot-bed, which will deſtroy the ſeeds.

When the weather is warm, towards the middle of April, theſe pots ſhould be placed in the open air, in a ſituation where they may have the morning-ſun till twelve o'clock, obſerving to water them conſtantly in dry weather; and when the plants come up, they ſhould be tranſplanted each into a ſmall pot filled with freſh light earth, and placed in the ſame ſituation, obſerving to water them in dry weather; and in Winter they ſhould be placed under a hot-bed frame, where they may be ſheltered from ſevere froſts; but in mild weather, they ſhould be as much expoſed to the open air as poſſible.

The March following, theſe plants ſhould be put into larger pots filled with the ſame freſh earth, and placed as before, to the morning ſun, obſerving to water them in dry weather, which will cauſe them to flower ſtrong the autumn following.

Theſe plants are alſo propagated by parting of their roots: The beſt ſeaſon for which is, either ſoon after they are paſt flower, or in March, obſerving to water and manage them, as hath been directed for the ſeedling plants, both in Winter and Summer.

CARDUUS BENEDICTUS, [*Cnicus.*] Bleſſed thiſtle: This is a perennial plant, cultivated in gardens: it flowers in June and July, and perfects its ſeeds in the autumn. The herb ſhould be gathered when in flower, dried in the ſhade, and kept in a very dry airy place, to prevent its rotting or growing mouldy, which it is very apt to do. The leaves have a penetrating bitter taſte, not very ſtrong, or very durable; accompanied with an ungrateful flavour, which they are in great meaſure freed from by keeping. Water extracts, in a few minutes, even without heat, the lighter and more grateful parts of this plant: if the digeſtion is continued for ſome hours, the diſagreeable parts are taken up: a ſtrong decoction is very naufeous and offenſive to the ſtomach. Rectified ſpirit gains a very pleaſant bitter taſte, which remains uninjured in the extract. The virtues of this plant ſeem to be little known in the preſent practice. The naufeous decoction is ſometimes uſed to provoke vomiting; and a ſtrong infuſion to promote the operation of other emetics. But this elegant bitter, when freed from the offenſive parts of the herb, may be advantageouſly applied to other purpoſes. We have frequently experienced excellent effects from a light infuſion of carduus in loſs of appetite where the ſtomach was injured by irregularities. A ſtronger infuſion made in cold or warm water, if drank freely and the patient kept warm, occaſions a plentiful ſweat, and promotes all the ſecretions in general. The ſeeds of this plant are alſo conſiderably bitter, and have been ſometimes uſed in the ſame intention as the leaves. *See Brooks Mat. M.*

CARFE. Ground unbroken in huſbandry.

CARIES. Rottenneſs, applied to bones.

CARIOUS. Rotten.

CARLINE THISTLE, [*Carlina.*] The ſorts are, 1ſt. Common wild Carline Thiſtle. 2d. Small wild Spaniſh Carline Thiſtle. 3d. Low Carline Thiſtle with a large white flower. 4th. Fiſh Thiſtle with a reddiſh, purple, ſpreading flower. 5th. Umbellated Fiſh Thiſtle of Apula.

The firſt ſort grows naturally upon ſterile ground in moſt parts of England, ſo is rarely admitted into gardens, but the others are preſerved in botanic gardens for the ſake of variety. They grow naturally in the ſouth of France, Spain, and Italy. They are all propagated by ſowing the ſeeds in the ſpring.

CARMINATIVES. Medicines given to expel wind.

CARNATION,

CARNATION, [*Dianthus.*] Under this head we ſhall range clove gilliflowers and pinks; the ſorts are, 1ſt. Common narrow leaved wild pink. 2d. Engliſh ſmall creeping, or Maiden Pink; commonly called the Matted Pink by ſeedſmen. 3d. Branching Pink with a white flower having a purple circle; commonly called Mountain Pink. 4th. Single wild Pink with a ſmall, pale, reddiſh flower. 5th. Single Garden Carnation with a large flower. 6th. Bearded wild Pink; called Deptford Pink. 7th. Broad-leaved Garden Sweet William. 8th. Wild childing Sweet William. 9th. Italian umbellated Mountain Pink, with flowers varying from yellow to an iron colour in the ſame cluſter. 10th. The China Pink. 11th. Dwarf wild Pink with one flower. 12th. Dwarf broad-leaved Pink. 13th. The Superb Pink. 14th. The leaſt wild Pink.

The firſt ſort is rarely admitted into gardens, the flower having little beauty.

The ſecond ſort is a low trailing plant, whoſe ſtalks lie on the ground, and grows naturally in ſeveral parts of England, ſo is not now often cultivated in gardens; but formerly the ſeeds were ſown to make edgings for the borders of the flower-garden by the title of Matted Pink, by which name the ſeeds were ſold in the ſhops.

The third ſort grows naturally upon Chedder rocks in Somerſetſhire, and ſome other parts of England; this was formerly cultivated in the gardens by the title of Mountain Pink. It hath a reſemblance of the ſecond ſort, but the leaves are ſhorter and of a grayiſh colour; the ſtalks grow taller and branch more; the flowers are larger, of a white colour with a purple circle at the bottom, like that ſort of Pink called Pheaſant's Eye. As the flowers of this ſort have no ſcent, the plants are ſeldom kept in gardens.

The fourth ſort grows naturally in ſeveral parts of England, frequently upon old walls; it is a ſmall ſingle Pink of a pale red colour, ſo is not cultivated in gardens.

The fifth ſort is a ſmall ſingle Carnation, which has been long caſt out of all the gardens; from ſome one of this ſort it is ſuppoſed, the fine flowers now cultivated in the gardens had their original.

The ſixth ſort grows naturally in ſeveral parts of England, and particularly in a meadow near Deptford in Kent, from whence it had the title of Deptford Pink. This is of the kind called Sweet William; the flowers of theſe grow in cloſe cluſters at the end of the branches; they are red, and have long bearded empalements.

The ſeventh ſort is the common Sweet William, which has been long cultivated in the gardens for ornament, of which there are now great varieties which differ in the form and colour of their flowers, as alſo in the ſize and ſhape of their leaves; thoſe which have narrow leaves were formerly titled Sweet Johns by the gardeners, and thoſe with broad leaves were called Sweet Williams; there are ſome of both theſe ſorts with double flowers, which are very ornamental plants in gardens.

The eighth ſort grows naturally in the ſouth of France, in Spain and Italy; but has little beauty, ſo the plants are ſeldom kept in gardens.

The ninth ſort is a perennial plant. The roots will continue two years, and produce flowers and ſeeds; but the young plants of the firſt year always produce the ſtrongeſt flowers.

The tenth ſort came originally from China, ſo it is titled the China Pink; the flowers of this have no ſcent, but there are a great variety of lively colours among them, and of late years there has been great improvements made in the double flowers of this ſort, ſome of which are as full of petals as the double Pink, and their colours are very rich. They are commonly raiſed every year from ſeeds, but the roots will continue two years in dry ground.

The eleventh ſort is found growing naturally upon old walls and buildings in many parts of England; this is a ſingle ſmall Pink of a ſweet odour, but of a pale colour, ſo makes no appearance; and ſince the great improvement which has been made in theſe flowers by culture, this hath been entirely neglected.

The twelfth ſort grows naturally on the Alps. It is ſometimes preſerved in botanic gardens for the ſake of variety, but is rarely admitted into other gardens.

The thirteenth ſort grows naturally in ſome parts of Germany, and in Denmark. The roots of this ſeldom live

live more than two years, but they are in their greateſt beauty the firſt year of their flowering, therefore young plants ſhould be annually raiſed from ſeeds.

The fourteenth ſort is a very diminutive plant, with ſhort narrow leaves; the ſtalk riſes little more than ſix inches high, and is terminated by a ſingle flower of a pale red colour, ſo is ſeldom cultivated unleſs in botanic gardens for the ſake of variety.

The ſorts here enumerated are ſuch as the botaniſts allow to be diſtinct ſpecies; and all the varieties of fine flowers which are now cultivated in the gardens of the curious, are ſuppoſed to be only accidental variations which have been produced by culture; the number of theſe are greatly increaſed annually in many different parts of Europe, ſo that as new varieties are obtained, the old flowers are rejected.

The plants of this genus may be properly enough divided into three ſections. The firſt to include all the variety of Pinks, the ſecond all the Carnations, and the third thoſe of the Sweet William; for although theſe agree ſo nearly in their principal characters, as to be included under the ſame genus by the botaniſts, yet they never vary from one to the other, though they frequently change and vary in the colour of their flowers.

And firſt the Pink, of which there are a great variety now cultivated in the gardens; the principal of which are, the Damaſk Pink, the White Shock, the Pheaſant Eye with double and ſingle flowers, varying greatly in their ſize and colour, the Cob Pink, Dobſon's Pink, and Bat's Pink. The Old Man's Head, and Painted Lady, rather belong to the Carnation.

The Damaſk Pink is the firſt which flowers of the double ſorts; this hath a ſhort ſtalk; the flower is not very large, and not ſo double as many others; the colour is of a pale purple inclining to red, but is very ſweet.

The next which flowers is the White Shock, which was ſo called from the whiteneſs of its flowers, and the borders of the petals being much jagged and fringed; the ſcent of this is not ſo agreeable as that of ſome others.

Then comes all the different kinds of Pheaſant's Eye, of which there are frequently new varieties raiſed, which are either titled from the perſons who raiſed them, or the places where they were raiſed; ſome of theſe have very large double flowers, but thoſe which burſt their pods are not ſo generally eſteemed.

The Cob Pink comes after theſe to flower; the ſtalks of this are much taller than thoſe of any of the former; the flowers are very double, and of a bright red colour; theſe have the moſt agreeable odour of all the ſorts, ſo merit a place in every good garden. The time of the Pinks flowering is from the latter end of May to the middle of July, and frequently that ſort of Pheaſant Eye, which is called Bat's Pink, will flower again in autumn.

The Old Man's Head Pink, and the Painted Lady, do not flower till July, coming at the ſame ſeaſon with the Carnation, to which they are more allied than the Pink. The firſt, when it is in its proper colours, is purple and white, ſtriped and ſpotted, but this frequently is of one plain colour, which is purple; this ſort will continue flowering till the froſt in autumn puts a ſtop to it, and the flowers having an agreeable ſcent renders them valuable. The Painted Lady is chiefly admired for the livelineſs of its colour, for it is not ſo ſweet, or of ſo long continuance as the other.

The common Pinks are propagated either by ſeeds, which is the way to obtain new varieties, or by making layers of them as is practiſed for Carnations, or by planting ſlips, which, if carefully managed, will take root very well.

If they are propagated by ſeeds, there ſhould be care taken in the choice of them, and only the ſeeds of the beſt ſorts ſaved, where perſons are curious to have the fineſt flowers. Theſe ſeeds may be ſown in the ſpring, and the plants afterwards treated in the ſame manner as is hereafter directed for the Carnation; with this difference only, that as the Pinks are leſs tender, ſo they may be more hardily treated. Thoſe which are propagated by layers muſt be alſo managed as the Carnation, for which there are full inſtructions hereafter given. The Old Man's Head, and Painted Lady Pinks, are commonly propagated this way, but moſt of the other ſorts are propagated from ſlips.

The beſt time to plant the ſlips of Pinks is about the end of July, when, if there ſhould happen rain, it will be of great ſervice to them; but if the weather be dry, they will require to be conſtantly watered every other day until they have taken root; theſe ſhould be planted in a ſhady border, and the ground ſhould be dug well and all the clods broken, and if no rain falls it ſhould be well ſoaked with water a few hours before the ſlips are planted; then the ſlips ſhould be taken from the plants, and all their lower leaves ſtripped off, and planted as ſoon as poſſible after, for if they are ſuffered to lie long after they are taken from the plants, they will wither and ſpoil; theſe need not be planted at a greater diſtance than three inches ſquare, and the ground muſt be cloſed very hard about them; then they muſt be well watered, and this muſt be repeated as often as it is found neceſſary, till the cuttings have taken root; after which they will require no other care but to keep them clean from weeds till autumn, when they ſhould be tranſplanted to the borders of the flower-garden where they are to remain: There are ſome who plant the ſlips of Pinks later in the ſeaſon than is here directed, but theſe plants are never ſo ſtrong, nor flower ſo well as thoſe which are early planted.

We ſhall next proceed to the culture of the Carnation; theſe the floriſts diſtinguiſh into four claſſes.

The firſt they call Flakes; theſe are of two colours only, and their ſtripes are large, going quite through the petals.

The ſecond are called Bizars; theſe have flowers marked or variegated with three or four different colours, in irregular ſpots and ſtripes.

The third are called Piquettes; the flowers of theſe have always a white ground, and are ſpotted (or pounced, as they call it) with ſcarlet, red, purple, or other colours.

The fourth are called Painted Ladies; theſe have their petals of a red or purple colour on their upper ſide, and are white underneath.

Of each of theſe claſſes there are numerous varieties, but particularly of the Piquettes, which ſome years ago were chiefly in eſteem with the floriſts, but of late years the Flakes have been in greater requeſt than any of the other kinds. To enumerate the varieties of the principal flowers in any one of theſe claſſes, would be needleſs, ſince every country produces new flowers almoſt every year; ſo that thoſe flowers, which, at their firſt raiſing were greatly valued, are in two or three years become ſo common as to be of little worth, eſpecially if they are defective in any one property. Therefore, (where flowers are ſo liable to mutability, either from the fancy of the owner, or that better kinds are yearly produced from ſeeds, which with good floriſts always take place of older, which are turned out of the garden to make room for them) it would be but ſuperfluous in this place to give a liſt of their names, which are generally borrowed either from the names or titles of noblemen, or from the perſons' names or places of abode who raiſed them.

Theſe flowers are propagated either from ſeeds (by which new flowers are obtained) or by layers, for the increaſe of thoſe ſorts which are worthy maintaining; the method of propagating them from ſeed, is thus:

Having obtained ſome good ſeeds, either of your own ſaving, or from a friend that you can confide in, about the middle of April, prepare ſome pots or boxes (according to the quantity of ſeed you have to ſow) theſe ſhould be filled with freſh light earth mixed with rotten neats dung, which ſhould be well incorporated together; then ſow your ſeeds thereon (but not too thick) covering it about a quarter of an inch with the ſame light earth, placing the pots or caſes ſo as to receive the morning ſun only till eleven of the clock, obſerving alſo to refreſh the earth with water as often as it may require; in a month or five weeks the plants will come up, and if kept clear from weeds and duly watered, will be fit to tranſplant about the latter end of June; at which time ſhould be prepared ſome beds (of the ſame ſort of earth as was directed to ſow them in) in an open airy ſituation, in which they ſhould be planted at the diſtance of three inches ſquare, obſerving to water and ſhade them till they have taken new root, then they muſt be kept clear from weeds; in theſe beds they may remain till the end of Auguſt, by which time they

they will have grown ſo large as almoſt to meet each other; then prepare ſome more beds of the like good earth (in quantity proportionable to the flowers raiſed) in which they ſhould be planted at ſix inches diſtance each way, and not above four rows in each bed, for the more conveniently laying ſuch of them as may prove worthy preſerving, for in theſe beds they ſhould remain to flower.

The alleys between theſe beds ſhould be two feet wide, that perſons may paſs between the beds to weed and clean them. If the ſeaſon ſhould prove very dry at this time, they ſhould not be tranſplanted till there is ſome rain, ſo that it may happen to be the middle, or latter end of September ſome years, before there is wet enough to moiſten the ground for this purpoſe; but if there is time enough for the plants to get root before the froſt comes on, it will be ſufficient. If the winter ſhould prove ſevere the beds ſhould be arched over with hoops that they may be covered with mats, otherwiſe many of the plants may be deſtroyed, for the good flowers are not ſo hardy as the ordinary ones of this genus. There will be no other culture wanting to theſe, but to keep them clean from weeds, and when they ſhoot up their ſtalks to flower, they muſt be ſupported by ſticks to prevent their breaking. When the flowers begin to blow, they muſt be looked over to ſee which of them proffer to make good flowers; as ſoon as that can be diſcovered, all the layers upon them ſhould be laid; thoſe which are well marked, and blow whole without breaking their pods, ſhould be reſerved to plant in borders, to furniſh ſeeds; and thoſe which burſt their pods, and ſeem to have good properties, ſhould be planted in pots, to try what their flowers will be when managed according to art; and it is not till the ſecond year of flowering that any perſon can pronounce what the value of a flower will be; but in order to be well acquainted with what the floriſts call good properties, we ſhall here ſet them down.

1. The ſtem of the flower ſhould be ſtrong, able to ſupport the weight of the flower without nodding down.

2. The petals of the flower ſhould be long, broad, and ſtiff, and pretty eaſy to expand, or (as the floriſts term them) ſhould be free flowerers.

3. The middle pod of the flower ſhould not advance too high above the petals in the other part of the flower.

4. The colours ſhould be bright, and equally marked all over the flower.

5. The flower ſhould be very full of leaves, ſo as to render it when blown very thick and high in the middle, and the outſide perfectly round.

Having made choice of ſuch flowers as promiſe well, theſe ſhould be marked ſeparately for pots, and the round whole-blowing flowers for borders; all ſingle flowers, or ſuch as are ill-coloured and not worth preſerving, ſhould be drawn out, that the good flowers may have the more air and room to grow ſtrong; when the layers of the good flowers have taken root (which will be ſome time in Auguſt) they ſhould be taken off and planted out; thoſe that blow large in pots, and the other in borders (as hath been already directed.)

Of late years the whole-blowing flowers have been much more eſteemed than thoſe large flowers which burſt their pods, but eſpecially thoſe round flowers which have broad ſtripes of beautiful colours, and round Roſe leaves, of which kinds there have been a great variety introduced from France within theſe few years; but as theſe French flowers are extremely apt to degenerate to plain colours, and being much tenderer than thoſe which are brought up in England, there are not ſuch great prices given for the plants now as was a few years paſt: From the preſent taſte of theſe whole-blowing flowers, many of the old varieties which had been turned out of the gardens of the floriſts have been received again and large prices have been paid of late for ſuch flowers as ſome years ago were ſold for one ſhilling a dozen, or leſs, which is a ſtrong proof of the variableneſs of the fancies of the floriſts.

The beſt ſeaſon for laying theſe flowers is in July, as ſoon as the ſhoots are ſtrong enough for that purpoſe; it is performed in the following manner; after having ſtripped off the leaves from the lower part of the ſhoot intended to be laid, make choice of a ſtrong joint about the middle of the ſhoot (not too near the heart of the

ſhoot, nor in the hard part next the old plant; then with a penknife make a ſlit in the middle of the ſhoot, from the under ſide of the joint upward half the way or more, to the joint next above it, according to the diſtance of the joints; then with your knife cut the tops of the leaves, and alſo cut off the ſwelling part of the joint where the ſlit is made, ſo that the part ſlit may be ſhaped like a tongue; (when that outward ſkin is pared off, which, if left on, would prevent their puſhing out roots) having looſened the earth round the plant, and, if need be, raiſed it with freſh mould, that it may be level with the ſhoot intended to be laid, leſt by the ground being too low, by forcing down the ſhoot it ſhould be ſplit off; then make a hollow place in the earth, juſt where the ſhoot is to come, and bend the ſhoot gently into the earth, obſerving to keep the top as upright as poſſible, that the ſlit may be open; and being provided with forked ſticks for that purpoſe, thruſt one of them into the ground, ſo that the forked part may take hold of the layer, to keep it down in its proper place; then gently cover the ſhank of the layer with the ſame ſort of earth, giving it a gentle watering to ſettle the earth about it, obſerving to repeat the ſame as often as is neceſſary to promote their rooting. In about five or ſix weeks after this, the layers will have taken root ſufficient to be tranſplanted; then thoſe which are intended for pots ſhould be each planted in a ſeparate ſmall pot, placing them in the ſhade until they have taken freſh root; after which they may be removed into a more open ſituation, where they may remain till the middle of November (if the weather continues ſo long good,) when the pots ſhould be put under a common frame, where they may enjoy the open air at all times when the air is mild, but ſkreened from hard rains, ſnow and froſt.

Where there is conveniency, the layers, which are intended for the common borders, may be planted upon a bed at about three inches aſunder each way, and in winter covered with a frame, or elſe arched over with hoops, and in bad weather covered with mats, which will ſecure them till ſpring, when they may be taken up with balls of earth, and planted where they are deſigned to flower.

Thoſe layers which were planted in ſmall pots in the autumn, ſhould in the ſpring be turned out of thoſe pots, preſerving the earth to their roots, paring off the outſide with the matted roots, and put into the pots they are deſigned to remain in for good. The beſt compoſt for theſe flowers is as follows:

Make choice of ſome good upland paſture, or a common that is of an hazel earth, or light ſandy loam; dig from the ſurface of this about eight inches deep, taking all the turf with it; let this be laid in a heap to rot and mellow for one year, turning it once a month that it may ſweeten; then mix about a third part of rotten neats dung, or for want of that ſome rotten dung from a Cucumber or Melon-bed; let this be well mixed together, and if you can get it time enough before-hand, let them lie mixed ſix or eight months before it is uſed, turning it ſeveral times, the better to incorporate their parts. But as the layers which are made from ſuch roots as have been forced to flower the ſame year, do ſeldom ſucceed ſo well the next, it will be a good method to plant two or three layers of each of the beſt kinds in a bed of freſh earth not over dunged; which plants ſhould only be ſuffered to ſhew their flowers, that their colours may be known to be perfect in their kind; and when ſatisfied in that particular, the flowers ſhould be cut off the ſtems, and not ſuffered to ſpend the roots in blowing, by which means the layers will be ſtrengthened. And from ſome of the beſt plants of theſe, the layers ſhould be taken for the next year's blowing, always obſerving to have a ſucceſſion of them yearly, by which means every year a fine bloom of theſe flowers may be expected, ſuppoſing the ſeaſon favourable. When the plants which are intended to flower, are put into the larger pots in the ſpring, they ſhould be placed in a ſituation where they may be defended from the north wind, obſerving to give them gentle waterings as the ſeaſon may require.

Here they may remain till the middle or latter end of April, when a ſtage of boards ſhould be made to ſet the pots upon, which ſhould be ſo ordered as to have little ciſterns of water round each poſt, to prevent the inſects from getting to the flowers in their bloom; which,

which, if they are ſuffered to do, they will deſtroy all the flowers in a ſhort time; the chief and moſt miſchievous inſect in this caſe is the earwig, which will gnaw off all the lower parts of the petals of the flowers (which are very ſweet) and thereby cauſe the whole flower to fall to pieces; but ſince the making one of theſe ſtages is ſomewhat expenſive, and not very eaſy to be underſtood by ſuch as have not ſeen them, we ſhall deſcribe a very ſimple one, which has been uſed for ſeveral years, and anſwers the purpoſe full as well as the beſt and moſt expenſive one can do. Firſt, prepare ſome common flat pans about two feet over, and three inches deep, place theſe two and two oppoſite to each other, at about two feet diſtance, and at every eight feet in length. In each of theſe turn a flower-pot upſide down, then lay a piece of flat timber, about two feet and a half long, and three inches thick, croſs from pot to pot, the whole length of the ſtage; then lay the planks lengthways upon theſe timbers, which will hold two rows of the ſize for theſe pots which are proper for the Carnations; and when you have ſet the pots upon the ſtage, fill the flat pans with water, always obſerving as it decreaſes in the pans, to repleniſh it, which will effectually guard your flowers againſt inſects, for they do not care to ſwim over water; ſo that if by this, or any other contrivance, the paſſage from the ground to the ſtage on which the pots are placed, is defended by a ſurface of water four or five inches broad, and as much in depth, theſe vermin will be effectually prevented from getting to the flowers.

This ſtage ſhould be placed in a ſituation open to the ſouth-eaſt, but defended from the weſt winds, to which theſe ſtages muſt not be expoſed, leſt the pots ſhould be blown down by the violence of that wind, which is often very troubleſome at the ſeaſon when the flowers blow; indeed they ſhould be defended by trees at ſome diſtance, from the winds of every point; but theſe trees ſhould not be too near the ſtage, nor by any means place them near walls, or tall buildings, for in ſuch ſituations the ſtems of the flowers will draw up too weak. About the middle of April the layers will begin to ſhoot up for flower, therefore there ſhould be provided ſome dead ſticks, about four feet and a half long, which ſhould be thicker towards the bottom, and planed off taper at the top; theſe ſticks ſhould be carefully ſtuck into the pots as near as poſſible to the plant, without injuring it; then with a ſlender piece of baſs mat, faſten the ſtalk of the flower to the ſtick to prevent its being broken; this muſt be often repeated as the ſtalk advances in height, and all the ſide ſtalks muſt be pulled off as they are produced, never letting more than two ſtalks remain upon one root, nor above one, if they are intended to blow exceeding large. Towards the beginning of June the flowers will moſt of them have attained their height, and their pods will begin to ſwell, and about the end ſome of the earlieſt begin to open on one ſide; therefore the pods muſt be opened in two other places, at equal angles; this muſt be done as ſoon as the pod breaks, otherwiſe the flower will run out on one ſide, and be in a ſhort time paſt recovering, ſo as to make a complete flower. In a few days after the flowers begin to open, they muſt be covered with glaſſes which are made for that purpoſe, in the following manner:

Upon the top of the glaſs, exactly in the center, is a tin collar or ſocket, about three-fourths of an inch ſquare, for the flower-ſtick to come through; to this ſocket are ſoldered eight ſlips of lead at equal diſtances, which are about ſix inches and a half long, and ſpread open at the bottom about four inches aſunder; into theſe ſlips of lead are faſtened ſlips of glaſs, cut according to the diſtances of the lead, which, when they are fixed in, are bordered round the bottom with another ſlip of lead quite round, ſo that the glaſs hath eight angles, with the ſocket in the middle, and ſpread open at the bottom about eleven inches wide.

When the flowers are open enough to be covered with theſe glaſſes, a hole muſt be made with an awl through the flower-ſtick, exactly to the height of the under part of the pod, through which ſhould be put a piece of ſmall wire about ſix inches long, making a ring at one end of the wire to contain the pod, into which ring ſhould the ſtem of the flower be fixed, taking off all the tyings of baſs; and the ſtem of the

the flower muſt be placed ſo far from the ſtick, as may give convenient room for the flower to expand without preſſing againſt it; to which diſtance it may be fixed, turning the wire ſo as not to draw back through the hole; then make another hole through the ſtick, at a convenient diſtance above the flower, through which ſhould be put a piece of wire an inch and a half long, to ſupport the glaſſes from ſliding down upon the flowers, obſerving that the glaſſes are not placed ſo high as to admit the ſun and rain under them to the flowers, nor ſo low as to ſcorch their leaves with the heat. At this time alſo, or a few days after, ſhould be cut ſome ſtiff paper, cards, or ſome ſuch thing, into collars about four inches over, and exactly round, cutting a hole in the middle of it about three-fourths of an inch diameter, for the bottom of the flower to be let through; then place theſe collars about them, to ſupport the petals of the flower from hanging down; this collar ſhould be placed within-ſide the calyx of the flower, and ſhould be ſupported thereby. If, as the flowers blow, one ſide comes out faſter than the other, the pots ſhould be turned about, to ſhift the other ſide towards the ſun; and, if the weather proves very hot, the glaſſes ſhould be ſhaded in the heat of the day with Cabbage-leaves, &c. to prevent their being ſcorched, or forced out too ſoon; and, when the middle pod begins to riſe, the calyx muſt be pulled out with a pair of nippers made for that purpoſe; but this ſhould not be done too ſoon, leſt the middle part of the flower ſhould advance too high above the ſides, which will greatly diminiſh the beauty of it. And when the flowers are fully blown, if they are cut off, a freſh collar of ſtiff paper ſhould be put on, which ſhould be cut exactly to the ſize of the flower, that it may ſupport the petals to their full width, but not to be ſeen wider than the flower in any part; when this is put on, the wideſt leaves ſhould be ſpread out, to form the outſide of the flower, which although they ſhould happen to be in the middle (as is often the caſe) yet by removing the other leaves they may be drawn down, and ſo the next longeſt leaves upon them again, that the whole flower may appear equally globular without any hollow parts. In the doing of this, ſome floriſts are ſo curious as to render an indifferent flower very handſome; and on this depends, in a great meaſure, the ſkill of the artiſt to produce large fine flowers.

The directions here given are chiefly for the management of thoſe large Carnations, which may require the greateſt ſkill of the floriſts to have them in perfection; but of late years theſe have not been ſo much in eſteem as formerly, and thoſe flowers which do not break their pods have now the preference. Theſe are generally planted in pots, and treated in the ſame way as the large flowers, but do not require ſo much trouble to blow them; all that is neceſſary to be done for theſe, is to faſten their ſtems up to flower-ſticks to prevent their being broken, and to take off the pods which proceed from the ſide of the ſtalks, leaving only the top bud to flower, if they are intended to be large and fair; and when the flowers begin to open, if they are ſkreened from the ſun in the heat of the day, and alſo from wet, they will continue much longer in beauty.

The layers which are planted in the full ground, generally produce ſeeds better than thoſe in pots; therefore whoever propoſes to raiſe a ſupply of new flowers from ſeeds, muſt always obſerve to ſave the beſt of their ſeedling flowers for this purpoſe; for it is well known, that after any of theſe flowers have been a few years propagated by layers, they become barren, and do not ſeed; which is alſo the caſe with many other plants which are propagated by ſlips, layers, or cuttings; ſo that the young plants which have been newly obtained from ſeed, are always the moſt productive of ſeeds.

We ſhall next proceed to the culture of that ſpecies, which is commonly known by the title of Sweet William; of this there are a great variety of different colours which are ſingle, and three with double flowers; ſome of theſe have narrow leaves, which were formerly titled Sweet Johns, but of late that diſtinction has not been made, becauſe they are found to vary when raiſed from ſeeds.

Some of the ſingle flowers have very rich colours, which frequently vary in thoſe of the ſame bunch; there are

others with fine variegated flowers, and others whoſe middles are of a ſoft red, bordered with white, which are called Painted Ladies; but where perſons are deſirous to preſerve any of theſe varieties in perfection, the beſt flowers of each ſhould be particularly marked, and no other permitted to ſtand near them, leſt the farina ſhould impregnate them, which would cauſe them to vary.

That which is called the Painted Lady Sweet William, is a very beautiful variety; the ſtalks of this do not riſe ſo high as moſt of the other; the bunches of flowers are larger, and produced more in the form of an umbel, the flowers ſtanding equal in height, make a better appearance; of this variety there have been ſome lately raiſed with double flowers, having many beautiful ſtripes, but are found very apt to degenerate; there are others whoſe ſtalks riſe three feet high, and the flowers are of a very deep red or ſcarlet colour. Theſe all flower at the ſame time with the Carnations, which renders them leſs valuable, becauſe they have no ſcent.

The ſingle kinds of theſe flowers are generally propagated by ſeeds, which muſt be ſown the beginning of April in a bed of light earth, and in June they will be fit to tranſplant out, at which time muſt be prepared ſome beds ready for them; they ſhould be planted ſix inches diſtant every way: In theſe beds they may remain till Michaelmas, at which time they may be tranſplanted into the borders of the pleaſure-garden. Theſe will flower the next year in June, and perfect their ſeeds in Auguſt, which you ſhould ſave from the beſt coloured flowers for a ſupply.

The three ſorts with double flowers, are, 1. The broad-leaved ſort, which hath very double flowers, of a deep purple colour inclining to blue, which burſts in pods, ſo that it is not ſo much eſteemed as the others, and therefore has been leſs regarded, and is now almoſt totally baniſhed the gardens of the curious. 2. The Double Roſe Sweet William, whoſe flowers are of a fine deep Roſe-colour, and ſmell ſweet; this is much valued for the beauty and ſweetneſs of its flowers; the empalement (or pods) of theſe flowers never burſt, ſo the flowers remain with their petals fully expanded, and do not hang down looſely as thoſe of the former. 3. The Mule, or Fairchild's Sweet William; it hath narrower leaves than either of the former, and is of that variety called Sweet John; this was ſaid to have been produced from ſeeds of a Carnation, which had been impregnated by the farina of the Sweet William; the flowers of this are of a brighter red colour than either of the former; their bunches are not quite ſo large, but their flowers have an agreeable ſcent.

The double kinds are propagated by layers, as the Carnations, or by ſlips as Pinks; they love a middling ſoil, not too light or too ſtiff, nor too much dunged, which very often occaſions their rotting; theſe continue flowering for a long time, and are extremely beautiful; but they are very ſubject to canker and rot away, eſpecially if planted in a ſoil over wet or too light. Theſe flowers when planted in pots, are very proper to adorn court-yards at the time they are in flower.

The China Pink is generally eſteemed an annual plant, becauſe the plants which are raiſed from ſeeds flower and produce ripe ſeeds the ſame ſeaſon, ſo their roots are not often preſerved; but where they are planted in a dry ſoil, they will continue two years, and the ſecond year will produce a greater number of flowers than the firſt. There are a great variety of very rich colours in theſe flowers, which annually vary when raiſed from ſeeds. The double flowers of this are moſt eſteemed, though the colours of the ſingle are more diſtinct and beautiful; for the multiplicity of petals in the double flowers, in a great meaſure, hide the deep ſhades which are toward the lower part of the petals.

Theſe plants are propagated by ſeeds, which ſhould be ſown upon a gentle hot-bed about the beginning of April; this moderate heat is only intended to forward the vegetation of the ſeeds, therefore when the plants come up, they muſt have a large ſhare of air admitted to them, to prevent their drawing up weak; and as ſoon as the weather will permit, they muſt be expoſed to the open air; in about a month after, the plants will be fit to remove, when they ſhould be carefully taken up with good roots, and

planted

planted in a bed of rich earth at about three inches aſunder, being careful to ſhade them from the ſun till they have taken new root. The farther care is to keep them clean from weeds till the end of May, at which time they may be tranſplanted to the places where they are deſigned to remain for flowering, when they may be taken up with large balls of earth to their roots, ſo as ſcarcely to feel their removal, eſpecially if it happens to rain at that time.

As theſe plants do not grow large, ſo when they are planted ſingly in the borders of the flower-garden, they do not make ſo fine an appearance, as where they are planted by themſelves in beds, or if they are planted in ſmall clumps of ſix or eight roots in each, where the flowers being of different colours ſet off each other to advantage.

Thoſe who are curious in theſe flowers, take particular care in ſaving their ſeeds, for they never permit any ſingle flowers to ſtand among their double, but pull them up as ſoon as they ſhew their flowers, and alſo draw out all thoſe which are not of lively good colours; where this is obſerved, the flowers may be kept in great perfection; but where perſons have truſty friends, who live at ſome diſtance, with whom they can exchange ſeeds once in two or three years, it is much better ſo to do than to continue ſowing ſeeds in the ſame place many years in ſucceſſion, and this holds true in moſt ſorts of ſeeds; but the great difficulty is to meet with an honeſt perſon of equal ſkill, who will be as careful in the choice of his plants for ſeed as if he was to ſow them himſelf.

CARLOCK. See CHARLOCK.

CAROB. See BEAN-TREE.

CARPOBALSAM. [*Carpobalſamum*] This is the fruit of the tree that yields the balm of Gilead; it is about the ſize of a pea, of a whitiſh colour, incloſed in a dark brown wrinkled bark. This fruit, when in perfection, has a pleaſant warm glowing taſte, and a fragrant ſmell, reſembling that of the opobalſamum itſelf. It is very rarely found in the ſhops, and ſuch as we now and then do meet with, has almoſt entirely loſt its ſmell and taſte. It is of no other uſe in this country than as an ingredient in the mithridate and theriaca, in both which the college directs cubebs as a ſubſtitute to it.

CARRIAGE. This is a term uſed in huſbandry, denoting a kind of a furrow in the ground for the conveyance of water to overflow or drown the ground: It is diſtinguiſhed into two ſorts; the main carriage, which muſt be ſo cut that an allowance be made for a convenient deſcent, to give the water a fair and plauſible current all along, and whoſe mouth muſt be of breadth rather than depth, ſufficient to receive the whole ſtream deſired or intended, and when part of the water comes to be uſed, it muſt be narrower gradually, that the water may preſs into the leſſer carriages, which at every riſing ground or other convenient diſtance, muſt be cut ſmall and tapering, proportionable to the diſtance and quantity of land or water you have, and are to be as ſhallow as may be, and as many in number as may be; for though it ſeems to waſte much land, by cutting ſo much turf, yet it proves not ſo in the end; for the more nimbly the water runs over the graſs, ſo much the better is the improvement, which is attained by making many and ſhallow carriages. *See Marsh.*

CARROT. [*Daucus.*] This is a root as fit for the field as the garden, requiring very little culture, and producing a very great profit to the planter. It is hardy enough to ſtand all the attacks of cold, and other natural accidents. And though in ſome parts of the kingdom only, hitherto kept in fields, is very worthy to be introduced in the Huſbandman's Catalogue every where, and is indeed, for many reaſons, fitter for the field than the garden.

The root of the carrot is long and thick, varying in colour from the deepeſt orange to the paleſt ſtraw, and having every tinge of red or yellow. The leaves are large, and divided very beautifully into a multitude of minute parts. The ſtalk, when the carrot gets to flowering, riſes in the midſt of the leaves, and is four feet high. The leaves ſtand irregularly on it, and are like thoſe at the root, only ſmaller and paler. The flowers are little and white, they ſtand in a large round hollow tuft at the tops of the branches, and are followed by ſeeds that are numerous, ſmall, pale-coloured, light, and rough.

This is the general deſcription of the carrot, which from its flowers growing

ing in a tuft, like an umbrella, though leſs ſo than many others, is one of thoſe called by authors umbelliferous plants.

We have obſerved that there is a variety of colour in the roots of the carrot, from the deepeſt orange to the paleſt ſtraw, or ſulphur colour: the gardeners have hence, according to their cuſtom, made what they call three principal kinds of carrot, taking the three moſt diſtinct degrees of colour, the deepeſt, the middle, and the paleſt. Theſe they call, 1. The dark red carrot. 2. The orange carrot. And, 3. The white carrot. The firſt and laſt of theſe terms are ſomewhat improper, the firſt kind being only a very deep orange, and the other only a very pale yellow.

The firſt is the moſt generally eſteemed: people who are critical in theſe matters, uſually preferring the deepeſt coloured carrots; the white kind is more common in France and Italy than here; and though cuſtom give the preference, the contrary way is the ſweeteſt and fineſt flavoured of them all.

This however is not to influence the farmer in his choice. He is to cultivate not that which is beſt, but what people think ſo; and therefore he is to chuſe the deep red, commonly called the Sandwich carrot.

The firſt thing a farmer muſt do who intends to plant carrots, muſt be to examine whether he have proper ground, for without this there is no ſucceeding: thoſe plants whoſe profitable part is the leaf or ear, may be raiſed on very different ſoils, by the aſſiſtance of manure; but thoſe which depend on the root can never come to any thing, when the ground is not proper in its own nature.

Three things are requiſite in land for carrots. It muſt be deep, rich, and dry. Theſe do not ſo often concur as the farmer might be inclined to wiſh. Deep and dry is common, becauſe all ſandy ſoils have it; and therefore in general they are fit for carrots; but to be rich withal is the compleating of the buſineſs: the other will give room to penetrate and warmth to cheriſh, but when nouriſhment in abundance is joined with theſe, in the richneſs of the land, 'tis then the ground is compleatly proper.

For this reaſon a fine rich deep garden mould, where there is not too much moiſture, is very proper for them; but too much moiſture is the common fault of this kind of ground. The beſt ſoil for carrots is, a dry earth, in which there is a great deal of ſand, a good quantity of mellow earth, and a very little or no clay. In Surry and Suſſex there are vaſt tracts of ground left in a manner deſert, which would yield a great profit from carrots. It is in theſe inſtances we ſee the vaſt advantages that would ariſe from making the knowledge of huſbandry univerſal; the putting into the thoughts of farmers in one place, what is the profitable practice of another on like ſoils. We hope this work will be inſtrumental to that excellent purpoſe.

The ſoil being choſen, the preparation of it naturally conſiſts in two articles, the enriching it by manure, and the breaking it deep by tillage. All land for this purpoſe will anſwer the better, the more care is taken of it in this reſpect; and we ſhall ſhew the manner of doing it; for otherwiſe all the expence may be worſe for the crop, than if the land had been left in its natural condition.

The times of theſe preparations are to be very different; as to the plowing and dividing of the land, that ſhould be done juſt before the ſeed is ſown; but the manure muſt be laid on a year before. This will occaſion no loſs of time with the judicious farmer, for he may have a previous crop. After this the land being plowed up for carrots, will be in the beſt poſſible condition to ſupport them.

The reaſon of this management of the dung is very plain: the carrot will have great advantage from the richneſs it gives the ground, for the richer that is the larger they will be; but then freſh dung always ſubjects the land to be full of worms; and this is what ſhould be feared more than almoſt any other accident, in a carrot plantation, for theſe roots are a very luſcious food for thoſe inſects; and when worm-eaten they are worth little.

The ground requires to be dug very deep for carrots, becauſe their whole value is their length and ſtraitneſs, which they will never attain if they have not a free paſſage down for their roots; but to ſave the expence of digging,

ging, the land ſhould be plowed with a very narrow furrow and very deep, which work none but a good plowman can perform; and he ought not to plow more than an acre in three days.

The farmer is to make it his firſt care, when he thinks of ſowing carrots, to procure good ſeed: this he will know by its ſweet ſmell, its pale colour, and its roughneſs: if it be muſty or broken, 'tis damaged or old, and in either caſe will greatly diſappoint him.

The ſeed being choſen, he is to get to work upon his ground in the beginning of March. Gardeners ſow carrots in a manner the year round, that they may have crops of young ones one under another; but this the farmer has nothing to do with. He ſows them for two conſiderations, which are, to have large roots for market, and to get good ſeeds from proper parts of his ground, which is alſo very abundantly produced, and yields a very large price.

The beginning of March therefore is the time when he is to prepare by plowing. His own reaſon will direct him never to chuſe a ſtony ſoil for this root; but he muſt have a couple of women or boys to follow the plow, to pick up any looſe ſtone or other hard matter that may chance to be turned up.

When the ground is thus deeply cut up and picked, the harrows are to be ſent in, and the ſurface is to be well levelled like the beſt prepared border in a garden: this done it is ready for the ſowing. When the ſeed is a material conſideration the plants are to be kept farther diſtant, and the drieſt and warmeſt ſoils are beſt for this purpoſe.

There muſt be a great deal of care in ſowing carrot ſeed; the ſeed muſt be well rubbed in the hand to ſeparate it and make it fit for ſowing, and a proper day muſt be choſen, otherwiſe it will be impoſſible to do it as it ſhould be. The weather muſt be ſtill and calm, and the perſon who ſows them muſt go over all the ground carefully, with the ſeeds in his apron, and muſt ſpread them by hand a few at a time.

As ſoon as ever the ſeed is upon the ground, let a good heavy roller be brought on, and the whole field well rolled over with it. This ſettles the ſeeds in their places, and prevents the effect of the winds, which would ſpread them irregularly ſhould any riſe before they are thus fixed down.

The ſeed being in the ground, is to be left to nature for its ſhooting, and as ſoon as it is up, and got to ſome little height, the hand-hoers are to be ſent into the field. They muſt have orders to cut up all weeds, and thin the plants. The proper diſtance at which they ſhould be left, is about ſeven inches from one another; and thus they are to ſtand till they come to their perfection; for the ground having been once well weeded in this manner, the carrots will grow ſo vigorouſly, that their leaves meeting every where one with another, will overſpread the whole ground, and let no more grow between them.

The carrots thus left to themſelves will grow to a very good ſize by the end of Autumn, and they will thrive the better if quantities are pulled for market, from time to time, when they are big enough to be ſaleable, not drawing theſe all in one place, but from thoſe cluſters where they happen to ſtand thickeſt.

Toward the end of November the leaves of the carrots will begin to decay. The farmer will know this by their becoming yelloviſh or reddiſh; this is his notice for taking up the roots. The carrot like the potatoe ſhould be taken up in the beginning of winter, and laid by in dry ſand, in which manner they will always be kept ready for the market.

The froſt hurts carrots in the ſame manner as potatoes, though not ſo early or ſo readily; therefore, as ſoon as that time of the year approaches, when they are to be expoſed to the hazard, they muſt be taken out of the ground and laid up in ſand, which froſt does not ſo much affect as any other earthy ſubſtance; and this muſt be in a dry place, where they are defended from it in the beſt manner.

This is the whole management of the carrot, eaſy and familiar in the greateſt degree; and the profit great and certain: there is always a market for this root, and the price is ſuch that the profit, proportioned to the land and labour, is very great.

The root is not the only article by which it is ſerviceable to the farmer, for there is a great deal of profit from

from the ſeed. This is the produce of the ſecond year, and for this purpoſe the plants may be either left in the ground during the winter, or ſet in again in the beginning of ſpring.

If the carrots for ſeed are planted, after being kept in ſand during the winter, the largeſt and fineſt roots muſt be choſen for that purpoſe: in the other method, of letting them ſtand through the winter for that uſe, the moſt vigorous plants muſt be left. Theſe are to be kept at a due diſtance, by ſeparating them in drawing the others. The drieſt and warmeſt, and beſt ſheltered part of the field, muſt be choſen, and they muſt be left at about a foot aſunder; in this condition they will gather ſtrength during winter; the ſtalks will riſe early the enſuing ſummer; and the ſeeds will ripen in abundance about the middle of Auguſt.

When thoroughly ripe the plants are to be cut down with an hook, and laid in the ſun and air four days to dry, frequently turning them. After this they are to be thraſhed, or the ſeeds are to be beaten out of them; and when ſeparate they are to be aired and dried ſeveral days before they are put up for ſale; they will thus be perfectly fine, ſweet, and well coloured, and will bring a large price.

The Flemings have long known the advantage of feeding their cattle with carrots; though it is but of late years that this root has been cultivated for that purpoſe in the fields in England: nor does this uſeful and profitable practice extend even now to more than a few parts of this country; though there is ſcarce any root yet known, which is more heartening food for moſt ſorts of animals, or which better merits the huſbandman's attention; as one acre of carrots, well planted, will fatten a greater number of ſheep, or bullocks, than three acres of turnips, and at the ſame time their fleſh will be firmer, and better taſted. Horſes are extremely fond of this food, and there is not any better for hogs. Theſe roots have alſo been of ſuch excellent ſervice to deer, in parks, that when numbers of theſe valuable creatures have periſhed elſewhere, through want in very hard winters, when there has been an extreme ſcarcity of their uſual food; thoſe that have been fed with carrots have kept their fleſh all the winter, and, upon the growth of the graſs in the ſpring, have been fat early in the ſeaſon. This is not an inconſiderable advantage, in places where the graſs is generally backward in its growth. All winter crops turn to good account, and deſerve the farmer's utmoſt attention.

Candy CARROT, [*Daucus Creticus.*] This is an umbelliferous plant, growing wild in the Levant, and warmer parts of Europe. The ſeeds have a warm biting taſte and aromatic ſmell; they are carminative and diuretic, but preſent practice does not regard them.

Deadly CARROT, [*Thapſia.*] This plant does not ill deſerve its epithet; a ſmall doſe operating with extreme violence both upwards and downwards. It is an entire ſtranger to the ſhops, and met with only in the gardens of the curious.

There are ſeveral ſpecies, which are propagated by ſowing their ſeeds on an open ſpot of ground ſo ſoon as they are ripe; in the ſpring the plants ſhould be hoed out to about a foot apart each way, and be conſtantly clear from weeds.

CART, a vehicle mounted upon two wheels, and drawn by one or more horſes.

The chief difficulty in the conſtruction of wheel carriages, conſiſts in properly adapting the wheels and axle, which ought to be done in ſuch a manner, that the carriage may move with the leaſt force poſſible.

For carrying dung on the land, and many other uſes in huſbandry, we would ſtrongly recommend Mr. Sharp's CART ROLLERS, *a print of which is given in the Farmer's Mag.* vol. ii.

Wild CARROT, [*Daucus ſylveſtris.*] This is common in paſture grounds and fallow fields throughout England. The ſeeds poſſeſs the virtues of thoſe of the *daucus Creticus*, in an inferior degree; and have often ſupplied their place in the ſhops; and been themſelves ſupplied by the ſeeds of the garden carrot: theſe laſt are, in warmth and flavour, the weakeſt of the three; the ſeeds of the Candy carrot are much the ſtrongeſt.

CART-HOUSE, } An out-houſe
CART-LODGE, } for ſheltering carts, waggons, &c. from the weather.

Farmers ſhould be very careful to

place their waggons, carts, &c. under proper ſhelter, when out of uſe, as they will laſt twice as long by this means, as they would if expoſed in the yard to all weathers; for as they are thus ſometimes wet, and ſometimes dry, they ſoon rot, and become unfit for uſe.

CART or PLOUGH-HORSE. In the choice of an horſe for either of theſe purpoſes, which is the ſlow draught, chooſe one that is of an ordinary height, for horſes in the cart unequally ſorted never draw at eaſe, but the tall hangs up the low horſe: He ſhould be big, large bodied, and ſtrong limbed, by nature rather inclined to crave the whip, than to draw more than is needful; and for this purpoſe, mares are moſt profitable, if you have cheap keeping for them; for they will not only do the work, but alſo bring yearly increaſe; but care muſt be taken to have them well forehanded; that is, a good head, neck, breaſt and ſhoulders, but for the reſt it is not ſo regardful, only let her body be large, for the more room a foal has in her dam's belly, the fairer are his members; and be ſure never to put your draught horſes to the ſaddle, for that alters the pace, and hurts them in their labour.

CART-LADDER, a kind of rack, placed occaſionally at the tail of a cart or waggon, to make it hold the larger quantity of hay, ſtraw, &c.

CART-ROLLER, a cart on rollers. See CART.

CART-ROPE, a rope to tie a load on a waggon or cart.

CASCARILLA, [*Eleutheria.*] A bark imported into Europe from one of the Bahama iſlands called *Elatheria*, in curled pieces, or rolled up into ſhort quills, about an inch in width, pretty much reſembling in appearance the *Peruvian bark*, but of a paler brown colour on the inſide, leſs compact, and more friable. Its taſte is bitterer, yet leſs diſagreeable, and leſs rough than that of the Peruvian bark; with a conſiderable greater ſhare of aromatic pungency and heat: the thin outward ſkin, which is of a whitiſh colour, has no taſte. It is eaſily inflammable, and yields whilſt burning a very fragrant ſmell: this peculiar property diſtinguiſhes the *eleutheria* from all other known barks.

Stiſſerus was the firſt that employed the *cortex eleutheriæ* as a medicine, in Europe; he relates (in his *Act. laborat. chym.* publiſhed in the year 1693) that he received this aromatic bark from England; and that ſome time after, it was ſold at Brunſwick for Peruvian bark: that a tincture of it in alcalized vinous ſpirits, or dulcified alcaline ones, proved carminative and diuretic, and did conſiderable ſervice in arthritic, ſcorbutic and calculous caſes; and that if taken immediately after meals, it affected the head a little. Eleutheria was ſoon after employed by Apinus in an epidemic fever which raged in ſome parts of Norway in 1694 and 1695: this diſeaſe, which at firſt had the appearance of an ordinary intermittent, at length was accompanied with petechial ſpots. The common alexipharmacs and ſudorifics were found ineffectual: but the powder or extract of this bark joined with them, proved ſucceſsful, even after petechiæ had come forth: dyſenteries, ſucceeding the fever, were removed by the ſame medicine. During the uſe of the eleutheria, the patient generally ſweated plentifully, without loſs of ſtrength, or other inconvenience: the belly was likewiſe kept open; thoſe who did not ſweat, had three or four ſtools a day: where the menſtrual or hæmorrhoidal fluxes were ſuppreſſed at the beginning of the diſorder, they generally, upon the uſe of this medicine, reappeared. Among the Germans, the eleutheria is at preſent in very great eſteem, and frequently exhibited againſt common intermittents, in preference to the Peruvian bark, as being leſs ſubject to ſome inconveniencies which the latter, on account of its greater aſtringency, is apt to occaſion; it is alſo given, with good ſucceſs, in flatulent colics, internal hæmorrhagies, dyſenteries, the diarrhœæ of acute fevers, and other like diſorders. The gentlemen of the French academy found this bark of excellent ſervice in an epidemic dyſentery in the year 1719; in which ipecacoanha proved ineffectual: Mr. Boulduc obſerved, that this laſt left a lowneſs, and weakneſs of ſtomach, which continued for a long time, whilſt eleutheria ſoon raiſed the ſtrength, and promoted appetite. From the experience which we have ourſelves had of this bark, we

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are apt to think, that it deſerves to be more regarded than it is at preſent.

CASE-WEED, [*Burſa Paſtoris.*] See SHEPHERD'S PURSE.

CASHEWNUT, [*Acajou.*] See ANACARDIUM.

CASSADA, or CASSAVA, [*Jatropha.*] A plant very common in the warmer parts of America, where the roots are prepared for food. The juice which is poiſonous is preſſed out, and it is made up into cakes or puddings.

CASSIA, [*Caſſia.*] Baſtard Sena. The ſorts are, 1ſt. American Caſſia with roundiſh-pointed leaves. 2d. Stinking American Caſſia with oblong ſmooth leaves. 3d. Wild ſtinking Caſſia with winged pods, called in the Weſt Indies French Guava. 4th. Caſſia from Maryland, with blunt leaves, and a creeping root. 5th. Narrow-leaved Caſſia of the Bahama iſlands, with a reflexed cup to the flower. 6th. Barbadoes Caſſia, with a reflexed cup, and pointed leaves. 7th. Stinking American Caſſia with blunt leaves. 8th. American Caſſia with ſmooth pods. 9th. Purging Caſſia, or Pudding-pipe-tree.

Theſe Caſſia's are all propagated by ſeeds, which muſt be ſown in a hot-bed in February, and afterwards tranſplanted into pots, which muſt be plunged into another hot-bed, and muſt be kept forward, by removing them from one hot-bed to another (as was directed for the Amaranths.) Nor ſhould theſe plants be ever expoſed to the open air, if we intend to ſee them flower; they muſt therefore be kept in a warm ſtove in winter, and be carefully managed. Many of theſe plants will flower the ſecond year, and ſome of them produce ripe ſeeds with us; nay, ſometimes, many of them will flower the firſt year, if they were ſown very early, as the fifth, ſixth, ſeventh, and eighth ſorts frequently do; but then they are more apt to decay in winter, than thoſe that do not flower: the fourth ſort will endure the ſevereſt cold of the winter in the open ground, and increaſe plentifully by the root: this produces flowers in the autumn; but our ſummers are not warm enough to ripen their ſeeds. The ninth ſort grows to be a very large tree, not only in Alexandria, but alſo in the Weſt-Indies: this is what produces the purging Caſſia of the ſhops, and may be raiſed by ſowing (freſh ſeeds taken out of the pulp) in a hot-bed in the ſpring of the year, and muſt be managed as the other ſorts: this will grow with us to be a handſome ſhrub, but muſt be kept in a warm ſtove, otherwiſe it will not endure through the winter. All theſe Caſſia's love a light ſandy foil, and in warm weather muſt be frequently watered. The third ſort will grow to a great height in one ſeaſon, if it be forwarded in hot-beds; but it is with much difficulty preſerved the winter through.

CASSIA, [*Caſſia Lignea.*] An Indian tree called by Breynius *arbor canelliferа Indica, cortice acerrimo viſcido ſeu mucilaginoſo, qui caſſia lignea officinarum.* This bark, in appearance and aromatic flavour approaches to cinnamon; from which it is eaſily diſtinguiſhable by its remarkable viſcidity: chewed, it ſeems to diſſolve in the mouth into a ſlimy ſubſtance; boiled in water, it gives out a ſtrong mucilage, the aromatic part exhaling; the water obtained by diſtillation has an unpleaſant ſmell, ſomewhat of the empyreumatic kind: nevertheleſs the diſtilled oil proves nearly the ſame quality with that of cinnamon. Caſſia poſſeſſes the aromatic virtues of cinnamon; but in an inferior degree; and its effects are leſs durable. Its glutinous quality renders it uſeful in ſome caſes where ſimple aromatics are leſs proper.

CASSIDONY, [*Stœchas.*] French lavender, Stœchas, or Stickadore. This is a ſhrubby plant, conſiderably ſmaller than common lavender: the flowery heads are brought from Italy and the ſouthern parts of France; they are very apt to grow mouldy in the paſſage, and even when they eſcape this inconvenience, are generally much inferior to thoſe raiſed in our gardens. The beſt ſtechas which we receive from abroad, has no great ſmell or taſte; Pomet affirms that ſuch as the ſhops of Paris are ſupplied with, is entirely deſtitute of both: whilſt that of our own growth, either whilſt freſh or when carefully dried, has a very fragrant ſmell, and a warm, aromatic, bitteriſh, ſubacrid taſte; diſtilled with water, it yields a conſiderable quantity of a fragrant eſſential oil; to rectified ſpirit it imparts a ſtrong tincture, which inſpiſſated proves an elegant aromatic

romatic extract. This aromatic plant is rarely met with in prescription; the only officinal compositions which it is admitted into are the mithridate and theriaca.

There is another sort of stechas, which on account of the beauty and durability of its flowers has of late years had a place in our gardens, and whose aromatic qualities render it worthy of one in the shops. This is the golden stechas, goldilocks, or golden cassidony: its flowers stand in umbels on the tops of the branches; they are of a deep shining yellow colour, which they retain in perfection for many years; their smell is fragrant and agreeable, approaching to that of nutmegs; their taste warm, bitterish, and pungent; they impart their flavour to water in distillation, and by infusion to rectified spirit.

They may be propagated by seeds sown in March, or by planting slips or cuttings in the spring.

Mountain CASSIDONY, [*Gnaphalium.*] Goldilocks, yellow Cassidony. See CASSIDONY.

Golden CASSIDONY. See CASSIDONY.

CASSIOBERRY BUSH, [*Cassine.*] A tree, native of Carolina, from whence the seeds are brought to England.

CAST, a flight of birds, insects, &c. Thus a cast of bees, signifies a swarm or flight of bees.

CASUMUNAR, this is a tuberous root, an inch or more in thickness, marked on the surface with circles or joints like galangal, of a brownish or ash colour on the outside, and a dusky yellowish within: it is brought from the East Indies, cut into transverse slices; what kind of plant it produces, is not known. Casumunar has a warm bitterish taste, and an aromatic smell somewhat resembling that of ginger. It has been celebrated in hysteric cases, epilepsies, palsies, loss of memory, and other disorders: the present practice sometimes employs it as a stomachic and carminative.

CATCH-FLY, [*Lychnis.*] A beautiful flower, which may be propagated by seeds or slips.

The double flowering sort of catch-fly was accidentally obtained from the seeds of the single; and has not been known above forty years in the English gardens. As this sort never produces seeds, so it can only be propagated by parting and slipping the roots; the best time for this is in autumn, at which time every slip will grow. If this be performed in September, the slips will have taken good roots before the frost, and will flower well the following summer; then if they are expected to flower strong, the roots must not be divided into small slips, though for multiplying the plant, it is no matter how small the slips are. These should be planted on a border exposed to the morning sun, and shaded when the sun is warm, till they have taken root. If the slips are planted in the beginning of September, they will be rooted strong enough to plant in the borders of the flower-garden, by the middle or latter end of October. The roots of this sort multiply so fast as to make it necessary to transplant and part them every year; for when they are suffered to remain any longer, they are very apt to rot. It delights in a light moist soil.

It has the name of catch-fly, from a glutinous liquor, almost as clammy as bird-lime, sweating out of the stalks under each pair of leaves; so that the flies, which happen to light on these places, are fastened to the stalk, where they die.

Lobel's CATCH-FLY, a species of Silene.

CATERPILLARS, are of innumerable kinds, like the beetles and their maggots. They are the young of the butterfly-species, and are as various in their form, size and colours, as those winged parents from whom they spring.

The butterfly is directed by nature to lay her eggs upon some particular plant; and there the caterpillars are hatched. This plant is to be their food, therefore the farmers and the gardeners crops suffer most because they are well tasted: and the creature devours immoderately, and does vast mischief.

After it has lived the appointed time in this state, it spins a web; and in that waits the change into a butterfly: thence it issues, like the parent animal, to lay the foundation of another brood.

Trees suffer as much as smaller plants by these creatures; they will eat up the whole quantity of their leaves sometimes in a very short time.

In

In the fields the pulſe-kind are moſt ſubject to them; and it is very eſſential to guard againſt them.

In plantations of trees their neſts ſhould be ſought, after the leaves are fallen; for many kinds of them breed in this manner in great numbers, the eggs remaining in the neſt or bag all the winter, and hatching juſt when the leaves come out in ſpring.

Theſe neſts are generally at the extremities of the branches of young trees, and the beſt method is to cut off the tip of the branch and deſtroy them.

In fields they have not this courſe of breeding, for what ſuffer moſt by them are the ſummer crops. When the farmer ſees them in any number, or perceives by their havock that they are numerous enough to do him miſchief, his remedy is this:

Melt ſome pitch in an earthen pipkin, and put it to ſome flour of brimſtone. Let it cool, and divide it into ſeveral lumps.

Place ſmall heaps of ſtraw in different parts of the field, and on each lay one of theſe lumps of the pitch and brimſtone. Set fire to the ſtraw, and the other ingredients will melt and burn among it; and every caterpillar that is within the influence of the ſmoak, will fall off and periſh.

If once be not ſufficient, the ſame practice may be repeated; and if the farmer be diligent, he need not fear ſucceſs. The art is diſpoſing the heaps in ſuch manner, that no part of the ground may be free from the ſmoak.

In gardens and plantations of any kind uſe the following method:

Boil ſome tobacco in urine, and add to it ſome ſoap-lees; ſprinkle where the caterpillars are, and it will deſtroy them.

To prevent their numerous increaſe on trees, gather them off in winter, taking away the prinkets which cleave to the branches, and burn them; but if they get on cauliflowers or cabbages, take ſome ſalt water, or ſtrong brine, and water the plants with it, and it will kill the inſects: the ſame effect will be produced by taking ſome of the caterpillars themſelves, bruiſing them with garlick, and infuſing the mixture in water; or you may ſmoak them with wiſps of dry ſtraw in March, juſt as the bud begins to open.

In the ſummer while they are yet young, when, either through the coldneſs of the night, or ſome humidity, they are aſſembled together on heaps, you may take and deſtroy them; or you may waſh your trees with water, in which wormwood, tobacco-ſtalks, and coloquintida have been diſſolved; or take lime duſt, when the wind is high, and the trees wet, ſprinkling the duſt, ſo that the wind may blow it on the trees.

CATERPILLAR PLANT, [*Scorpiurus.*] There are ſeveral ſpecies of this plant, all annual, and growing naturally in the warm countries in Europe.

The plants are preſerved in ſeveral curious gardens for their oddneſs more than for any great beauty: they are propagated by ſowing their ſeeds upon a bed of light earth; and when the plants are come up they muſt be kept clean from weeds, and ſhould be thinned ſo as to leave them about ten inches or a foot aſunder, becauſe their branches trail upon the ground; and if they have not room they are apt to overbear each other.

Theſe plants ſeldom thrive well if they are tranſplanted; therefore the beſt method is to put in three or four good ſeeds in each place where you would have the plants remain. When the plants come up there ſhould be only one of the moſt promiſing left in each place, which ſhould be conſtantly kept clear from weeds; and when their pods are ripe, they ſhould be gathered and preſerved in a dry place till the following ſpring, to be ſown.

CATKYNS, an aggregate of ſummits which are joined together in form of a rope or cat's-tail, and is the male flower of ſuch trees as bear them, as Filberts, Walnuts, Birch, Willows, Firs, Pines, &c.

CAT-MINT, [*Nepeta.*] Called alſo Nep. Cat-mint (ſo called from its being often deſtroyed by that animal) is met with in our gardens, and ſometimes growing wild in hedges and on dry banks. It is a moderately aromatic plant, of a ſtrong ſmell, not ill reſembling a mixture of mint and pennyroyal; of the virtue of which it likewiſe participates.

CAT's-FOOT, Ground Ivy.

CATTLE, a general name for beaſts of paſture, but generally confined to thoſe of the cow kind.

CAVING, ſmall and ſhort ſtraws left in the caving ridder or ſieve, uſed as chaff.

CAVING *Ridder*, a coarſe kind of ſieve, by which the thraſher ſeparates the corn and chaff from the ſhort ſtraws.

CAYAN PEPPER, Capſicum or Guinea Pepper.

CEDAR, the ſpecies are: 1ſt. The Cedar of Libanus. 2d. The red Virginian Cedar. 3d. The white-berried Virginian Cedar. 4th. The Cedar of Bermudas. 5th. The Tree, or Swediſh Juniper.

The cones of the Cedar of Libanus were formerly brought to Britain from the Levant; but the Engliſh trees have ſince produced abundance, and thoſe of a better quality than the foreign. They are more apt both to produce and ripen their cones in hard than mild winters.

The way to get out the ſeeds, is by ſplitting the cones through the centre with a ſharp piece of iron length-ways, and picking them out with your fingers, which may eaſily be done, after expoſing them for ſome hours on the hearth before a warm fire. If the cones are two years old, they will emit their ſeeds more readily than thoſe lately gathered, and the ſeeds equally good.

The beſt ſoil to raiſe theſe plants on, is rich old cow-paſture earth, which, if not naturally of a light quality, mix with a fourth or fifth part of ſea-ſand, or that from the ſides of rivulets, well blended together for ſome months before it is uſed. This tree is very hardy at three or four years old, neither is it delicate from the beginning; but at the ſame time, it is abſolutely neceſſary to give them abundant nouriſhment at firſt, in order to make fair and vigorous plants; for if they once become dwarfiſh, ſtunted, or loſe their leading ſhoot, no art will afterwards reſtore them to a good figure: Therefore the raiſing a number of plants, which any tolerable gardener may eaſily do, is not the only thing required; it is raiſing them of a healthful comely figure, and this cannot be done without ſkill and attention. In order to effect it, obſerve the following rules:

Having prepared the ſoil as before mentioned, in a ſheltered ſituation expoſed only to the morning ſun, place an old hot-bed frame thereon, and put in it the depth of ſeven or eight inches of this mould, in which ſow the ſeeds the beginning of March, in ſhallow drills made with your finger, a foot or fourteen inches aſunder. About a fortnight after ſowing, the weather being dry, give them a very gentle ſprinkling of water every ſecond evening while it continues ſo. In about ſix weeks the plants will appear above ground, when, if the nights are froſty, which is often the caſe at this ſeaſon, let a mat be thrown over them in the evening, and taken off next morning or forenoon, when the ſun diſpels the froſt. After this time, the weather being mild and dry, the waterings muſt be regularly though gently continued; and now it will be ſafeſt to do it in the mornings till the froſt is over, after which they will receive more benefit from it in the evenings.

Theſe Cedars come up, and continue the firſt year, with remarkable tall and thin bodies, and with heavy tops, inclining to hang downwards: they have downright roots, with few fibres; and their roots penetrate leſs into the earth at firſt than any plant, inſomuch that great numbers of them have been laid flat, and beat entirely out of the ground with the rains, even in the ſummer months. To remedy this common misfortune, no method is equal to drawing up the mould about their ſtems, at ſundry times as they advance in growth, which will not only preſerve, but much invigorate the plants. This being attended to, they will require no further care till next ſeaſon, but covering the frame with a mat in violent rains or ſevere froſt, never omitting to uncover them in mild weather.

The following ſpring, prepare another ſpot in the ſame manner as for the ſeed, but let the compoſt ſoil be twelve or fourteen inches deep, having cut off the points of their downright roots with a very ſharp knife, which, being tender, would otherways tear their fibres; immerſe them in a ſoft palp of earth and water mixed together like batter, about half an hour, and plant them in beds eighteen inches by a foot aſunder. If theſe beds are hooped acroſs, and a mat thrown over them during the heat of the day, till their roots have ſtruck, and their leaves begin to expand, it will much accelerate their

their growth; and during any ſevere ſtorm the ſucceeding winter, this ought ſtill to be repeated. It will likewiſe be neceſſary, the firſt ſummer, to draw a little earth to the ſtems of the plants, as mentioned for the ſeedlings, and to give them frequent gentle waterings during the growing ſeaſon. By next ſpring the Cedars will be out of danger, the hoops and mats will be of no further uſe, and the plants require only common culture at any time after.

Theſe plants being now three years old, will be hardy enough for removal to a common nurſery, in any ordinary ſoil or ſituation, where, about the beginning of April, they ſhould be planted in lines two feet and a half aſunder, and fourteen or ſixteen inches diſtant in the line. At tranſplanting, continue to reduce the downright roots, and ſhorten the ſmaller fibres moderately, which will occaſion their producing many more new roots, ſo as afterwards to riſe with bulks of earth cloſely adhering to them;—it will be neceſſary to ſteep them in palp as formerly, to water them at planting, and to continue it every fourth or fifth evening for ſix weeks, the weather being dry. Here let them continue two years, when they may be removed to the places in which they are meant to remain; or, if deſired larger for future deſigns, they may again be tranſplanted to another quarter, and placed in rows five feet aſunder and three feet in the row, to continue three years longer; and they will afterwards ſucceed equally well as the youngeſt plant, by ſeaſonably repeated waterings.

The above culture is beſt for private perſons, who have them to remove only from their nurſery to the adjoining fields; but for nurſerymen, who often ſend them to a great diſtance, a parcel of them ſhould be put in pots nine inches diameter, at three years old, where, after keeping them three years longer, they may be ſhaken out of theſe pots with their whole bulks of earth entire, and, being wrapt in a piece of mat, may with ſafety be tranſported to the remoteſt corners of the iſland, and will keep ſeveral months out of the ground without ſuffering any injury.

When the plants begin to grow freely, the leading ſhoot always inclines to one ſide: To remedy this, you muſt thruſt in a ſtake by the ſide of each plant, and tye the leader cloſe to it, till you have got them to a conſiderable height, otherways their branches, which naturally expand a great way, will prevent their growing tall.

To whatever height you intend clearing the trunks of thoſe Cedars, (which ought never to be great, as much of their beauty conſiſts in being cloathed with their noble verdant boughs to near the ſurface), let the branches be cut off when young and tender, as no tree reſents lopping their old wood ſo much.

Though theſe trees, when young, require all the culture and ſhelter here directed to make them handſome and vigorous, yet, when five or ſix years old, no plant will better endure our moſt ſevere ſeaſons, or grow in more forbidding, poor, and hungry ſoil; the largeſt trees of them now known in the world being in the coldeſt and moſt expoſed places, covered great part of the year with ſnow; from whence, it cannot be doubted, but that they might become a great ornament, and valuable improvement, if generally planted in Great-Britain.

Many pages have been written by learned men on the virtues of the wood of this tree, as, that it is proof againſt all putrefaction of animal bodies,—that it yields an oil famous for preſerving books and writings,—that the great Seſoſtris King of Egypt built a veſſel of Cedar, two hundred and eighty cubits long,—that in the temple of Apollo at Utica, was found freſh timber near two thouſand years old,—and that the ſtatue of the Goddeſs in the Epheſian temple was of this material, as was moſt of the timber-work of that glorious ſtructure, &c. &c.

The red and white Virginian Cedars are eaſily propagated, by ſowing their berries in the ſpring on beds of good mellow light ſoil, expoſed only to the morning ſun, and otherways ſheltered by trees, hedges, or walls. Theſe ſeeds will remain a year in the ground before they appear; during which time, the beds muſt be kept clean, and the ſurface ſweet and looſe: It will likewiſe be neceſſary, in extreme drought, to give them now and then a gentle ſprinkling of water, which will keep th

berries in vigour, as otherways many of them periſh, and the remainder come up weak, late, and irregular in the ſpring, after a very dry ſummer. As the plants make ſmall progreſs the firſt year, they may remain two years in the ſeed-bed; they muſt, both the ſummer ſeaſons, be frequently refreſhed with water, and let the ſurface of the beds in autumn, be dreſſed as for other ſeedlings.

The ſpring following, remove them to another well-ſheltered ſpot, of the ſame quality as for the ſeed, and plant them in lines, eighteen inches aſunder, and nine or ten inches diſtant in the line; give them the ſame kind of culture, generally required for Evergreens of that age, and let them remain two years.

From thence remove them to another quarter of the nurſery, in any ordinary ſoil and ſituation, cutting away the extreme parts of their roots, with any of the crowded or ill-placed branches, and plant them in lines, three and a half feet aſunder, and two feet in the line; let them be watered at planting, and frequently after it in dry weather, till paſt Mid-ſummer, keeping the ground entirely clean; and here they ought to remain three years, when they will be of a proper ſize to be planted out for good.

The Tree, or Swediſh Juniper, may be treated in all reſpects as the red and white Cedars.

The Bermudas Cedar is more delicate and ſlower of growth, when young, than the ſorts mentioned; it will therefore be an improvement to ſow their berries in pots, to keep them in the ſhade during the ſummer months, and under a frame the following winter. In the ſpring, when the ſeeds begin to vegetate, plunge the pots into a moderate hot-bed till the month of July, from whence they will advance more in one ſeaſon, than two in their natural ſtate, and make better plants.

The ſucceeding ſpring, plant each of them in halfpenny pots, and again plunge them in a hot-bed till July, when, in mild weather, they may by degrees be inured to the open air, and next ſpring put into penny pots, where they ſhould remain two years, when they ought, once more, either to be ſhifted into two-penny pots, or planted in a well-ſheltered place of the nurſery for three years, by which time they will reſiſt our ſevereſt winters very well. Though this proceſs may to ſome appear troubleſome, it is only ſo in a very trifling degree to a good gardener, who has proper conveniencies for executing his buſineſs; and the Bermudas Cedar, being a plant of great beauty and elegance, is well worth beſtowing a little extraordinary pains in bringing it ſoon to perfection.

The two Virginian kinds, and Swediſh Juniper, will grow by cuttings, which may either be done the beginning of April or end of Auguſt, the latter of which ſeaſons is rather moſt ſucceſsful. Being then provided with branches of one or two years growth, cut or tear them aſunder at the joints, leaving a knob of the old wood at them, and clear off the leaves or ſmall twigs as far as the cuttings are to be buried in the ground, which, if they will admit of it, may be about ſix inches; plant them in lines eighteen inches diſtant, in a ſhady border of rich looſe earth, and refreſh them with water as the ſeaſon may require. The following ſummer, let the ground between the earth be kept looſe and mellow, by frequent ſtirring with a trowel; water them every third or fourth evening in dry weather, and the ſecond ſpring they will be ſufficiently rooted to tranſplant to the quarters of the nurſery, there to be treated as the ſeedlings.

The Bermudas Cedar will likewiſe grow by cuttings, though not ſo freely in the open ground; but ten or twelve of them put in a penny pot, and plunged into a hot-bed of tanners bark, will root liberally in one ſummer; and if taken out of thoſe pots the ſucceeding ſpring, put in ſeparate ones of the ſame ſize, and again plunged in the hot-bed another ſummer, they will be larger plants than the ſeedlings at four years old, and may afterwards be treated as has been directed for them.

There are various other ſorts of Cedars, but the rules here laid down for the culture of thoſe mentioned are ſufficient to lead to the whole, by only obſerving, that ſuch ſeeds or plants as are brought from warm and temperate regions, require more aid and protection for ſome time, than others from more hoſpitable climes.

In the culture of all the Cedars as well as that of Libanus, let it be an invariable rule, to prune and reduce them to their proper form when the branches are young, from whence their wounds will immediately heal; but if this be neglected till old and woody, ſo great an effuſion of ſap will flow from them in hot weather, as to render the trees weak and unhealthy, if it does not deſtroy them.

The Cedar grows in all extreams in the moiſt Barbadoes, the hot Bermudas, and cold New-England, even where the ſnow lies almoſt half the year, for ſo it does on Mount Lebanon. It is raiſed of ſeeds ſet like bay-berries, and the beſt kind in the world might be had from the Summer iſlands. That from Barbadoes and Jamaica is ſpurious, and ſo porous, that wine will ſoak through it; yet that which is called Cedar in New England, grows tall, and, ſawed into planks, makes excellent and everlaſting flooring. Some of this timber was found in the temple of Apollo at Utica, of 2000 years ſtanding; and the ſtatue of the Epheſian Diana is ſaid to have been of it. If uſed in building, it would reform the malignity and corroſiveneſs of the air, and preſerve againſt moths and worms. It is ſo dry, that it cannot well endure nails, and therefore proper only to be faſtened by pins of the ſame wood. Formerly it was uſed in ſhipping. The Shittim mentioned in the Scriptures is ſuppoſed to have been a ſort of Cedar.

Barbadoes CEDAR. This grows naturally in Barbadoes, Jamaica, and the other Weſt-India iſlands, and ſo large as to be employed in ſhip building.

Baſtard CEDAR. *See* BASTARD CEDAR.

CELANDINE, [*Chelidonium majus.*] This plant grows on old walls, among rubbiſh, and in waſte ſhady places. The herb is of a blueiſh green colour; the root of a deep red; both contain a gold coloured juice; their ſmell is diſagreeable; the taſte ſomewhat bitteriſh, very acrid, biting and burning the mouth; the root is the moſt acrid. Juice of celandine has long been celebrated in diſorders of the eyes; but it is greatly too ſharp, unleſs plentifully diluted, to be applied with ſafety to that tender organ. It has been ſometimes uſed, and it is ſaid with good ſucceſs, for extirpating warts, cleanſing old ulcers, and in cataplaſms for the herpes miliaris. This acrimonious plant is rarely exhibited internally: the virtues attributed to it are thoſe of a ſtimulating aperient, diuretic, and ſudorific: it is particularly recommended in the ſlow kind of jaundice, where there are no ſymptoms of inflammation, and in dropſies; ſome ſuppoſe the root to have been Helmont's ſpecific in the hydrops aſcites. Half a dram or a dram of the dry root is directed for a doſe; or an infuſion in wine of an ounce of the freſh root.

It is recommended for the yellows in cows.

CELERIAC, [*Apium rapaceum.*] A ſpecies of celery which ſhould be ſown at two or three different times, in order to have, during the whole ſeaſon, a ſucceſſion of plants which do not run up to ſeed. The firſt ſowing may be in the beginning of March, in which caſe it ſhould be upon a gentle hot-bed, on account of the rawneſs of the weather at that ſeaſon. The ſecond may be at the end of the ſame month, in an open ſpot of fine rich moiſt and light earth, fully expoſed to the warmth of the ſun: and the third ſhould by the latter end of April, or the beginning of May, likewiſe on a rich and moiſt ſoil, diſtant from the drip of trees. If this ground be expoſed to the morning ſun only, it will be ſo much the better. Theſe ſeeds muſt be watered frequently, if the weather be dry, for otherwiſe they will not grow; but with this care they will put forth plants in about three weeks or a month, and theſe will be fit to tranſplant in five or ſix weeks after their coming up.

When this is done, they ſhould be pricked out at the diſtance of three inches ſquare from one another, in well prepared, and warmly ſituated beds of moiſt rich earth; and if the ſeaſon ſhould prove cold, theſe beds muſt be covered with mats, to defend the young plants from the morning froſts, which would greatly check their growth, or, perhaps, even kill many of them. In drawing them out of the ſeed-bed, care ſhould be taken to thin them, where they grow too thick, and to leave the ſmalleſt to get more ſtrength before they are removed. By this means the ſame ſeed-bed will af-

ford three different plantings, which will ſucceed each other for uſe.

By the middle of May, ſome of the firſt tranſplanted plants will be fit to remove again for blanching; and in this particular only the culture of celeriac differs from that of celery, the latter being tranſplanted into trenches, and there earthed up, whereas celeriac, which ſeldom grows above eight or ten inches high, and therefore requires but little earthing up, ſhould be planted in level ground, or in very ſhallow drills, its great excellency conſiſting in the ſize of its root, which often grows as big as an ordinary turnip, even in the common way of ſetting theſe plants only ſix or eight inches aſunder in rows, ſixteen inches apart, and earthing them up but once. It is therefore highly reaſonable to think, that if the ſuperior method of culture uſed in the new huſbandry was applied to this plant, both the taſte and ſize of the roots would be greatly improved.

CELERY, [*Apium Dulce.*] The name of a well-known plant, much uſed in ſoups, and other culinary uſes.

It requires exactly the ſame treatment as celeriac, laid down in the preceding article, till it is tranſplanted for the ſecond time, in order to be blanched. The uſual way of performing this, is to dig a trench by a line, about ten inches wide, and eight or nine inches deep, in a moiſt, rich, and light ſoil; and to looſen and lay level the earth at the bottom of this trench, and to throw up on each ſide a ridge of the mould taken out, that it may be in readineſs there for earthing the celery. Theſe trenches are generally three feet aſunder, which is a ſufficient ſpace for digging between them after they are filled up. When the young plants have been trimmed, and the tops of their longeſt leaves cut off, they are ſet in one ſtrait row in the middle of the bottom of the trench, at about four or five inches deep from one another; their roots are then covered with mould trodden down cloſe to them; and care is taken to water them plentifully, till they have ſtruck out new roots. As theſe plants advance in height, freſh earth is drawn in cloſe to them on each ſide, but with great caution not to bury their hearts, or even to do this in wet weather, leſt it ſhould make them rot.

When the plants are grown conſiderably above the trenches, and all the ridges have been employed in earthing them up, a ſpade is uſed to dig up more earth from between their rows, and this is continued, at proper intervals of time, till they are fit for uſe.

The celery firſt planted out will be fit for uſe about the end of July. This will be ſucceeded by the after plantations; and the later ſowings, if rightly managed, will yield a conſtant ſupply of it till April. The laſt crop ſhould be planted in a drier ſoil than any of the preceding; and to prevent its being rotted by much wet in winter, it will be right to cover the ridges, eſpecially if there be any danger of hard froſt, with peaſe-haulm, or ſome other light covering, which will not ſmother the plants: for covering them too cloſe would alſo make them rot. However, this will be ſufficient to keep the froſt out of the ground, ſo that the celery may be taken up whenever it is wanted; which cannot be done when the earth around it is hard frozen. But this covering muſt be taken off as early in the ſpring as the weather will permit, leſt it ſhould make the plants run to ſeed.

Celery will not continue good above three weeks or a month after it is fully blanched, but will then grow hollow, or rot. A ſucceſſion of ſix or ſeven different plantings is therefore neceſſary for thoſe who would have a conſtant and regular ſupply.

CELLS, [*Cellulæ.*] The ſmall diviſions in honey-combs, which geometers have obſerved to be always regular hexagons.

Cells alſo denote the hollow places between the partitions in the pods, huſks, and other ſeed-veſſels of plants.

Greater CENTAURY, [*Centaurium majus.*] This is a large plant, cultivated in gardens. The root has a rough ſomewhat acrid taſte, and abounds with a red viſcid juice: its rough taſte has gained it ſome eſteem as an aſtringent; its acrimony as an aperient; and its glutinous quality as a vulnerary: the preſent practice takes little notice of it in any intention.

Leſſer CENTAURY, [*Centaurium minus.*] This grows wild in many parts

Parts of England, in dry paſture grounds, and amongſt corn. The leaves are an uſeful aperient bitter, void of acrimony: they ſtand recommended as ſudorific and emmenagogue; and by ſome in the jaundice, intermittent fevers, and dropſies.

CETERACH. Spleenwort.

CHALK, [*Creta.*] Chalk is of two ſorts, the hard dry ſtrong chalk, which is the beſt for lime; and a ſoft unctuous chalk, which is the beſt for lands, becauſe it eaſily diſſolves with rain and froſt: 'tis a very great improver of moſt lands, and will alter and change even the very nature of them, eſpecially ſuch as have not been chalked before: for it is apt to cauſe land to put forth itſelf too much; and therefore land that is chalked, if it is not well dunged and kept in heart, will receive but little benefit from a ſecond chalking, unleſs it lie a great many years to recover itſelf, except it be ſome very particular ſort of land, which is the occaſion of that ſaying, that chalk makes a rich tenant, and a poor landlord. For which reaſon the beſt way of making improvement by it, is to mix but one load of chalk with two or three loads of dung, mud, or freſh earth, which will make it a conſtant advantage. It is beſt for cold, ſour lands, and commonly the greateſt improvement of thoſe lands that lie fartheſt from it; becauſe the lands near it partake, and have too much of the nature of the chalk in them. They commonly lay eight, to fourteen loads of chalk upon an acre where they lay it ſingle, which will upon ſome lands cauſe extraordinary crops of corn, for fourteen or fifteen years together. It is beſt to carry the chalk on upon a lay, a year or two before you plough it up, becauſe by that means it will ſweeten the ſurface of the earth, and work not ſo much downwards, as it will if ploughed up at firſt. It makes corn to yield well, and where it is laid upon graſs ground, it will not ſo much increaſe the bulk of it, as it will make the graſs ſweet, ſo as to cauſe cattle to fatten ſpeedily, and cows to give thick milk.

A correſpondent of the editors of the Muſeum Ruſticum ſtrongly recommends chalk as a manure for clay lands; but adds, it ſhould be laid on rough, in large clods, whereby the land will gradually receive the greateſt benefit by it. The ſalts in the air will penetrate, and crumble the clods; and the land, on which the chalk is laid, will ſoon be brought into a ſtate of fermentation, reduced and pulverized in a ſpecial manner, inſomuch that, afterwards, one ploughing will go as far towards bringing it into tilth as two before.

The quantity of chalk ſhould be proportioned to the ſtubbornneſs of the ſoil; from eight to twelve waggon loads, of four horſes each, to an acre.

The virtues of this manure are not exhauſted under, at leaſt, twenty years; nor are they much perceived till the third year; but for twelve or fourteen years the farmer will have reaſon to thank thoſe who adviſed him to the ſtep of chalking his clay lands: and happy is he who can afford to do it, provided he has a long leaſe; for lands not worth five ſhillings an acre have, by this means been, in a year or two, worth twenty. *Muſeum Ruſticum, vol.* II. *p.* 305.

An old experienced farmer in the hundreds of Eſſex has, in the ſame work, given an excellent account of the benefits reſulting from chalk laid on clay lands, where, he juſtly obſerves, it inſinuates itſelf into the ſmall pores, and, raiſing a fermentation, expoſes the clay more to the operations of the froſts, rain, ſun, and air, by which means its too coherent particles are looſened, and it is reduced to a ſtate of pulverization.

"We all know, adds this intelligent huſbandman, that clay, when reduced, either by fermentation or attrition, into ſmall and minute particles, is an excellent ſoil for affording plenty of nouriſhment to almoſt every kind of vegetable: it is therefore natural to us, when poſſeſſed of a ſtiff clay, to go in ſearch of means for producing theſe deſirable effects.

"Chalk has been long allowed the palm in this reſpect: our anceſtors, the ancient Britons, uſed it with great ſucceſs; and the practice, as warranted by conſtant experience, has been handed down to the preſent age: is it not then a pity that a cuſtom ſo profitable ſhould not be made known to every part of his Majeſty's dominions?

"The chalk we uſe in Eſſex is moſtly

by brought from Kent: it agrees well with our clays, and many fine fortunes have been made in this country by chalking farms: yet what may appear very ſtrange, but is not leſs true, this ſame chalk, when laid on the clayey lands in Kent near the pits, does by no means anſwer the farmer's expectation.

"It has been a common ſaying among farmers, that chalk laſts only for a certain number of years, after which it leaves the land in a worſe ſtate than that in which it found it: but this is probably a miſtake, owing to prejudice, negligence, or ignorance.

When land has been chalked, under a notion it cannot be hurt by cropping, they generally keep it in almoſt conſtant tillage, and it pays well for the ploughings; but then the ſoil being, by ſuch conſtant working, reduced to a pulverized ſtate, the chalk eſcapes through the now-enlarged pores of the clay, and forms a cruſt under the looſe ſtratum on the ſurface of the hard clay beneath, being waſhed down by the rains.

"The particles of clay, being now deprived of their coatings of chalk, adhere one to the other, enlarge their ſurfaces, and become at length a coherent maſs of ſtiff ſoil, like what it was before the land was chalked at all, not worſe in quality, but nearly in the ſame ſtate. Probably the chief reaſon which induces farmers to think the land impoveriſhed with chalk is, becauſe they have, whilſt the manure acted with its full vigour, been for many years uſed to great crops, forgetting, or perhaps never knowing, what crops the land yielded before any chalk was laid on it.

"A great deal of care is requiſite in land after it is freſh chalked: if the large lumps are buried before they are ſtrongly impregnated with the influences of the atmoſphere, they will lie under ground undiſſolved, in a hard maſs, for a great number of years, without benefiting the landin the leaſt. For this reaſon farmers muſt not be in a hurry to bury their chalk: in fact, the longer it lies above ground, the better, as it will then gradually be reduced into powder, which, being mixed and incorporated with the clay, leſſens the coheſion of its parts, enlarges its pores, and diſpoſes it to yield that nouriſhment to vegetbles, which in it is natural ſtate, it is too retentive of.

A correſpondent to the Farmer's Magazine, Vol. III, p. 47, ſays, "I have heard it advanced that chalk is a dreſſing only for ſtrong land; it is a miſtake, there is ſcarce any kind of land to which chalk will not do amazing ſervice: I have known it do wonders in light land. I imagine the advantages of chalk to proceed, not ſo much from its being a manure, as from altering the nature of the ſoil; for I do not conſider chalk as poſſeſſing within itſelf any vegetative power, being rather a medicine than a food.

CHAMOMILE. See CAMOMILE.

CHAMPIGNONS. A ſpecies of muſhrooms.

CHARDS *of artichokes*, the leaves tied up to blanch.

CHARDS *of beets*, white beets covered over with dry dung, during the winter, when they will produce large tops, with a downy ſhoot, which is the true chard.

CHARLOCK. *(Sinapi arvenſe)* A very troubleſome weed, of which there are two ſorts, one bearing white, the other yellow flowers. *See Wild Rape.*

CHARGE. An outward application to the bodies of horſes, &c.

CHASTE-TREE, [*Agnus caſtus*] A ſmall ſhrub, growing ſpontaneouſly in Italy, and raiſed with us in gardens. Its ſeeds were formerly recommended as antaphrodiſiacs, but the preſent practice entirely diſregards it.

CHEESE. [*Caſeus*] The curdy part of milk ſeparated from the reſt, at leaſt from the watery matter, in which it is originally mixed in the natural ſtate.

It *is* a property of milk to curdle with any acid whatſoever: but of all acids, there is none equal to the acid in the ſtomach of a ſucking calf. This is what the farmers prefer to all others, and is called rennet or rennet-bag. *Mawe.*

This bag then is the ſtomach bag of a young calf, that has never taſted any other food than milk.

In the ſpring let the farmer get a ſufficient ſtore of them, and they are thus to be prepared:

Firſt open the bag, and pour out the the curd and thick ſubſtance into a baſon, leaving the reſt that is not curdled in the bag.

Let the curd in the baſon be carefully examined and picked clean. The

ſpeck

ſpecks of dirt, hair, or other foulneſſes among it muſt all be taken away, and the curd muſt be waſhed ſeveral times with cold water, till it is quite clean; then ſprinkle it well with ſalt; waſh and ſprinkle the bag in the ſame manner, and then put the curd and bag into a pan covered from the duſt.

When a ſufficient number are prepared, they are to be kept laid cloſe together for twelve months, and are then fit for uſe.

This is the preparation of rennet; and when the bags have been kept a year, or before if wanted, let one of the bags be taken out of the pot and opened; let the curd be emptied into a clean marble mortar, rub it well with a wooden peſtle, firſt by itſelf, and then with the yolks of three new laid eggs, and half a pint of cream, adding a blade of mace and a clove, dried before the fire and powdered; when all is well mixed together, put it again into the bag.

Then make a very ſtrong brine of ſalt and water, by boiling them together; let this ſtand to ſettle, and ſtrain off the clear liquor into a clean earthen pan. Take half a gill of the curd out of the bag, and mix it with this brine: this done, cloſe the bag again, and hang it up with the brine, putting in four or five walnut leaves.

The rennet thus perfectly prepared, is to be ſet by a fortnight, and it will then be fit for uſe.

We have here ſet down the management of one bag, and thus may all the reſt be done, taking care always to do one under another, to have a conſtant ſupply, obſerving not to take the bag out of its firſt preparation before it has been kept a twelve-month, if poſſible, nor is it fit for uſe, before it has been brined a full fortnight.

Having deſcribed the manner of preparing the rennet, we now proceed to the application.

New-Milk Cheeſe, otherwiſe called *Morning-Milk Cheeſe*, is a kind of general production of the dairy, like freſh butter. It is made almoſt every where, and in moſt places is very fine, but varies in quality in different paſtures, while the preparation is in every place the ſame.

In the morning, towards the time of the people's coming home from milking, let a clean large tub be ſet ready; and let the milk brought home the evening before, be carefully ſkimmed.

Let the new milk, warm as it is from the cow, be clean ſtrained into the tub, and then ſtrain the cream taken from the laſt night's milk. This is too rich alone, and therefore is to be a little reduced, and at the ſame time better prepared for turning by ſome hot water. This is to be poured in in ſuch a quantity as will ſerve to make the whole tolerably hot, which ſcalds the cream.

When this is done, the buſineſs is to get it cold a little; to this end it muſt be moved about with a diſh, till it is no more than luke-warm.

It will now be in a condition to receive the rennet.

As to the proportion of rennet to milk, that differs according to the ſtrength of the rennet; but as we can very well determine the ſtrength of ſuch as ſhall be made according to the directions, we may be ſufficiently exact on this head. The ſtrength of the rennet made thus is ſuch, that a ſpoonful is a very good proportion for three gallons of milk; ſo that if the quantity be one and twenty gallons, the farmer will know he is to put in ſeven ſpoonfuls of rennet, and in the ſame proportion he is to uſe it, let the quantity be what it will.

When the farmer has computed, from his quantity of milk, how much rennet he ſhall want, there will require ſome care in the drawing it from the bag. He muſt do this ſteadily and evenly, without ſtirring the bag; when he has got the due quantity out he muſt ſtrain it very carefully into the milk. Let him not wonder at our recommending ſo much care in this reſpect, for if the leaſt particle of the curd of the rennet fall into the milk, it will be unſeen among the curd it brings on in the whole, and then mixing up with the reſt in the making of the cheeſe it will taint and corrupt the ſpot where it is; and every one accuſtomed to this commodity, knows how dangerous it is to get a corrupt ſpot, as it never fails to ſpread and taint farther.

When the earning or rennet is put in, the veſſel is to be covered, and all is to ſtand quiet for half an hour. This is the time needful for the operation of turning the milk, that is, for collecting the curdy part ſeparate from the whey: at the end of the half hour the cover is

to

to be taken off, and if it be not come, that is, if the proper ſeparation be not made, it is not to be left longer for that purpoſe, for the expectation would be always fruitleſs, and the loſs of time prejudicial; but more rennet is to be put in. Beſide the difference of ſtrength in the rennet itſelf, there is a very great variety in milk, ſome requiring more of the ſame ſtrength than other.

When the freſh rennet is put in, the veſſel is to be covered up as before; and opened at times to ſee the effect. As ſoon as the ſeparation is well made, the curd muſt be well toſſed and worked about in the whey. The beſt method of doing this is firſt with a ſhallow bowl, and afterwards with the hands.

The bowl is to be uſed in rummaging and toſſing it to and fro in the whey; and when this has been done for ſome time, it is to be wrought and moulded, and worked together between the hands, and then preſſed forcibly down to the bottom of the tub.

The curd being got to the bottom, the whey is to be ſkimmed off with a ſhallow diſh; and while this is doing the cheeſe vat is to be got ready to receive the curd.

The curd is to be lifted up with the hands and broke, and preſſed down into the vat.

When the vat is well filled, the cheeſe board is to be laid over it, and a ſmall weight put upon it. In this condition it is to be left till all the remainder of the whey, not ſeparated by the working in the hands, is preſſed gently from it.

When done dropping let the houſewife wet a large cheeſe cloth, and lay it over the board, and then turn the cheeſe upon it. Then ſhe is to lay the cloth into the vat, and put the cheeſe in again. She is now, with a thin ſlice, to preſs down the ſides every where, then turning the cloth over it, it is to be carried to the preſs, and there preſſed with a good weight.

It is to be in its preſent condition half an hour in the preſs; after which it is to be turned into a dry cloth, and then put there again.

This practice is to be repeated again every two hours, each time uſing a freſh dry cloth; and it is to continue in the preſs till the evening of the next day: only the laſt time it is turned, it is to be put into the vat without any cloth at all.

When it is, after this, taken out of the preſs, it muſt be put into a tub, and rubbed on both ſides with ſalt; there it is to remain all night; and next morning it is to be rubbed again with ſalt, firſt on one ſide and then on the other, and left upon the brine which came from the firſt and ſucceeding ſaltings: when it has lain thus three days, it is to be taken out, and laid on a ſhelf to dry; and while it is drying the houſewife muſt continue her care of it, wiping it once every day perfectly clean with a dry cloth, and then turn it on the dry ſide; this is to be done every day, till it be perfectly dry. At firſt it is fit the cheeſe dry ſomewhat quicker than afterwards, which may eaſily be contrived by changing the place.

This is the whole proceſs that is to be followed in making the new milk cheeſe; we have been the more particular in deſcribing it, becauſe it will let the reader into the general manner of doing the reſt.

One-Meal Cheeſe. The farmer will know we mean, by a one-meal cheeſe, ſuch as is made of the milking of one morning or one evening only; but the morning is the proper time, becauſe the day is then before him for buſineſs. The reader unaccuſtomed to theſe things might ſuppoſe we mean a cheeſe to be eaten at one meal; but we muſt keep the accuſtomed terms: all we can do is to explain them.

A one-meal cheeſe might properly be be called a new milk cheeſe, or a morning milk cheeſe, rather than that laſt deſcribed, becauſe it is really made of new milk only, or of the morning milk alone, whereas that has the addition of the evening's cream; but we ſhall not be underſtood by thoſe for whoſe ſake we principally write, if we do not keep to the uſe of thoſe terms they are accuſtomed to hear.

The one-meal cheeſe is made, we have obſerved already, of the morning's milk, and nothing more, and the method of making it is the ſame with that before deſcribed, only that it is not ſo difficult in the firſt part, becauſe there is nothing of that trouble of mixing the cream, and preparing the whole for the rennet.

When a cheeſe of this kind is intended to be made, the houſewife ſhould tell her milk people of it, and give them a particular caution to be quick home with their pails; for the moſt advantageous

tageous way is, to mix in the rennet when the milk is warm from the cow; it is in this caſe to be ſtrained into a tub, and the rennet at once put to it in the quantity before-mentioned. If the milk be not warm when it is brought in, it muſt be ſet over the fire to give it a little airing: but here a great deal of caution is to be uſed, as to the degree of warmth: for a little heat ſerves to make the rennet take effect, and the curd ſeparates the ſooner for it, but on the other hand, if the milk be made too hot another ſeparation comes on, which is not intended in this caſe, and this is the parting of the cream from the milk.

When the milk has been made of a proper warmth, and the rennet is in, it is to be covered up till the curd is formed; and then the cheeſe is to be made, in all particulars, juſt as that before deſcribed; that being the general method, we ſhall in none of the following inſtances repeat it, but only refer to it, unleſs when any particular circumſtance requires ſome variation.

Having mentioned what is called the one Meal, we muſt add the making of the two Meal Cheeſe; this is a cheeſe made of two milkings mixed together, and the common way is to mix the evening's and the next morning's milkings for this purpoſe.

In that caſe the cream is ſtirred into the evening's milk, and then the whole is mixed with the morning's milk: all this warmed a little together, till nearly as warm as the milk when it comes from the cow, and the rennet is put to it, it is then to be covered up, and the whole to be managed into a cheeſe as before.

There is another ſort of two Meal Cheeſe, which is made by mixing the evening's milk after it has been ſkimmed, with the morning's entire, and this alſo is eaſily enough made into a cheeſe, by firſt warming the whole over a fire.

Theſe cheeſes differ in goodneſs according to the quantity of cream that is in them, and they are all, in their ſeveral degrees, inferior to the new Milk Cheeſe as before-mentioned. As that conſiſted of the morning's milk and evening's cream, it is the richeſt cheeſe of this kind. As to the others, the one Meal Cheeſe and the two Meal, are juſt equal in goodneſs, when the evening milk is uſed with its cream; but in this caſe the cheeſe is one degree inferior to the other, as there the cream of the evening went to enrich the milk of the morning, without its own milk. The third and pooreſt kind is that made of the two meals or milkings, one of which has been ſkimmed. This reduces it toward the condition of ſkimmed milk cheeſe; but however it is very ſuperior to what is made of ſkim'd milk only, becauſe as that conſiſts of the curd of milk wholly, that had loſt its cream, this is in part compoſed of curd with the cream in the milk, that of one meal not having been ſkimmed. We ſhall add, for the uſe of the poorer farmer, and ſuch as have occaſion for the moſt ordinary cheeſe of all, the manner of making it from milk that has been ſkimmed entirely.

Skim-milk Cheeſe. When the milk of two or more meals has been ſkimmed for butter, it muſt be poured into a tub, and the firſt thing is to taſte it carefully, to find whether it begin to be ſour, for on this depends the manner of working it; if the nice and accuſtomed taſte of the houſewife cannot perceive any thing ſour in it, ſhe muſt put a part of it into a pot, and ſet it over the fire, making it ſo hot that it ſhall be able to heat the reſt thoroughly, to ſomewhat more than the degree of heat required in the preceding directions.

In thoſe caſes a richer milk was uſed, ſo that there was danger of raiſing and ſeparating the cream by too much heat: but here there is ſo little that it is in leſs danger of that accident; and the milk being poorer, is not ſo eaſily turned. It will require ſomewhat more earning and more heat for that purpoſe.

This is the method to be followed, if the milk be perfectly ſweet; but if on taſting it be found ſour, or but inclined plainly to ſourneſs, it muſt not be ſet on the fire, leſt it ſhould break: in this caſe a ſmall quantity of water is to be made thoroughly hot, and poured in to bring the whole to a due degree of warmth to receive the rennet.

When the rennet is in, the veſſel is to be covered, and after this the whole proceſs is to be repeated, till the cheeſe is made in the ſame manner as the former.

Cheſhire Cheeſe. In Cheſhire their paſtures are ſo rich that they never find it needful to renew their rich milk, for it will alone, with proper management, make cheeſe of the richeſt kind that can be; but ſome of the Cheſhire cheeſe people impoveriſh their new milk, by mixing the ſkimmed milk of a former meal, and this always debaſes the nature and quality of the product.

When the morning's milking is brought in, they ſtrain it warm into a large tub, and put in their rennet. Four ſpoonfuls is the quantity they uſually allow to as much milk as will make a cheeſe of a hundred weight; and there are dairies of ſuch conſequence in that county, that they turn out two cheeſes of about this ſize every day, during the five months they are in the right ſeaſon.

They cover up the tub, and when it has ſtood half an hour they open it, and find the curd formed. They are very cautious to hit the right quantity of rennet, which no rule can determine, becauſe of the difference in the ſtrength: for too little does not give the curd a due conſiſtence, and too much makes the cheeſe bitter.

After half an hour they uncover the tub, and preſs down the curd with a large ſkimming diſh; and when they have pretty well cleared off the whey, they get to work upon the curd with their hands, which they break to pieces in the moſt perfect manner, working it a long time for that purpoſe.

This done, ſuppoſing it for a hundred weight cheeſe, they add one pound of ſalt: this they work in, and mix thoroughly well with the curd.

This done they put the curd into a wet ſtrong and large cheeſe cloth, and when they have got the whey tolerably well drained out, they put it into the vat, or mould, for four hours, with a good preſſure, putting the vat in the cheeſe preſs, and working it down pretty ſtrongly.

At the end of the four hours they take it out, ſalt the outſides, put it into a freſh wet cloth, and put it into the vat, and that into the preſs again: here it is to be kept four hours more; and in the mean time a quantity of good ſtrong brine is to be made of ſalt and water, and put into a large tub.

When the cheeſe has been four hours more in the preſs they take it out, and put it into the tub of brine, and then let it lie eight days, all the time covered over with brine, and turned once a day.

At the end of this time it is to be taken out, and laid to harden and dry. This is to be done in a particular manner, and preparation is to be made for it accordingly.

A quantity of ruſhes are to be cut up, and laid green on a large board: on theſe the cheeſe is to be laid when taken out of the brine, and for the firſt day nothing is to be done to it; the next morning it is to be turned and wiped with a hair-cloth all over; and this is to be repeated every day for twenty days.

At the end of this time it muſt be removed from the bed of ruſhes, and laid on the floor; and it is here to be taken up, and turned once in three days, and at every turning it is to be rubbed, till it gets firm and hard: as this is the compleating the work, it is to be done very carefully; for if the due degree of hardneſs be not given at this time, the cheeſe will be liable to accidents in the keeping. Therefore it is an eſſential point to let it lie long enough, and wipe it carefully.

When it is thus finiſhed and hardened, the laſt thing is the rubbing it over with ſome butter, and this, though it may ſeem more trivial than the reſt, is very eſſential: half a pound of butter is the proper quantity for a cheeſe of a hundred weight, and this ſhould be rubbed thoroughly in all over it, nothing more tending to preſerve the rind in good condition, and keep the cheeſe ſound.

Nettle Cheeſe. Let the milk of the morning's milking be taken for this purpoſe, juſt as it comes in warm from the cows, without any addition or mixture, for the enriching or impoveriſhing it; or the joining with it the milk of any former milking. Let this pure freſh milk be ſtrained through the ſtraining bowl into a large pan, or ſmall tub, and let there be immediately added to it as much rennet as will be neceſſary to turn it. It is then to be covered up half an hour; then the curd is to be preſſed down, and the whey ſkimmed off, and when thus ſeparated the curd is to be wrought in the hands. When it is well worked it is to be put into a cheeſe vat, not

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more than three quarters of an inch deep, and preſſed to get out the whey.

The ſame method is to be uſed that was directed for the new milk cheeſe, and by this means there will be a very fine one-meal cheeſe, thin and delicate, prepared, and ready for drying. It is then the nettles come in uſe. When it has been ſufficiently preſſed, it is to be laid on the floor, which is to be firſt ſpread over with freſh nettles, and another parcel of the ſame is to be ſpread over it.

Care muſt be taken in the cutting and laying of theſe nettles, for the cheeſe is to have an even coat, and that will depend entirely upon the management in this particular. In the cutting then it muſt be obſerved, that only young nettles are to be taken, or the tender tops alone of ſuch as are more grown; and theſe, when they have been laid evenly upon the floor, muſt be preſſed down, and flatted carefully into an even and ſmooth ſurface: this is the eſſential article whereon the ſmoothneſs of the coat of the cheeſe depends; and if there be any thicker ſtalks, they will take effect upon the tender ſurface of it, and even any rumpled leaf will have the ſame conſequence. When the bed is made flat and even, the cheeſe is to be laid carefully upon it, and a coat of the ſame kind ſpread evenly over it. Every other day freſh nettles are to be brought in, and the cheeſe is to be wiped and laid upon the new parcel, covering it with freſh ones alſo. In this manner it is to be kept till it is ripe and ready for the table, and no cheeſe ripens finer.

Running Cheeſe. Mix together equal meaſure of ſtroakings of the cow, and of rich cream, put this in a clean pan. Set it in a pot of water, that the water may reach up on the outſide as high as the cream and ſtroakings do within; then ſet the pot on the fire, till the whole be as warm as milk from the cow.

Take the pan out of the water, and put in as much rennet as is ſufficient to turn it. Stir this well in, ſo that it may mix thoroughly, and then cover the veſſel.

When it is come, preſs down the curd, and take off the whey: then heat the whey ſcalding hot and throw it upon the curds, and after this take up the curd, which will now be in a body: this muſt be done carefully with both hands; and the curd is to be raiſed up as whole as poſſible without breaking it, and ſo laid into the vat; then place it in the preſs, and put a ſmall weight upon it; afterwards put on a larger, but don't bring it to the ſcrew preſs, for it is too delicate for that forcible ſqueezing.

When the whey is got out let it be taken out, ſalted a little, and laid upon a fine even bed of nettles. The leaves of the nettles ſtripped from their ſtalks, ſhould be uſed for this purpoſe. It muſt be ſhifted as the other, and will be very ripe in three weeks or leſs. Three pints of each of the ingredients makes a proper ſized cheeſe of this kind.

Sheep's Milk Cheeſe. It is the property of ſheep's milk that it affords a great quantity of curd; in the county of Denbigh in Wales, very fine cheeſe is made from this milk; the manner of doing it is thus:

The ſheep are to be milked morning and evening, and when they are a little uſed to it will ſtand very quietly. The milk of the evening is to be ſtrained into that of the morning, and when the milkers come in the next morning the whole is to be mixed with what they bring in.

When the milk is all mixed, a little of it muſt be heated, and that poured into the reſt to make the whole of the ſame degree of warmth with that which juſt comes from the cow. Then the rennet is to be ſtrained in, and thoroughly mixed with it. As to the quantity, it is to be about one fifth part more than is uſed for cow's milk.

The veſſel is to be covered, and ſtand quiet till the curd is formed, and after that the procedure is to be much the ſame with that on other occaſions. The whey muſt be ſkimmed off, the curd muſt be well worked in the hand; and afterwards put into a wet cloth and preſſed, but this preſſure muſt be continued ſix hours.

At the end of that time it muſt be taken out, and the cloth ſhifted; the outſide muſt be then ſalted, and it muſt be preſſed ſix hours more, the other ſide being turned upwards.

While this is doing a bed of ruſhes muſt be made upon the floor, and the cheeſe, when taken out, muſt be laid

upon it, and in this manner it muſt lie a fortnight, taking up and turning it every day; and remembering every time it is taken up, to rub it ſoftly but thoroughly all over, with a dry and not very coarſe cloth. In this time, drying gently and leiſurely, it will get ſome conſiderable firmneſs, for a cheeſe of ſo mellow a kind; and when it is thus far prepared, it is to be taken from the floor and laid upon ſhelves, where it will dry more quickly than at firſt, and be thoroughly finiſhed.

Chedder-Cheeſe. A name given to a very large kind of cheeſe made at Chedder, a village near Mendip-hills in Somerſetſhire, famous for its paſtures. It is common in this place for three or four dairies to join their milk, to make one great cheeſe, which generally weighs from one hundred and fifty to two hundred weight; and which they often ſell at ſix-pence per pound on the ſpot.

CHEESE-LIP, a bag in which the rennet is prepared and kept.

CHEESE-PRESS, a preſs to ſqueeze the whey from the cheeſe.

CHEESE BOWLS. Garden poppies.

CHEESE-RENNET. *See* CHEESE.

CHEESE-RENNET, [*Gallium.*] Ladies bed-ſtraw.

CHERRY-TREE, [*Ceraſus.*] The botanical characters to this genus, according to the ſyſtem of Linnæus, are the ſame with thoſe of Prunus or plum; therefore he has joined the Apricot, Cherry, Laurel, and Bird Cherry together, making them only ſpecies of the ſame genus; but thoſe who admit of the fruit as a character to determine the genus, muſt ſeparate the cherry from the others, becauſe they differ greatly in the ſhape of their ſtones; but there is a more eſſential difference in nature between them, which is, that the cherry will not grow upon a plum ſtock by budding or grafting, nor will the plum take upon a cherry ſtock, and yet we know of no trees of the ſame genus which do not unite with each other by budding or graſting.

We ſhall firſt enumerate the ſorts which are ſpecifically different from each other, and then mention the varieties of theſe fruits which are cultivated in the Engliſh gardens; many of which ſeem to differ ſo eſſentially from each other, that they may be allowed as ſpecific differences.

The ſpecies are, 1. The common, or Kentiſh Cherry. 2. The Black Cherry. 3. The Cluſter Cherry. 4. The Mahaleb, or perfumed Cherry. 5. Cherry-tree with ſmooth, ſpear-ſhaped, entire leaves, of a bluiſh green on their under ſide, and ſpreading branches.

The firſt ſort is ſo well known in England as to need no deſcription. From this ſort, it hath been ſuppoſed, moſt of the varieties which are cultivated in the Engliſh gardens, have been raiſed.

The early May Cherry.
The May Duke Cherry.
The Archduke Cherry.
The Flemiſh Cherry.
The Red Heart.
The White Heart.
The Black Heart.
The Amber Heart.
The Ox Heart.
The Lukeward.
The Carnation.
The Hertfordſhire Heart.
The Morello.
The Bleeding Heart.
Yellow Spaniſh Cherry.

Two ſorts with double flowers, one larger and fuller than the other. Theſe are propagated for ornament.

The ſecond ſort is the Black Cherry, which is ſuppoſed to be a native of England. This grows to be a large tree fit for timber, and is frequently found growing as ſuch in the woods. From this the only varieties which I have ever known raiſed by ſeeds, are the Black Coroun, and the ſmall Wild Cherry; of which there are two or three varieties, which differ in the ſize and colour of their fruit.

The ſtones of this ſort are generally ſown for raiſing ſtocks, to graft or bud the other ſorts of cherries upon, being of quicker growth, and of longer duration than either of the other, ſo are very juſtly eſteemed, and preferred to them.

The wood of the fourth ſort, is by the French greatly eſteemed for making of cabinets, becauſe it hath an agreeable odour. This, and the wood of the Bird Cherry, are often blended together, and paſs under the appellation of Bois de Sainte Lucie; but the Bird Cherry is the true ſort.

It is eaſily propagated by laying down

down the branches early in the ſpring, which will take root by the following autumn, when they may be taken off, and either planted in a nurſery to get ſtrength, or to the places where they are deſigned to remain. It may alſo be propagated by ſowing of the ſtones in the ſame manner as other cherries.

All the ſorts of cherries which are uſually cultivated in fruit gardens, are propagated by budding or grafting the ſeveral kinds into ſtocks of the black or wild red cherries, which are ſtrong ſhooters, and of a longer duration than any of the garden kinds. The ſtones of theſe two kinds are ſown in a bed of light ſandy earth in autumn (or are preſerved in ſand till ſpring, and then ſowed:) theſe young ſtocks ſhould remain in theſe nurſery-beds till the ſecond autumn after ſowing, at which time you ſhould prepare an open ſpot of good freſh earth, which ſhould be well worked. In this ground, in October, you ſhould plant out the young ſtocks at three feet diſtance row from row, and about a foot aſunder in the rows, being careful in taking them up from their ſeed-beds, to looſen their roots well with a ſpade, to prevent their breaking, as alſo to prune their roots; and if they are inclinable to root downwards, you ſhould ſhorten the tap-root, to cauſe it to put out lateral roots; but do not prune their tops, for this is what they will by no means endure.

The ſecond year after planting out, if they take to growing well, they will be fit to bud, if they are intended for dwarfs; but if they are for ſtandards, they will not be tall enough till the fourth year, for they ſhould be budded or grafted near ſix feet from the ground, otherwiſe the graft will not advance much in height; ſo that it will be impoſſible to make a good tree from ſuch as are grafted low, unleſs the graft is trained upward.

The uſual way is, to bud their ſtocks in ſummer, and ſuch of them as miſcarry, to graft the ſucceeding ſpring, (the manner of theſe operations will be deſcribed under their proper heads.) Thoſe trees where the buds have taken, muſt be headed off the beginning of March about ſix inches above the bud; and when the bud hath ſhot in ſummer, if you fear its being blown out by the winds, you muſt faſten it up with ſome baſs, or ſuch ſoft tying, to that part of the ſtock which was left above the bud. The autumn following theſe trees will be fit to remove; but they may remain two years before they are tranſplanted; in the doing of which you muſt not head them, for this very often is immediate death to them; and if they ſurvive it, they ſeldom recover this amputation in five or ſix years.

If theſe trees are intended for a wall, would adviſe the planting dwarfs between the ſtandards; ſo that while the dwarfs are filling the bottom of the walls, the ſtandards will cover the tops, and will produce a great deal of fruit: but theſe, as the dwarfs ariſe to fill the walls, muſt be cut away to make room for them; and when the dwarf trees cover the walls, the ſtandards ſhould be entirely taken away. But we would adviſe never to plant ſtandard cherries over other fruits, for there is no other ſort of fruit that will proſper well under the drip of cherries.

When theſe trees are taken up from the nurſery, their roots muſt be ſhortened, and all the bruiſed parts cut off; as alſo all the ſmall fibres, which would dry, grow mouldy, and be a great prejudice to the new fibres in their coming forth; you muſt alſo cut off the dead part of the ſtock which was left above the bud, cloſe down to the back part of it, that the ſtock may be covered by the bud. If theſe trees are deſigned for a wall, obſerve to place the bud directly from the wall, that the back part of the ſtock that was cut may be hid from ſight. The ſoil that cherries thrive beſt in, is a freſh hazel loam; for if the ſoil is a dry gravel they will not live many years, and will be perpetually blighted in the ſpring.

The ſorts commonly planted againſt walls are the Early May and May Duke, which ſhould have a ſouth aſpected wall. The Hearts and common Duke will thrive on a weſt wall; and in order to continue the Duke later in the ſeaſon, they are frequently placed againſt north and north-weſt aſpected walls, where they ſucceed very well; and the Morello on a north wall, which laſt is chiefly planted for preſerving. The Hearts are all of them ill bearers, for which reaſon they are ſeldom planted againſt walls: but we are apt

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to believe, if they were grafted on the Bird Cherry, and managed properly, that defect might be remedied; for this ſtock will render cherries very fruitful; and having the ſame effect on cherries as the Paradiſe ſtock hath on apples, they may be left in leſs compaſs, which is an experiment well worth the trial.

Your trees, if planted againſt a wall, ſhould be placed at leaſt twenty or twenty-four feet aſunder, with a ſtandard-tree between each dwarf.

In pruning theſe ſorts of fruit, you ſhould never ſhorten their ſhoots; for the moſt part of them produce their fruit buds at their extreme part, which, when ſhortened, are cut off, and this often occaſions the death of the ſhoot: their branches ſhould be therefore trained in at full length horizontally, obſerving in May, where there is a vacancy in the wall, to ſtop ſome ſtrong adjoining branches, which will occaſion their putting out two or more ſhoots; by which means, at that ſeaſon of the year, you may always get a ſupply of wood for covering the wall; and at the ſame time ſhould all foreright ſhoots be diſplaced by the hand, for if they are ſuffered to grow till winter, they will not only deprive the bearing branches of their proper ſupply of nouriſhment, but when they are cut out it occaſions the tree to gum in that part (for cherries bear the knife the worſt of any ſort of fruit trees;) but be careful not to rub off the ſides or ſpurs, which are produced upon the two or three years old wood: for it is upon theſe that the greateſt part of the fruit are produced, which ſpurs will continue fruitful for ſeveral years. And it is for want of duly obſerving this caution, that cherry-trees are often ſeen ſo unfruitful, eſpecially the Morello, which the more it is cut the weaker it ſhoots; and is at laſt deſtroyed; which, if they had been ſuffered to grow without any pruning, might probably have lived many years, and produced large quantities of fruit.

The uſual diſtance allowed for their ſtanding in orchards is forty feet ſquare, at which ſpace they are leſs ſubject to blight than when they are cloſer planted; and the ground may be tilled between them almoſt as well as if it were entirely clear, eſpecially while the trees are young; and the often ſtirring the ground, provided you do not diſturb their roots, will greatly help the trees; but when they are grown ſo big as to overſhadow the ground, the drip of their leaves will ſuffer very few things to thrive under them.

The ſorts being approved of for an orchard, are the common Red or Kentiſh cherry, the Duke, and Lukeward, all which are plentiful bearers. But orchards of theſe trees are now ſcarcely worth planting, except where land is very cheap.

There are ſome perſons who graft the Duke, and other ſorts of cherries, upon the Morello cherry, which is but a weak ſhooter, in order to check the luxuriant growth of their trees, which will ſucceed for three or four years; but they are not of long duration.

The Early, or May cherry, is the firſt ripe; ſo one or two trees of this ſort may be allowed a place in a garden, where there is room for variety. The next ripe is the May Duke, which is a larger fruit than the other, and is more valuable. After this comes the Archduke, which, if permitted to hang upon the tree till the fruit is quite ripe, is an excellent cherry.

The Hertfordſhire cherry, which is a ſort of Heart cherry, but a firmer and better flavoured fruit, will not ripen earlier than the end of July, or the beginning of Auguſt, which makes it the more valuable, for its coming when the other ſorts of cherries are gone.

The Morello cherry, which is generally planted againſt walls to a north aſpect, and the fruit commonly uſed for preſerving, or for tarts, yet where they are planted to a better aſpect, and ſuffered to hang upon the trees till they are thoroughly ripe, is a very good fruit for the table: therefore two or three of the trees of this ſort ſhould have a place where there is plenty of walling, upon a ſouth-weſt wall, where they will ripen perfectly by the middle or end of Auguſt, at which time they will be an acceptable fruit.

The Carnation cherry is alſo valuable for coming late in the ſeaſon; this is a very firm fleſhy fruit, but is not the beſt bearer. This ſort will ripen very well on eſpaliers, and by this means the fruit may be continued longer in the ſeaſon.

The large Spaniſh cherry is nearly allied

allied to the Duke Cherry, from which it ſeems to be only a variety accidentally obtained; it ripens ſoon after the common Duke cherry, and very often paſſes for it.

The yellow Spaniſh cherry is of an oval ſhape, and of an amber colour; this ripens late, and is a ſweet cherry, but not of a rich flavour, and being but a middling bearer, is not often admitted into curious gardens, unleſs where variety is chiefly conſidered.

The Corone, or Coroun cherry, is ſomewhat like the Black Heart, but a little rounder; this is a very good bearer, and an excellent fruit, ſo ſhould have a place in every good fruit-garden. This ripens the middle of July.

The Lukeward ripens ſoon after the Corone cherry; this is a good bearer, and a very good fruit; it is of a dark colour, not ſo black as the Corone, and will do well in ſtandards.

The Black cherry is ſeldom grafted or budded, but is generally ſown for ſtocks to graft the other kinds of cherries upon; but where perſons are curious to have the beſt flavoured of this ſort of fruit, they ſhould be propagated by grafting from ſuch trees as produce the beſt fruit. This ſort of cherry is frequently planted in wilderneſſes, where it will grow to a large ſize, and, at the time of its flowering, will make a variety, and the fruit will be food for the birds.

The double-flowering cherry is alſo propagated for the beauty of the flowers, which are extremely fine, the flowers being as double and large as a Cinnamon Roſe; and theſe being produced in large bunches on every part of the tree, render it one of the moſt beautiful trees of the ſpring. Some of the flowers which are leſs double, will often produce fruit, which the very double flowers will not; but this defect is ſufficiently recompenſed in the beauty of its flowers. This is propagated by budding or grafting on the Black or Wild cherry-ſtock, and the trees are very proper to intermix with the ſecond growth of flowering-trees.

Barbadoes CHERRY. See BARBADOES CHERRY.

Bird CHERRY. See BIRD CHERRY.

Cowitch CHERRY. A ſpecies of the Barbadoes cherry.

Portugal CHERRY. A ſpecies of the Bird cherry.

Cornelian CHERRY, [*Cornus.*] Dog-wood. There are ſeveral ſpecies of this tree growing in ſeveral parts of England and America. The wood is much uſed for butchers ſkewers.

Winter CHERRY, [*Alkekengi.*] There are ſeveral varieties of this plant cultivated by the curious botaniſts, but there is but one of them that is either uſeful or ornamental, which is the Alkekengi officinarum, or the common medicinal Winter cherry.

This plant produces round red fruit, about the ſize of a large cherry; which is incloſed in a ſmall bladder, which, in autumn, changes to a reddiſh colour, and opens, and ſhews its beautiful red fruit, which continues till November, or ſometimes later, before it falls off; for which it is chiefly kept in gardens: It is very apt to creep far under-ground, by which it ſoon ſpreads over a large ſpot of ground, therefore ſhould be confined in pots; which, if ſet in the ſhade, and frequently watered, will very much add to its fruitfulneſs; for when the roots have liberty, they ſpend themſelves in ſpreading, and become leſs fruitful than when confined in pots.

CHERVIL, [*Chærefolium.*] This is a low annual plant, ſomewhat like parſley, commonly cultivated in gardens for culinary purpoſes. This plant is grateful both to the palate and ſtomach, gently aperient and diuretic. Geoffroy aſſures us, that he has found it from experience to be of excellent ſervice in dropſies; that in this diſorder, it promotes the diſcharge of urine when ſuppreſſed, renders it clear when feculent and turbid, and when high and fiery of a paler colour; that it acts mildly without irritation, and tends rather to allay than excite inflammation; and that dropſies which do not yield to this medicine, are ſcarce capable of being cured by any other. He directs the juice to be given in the doſe of three or four ounces every fourth hour, and continued for ſome time, either alone, or in conjunction with nitre and ſyrup of the five opening roots.

CHESNUT-TREE, [*Caſtanea.*] The ſpecies are, 1. The common or Spaniſh Cheſnut. 2. The ſtrip'd Cheſnut. 3. The Chinquapin, or dwarf Virginian Cheſnut.

This much neglected, though graceful and magnificent tree, by attending to its proper culture, for fruit, timber, and copſe-wood, might, in a few years, become among the greateſt advantages this country can reap by planting.

To raiſe them for fruit, procure a parcel of the nuts from Portugal and Spain; pick out the largeſt, plumpeſt, and browneſt of them; the goodneſs of the ſeed is known by its weight, to try which, throw them into a tub of water; reject ſuch as ſwim, but thoſe that ſink you may be ſure are good; preſerve them in dry ſand the beginning of March, when, having prepared a ſpot of looſe mellow ground, ſow them in drills made with the hoe, three inches deep, the drills about fourteen inches aſunder, and the nuts ſix inches in the drill, where, as they ſhoot freely, they ſhould only remain one year.

In February, or early in March following, remove them to another quarter; ſhorten their tap-roots with a ſharp knife, ſmooth and clean, ſparing their ſpreading fibres, and keeping them as ſhort as poſſible out of the ground, to keep theſe fibres freſh, and prevent their moulding; plant them in lines, two and a half feet aſunder, and one foot diſtant in the line, keeping them clean in ſummer, and pointing over the ground between the lines ſpring and autumn, when any croſs ill-placed branches may be pruned off; and in this ſituation let them remain two years.

Remove them carefully, by taking up their whole fibres, to another freſh quarter of the nurſery, ſtill obſerving to ſhorten their tap-roots, to cut off ſuch as croſs each other, and ſmooth the ends of the ſpreading ones, which will now be ſtronger and more numerous; at the ſame time, prune away any ill-placed branches from their bodies and tops; which being done, plant them in lines four feet aſunder, and at two feet diſtance in the line, where, managing them in other reſpects as directed for the former nurſery, let them continue three years.

By this time theſe trees will be of a proper age and ſize, either for ornamental plantations in avenues, clumps in parks, the wilderneſs, or in the orchard way for fruit; but it may be neceſſary here to obſerve, that the ſhade of the cheſnut, like that of the aſh, is noxious to other plants, and that they ſhould therefore be placed in thickets, or other detached plantations, by themſelves.

The ground intended for a conſiderable plantation of fruit-bearing cheſnut trees, ſhould have three or four ploughings the preceding ſummer and winter; and if one good digging is added a little before planting, it will be a great improvement to the ſoil, as I hold the labour of the ſpade to be of all others the beſt. This being done, your trees carefully raiſed, their roots and bodies properly pruned, plant them in ſtraight rows, ſix feet diſtant every way; let the ground be annually dug, to encourage the ſpreading of their roots, and, at this diſtance, they may remain till the branches begin to approach each other, when you muſt take up, by the roots, every ſecond row entirely, and every ſecond plant in the row remaining, which will leave them at twelve feet diſtance; and the wood of the trees taken up, will be highly uſeful for many purpoſes of gardening and farming. Having dug or half-trenched the land, (for deep trenching would increaſe the growth, but retard the fertility), it may, for ſome years, if of a good quality, be profitably employed in potatoes, cabbages, turnips, and many other crops, which, by digging in the leaves of the cheſnuts, when rotted, (the beſt of all manure for them), will, inſtead of exhauſting, annually invigorate the ſoil, and improve the plantations both for fruit and timber. Theſe trees having ſtood till their branches begin to meet as formerly, muſt again be reduced in the ſame proportion the others were, which will leave them at twenty-four feet diſtance every way, and at which diſtance they may remain for good. For thoſe intended for timber and copſe-wood, the propagation will be attended with little trouble or expence.

Let the field be fallowed the preceding ſummer, and get two or three good deep ploughings in winter, to ſweeten and pulveriſe the ſoil, and to deſtroy all root-weeds. Having procured and tried your ſeeds, as formerly mentioned for the fruit-bearing trees, make drills acroſs the ground with a hoe, four feet diſtance, and put in your nuts, with the point or eye upwards, at fourteen

or ſixteen inches aſunder, filling up the drills, and raking the ſurface ſmooth; and for this, and the following year, you may take a line of beans between the drills, which, having their tops cut off, and being kept clean, will be a protection to the young plants, and encourage their growth. At the end of two years, early in the ſpring as has been ſaid, remove every ſecond plant in the rows, which will leave them about two feet and a half aſunder, and at this diſtance let them remain three years. With the plants taken up as above, I mean the two years old, you may make any plantation required.

At the end of the three years, remove by the roots, ſo as not to hurt the plants that are to continue, every ſecond row of trees, and every ſecond tree in the remaining row, which will leave them at the diſtance of eight feet by five. The plants now raiſed will have carroty roots, and few fibres; ſo are not worth planting again, but will be uſeful for ſtakes and poles. Left, by rooting out the unneceſſary trees, any of thoſe that are to remain ſhould be looſened, or their roots hurt, let the holes be filled up immediately, the ground well dug, any kitchen-crop taken, and the trees remain untouched another year; when, in February, cut them over, reſerving only one of the ſtraighteſt and moſt vigorous, at the diſtance of twenty-five to thirty feet: You may ſtill continue to work the ground, and take dwarf-crops between the rows for two years more; after which, they will ſoon cover it, and muſt be left to nature. One will readily obſerve, that when any of the ſeeds have failed at the due diſtances here preſcribed, theſe defects are to be ſupplied by the beſt plants, taken up at two years old.

The ſtrip'd chefnut is amongſt the moſt beautiful of all the variegated trees, and, when mixed with other ſtrip'd plants, has a moſt agreeable and chearful effect, the blotches being of a rich ſhining gold colour, ſtrongly mark'd. This is uſually propagated by budding, or inarching it on the plain ſort, though I have raiſed many of them by common grafting.

The Chinquapin, or dwarf kind, abounds in the woods of America, where it produces abundance of nuts, which may eaſily be brought here with ſafety, by mixing them with dry ſand, and which all the nut kinds from far diſtant countries ought to be, though, by not adverting to this ſimple and eaſy preſervative, we generally loſe the greateſt part of them. It grows in its native ſoil to about fourteen or ſixteen feet high, and is hardy enough to bear our ſevereſt winters. This may be propagated by its ſeeds as the common chefnut, or, when theſe cannot be procured, by inarching on it, which will increaſe its magnitude.

The fruit of the chefnut tree is not only uſed for many elegant diſhes in France and Italy, but is found ſtrong and healthful food for labouring people, either made into bread, or prepared as they do in various ways abroad: For all which purpoſes, we might in a few years have abundance of them, as well as for feeding our hogs, which would highly improve both the taſte and quality of our bacon, and render it as good as from Virginia, or any other country we know: It would alſo much reduce its price, and bring it within the reach of labouring men.

The leaves of this tree make excellent litter for cattle, which, when mixed with their dung, (particularly that of cows well rotted) is an admirable manure for many kinds of flowers, green-houſe, hot-houſe, and other delicate plants

The beſt ground for fruit-bearing chefnuts, is a looſe moiſt (though not wet) gravel or ſand: They will likewiſe ſucceed in any ordinary mixt ſoil, which, if it abound with ſmall round ſtones, ſhould not be taken away, as, from their warmth, they will cheriſh and forward the ripening of the fruit.

For plantations of timber-trees, and copſe-wood, you can hardly go amiſs, ſo there be depth of ſoil, and no ſtanding water; they will grow on obſtinate clay, and the bleakeſt declivities of hills, this tree, where fruit is not aimed at, being more patient of cold than heat.

The wood is uſeful for many eſſential purpoſes: It makes good tables, chairs, and bedſteads; is the moſt laſting poles of any put in the ground with the rind on, for eſpaliers, paliſade hedges, dead fences, vine and hop yards, and for pipes to convey

water under ground: It will laſt longer than elm, or even oak itſelf. In Italy, the beſt caſks for wine and other liquors are made of this wood, which has the ſingular property, when thoroughly ſeaſoned, of maintaining its bulk, without ſhrinking or ſwelling, which moſt other timber does; and formerly was built of it, great part of the ancient city of London, near which were large foreſts of cheſnut trees, which, whether or not a native of this iſland, is not well determined.

HORSE-CHESNUT, [*Caſtanea Equina, Æſculus.*] The ſpecies are: 1. The common Horſe-cheſnut. 2. The yellow blotched Horſe-cheſnut. 3. The white blotched Horſe-cheſnut. 4. The ſcarlet flowering Horſe-cheſnut.

The firſt mentioned ſort, though a native of Conſtantinople, defies the greateſt ſeverity of our winters, and ſoon becomes a large tree. The nuts of it may be ſown as directed for the Sweet cheſnut, and, like it, ſhould only remain one year in the ſeed bed.

In February, or early in March following, having reduced their top-roots, plant them in lines three feet aſunder, and at fifteen inches diſtance in the line, where let them remain three years.

To make them a proper ſize for avenues, or clumps in parks, and lawns, remove them to another quarter; dreſs the roots properly, and prune ſome of the under branches, with any others that are croſs, too thick, or ill-placed; but beware of the large bud at the extremity of the leading branch, in which is incloſed the ſhoot in embryo for the ſucceeding ſeaſon: plant them in lines, ſix feet aſunder, and two and a half feet in the line. In this ſituation they may continue three, but not above four years, when, in an ordinary ſoil, the plants will be from twelve to fourteen or fifteen feet high.

The ſecond and third ſorts may be propagated by budding them on the common kind, on which they take freely.

The ſcarlet-flowering Horſe-cheſnut is a beautiful plant, and produces a very rich and elegant flower. It is a native of America, but is hardy enough to bear our climate, in ordinary ſituations, when four or five years old, though it is ſomewhat more delicate than the common in infancy: therefore, having procured their nuts, (which you may eaſily do from South Carolina, where they grow abundantly) ſow them as directed for the common kind, but in a warm ſheltered ſituation, and in a rich looſe ſweet mould; and remove them the ſucceeding ſpring to a ſituation and ſoil of the ſame quality, where they may remain three years, when they will have acquired ſtrength enough to put up with common uſage. This tree, in America, grows to the height of thirty feet.

This may alſo be budded or inarched on the common kind; but they will neither make ſo handſome plants, nor ever grow to near the ſize of thoſe raiſed from ſeeds.

The Horſe-cheſnut is a tree of ſingular beauty when in bloom; and the common ſort of it, which will ſucceed in almoſt all ſoils, (though beſt in that which is deep) is proper enough to intermix in ornamental plantations, in a ſheltered country; but in bleak and expoſed ſituations, it is idle to plant them, as, from the wood being very brittle, every impetuous wind will break and diſfigure more or leſs of them,

The fruit is ſo extremely bitter, that even hogs will not eat it, though the Turks mix it with other food for their horſes that have coughs, or are broken-winded, for which it is ſaid to be an excellent remedy.

The timber, except for fuel, anſwers no valuable purpoſe I know, further than that it is proper for pipes, to convey water under ground, and, in that ſituation, will laſt longer than many harder woods.

CHEST-FOUNDER, a diſtemper incident to horſes, and occaſioned by an improper treatment of an inflammation between the ribs. For if the inflammation be not diſperſed in time, and the viſcid blood and juices ſo attenuated by internal medicines, that a free circulation is obtained, ſuch a ſtiffneſs and inactivity will remain on thoſe parts as will not eaſily be removed; and this ſtiffneſs is generally called cheſt-founder.

The ſigns of this inflammation are, a ſtiffneſs of the body, ſhoulders, and fore-legs; attended ſometimes with a ſhort dry cough, &c. a ſhrinking when handled in thoſe parts.

Bleeding,

Bleeding, ſoft pectorals, attenuants, and gentle purges, are the internal remedies; and externally the parts affected may be bathed with equal parts of ſpirit of ſal ammoniac, and ointment of marſhmallows, or oil of chamomile.

Theſe outward inflammations frequently fall into the inſide of the foreleg, and ſometimes near the ſhoulder; forming abſceſſes there, which terminate the diſorder.

CHIBOULS, or CIBOULS. They are (properly ſpeaking) but degenerated onions, propagated only by ſeeds, of the bigneſs of a corn of ordinary gunpowder; in one ſide a little flat, and half round on the other, and yet a little long and oval, and white on the inſide. They are ſown in all ſeaſons; but herein they are different from the onion, in that it produces but a ſmall root, and ſeveral ſtems, or upright ſhoots, and thoſe which produce moſt of them, are moſt eſteemed, and of which you ſhould be careful to produce moſt ſeed, that will beſt fit to be gathered in Auguſt, if planted in March; they are ſown almoſt in every month of the year; they are thinned as well as onions, and ſome that are tranſplanted will proſper well: In dry ſummers, their beds muſt be watered, and their planting muſt be always in good earth.

CHICHES, or CHICK PEASE, [*Cicer.*] It is much cultivated in Spain, being one of the ingredients in their olios, and is there called Garavance; it is alſo cultivated in France, but in England it is rarely ſown.

The plant is annual, ſhooting out ſeveral ſtalks from the root, which are about two feet long; theſe are hairy, and garniſhed with long-winged leaves of a grayiſh colour, compoſed of ſeven or nine pair of ſmall roundiſh leaves (or lobes) terminated by an odd one, which are ſawed on their edges. From the ſide of the branches come out the flowers, ſometimes one, at other times two together. They are ſhaped like thoſe of peaſe, but are much ſmaller and white, ſtanding on long foot-ſtalks, and are ſucceeded by ſhort hairy pods, including two ſeeds in each, which are the ſize of common peaſe, but have a little knob or protuberance on one ſide.

The ſeeds of this plant may be ſown in the ſpring, in the ſame manner as peaſe, making drills with a hoe about an inch and a half deep, in which the ſeeds ſhould be ſown at about two inches aſunder, then with a rake draw the earth into the drill to cover the ſeeds. The drills ſhould be made at three feet diſtance from each other, that there may be room for their branches to ſpread, when the plants are full grown, as alſo to hoe the ground between them, to keep it clean from weeds, which is all the culture theſe plants require.

This plant flowers in June, and the ſeeds ripen in Auguſt; but unleſs the ſeaſon proves warm and dry, the plants decay before the ſeeds are ripe.

CHICKEN, the young of the cock and hen. As great pleaſure and convenience, beſides conſiderable profit, accrues to the farmer from keeping poultry, we will under this article endeavour to deſcribe the whole of what relates to raiſing of chicken.

Though the profits ariſing from the hen and cock are ſmall, in proportion to thoſe of the ox or ſheep, yet they come eaſier. There is leſs trouble and expence in theſe creatures, even than in rabbits. Indeed they in a manner take care of themſelves; feeding at the beſt upon the ſcatterings of the barn, with little aſſiſtance; and maintaining themſelves even where there is not this help, by their own care, with very little aſſiſtance.

Fowls are therefore a ſtock the pooreſt may keep, and ſuch as the richeſt need not to neglect; they are univerſal, and they very well deſerve to be ſo; and are a comfort to the peaſant, while they add their profit, though ſmall not inconſiderable, to the general purſe of the wealthy farmer.

The huſbandman is therefore to provide himſelf with cocks and hens as a material part of his ſtock, and he need not be afraid of over-doing in this article; for theſe are not like thoſe creatures, numbers of which require great attendance, and rich paſturage: a very conſiderable quantity of theſe will provide for themſelves in his yard, and at the barn door, for the greateſt part of the year, without doing him any damage, and will be ſupported during the remainder, at a very ſmall expence.

The advantages they afford in return

for this are very conſiderable in their kind, when the number is large; and they are in a manner continual: they are a conſtant ſupply for the proviſion of his family; and as conſtant for the market; where, according to their management, they afford a larger or ſmaller price.

The value of every thing riſes in proportion to the demand there is for it, and on this will depend the particular directions that are to be given to the farmer in this article. The great demand for fowls is in large towns, therefore the careful provider ought to proportion the quantity of theſe he keeps to his ſituation. If he live in a lone place, it will not be worth his while to keep more than will ſerve for his own family's ſupply, and for a few of his neighbours who may purchaſe of him: but if he be ſituated near a market town, eſpecially if within a due diſtance from London, he may ſtock himſelf as largely as he pleaſes; and the greater number the more the profit; for there is there a conſtant and good market throughout the whole year, for one kind or other in this way, either eggs, pullets, chickens, or capons, going off at a good price the whole year.

Additionally to this, which is the greater conſideration, he has the leſſer article of their feathers; and he has alſo the dung, which is very rich.

The huſbandman therefore, by this conſideration, will be led to the fixing upon a proper number of this kind of ſtock and after that, he is to acquaint himſelf with the choice before he makes his purchaſe. A great deal depends upon the firſt choice in all theſe caſes: the whole brood to come is to be of the ſame kind with theſe, which are the general parents.

The induſtry and curioſity of thoſe who breed poultry of this ſpecies for their pleaſure or profit, have of late years greatly multiplied what are called the breeds: but theſe differences are not ſo great as many imagine. They ariſe from ſmall diſtinctions, and will ſometimes go off in the continuance. Between the Darking fowl, and the little bantam breed, there are many degrees in bigneſs; and the game breed is altogether diſtinct from all theſe; anſwering the purpoſes of the ſportſman, not of the farmer.

Among the ſeveral breeds we would adviſe the huſbandman to chuſe, not fixing himſelf to one in particular according to what he ſuppoſes to be its value above the reſt, but conſidering which will beſt anſwer the demand he is like to have for the produce. In ſome meaſure, indeed, he is to be guided in this by the circumſtances of his farm; as in the choice of his oxen and ſheep, by the richneſs of his paſtures. He who has a good barn door, and a rich yard, will be able to keep a proper quantity of the largeſt breed of theſe fowls in health and vigour: the common or ſmaller kind will ſucceed beſt with the peaſant or the poorer farmer; for they will ſupport themſelves by running about the roads and hedges, in a great meaſure; eating inſects, ſeeds, and whatſoever can afford a living creature nouriſhment.

Thus upon theſe two conſiderations of the food and the demand, taken together, the huſbandman, of whatſoever rank, will be able to know which of thoſe ſeveral breeds, that are now ſo common in all places, it will be his intereſt to take.

Whichſoever kind he fixes on, let him obſerve theſe marks of goodneſs in the particular fowls he buys, and guide himſelf by them in the choice.

Let the cock be large for his kind, full bodied, well ſhaped, and lively; the cock is naturally an upright, ſtately, and majeſtic bird; and when he appears without theſe characters, it is a proof that ſomething is amiſs. The cock that does not ſtrut, is not fit for the father of a brood. He ſhould be long in the body, and thick in the garth. His neck ſhould be long and naturally arched, free in its motions, and well covered with feathers. His comb and watles ſhould be large, and of a bright red; his eyes full and ſprightly, and their colour anſwerable to that of his feathers, which is a great beauty in the cock, and a mark of a right and true breed. His beak ſhould be ſtrong and hooked, his legs ſtout and ſturdy; his ſpurs long and ſharp, and his claws ſhort and ſtrong. Theſe are the marks of a good cock, of whatſoever breed. Some have made a great deal of the colour, but the two beſt

are

are the red and the white, of which the red is fitteſt for a ſhout breed, and the white for a more delicate.

In the choice of a hen, the ſame general marks are to be obſerved as in the cock, only her whole aſpect ſhould be mild as the cock is ſturdy. She ſhould be lively and well coloured; her claws ſhort and ſtrong; but if ſhe want the hinder claws, it is ſo much the better, they often breaking the eggs in her ſitting.

When the cocks and hens are thus choſen, let them be well obſerved as ſoon as they are put into the ground, for if any thing be amiſs in them, that is the time to change; and it is much better to ſell the bad again, and buy others, than to ſit down content with ſuch as are not of the beſt kinds in every reſpect; the loſs attending this can be little, and is for once; but the diſadvantage of having a bad kind is great and continual.

The cock ſhould be lively, buſy, and noiſy: he ſhould be often crowing; and from time to time ſcratching up the ground to turn up worms and other food for the hens. The hens ſhould be lively, but quiet; a crowing hen is as much to be rejected as a dumb cock: for theſe are found by experience, neither to lay any quantity of eggs, nor to ſit well.

Now if any of theſe faults appear in the fowls that are bought for the breeders of a ſtock, let ſuch as have them be changed; and this done over and over again till ſuch as are in every reſpect right, are fixed upon.

The proportions of the two ſexes is about one to ten: a ſingle cock will ſerve twelve or fourteen hens; but the moſt profitable way is to allow a cock to every ten of them; and this way they will breed to the fulleſt advantage.

The yard being thus ſtocked with theſe poultry in proper number, of the fitteſt kinds, and of the choiceſt of the breed, the farmer is to conſult the managing them to the beſt advantage for their breeding.

The age is a conſiderable article in this reſpect; and he is to be very careful in ſuiting their employment to that: for it would be very ill huſbandry to ſtop the profitable laying of a young hen, by ſetting her upon her firſt eggs, when there are ſuch as are fit for nothing elſe, and will do this better.

As the youngeſt hens are always the beſt layers, and thoſe advanced into years are the beſt ſitters, let theſe be managed ſeverally accordingly. And in both theſe reſpects the farmer is to have regard to the feeding: for any extream is equally wrong, whether in exceſs, or in defect. If they be ſtarved or kept too low, they will want ſtrength and ſpirits; and if they be fed too high they will grow fat. A fat hen is always lazy, and will never lay well, nor ſit quietly. The feeding them moderately while laying, or while ſitting, is the right method.

The beſt ſeaſon of the year for hens ſitting, is ſpring and ſummer; the earlier in ſummer the better, and the firſt months of ſpring beſt of all. March is the beſt month for chicken to be hatched, and the middle of that month is the moſt favourable time of the whole year. The hen ſits only twenty days, ſo from this account it will be eaſy for the huſbandman to know when to put her upon the eggs for the beſt brood; that is, in the laſt week of February; and from that time he may continue breeding till the firſt week in October.

The prudent huſbandman ſhould never ſet a hen that is leſs than two years and a half old; from this time to five, or between five and ſix years is the beſt time of that creature's life for ſitting, and producing chicken. The fineſt broods will be obtained when theſe two conſiderations are regarded together; that is, when a hen of a good breed, and of about three years old, is ſet in the middle or end of February, upon a parcel of well-choſen eggs laid by a young hen of a good kind alſo, who has let no cock come near her but her own, that the breed may be kept entire.

We have obſerved, that in order to the having a due quantity of eggs, the hen that lays muſt be kept moderately: ſhe muſt be fed ſo as to have health and vigour, and not to grow fat: but there is ſomething to be ſaid for the kind of food, as well as the quantity.

The pretences of increaſing the laying of hens by particular diet, have been ſlighted by ſome; but they have been ſince confirmed upon the repeated trials of others, and no argument can ſtand

ſtand againſt experience. Many kinds of food have been preſcribed for this purpoſe, but there are two moſt authorized by experiment, theſe are buckwheat and hemp-ſeed: the effect of theſe is equal in reſpect of laying; but the one fattens, at the ſame time the other does not, therefore the condition of the hen is to fix which is preferable.

If ſhe be inclined to fat, then buckwheat muſt not be given, becauſe while it tends to make her lay by its common virtue, it will alſo increaſe her fat ſo as to take her off: in this caſe hempſeed is the proper kind. On the other hand, when a hen is poor, the proper kind is buckwheat, for at the ſame time that it inclines her to lay, it gets her into fleſh.

As to the number of eggs to be put under a hen for ſetting, there have been different opinions; but from what I have found from many trials, the beſt number is ſeventeen. Let care be taken that they be freſh and ſound eggs, and let the upper ſide of every one of them be marked blue; when the hen gets from her neſt for feeding, or waſhing herſelf, let the whole number be carefully examined to ſee if ſhe have turned them all, or any of them. Such as ſhe has not turned, the owner muſt ſee turned for her. And from this he will know how to value her for ſetting afterwards; for the hen that turns all her eggs herſelf, is greatly preferable to thoſe negligent ones which omit that needful caution.

Every good houſewife knows how to judge of the newneſs and foundneſs of her eggs by holding them up to the light, and ſeeing that they be full and clear. This is never ſo neceſſary as in the choice of thoſe eggs which are to be ſet for hatching.

When a hen is ſet, ſhe muſt never be diſturbed againſt her will; and ſome care muſt be taken to ſet her food and water. If ſhe be put from the neſt againſt her will, ſhe often forſakes it entirely; and if ſhe be obliged to go to ſeek for food and drink, oftentimes ſhe is obliged to be abſent ſo long in the ſearch, that the eggs chill, and the chicken are killed in them.

This care is needful during the whole time of her ſetting, but is moſt of all to be ſtrictly obſerved toward the end of the period. The chicken are then formed in the eggs, and they require the conſtant warmth of the creature's body to keep them alive, a ſmall time of chilling will utterly deſtroy them.

When the hen riſes from her eggs, eſpecially at theſe times, to feed upon what is ſet before her, the perſon who has the care of her, ſhould ſtir up the ſtraw of her neſt, and lay the eggs regularly together, that ſhe may find all convenient and agreeable at her return.

The cock is alſo to be watched upon theſe occaſions, for when the hen is off her neſt, he will offer his ſervice to ſet for her, but he does this very awkwardly, frequently breaking ſome of the eggs; and the hen is always diſpleaſed at it. Sometimes ſhe will entirely forſake the neſt upon it.

In the choice of eggs for ſetting, if there be any larger than uſual, they are to be rejected, for they will not lie even, and will cool thoſe that are next them. Theſe often have a double yolk, and they are the eggs which commonly produce thoſe monſtrous or miſſhapen chicken, which ſurprize the common people, among the broods of this creature.

As nothing more is required for the hatching of chickens than a due degree of heat, there has been long a cuſtom in Egypt, of hatching them without the help of hens, in ovens, by means of a ſmall and regular fire. They in this manner produce vaſt broods at a time. This cuſtom has of late been attempted to be brought into Europe; in France the celebrated Monſieur de Reaumur has made many experiments, and at length with ſome ſucceſs. From the public account he gave of this, the ſame has been attempted in England, and among other ingenious perſons, the honourable Mr. Stanhope tried it, and ſucceeded: but there does not ſeem any probability of its being brought into common uſe; and indeed ſo much nicety is required in the thing itſelf, and ſuch a great deal of care of the chicken after they are hatched, that it appears rather fit for an amuſement for the curious, than an employment to the huſbandman. We have ſeen that it may be done; and that is all that is worth our while to regard about it.

If it happen that a hen dies, or a brood become by any accident mother-

leſs,

leſs, the beſt method is to mix them among the chicken of another hen that are about the ſame age, and ſhe will take care of all together. A hen may thus be brought to conduct and aſſiſt three or four broods: and this is the moſt favourable circumſtance concerning the hatching of eggs by art; but there is a limitation in the number; and at preſent the attempt is not to be recommended to any on the foundation of utility and profit.

Although we have fixed the ſetting of the hen to the ſummer and ſpring months, it is not to be underſtood that they will not ſet at other times. Eggs may be put under them at any ſeaſon of the year, and they will hatch them; and for thoſe that chuſe to beſtow a ſufficient time and attendance upon them, the winter broods may be worth raiſing, for they bear the beſt price when they are grown up for ſale in ſpring. This, however, requires more trouble than the huſbandman can well beſtow upon ſo ſmall an article in his ſtock; and therefore it is we have recommended the ſetting of the hens in the end of February to any other time; for a brood of March chicken will be worth near twice as much to him in this general way, as thoſe of any other time.

When the breed of chicken is the only care, the white fowls with white legs and white beaks are to be preferred to all others, becauſe of the whiteneſs and natural tenderneſs of their fleſh, and their price on that account in the markets: but theſe are not the beſt layers.

Therefore if eggs be the principal care, the red cock and mottled hen are to be preferred.

If a hen that has been fed with buckwheat to make her lay frequently, grow too fat upon that diet, ſhe muſt be fed with oats; for they at the ſame time that they take down her fat, aſſiſt her breeding of eggs.

In all theſe articles of feeding, it is not intended that the fowl ſhould be kept upon thoſe things entirely. She ſhould be left to take ſome care of herſelf abroad, for her ſtirring about will do her ſervice; only what addition to her natural food is required to keep her in health and ſtrength for laying, ſhould be of theſe kinds.

We have led the huſbandman, or rather the good houſewife, (for this care naturally falls upon her) from the purchaſe of the ſtock in this kind, to the hatching of the young brood: theſe are the moſt eſſential as well as the moſt valuable articles that fall under this head, and we ſhall therefore lay down ſuch rules for the breeding them up to the condition for market, as experience has ſhewn are the moſt uſeful.

We have mentioned twenty days for the time the hen ſets: this is the earlieſt period at which an egg hatches, and as ſome are longer than others according to the thickneſs of the ſhell, their place under the hen, or other accidents, they ſometimes are one and twenty, and ſometimes two and twenty days.

In this, patience is the remedy. There have been ſeveral ways propoſed of aſſiſting the hen in hatching, and the like, but they are fooliſh and unneceſſary. All this is left to nature.

In large broods eſpecially, it often happens that ſome chicken are thus hatched a conſiderable time before the others, often one, and ſometimes two days. In this caſe let the hen be watched to ſee how ſhe treats them, for if ſhe be careful, nothing better can be done than to leave them with her. But if ſhe be reſtleſs, and ſeem troubled with them, it will be beſt to take them away.

In this caſe let a little wool be put into the bottom of a ſieve, and let them be ſet in the reach of the warmth of the fire, if the air be chill; and thus nurſed up till the hen has hatched the reſt, and can take them under her care. During this time nothing is needful but to keep them warm, for the chicken in the two firſt days requires no food.

For the firſt feeding of the chicken, the beſt thing in the world is a mixture of white bread crumbs and ſmall oatmeal. Let a quantity of theſe be mixed well together, and then put a part of it to ſteep in milk, and keep the reſt dry. Give the chicken a little of each ſort at times, as they follow the hen.

After they have thus got a little ſtrength, they are to be fed with bread ſteeped in milk, and then with barley-meal and cheeſe-parings cut ſmall, and the like, and the hen will by this time greatly

greatle aſſiſt in the providing for them, though at the firſt ſhe can do little more for them, than the keeping them together, and nouriſhing them by her warmth.

In cool weather it is always beſt to keep chicken within doors, till they have got ſome ſtrength. At the worſt ſeaſon, during the months we have recommended for breeding theſe creatures, they need not be kept within doors above ten or twelve days, after which they may be ſuffered to go about abroad with the hen; and in the better ſeaſons, the leſs of this keeping them within will be neceſſary; often ſcarce at all.

It is a very material thing to let the chicken, while they are young, have good water, for they fall into half the diſeaſes to which they are ſubject, from the being obliged to drink ſuch as is foul, or any thing they can get at.

By means of the food we have directed for young chicken; and the giving them bread, ſcalded with milk, and ſome barley meal afterwards, they may be fattened up while they are under the hen. This is a very common practice in Ireland, and according to the common error of expreſſion in that country, they call theſe ſucking chicken.

The moſt general and uſeful time of fattening them is, at a ſomewhat more advanced growth. To this end, when the hen forſakes them, which ſhe always does as ſoon as they are fairly able to provide for themſelves, they ſhould be taken up and put into coops, in a darkiſh place, and there fed for fourteen or fifteen days. Their quietneſs aſſiſts greatly to the fattening of them; and they will always be moſt quiet where they have leaſt light.

In theſe places they are to be fed in the manner that is called cramming, and the beſt food is ordinary wheat flour, made into a paſte with milk. This is to be ſoaked in milk, and then broke into ſmall pieces, which are to be put down their throats, always wetting them well in milk firſt, that they may go down eaſily.

Some prefer barley meal to wheat for this purpoſe; and others ſpeak greatly of the meal of buck-wheat: but from many trials it appears, that buck-wheat meal does not anſwer well alone. A little of it mixed with the wheat flour before it is made into paſte, may do very well; but too much is not profitable.

CHICKLING PEA, [*Lathyrus.*] Chickling Vetch, or Everlaſting Peas. There are many varieties of this plant cultivated in botanic gardens. They may be propagated by ſowing the ſeeds in March upon a bed of light freſh earth, covering them about half an inch deep. But the beſt method is, to make a ſhallow drill in the ground, and then drop the ſeeds therein about ſix inches diſtant; theſe drills ſhould be a foot aſunder, for the conveniency of hoeing and cleaning the ground between them; which muſt conſtantly be done, otherwiſe the weeds will overbear and deſtroy them: but they will require no farther care, being very hardy plants, until the ſpring following, at which time, (viz. in March) juſt before they begin to ſhoot, the roots ſhould be carefully taken up, and tranſplanted where they are to continue, placing them at leaſt two feet aſunder, otherwiſe they will over-run each other, or whatever other plants ſtand near them. If the ſeaſon ſhould prove dry, you muſt give them ſome water, to ſettle the earth to their roots; which ſhould be now-and-then repeated, if it continue dry weather, until the plants have taken root: after which, they will require no farther culture but to keep them clear from weeds, and in the ſummer time to ſupport them with ſtrong ſtakes, otherwiſe they will trail upon the ground and rot the branches, and deſtroy whatever plants grow near them.

Theſe plants are very proper to plant againſt a dead hedge, where they will run over it, and if they be kept trained up, will cover it in the ſummer, and in ſuch places they will produce great quantities of flowers; but if they are planted in a lower garden, they muſt have a great deal of room, and in ſummer ſhould have very ſtrong ſtakes placed down by them, to which they muſt be cloſely faſtened, otherwiſe they will ramble and trail upon the ground, and appear very unſightly: for if the ground be good in which they are planted, and the roots are very ſtrong, they will ſometimes grow eight or ten feet high in a ſeaſon, and produce abundance of flowers, which are very ornamental in baſons or pots of flowers,

flowers, to place in chimnies or other parts of large rooms. Theſe produce their flowers in June and July, and their ſeeds are perfected in Auguſt; their green leaves decay in autumn, and riſe again the ſucceeding ſpring, their roots continuing good for many years: They delight moſt in a light ſoil, not too dry nor over wet, but will grow in almoſt any ſoil or ſituation, but beſt in that which is expoſed to the ſun.

CHICK-WEED, [*Alſine.*] This plant was employed by the ancients externally againſt eryſipelatous and other inflammatory diſorders. Later times have given it internally in hæmoptoes, as a reſtorative in atrophies and conſumptions, and likewiſe as an antepileptic. Some recommend for theſe purpoſes the expreſſed juice to be taken to the quantity of an ounce; others the dried leaves, in the doſe of a dram; and others a water diſtilled from them. But if any real benefit is expected from alſine, it ought to be uſed liberally as food; though even then, its effects would not be ſuperior to thoſe of more approved culinary herbs.

BERRY-BEARING CHICK-WEED, [*Cucubalus.*] This plant is of no great uſe or beauty, it grows wild in Germany and the northern parts of England.

CHINA ROOT. There are two ſorts of this root in the ſhops, one brought from the Eaſt-Indies, the other from the Weſt. They are both longiſh, full of joints, of a pale reddiſh colour, of no ſmell, and very little taſte: the oriental, which is the moſt eſteemed, is conſiderably harder and paler coloured than the other. Such ſhould be choſen as is freſh, cloſe, heavy, and upon being chewed appears full of a fat unctuous juice. China root was either unknown or diſregarded by the ancient phyſicians. It was firſt introduced into Europe about the year 1535, with the character of a ſpecific againſt venereal and cutaneous diſorders, and as ſuch was made uſe of for ſome time, but at length gave place to medicines of a more powerful kind. It is generally ſuppoſed to promote inſenſible perſpiration and the urinary diſcharge; and by its unctuous quality to obtund acrimonious juices.

CHIN-SCAB, A ſcabby diſeaſe in ſheep, that runs on the ſkin, and is commonly called of ſhepherds, the Darters; which will kill them, if not remedied: it comes by negligence of the ſhepherds, when they ſuffer them to feed on graſs covered with dew, which is evil. To cure it, 1. Take a little quantity of hyſſop and ſalt beaten together, and therewith chafe and fret the palate of the mouth, and all over the mouth; or elſe with ſelfheal and cinque-foil, and waſhing the ſcab with vinegar, afterwards anoint it with tar and hogſgreaſe mixed together. 2. Others ſtamp cypreſs leaves in water, and therewith waſh the palate of the mouth, and the ſores. 3. But as ſome ſhepherds take this ſcab to be a kind of a pox, which will commonly be as well on the briſket, as upon his chin, and ſay, it is got by feeding after hogs that have the ſwine pox; they anoint it with tar and hogſgreaſe melted together; and if not helped in time, one ſheep will infect the reſt.

To CHIT, to ſprout, ſhooting forth for growth, applied to corn.

CHIVES, [*Cepa ſectilis juncifolia perennis.*] A ſmall ſort of onions which never produce any bulbs, and are propagated by parting the roots.

CHOCOLATE-NUT, the fruit of the cocoa tree.

CHOLER, a diſtemper incident to ſheep, in ſummer, being known by the yellowneſs of the ſkin: To cure which, ſtamp a few elder leaves, ſtrain them with ale, and give the ſame warm.

CHOLIC. The cholic, fret, or gripes, which, in the farriers terms, though very injudiciouſly, is meant to ſignify moſt of the diſeaſes of the guts, is no other than the pain that accompanies all the particular diſorders thoſe parts are liable to.

Horſes are ſeldom or never troubled with any other adſtriction in their bowels, excepting what proceeds from the dung hardening and obſtructing thoſe paſſages; and when the matter is pent up in the firſt paſſages, to wit, in the ſtomach and guts, and putrifies there, the juices turn ſour, viſcid, and ropy, and fret the tender membrane which covers the inſide of the guts; by the viſcidity alſo the wind is intangled, which creates a ſwelling and diſtention, ſo that the belly becomes hard like a drum; and if the excre-

ments be very much hardened in the great or ſtreight gut, they cauſe a preſſure upon the neck of the bladder, and hinder the paſſages of the urine, that a horſe cannot piſs; ſometimes the fundament ſwells, and all towards the ſheath, which is very dangerous. A horſe in this condition muſt needs be in great pain, and even in danger of his life, if a ſpeedy relief is not had; therefore, in order to the cure, after he has been raked, and with a great deal of caution, the following clyſter ought to be injected:

"Take the leaves of mallows, marſh-mallows, and mercury, of each three handfuls, boil them in three quarts of water for the ſpace of half an hour; to the ſtrained decoction add lenitive electuary four ounces, ſpirit of wine or brandy half a pint, oil or butter half a pound." Let this be injected lukewarm, and retained as long as poſſible.

Four hours after the operation of this clyſter, if the horſe is not very much relieved, the following may be given:

"Take leaves of mallows and marſh-mallows, of each three handfuls, as above directed, linſeed and fœnugreek ſeeds, of each two ounces, coriander ſeeds, cummin ſeeds, and aniſeeds, of each two drams, bay-berries, cubebs, and Jamaica pepper, of each one dram. Let theſe alſo be boiled for the ſpace of half an hour, or be infuſed in boiling water for two hours; and to the decoction add four ounces of emetic wine." Let this be given as the former; and by the help of theſe, the adſtriction of the bowels, or the coſtiveneſs, may be removed.

But if the horſe has, along with his coſtiveneſs, violent cholic pains, proceeding from wind and phlegm; after the groſſer excrements are diſcharged, the following clyſter may be given.

"Take red-roſe leaves two handfuls, tops of centaury the leſs, and wormwood, of each one handful. Boil them in two quarts of water to three pints; and in the decoction diſſolve two ounces of diaſcordium, and half a pint of treacle water, or ſpirit of wine.

This will infallibly take off the pain, and lie in the bowels like a cordial, without giving him the leaſt motion to dung, but compoſe and lull his ſpirits, and in a minute take off the violent gripes; if the pain ſhould chance to return, the ſame may be repeated; and, if neceſſary, the doſe of the diaſcordium may be enlarged to three ounces or more; and there is hardly any kind of cholic pain but what may be carried off by it.

Cholicks and griping pains in the bowels of horſes become ſuddenly mortal, that without any regard to other circumſtances, they ought immediately to be removed; and if coſtiveneſs happens to continue upon the uſe of the remedies that are preſcribed for that purpoſe, that ſymptom will of courſe go off in the ſequel of the cure; for after the moſt urgent ſymptoms are removed, the next intention muſt be to deſtroy the cauſe of the diſtemper, otherwiſe it may return again.

Wherefore we recommend gentle purging, with the uſe of ſuch things as are hot and penetrating; and this we do contrary to the opinion, though not altogether to the practice, of moſt farriers, who believe coſtiveneſs to proceed from inward heat; whereas that heat is only the effect of coſtiveneſs and not the cauſe, as is eaſily demonſtrated, and is occaſioned chiefly by indigeſted matter in the ſtomach and guts, which binds up the excrements; which, when the guts are full and preſſed upon, cauſe heat; therefore as all hot ſpicy things are proper to cut and deſtroy thoſe viſcidities which cauſe the lentor, and harbour wind, they ought more or leſs to be exhibited in all intentions that are requiſite to the cure of coſtiveneſs. The following purge may, for that reaſon, be given, and will be found very profitable, after the violence of the cholic pains are over, and the obſtinate ſtoppages of the bowels are removed.

"Take mallows and marſh-mallows, of each one handful, roots of marſh-mallows ſix ounces, leaves of ſenna two ounces, bay-berries and juniper-berries, of each an ounce. Boil them in three pints of water to one quart, ſtrain out the decoction through a ſieve or coarſe cloth, and add two ounces of ſyrup of buckthorn." Or this:

"Take mallows and marſh-mallows, of each two handfuls, ſenna one ounce, jalap in groſs powder half an ounce,

ounce, carraway ſeeds, an ounce and a half. Boil them in the ſame quantity of water as above directed, to the conſumption of a third part; and in the ſtrained decoction diſſolve four ounces of manna." Or the following:

"Take eight ounces of manna, two ounces of cream of tartar, diſſolve them in a quart of ſweet whey, and add eight ounces of the oil of olives."

Either of theſe may be made uſe of after clyſters have been injected, the horſe being kept from feeding two hours before and two hours thereafter. He may then be walked abroad for the ſpace of an hour; and upon his return it would not at all be amiſs if there was tripe-broth prepared for him ſtrewed with oatmeal; and if he ſeems unwilling to drink it, he may have two or three quarts adminiſtered through a horn, and the ſame quantity repeated two hours after.

Theſe will help the operation of the phyſic, looſen, and waſh down the viſcid ſlimy matter, which not only fetters the excrements, but intangles the wind, which cauſes violent exceſſive pain, by its preſſure and diſtention of the colon: But if the horſe be of ſmall value, and it is not worth while to be at all this expence and trouble about him, the following purging drench may be made uſe of.

"Take mallows and marſh-mallows, of each two handfuls, or four handfuls of common mallows (if marſh-mallows are not to be had) jalap in powder two ounces, aniſeeds, or fennel ſeeds, an ounce. Boil them as before directed, and add to the decoction four ounces of common treacle." Or this:

"Take half an ounce of the bitter apple in powder, three drams of aloes, and one dram of diagridium; make them into a ball with flour and butter." To be given as the former.

If your horſe's fundament be ſwelled, which ſometimes happens to that degree before raking and clyſters are adminiſtered, that he cannot ſtale, becauſe when the excrements are hardened and pent up in the great or ſtraight gut, that being full, it preſſes upon the neck of the bladder, ſo as to hinder the paſſage of his urine; and if this ſymptom does not wear off ſoon after thoſe means have been uſed, recourſe muſt be had with all ſpeed to thoſe things that are proper to keep down inflammation, for which purpoſe we recommend the uſe of the following decoction:

"Take of red-roſe leaves two handfuls, boil them in a quart of water for the ſpace of half an hour; add to the decoction a ſmall quantity of brandy, ſpirit of wine, or rum, and with a ſponge bathe his fundament and ſheath often.

This decoction ſhould always be made as warm as he can bear it, and the ſpirits mixt with it as often as it is uſed, viz. to every two parts of the decoction add one of the ſpirits.

His yard ought alſo to be kept up to his belly with a gentle bandage, becauſe the humours fall into it with a very eaſy influx, as it is both a ſoft and dependent part, by which means the ſwelling and inflammation are often kept up, after the firſt cauſe is in a great meaſure removed, and ſometimes proves the occaſion of a gangrene; and therefore to keep that ſuſpended, the farrier or groom may take a piece of canvas, ſix or eight inches broad, and fixing two ſtraps to each corner forwards, they may be brought one on each ſide over his flanks, and faſtened upon his reins, the hind parts ſhould have the corners cut off, according as the ſwelling happens to be more or leſs on the upper part of the yard, with one ſingle piece of ſtrong tape fixt to it, which coming through between his hips, is to be brought over the croup, and tied to the other two; and when this accident happens to a ſtone-horſe, his ſtones ought alſo to be ſuſpended in a bag of ſoft flaxen cloth, which may eaſily be fixt to the other.

By this means the return of the blood will be rendered very eaſy, and the ſwelling will thereupon aſſwage, which, for want of ſuch a method, has ſometimes been the cauſe of ſudden death.

It will be very neceſſary, after the preceding means have been complied with, and the moſt urgent ſymptoms are removed, to adminiſter ſuch things as are neceſſary to deſtroy the remains of thoſe viſcidities; for which purpoſe the following powder, to the quantity of a ſpoonful, may be given every morning:

"Take gentian and birthwort-roots, of each four ounces, galangal, zedoary, and calamus aromaticus, of each one ounce, the tops of dried wormwood and the leſſer centaury, of each an ounce and a half, nutmegs, ginger, black pepper, and bay-berries, of each half an ounce. Make them into a fine powder, and keep it in a glaſs or gallipot cloſe covered."

This may be given in white wine, ale, or in a decoction wherein a handful of rue has been boiled, letting him faſt two hours before and one after; and if your horſe be of ſmall value, you may give him every day, among a few oats, an ounce of antimony, and two ounces of flour of brimſtone; or you may make it up into a paſte, with a little flour and butter, continuing its uſe for the ſpace of one week.

Champt rue and garlick is alſo very ſerviceable in this caſe; but all remedies will prove the more ſucceſsful if you give your horſe proper exerciſe; and, indeed, that alone oftentimes proves ſufficient; for by exerciſe the whole body is ſhook, and the lentor in the bowels and the excrements readily falls downwards to their expulſion out of the body.

A bottle of Jackſon's tincture given in ſome warm ale has often done ſervice.

CHRISTMAS ROSE, [*Helleborus Niger.*] This grows wild in Swiſſerland, Auſtria, &c. and is propagated by parting its roots in autumn. It is otherwiſe called Black Hellebore.

CHRIST's THORN, [*Spina Chriſti, Paliurus.*] This plant grows naturally in the hedges near Paleſtine; it riſes with a pliant ſhrubby ſtalk to the height of eight or ten feet, ſending out many weak ſlender branches, garniſhed with olive leaves placed alternately; they have three longitudinal veins, and are of a pale green. The flowers come out at the wings of the ſtalk in cluſters, almoſt the length of the young branches; they are of a greeniſh yellow colour, and appear in June, and are ſucceeded by broad, roundiſh, buckler-ſhaped ſeed-veſſels, which have borders like the brims of a hat, the foot-ſtalks being faſtened to the middle, and have three cells, each containing one ſeed.

This is by many perſons ſuppoſed to be the plant from which the crown of thorns, which was put upon the head of our Saviour, was compoſed; the truth of which is ſupported by many travellers of credit, who affirm, that this is one of the moſt common ſhrubs in the country of Judea; and from the pliableneſs of its branches, which may be eaſily wrought into any figure, it may afford a probability.

Herb CHRISTOPHER, [*Actæa.*] This plant grows wild in ſeveral parts of the north of England, but being of little beauty, is ſeldom cultivated in gardens, except by curious perſons for variety.

CHURNING. See BUTTER.

CIBOULS. See CHIBOULS.

Sweet CICELY, [*Myrrhis.*] There are ſeveral ſorts of this plant in the gardens of the curious, but they are of little uſe or beauty.

CICHORY. Wild ſuccory.

CINNAMON, [*Cinnamomum.*] This is a light, thin bark, of a reddiſh colour, rolled up in long quills or canes; of a fragrant, delightful ſmell, and an aromatic, ſweet, pungent taſte, with ſome degree of aſtringency. It is generally mixed with the Caſia bark: this laſt is eaſily diſtinguiſhable by its breaking over ſmooth, whilſt cinnamon ſplinters; and by its ſlimy mucilaginous taſte, without any thing of the roughneſs of the true cinnamon. Cinnamon is a very elegant and uſeful aromatic, more grateful both to the palate and ſtomach, than moſt other ſubſtances of this claſs: by its aſtringent quality it likewiſe corroborates the viſcera, and proves of great ſervice in ſeveral kinds of alvine fluxes, and immoderate diſcharges from the uterus. An eſſential oil, a ſimple and ſpirituous diſtilled water, and a tincture of it, are kept in the ſhops.

The body of the tree is covered with the bark, which is at firſt green and afterwards red, the leaf is not unlike the laurel. When firſt unfolded, it is of a flame colour, but after being expoſed to the air, and growing dry, it changes to a deep green on the upper ſurface, and to a lighter on the lower. The flowers are ſmall and white, and grow in large bunches at the extremity of the branches, and have an agreeable ſmell, not unlike the lilly of the valley. The fruit is ſhaped like an acorn, but not ſo large.

CINQUE-

CINQUEFOIL, [*Argentina.*] Called alſo ſilverweed or wild tanſey. This plant grows wild about the ſides of rivulets and other moiſt places: it has no ſtalk; the leaves lie flat on the ground. The writers on the materia medica in general look upon argentina as a very ſtrong aſtringent; Boerhaave relates, that it equals in virtue the Peruvian bark; Hoffman, that it powerfully reſtrains alvine and other fluxes; Geoffroy, that it effectually ſtops hæmorrhagies of every kind. Theſe virtues ſeem to have been attributed to this plant from its agreement in botanic characters with tormentil, which is known to be a powerful ſtyptic. The ſenſible qualities of *argentina* do not promiſe any ſuch virtues: the leaves have a merely herbaceous taſte; the roots, a pleaſant ſweetiſh one, like that of parſnips, but not ſo ſtrong.

CISTUS, *Rock Roſe.* There are no leſs than eighteen ſorts of this beautiful ſhrub; the varieties of which are very great ornaments to a garden; their flowers are produced in great plenty all over the ſhrubs, which though but of a ſhort duration, yet are ſucceeded by freſh ones almoſt every day for above two months ſucceſſively. Theſe flowers are many of them about the bigneſs of a middling roſe, but ſingle, and of different colours; the plant continues green throughout the year.

The ſorts may all be propagated, by ſowing their ſeeds upon a gentle hot-bed, or on a warm border in the common ground in March; and when the plants are come up about three inches high, they ſhould be tranſplanted either into ſmall pots, or a border of good light earth, at about ten inches diſtance every way: if they are planted into pots, they ſhould be removed under a common hot-bed frame in winter, to defend them from the froſt, which may be hurtful to them while young, if they are not protected from it; but they ſhould have as much open free air as poſſible in mild weather, and will require to be often refreſhed with water.

In the ſpring following, theſe plants may be turned out of the pots, with all the earth preſerved to their roots, and planted in the places where they are to remain, (for they are bad plants to remove when grown old) obſerving to give them now and then a little water, until they have taken freſh roots; after which time they will require no farther care than to train them upright in the manner you would have them grow: but thoſe plants which were at firſt planted into a border in the open ground, ſhould be arched over, and covered with mats in froſty weather, during the firſt winter, but may be tranſplanted abroad the ſucceeding ſpring: in removing of theſe plants, you ſhould be careful to preſerve as much earth about their roots as you can; and if the ſeaſon ſhould prove hot and dry, you muſt water and ſhade them, until they have taken freſh root; after which they will require no other culture than was before directed.

From this tree growing in the Archipelago, the Greeks gather the gum labdanum.

Dwarf CISTUS, [*Helianthemum.*] There are many ſpecies of this plant growing in England, Portugal, Italy, France, and America, ſome of which are perennial, others annual; they are all propagated by ſeeds ſown in March, or cuttings planted in May.

CITRON, [*Citrus.*] The ſpecies are, 1. Citron with a large, oblong, pointed fruit, having a thick rough rind; or Sweet Citron. 2. The common Citron.

There are ſeveral other varieties of this fruit, with which the Engliſh gardens have been ſupplied from Genoa, where is the great nurſery for the ſeveral parts of Europe for this ſort, as alſo Orange and Lemon-trees.

The ſeveral ſorts of Citrons are cultivated in much the ſame manner as the Orange-tree, to which we ſhall refer the reader to avoid repetition; but ſhall only remark, that theſe are ſomewhat tenderer than the Orange, and ſhould therefore have a warmer ſituation in winter, otherwiſe they are very ſubject to caſt their fruit. They ſhould alſo continue a little longer in the houſe in the ſpring, and be carried in again ſooner in the autumn. And as their leaves are larger, and their ſhoots ſtronger than thoſe of the Orange, they require a little more water in the ſummer; but in the winter they ſhould have little water at each time, which muſt be the oftener repeated.

The

The common Citron is much the beſt ſtock to bud any of the Orange or Lemon kinds upon, it being the ſtraiteſt and freeſt growing tree; the rind is ſmoother, and the wood leſs knotty than either the Orange or the Lemon, and will take either ſort full as well as its own kind, which is what none of the other ſorts will do: and theſe ſtocks, if rightly managed, will be very ſtrong the ſecond year after ſowing, capable to receive any buds, and will have ſtrength to force them out vigorouſly; whereas it often happens, when theſe buds are inoculated into weak ſtocks, they frequently die, or remain till the ſecond year before they put out; and thoſe that ſhoot the next ſpring after budding, are oftentimes ſo weak as hardly to be fit to remain, being incapable to make a ſtrait handſome ſtem, which is the great beauty of theſe trees.

CITRUL, or *Water Melon*, [*Anguria.*] Of this there are ſeveral varieties, which differ in the form and colour of their fruit. But as theſe vary annually from ſeeds, ſo it is needleſs to enumerate them here.

The fruit is cultivated in Spain, Portugal, Italy, and moſt other warm countries in Europe; as alſo in Africa, Aſia, and America, and is by the inhabitants of thoſe countries greatly eſteemed for their wholeſome cooling quality: but in England the fruit is not ſo univerſally eſteemed, though there are ſome few perſons who are very fond of them.

To have this fruit good, you muſt firſt provide yourſelf with ſome ſeeds which ſhould be three or four years old, for new ſeeds are apt to produce vigorous plants, which are ſeldom ſo fruitful as thoſe of a moderate ſtrength. The beſt ſorts to cultivate in England are thoſe with ſmall round fruit, which come from Aſtracan, for thoſe with very large fruit ſeldom ripen in this climate. Having provided yourſelf with good ſeed, you may ſow it in the hot-bed for early cucumbers; then you ſhould prepare a heap of new dung the beginning of February, which ſhould be thrown in a heap for about twelve days to heat, as is practiſed for early cucumbers. When the dung is of a proper temper, the bed ſhould be made in the ſame manner as for the Muſk Melon, covering the dung about five inches thick with loamy earth; for the plants may be raiſed fit to plant out for good, in the ſame manner as the early cucumbers, ſo the bed here mentioned is where they are to remain for good. But as theſe plants require much more room than either cucumbers or common melons, ſo there ſhould be but one plant put into a three-light frame; therefore a hill of the ſame loamy earth ſhould be raiſed a foot and a half high in the middle light of each frame, into which, when the bed is of a proper temper for heat, the plants ſhould be carefully planted, obſerving to water and ſhade them until they have taken good root.

After theſe plants are placed in theſe beds, you muſt be careful to admit freſh air to them, by raiſing of the glaſſes in proportion to the weather; and as their branches extend you ſhould lead the ſhoots as they are produced, ſo as to fill each part of the frame, but not to croud each other, and be careful to keep them clear from weeds; they muſt alſo be frequently watered, but do not give it them in great quantities. In ſhort, there is little difference to be obſerved in the management of theſe, from that of muſk melons, but only to give them more room, earthing the beds to the ſame depth, and adding to the ſides of the beds for the roots of the plants to run into it, and to keep the beds to a good temperature of heat; and when the fruit appears, to admit air freely to the plants, in order to ſet their fruit; but when the nights are cold, the glaſſes muſt be covered with matts to keep the beds warm, without which this fruit will ſeldom come to be good in this country. *Clay-Sea poſt.*

CLIMBERS, or *Virgin's Bower*, [*Clematis.*] Of this plant there are ſeveral ſpecies, and of different colours, as blue, purple, red, &c. as alſo ſingle and double flowers, and are all eaſily propagated by laying down their branches; for although the ſingle flowers do ſometimes produce ſeeds in England, yet as theſe ſeeds, when ſown, remain a whole year in the ground before they vegetate, ſo the other being the more expeditious method of increaſing theſe plants, is generally practiſed: but in order to ſucceed, theſe layers ſhould be put down at a different

rent ſeaſon from the former; for when they are layed in the autumn, their ſhoots are become tough, ſo do rarely put out roots under two years; and after lying ſo long in the ground, not one in three of them will have made good roots, ſo that many have ſuppoſed theſe plants were difficult to propagate; but ſince they have altered the ſeaſon of doing it, they have found theſe layers have ſucceeded as well as thoſe of other plants.

The beſt time for laying down of the branches is in July, ſoon after they have made their firſt ſhoots, for it is the young branches of the ſame year which do freely take root; but as theſe are very tender, and apt to break, ſo there ſhould be great care taken in the operation: therefore thoſe branches from which theſe ſhoots are produced, ſhould be firſt brought down to the ground, and faſtened to prevent their riſing; then the young ſhoots ſhould be laid into the earth, with their tops raiſed upright, three or four inches above ground; and after the layers are placed down, if the ſurface of the ground be covered with moſs, rotten tanners bark, or other mulch, it will prevent the ground from drying, ſo that the layers will not require watering above three or four times, which ſhould not be at leſs than five or ſix days interval; for when theſe layers have too much wet, the tender ſhoots frequently rot, or when the young fibres are newly put out, they are ſo tender as to periſh by having much wet: therefore where the method here directed is practiſed, the branches will more certainly take root than by any other yet practiſed.

As theſe plants have all of them climbing branches, ſo they ſhould be always planted where they may be ſupported, otherwiſe the branches will fall to the ground and appear unſightly; ſo that unleſs they are properly diſpoſed, inſtead of being ornaments to a garden, they will become the reverſe. When there are arbours or ſeats with trellis-work round them, theſe plants are very proper to train up againſt it; or where any walls or other fences require to be covered from the ſight, theſe plants are very proper for the purpoſe; but they are by no means proper for open borders, nor do they anſwer the expectation when they are intermixed with ſhrubs; for unleſs their branches have room to extend, they will not be productive of many flowers.

The ſort with double flowers is the moſt beautiful, ſo that ſhould be preferred to thoſe with ſingle flowers, of which a few only ſhould be planted for variety. They are all equally hardy, ſo are ſeldom injured by froſt, excepting in very ſevere winters, when ſometimes the very tender ſhoots are killed; but if theſe are cut off in the ſpring, the ſtems will put out new ſhoots.

CIVES. See CHIVES.

CLARY, [*Sclarea Horminum.*] The name of a plant, of which there are great varieties found in different parts of Europe, in the Canary iſlands, and Mexico. The leaves have a warm bitteriſh pungent taſte; and a ſtrong, not very agreeable ſmell: the touch diſcovers in the leaves a large quantity of glutinous or reſinous matter: they are principally recommended in the fluor albus, and other female weakneſſes, in hyſteric diſorders, and in flatulent colics.

CLIVERS, [*Aparine.*] This is a ſlender rough plant, growing very frequently to the length of four or five feet when hanging on a hedge. It is recommended as an aperient, and particularly uſeful as an antiſcorbutic.

CLOTBUR. Burdock.

CLOUDBERRY, a ſpecies of bramble, growing in the north of England and Scotland.

CLOVE, [*Caryophylla Aromatica.*] Cloves are the flower cups (not as is generally ſuppoſed the fruit) of a bay-like tree, growing in the Eaſt-Indies. In ſhape, they ſomewhat reſemble a ſhort thick nail: in the inſide of each clove are found a ſtylus and ſtamina with their apices, as in other flower cups: at the larger end ſhoot out from the four angles four little points like a ſtar, in the middle of which is a round ball, compoſed of four little leaves, which are the unexpanded petala of the flower. Cloves have a very ſtrong agreeable aromatic ſmell, and a bitteriſh pungent taſte, almoſt burning the mouth and fauces. The Dutch, from whom we have this ſpice, frequently mix with it cloves which have been robbed of their oil: theſe, though in time they regain from the others a conſiderable ſhare both of taſte and ſmell,

ſmell, are eaſily diſtinguiſhable by their weaker flavour and lighter colour. Cloves, conſidered as medicines, are very hot ſtimulating aromatics, and poſſeſs in an eminent degree the general virtues of ſubſtances of this claſs. An extract made from them with rectified ſpirit is exceſſively hot and pungent; the diſtilled oil has no great pungency; an extract made with water is nauſeous and ſomewhat ſtyptic.

CLOVE GILLIFLOWER, or *July Flower*. See CARNATION. A great variety of theſe flowers are met with in our gardens: thoſe made uſe of in medicine ought to be of a deep crimſon colour, and a pleaſant aromatic ſmell, ſomewhat like that of cloves; many ſorts have ſcarce any ſmell at all. The *caryophylla rubra* are ſaid to be cardiac and alexipharmac: Simon Paulli relates, that he has cured many malignant fevers by the uſe of a decoction of them; which he ſays powerfully promotes ſweat and urine, without greatly irritating nature, and alſo raiſes the ſpirits, and quenches thirſt. At preſent theſe flowers are chiefly valued for their pleaſant flavour, which is entirely loſt even by light coction: hence the college direct the ſyrup, which is the only officinal preparation of them, to be made by infuſion.

CLOVER, [*Trifolium.*] The ſpecies are, 1. The red or Dutch Clover. 2. Trefoil with umbellated heads, pods having four ſeeds, and a creeping ſtalk; White Meadow Trefoil, Honeyſuckle graſs, or White Dutch Clover. 3. Trefoil with oval imbricated ſpikes of flowers, having deflexed permanent ſtandards, naked empalements, and an erect ſtalk; Yellow Meadow Trefoil, or Hop Clover. 4. Trefoil with imbricated ſpikes of flowers, having deflexed permanent ſtandards, empalements ſtanding upon foot-ſtalks, and trailing ſtalks; the leaſt Yellow Hop Trefoil, called None-ſuch, or Black-ſeed. 5. Trefoil with oval ſpikes of flowers, having leafy empalements, an erect hairy ſtalk, and ſpear-ſhaped leaves; greater hairy Meadow Trefoil, with a whitiſh ſulphur or copper-coloured flower. 6. Trefoil with oblong, blunt, hairy ſpikes of flowers without leaves, and roundiſh lobes. 7. Narrow-leaved Spaniſh Trefoil. 8. Trefoil with oblong, conical, hairy ſpikes, having briſtly indentures to the empalements, which are almoſt equal, and linear lobes to the leaves. 9 Trefoil with oval hoary ſpikes, and briſtly indentures to the empalements, which are equal; or Hare's-foot Trefoil. 10. Trefoil with round diſh heads, reflexed bladder empalements with two teeth, and a creeping ſtalk; Strawberry Trefoil. 11. Trefoil with long naked bunches of pods containing two ſeeds, and an erect ſtalk; or, common Melilot. 12. Trefoil with long ſpikes, half-naked acute-pointed pods, and an upright ſtalk; Sweet Melilot Trefoil.

The firſt ſort, which is well known in England by the title of Red Clover, needs no deſcription; this has been frequently confounded with the red Meadow Trefoil by the botaniſts, who have ſuppoſed they were the ſame ſpecies; but the ſeeds of both have been often ſown in the ſame bed, which have conſtantly produced the two ſpecies without varying. The ſtalks of the Meadow Trefoil are weak and hairy; the ſtipulæ, which embrace the foot-ſtalks of the leaves, are narrow and very hairy; the heads of flowers are rounder, and not ſo hairy as thoſe of the clover, whoſe ſtalks are ſtrong, almoſt ſmooth, furrowed, and riſe twice the height of the other; the heads of flowers are large, oval, and hairy; the petal of the flowers open much wider, and their tubes are ſhorter than thoſe of the other; but the clover has been ſo much cultivated in England for near a hundred years paſt, that the ſeeds have been ſcattered over many of the Engliſh paſtures, ſo that there are few of them which have not clover mixed with the other graſſes; and this has often deceived the botaniſts, who have ſuppoſed that the Meadow Trefoil has been improved to this by dreſſing of the land.

Since the red clover has been cultivated in England, there has been great improvement made of the clay lands, which before produced little but rye-graſs, and other coarſe bents, which, by being ſown with red clover, have produced more than ſix times the quantity of fodder they formerly had on the ſame land; whereby the farmers have been enabled to feed a much greater ſtock of cattle than they could do before, with the ſame extent of ground, which has enriched the ground,

and

and prepared it for corn; ſo where the land is kept in tillage, it is the uſual method now amongſt the farmers to lay down their ground with clover, after having had two crops of corn, whereby there is a conſtant rotation of wheat, barley, clover, or turneps, on the ſame land. The clover ſeed is generally ſown with the barley in the ſpring, and when the barley is taken off, the clover ſpreads and covers the ground, and this remains one two years; after which the land is ploughed again for wheat.

The clover is a biennial plant, whoſe roots decay after they have produced ſeeds; but by eating it down, or mowing it when it begins to flower, it cauſes the roots to ſend out new ſhoots, whereby the plant is continued longer than it would naturally do. The common allowance of ſeed for an acre of ground is ten pounds. In the choice of the ſeed, that which is of a bright yellow colour, inclining to brown, ſhould be preferred, and the pale-coloured thin ſeed ſhould be rejected. The clover ſeed ſhould be ſown after the barley is harrowed in, otherwiſe it will be buried too deep; and after the ſeeds are ſown, the ground ſhould be rolled, which will preſs the ſeeds into the ground; but this ſhould be done in dry weather, for moiſture will often cauſe the ſeeds to burſt, and when the ground is wet the ſeeds will ſtick to the roll. This is the method which is generally practiſed by moſt people in ſowing of this ſeed with corn, but it will be much better if ſown alone; for the corn prevents the growth of the plants until it is reaped and taken off the ground, ſo that one whole ſeaſon is loſt; and many times, if there be a great crop of corn upon the ground, it ſpoils the clover, ſo that it is hardly worth ſtanding; whereas, when it is ſown without any other ſeed, the plants will come up more equal, and come on much faſter than that which was ſown the ſpring before under corn.

Therefore, from many years trial, I would adviſe the ſeeds to be ſown in Auguſt, when the land is to be laid for meadow: for as the ground is at that ſeaſon warm, ſo the firſt ſhower of rain will bring up the plants, and theſe will have time enough to get ſtrength before the winter: and if ſome time in October, when the ground is not too wet, the clover be well rolled, it will preſs the ground cloſe to the roots, and cauſe the plants to ſend out more ſhoots; the ſame ſhould be repeated in March, which will be found very ſerviceable to the clover. The reaſon of my preferring this ſeaſon for the ſowing of the ſeed rather than the ſpring, is, becauſe the ground is cold and wet in ſpring, and if much rain fall after the ſeed is ſown, it will rot in the ground; and many times when the ſeed is ſown late in the ſpring, if the ſeaſon ſhould prove dry, the ſeed will not grow; ſo that Auguſt has been found the ſureſt ſeaſon.

By the latter end of May this graſs will be fit to cut, when there ſhould be great care taken in making it; for it will require a great deal more labour and time to dry than common graſs, and will ſhrink into leſs compaſs; but if it be not too rank, it will make extraordinary rich food for cattle. The time of cutting it is when it begins to flower; for if it ſtands much longer, the lower part of the ſtems, and the under leaves, will begin to dry, whereby it will make a leſs quantity of hay, and that not ſo well flavoured.

Some people cut three crops in one year of this graſs; but the beſt way is to cut but one in the ſpring, and feed it the remaining part of the year, whereby the land will be enriched, and the plants will grow much ſtronger.

One acre of this plant will feed as many cattle as four or five acres of common graſs; but great care ſhould be taken of the cattle, when they are firſt put into it, leſt it burſt them: to prevent which, ſome turn them in for a few hours only at firſt, and ſo ſtint them as to quantity; and this by degrees, letting them at firſt be only one hour in the middle of the day, when there is no moiſture upon the graſs, and ſo every day ſuffer them to remain a longer time, until they are fully ſeaſoned to it; but great care ſhould be had never to turn them into this food in wet weather; or if they have been for ſome time accuſtomed to this food, it will be proper to turn them out at night in wet weather, and let them have hay, which will prevent the ill conſequences of the clover; but there are ſome who give ſtraw to their cattle while they are feeding upon this graſs, to prevent the ill effects of it;

which muſt not be given them in the field, becauſe they will not eat it where there is plenty of better food. There are others who ſow rye graſs amongſt their clover, which they let grow together, in order to prevent the ill conſequences of the cattle feeding wholly on clover; but this is not a commendable way, becauſe the rye graſs will greatly injure the clover in its growth, and the ſeeds will ſcatter and fill the ground with bents.

Where the ſeeds are deſigned to be ſaved, the firſt crop in the ſpring ſhould be permitted to ſtand until the ſeeds are ripe, which may be known by the ſtalks and heads changing to a brown colour; then it ſhould be cut in a dry time; and when it is well dried, it may be houſed until winter, when the ſeeds ſhould be threſhed out; but if the ſeeds are wanted for immediate ſowing, it may be threſhed before it be houſed or ſtacked; but then it muſt be well dried, otherwiſe the ſeeds will not quit their huſks.

It has been a great complaint amongſt the farmers, that they could not threſh out theſe ſeeds without great labour and difficulty; which we take to be chiefly owing to their cutting the ſpring crop when it begins to flower, and ſo leave the ſecond crop for ſeed, which ripens ſo late in autumn, that there is not heat enough to dry the huſks ſufficiently; whereby they are tough, and the ſeeds rendered difficult to get out; which may be entirely remedied by leaving the firſt crop for ſeed, as hath been directed; and then the ground will be ready to plough, and prepare for wheat the ſame year, which is another advantage.

When cattle are fed with this hay, the beſt way is to put it in racks, otherwiſe they will tread a great quantity of it down with their feet. This ſeed is much better for moſt other cattle than milch cows, ſo that theſe ſhould rarely have any of it, leſt it prove hurtful to them; though when it is dry, it is not near ſo injurious to any ſort of cattle as when green.

The ſecond ſort grows naturally in moſt of the paſtures in England, and is generally known among the country people, by the title of white Honeyſuckle.

This is an abiding plant, whoſe branches trail upon the ground, and ſend out roots from every joint, ſo that it thickens and makes the cloſeſt ſward of any of the ſown graſſes; and it is the ſweeteſt feed for all ſorts of cattle yet known; therefore when land is deſigned to be laid down for paſture, with intent to continue ſo, it ſhould be ſown with the ſeeds of this plant. The uſual allowance of this ſeed is eight pounds to one acre of land; but this ſhould never be ſown with corn, for if there is a crop of corn, the graſs will be ſo weak under it, as to be ſcarce worth ſtanding; but ſuch is the covetouſneſs of moſt farmers, that they will not be prevailed on to alter their old cuſtom of laying down their grounds with a crop of corn, though they loſe twice the value of their corn by the poorneſs of the graſs, which will never come to a good ſward, and one whole ſeaſon is alſo loſt; for if this ſeed is ſown in the ſpring without corn, there will be a crop of hay to mow by the middle or latter end of July, and a much better after-feed for cattle the following autumn and winter, than the graſs which is ſown with corn will produce the ſecond year. The ſeed of this ſort may alſo be ſown in autumn, in the manner before directed for the common red clover; and this autumnal ſowing, if the ſeeds grow kindly, will afford a good early crop of hay the following ſpring; and if, after the hay is taken off the land, the ground is well rolled, it will cauſe the clover to mat cloſe upon the ground, and become a thick ſward.

The ſeed of this white Dutch clover is annually imported from Flanders, by the way of Holland, from whence it received the name of Dutch clover; not that it is more a native of that country than of this, for it is very common in moiſt paſtures in every county in England; but the ſeed was never collected for ſowing in England till of late years; nor are there many perſons at preſent here who ſave this ſeed, although it may be done, if the ſame care as is practiſed for the red clover be taken of this ſort; therefore it ſhould be recommended to every farmer, who is deſirous to improve his land, carefully to ſow an acre or two of this white clover by itſelf for ſeed, which will ſave him the expence of buying for ſome years when the

the price is great, and there will be no want of ſale for any quantity they may have to ſpare.

The third ſort grows naturally among the graſs in moſt of the upland paſtures in this country; but the ſeed is frequently ſold in the ſhops by the title of Hop clover, and is by many people mixed with the other ſorts of clover and graſs ſeeds, for laying down ground to paſture. This grows with upright branching ſtalks about a foot high, garniſhed with trifoliate leaves, whoſe lobes are oblong and heart-ſhaped, but reverſed, the narrow point joining the foot-ſtalks. The flowers, which are yellow, grow from the wings of the ſtalk, upon long foot-ſtalks, collected into oval imbricated heads, having naked empalements, lying over each other like ſcales, ſomewhat like the flowers of hops, from whence this plant had the title of Hop clover. But there are two ſorts of this which grow naturally in England. The other, which is the fourth ſort, is a much ſmaller plant than this, and has trailing ſtalks. The heads of the flowers are ſmaller, and the flowers are of a deeper yellow colour; theſe are not abiding plants, ſo are by no means proper to be ſown, where the ground is deſigned to continue in paſture; but in ſuch places where one or two crops only are taken, and the land is ploughed again for corn, it may do well enough when it is mixed with other ſeeds, though the cattle are not very fond of it green, unleſs when it is very young. The large ſort is the moſt profitable, but this is rarely to be had without a mixture of the ſmall kind, alſo of the ſmaller Melilot, which is commonly called None-ſuch, or ſometimes Black-ſeeds; for thoſe who ſave the ſeeds for ſale, are ſeldom curious enough to diſtinguiſh the ſorts; but where the beauty of the verdure is conſidered, there muſt not be any of the ſeeds ſown, becauſe their yellow heads of flowers are very unſightly among the graſs; and if it is in gardens, where the graſs is conſtantly mowed, the flowers of theſe plants will come out near the root in ſuch cluſters, as to occaſion large, unſightly, yellow patches; and as the heads decay, they turn brown, and have a very diſagreeable appearance.

The fifth ſort grows naturally on chalky lands in many parts of England; and in ſome countries the ſeed is ſown after the ſame manner as the common red clover, eſpecially on chalky ground, where it will thrive, and produce a better crop than clover. The ſtalks of this are hairy, and grow erect to the height of two feet or more, garniſhed with trifoliate leaves, ſtanding upon long foot-ſtalks, whoſe lobes are longer than thoſe of the red clover, and have no marks of white; they are of a yellowiſh green colour, and are covered with ſoft hairs. The flowers grow in oval ſpikes at the end of the branches; they are of a pale copper colour; their petals are long and tubulous, but the brim is divided into two lips as the other ſorts.

This is known by the title of Treſoil, in the places where it is cultivated; but the ſeedſmen ſell the Hop clover by that name, ſo they make no diſtinction between this, the Hop clover, and None-ſuch; therefore, by which of theſe three titles the ſeeds are bought, they often prove the ſame. This ſort of Treſoil is much cultivated in that part of Eſſex which borders on Cambridgeſhire.

The ſixth ſort grows naturally in Spain and Italy; this has upright ſtalks near two feet high, which are hairy, garniſhed with trifoliate leaves, having roundiſh lobes, which are ſawed at their points. The flowers are produced at the top of the ſtalk in long, obtuſe, hairy ſpikes, of a bright red colour, ſo make a pretty appearance during their continuance. It is an annual plant, ſo is not proper for ſowing as fodder.

The ſeventh ſort is an annual plant, which grows naturally in the ſouth of France and Italy; it riſes with a ſtrong ſmooth ſtalk near three feet high, garniſhed with trifoliate leaves, whoſe lobes are two inches and a half long, and near a quarter broad, ſtanding upon long foot-ſtalks, which are embraced by ſtipulæ or ſheaths their whole length. The flowers are produced at the top of the ſtalks in very long ſpikes; they are of a beautiful red colour, ſo make a fine appearance. It flowers in July, and the ſeeds ripen in autumn.

The eighth ſort grows naturally in Spain and Italy; this riſes with a ſlender ſtiff ſtalk near two feet high, garniſhed

niſhed with trifoliate leaves, whoſe lobes are very narrow and hairy. The flowers are produced at the top of the ſtalks in oblong conical ſpikes; the indentures of their empalements end in long briſtly hairs, which are almoſt equal in length; the ſpikes are hairy, and the flowers of a pale red colour.

The ninth ſort is the common Hares-foot Trefoil, which grows naturally upon dry gravelly land in moſt parts of England, and is a ſure indication of the ſterility of the ſoil, for it is rarely ſeen upon good ground. This plant is ſeldom eaten by cattle, ſo is unfit for paſture, and is only mentioned here becauſe it is ſometimes uſed in medicine; it is an annual plant, whoſe root decays ſoon after it has perfected ſeeds.

The tenth ſort grows naturally on arable land in many parts of England; this has trailing ſtalks, which put out roots at their joints. The leaves ſtand upon long ſlender foot-ſtalks; the lobes are roundiſh, and ſawed on their edges; the flowers are collected in roundiſh heads, ſtanding upon ſlender foot-ſtalks, which riſe from the wings of the ſtalks: theſe have bladdery empalements, which terminate in two teeth. When theſe lie on the ground, their globular heads, having a little bluſh of red on their upward ſide towards the ſun, and the other part being white, have a great reſemblance of ſtrawberries, and from thence it was titled Strawberry Trefoil.

Theſe ſorts are preſerved in botanic gardens for variety; they are eaſily propagated by ſeeds, which may be ſown on an open bed of ground, either in autumn or ſpring. The plants, which come up in autumn, will grow much larger, and flower earlier in the ſummer than thoſe which are ſown in the ſpring, ſo from thoſe good ſeeds may be always obtained, whereas the others ſometimes miſcarry. When the plants come up, they require no other care than to keep them clean from weeds, and thin them where they are too cloſe.

The eleventh ſort is the common Melilot, which is uſed in medicine; it grows naturally among the corn in many parts of England, particularly in Cambridgeſhire in great plenty, where it is a moſt troubleſome weed; for in reaping it is ſcarce poſſible to ſeparate it from the Melilot, ſo that it is carried in with the corn; and the ſeeds of the Melilot being ripe about the ſame time with the corn, they are threſhed out with it, and being heavy are difficult to ſeparate from it; and when a few of the ſeeds are ground with the corn, it ſpoils the flour, for the bread, or whatever elſe is made with it, will have a ſtrong taſte like Melilot plaſter.

The roots of this plant are ſtrong and ligneous, from which ſpring out ſeveral ſtalks, which riſe from two to four feet high, according to the goodneſs of the land. The ſtalks branch out, and are garniſhed with trifoliate leaves, having oval ſawed lobes, of a deep green colour. The flowers are produced in long ſlender ſpikes, which ſpring from the wings of the ſtalks; they are of a bright yellow, and ſhaped like the other butterfly flowers; theſe are ſucceeded by naked ſeeds.

The twelfth ſort grows naturally in Bohemia and Auſtria, but has been long cultivated in England as a medicinal plant, though at preſent it is rarely uſed: it is annual. The ſtalks are large, hollow, and channelled; they riſe about a foot high, garniſhed with trifoliate leaves, whoſe lobes are oval, and ſlightly ſawed on their edges, ſtanding upon pretty long foot ſtalks. The flowers are collected in oblong ſpikes, which ſtand upon very long foot-ſtalks, ſpringing from the wings of the ſtalk at every joint; they are of a pale blue colour, ſhaped like thoſe of the common Melilot: theſe appear in June and July, and are ſucceeded by ſmall yellow ſeeds of a kidney ſhape, two or three being included in each ſhort pod. The whole plant has a very ſtrong ſcent like that of Fenugreek, and periſhes ſoon after the ſeed is ripe.

If the ſeeds of theſe two ſorts are permitted to ſcatter, the plants will riſe without care, and require no other culture but to keep them clean from weeds, and thin them where they grow too cloſe.——*Miller.*

CLOUT, an iron plate on the axle-tree of a carriage.

CLOWN's WOUND WORT, [*Sideritis.*] Ironwort.

CLUMP, a number of trees planted together.

CLUNG, cloſed up, or ſtopped; ſpoken

ſpoken of hens when they do not lay. It is alſo applied to wood, or any other thing that is ſhrivelled, or ſhrunk up, when it is ſaid to be clung.

CLUSTER, a bunch, a number of things of the ſame kind growing or joining together. Alſo a number of animals, or a body of people collected together.

CLAYS, though diſtinguiſhed according to their colours, under the terms of red, yellow, black and white, and called in particular places under their different appearances, by a variety of names, yet all agree in their general nature, and may be conveniently firſt treated of together.

They differ from all other ſoils in that they are tough, wet, and cold: and in proportion as they are mixed in greater or leſſer quantity in the lands, they give them thoſe properties in a greater or leſſer degree.

Some of the kinds are indeed ſo much tougher than the others, that an equal mixture of them does more hurt. Thus the red clays debaſe lands more than any other kind; the yellow are next in ſtiffneſs and coldneſs to theſe; the black are leſs wet and tough than either of the former; and the white leaſt of all. However, the yellow, in a ſomewhat larger proportion, will do equal miſchief with the red in a ſmaller, and ſo of the reſt: the difference as at firſt obſerved, being more in the quantity of the clay in the ſoil, than according to the particular kind.

The improvement of all ſoils depends in a great meaſure upon the breaking them, by which means their parts are more expoſed to the ſun and air, and are made more fit to receive the different kinds of ſeeds.

As the clayey ſoils are of all others the moſt tough, they moſt of all require this care. We know that the effect of fire is to reduce this tough earth into a looſe crumbly matter: and whatever fire will do on theſe occaſions, the action of the ſun and air will alſo perform, only it requires more time. Oyſter-ſhells, that have lain a a great while on the ſea ſhores, are as perfectly calcined by the ſun and air, as if they had been in the fire. And in the ſame manner thoſe ſhells which are found in marle, and other earths, when they have been a while ſpread upon the ground, grow ſoft and crumbly. It is the ſame with clay: the ſun and air will take away its tough quality, as the fire does: and frequent ploughing meliorates clayey ſoils, by turning up the clods in different poſitions to the ſun and air, and by aſſiſting the operation in breaking them to pieces.

This is the way wherein frequent ploughing operates upon a clayey ſoil, and the farmer who tries it will never be deceived in his expectations.

All clay lands are known by theſe qualities: they hold the water that falls on them; and when well wetted, they are a great while before they dry: in the ſame manner when thoroughly dry, they are not ſoon wetted. In a dry ſeaſon the land cracks in chinks. If it be ploughed when wet, it ſticks to the plough like mortar; and in a dry ſeaſon the plough tears it up in great hard clods, which are all clay at the bottom. For this reaſon where the coat of ſoil is not thick, the farmer ſhould not plough deep, for he will then injure his land by mixing the clay among it.

All the clayey ſoils require a great deal of induſtry and care, as well as knowledge, in the dreſſing and management: but when the toughneſs is got the better of, ſo that the farmer can get his grain into it, and ſee it well covered, it very often yields large crops.

The reddiſh clay is the tougheſt and coldeſt of all the kinds; and requires the moſt pains in the huſbandman to ſubdue its nature.

The firſt method for the improving this kind of ſoil is, by frequently repeating theſe deep ploughings to break and ſeparate the clods over and over, as the ſun and air calcine them.

To this the farmer is to add the aſſiſtance of dreſſings. And it is the particular quality of this clay, that it will receive all kinds of manures, and be improved by them: but then the labour is to be equal to the expence, for without the frequent ploughing already mentioned, nothing will take effect upon it.

Dung does not readily mix with this ſort of ſoil; but when it is well ploughed in, it is of great ſervice. This however is not the kind that agrees beſt with it; in Northampton-

ſhire

ſhire they manure it with lime to ſome advantage; in Hertfordſhire and Buckingſhire they uſe ſoot and aſhes; but that which agrees beſt of all with its nature is chalk. This is now the general practice; and the farmers in moſt parts of England begin to find the advantages of it.

The young huſbandman muſt not be diſheartened at the expence of this ſort of dreſſing, or the labour of ſuch frequent ploughings; for he will be ſure to reap the benefit of it: it is much more chargeable to dreſs a piece of the red clayey ſoil, than any other whatſoever; but then the advantage laſts long in proportion: a field of this ſoil, once well dreſſed, will keep in heart fifteen or ſixteen years.

Indeed it may be remarked of the clayey ſoils in general; and moſt of all of this in particular, that although no ground is ſo ſtubborn or ſo barren when neglected; none has ſo many or ſo great and good qualities, when it has been thoroughly wrought in the above deſcribed manner.

When this red clayey ſoil is well wrought, wheat ſucceeds excellently upon it. Barley ſometimes yields a good crop, but not conſtantly, for it depends on the ſeaſon; if that prove dry the barley does well; but if not it comes to little: for this ſoil holds the water a great while, and barley cannot bear a great deal of wet to lie about the roots.

Beans ſucceed extremely well in this earth, for they will bear great deal of water, nay, they require it: for in dry ſeaſons and on a looſe land, they yield nothing in compariſon of their produce on theſe ſoils. Beans require a great deal of nouriſhment, and this red clayey ſoil is the richeſt feeding land we have when well prepared.

Our advice therefore to the young farmer, who has a piece of land with this ſoil upon his hands, is:

Firſt, not to ſpare either labour or expence upon it in the beginning, for all this will be returned to him tenfold. Let him plough it thoroughly and often, and take care that the plough cut deep. Let him employ a careful and honeſt ploughman that will mind his buſineſs, not an idle boy, as is too often done. And let him go over the land frequently himſelf to ſee that it was well cut up, and well broke in every part.

In the ſecond place, let him beſtow chalk enough upon it, and ſee it be worked well in; or if chalk cannot be had, let him uſe ſome of the other manures juſt mentioned. When this is thoroughly done at firſt, common care and induſtry will ſerve afterwards: and from this he will have a ſoil, which inſtead of holding the water to chill his crops while young, will let the wet when it is too much, below the roots; and will always detain enough.

Thirdly, let him depend chiefly upon his wheat: for that grain upon a red clayey ſoil thus manured, will never fail him. He may alſo be ſure of beans, turneps, and clover, for theſe never fail. He may in dry ſeaſons ſtand a fair chance for barley: but wheat is the ſure and certain commodity for this ſoil.

Laſtly, when he has thus got his land into good order by his induſtry and expence, don't let him drain it of its heart again by covetouſneſs or folly. Let him not draw away its ſtrength by croſs cropping, or too frequent ſowing. Moderation is the rule of all things in this life. There is no way to be poor ſo quickly as the deſire of growing rich too faſt.

The yellow clay of England is in its nature more nearly allied to the red than any other: and is next to that the moſt frequent. It is as univerſal in ſome counties, as the red is in others; and is ſo much of the ſame compoſition, that a great many of the rules preceding hold true here: but as chalk is the beſt manure for that, marle, where a proper kind can be had, is for this.

In Staffordſhire, where this ſoil is frequent in the common fields, they ſow it two years, and let it lie fallow the third. They lay it in ridges, or otherwiſe, according to the condition; and make their fallows toward the latter end of March. They plough it a ſecond time about three months after, or a little ſooner; and before this, they dreſs it with cow-dung or horſe-dung, except when they fold it with ſheep, then it is immediately ſpread and caſt under furrow with the plough, before the ſun and rain exhauſt and weaken it. Ten weeks after this, that is, toward the end of Auguſt, they plough it again to kill the weeds; and to turn up the manure.

About

About the week before Michaelmas they plough for ſowing, and then the manure is again turned and falls upon the ſeed with the fineſt part of the land.

They ſow wheat upon the land after this dreſſing, and afterwards beans, with both which the yellow clayey ſoil excellently agrees after this preparation. This is the Staffordſhire practice in common fields.

In ſome places where other manure cannot be had, ſea ſand may be uſed for the improvement of the yellow clayey ſoil; and it is to be laid on in very large quantities: this may ſeem ſtrange advice to the farmer in ſome counties, where ſuch a thing was never heard of, for every thing appears ſtrange at firſt; but it is a practice founded on reaſon: the cauſe of the particular barrenneſs of theſe clayey ſoils is the toughneſs of their ſubſtance; and ſand breaks that toughneſs, and gives way for the rains to get into their body. Farther, loams are fruitful, as will be ſeen hereafter; and as the practical farmer well knows loams are only mixtures of clay and ſand. Nature has made the mixture in theſe places, and why may not art and induſtry imitate her.

By large dreſſings of ſand, a clayey ſoil may be turned into a loamy one for ever; and then an addition of ſuch manures as are ordered for loams is uſeful. Nor is it matter of wonder that ſand ſhould in this manner meliorate clay ground; for clay is uſed in the ſame way as a manure to ſand; and in that caſe it does the ſame thing.

Aſhes which are a very good manure for yellow clayey lands, act in a double way, both as ſand, and by their other qualities; warming, as well as opening the land: and after the more ſubſtantial dreſſings, ſoot is an excellent manure. Nor is burning to be forgot for the improvement either of this, or of the red clayey ſoil, for it breaks their parts in a ſurpriſing manner, rendering them not only fruitful in themſelves, but converting them into a manure for other lands.

It has been affirmed by ſome practical writers who have examined theſe things nicely, and who have proved it by experiments, that clay contains about a fourth part of fine ſand. But it is only of the red and yellow clays this ſhould be affirmed. The white clay contains none: nor would it be difficult to produce the yellow clay altogether pure from it. Indeed there always is ſome in the red, and this is a reaſon why the red clayey ſoil is not quite ſo ſtubborn as the yellow.

It is ſtrange, that among ſoils of the ſame name, contrary methods are to be uſed in the culture; but this is the caſe between the red and yellow clayey ſoils, and the white: it is to be obſerved, however, as before hinted, that theſe really agree in nothing but the name of clay, their qualities being altogether different.

The farmer is to obſerve an exact contrary conduct with the white clayey ſoil, from that proper for theſe beforementioned; for his aim is to be juſt oppoſite: his care with the others is to make them fine enough: but when he has a white clayey ſoil to manage, he muſt take care not to make it too fine.

As the red and yellow clayey ſoils are tough and ſtiff; the white is tender and brittle: it breaks as it falls from the plough: and from its nature in this reſpect, it yields to the plough with great eaſe.

Frequent ploughings were ordered for the others, but a few do for this. As no ſoil requires ſo much care in the manures, the farmer's attention is to be employed almoſt entirely on that head. In general, as the yellow and red clayey ſoils require ſtrong, this white one requires rich dreſſings.

In the firſt place, the fineſt manure for it is ſoot.

Soot may ſeem at firſt ſight a dear manure, but a little of it goes a great way. Experience ſhews that one buſhel of ſoot is equal in its effects to a load of common dung.

Eighteen buſhels of good ſoot will compleatly dreſs an acre of the white clayey land; and the ſame quantity of ground, as is very well known, will take as many cart loads or more of good dung. But let the farmer take care he is not impoſed upon in this commodity: for the chimney ſweepers are apt to mix aſhes among their ſoot to encreaſe the quantity; and then it may require five and twenty buſhels to an acre.

After ſoot, the next manure for this ſoil is dung. And in this reſpect, the farmer

farmer will find that the practice of folding upon it is excellent. Ellis recommends the folding firſt; and afterwards ſpreading it all over with the dung: and this is found to be of great ſervice.

Having conſidered the red, yellow, and white clayey ſoils, we come now to the black, which is the richeſt of them all.

The other kinds may be brought to fertility by art, and with experience, but this enjoys from nature the ſame advantages. The mixture in this ſoil is ſo happy, that it is in its own native ſtate much like what they are when improved by culture. Yet even this is capable of great improvement, inſomuch that it will yield twice the produce in the hands of the ſkilful and induſtrious, that it does to the inconſiderate or ignorant.

This black clayey ſoil conſiſts of a blackiſh clay, which is mixed with a quantity of vegetable mould; and alſo contains ſand, ſometimes in a very large, uſually in a moderate quantity.

The clay in the compoſition of this is not ſo tough as that of the red or yellow, as appears when they are examined ſingly; nor yet is it ſo ſhort and crumbly as the white. Thus its own nature tends to its making a better ſoil than either; and then the ſand which it contains anſwers the purpoſe of that which in other caſes is to be added; and the quantity of vegetable mould gives it great fertility.

Such is the compoſition of this excellent ſoil; which is, in reſpect to its ſtructure and conſiſtence, of a middle nature between the white clayey ſoil, and the yellow or red; and exceeds them both in fruitfulneſs.

This ſoil therefore does not require thoſe painful or repeated ploughings, nor that expence and tedioufneſs of manure which are neceſſary to the others: but light turnings and rich manures, applied in ſmall quantities, anſwer the purpoſe. Theſe muſt be uſed according to knowledge, and as there is no land ſo well worth the ſtudying as this, there is none that will ſo well reward the pains.

The farmer who ſhould dreſs this ſoil like the other clayey kinds, with chalk and ſand, and the like, would be guilty of ſtrange error. Mellow dung is the proper manure for this land; and adds to its natural richneſs. Cow dung is not amiſs for it, but the beſt manure of all is the dung of pigeons. Where this is to be had, the way of uſing it is thus: It is to be ſprinkled over a barley field, for inſtance by hand, as ſoon as the barley is ſown. In this caſe the rains waſh it in, and the effects of it is ſurpriſing. Nothing can exceed the crop that follows ſuch dreſſing on ſuch land.

The dung of poultry is alſo good uſed in the ſame way; and any rich and mellow manure.

This black clayey ſoil in paſture land is very fruitful, and needs leſs dreſſing than any other; the beſt manure is dung, that has lain till it is well rotted: this is to be carefully ſpread over the ground, that the rain may waſh it in: and for this purpoſe it ſhould be laid on in a rainy ſeaſon.

CLASPERS. Threads or tendrils of creeping plants.

CLAW. The foot of a bird or beaſt, armed with ſharp horny nails.

CLEARING *of* LAND, to get out all roots of trees, buſhes, &c.

CLEANING *of* CORN, to get it ready for winnowing.

CLETCH. A brood. A provincial term.

CLOD. A lump.

CLODDING BEETLE. A beetle uſed to break the clods or lumps of earth. This is now generally and better performed by the ſpike-roller.

CLOGGS. Pieces of wood, or the like, faſtened about the necks, or to the legs of beaſts, to prevent their running away.

CLOSH. The *Founder*. A diſtemper in the feet of cattle, after a great heat or vehement travel, which has ſtirred the feet, and will ſuddenly viſit their blood, ſo as it goes down to the hoofs, fret, hurt, and pain them, ſo that they ſhall not be able to cruſh that place. In order to the cure hereof, if the bloods reſts nigh the legs, above the hoof, you ſhould then chafe the beaſt often, and rub him hard, to make the blood retire; and if that profit not, launce his feet gently round, on the edges of his hoofs, with ſmall races, not deep; and if the blood be gone down into the hoof, open it a little with a ſharp knife, in the midſt, under both the claws; then lay lint, mixed with ſalt, nettles, and vinegar,

vinegar; and not let his feet come to any water, till he be well, but keep him dry in the ſtall; taking care in the cutting of him, that the blood do iſſue, for otherwiſe it will grow to ſome putrefaction, and ſo impoſtumate; for which reaſon, it muſt be opened and cleanſed well, and a cloth, ſteeped in vinegar, ſalt, and oil, bound thereto; and in the end, take of old greaſe and deer ſuet, melted together, an equal portion, and heal it therewith. *See Wart-Hollg.*

CLOVE, a term uſed in weights; and in reſpect to wool, ſeven pounds makes a clove; but in Eſſex, they allow eight pounds of cheeſe and butter to the clove; 31 cloves, or 256 pounds to the wey: in Suffolk, they allow 42 of thoſe cloves, or 336 pounds to the wey.

CLOVEN-FOOTED. Having the foot divided.

CLOUGH, or *Draught*. This is an allowance of two pound at every three hundred weight, for the turn of the ſcale; that ſo the commodity may hold out, when retailed.

CLOUGH, a valley between two ſteep hills.

CLOWN's-MUSTARD. An herb ſo called.

CLOYED. Pricked with a nail, applied to a horſe when ſhoed.

To CLUCK. To call the chickens as the hen does.

CLUSH, or *Swollen Neck*. A diſtemper in cattle, cured in this manner; firſt, let the beaſt reſt three or four days, then take freſh butter, honey, hogs-lard, and wax, all in equal quantities, melted together into a ſalve, with which anoint the place; alſo, if the neck be ſwollen and raw, take honey, maſtick, and a little freſh butter, or freſh ſwine's greaſe, (without ſalt) and boiling them altogether, uſe it for an ointment: when it is puffed up, ſwollen and raw, take elecampane, well boiled, and ſtamped with hogſ-greaſe, weather fat, honey, frankincenſe, and new wax, blended together, and anoint the place therewith.

CLUSTER-GRAPE. A ſpecies of grape ſo called.

CLYSTER, an injection up the fundament for the purpoſe of eaſing or aſſiſting in ſome diſeaſe, and are of various kinds; the following are preſcribed by a correſpondent to the Farmer's Magazine.

Purging Clyſters. No. 1.——Gruel, three pints or two quarts; Epſom ſalts, or common ſalt, ſyrup of buckthorn, ſweet oil, or linſeed oil, each four ounces.

No. 2.—Boil a handful of bearsfoot and chamomile flowers in three pints of water a few minutes; ſtrain, and add half a pint of linſeed oil, and four ounces of ſyrup of buckthorn.

The clyſter, No. 2, may be made more purging by adding ſenna, or bitter-apple.

Emollient Clyſters. No. 1.—Milk gruel, three pints; ſweet oil, half a pint.

No. 2.—Sheep's-head broth.

Carminative Clyſters. No. 1.—Camomile flowers, ſweet fennel ſeeds, carraway ſeeds, and coriander ſeeds, each one ounce; water, three pints; boil five minutes, ſtrain, and add two ounces of electuary of bay berries, and one ounce of ſoot.

Anodyne Clyſters. No. 1.—Sheep's head broth, three pints; liquid laudanum, one ounce.

No. 2.—Diſſolve half a dram to a dram of opiumin ſome broth, gruel, &c.

Reſtringent Clyſter.—Logwood chips, two ounces; balauſtine flowers, one ounce; water, two quarts; boil to one, and then add two ounces of diaſcordium, and one ounce of armenian bole.

COAL. The common foſſil firing.

Small COAL. Made of the ſpray and bruſh-wood which is ſtripped off from the branches of coppice wood, and which is ſometimes bound up in bavins for this uſe; though alſo it ſhall be as frequently charred without binding, and then it is called, coming it together. This they place in ſome near floor, made level, and free of incumbrances; where ſetting one of the bavins, or part of the ſpray on fire, two men ſtand ready to throw on bavin upon bavin, as faſt as they take fire, which makes a very great and ſudden blaze, till all is burnt that lies near the place; but before they begin to ſet fire, they fill great tubs or veſſels with water, which ſtand ready by them, and this is daſhed on with a great diſh or ſcoop, ſo ſoon as ever they have thrown on all their bavins, continually plying the great heap of glowing coals, which gives a ſudden ſtop to the fury of the fire, whilſt with

a great rake, they lay and ſpread it over, and ply caſting water ſtill on the coal, which are now perpetually turned by two men, with great ſhovels, a third throwing on the water; and this is continued to be done, till no more fire appears, though they ceaſe not from being hot; then they ſhovel them up into great heaps, and when thoroughly cold, put them up in ſacks for ſale, where they are uſed among divers artificers, both to kindle greater fire, and to temper and aneal their ſeveral works: to ſay nothing of the ordinary uſe of them in families, to kindle their fires, when out.

COAL *Aſhes.* See *Coal* ASHES.

COAL *Soot.* A very good dreſſing for graſs land, and for wheat in the ſpring, eſpecially when attacked by the worm.

COB, a wicker baſket to carry on the arm. Hence a ſeed-cob, or ſeed-lip, is a baſket for ſowing.

COB NUT. A large nut of the hazle kind.

COCCIFEROUS. Bearing berries.

COCCYGRIA. Venice ſumach. See SUMACH.

COCHINEAL, [*Coccinella.*] This is a ſmall grain, of an irregular figure, a dark red colour on the outſide, and a deep bright red within: it is brought from Mexico and New Spain. This ſubſtance has long been ſuppoſed to be the ſeed of a plant: it appears from chemical experiments to be an animal, and from the accounts of the more celebrated naturaliſts, an inſect, which breeds on the American prickly pear tree, and adheres thereto without changing its place. Cochineal has been ſtrongly recommended as a ſudorific, cardiac and alexipharmac: but practitioners have never obſerved any conſiderable effects from it. Its greateſt conſumption is among the ſcarlet dyers; and in medicine its principal uſe is as a colouring drug; both watery and ſpirituous liquors extract its colour.

COCK. The male of a hen. The male of ſmall birds in general.

COCK. A ſmall heap of hay.

COCKEREL. A young cock.

COCKLE. A pernicious weed.

COCKSCOMB. A ſpecies of Amaranthus.

COCKSHEAD. Saintfoin.

CODLING. A ſpecies of apples well known.

CODLINS and CREAM. A herb found wild by the ſides of ditches and rivers in many parts of England.

COFFEE, [*Coffea.*] This tree is a native of Arabia, but is now cultivated in both Indies. It is a low tree, ſeldom riſing above ſixteen feet in heighth. It is propagated by the berries which ſhould be ſown ſoon after they are gathered.

The berries ſhould be planted in ſmall pots, and plunged into a hot bed of tanners bark. If the bed be of a proper temperature of warmth, the plants will appear in a month or five weeks time, and in about ſix weeks more will be fit to tranſplant; for as many of the berries will produce two plants, ſo the ſooner they are parted the better; for when they grow double till they have made large roots, they will be ſo intermixed and entangled, as to render it difficult to ſeparate them, without tearing off their fibres, which will greatly prejudice the plants. When theſe are tranſplanted, they muſt each be put into a ſeparate ſmall pot, and plunged into the tan-bed again; which ſhould be ſtirred up to the bottom, and, if required, ſome new tan ſhould be mixed with it to renew the heat, then the plants ſhould be gently watered, and the glaſſes of the hot-bed muſt be ſhaded every day till they have taken new root; after which the plants ſhould have freſh air admitted to them every day, in proportion to the warmth of the ſeaſon: during the ſummer they will require frequently to be refreſhed with water, but they muſt not have it in too great plenty: for if the roots are kept too moiſt, they are very ſubject to rot, then the leaves will ſoon decay and drop off, and the plants become naked; when this happens, they are ſeldom recovered again. The firſt ſign of theſe plants being diſordered, is, their leaves ſweating out a clammy juice, which attracts the ſmall inſects which frequently infeſt them in ſtoves when they are not in health, and theſe cannot be deſtroyed till the plants are recovered to vigour; for although the plants are ever ſo carefully waſhed and cleared from theſe inſects, yet they will be ſoon attacked by

by them again, if they are not recovered to health, for theſe inſects are never ſeen upon any of the plants while they are in perfect vigour; but when they are diſcovered, they ſoon ſpread over all the leaves and tender parts of the plants, and multiply exceedingly; ſo that upon the firſt attack, the plants ſhould be ſhifted into freſh earth, and all poſſible care taken to recover them, without which all the waſhing and cleaning of the plants will be to little purpoſe. The diſorders attending the coffee-trees, generally proceed from either being put into pots too large for them, nothing being of worſe conſequence than over potting them, or from the earth being too ſtiff, or over watered. If theſe errors are avoided, and the ſtove kept always in a proper temperature of heat, the plants will thrive, and produce plenty of fruit annually.

COLESEED. See CABBAGE.

COLEWORT. See CABBAGE.

Sea COLEWORT. See *Sea* CABBAGE.

COFFIN, that part of the horn or hoof of a horſe which appears when he has his foot ſet on the ground.

COFFIN-BONE, that bone which lies within a horſe's hoof as in a coffin.

This bone is round upwards, where it receives the little paſtern, but grows broader and thinner towards its bottom; it is of a porous open contexture, like a piece of loaf ſugar, and is eaſily pierced, and often wounded when horſes happen to take up nails and other ſharp bodies in the ſtreets or roads: accidents to which they are often liable, and are more eaſily cured than they would have been, had the bone been hard and ſolid.

COFFIN-JOINT, that where the leſſer paſtern joins the foot.

When the coffin-joint is ſtrained, a horſe often continues a long time lame, without the owner's diſcovering where the lameneſs lies; becauſe a horſe does not, at firſt, favour it much on the bending of the foot, only in planting his foot upon the ground: but in time there will grow ſuch a ſtiffneſs in that joint, that he will only touch the ground with his toe, and it will be impoſſible to play the joint with one's hand. The only method of removing this ſtiffneſs is bliſtering and firing, which generally ſucceeds the diſorder, and then rarely ever admits a cure, or even aleviation, unleſs the ſtiffneſs and contraction has been of long ſtanding.

COKE, pit-coal, or ſea-coal, charred. It is made by burning pit-coal in ovens conſtructed for that purpoſe, and extinguiſhing the fire, by drawing it out of the oven, and ſpreading it on the ground.

COLD, the name of a diſeaſe to which animals of almoſt every kind, particularly horſes, are very ſubject.

Colds are cauſed by an obſtruction of perſpiration: that is, the pores, or outlets of the ſkin, are ſo far ſhut up, that the ſteams of perſpirable matter are checked ſo that they cannot paſs off in their uſual manner. The conſequence of this is they recoil on the blood, vitiate its quality overfill the veſſels, and affect the head, the glands or kernels of the neck and throat, the lungs, and other principal parts.

It would be endleſs to enumerate the various cauſes of colds; the moſt uſual are, riding horſes till they are hot, and ſuffering them to ſtand in that condition, where the air is cold and piercing; removing a horſe from a hot ſtable to a cold one, and too ſuddenly changing his cloathing: hence it is that horſes catch ſevere colds after they come out of dealers hands; and by not being carefully rubbed down, when they come in hot, off journeys.

The ſigns of a horſe's catching cold, are a cough, heavineſs, and oulneſs, which affect him more or leſs in proportion to the ſeverity of it: the eyes are ſometimes moiſt and watery, the kernels about the ears, and under the jaw ſwell, the noſe gleets, and he rattles in his breathing; and when the cold is violent, the horſe will be feveriſh, his flanks work, and he will both loath his meat, and refuſe his water. When theſe laſt ſymptoms are attended with a ſlimy mouth, ears and feet cold, and a great inward forenaſs, there is danger of a bad fever.

But when the horſe coughs ſtrong, ſnorts after it, is but little off his ſtomach, pricks up his ears, and moves briſkly in his ſtall, dungs and ſtales freely, his ſkin feels kindly, and his coat does not ſtare, he is in no danger, and there will be no occaſion for medicines of any kind; and you ſhould

ſhould bleed him about two quarts, keep him warm, and give him feeds of ſcalded bran, with as much warm water as he will drink, in order to dilute his blood.

If the diſorder ſhould increaſe, the horſe fall hot, and refuſe his meat, bleed him, if a ſtrong one, two quarts more; and if you are not ſatisfied, without giving medicines, avoid, as you would poiſon, a farrier's drench; which is generally compoſed of ſome hot nauſeous powders, giving in a quantity of ale: which too often increaſes the fever, by over-heating the blood, and palls the horſe's ſtomach by its loathſomeneſs. And inſtead of it, infuſe two ounces of anniſeeds, with a dram of ſaffron, in a pint and a half of boiling water; pour off the clear, and diſſolve in it four ounces of honey; to which may be added four ſpoonfuls of ſallad oil: this drink may be given every night; or one of the following balls, provided there is no fever; in which caſe, it always will be more eligible to give two or three ounces of nitre, or ſal prunella, every day in his feeds, or water, till it is removed; but ſhould the horſe be inclined to coſtiveneſs, remember that his body ſhould be kept open by emollient clyſters, or cream of tartar diſſolved in his water, to the quantity of three or four ounces a day.

Take of the freſh powders of aniſeed, elicampane, carraway, liquorice, turmeric, and flour of brimſtone, each three ounces; juice of liquorice four ounces, diſſolved in a ſufficient quantity of mountain; ſaffron powdered half an ounce, ſallad oil and honey, each half a pound, oil of anniſeed one ounce: mixed together with wheat flour; give the ſize of a pullet's egg night and morning.

This ſimple method, with good nurſing and hot maſhes, warm water and cloathing, eſpecially about the head and throat, which promotes the running at the noſtrils, will anſwer in moſt ſudden colds; and when the horſe feeds heartily, and ſnorts after coughing, moderate exerciſe every day will haſten his recovery.

The ſcalded bran ſhould be put hot into the manger, for the ſteams conduce not a little to promote a running at the noſe, which is often very plentiful, and greatly forwards the cure. His manger ſhould be kept clean, by filling it with ſtraw; his hay well ſhook and ſprinkled with water, and given in ſmall quantities: for his breathing, at this time, taints the hay, and then he will not touch it.

To a horſe loaded with fleſh, a rowel may ſometimes be neceſſary, as may alſo a gentle purge or two, to ſome, when the diſtemper is gone off.

COLD-CHARGE, the name of a medicine much uſed by farriers for curing ſtrains, &c. It conſiſts of vinegar, bole, and the white of eggs, mixed together to the conſiſtence of a poultice, and ſpread over the part hurt.

COLD-SEEDS. *Greater*, are watermelons, cucumbers, gourds, and melons. *Leſſer*, ſuccory, endive, lettuce, and purſlane.

COLD-BATH, [*Balnea Frigida.*] There are hardly any chronic diſeaſes but the cold bath may be made uſe of to advantage, if the conſtitution has not ſomewhat particular that forbids its uſe; which are chiefly corpulency, and unſound viſcera. In very fat perſons, the fibres are ſo ſtuffed round, and as it were bolſtered up, that they have not room to vibrate or contract with the ſudden ſqueeze of the bath; inſtead therefore of enforcing their ſprings, and ſhaking off any unneceſſary incumbrances, they will only be ſtrained to no purpoſe, and conſequently weakened; for whereſoever an effort is made to remove any thing by an elaſtic body, if the firſt exertion fails, every impetus afterwards languiſhes, and the ſpring is ſpoiled. And in unſound viſcera, or where any part is much weaker than the reſt, ſuch an additional force, as the ſudden contraction the bath gives to the ſolids, will preſs the fluids on that part, very much to its damage; which may occaſion either the burſting of the veſſels, or promoting the diſcharge of ſome ill humours upon that part, which otherwiſe might drain off elſewhere.

But where nothing of this nature forbids the uſe of the cold bath, whatſoever is to be effected by bracing the ſolids, invigorating their vibrations, and accelerating the blood's motion, is with certainty to be had from hence. All diſeaſes therefore from a ſizy blood, and a lentor in the animal juices, if the elaſticity of the veſſels is not worn out with age or debauches, will find relief

relief from the cold bath. As rheumatiſms of the moſt obſtinate kind, hypochrondriacal affections, and debility, from too tender, indulgent, and inactive ways of life. Whatſoever inconveniences alſo proceed from a bad tranſpiration, or when humours are thrown upon the ſurface, which cannot get through, but ulcerate, blotch and deform the ſkin, this remedy will be of ſervice in. For upon immerſion, the whole nervous ſyſtem is ſo ſhook, that the very capillaries feel the influence, and the minuteſt paſſages are forced open by an increaſed velocity of the circulating fluids; whereby the ſkin will be cleared, and inſtead of entertaining groſs acrimonious humours, tranſmit only the imperceptible matter of perſpiration.

COLLAR, the part of the harneſs that goes round a horſe's neck.

COLLAR *of brawn*, is the quantity of brawn bound up in one parcel.

COLOCYNTH, See BITTER APPLE.

COLTS-FOOT, [*Tuſſilago.*] This grows wild in watery places, producing yellow flowers in February and March; theſe ſoon fall off, and are ſucceeded by roundiſh leaves, hairy underneath: their taſte is herbaceous, ſomewhat glutinous and ſubacrid. Tuſſilago ſtands recommended in coughs, and other diſorders of the breaſt and lungs: practice however ſeems to have almoſt rejected it.

This weed, which delights to grow by the ſide of rivers, increaſes ſo faſt by its ſeeds and rambling roots, every piece of which laſt will produce a new plant, though they have been broken with the plough, that it cannot be extirpated without much difficulty, and a conſiderable time. Carefully pulling up the roots every time the earth is ſtirred, or the leaſt veſtige of the plant appears, and preventing its running to ſeed, are the moſt effectual means of deſtroying it in arable land; and this is beſt accompliſhed by the horſe hoeing huſbandry: but totally to extirpate it, the ground muſt be laid down long to graſs. One of Mr. Liſle's neighbours almoſt deſtroyed it by two ſucceſſive crops of vetches; and he himſelf is clearly of opinion, that it may be killed by letting the land lie a ſufficient time under clover, or rye-graſs; becauſe, ſays he, the roots of the natural graſs matting more and more every year, will, in five or ſix years, ſo bind the ſurface of the ground, that the colts-foot will not be able to pierce through it, and will therefore die for want of air. He ploughed up broad clover the beginning of July, and turned up the roots of colts-foot, in which he obſerved, between earth and air, many little buds, ſhot forth, of the bigneſs of the Mid-ſummer buds in fruit-trees, probably to be the leaves or flowers of the next year; and at the depth of five, ſix, and even ſeven inches, he remarked here and there a ſhoot, of a callous body, like the root itſelf, from one to four inches long; perhaps deſtined to be future roots: he experienced that a winter's fallow will not deſtroy theſe roots, and that they cannot reſiſt the effect of ſummer fallows, in which they are turned up, and expoſed dry to the ſun. It is therefore neceſſary to pick them as clean as poſſible, and burn them: for it is not to be ſuppoſed, that all the roots which are turned up in a ſummer fallow will wither of themſelves: on the contrary, ſuch of the buds at the joints of theſe as are buried under ground, will ſhoot again if much rain falls, or the ſeaſon be wet. *See Butter-Bur.*

Foreign COLTS-FOOT, [*Cacalia.*] Of this there are ſeveral ſorts growing in different parts of the world, and cultivated in the gardens of England.

COCOA, or CACAO. The chocolate-nut tree. This tree is a native of America, and is found in great plenty in ſeveral places between the Tropics, but particularly at Caracca and Carthagena, on the river Amazons, in the iſthmus of Darien, at Honduras, Guatimala, and Nicaragua. *Cocoa*

In order to cultivate this plant in Europe, by way of curioſity, it will be neceſſary to have the nuts planted into boxes of earth (in the countries where they grow) ſoon after they are ripe, becauſe, if the nuts are ſent over, they will loſe their growing quality before they arrive. Theſe boxes ſhould be placed in a ſhady ſituation, and muſt be frequently watered, in order to forward the vegetation of the nuts. In about a fortnight after the nuts are planted, the plants will appear above ground, when they ſhould be carefully watered in dry weather, and protected from

Collected, Selected, Corrected.

from the violent heat of the ſun. During their paſſage they muſt be frequently refreſhed with water; but it muſt not be given them in great quantities, unleſs it rot the tender fibres of their roots; and when they come into a cool latitude, they muſt be carefully protected from the cold, when they will not require to be ſo frequently watered; for in a moderate degree of heat, if they have gentle waterings once a week it will be ſufficient.

When the plants arrive in England, they ſhould be carefully taken out of the boxes, and each tranſplanted into a ſeparate pot filled with light rich earth, and plunged into a moderate hot-bed of tanners bark. In this hot-bed the plants may remain till Michaelmas, when they muſt be removed into the bark-ſtove, and plunged into the tan, in the warmeſt part of the ſtove. During the winter ſeaſon the plants muſt be frequently refreſhed with water, but it muſt be given to them in ſmall quantities, yet in ſummer they will require a more plentiful ſhare. Theſe plants are too tender to live in the open air in this country, even in the hotteſt ſeaſon of the year, therefore muſt conſtantly remain in the bath-ſtove, obſerving in very warm weather to let in a large ſhare of freſh air to them, and in winter to keep them very warm. The leaves of theſe plants muſt be frequently waſhed to clear them from filth, which they are ſubject to contract by remaining conſtantly in the houſe; and this becomes an harbour for ſmall inſects, which will inſeſt the plants and deſtroy them, if they are not timely waſhed off. If theſe rules are duly obſerved, the plants will thrive very well, and may produce flowers in this climate: but it will be very difficult to obtain fruit from them, for being of a very tender nature, they are ſubject to many accidents in a cold country.

COLLEY *Sheep.* Such as have black faces and legs.

COLUMBINE, [*Aquilegia.*] There are three ſpecies, 1. The Garden or Common Columbine. 2. Wild Mountain Columbine. 3. Canada Dwarf Columbine. They all flower in May and June, and may be raiſed by ſowing the ſeed in autumn and dividing the roots.

COLT. A young horſe.

Foals are ſeparated from their dams after five, ſix, or at fartheſt ſeven months; experience having ſhewn, that ſuch as are ſuffered to ſuck ten or eleven months, though uſually larger and fuller of fleſh, are not equal, in other reſpects, to thoſe that are taken away ſooner. After living ſix or ſeven months on milk, they are habituated to a more ſolid nouriſhment, having bran given them twice a day, with a ſmall quantity of hay, which is increaſed as they advance in age, and in this manner they are kept in the ſtable, as long as they expreſs any deſire of returning to their dams: but when this uneaſineſs is over, they are turned into the fields, taking care never to do it faſting. An hour before they are turned to graſs, a feed of bran, and ſome water ſhould be given them; nor ſhould they be expoſed to either ſevere cold or rain: in this manner the firſt winter muſt be paſſed. In May following, they muſt not only be turned in the fields every day, but may lie in the open air till the end of October, taking care not to let them feed on the after-math; for by accuſtoming themſelves to this remarkable delicate and ſucculent graſs, they would contract a diſlike to hay, which, together with bran mixed with barley and oats ground, ſhould be their principal food during the ſecond winter. In this manner they are to be kept till their fourth year, ſpending the days only in the paſtures, during the winter; but both day and night in the ſummer. When they reach that age, they are to be taken from the paſtures, and fed with dry meat; but in this change of food ſome precautions are requiſite; as during the firſt week to feed them only with ſtraw, and give them proper medicines againſt worms, which often trouble them from bad digeſtions and too rank graſs.

At weaning young colts, they ſhould be kept in a clean ſtable, not over warm, which would render them tender, and too ſenſible of the impreſſions of the air. They muſt frequently have freſh litter, and be rubbed often with ſtraw; but not tied nor curried till they are three, or at leaſt two years and a half old; for the roughneſs of this friction would give them pain, and their ſhin being too tender to endure it, inſtead of thriving, they would fall

fall away. The rack and manger ſhould not be too high, leſt the neceſſity of lifting up their heads to reach their food, ſhould occaſion them to carry their heads in that manner, which would ſpoil their cheſts. When they are a year, or a year and a half old, the hair on their tails ſhould be cut, as the ſucceeding growth will be ſtronger and thicker than the former. When they are two years old, they ſhould be ſeparated, and the ſtone colts kept with the horſes, and the fillies with the mares, otherwiſe the former would fruitleſsly weaken themſelves with the latter. At the age of three years, or three and a half, they ſhould be broke, and rendered docile. In order to this, a light eaſy ſaddle ſhould be put on their backs, and continue there three or four hours every day. They ſhould alſo be uſed to receive the bit of a ſmall bridle into their mouths, and ſuffer their feet to be taken up, and ſome ſtrokes given on the ſole, as if ſhoeing them. If they are deſigned for draught horſes, a harneſs ſhould be put on their bodies, and afterwards a ſnaffle bridle ſhould be added. They ſhould then be trotted on level ground, but without a rider, the perſon only holding the reins, and either the ſaddle or harneſs on their backs: and when the ſaddle horſe eaſily turns, and freely comes up to him that holds the rein, he ſhould mount on his back, and diſmount again immediately, without riding him, till he is four years old, as before that time the weight would be too much for him: but at four years old he may be ridden, and trotted at ſmall intervals.

COLTEVIL. A diſeaſe in horſes be a ſwelling in the ſheath, teſticles and yard: the cure to be begun by bleeding and waſhing the parts clean; then anoint with ointment of elder, or ointment of adder's tongue.

This diſeaſe not unfrequently ariſes in colts from going with mares before they are able to cover: Uſe the following fomentation,

Take, Wormwood,
Bay leaves,
Southernwood,
Mallow leaves,
Chamomile flowers,
Elder flowers, and
Agrimony,—each a handful,
Water, two gallons,
Boil the whole together about twenty minutes, and then ſtrain.

COMB. The ornament of a cock's head.

COMB. A meaſure of corn, conſiſting of four Wincheſter buſhels; but in the fen country the comb generally conſiſts of four buſhels, and each buſhel of eight gallons and a quart.

COMFRY, [*Symphitum.*] A rough hairy plant, growing wild by the ſides of rivers and watery places.

Spotted COMFRY. Lungwort.

COMMON. An open piece of ground, not incloſed.

COMPOSTS. In huſbandry and gardening, they ſignify ſeveral ſorts of ſoils of earthy matter mixed together, in order to make a manure for aſſiſting the natural earth in the works of vegetation, by way of amendment or improvement.

Compoſts are various, and ought to be different according to the different nature or quality of the ſoils which they are deſigned to meliorate, and according as the land is either light, ſandy, or looſe or heavy, clayey or cloddy. A light, looſe land requires a compoſt of a heavy nature, as the ſcouring of deep ditches, ponds, &c.

So, on the other hand, a land that is heavy, clayey or cloddy, requires a compoſt of a more ſprightly and fiery nature, that will inſinuate itſelf into the lumpiſh clods; which, if they were not thus managed, would much obſtruct vegetation. For cold clayey land, ſome adviſe to take one load of ſea ſand (if it can be conveniently had), or if not, other ſand, or ſandy ground, or ſharp ſand, and two loads of good rotten dung, and three loads of natural mould, two loads of the top of ſpit turf from off the meadows, or any other kind of rich turf land, and half a load of coal-aſhes, or the ſweepings of ſtreets, a ſmall ſprinkling of pigeons, ſheep, or other hot dungs. Theſe are to be laid down in different heaps in a circle, having a large ſpace in the centre, ſo that they may all be thrown up together in one heap, which is to be done by as many perſons at each heap, as there are different loads in each, viz. one to that of one load, two to that of two loads, and three to that of three loads, and ſo on; theſe muſt caſt and ſpread at the

the ſame time every parcel with care and not altogether in lumps.

The fitteſt time for the doing of this, is when the weather is dry, and alſo in the month of May. This mixture ſhould be turned once a month till Michaelmas, and then it may be ſcreened, and ſeparated into ſeveral ſorts, to be ready, as occaſion ſhall require, in the nurſery.

For the firſt ſort, it will be beſt to ſet the ſkreen more upright; and what comes through may be mixed with one-fourth part of melon earth very fine.

The ſecond ſort may be ſcreened with the ſkreen ſtanding more ſloping; by which means, what comes through will be coarſer than the firſt.

The remainder, which will be the roughest and moſt cloddy earth, is recommended as an extraordinary manure to be dug in order to improve any barren or poor land; and if it be kept in a heap for one year, and ſkreened the next year, it will then be as good as either the former. The fineſt of theſe will be beſt kept in a houſe, or under ſome covering, that it may be dry; though it would be better to be turned out ſometimes to get rain.

A compoſt for a looſe ſandy ground may be made, by taking two loads of dung, three loads of natural ſoil, three loads of ſtrong loamy earth, three loads of pond earth, or of the ſcouring of ditches, which are to be ordered, mixed and ſkreened as before; and ſo to make three different ſorts of ſkreenings.

Others recommend other compoſts differing according to the different ſoils.

For a ſtiff ſoil inclining to clay, to take five loads of the ſame ſoil when broken and opened, and to add to that five loads more of heath turfs burnt; that theſe having been well mixed and laid together during the winter in a heap or ridge, and being well ſifted or ſkreened, are recommended as a good compoſt that will extremely forward trees.

2. To mix four loads of ſharp ſand, and two loads of aſhes of burnt furzes, gorz, fern, weeds, or wood, with four loads of ſtiff ſoil well broken and opened: that theſe having been well mixed together and laid up in a ridge in September, ſhould lie till the February following, and then may be ſkreened and ſifted for uſe. Sir William Bruce is ſaid to have uſed this compoſt in his garden with good ſucceſs.

3. For a ſtiff ſoil,—take four loads of the ſtiff ſoil, two loads of rotten wood, ſuch as may be found under a wood pile, or the ſame quantity of rotted leaves, if the former cannot be had, two loads of burnt graſs-turf, and four loads of ſand: this is recommended to be done in October likewiſe; becauſe being then made, and ſifted in the following ſpring, it will be better than if they were made in the ſpring; for that the heat of the ſummer would exhale the volatile ſpirits, and if they were not laid in ſome ſhady place under trees, the weeds would exhauſt good part of the nouriſhment that is in them. Theſe being mixed well, and laid in a ridge till February, and then ſifted, is recommended as a good compoſt.

4. Take two loads of ſtiff ſoil, two loads of rape-ſeed after the oil has been preſſed out, four loads of ſand, and two loads of burnt heath or graſs turf, and prepare them as the others, and ſift them: and this compoſt is recommended as one that will forward any plant.

5. Take four loads of ſtiff ſoil, two loads of malt grains after brewing, and four loads of ſand; theſe being prepared as before, are recommended as a compoſt that will haſten the growth of plants.

6. Take of ſheeps-dung and wood aſhes equal quantities; of loam or mother-earth double the quantity: prepare them as before directed, and they will prove a good compoſt.

7. Take four loads of ſtiff earth, four loads of ſand, four loads of horſe dung well conſumed, and two loads of turf aſhes: prepare this mixture as before directed.

CONTRAYERVA. This is a knotty root, an inch or two in length, about half an inch thick, of a reddiſh brown colour externally, and pale within: long, tough, ſlender fibres ſhoot out from all ſides of it; theſe are generally loaded with knotty excreſcences. This root is of a peculiar kind of aromatic ſmell and a ſomewhat aſtringent, warm, bitteriſh taſte, with

with a light and ſweetiſh kind of acrimony when long chewed: the fibres have little taſte or ſmell; the tuberous part therefore ſhould be only choſen. Contrayerva is one of the mildeſt of thoſe ſubſtances called alexipharmacs: it is indiſputably a good and uſeful diaphoretic, and may be ſafely given in much larger doſes than the common practice is accuſtomed to exhibit it in. Its virtues are extracted both by water and rectified ſpirit, and do not ariſe in evaporation with either: the ſpirituous tincture and extract taſte ſtronger of the root than the aqueous ones.

CONIFEROUS. Bearing cones.

Greater CONSOUND. Comfry.

Middle CONSOUND. Bugle.

Leſſer CONSOUND. Daiſy.

CONSERVATORY. Green-houſe.

CONVOLVULUS. See BINDWEED.

CONVALLILY, [*Convallaria.*] Lily of the valley.

COOM, the ſoot that gathers over the mouth of an oven; alſo a compoſition of tar and greaſe, with which the axle-trees and boxes of the wheels of carriages are daubed or ſmeared over, in order to leſſen the friction.

COOP, a tumbrel, or cart incloſed with boards, to carry dung, ſand, grains, &c. which would otherwiſe fall out.

COOP, likewiſe ſignifies a pen, or incloſed place, where lambs, poultry, &c. are ſhut up, in order to be fed.

COPPICE, low woods, cut at ſtated times for poles, fuel, &c.

To plant a coppice, ſet your plants in trenches, not ſow ſeeds, for they are tedious in coming forward, and will tire one's patience in weeding them. About four plants in twelve feet ſquare, and at regular diſtances, ſo that the benefit of ploughing might not be loſt; and then at ſix or ſeven year's growth, plaſh, by laying the whole ſhoot, end and all, under the earth in the trenches, which will ſhoot forth innumerable iſſues.

In raiſing coppices, great care ought to be taken that the wood they are to be compoſed of be ſuch as is proper for the ſoil you raiſe them on, and that it be proper for the uſes you deſign to ſell it for, which you muſt be regulated in by the vend you have; and let the profits reſulting from your under-wood regulate the thickneſs of your ſtandards; for in proportion as they are thicker or thinner, they will do more or leſs injury to your underwood. You ſhould likewiſe conſider at what growth you can ſell your under-wood; only remember that the older and taller your under-wood is, the better it is both for fuel, and for what ſtandards you leave, becauſe they will be the taller and ſtraiter, by being forced up by the wood that grows about them; though a deep ſoil contributes much to their ſpring. It is alſo neceſſary, about the time of your felling, to lay out your ſeveral falls, that you may have an annual ſucceſſion, to yield a yearly profit. But though the ſeldom felling of coppices yields the more and better wood; yet the frequent cutting of it makes it thicken, and gives room for the ſeedlings to come up. If many trees grow in the coppice that is to be cut down, fell both them and the underwood together, cutting off the ſtubs as near the ground as convenient, and thoſe of the under-wood a-ſlope and ſmooth, and not above half a foot from the ground; and ſtock up the roots of the timber-trees, if they ſend forth no ſhoots, in order to make room for ſeedlings and young roots to grow.

The under-wood may be cut from the beginning of October to the latter end of February; but February is the beſt month to cut wood in, where you have but a ſmall quantity to fell, that you may do it before the ſpring comes on too much: take great care to prevent the carters from bruſhing againſt the young ſtandards, and let all your wood be carried out by Midſummer, and made up by the end of April at the fartheſt; for if the rows and bruſh lie longer unbound or unmade up, it will ſpoil many of the young ſhoots and ſeedlings. If, the winter before you fell, you incloſe it ſo as to keep all cattle out of it, your care and trouble will be well recompenſed.

Your elder under-wood may be grazed about July, or in winter, but, for a general rule, newly weaned calves are the leaſt prejudicial to new cut wood, where there is abundance of graſs; and ſome ſay colts of a year old; but then they muſt be driven out by the beginning of May at fartheſt. However, if nothing at all be ſuffered to come in, it will be better. In this

every man's experience muſt direct him.

If your woods happen to be cropt by cattle, it will be better to cut them down, and they will then make freſh ſhoots; whereas what has been bit by the cattle, will otherwiſe be ſtunted for ſeveral years before it will take to its growth.

CORAL-TREE [*Erythrina.*] A tree of America, of which there are ſeveral ſorts; propagated by ſeeds and cuttings.

CORD or WOOD, is four feet long, four feet high, and eight feet long.

CORDIAL *Balls*, of Dr. Bracken, are thus made:

Take anniſeed, carraway-ſeed, and greater cardamoms, finely powdered, of each one ounce, flour of brimſtone two ounces, turmeric in fine powder one ounce and a half, ſaffron two drams. Spaniſh juice diſſolved in water, two ounces, oil of anniſeed half an ounce, liquorice-powder one ounce and a half, wheat-flour, a ſufficient quantity, to make into a ſtiff paſte, by beating all the ingredients well in a mortar.

Theſe balls conſiſt of warm opening ingredients; and, given in ſmall quantities, about the ſize of a pullet's egg, will encourage a free perſpiration; but, in caſe of a fever, ſhould be cautiouſly continued. They are much more efficacious, and in all caſes ſuperior to the farrier's drenches, if diſſolved in a pint of warm ale.

CORE, a diſorder incident to ſheep, occaſioned by worms in their liver, reſembling a plaice, or flounder.

A ſheep, if chiefly fed with hay, will live a year after being affected with this diſtemper, by which time he will have a water bladder as large as an egg, under his throat; at the ſame time his eyes, mouth, and gums, will be white.

If any ſheep in a flock core during the winter, it will be eaſily ſeen at ſhearing time; for ſuch ſheep will be poorer than the reſt; their wool alſo will run into threads, twiſting together at the ends, and look ſomewhat like teats. The laſt particular is not however a certain ſign of a ſheep's being cored; for ſometimes the wool of very ſound ſheep will be apt to run together into threads; and the finer the wool the more apt it is to twiſt together in that manner. There is no method of curing this diſtemper hitherto known.

CORIANDER, [*Coriandrum.*] The name of a plant formerly much cultivated in England; but at preſent little of it is ſown.

The ſeeds ſhould be ſown in autumn on rich land; and when the plants are come up, they ſhould be hoed out to about four inches diſtance, every way, clearing them from weeds. By the above management, the plants will grow ſtrong, and produce a greater quantity of good ſeeds.

CORK-TREE, [*Suber.*] A ſort of oak growing in the warmer parts of Europe, and is not uncommon in England.

CORN, a general name for grain that grows in ears.

CORN-BOTTLE, [*Centaurea.*] Greater Centaury, Knap-weed, Blue-bottle. There are a great number of ſpecies of this plant cultivated in botanic gardens, ſome of which grow wild in the fields in England, and are often troubleſome weeds, and to this genus belong the Batchelor's Buttons, Sweet Sultan, Caduus Benedictus, &c.

CORN-CROWFOOT, a weed very common among the corn. It has an upright ſtalk; the leaves are of a pale green, and cut into long, narrow, acute ſegments. The flowers are much ſmaller and paler than the crowfoot of the paſtures: but the ſeed-veſſels are the moſt remarkable, being covered all over with prickles.

CORN-FLAG, a very troubleſome weed, multiplying exceedingly by its roots. It has a round compreſſed tuberous root, which is of a yellowiſh colour, and covered with a brown furrowed ſkin, like that of the vernal crocus. From this root ariſe two flat ſword-ſhaped leaves, which embrace each other at their baſe; and between theſe ariſes the flower ſtalk, which grows near two feet high, having one or two narrow leaves embracing it like a ſheath. This ſtalk is terminated by five or ſix purple flowers, ſtanding above each other at ſome diſtance, and ranged on one ſide of the ſtalk; each of theſe has a ſheath, which covers the flower-bud, before it expands, but ſplits open lengthways when the flowers blow, and afterwards ſhrivels up to a dry ſkin, which

which remains about the ſeed-veſſel, till the ſeeds are ripe, which is in the beginning of Auguſt. The flowers come out in the beginning of May, or in June. Some of theſe flowers are white, and others fleſh-coloured.

Corn-flag is extremely difficult to root out, as every part of the root will grow. The beſt manner of extirpating it is, that already mentioned under the article Colts-foot.

CORN-MARYGOLD, The name of a very troubleſome weed, of which there are two ſpecies, one common in corn-fields, and the other in moiſt paſtures. The leaves of the firſt ſort embrace the ſtalks, the upper being jagged, and the lower indented like a ſaw. The ſecond is, by C. Bauhine, called the Greater Wild Daiſy, with a leafy ſtalk. It riſes with ſtalks near two feet high, garniſhed with oblong indented leaves, which embrace the ſtalks with their baſe. Each of theſe ſtalks is terminated by one white flower, ſhaped like that of the daiſy, but four times as large.

The corn-marygold has a perennial woody root, which ſtriking deep requires a conſiderable quantity of food, and therefore muſt be a great enemy to the corn. Conſiderable pains muſt be taken before this weed can be extirpated, as it is highly probable, that, beſides multiplying by its roots, its ſeed will grow, if ploughed in, as that of the garden marygold will do when dug in. Deep and repeated hoeings are therefore neceſſary, before it runs to ſeed. Dreſſings of chalk and clay generally deſtroy it.

CORN-PARSLEY, the name of a low branching plant common among corn. The branches grow thick together, and are knotted and crooked. The flowers grow cloſe together after the manner of parſley, and are of a white colour inclining to yellow. The ſeeds are large in proportion to the plant; and are ſet about with little crooked briſtles; which make them adhere to the ſtockings in great plenty, when the ſeeds are ripe; which is generally about harveſt.

CORN-SALLET, [*Valeriana Locuſta.*] It is cultivated as a ſallad herb for the ſpring, but, having a ſtrong taſte which is not agreeable to many palates, it is not ſo much in uſe as it was formerly; it is propagated by ſeeds, which ſhould be ſown the latter end of Auguſt, then the firſt rains will bring up the plants, which ſhould be hoed to thin them where they are too cloſe, and to deſtroy the weeds. Early in the ſpring the plants will be fit for uſe. The younger the plants are when uſed, the leſs ſtrong will be their taſte, ſo they may ſupply the table in a ſcarcity of other herbs. When the ſeeds of this ſort are ſown in the ſpring, if the ſeaſon proves dry, the plants will not appear till autumn or the ſpring following; beſides, in ſummer the herb is not ſo fit for uſe. The ſeeds of this plant have been known to lie in the ground many years, when they have happened to be buried deep, and upon being turned up to the air, the plants have come up as thick as if the ſeeds had been newly ſown.

CORN-VIOLET, a kind of wild violet growing among corn.

CORNELIAN *Cherry-tree*, [*Cornus.*] Dogwood. The ſpecies are, 1. Female Dogwood. 2. Male Cornel. 3. Male Virginia Dogwood. 4. Female Virginian Dogwood. 5. Wild Tartarian Dogwood. 6. Low herbaceous Dogwood, or Dwarf Honeyſuckle.

All the ſorts of Dogwood may be propagated by their ſeeds, which, if ſown in autumn ſoon after they are ripe, will moſt of them come the following ſpring; but, if the ſeeds are not ſown in autumn, they will lie a year in the ground before the plants will appear; and, when the ſeaſon proves dry, they will ſometimes remain two years in the ground: therefore the place ſhould not be diſturbed where theſe ſeeds are ſown under two years, if the plants ſhould not come up ſooner. When the plants are come up, they ſhould be duly watered in dry weather, and kept clean from weeds, and the autumn following they may be removed and planted in beds in the nurſery where they muſt remain two years, by which time they will be fit to tranſplant where they are to remain for good.

They are alſo propagated by ſuckers, and laying down of the branches. Moſt of the ſorts produce plenty of ſuckers, eſpecially when they are planted on a moiſt ſoil, which may be taken off from the old plants in autumn, and planted into a nurſery for a year or two, and then may be

transplanted into the places where they are to remain; but those plants which are propagated by suckers, rarely have so good roots as those which are propagated by layers.

CORN-ROSE. Wild poppy.

CORROBORANTS. Strengtheners.

CORROSIVE, that destroys, that eats away.

COSTMARY, [*Balsamita mas.*] This was formerly a very common garden plant, and of frequent use both for culinary and medicinal purposes; but is at present very little regarded for either; though it should seem, from its sensible qualities, to be equal or superior, as a medicine, to some aromatic herbs, which practice has retained. The leaves have a bitterish warm aromatic taste; and a very pleasant smell, approaching to that of mint, or a mixture of mint and maudlin. Water elevates their flavour in distillation; and rectified spirit extracts it by infusion.

COSTUS. A root brought from the East Indies. Authors mention two sorts of costus, sweet and bitter: in the shops we seldom meet with any more than one, the *costus dulcis officinarum*. This root is about the size of the finger; and consists of a yellowish woody part, inclosed within a whitish bark: the former is very tough, of no smell, and very little taste; the cortical part brittle, of a warm, bitterish, aromatic taste, and an agreeable smell, somewhat resembling that of violets o Florentine orris. Costus is said to attenuate viscid humours, to promote expectoration, perspiration, and urine. At present it is rarely met with in prescription, and not often in the shops; in mithridate and theriaca, the only officinal compositions it is directed in, zedoary supplies its place.

CORONET, the lowest part of a horse's pastern, which runs round the coffin, and is distinguished by the hair which joins and covers the upper part of the hoof.

COSH. A pod.

COSSART, or *Cosset Lamb*, a lamb left by its dam's dying before it is capable of shifting for itself; or it is a lamb taken from a ewe that brings two, three, or four lambs at a yeaning, and consequently is incapable of bringing them all up. The word is also applied to a colt, calf, &c.

In either of these cases, if there be not another ewe at liberty to suckle it, it must be brought up by hand, or perish. By an ewe at liberty is meant one that has, by some accident, lost her lamb, and has milk enough to suckle a lamb yeaned by another.

COSTIVENESS, a complaint to which horses are often subject; sometimes occasioned by violent and hard exercise, especially in hot weather; and sometimes by standing long at hard meat, without grass, or other cleansing diet, and with very little exercise.

The cure for this complaint is easy, only by giving him an open diet for some time; and if any thing more is wanting, lenitive mild purges are the most likely to succeed: Such as Glauber's salts with lenitive electuary, four ounces of each, dissolved in warm ale or water, and repeated every other day. This, with scalded bran given every day, will remove the complaint, and carry off the viscid slime engendered in the guts, which is generally the cause of his costiveness.

But there is another kind of costiveness in horses, which is much harder to be removed, viz. that which seems to be natural, or grown into a habit. We find some very good horses liable to this disorder; and, when it is of long continuance, they are apt to grow lean and emaciated, feel hot and dry, their hair staring, and there is danger of some approaching sickness

This disorder is not easily removed; nor is it often necessary to bring such horses into a contrary habit; for where this is natural, it may proceed from a more than ordinary strength and rigidity in the small fibres of the stomach and guts, which make them digest their aliment well, and retain their excrements longer; and when such a habit can be kept within any proper medium, the horse will continue in strength and vigour, without any inconvenience; and it is observable, that these horses are, for the most part, able to endure great fatigue and labour. However, it is proper to give such horses, at all convenient times, an opening diet. For if this habit happens, by an accident, to grow into habitual costiveness, so as to produce ill effects,

as heat, dryneſs of the conſtitution, little ſcabby eruptions over the ſkin, and a rough coat, it will then be neceſſary to remove it in ſome degree, which cannot be done but by a continual uſe of emollients, joined by a looſe opening diet.

Purging is here alſo neceſſary, and ought by all means to be complied with: but purging in the common way with Barbadoes or other plantation aloes, ſeldom has any great effect longer than the purge is working; for when that is over, the ſame habit of coſtiveneſs generally returns as ſtrong as ever. Scalded bran, and the common opening diet, ſeldom makes any great alteration in theſe horſes. The aloetic purges will ſcarcely work, eſpecially if they are made ſtrong, for they then chiefly run off by urine, which does the creature little ſervice in this caſe. But after the common purges have failed, the following will ſucceed beyond expectation.

Take ſuccotrine aloes, ſix drams; ſpermaceti, half an ounce; fœnugreek ſeeds in powder, two ounces: make the whole into two balls, with a ſufficient quantity of honey, or common treacle, and give them in a morning faſting.

Let the horſe have ſcalded barley inſtead of ſcalded bran, and the liquor of the barley for his drink, milk warm. This will work very gently, where ſtronger purges have little other effect upon coſtive horſes than to make them ſick. It ought to be repeated once in four days, and may be continued till he has taken ſix doſes. Let him have an ounce of fœnugreek ſeeds once a day, in one of his maſhes, and when the purgation is over, continue the uſe of the fœnugreek; and ſometimes give linſeed in the ſame manner, either in his dry or moiſt feeds, until the horſe grows ſmooth and well coated, and his dung moiſt and in good order.

COTYLEDONS, rinds, or huſks.

COUCH-GRASS, [*Gramen caninum.*] Is one of the worſt of weeds among corn, and one of the moſt difficult to extirpate in arable land; every joint of its long creeping roots being capable of ſoon producing a new plant, after thoſe roots have been broken by the plough. The uſual way of deſtroying it, is by laying the land fallow in ſummer, and frequently harrowing it well over, to draw out the roots, every piece of which ſhould then be burnt, for the reaſon already mentioned. Where this is carefully done, the ground may be ſo well cleanſed in one ſummer, that the remaining roots will not do any great injury to the enſuing crop: but the beſt way is to ſow the land in which this weed prevails with ſuch plants as require the horſe-hoeing culture. The blade of this graſs is ſo rough, that cattle will not feed upon it when green. *Dog's-bear or Water graſs?*

COTTON, [*Goſſypium.*] The ſorts are, 1. Cotton with leaves having five lobes, and an herbaceous ſtalk. 2. Cotton with entire leaves, having three lobes. 3. Cotton with hand-ſhaped leaves, having five ſpear-ſhaped lobes, and a ſhrubby ſtalk. 4. Fineſt American Cotton with a green ſeed.

The firſt ſort is the common Levant cotton, which is cultivated in ſeveral iſlands of the Archipelago, as alſo in Malta, Sicily, and the kingdom of Naples; it is ſown in tilled ground in the ſpring of the year, and is ripe in about four months after, when it is cut down in harveſt as corn in England, the plants always periſhing ſoon after the ſeeds are ripe: this plant grows about two feet high with an herbaceous ſtalk, garniſhed with ſmooth leaves divided into five lobes. The ſtalks ſend out a few weak branches upward, which are garniſhed with leaves of the ſame form, but are ſmaller. The flowers are produced at the extremity of the branches; theſe have two large empalements, the outer is cut into three parts, and the inner into five. The petals of the flower are of a pale yellow colour, inclining to white; theſe are ſucceeded by oval capſules, which open in four parts, having four cells, which are filled with ſeeds, wrapt up in a down, which is the cotton.

The ſecond ſort grows naturally in ſeveral iſlands of the Weſt-Indies; this riſes with a ſhrubby ſmooth ſtalk four or five feet high, ſending out a few ſide branches, which are garniſhed with ſmooth leaves, divided into three lobes. The flowers are produced at the end of the branches, which are ſhaped like thoſe of the former ſort, but are larger, and of a deeper yellow colour. The pods are larger, and the ſeeds are black.

That

The third ſort has a perennial ſhrubby ſtalk, which riſes ſix or eight feet high, and divides into many branches, which are ſmooth, and garniſhed with hand-ſhaped leaves, having four or five lobes. The flowers are produced at the end of the branches; theſe are larger than thoſe of the two former ſorts, and are of a deep yellow colour. The pods of this ſort are larger than thoſe of the former.

The fourth ſort is a native of the Eaſt and Weſt-Indies; this is an annual plant, which periſhes ſoon after the ſeeds are ripe. It riſes to the height of three feet or more, and ſends out many lateral branches where they are allowed room to grow; theſe are hairy, and garniſhed with leaves, having in ſome three, and others five acute-pointed hairy lobes. The flowers are produced from the ſide, and at the ends of the branches, which are large, of a dirty ſulphur colour, each petal having a large purple ſpot at the baſe; the flowers are ſucceeded by oval pods, which open in four cells, filled with oblong green ſeeds, wrapped up in a ſoft down. The ſtaple of this is much finer than either of the other ſpecies, therefore it is well worth the attention of the inhabitants of the Britiſh colonies in America to cultivate and improve this ſort, ſince it will ſucceed in Carolina, where it has been cultivated for ſome years; and might be a commodity worthy of encouragement by the public, could they contrive a proper engine to ſeparate the cotton from the ſeeds, to which this ſort adheres much cloſer than any of the other ſorts, the cotton from this ſhrub being preferable to any other yet known.

All theſe ſorts are tender plants, therefore will not thrive in the open air in England, but they are frequently ſown in curious gardens for variety; the firſt and fourth ſorts will produce ripe ſeeds in England, if their ſeeds are ſown early in the ſpring, upon a good hot-bed, and the plants afterwards planted each into ſeparate pots, and plunged into a hot-bed of tanners bark to bring them forward; when they are grown too tall to remain under the frames, they ſhould be removed into the tan-bed in the ſtove, and ſhifted into larger pots, if their roots have filled the other; with this management their flowers will appear in July, and towards the end of September the ſeeds will ripen, and the pods will be as large as thoſe produced in the Eaſt and Weſt-Indies; but if the plants are not brought forward early in the ſpring, it will be late in the ſummer before the flowers will appear, and there will be no hopes of the pods coming to perfection.

The ſhrub cotton will riſe from the ſeeds very eaſily, if they are ſown upon a good hot-bed; and when they are ſown early in the ſpring, and brought forward in the ſame manner as hath been directed for the former ſorts, the plants will grow to be five or ſix feet high the ſame ſummer; but it is difficult to preſerve the plants during the winter, unleſs they are hardened gradually in Auguſt during the continuance of the warm weather; for when they are forced on in ſummer, they will be ſo tender as to render them incapable of reſiſting the leaſt injury. The plants of this ſort muſt be placed in the bark ſtove in autumn, and kept in the firſt claſs of heat, otherwiſe they will not live through the winter in England.

Silk COTTON *Tree*, [*Bombax.*] The ſorts are, 1. Silk Cotton-tree with a prickly ſtalk. 2. Silk Cotton-tree with ſmooth ſtems. 3. Silk Cotton-tree with leaves cut into ſeveral parts.

The firſt and ſecond ſorts grow naturally in both Indies, where they arrive to a great magnitude.

In the autumn they muſt be removed into the bark-ſtove, where they muſt conſtantly remain, being too tender to thrive in this country in any other ſituation. In winter they muſt have but little wet, eſpecially if they caſt their leaves; but in the ſummer they ſhould be frequently refreſhed with water, and in warm weather muſt have plenty of freſh air admitted to them.

The plants require a large ſtove where they may have room to grow, but as they are ſeveral years old before they flower in the countries where they grow naturally, ſo there is little hopes of their producing any in England.

COTTON-WEED. Goldylocks.

COUGH-WORT. Colts-foot.

COVERT. Sheltered place, not open. *Cough glaſs. See before.*

COUGH, [*Tuſſis.*] See COLD. This is a diſorder ſo well underſtood, that

that it cannot be miſtaken, nor does it need any explanation.

Boil in a quart of ale three ounces of freſh liquorice-root, beat very fine into threads. Strain the liquor off, preſſing it hard, and add to it three drams of elecampane powder, one dram of powder of anniſeeds, a quarter of a pint of oil, and a quarter of a pound of honey; mix all well, and give it warm. If it does not take effect the firſt time, let it be repeated three or four times, and it ſeldom fails.

Balls for a cold of long ſtanding.

Put into a large bowl ſix pounds of wheat meal, mix with it two ounces of powder of anniſeeds, cummin ſeed one ounce, linſeed three ounces, fœnugreek ſeed one ounce and a half; ſtir theſe well about, then mix half a pound of liquorice powder, and a quarter of a pound of flour of brimſtone, add theſe to the reſt. Laſtly, add bay-berries and juniper berries, powdered, three ounces of each, and the ſame quantity of powder of elecampane.

When all are well ſtirred and mixed together, break ſix eggs, throw away the whites, beat up the yolks with two quarts of mountain wine. Add to this a pound and a half of honey, and a pint of ſallad oil. Mix all theſe perfectly well together; then bring in the powder, and work the whole to a paſte. If this ſhould be too ſtiff, a little more wine muſt be added; and, if too ſoft, ſome flour muſt be put in, till the whole be of ſuch a conſiſtence that it will conveniently roll into balls.

Theſe are to be made of the bigneſs of a hen's egg, but round. This rolling them up is only for the convenience of keeping; when they are to be uſed they are to be diſſolved. Two is the proper quantity for a doſe, and they are to be melted in the creature's water, morning and evening, fifteen days.

COULTER, a part of the plough which cuts the earth before the ſhare.

COUPLE. Two.

COUPLE. The ewe and lamb.

COURSING LAWS, or *Laws of the Leaſh*, as ſettled and commanded by Thomas, Duke of Norfolk.

That he who is choſen ſewterer, or letter-looſe of the grey-hounds, ſhall receive the grey-hounds match'd to run together into his leaſh, as ſoon as he come into the field, and to follow next to the hare-finder till he come unto the form: and no horſeman nor footman, on pain of diſgrace, to go before them, or on either ſide, but directly behind, the ſpace of forty yards, or thereabouts.

That not above one brace of grey-hounds do courſe a hare at one inſtant.

That the hare-finder ſhall give the hare three ſo-ho's, before they put her from the lair, to make the grey-hounds gaze and attend her riſing.

That the ſewterer ſhall give the hare twelve-ſcore law, before he looſe the grey-hounds, except it be in danger of loſing ſight.

That dog that giveth the firſt turn, (if after the turn be given, there be neither coat, ſlip, nor wrench extraordinary, ſhall be held to win the wager.

If one dog gave the firſt turn, and the other bear the hare, then he which bore the hare ſhall win.

If one dog give both the firſt turn and laſt turn, and no other advantage between them, that odd turn ſhall win the wager.

That a coat ſhall be more than two turns, and a go-by, or the bearing of the hare, equal with two turns.

If neither dog turn the hare, then he which leadeth laſt, at the covert, ſhall be held to win the wager.

If one dog turn the hare, ſerve himſelf, and turn her again, thoſe two turns ſhall be as much as a coat.

If all the courſe be equal, then he only which bears the hare ſhall win; and if ſhe be not borne, then the courſe muſt be adjudged dead.

If he which comes firſt into the death of the hare, takes her up and ſaves her from breaking, cheriſheth the dogs, and cleanſeth their mouths from the wool, or other filth of the hare, for ſuch courteſy done, he ſhall in courteſy challenge the hare, but not doing it, he ſhall have no right, privelege or title therein.

If any dog ſhall take a fall in the courſe, and yet perform his part, he ſhall challenge advantage of a turn more than he giveth.

If one dog turn the hare, ſerve himſelf, and give divers coats, yet in the end ſtand ſtill in the field, the other dog

dog without turn giving, running home to the covert, that dog which ſtood ſtill in the field, ſhall be then adjudged to loſe the wager.

If any man ſhall ride over a dog, and overthrow him in his courſe, (tho' the dog was the worſe dog in opinion) yet the party for offence ſhall either receive the diſgrace of the field, or pay the wager; for between the parties, it ſhall be adjudged no courſe.

Thoſe which are choſen judges of the leaſh, ſhall give their judgments preſently before they depart from the field, or elſe he, in whoſe default it lieth, ſhall pay the wager by a general voice and ſentence.

COW. The cow being chiefly intended for the ſervice of the dairy, a great deal of care is to be taken in the purchaſing a right kind, for there is a vaſt difference in the profit of this animal, according to the breed from which ſhe comes.

They have large cows in all thoſe counties where they breed the large oxen; but the ſize is not all the huſbandman is to conſider: the quantity of milk is not always proportioned to the bigneſs of the beaſt; and that is to be his chief regard.

The Welch and Scotch cows will do upon the pooreſt paſtures. They will ſuit ſome who cannot riſe to the price of the better kinds; and they will yield a very good quantity of milk, if rightly managed; but the fine kinds are the Dutch and Alderney cows, theſe are very like one another in ſhape, and in their goodneſs, but the Alderney cow is preferable, becauſe ſhe is hardier.

The fine Dutch breed have long legs, ſhort horns, and a full body. They are to be had in Kent and Suſſex, and ſome other places where they are ſtill carefully kept up without mixture in colour, and where they will yield two gallons at a milking: but in order to this they require great attendance, and the beſt of food.

The Alderney Cow is like the Dutch in the ſhortneſs of her horns, but ſhe is ſomewhat ſtronger built, and is not quite ſo tender. She requires rich feeding; but is not liable to ſo many accidents as the other, and is equal to her in the quantity and natural goodneſs of her milk.

Of which ever kind the huſbandman determines to have his cows, let him take the following rules for his direction in their choice. Let them have the forehead broad and open; the eyes large and full, and, excepting only the Dutch and Alderney breeds, which are naturally ſhort horned, let the horns be large, clean, and fair.

They have in ſome part of Buckinghamſhire alſo, a kind that have no horns, they call theſe the polled breed. They are to be choſen principally by the breadth of their forehead; for their eyes are leſs full by nature, than thoſe of many of the other kinds.

Of what breed your cow be, let her neck be long and thin; her belly deep and large. Let her thighs be thick, her legs round and well-ſhaped, and her feet large. Above all things ſee that ſhe have a large, good, white, and clean looking udder, with four full-grown teats.

Of whatever breed the cows be, let the bull be of the ſame. And let them generally be of as large a kind as the paſtures will ſupport in health and ſtrength. But it is better to have a cow of a ſmaller kind well fed; than one of the beſt breed in the world ſtarved.

It is a general obſervation among the farmers, that the red cow gives the beſt milk, and the black cow is beſt for her calf, which is uſually fairer and healthier than that of the red. But this is not founded on fact, it is rather fancy. The red cow's milk has been long famous; and a calf of a black cow is accounted good to a proverb; but the breed is the thing of conſequence, not the colour.

The cow that gives milk longeſt is the moſt profitable to the huſbandman; and from what we have obſerved, this is moſtly the caſe with thoſe which are neither very young, nor advanced into years.

The beſt time for them to calve is in the beginning of April, this is moſt favourable both for the calf and for the dairy. *See Heifer, Martin, Gaſt-*

The huſbandman ſhould take care to know rightly the time of his cow's being to calve; and three weeks before that, he is to feed her better than uſual. She ſhould be put into a rich paſture, if the ſeaſon be ſo advanced that there is a good growth of graſs any where: if not, ſhe muſt be fed well with good hay. And this will be returned many fold

fold in the profits of her milk, which will riſe in proportion to the care that is taken to feed her well juſt at this time.

When ſhe has calv'd let her be kept that day and night in the houſe, and let the water be a little warmed that ſhe drinks. She is to be turned out the next day, in the heat of the ſun if well; but ſhe ſhould be taken in at night for two or three days following, and ſome water a little warmed ſhould be given her before ſhe is turned out in the morning.

In hard weather in the winter, cows that give a good deal of milk, ſhould be fed in proportion; and that ſhould be fine hay every morning and evening, when the ground is covered with ſnow; and at other times once a day, as there may be found occaſion.

When a cow does not yield milk enough at theſe ſeaſons, to pay the price of a good feeding with hay, let the fodder be hay and ſtraw mixed; or if ſtill worſe, let it be ſtraw alone. But then it muſt be oat ſtraw, for barley ſtraw has a particular effect in drying up a cow's milk; and if given to her in this condition, becauſe the quantity ſhe yielded would not pay for better fodder, the conſequence would be that ſhe would yield none after a very few days feeding.

When the farmer has a ſcarcity of hay, or the price is very high, let him give the cows which he deſires to keep in milk, malt duſt, ſcalded with boiling water. The malt duſt ſwells up vaſtly with the water; and when it has ſtood to be almoſt cold, it is to be given the cow in the manner of a maſh.

If the cow have this at times, ſhe may be fed with any kind of ſtraw; for this breeds milk ſo well, that the other food will not be able to dry it up, while the creature has the advantage of its aſſiſtance at the ſame time.

About London they feed their cows very much with grains. This is a diet that cauſes them to yield much milk; but it gives it an ill taſte; and is unhealthful for the cow, ſubjecting her to many diſorders. The malt duſt is as cheap, and anſwers the ſame purpoſe in a much ſmaller quantity, and without the danger of illneſs, or hurting the milk. It may be bought at threepence a buſhel, and it ſwells ſo much in the wetting, that this quantity will very well laſt a cow a week.

In February, when the paſturage is eaten bare, the cows are to be taken up into the cow-houſe, and fed with dry meat, according to their quantity of milk; thoſe which yield the moſt being the beſt fed to keep them to it; and the others in proportion.

Milch cows ſhould not be blooded unleſs there be preſſing occaſions, and in that caſe the quantity ſhould be moderate, never more than about ſixteen ounces.

The difference there is between one cow and another, in the quantity of their milk, is ſo great, that there can no exact rule be laid down for their management in times when feeding comes dear; the beſt that can be ſaid is, that in proportion to the profit the creature brings, ſhould be allowed an expence in feeding: for a cow may be kept alive, in health, nay and in tolerable fleſh, for much leſs than ſhe can be fed for the continuing to yield her quantity of milk.

The demand there is for the milk and the cow, and the profit that may be at any time made by ſelling both, is to be conſidered; for the ſame thing is worth much more in one place, and at one time, than another, in proportion to theſe accidents.

In the neighbourhood of London there is ſo conſtant and certain a demand for every thing, that the cow-keeper, partly with his early and late rank graſs, partly with hay, and partly with turnips and grains, feeds his cows in ſuch a manner, that they are at the ſame time in their higheſt perfection for milk, and at any time fit for the butcher. But this is not to be done elſewhere.

The difference between the milk of theſe cows, however, and thoſe fed in the country, is very great, and all the advantage is on the country fed cow's ſide. The grains make the milk poor, tho' they yield a large quantity.

The price of grazing ground about London is very great indeed, but this is very well anſwered in the preſent article, by the price at which the milk is ſold. This poor milk being ſold at three-pence the quart, very bad meaſure, while in the country, but half a day's journey from London, 'tis a penny the Wincheſter quart; and in

some places the milk quart is full three wine pints, while the London quart of milk is less than a wine quart.

A cow in a good farming country, where provisions are at a middling price, is supposed, while in milk, to be worth five pounds a year. This is reckoning her to yield about four hundred gallons in that time, which, with proper management, is a very decent computation.

If the whole quantity of milk yielded by a middling cow be made into butter, the quantity will be about two hundred weight a year; and there will be a value beside in the skim'd milk cheese, and in the whey, which last serves for the feeding of hogs. From this, which is counting at a moderate rate, we may see the importance of this creature to the farmer, especially if he take care to keep her in tolerable flesh all the time, so that upon a short notice for fattening, she may be ready for the butcher.

There is another use to which the milch cow is put in some places, and which should be here brought to account, that is, the suckling of calves. A good cow will suckle four calves besides her own, and grains will then be a considerable article in her food, for a great part of the year. In this way of feeding, though the milk be poor, there is always a great deal of it; and then, though bad for the uses of the dairy, it is very fit for the breeding up of calves.

COW-LEASE. Pasture for cows.

COWHERD. A person who takes care of cows.

COW-PARSLEY. The name of a plant common in pasture grounds, and of which cows are said to be very fond. This plant should be rooted out of all pastures, for it is one of the most early plants in shooting, so that by the beginning of April its leaves are near two feet high. The seeds of this plant spread greatly over the ground, and as the roots are perennial, so they are often very troublesome weeds to destroy.

COW-PARSNIP, *wild parsnip*, *meadow parsnip*, or *madrep*. The name of a weed that grows to near three feet high. The stalk is round, furrowed, and hollow. The leaves proceed from a large membrane or sheath. They grow on long hairy stalks, and are divided and downy. The flowers grow in large umbels, are white, and consist of five irregular petals: two oval, streaked, compressed seeds, surrounded by a wing, succeed each flower.

COW-WHEAT, by some called *fox-tail*, is a pernicious weed in many countries. Its seed is something like wheat, and, according to Clusius, spoils the meal, with which it is ground, by giving it a dark colour, and a bitter taste: though Mr. Ray says he could never perceive any disagreeable relish in the bread with which it was mixed. Mr. Miller says it is a delicious food for cattle, particularly for fattening of oxen and cows, and that it may be worth while to cultivate it for that purpose.

Its seeds seldom grow the first year, unless they chance to be sown, or sow themselves, in the autumn, soon after they are ripe.

COW-SLIP, [*Paralysis.*] A species of primrose, which grows naturally in meadows and moist pastures; the flowers of which grow in bunches on the top of the foot-stalk; the flowers are much used in medicine, and sometimes the leaves. As these grow wild, their roots may be taken up, and transplanted into gardens.

The best time to transplant them is at Michaelmas, that their roots may have strength to produce their flowers early in the spring. These delight in a strong rich soil, but will grow in almost any sort of earth, provided they have a shady situation.

Jerusalem COWSLIP. A species of Lungwort.

COWS LUNGWORT. Mullein.

CRAB, [*Malus Sylvestris.*] This is by botanists supposed to be the original kind, and from the seed was first obtained the cultivated apple, whose varieties are now so numerous. There are two or three varieties of the crab, as the white, the purple, and the crab with variegated leaves.

The wood of the crab is hard and serviceable, and of the fruit is made verjuice. They are propagated by sowing the seeds.

CRADLE, A part often added to a scythe, the better to gather the corn, when low, into swarths, when it is mowed.

CRAGGE, A name given in Suffolk to the remains of marine shells, of various kinds, and in which the greater part of the British cliffs abound.

This

This is a very excellent manure for cold, wet, or clay land; so that every farmer would do well to search his grounds, in order to know whether he is, or is not, poſſeſſed of this treaſure, which will inſure him very large crops of corn, though his lands were before worn out by continual labour.

CRAKE, A provincial name for the crow.

CRAKE-NEEDLE. The Shepherd's needle.

CRAMP. Cramps and convulſions are of one nature in horſes as well as other animals, and are forcible contraction of the ſinews, veins, and muſcles, in any member or part of the body; which proceeds ſeveral ways, either from ſome wound, or ſinew cut aſunder, or for want of blood, or elſe by over-heats, and ſudden coolings afterwards; or laſtly, by overmuch purging the beaſt: the ſigns to know which are, that the infected part will be ſo ſtiff, that the whole ſtrength of a man is not able to bend it, he will be lame and well as it were in a moment: There is alſo another kind of them, that ſeizes upon a horſe's neck, and the reins of his back, and almoſt univerſally over his whole body, which proceed either from ſome great cold that may be catched, or from the loſs of blood, whereby a great windineſs enters into the veins, and ſo benumbs the ſinews. This is alſo known by his head and neck ſtanding awry, his ears upright, and his eyes hollow, his mouth dry and clung, and his back will riſe like a camel; which muſt be cured, by giving him ſomething to make him ſweat, and by loading him with warm woollen-cloths.

Take oil of peter, oil of amber, and oil of Exeter, each equal parts, mix and bathe the parts affected, twice or thrice a day.

In ſheep, the cramp is cured by boiling ſome cinquefoil, or five-leaved graſs, in wine, and giving him to drink warm; but he muſt be kept warm, and his legs chafed with oil and vinegar.

CRANE's BILL. See GERANIUM.

CRAP, a name given in ſome parts to darnel; in others to buck-weed.

CRATCH, or *Critch*. A rack.

CREAM, the unctuous or oily part of milk. See BUTTER.

CREAM *of Tartar*. A gentle aperient, well known in the ſhops of the druggiſt and apothecary.

CRESS, [*Naſturtium*.] The common garden creſs, pretty generally cultivated as a ſallad herb, is moſt eſteemed in the winter and ſpring, becauſe it is one of the warm kind. It is propagated by its ſeeds only. If raiſed in the winter ſeaſon, it muſt be ſown upon a gentle hot-bed, and covered ſo as to defend it from great rains or froſt, both of which are equally deſtructive to it in that ſeaſon. If it be not raiſed till the ſpring, it may then be ſown in warm borders, well fenced from all nipping winds; but if it is to be continued in the ſummer, it muſt be ſown upon ſhady borders; and this ſowing ſhould be repeated every third day, or it will ſoon be too large for uſe, as it grows very faſt at that time of the year.

A curled ſort of this plant is propagated in ſome gardens, more for curioſity, and to garniſh diſhes, than for any real uſe; for the common ſort is full as good. This curled creſs ſhould not be ſown quite ſo thick as the other, and when its plants are come up, they ſhould be thinned, ſo as to leave the remaining ones at leaſt half an inch aſunder, that they may have room to expand their leaves. To preſerve this curled variety unmixed, all ſuch plants of it as ſeem to have a tendency to degenerate muſt be pulled up as ſoon as they are noticed.

The beſt method of ſowing both theſe ſorts of creſſes is in drills, becauſe it will then be eaſieſt to cut them as they may be wanted. Their ſeeds, which are very ſmall, ſhould be but barely covered with earth; and to ſave theſe ſeeds when they are ripe, the plants ſhould be drawn up, ſpread upon a cloth, and dried in the ſun for two or three days. They may then be eaſily beaten out; and they ſhould be kept in a dry place.

Indian CRESS, [*Tropæolum*.] There are two kinds of Indian creſs; the leſs or common, and the greater. The firſt ſort is leſs common at preſent in Engliſh gardens than the ſecond, tho' it was formerly more ſo; the flowers of the latter being larger make a finer appearance, for which it is preferred; they are both eſteemed annual plants, though they may be continued through the winter if they are kept in pots, and ſheltered in a good green-houſe, in

like manner as that with double flowers is preserved, ſo may be propagated by cuttings as that is; but, as theſe ripen their ſeeds conſtantly every year, the plants are generally raiſed from them; theſe may be ſown in April in the places where they are to remain, which ſhould be where their ſtalks may have ſupport, for they will climb ſix or eight feet high, when they are trained up, and then their flowers will make a good appearance; but when they trail upon the ground, they will ſpread over the neighbouring plants, and become unſightly.

The flowers of theſe plants are frequently eaten in ſallads; they have a warm taſte like the garden creſs, and are eſteemed very wholeſome; they are likewiſe uſed for garniſhing diſhes. The ſeeds are pickled, and by ſome are preferred to moſt kinds of pickles for ſauce.

Sciatica CRESS. Candy tuft.

Swine's CRESS. Scurvy graſs.

Water CRESS, or *Winter* CRESS, [*Naſturtium aquaticum, Siſymbrium.*] This plant has of late been generally uſed as a ſallad herb in the ſpring of the year, & is by many preferred to all other ſorts of ſallads for its agreeable warm bitter taſte, and being accounted an excellent remedy for the ſcurvy, and to cleanſe the blood, as alſo a good diuretic, it has greatly obtained a preference to moſt other herbs for winter and ſpring uſe with many people. This is generally gathered in ditches, and in other ſtanding waters near London, to ſupply the markets; but whoever has a mind to cultivate it may eaſily do it, by taking ſome of the plants from the places of their natural growth early in the ſpring, being careful to preſerve their roots as entire as poſſible, and plant them into mud, and then let the water in upon them by degrees. When they have taken root they will ſoon flouriſh, and ſpread over a large compaſs of water; they ſhould not be cut the firſt ſeaſon, but ſuffered to run to ſeed, which will fall into the water, and furniſh a ſufficient ſupply of plants afterwards.

But where the water is ſo deep, that it will not be eaſy to plant them, the beſt method will be to get a quantity of the plants juſt as their ſeeds are ripening, and throw them on the ſurface of the water where they are deſigned to grow, and their ſeeds will ripen, and fall to the bottom, where they will take root, and produce a ſupply of theſe plants.

As to the virtues of water creſſes, they are among the milder aperient antiſcorbutics: Hoffman has a mighty opinion of this plant, and recommends it as of ſingular efficacy for accelerating the circulation, ſtrengthening the viſcera, opening obſtructions of the glands, promoting the fluid ſecretions, and purifying the blood and humours: for theſe purpoſes, the expreſſed juice, which contains the peculiar taſte and pungency of the herb, may be taken in doſes of an ounce or two, and continued for a conſiderable time.

CREEPER, The name of an apple.

CRENATED, A term applied by botaniſts to ſuch leaves as are jagged or notched.

CRESSAN, The name of a pear.

CREST-FALLEN, applied to a horſe, is, when that part on which his mane grows, hangs to one ſide or the other.

CRIB-BITING, A vice to which ſome horſes are ſubject; conſiſting in their catching hold of the manger, ſucking in of the air, and ſwallowing it down in gulps, till they are often ſo full that they are ready to burſt. Some do it only on their collar reins, and ſome on every poſt and gate they come at.

This vice is more common in London than any where elſe, and may either come upon horſes from very low feeding, while they are young and have appetites, or perhaps by ſtanding much at the crib while they are ſhedding their teeth; for then their mouths are hot, and their gums tender and itching, which may readily make them ſuck in the air to cool their mouths: but young horſes are the more apt to imbibe this ill habit, when they ſtand next thoſe that do it; for young horſes often follow others. Horſes addicted to this vice are but of ſmall value; they drop a great part of their food unchewed, which makes them almoſt always look lean and jaded, with a ſtaring coat, and conſequently few of them are able to endure much labour either in harneſs or with the ſaddle; beſides their being frequently ſubject to the gripes, and other diſorders, owing to their continual ſucking in the air.

There

There is no method yet known, that has proved effectual in the cure of this vice.

CRIBBLE. Coarſe meal, or that but one degree better than bran.

CRICK *in the Neck*. Take oil of peter, oil of amber, and oil of Exeter; mix for an embrocation, and bathe the parts twice or thrice a day.

CRIMSON GRASS VETCH, [*Lathyrus.*] See SWEET PEA.

CROCUS. Saffron. The ſpecies are, Autumnal Crocus, and Spring Crocus, with their varieties of yellow, blue, purple, white, &c.

The common ſaffron of the ſhops is a variety of the Autumnal Crocus, with a ſmall round bulbous root compreſſed at the bottom. From the root iſſue many long narrow deep green leaves, and amidſt them the flowers, of a bluiſh purple, which commonly appear before the leaves, and, when the flowers decay, continue their growth, remain all winter, and decay in May following, which is the time to remove the roots, which ſhould be done every two or three years. The ſaffron is the ſtigma of a fine reddiſh golden colour, growing out of the middle of the flower, three in number. There are ſeveral other varieties beſides the officinal, known by the colour, as whitiſh, blue, ſky blue, purple, white, and yellow.

Of the Vernal or Spring Crocus, are ſeveral varieties of white, blue, and yellow colours, all which flower in February, March, and April; they are all very ornamental ſpring flowers, and valuable for their early appearance, when very few other flowers are to be ſeen, and are ſo hardy, that they will grow almoſt any where, and rear their flowery heads even when chilling colds prevail, and, where duly diſpoſed along the fronts of borders or clumps, make a fine ſhew for a month or ſix weeks; and they encreaſe abundantly by off-ſets of their roots, as well as furniſh ſeed for raiſing new varieties.

CROFT, a ſmall cloſe or encloſure.

CRONE, an old ewe.

CROP, the produce, or quantity of corn, graſs, &c. growing on any parcel of land.

CROSS-WORT, [*Cruciata.*] A plant growing wild in many parts of England, ſeldom admitted into gardens.

Jeruſalem CROSS-WORT, a ſpecies of campion.

CROSS-TINING, a method of harrowing land, conſiſting in drawing the harrow up the interval it went down before, and down that which it was drawn up.

CROTCH, A hook.

CROUP, The rump of a fowl; the buttock of a horſe.

CROW, An iron bar, with a claw and a point to act as a lever.

CROW, The name of a well-known bird. It has long been a matter of doubt, whether rooks or even crows do more harm than good. We are of opinion that they do infinitely more good than harm, by deſtroying the numbers of ſlugs, grubs, and beetles they do in the ground.

CROWING, The noiſe or voice of a cock.

CROW-FOOT, The name of a perennial weed common in paſtures, a ſpecies of the ranunculus.

CROWLING, A dyſentery or flux.

CROWN IMPERIAL, *Fritillaria imperialis.*] The varieties are, 1. Brown Imperial, with duſky red flowers; 2. with bright red flowers; 3. late red flowering; 4. double red flowers; 5. golden yellow flowers; 6. pale yellow flowers; 7. yellow ſtriped ditto; 8. double yellow flowers; 9. doubly crowned, or crown upon crown, having two tier of flowers; 10. triple crowned, having three tier of flowers; 11. with gold ſtriped leaves; 12. with ſilver ſtriped leaves.

They are all hardy, bulbous-rooted perennials, the roots of great duration, and the flower ſtalks annually renewed in the ſpring. The bulbs ſhould be removed every ſecond or third year, and the offſets taken from them by which they may be propagated. They are alſo propagated by ſeed in the ſame manner as tulips, but it requires ſo much time (ſix or ſeven years) before they come to flower, that few will take that pains.

CROWN-SCAB, A diſeaſe in horſes, conſiſting in an humour, that breaks out round the coronet; of a very ſharp and itching nature, and attended with a ſcurfineſs. Sharp waters prepared with vitriol are generally uſed for the cure of this diſorder: but the ſafeſt way is firſt to mix equal parts of

of marſhmallow ointment and yellow baſilicon together, ſpreading the compoſition on tow, and laying it all round the coronet. A doſe or two of phyſic may be very proper, to carry off the humour.

CRUPPER, That part of a horſe's furniture which goes from the ſaddle to the tail.

CUBEBS, [*Cubebæ.*] A fruit brought from the Eaſt-Indies. This fruit has a great affinity with pepper. The principal difference, diſtinguiſhable by the eye, is, that each cubeb is furniſhed with a long ſlender ſtalk (whence they are called by ſome *piper caudatum.*) In aromatic warmth and pungency, cubebs are far inferior to pepper.

CUCKOW-FLOWER, [*Cardamine.*] Ladies ſmock.

CUCKOW-PINT. See ARUM.

CUCKOW's MEAT. Wood ſorrel.

CUCKOW LAMB, A late lamb, yeaned after the cuckow appears.

CUCKOW-SPIT, A kind of frothy ſubſtance frequently found on plants, containing one or two inſects.

M. Poupart tells us, that as ſoon as the little creature comes out of its egg, it haſtens to ſome plant, which it touches with its fundament, and faſtens there a drop of white liquor full of air; it drops a ſecond near the firſt, then a third, and ſo on, till it covers itſelf all over with a ſcum or froth: this froth defends it from the heat of the ſun, and alſo from the attacks of the ſpiders, which would otherwiſe devour it. Mr. Liſle is of opinion, that this froth is nothing more than the nightly dew which falls upon the fork or joint of the plant, and which the little inſect, with its proboſcis, as with a pair of bellows, works into froth.

CUCUMBERS, [*Cucumis.*] The varieties are, 1, the common rough green prickly; 2, ſhort green prickly; 3, long green prickly; 4, early green cluſters; 5, long ſmooth green Turkey; 6, long ſmooth white Turkey; 7, large ſmooth green Roman; 8, long white prickly Dutch.

The firſt four ſorts are the moſt to be depended on both for the early and main crops. The flowers of all are monoecious, *i. e.* male and female apart on the ſame plant.

Some time between Chriſtmas and Candlemas is the moſt common ſeaſon to begin the culture of early cucumbers in frames.

In the culture of early cucumbers, it is proper, where there are good accommodation of frames and hot dung, to forward the firſt crop in three different hot-beds; a ſmall one for a one-light frame, in which to ſow the ſeed, and raiſe the plants a few days old; a ſecond, of larger dimenſions, for a large one-light, or a two-light frame, by way of nurſery-bed, in which to prick the plants from the ſeed-bed into pots, to remain three weeks or a month, till their two firſt rough leaves are two or three inches broad, and when the plants have formed one joint; then to be tranſplanted with the balls of earth about their roots into a third and final hot-bed, to remain to fruit; the planting in this laſt bed gardeners call ridging out; however, if the ſeed-bed is made ſubſtantial for a large one-light, or a moderate two-light frame, it is very poſſible, by aid of occaſional linings, both to raiſe the plants, prick them down, and continue them in the ſame bed till large enough for the fruiting hot-bed.

Proceed therefore to prepare the ſeed hot-bed according to the above rules, procuring for this purpoſe hot dung, in a ſufficient quantity, of a good quality, and preparation, which being ready, then, with four ſtakes, ſet out on the ground the proper dimenſions of the bed, according to that of the frame, allowing for the bed to be rather two or three inches wider on every ſide: begin the bed by laying ſome of the longeſt dung in the bottom, afterwards take it as it comes to hand, mixing the ſhort and long well together, and ſpread it regularly on the bed, beating it firmly down with the fork as you go on, till raiſed to the proper height; obſerving, if you intend it only juſt to raiſe the plants, two feet and a half is high enough; but if deſigned both to raiſe and forward the plants large enough for the fruiting-bed, it is proper to make it three feet ſix inches high at leaſt; or, if the dung conſiſts of very long litter, four feet high in dung is not too much, ſince it will ſettle almoſt a foot in a week's time.

As ſoon as the bed is made, ſet on the frame and glaſs, keeping it cloſe a day or two to draw up the heat; then

tilt the light behind, for the ſteam to paſs off.

In ſix, eight, or ten days, according to the ſubſtance of the bed, the vehement heat will begin to abate, when you earth the bed with the prepared mould, before-mentioned, five or ſix inches thick; and next, or the ſame day, as ſoon as the earth is warm, ſow the ſeed, drilling it near half an inch deep.

But if you are in haſte to forward your plants as much as poſſible, or that you would uſe only one hot-bed both for the ſeed and nurſery-bed, let the bed be made ſubſtantial, as before obſerved, for the largeſt one-light, or for a two-light frame, according to the quantity of plants required; ſo that by ſowing the ſeed in ſmall pots (thirty-two's) you may uſe the bed the ſame, or next day after it is made, as ſoon as it begins to heat, covering it all over with any ſort of dry earth, or with old tan five or ſix inches thick, filling ſome pots with rich mould, and plunge them a little in the earth, &c. and next day the earth in them being warm, ſow fifteen or twenty ſeeds in each; but obſerving, if there is danger of burning, draw up the pots more or leſs in proportion, as you ſee it neceſſary, to prevent the earth, &c. from being burned; and in about a week the plants will be up and fit to prick in pots, by which time the bed will be arrived at a moderate heat.

The ſeed however being ſowed in either method, do not omit tilting the light behind an inch or two occaſionally, to paſs off the ſteam, and cover it on nights with a mat.

Thus the plants will come up in three or four days, obſerving now to admit freſh air daily, by raiſing the lights an inch or two behind, alſo occaſionally on nights, according to the rules hereafter directed, & cover every night with mats: when their cotyledons, or ſeed-leaves, are fully out of the earth, and begin to expand about half an inch in breadth, it is proper to prick them in pots (forty-eights) previouſly filled with rich earth within an inch of their rims, and placed in the frame a day before to warm, either in the ſame bed, made ſubſtantial at firſt for that purpoſe, otherwiſe in a new hot-bed, as you ſhall judge neceſſary, prepared a week before, and earthed, or covered with old tan ſix inches deep, for the reception of the pots: in either of theſe beds, when the earth of the pots is warm, proceed to prick the plants therein, raiſing them carefully out of the ſeed-bed, &c. with the fibres of their roots entire; then forming a hollow in the middle of the earth in the pots, place three or four plants horizontally at equal diſtances in each pot, covering over their ſhanks almoſt to their ſeed-leaves, ſhaking the pot gently to ſettle the earth cloſe; if the earth is dry give a very light watering with ſuch that has ſtood a few hours in the bed in bottles, to take off the chill; then directly plunge the pots to their rims in the earth of the bed, being careful that every part of the dung within the frame is covered with earth, &c. to reſtrain the ſteam from riſing immediately from the dung upon the plants; for the rank dung ſteam, when not meliorated by firſt paſſing through the earth, would prove their deſtruction.

In two or three days, at moſt, they will have taken freſh root, and begin to advance in growth, though that is often effected by theſe plants in leſs than four and twenty hours, when pricked out at the above age; nor will they then require ſhading from the ſun till rooted, as is often the caſe with larger plants.

The plants being thus potted out, continue every day to tilt the lights, to paſs off the ſteam, and to admit a moderate portion of freſh air, and every night cover the glaſſes with a mat or two; give alſo occaſional light waterings, and as the plants riſe in height, mould up their ſhanks by degrees; likewiſe ſupport a due degree of heat in the bed, and in about a month the plants will be arrived at a proper ſize for ridging out.

As in the early culture of cucumbers, the plants being tender, are liable to ſuffer by many accidents; it is therefore eligible to continue ſowing a little ſeed in the ſame bed every week, and prick ſome in pots, as before directed, that, if the preceding plants ſhould fail, theſe may ſtand, and will be a ready ſubſtitute; or, if the whole ſhould ſtand, theſe will do for latter crops, and you will have ſome to oblige a friend.

But as to the particular culture of

theſe plants, after being potted in this their nurſery hot-bed, the following are the principal directions.

During the violent heat and ſteam of the bed, care is neceſſary to tilt the upper end of the lights, not only every day, but alſo occaſionally on nights, raiſing them an inch or two, or a little more or leſs, in proportion to the temperature of the bed and weather, that the ſteam may freely evaporate, as well as for the admiſſion of freſh air, to ſtrengthen the plants, which would otherwiſe draw up weak and yellow-coloured; but tilt the glaſſes, however, leſs in proportion on nights than the day, obſerving, in all cold piercing weather, to ſcreen the opening or tilted part of the lights occaſionally, by hanging a mat looſely from the top of the glaſſes, which will break the keen edge of the air and winds from ruſhing immediately upon the tender plants; likewiſe obſerve, that if the firſt great heat is ſo violent as to endanger burning the earth in the pots, the roots, or fibres of the plants, which you ought to examine daily, the remedy is, to raiſe up the pots a few inches, or as high from the dung as ſhall appear expedient for the preſervation of the plants; and when the vehemence of the heat ſubſides, they may be plunged again to their rims; obſerving alſo, when the heat is moderate, to raiſe the glaſs for admiſſion of air, &c. only occaſionally in the day time, from about nine or ten in the morning in winter and early ſpring months, till two, three, or four in the evening, according to the heat of the bed, and as the weather is more or leſs mild and ſunny, always ſhutting down the glaſſes cloſe before ſun-ſet; cover the lights with mats every evening about four or five o'clock, or a little ſooner or later, according to the earlineſs, or advanced period of the ſeaſon and temperature of your bed, &c. uncover each morning about eight, or a little ſooner or later, according to the above rule, obſerving, that during the firſt greateſt heat of the bed, a ſingle mat thick is ſufficient covering; but as the heat decreaſes, augment it to two or three, but never let the ends of the mats hang down conſiderably over the ſides of the frame and bed, which would draw up a violent ſteam, and promote burning, and, at any rate, would ſtifle the plants, draw them up weak, and occaſion them to aſſume a yellow hue.

Water in moderate ſprinklings may be neceſſary once in three, four, five, or ſix days, as you ſhall ſee occaſion, by the mould drying in the pots, and according to the heat of the bed, and as the weather is more or leſs ſunny; obſerving, that ſunny days are to be preferred for the application of this element, and during the winter and early ſpring months, from about eleven to one or two o'clock is the proper time of day to perform the work; the water for which purpoſe ſhould be ſoft, i. e. either pond, river, or rain water, and ſhould either be previouſly placed in bottles within the frame of the hot-bed a few hours, juſt to take the chill off, or prepared to a proper temperature, by warming a little over a fire to mix with the reſt, but by no means let it be warmer than juſt to take off the chill.

According as the ſhanks of the young plants riſe in height, add a ſmall portion of fine dry earth round them, repeating it occaſionally till the vacant ſpace in the top of the pot is filled, being careful to have ſome fine rich earth in the frame to warm for this uſe, adding it by degrees, and the plants will emit roots all the way along their ſhanks, as far as they are thus landed up, which will prove of no inconſiderable advantage to their growth.

In regard to the heat of the bed, it muſt all along be preſerved in a due temperature by proper linings round its ſides. But, in the firſt place, that in a week after the bed is made, when the vehement heat abates, it is proper to lay ſome dry ſtraw, waſte hay, or dry fern, around the ſides, near a foot wide, and as high as the bed, and a little way up the frame, which will prevent driving wet, and piercing cold winds from penetrating, to chill and occaſion a ſudden decay of its heat.

But when the heat begins naturally to decline, which in a ſmall bed often happens in about a fortnight, or three weeks, after it is made, then the ſtraw, &c. muſt be removed from the back and front of the bed, ſubſtituting in its ſtead a lining of well-prepared hot dung, working it about eighteen inches wide at bottom, ſloping it gradually upward,

upwards, and raiſe it three or four inches higher than the dung of the bed, to allow for ſettling, covering the top with two inches depth of earth cloſe up to the ſides of the frame, to keep down the ſteam, which might enter the frame, when the glaſs is opened to give air, and injure the plants; for all rank ſteam, coming directly from the dung upon theſe plants, will ſcald and deſtroy all the leaves it encounters in its direction: this dung lining will revive the declining heat of the bed, and continue your plants in a healthful growing ſtate. In ten or twelve days after, you may line the other ſides of the bed, if it ſhall ſeem neceſſary, otherwiſe defer it longer; and if the ſeaſon ſhould prove very wet or ſnowy, lay ſome dry litter around the frame, upon the top of the lining, to ſhoot off the water.

In the courſe of lining the bed, have a watchful eye againſt burning or ſteaming your plants, as a freſh dung lining often promotes a new violent heat and ſteam; you muſt therefore obſerve the precautions above hinted, of raiſing up the pots of plants, if neceſſary, and tilting the light in proportion.

As the plants, when firſt potted out, conſiſted only of the two ſeed leaves, or cotyledons, they, in a week after, will begin to puſh from their centre the firſt proper or rough leaf, and in a few days after that, the ſecond rough leaf will advance, encloſing in its boſom other younger leaves, and the end of the firſt advancing ſhoot or runner, which in a few days ſhould be ſtopped, to ſtrengthen the plants, and promote lateral fruitful ſhoots.

The operation of ſtopping ſhould be performed when the ſecond of the rough leaves has expanded the breadth of a ſhilling; it is a ſort of pruning performed by taking off the end of the firſt runner, ariſing, as above hinted, in the boſom of the ſecond leaf; is requiſite both to ſtrengthen the plants, and to promote their putting forth lateral ſhoots or runners, to fill the bed with proper bearing vine; for the lateral ſhoots are the only bearers to be depended on: let therefore the end of the advancing runner be carefully taken off almoſt cloſe to the baſe of the ſecond leaf, but never ſuffer more than the third rough leaf to advance before this is done, and, if performed when the end of the ſhoot is not bigger than a large pin's head, the better; and by this early ſtopping the plants at the firſt or ſecond joint, they will grow robuſt, and ſoon prepare to ſend forth fruitful runners, ſhewing fruit probably at the firſt or ſecond joint; but if the firſt ſhoot was not ſtopped as above, it would ſometimes advance two or three feet in length, without either ſending forth ſide runners, or ſhewing fruit; for the fruit are always principally to be expected from the lateral runners.

When the plants have two or three rough leaves near three inches broad, and the operation of ſtopping at the firſt joint has been performed, as above directed, they will be in excellent order for ridging out, as they will be juſt preparing to emit runners.

Provide therefore, in due time, dung for making the fruiting hot-bed, the quantity proportioned to the number of lights which you intend to work, allowing, if early, a cart load, or twelve or fifteen barrows full to each light; on this occaſion your care is requiſite to have it of proper quality, as before obſerved, by mixing it well together in an heap; but in your proceedings you muſt with forecaſt obſerve to make the neceſſary allowance for the time of the dung's working, and the bed coming to a proper heat, that the plants, when ready, may not wait for the bed; this premiſed, and the dung being prepared, ſtake out the bed frontways to the ſouth, the width and length in proportion to the dimenſions of the frames, and number of lights to be employed, making an allowance for the bed to be ſix inches wider than the frames; and, when more than one range of hot-beds are intended, one before another, allow a ſpace of five or ſix feet between bed and bed, for lining, &c. the dimenſions being thus ſtaked out, wheel in the dung, and proceed to make the bed, firſt ſhaking ſome of the moſt ſtrawey dung along the bottom, and then mixing long and ſhort regularly together, carry on the bed evenly, building the ſides ſtraight and upright, the middle perfectly full, and form every part equally cloſe and firm, by beating it evenly down with the

the fork from time to time as you advance, not treading it, unleſs the dung is very long and ſtrawy indeed, raiſing the whole three feet ſix inches high, at leaſt, if early in the year; otherwiſe a yard in height will be ſufficient, eſpecially if any conſiderable range for two, three, or more frames; but if for a three-light frame only, and made any time before April, make it the full height of three feet and a half, before mentioned, as it will ſettle near a foot in leſs than a fortnight; obſerving, that of whatever ſubſtance the bed, always raiſe it rather higheſt behind, finiſhing the work by ſhovelling up all the ſhort dung remaining round the bed at laſt, and lay it at top in a ridge along the middle, which, after the bed ſettles, may be levelled as you ſee occaſion; for it will be a week, ten days, or a fortnight, according to its ſubſtance, before its heat is moderate enough for the plants.

But as ſoon as the bed is made, we adviſe to ſet on the frame and glaſſes, being neceſſary both to defend the bed from great rains, and to forward it ſooner to a proper degree of heat for the reception of the plants; obſerving when the heat riſes, to prop up the lights, to give free vent to the ſteam, at the ſame time thruſting a long ſtick or two into the bed, that by pulling them out daily, and feeling the lower part, you can readily judge of the working of the bed, from its firſt heat, till it gradually encreaſes to its greateſt height of vehemence, and thence till it becomes of a temperate degree, which, in a middling bed, is ſometimes effected in a week or ten days, but when of a more conſiderable range, for two, three, or more frames, it is often near a fortnight, and ſometimes more, before the heat becomes temperate enough to receive the mould and plants, which muſt not be truſted in the bed while the heat is violent, i. e. ſo hot that you cannot readily bear your finger in it any conſiderable time; for it would both burn the earth and roots of the plants, and, if it even only burns the mould, the plants can never thrive; do not, however, ſuffer the heat to become too moderate before you put in the plants, for it is neceſſary there be a briſk heat to ſet them a-going at firſt.

When the bed, therefore, is become of due temperature, prepare to mould it, previouſly obſerving, that, as the bed generally ſettles unequally, it is proper, firſt to take off the frames, and level all inequalities, and ſmooth the ſurface with the back of the ſpade, and directly ſet on the frame for good; then, the better to ſecure the earth, immediately under each hill of plants, from burning, you may, where convenient, lay a ſtratum of pliable cow dung, not too wet, on the ſurface of the bed, juſt under the centre of each light, about eighteen inches, or two feet diameter, and an inch and a half thick, plaiſtering it cloſe and ſmooth; this done, proceed to mould or earth the bed. Let the earth be rich, light, and moderately dry, as formerly mentioned, then, under the centre of each light, upon the ſtratum of cow dung, lay about three pecks, or near a buſhel of this earth, forming each parcel into a ſort of conical hillock ten or twelve inches high, at the ſame time covering the reſt of the bed, between and round the hillocks, with the ſame ſort of earth three inches thick; on each of theſe hillocks of earth you are to ſet one pot of plants, as hereafter directed, and the reſt of the bed is to be afterwards moulded up by degrees to the height of the ſummit of each hillock.

The reaſon of forming the earth in hillocks is, that if the bed ſhould diſcover any tendency to burning after the plants are ridged out, the vehemence of the heat and ſteam will more readily paſs off between the little hills, than if the bed was at once earthed all over to its proper depth; beſides, by forming it in hills, if the earth ſhould be in danger of burning, by removing ſome around near the bottom, to reduce the ſubſtance of the heaps, the ſteam will more eaſily find vent, and if the earth ſhould unavoidably burn at the baſe of the hillocks, the burnt earth can be more eaſily removed, with leſs danger of diſturbing the plants, and, at the ſame time, be replaced, with freſh mould; likewiſe, by this practice, you may venture to ridge out your plants two or three days, and in ſome beds, a week ſooner than if the bed was to be at once fully earthed; and likewiſe, by adding freſh earth by degrees round the hills, it greatly encourages the fibres of the plants.

But

But to proceed to planting—The bed being earthed, as above directed, immediately put on the glaſſes cloſe, and by next day the bed will have imparted a proper warmth to the mould for the reception of the plants; having directed them, in the nurſery bed, to be potted, three or four plants in pot, allowing one pot of plants to each of the above hillocks of earth; but previous to tranſplanting, let each pot of plants be watered a few hours before, that the earth may adhere firmly in a ball about their roots; then, to turn them out of the pots, ſpread your hand on the ſurface of the mould, paſſing the ſhanks of the planks between your fingers, and turning the pot upſide down, ſtrike the edge gently on the frame, the plants will readily come out with the whole ball of earth entire; then, making a wide hole in the middle of the hill of earth, place the plants, with the entire ball about their roots, therein, drawing the earth cloſe round, and about an inch over the top of the ball; and if the earth is moderately dry, give a little water that has the chill taken off; and, as ſoon as they are planted, ſhut down the glaſſes cloſe, to draw up the heat obſerving, if the ſun ſhine out, and it occaſions the leaves of the plants to flag, indulge them with occaſional ſhade; but, by care in tranſplanting them from the pots with the entire ball about their roots, they will ſcarce feel their removal, ſo as to ſhrink their leaves at the approach of the ſun; if they, however, flag conſiderably, ſhade them with a thin mat, from ten to two o'clock, the firſt three or four days, or till they take root ſo firmly as to ſtand the ſun without flagging.

The plants being now ridged out, great attention is neceſſary to allow them a daily and proportionable ſhare of freſh air, by tilting up the lights occaſionally; likewiſe to cover the glaſſes every night with mats; particular care is alſo requiſite, at firſt, to guard againſt their being annoyed by too much heat or ſteam, and that they do not ſuffer by cold or want of heat; occaſional waterings are alſo neceſſary in moderation; the moulding up the bed round the hillocks by degrees muſt alſo be duly attended to, ſtopping the plants once more, to procure a farther ſupply of fruitful runners, and, as the runners advance in length, train them at regular diſtances, together with the care of ſetting the early fruit; and the due temperature of the heat of the bed to be obſerved by proper linings, &c.

As to the article air; in this particular your care is not only to conſider the ſtate of the bed, but likewiſe the temperature of the weather, early or advanced period of the ſeaſon, or if the ſun ſhines, or the air be cloudy, wet, or foggy; and to proportion the admiſſion of air accordingly; obſerving, that wet or foggy air, even, though mild, is more unfavourable to the growth of theſe plants than froſt, provided it is accompanied with ſunſhine, and that you have proper heat in the bed, to maintain a warmth about the roots of the plants, and to warm the internal air of the frame almoſt equal to that of a hot houſe; and indeed, great care is neceſſary to preſerve your bed always nearly to that temperature; for the plants are rather of a more tender quality than the pine; let air, however, be admitted daily at all opportunities, when the wind is ſtill, by tilting the lights behind, from half an inch, to two or three high, as your diſcretion ſhall direct, according to the rules laid down for the nurſery-bed, making an allowance, as the ſeaſon and warm weather advances, in the time of day, of beginning to open and ſhut down the lights; and be ſtill perſuaded to occaſionally hang a mat over the tilted part of the lights in ſharp weather, 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 an early ſeaſon, it will frequently deſtroy, or greatly injure the plants; and if the lights are kept too cloſe, ſo as to confine and ſtagnate the ſteam, the danger will be equal, the plants will imbibe an infected air, and ſoon ſhew their ſickneſs by the yellowneſs of their aſpect: when there is a conſiderable heat and ſteam in the bed, air ſhould always be admitted the moſt freely, even ſometimes on nights in a ſmall degree, as obſerved of the nurſery-bed; and in ſunny weather air is to be admitted more freely than in wet, foggy, or cloudy days: in the whole obſerve, that as there are often ſeveral changes of weather in a winter's day, and

even early in ſpring, your attention muſt be given accordingly, to admit either more or leſs air, or none at all, as you ſhall judge neceſſary for the benefit of the plants; being careful, for the general part, after the great ſteam has ſubſided, to ſhut down the lights always before ſun-ſet; or if the weather changes very ſharp, foggy, or cold-driving wet, let them be ſhut down an hour or two ſooner: thus continue your attention in reſpect to the admiſſion of air, obſerving, with this care, the lights are to be continued conſtantly over the plants till almoſt Midſummer; not omitting, as the warm weather advances, to tilt them high enough in proportion; and as the heat of each day encreaſes, from morning to noon, tilt them gradually higher in proportion to the power of the ſun.

Covering the glaſſes on nights with gardening-mats, &c. muſt be conſtantly practiſed every evening about ſun-ſet, or a little ſooner in very cold cloudy weather, uncovering again in the morning about ſun-riſing, or a little before or after, according to the temperature or heat of the bed, or as the weather is more or leſs favourable; and in fine, warm, ſunny mornings, always uncover as ſoon as the ſun ſhines freely on the frames; for it is very beneficial to the growth and proſperity of the plants, to enjoy as much day-light as poſſible. As to the mode of covering, uſe only a ſingle mat thick at firſt, augmenting it to two or three occaſionally, and never ſuffer the mats to hang down much over the ſides of the frame, which would draw up a great ſteam, and ſtifle the plants too much. By theſe rules, the covering muſt be continued every night till June.

The ſtate of heat of the bed ſhould daily be examined the firſt week or fortnight after the plants are ridged out, leſt it ſhould encreaſe again ſo violent as to endanger the earth at the bottom of the hills, as well as the roots of the plants; by examining the bottom of the hills, the burning, if any, is generally diſcoverable, by its having a whitiſh mouldy appearance; this muſt be taken away with great care, before it encreaſes upwards to reach the roots of the plants, and, if poſſible, without diſturbing them in growth, immediately adding in its ſtead a due quantity of freſh earth, keeping the bottom of the hillocks in as narrow a compaſs as poſſible, till the danger of burning is paſt, which will be in a few days; but if the heat ſtill threatens danger to the plants by its violence, make wide holes in the ſides of the bed, by thruſting large ſtakes into the dung in different parts, at which holes the burning heat will evaporate in ſteam, without aſcending to the top, cloſing the holes again in two or three days with dung.

The moulding or earthing the bed between the hillocks ſhould be begun as ſoon as the heat becomes moderate; therefore, in a week, fortnight, or three weeks, as you ſhall judge the danger from burning is over, lay in ſome freſh earth, to be added gradually round each hill of plants, for their fibres will now advance conſiderably, and ſtriking into the freſh mould, it will greatly encourage them; but obſerving this precaution, that the earth for this purpoſe ſhould be previouſly laid a day or two, towards the ſides and ends of the bed within the frame, to acquire a due warmth before it is applied round the hills, which otherwiſe would chill the fibres; and let it be underſtood, that this mould is not to be laid all on at once, but at different times, till the whole is earthed to the height of the top of the hills; ſo that the whole bed will be now eight or ten inches deep in earth.

With regard to preſerving the due temperature of heat in the bed, let it be obſerved, that as ſoon as the firſt great heat and ſteam ſubſides, it will be of utility to lay ſome dry long litter, or ſtraw, waſte hay, or dry fern round the bed and frame, eſpecially in early work; it will defend it from the inclemencies of weather, by preventing violent or driving rains, ſnow, or ſharp cold, penetrating winds, or ſevere froſt, from inſinuating into the interior part of the bed; and by which precautions the heat will be continued in fine order, till it begins naturally to decreaſe, when a ſubſtantial lining of hot dung muſt be added to one or two ſides of the bed.

In reſpect to watering, a moderate ſprinkling will be neceſſary about once a week or ten days, though, in ſunny warm weather, it is probable twice in that time will be requiſite, or oftener, as the warm weather advances; chuſing,

fing, in winter and ſpring, always a warm ſunny day, any time from ten to two o'clock for this operation; but, as the warm ſeaſon advances, be more early in the day, and encreaſe the quantity of water, being careful, in cold weather, to have the chill taken off, obſerving, that early in the year it is not proper to water too freely all over the plants and young fruit, eſpecially when there is but little ſun; but rather give the water moſtly between the vine, out of the ſpout of a ſmall watering-pot, placing a piece of tile, or oyſter-ſhell, to water on, to prevent the mould from being waſhed from the fibres, ſo removing it to different parts of the bed; but, in fine weather, water ſhould alſo be given now and then moderately all over the leaves of the plants, which will prove a conſiderable refreſhment to them. At each time of watering, in either method, always ſhut down the lights for half an hour, or an hour, particularly in the winter and ſpring waterings. When you at any time water all over the plants, obſerve, if the ſun ſhould then, or ſoon after, ſhine out with much force, give a ſlight ſhade of a mat over the glaſſes an hour or two, leſt, by its power through the lights, it ſcorch the leaves where the drops of water adhere to their ſurfaces; but when the ſeaſon is ſo conſiderably advanced, that the ſun is powerful, the general waterings ſhould be performed in a morning before nine, or in an afternoon about three or four o'clock, when the heat of the day is paſt.

Having, when the plants were in the nurſery-bed, directed their firſt pruning, called ſtopping, obſerving, if that operation was then omitted, it muſt now be done the firſt opportunity, according to the former directions.

The plants, being thus ſtopped, they, in ten days, or a fortnight, will each ſend forth two or three lateral ſhoots or runners; obſerving, that when theſe have advanced two or three joints in length, if they do not ſhew fruit, a ſecond pruning ſhould take place, by ſtopping each ſuch runner at the third joint; this will promote their putting forth each about three fruitful runners, i. e. ſuch that will probably ſhew fruit at almoſt every joint; for it is from the lateral or ſide runners, acquired by the firſt or ſecond ſtopping, we are principally to expect the fruit, as you will ſee by obſervation, though in good kinds, it frequently happens that the runners produced, in conſequence of their firſt ſtopping, ſhew fruit at the firſt or ſecond joint, which is a particular advantage in early crops. According as the runners advance, conduct them along in regular directions, at equal diſtances from each other, fixing them in their proper poſition, by gently pegging them down to the earth with ſmall hooked pegs, which you will repeat occaſionally during their advancing growth, and they will ſoon ſpread all over the bed.

In three or four weeks after ridging out, the plants may be expected to ſhow fruit, though ſometimes that is effected in a week or leſs, and perhaps at the firſt or ſecond joint, when the plants are not more than five or ſix weeks old; and I have had fruit ſhew at the firſt joint, a day or two after ridging out, in the beginning of February, as big as a ſmall barley-corn, and cut the ſame fruit for the table before the month was out; for the great article at an early ſeaſon is, to ſecure and forward the firſt-ſhewn fruit to maturity, which, without a peculiar mode of culture, will turn yellow, and drop off in their infant ſtate.

When the plants therefore ſhew fruit, particular attention is neceſſary, for one thing, to the keeping up a moderate, briſk, and regular heat in the bed, by proper linings, &c. for a great deal depends upon this, that the plants may be continued in a ſtate of free growth, whereby the infant fruit will advance freely, and flower ſtrong; and the next thing particularly to be obſerved is, always to perform the office of ſetting or impregnating the young fruit, according as they come into full bloſſom, by injecting the farina of the male flowers; for the male flowers moſt commonly accompany the female or fruit bloſſoms; ſo that, by practiſing this, and if a good heat is preſerved in the beds, with the due admiſſion of ſuch freſh air and moderate waterings, the fruit will ſet and ſwell freely, ſo as to acquire a due ſize for the table, probably in a week or ten days, or a fortnight at moſt, after performing the impregnation; and that, if you began about Chriſtmas,

mas, or ſoon after, the firſt fruit, with due management, will be ready early in March, and from the ſame bed a regular ſucceſſion may be obtained till Midſummer, or longer.

In reſpect to lining the bed; this may probably be requiſite in three weeks or a month, or little more or leſs, after it is made, but this is according to the ſubſtance of the bed; examine, therefore, carefully, when the heat begins conſiderably to abate; and, on diſcovery thereof, loſe no time, but prepare to line the back-part as ſoon as poſſible, for the ſucceſs of early work depends on keeping up a conſtant regular heat; having therefore hot dung in due readineſs, by previouſly working it in a heap, as formerly directed; then removing the litter from the back of the bed, work up the dung lining a foot and half wide, and as high as the dung of the bed, or rather half a foot higher, to allow for ſettling, for the lining ought to be ſubſtantial, otherwiſe it will not have the deſired effect; obſerving, if the heat of the bed is conſiderably declined, you may alſo line the front, otherwiſe it will be better to defer it a week longer; and, in ten or twelve days after that, you may ſhake up the firſt lining, adding thereto a little freſh dung, which will greatly revive its heat, obſerving alſo the ſame of the front lining; and by thus alternately making and renewing the lining, you may preſerve a fine growing heat in the bed till June, when, by the nature of the ſeaſon, the plants will ſucceed without farther aid of artificial heat, though it is neceſſary to allow them the ſhelter of the frames and glaſſes until the middle or end of that month.

At each time of lining, do not omit laying two or three inches of earth at top, to reſtrain the rank ſteam of the dung, which would riſe and enter the frame at the ſmalleſt hole or crevice, or at the opening of the lights deſigned for the admiſſion of air.

Obſerve, likewiſe, that as a freſh lining always cauſes a very copious ſteam, and ſometimes a ſtrong heat, due attention muſt be given to tilt the glaſſes in proportion.

And when you renew the lining for the laſt time in the end of April, or in May, lay ſix or eight inches depth of earth on the top, and at the ſame time raiſing the frame at bottom, that the earth of the lining and bed may join, ſo as the fibres may ſhoot into the new earth; it will greatly encourage the roots, add freſh vigour to the plants, and will ſufficiently recompence you for the trouble.

Where there is more than one range of framing, if the whole ſpace between was filled up at the above time with hot dung, it would be an additional advantage to the crop.

With regard to the work of impregnation, or ſetting the fruit abovementioned, it is a moſt neceſſary operation of art incumbent on the gardener in the early culture of theſe plants, to be done according as the flowers, both male and female, come into full bloom, and is performed by injecting the farina of the male into the ſtigmata of the female bloſſom, which is as neceſſary to the generation of plants, as the ſeed of animals is to their reſpective ſpecies. In hermaphrodite plants the male and female organs are included all within the ſame flower, and conſequently the impregnation is readily effected by nature; but all the ſpecies of *Cucumis* being monoecious plants, male and female flowers diſtinct, both, however, on the ſame plant, the male bloſſoms being furniſhed with the ſtamina, having their antheræ loaded with a golden powder or farina, deſigned by nature to impregnate the females, ſo that the conveyance of this male powder to the female flower, either by nature or by art, is abſolutely neceſſary; as, without its aid, the young fruit will conſtantly turn yellow, and drop ſoon after they have flowered: in ſummer when the plants are fully expoſed, the gentle breezes of wind, as alſo the bees roving from flower to flower, having the farina adhering to their legs, and ſome other accidents, are ſuppoſed to convey a ſufficient portion of the farina for fecundating the females; but in winter and early ſpring, when no wind nor bees, &c. have free acceſs into the frames, it ſhews the neceſſity of performing the impregnation by art to theſe plants in particular, by carrying the male to the female bloſſoms; and the following is the method:

On the day the flowers of both ſexes fully open, or the day after at fartheſt,

fartheſt, is the proper period for performing the operation; the male bloſſoms are with facility diſtinguiſhed from the females by the rules already obſerved; therefore, at the period of growth juſt mentioned, gather ſome of the beſt male bloſſoms, and apply their antheræ to the ſtigma of the females; ſome direct whelming them down over the female flower, ſo ſtriking them with the fore finger, to cauſe them to diſcharge the farina; but the moſt certain method is, that having gathered the male bloſſom with the ſhank or ſtalk thereto, pull off the petal or corolla carefully from about the ſtamina and antheræ; then, taking the ſhank of the flower betwixt your finger and thumb, apply the antheræ, or top of the ſtamina, to the centre of the three ſtigmas of the female bloſſom, and twirl it about two or three times, that it may diſcharge or inject a due portion of the *pollen*, or farina, into the ſaid ſtigmata or female organs, and then caſt it away, uſing a freſh male bloſſom for each impregnation, unleſs the males are ſcarce, as ſometimes is the caſe early in the year, when one male with care may be made to impregnate two or three females, as it alſo ſometimes happens at an early ſeaſon, that a fruit-bloſſom opens, and no males forward enough on the plants; in this mortifying circumſtance, you muſt have recourſe to your neighbours, ſome of whoſe plants may probably be on the contrary extreme. Some, in performing the impregnation, inſinuate the male organs in betwixt the ſtigmata of the females, and ſo leave it till it naturally drops out; and ſometimes they twiſt the top of the female corolla together to keep the other part in; but all this is unneceſſary: practiſe, as before directed, and caſt the male part away as ſoon as you have performed the operation, which, if well executed, and there is a good heat in the bed, the young fruit will make amazing progreſs in a few days, advancing with the flower in its extremity; and when from about three to five or ſix inches in length, is fit to cut for the table.

Always make it a rule, during the early ſeaſon, to ſet every promiſing fruit, according as they come into bloſſom; and the critical moment is, the middle of the firſt day the bloſſom opens, or the ſecond, at moſt; being careful never to water too freely over the new-ſet fruit, eſpecially at an early ſeaſon.

Some, to encreaſe the growth of the newly-ſet fruit, ſtop the runner, on which it is ſituated, at the firſt or ſecond joint above; it may be practiſed to ſome of the earlieſt; but too frequent ſtopping occaſions a great number of weak ſhoots, and a confuſion of vine.

The importance of the above operation is ſo eſſential in the early culture of cucumbers, that it ſhould never be omitted; as, by the practice, you may always make ſure of the firſt, and every fruit that ſhews, whereas, without this care, if the culture of the plant is ever ſo well conducted, no fruit will ſet till late, as by many is experienced, except by chance ſome ſtraggling bee may have crept into the frame, ſo, by the fertilizing duſt ſticking to their legs, accidentally perform the operation. The doctrine, however, of impregnation, is by ſome diſputed, with reſpect to its neceſſity and efficacy; and what is ſurpriſing, the Rev. Mr. Hanbury, in his Body of Gardening, gives hints of its inutility, as unneceſſary and of no effect, advancing, that good crops of early fruit may be expected without its aſſiſtance; but this only ſhews their total want of practical experience in this very important proceſs, as well as in that of early cucumber-framing; for almoſt every eminent gardener has proved its great uſe, and was retained as a grand and uſeful ſecret, that many young gardeners, to know it, have given a conſiderable gratuity.

There is, however, no other plant of our gardens that requires the gardener's aſſiſtance in the above work of generation, beſides Cucumbers and Melons, and theſe only in their early culture, under frames, or in hot-houſes, where the free air, and other means, by which the fecundating function might be naturally performed, is not obtained.

The male bloſſoms, ſo eſſentially neceſſary in the above culture, are, by the ignorant, termed falſe bloſſoms, and are often pulled off; but this ſhould never be done at any time of the year, either in hot-beds, or in the full ground, except, indeed, where they

they grow in great clusters, in which case they may be thinned off, leaving sufficient for setting the fruit; and likewise, as the blossom in general fades, it should always be cleared away, especially in early frame-culture.

As these plants generally extend their vine considerably all over the surface of the bed, quite to the sides of the frame, frequently sending forth runners from all their joints as they advance, insomuch as sometimes to occasion a great confusion of vine, in which case, if numbers of weak, long-jointed, fruitless shoots, are produced, it is proper to thin them out occasionally, cutting them off close; and where the runners in general are considerably crouded, thin out also the weakest, most irregular, and the fruitless stragglers, so training the main vine, and principal-bearing side runners, in a moderately thin and regular manner; for when the bed is greatly crouded with vine, it, by excluding the necessary influence of the benefit of the sun and air, occasions numbers of the young fruit to drop off in their minority; observing, however, that the regulation of the plants, as above, should, if possible, be begun before the vines are much entangled with each other. Clear off also all worn-out or decayed runners; likewise all decayed leaves, and thin the large clusters of male blossoms, and pick them off in general when they begin to decay.

When the season is advanced that the sun shines with great vehemence through the glasses, it is proper to give occasional shade of single mats, an hour or two, in the middle of such scorching sunny days; otherwise the violence of the sun through the glasses might scorch the leaves of the plant.

As the summer advances, and the days grow long, the sun powerful, and the air mild, afford your plants a large portion of air, by tilting the lights a hand's breadth or more high, in the heat of the day, which should be done occasionally in front, in very hot calm days in May and June; and in very scorching weather, the occasional shade of a single mat, or a little loose hay strewed over the glasses, during the fierce sun, from eleven to two o'clock, is necessary, lest the violent heat through the glasses scorch the leaves and fibres of the roots; at this time do not let them want water, once, twice, or three or four times a week, according to the heat of the weather: observe, likewise, at this time, if the leaves of the plants are grown so large and high as to press against the lights, it is advisable to raise the frame at bottom about three or four inches, by placing a brick, &c. under each corner, making good all irregularities of the earth of the bed occasioned by this work, filling up also, at the same time, with earth, between the mould of the bed, and that at the top of the lining, for the fibres to strike into, as before hinted; and if the leaves of the plants are very large and crouded, let some be cut out, so as to admit the air freely: likewise, when the summer is advanced to the middle of June, if the weather is warm and settled, the frame may be raised so high at bottom, as to admit of the end of the plants being trained from under, upon the top of the lining, being careful to cover them on nights with mats the first week after training them out, till hardened to the open air; and towards the end of that month, or beginning of July, may gradually expose the whole to the full air, to take their chance for the remainder of the summer, though, if you would continue them in bearing as long as possible, it is proper to defend them on nights, and all excessive wet weather, with the lights.

The most eligible method for raising plants for the hand or bell-glass crop, is in March, or very early in April, either to sow the seed in the cucumber or melon-hot-beds already at work under frames, or where there is no room, or there are no frames at work, make, about the middle, or toward the latter end of March, a hot-bed for a frame of one, two, or more lights, according to the quantity of plants required, observing nearly the same rules in making the bed and sowing the seed, as directed in the frame culture; likewise prick the plants, when in the seed-leaf, either in pots, or at two or three inches distance in the earth of the bed; but, for the greater convenience of ridging-out the plants with balls of earth about their roots, it is more advisable to prick most of them in pots, four in each, as observed of raising

raiſing them for the frames; obſerve alſo nearly the ſame rules for giving air, covering up on nights, giving occaſional waterings, keeping up the heat of the bed, and ſtopping the plants at the firſt joint: and in about three, four, or five weeks, when the plants have rough leaves, two or three inches or more broad, and beginning to ſhoot runners, they are of due ſize for ridging out.

The moſt proper time for ridging out under theſe glaſſes, is from about the middle of April, to the middle or latter end of May.

The hot-beds for this ridging out are to be of hot dung, prepared as exhibited in the framing; obſerving, that as the ſeaſon for this work is April and May, the beds need not be quite ſo ſubſtantial as is neceſſary at a more early ſeaſon, allowing, however, if in April, dung enough, if poſſible, to make the bed three feet ſix wide, and two feet and a half high; though, if not made till May, two feet high in dung may be ſufficient, and, at either time, the length of courſe proportionable to the number of hand-glaſſes you deſign to work, allowing them to ſtand at three feet ſix inches diſtance, in one row along the top of each bed.

The ridges or beds are, according to the ſeaſon, to be made either entirely on level ground, or in a trench fifteen or eighteen inches deep; obſerving, if you would ridge out in April, that, as the beds will require lining in three weeks, to revive the heat, to carry on the plants till the arrival of warm ſettled weather in June, it is therefore proper to make them entirely above-ground, to admit of lining the whole of each ſide quite to the bottom; but if you do not ridge out till May, no linings will be required: and as the ground will then be warm, dry, and free from ſtanding water, it is proper to make the bed in a trench three feet wide, and near half that in depth; ſo that the bed being above half way in the ground, and the upper part to be covered on the ſides and top with the earth of the trench, the whole will aſſume the appearance of a ridge of earth, and, by being thus moulded, and all caſed over with earth, it will preſerve the heat the longer.

On conſideration, however, of ridging out in April, conclude to make the ridge entirely on level ground; therefore ſtake it out three feet and half wide, and as long as convenient; then wheel in the dung, and work it up regularly ſtraight and upright on each ſide to about two feet and a half high; but if four feet wide, and the above height, it will ſupport a more durable heat, and be of additional advantage, for the bed will ſettle a foot, and there are often many cold nights between this time and the end of May; obſerving, if more than one range is to be made, make them one before another, allowing a ſpace of three or four feet between, which may afterwards be occaſionally filled up with linings of hot dung and earth, which will prove very beneficial to the plants, finiſhing each bed, by ſhovelling up all the ſhort dung at laſt, and laying it at top.

Having thus made the ridge or ridges, they, in three or four days, will have ſettled, and the heat ariſen, then level any inequalities at top, making that part even and ſmooth, and proceed to mark out the diſtances for the plants, and mould the places for their reception; for, as there are no frames to confine the heat and ſteam, you may always venture to ridge out within the week; the bed being levelled at top, mark out exactly along the middle thereof, the places for the glaſſes and plants, at three feet ſix inches diſtance; and if the bed is very ſubſtantial, that, previous to moulding it, you may, if convenient, as a precaution, the more certainly to preſerve the earth from burning, plaiſter cow-dung an inch and a half thick on the places where the plants are to ſtand: having, however, marked the diſtances for the plants, lay on each of theſe places about a buſhel of rich earth, in a hillock twelve inches high, and broad enough for a hand-glaſs; at the ſame time cover the other parts of the bed, between, and on every ſide the hillocks, two or three inches thick, with the ſame ſort of compoſt, and directly place a hand-glaſs over each hill, ſhutting them down cloſe to draw the heat up ſoon, and cover them on nights with mats, and, when the earth is warm, put in the plants.

The next day or day after, the earth will be ſufficiently warm for the reception of the plants; therefore, having

ving previouſly watered the plants the day before, that the mould may cling in a ball about their roots; then removing the plants with a ball, and levelling the tops of the hillocks broad enough for each glaſs to ſtand, plant one pot of four plants in each hillock, giving directly a little water, and put on the glaſſes; and, if they flag at the approach of ſun, afford them a moderate ſhade the firſt two or three days; but if they are carefully tranſplanted, with balls to their roots, they will not want much ſhading, and the leſs the better.

Being now ridged out, care muſt be taken to admit freſh air to the plants in the warmeſt time of every mild day, by tilting one ſide of the glaſſes, from about half an inch, to one, two, or more high, according to the heat of the bed, and warmth of the weather; but ſhut down the glaſſes in due time towards evening, or ſooner, if the weather changes cold, keeping them cloſe on nights, and all very cold bad weather; and cover every night, all over the glaſſes and ridge, with mats, until June; alſo occaſionally in all hard rains. Give alſo occaſional moderate waterings.

In a week after ridging-out, when the great heat of the bed will be abated, then begin to earth it by degrees all over, to the height of the hillocks, which will encourage and preſerve a due heat about the fibres of the plants; and if previouſly a wreath of large ſtraw-bands, made of any kind of long litter, is placed round the edge of the bed, juſt on the top of the dung, fixing them thereto ſix or eight inches high, with long ſharp-pointed ſticks thruſt into the bed, it will ſupport the ſides of the earth, ſo as to admit of moulding the bed to its full width, and will preſerve that part of the mould from being dried too faſt by the ſun and winds.

Towards the middle of May, or ſooner, if the heat of the ridges abate, and the nights continue cold, a lining of hot dung to both ſides of the bed will be of very great advantage; make this fifteen or eighteen inches wide, beating it firm on every part, raiſing it three inches higher than the dung of the bed, to allow for ſettling, and immediately earth it at top with rich earth, to the thickneſs of that on the ridge; this lining will be moſt ſerviceable in a triple degree; the freſh dung will revive the heat of the bed, the earth at top affords additional ſcope for the fibres to ſtrike into, and the bed, being augmented in width, gives an opportunity of training the vines regularly to their full extent.

As the days encreaſe in heat, and the plants in growth, admit air accordingly, by tilting the warm ſide of the glaſſes in proportion, to harden the ends of the runners gradually, to be trained out from under the glaſſes, when the weather is become warm and ſettled.

In the latter end of May, or beginning of June, the plants will have filled the glaſſes with their runners; they muſt then be trained out, by elevating the glaſſes on props: this, however, muſt not be done too haſtily before the firſt or ſecond week in June, if poſſible, to retain the plants till that time under the glaſſes, for we have often very cold nights till the end of May, and ſometimes a week longer; therefore, in the firſt or ſecond week in June, according to the ſettled temperature of the weather, and advanced growth of the plants, prepare to raiſe the glaſſes on every ſide three or four inches high, on bricks, pieces of wood, or notched ſticks, and lead the runners out regularly at equal diſtances; faſten them down with hooked pegs, to ſecure them againſt the power of winds, obſerving to continue the covering of mats every night, and all very rainy or bad weather, for the firſt fortnight after they are thus trained out from under the glaſſes; continue the glaſſes alſo over them till July, or if continued all the ſummer, it will preſerve the head or main ſtem of the plants from injury of weather.

When the runners advance from under the glaſſes, if ſome dry reeds, clean wheaten ſtraw, or ſmall bruſhy or branchy ſticks, are ſpread on the ſurface of a few holes, for the vines to run upon, it will preſerve them clean, and the earth from drying too faſt; and the fruit will be better preſerved from ſpotting, which often is the caſe in wet ſummers, when they lie on the ground.

In hot dry weather, when the vines are advanced conſiderably, and in fruit, do not omit ſupplying them with water

water two or three times a week, though in July, when in full fruit, they, in very dry ſcorching weather, will need water every day, or even twice in a day, in the morning before eight, and in the evening after four o'clock, giving, at this time, a watering-pot full, at leaſt, of water to each hole, watering equally all over the bed to the very outſide; and by thus preſerving a due moiſture in the earth, during the great heat of the ſeaſon, the plants will ſhew fruit abundantly, and it will ſet and ſwell ſurpriſingly faſt to maturity.

As to the operation of ſetting or impregnating the fruit, as directed for the frames; this, if you are anxious about having ſome of this crop fit to cut as ſoon as poſſible, may be performed to thoſe that firſt ſhew whilſt under the glaſſes; but after the vine is trained out into the full air, there will be no great neceſſity for taking that trouble.

In default of hand or bell glaſſes, a few holes of cucumbers for private uſe, may be brought to bearing in June, under ſhelters of oiled paper, either paſted on ridged or arched frames, made of lath, or other open work, four feet wide, ten long, and three high, or on ſmall open frames the ſize of hand glaſſes; or by paſting three or four ſheets of ſtrong paper together in a piece, each ſuch piece to cover one hole of plants, previouſly oiling it.

Cucumbers are often obtained in hot-houſes any time in winter, and early in ſpring, with leſs trouble ſometimes than in hot-beds under frames, not, however, always with ſucceſs of ſuch plentiful crops; but as pine-apple ſtoves are now common in moſt parts of the kingdom, it is worth trial, and if but a few very early fruit be obtained, it will compenſate for the trouble.

Cucumber plants, raiſed in a common dung hot-bed in September or October, till in the ſecond or third joint, and then tranſplanted with balls into the ſtove, will ſometimes afford a few fruit in November and December.

Cuttings of cucumbers, taken off five or ſix inches long from ſome healthful plants of the ſummer crops towards the end of September, or beginning of October, planted in pots of rich light earth, and plunged in the bark-bed, will take root, and often break forth into runners, and produce fruit in November and December.

Cucumber plants may be raiſed in ſtoves to a proper ſize to plant out in hot-beds under frames, where they are to fruit for the early crop, which will ſave the trouble of making a dung hot-bed for ſowing the ſeed, and nurſing the plants: ſow the ſeed about Chriſtmas in pots, and prick the plants into others, as before directed, and when in the firſt joint, and begin to ſhoot runners, tranſplant them with balls into the fruiting frames.

The time for ſowing the latter crop of cucumbers, commonly called picklers, is the beginning of June. The London gardeners generally ſet theſe between the wideſt rows of cauliflowers, which are four feet and a half aſunder. To this end, they dig ſquare holes about three feet and a half from each other, breaking the earth well, and hollowing the ſurface of each hole with their hands, till it is like a baſon. They then plant eight or nine ſeeds in the middle of each of theſe ſpots, and cover them with earth to the thickneſs of about half an inch. If the weather is very dry, they water them gently at the end of a day or two. In five or ſix days the plants will appear above-ground, and particular care muſt be taken then to defend them from birds, eſpecially ſparrows, which will otherwiſe ſoon pinch them off, and thereby fruſtrate all expectations of a crop; but this danger will be over in little more than a week, for the ſparrows will not meddle with them after they have expanded their ſeed leaves. Care muſt alſo be taken to continue to water them gently, from time to time, according as the ſeaſon is more or leſs dry; and when they begin to ſhew their third leaf, which is the firſt of their rough ones, all the weakeſt plants ſhould be pulled up, leaving in each hole only four of the moſt promiſing and beſt ſituated. The ground about theſe ſhould then be ſtirred with a ſmall hoe, to deſtroy the weeds, and earth up the plants, around the ſtems of which the mould ſhould afterwards be gently preſſed down by hand, the better to ſeparate them gently from each other, as much as can be, without hurting them. This being done, water them a little to ſettle the earth

about them, and at such times as the dryness of the weather may render it necessary: but, above all, they must be kept clear from weeds. When the cauliflowers are quite removed, the whole ground should be thoroughly hoed and cleaned, fresh earth should be laid up around the plants, so as to deepen the hollows in which they stand, that they may the better contain water when it is given them, and their vines should be spread out carefully in the order they are to run, in such manner that they may not cross, or be tangled with one another. A little earth should then be laid, and gently pressed down between the plants, the better to separate them every way, and a gentle watering now, and as often afterwards as the season shall require, will forward their growth. With this management, these plants will begin to yield young cucumbers, fit for pickling, about the latter end of July, or early in August.

About fifty or sixty of these holes will be necessary for a middling family; because a smaller number of them will not afford fruit enough at one gathering, to requite the trouble and expence of pickling, and they never are so good if they are gathered long before they are put into the vinegar. Fifty holes will seldom furnish more than two hundred cucumbers fit to gather at a time, and this may be repeated twice a week, as long as the season lasts, which generally is five weeks. What are not wanted for pickling, may be left to grow till they become fit to eat.

Wild CUCUMBER, [*Cucumis Agrestis, Momordica.*] See *Male Balsam* Apple.

CUD. That food which is reposited in the first stomach, in order for rumination, or to be chewed again.

CUD *lost*. When cattle lose the cud, which they sometimes do by chance, when they really mourn; and sometimes by sickness and poverty. To cure this, take four leaven of rye-bread and salt, and mix it in a mortar with urine and yeast, and making a big ball or two thereof, put them down the beast's throat. Others take part of the cud of another beast, blend it with rye-bread, sour leaven, and salt, and, pounding them in a mortar, make them into balls, which they give the beast.

CUDWEED. Goldylocks, or eternal flower.

CULLIONS. Round roots of plants.

CULMIFEROUS *Plants*, Such as have a smooth jointed stalk, and their seeds are contained in chaffy husks.

CULRAGE. Biting Arsmart.

CULTIVATION. The art of improving soils, and forwarding or meliorating the produce of the earth, by manual labour, manure, &c.

CULTIVATOR. The horse-hoe, by some so called. *See Alley.*

CULTURE. The art of cultivating the soil.

CULVER. A pidgeon, or dove.

CUMMIN, [*Cuminum, Cyminum.*] An umbelliferous plant, in appearance resembling fennel, but much smaller. The seeds are brought from Sicily and Malta. Cummin seeds have a bitterish warm taste, accompanied with an aromatic flavour, not of the most agreeable kind. They are accounted good carminatives, but not very often made use of.

CUPMOSS. A species of moss.

CURB. An iron chain fastened to the upper part of the branches of the bridle, in a part called the eye, and running over the beard of the horse.

Curb, is also the name of a disease in horses, consisting in a swelling at the junctures of the bones on the hind part of the hock, forming a pretty large tumour over the back part of the hind leg, attended with stiffness, and sometimes with pain and lameness.

A curb proceeds from hard riding, strains, blows, or kicks. The cure at first is in general easily enough effected by blistering, repeated two or three times, or even oftener. If it does not submit to this treatment, but grows excessively hard, the quickest and surest way is to fire with a thin iron, making a line down the middle from top to bottom, and drawing several lines in a penni-form manner, pretty deep, and then to apply a mild blistering plaister or ointment over it. This method will entirely remove it.

CURRANT, [*Uvæ Passæ Minores.*] The fruit of the Corinth vine.

CURRANT-TREE, [*Ribes.*] The name of a shrub well known in the English gardens, and of which there are several varieties; but the most valuable sorts, for common uses, are the white and red Dutch.

These

Theſe ſorts may be eaſily propagated by planting their cuttings any time from the middle of September to the end of October, upon a ſpot of freſh earth, either in rows, at a foot aſunder, or in beds, which in the ſpring muſt be kept very clear from weeds. Theſe may remain one or two years in the nurſery, during which time they muſt be pruned up for the purpoſes they are deſigned for; that is, either to clear ſtems about a foot high if for ſtandards; or, if for walls, pales, or eſpaliers, they may be trained up flat. They ſhould then be planted out where they are to remain, for the younger they are planted the better they will ſucceed; the beſt ſeaſon for which is when their leaves begin to decay, that they may take root before winter, ſo that they may be in no danger of ſuffering from drought in the ſpring.

Theſe ſhrubs are generally planted in rows about ten feet aſunder and at four feet diſtance in the rows, in thoſe gardens where the fruit is cultivated for ſale; but the beſt method is to train them againſt low eſpaliers, in which manner they will take up much leſs room in a garden, and their fruit will be much fairer.

The diſtance they ſhould be placed for an eſpalier, ought not to be leſs than ten or twelve feet, that their branches may be trained horizontally, which is of great importance to their bearing.

Thoſe that are planted againſt pales or walls, ſhould alſo be allowed the ſame diſtance. If they are planted againſt a ſouth-eaſt wall or pale, it will cauſe their fruit to ripen at leaſt a fortnight or three weeks ſooner than thoſe in the open air, and thoſe which are planted againſt a north wall or pale, will be proportionably later; ſo that, by this method, the fruit may be continued a long time in perfection, eſpecially if thoſe againſt the north pales are matted in the heat of the day.

Theſe plants produce their fruit upon the former year's wood, and alſo upon ſmall ſnags which come out of the old wood; ſo that in pruning them, theſe ſnags ſhould be preſerved, and the young ſhoots ſhortened in proportion to their ſtrength. The only method, very neceſſary to be obſerved in pruning them, is not to lay their ſhoots too cloſe, and never to prune their ſnags to make them ſmooth. This, with a little care in obſerving the manner of their growth, will be ſufficient to inſtruct any perſon how to manage this ſhrub, ſo as to produce great quantities of fruit.

Theſe plants will thrive and produce fruit in almoſt any ſoil or ſituation, and are often planted under the ſhade of trees: but the fruit is always beſt when they are planted in the open air, and upon a light loamy ſoil.

CURRY-COMB. An iron inſtrument full of ſmall teeth, uſed for currying horſes.

CURSONS. Spurs, or ſnags, growing on the ſtems and branches of the apple, currant, and other fruit-trees.

CURTILAGE. A piece of ground near the dwelling houſe.

CUSTARD *Apple*. See APPLE.

CUSPATED *Flowers*, thoſe whoſe petals, or flower-leaves, end in a point.

CUTTINGS. Pieces cut off for the purpoſe of planting.

CYDER. The expreſſed juice of apples fermented.

In the improvement of Cyder obſerve, that all the apples be permitted to drop from the tree, that they may have the full benefit of the ſtock on which they grew, and of the ſun, their foſter-father: for by ſtriking down the fruit before it is ripe, the buds are ſtruck off with it, the tree is injured, and the cyder that is made is tart and harſh, for want of time to meliorate the juice.

Let your apples (eſpecially in windy and tempeſtuous weather) be gathered up once or twice a week, and thrown together in ſome ſecure place without doors; for hoarding the fruit in a houſe, is apt to give the juice a muſty taſte, for the want of a free and open air. It alſo prevents the cyder from quick refining, by rendering the juice flat, dead, heavy, and unapt for fermentation.

Let your apple-heap be made on ſlanting and open ground towards the ſouth, that the falling rains may fleet from it, and that your fruit may be expoſed to the eye of the ſun.

To erect a ſlight covering of reed over the apple-heap, ſupported by four tall ſticks, will be very proper; the fore and higher part of the covering fronting the ſouth. By the ſhed ſo contrived,

contrived, and ſituated, your fruit may have the refreſhment of the air, be defended from rain, and be alſo viſited by the ſun. But let the bottom of the apple-heap be covered, or paved with broad ſtones, and edged round with the like ſort, to keep the fruit clean and cloſe together.

Let your apples lie in the heap a longer or ſhorter time, according to the nature of them. Mediates, for inſtance, being of a hard kind, and their juice auſtere, require a month in the heap, or more; whereas white-ſours, being of a ſofter and more early ſort, a fortnight, or leſs, for them may be ſufficient. But the time for each muſt be proportioned to the ripeneſs of the fruit, and to the various diſpoſitions of the air and weather. For, according to the quality of the fruit, and the temperament of the air, the apples run ſooner or later to decay.

When the apples are pounded, let the muck lie a day before it is ſqueezed. It will improve the colour of your cyder, and render it of a deeper complexion.

If you make a tun of cyder at one time, and have a veſſel large enough to contain it all, it is a good way to keep it together, that it may all become fine at the ſame time, and be fit for racking.

When your cyder is fine, (which it ſometimes happens to be within a day or two, eſpecially upon a dry northern, or eaſtern wind) then, by a cock placed within half a foot of the bottom of the veſſel, always allowing room for the dregs to ſettle in; it muſt be racked off into hogſheads.

But although cyder be racked never ſo fine at firſt, it will ferment again and become foul, eſpecially in rainy and tempeſtuous weather, and upon ſouthern and weſtern winds; and then your cyder may require ſeveral rackings before you give over your care about it: for all wet ſeaſons are injurious to new cyder, by cauſing a conſtant fermentation for a month or ſix weeks, and longer too, if the rough winds and foul weather do ſo long continue. You muſt therefore be very obſervant of them, and watchful againſt them, by frequent racking, whether your cyder be fine or not; in order to prevent its over fermentation, and to keep it quiet.

Let this be a ſtanding rule for your firſt racking; namely, to ſet about it when the thick red head or cruſt which covered the cyder, begins to ſeparate, and white bubbles do appear; that ſo, by its kindly warmth, a fermentation may be promoted. For although your cyder be foul at that very juncture, it is yet very proper to rack it, otherwiſe your cyder may become incurable; for it will then (eſpecially in wet weather) inſtead of a gentle fermentation, be put upon the fret, and ſing; the wild notes whereof may be heard at a conſiderable diſtance, till it becomes pale, thin, and languid; and hath ſung itſelf to death.

To prevent waſte in racking, and, at the ſame time, to diſpoſe cyder for becoming fine the ſooner, recourſe muſt be had to ſtraining.

Get flannel enough for five or ſix bags, each containing five or ſix quarts. Let thoſe bags be made of a conical figure, like a ſugar-loaf, and the ſmall ends hang downwards, that the cyder, by its impending weight, may the ſooner be impreſſed through them. Let the upper and open parts be edged or bound round with inkle; that they may the better ſupport the weight of the liquor.

When your bags are thus prepared, get a ſtrong hoop, and having faſtened two ſticks acroſs in it, tie up your bags to them. The center, where the two ſticks meet, having a rope fixed to it, and the bags being made to hang perpendicular over a large veſſel, pour that cyder into them, which remains at the bottom of each hogſhead after racking; and which is too foul to be mixed with the reſt. By this method abundance of cyder, (and fit for common uſe) may be preſerved, which muſt otherwiſe have been thrown away with the lees.

An empty hogſhead muſt be kept on purpoſe for the reception of the ſtrained cyder, into which it muſt be thrown from time to time, as ſoon as it is ſtrained. The caſk muſt be cloſely bunged, as often as the cyder is thrown into it, leſt the liquor become flat by being too much expoſed in an open veſſel. The ſtrained cyder muſt alſo be racked, when there is a good quantity of it together, and it is become tolerably fine.

To adapt your cyder to all palates, you

you may, either at your laſt racking, or juſt before you bung and ſtop it up, mix ſeveral ſorts together, and ſo render your cyder rough or mellow, to what degree you think fit.

By thus mixing your cyder, you may give all that you intend for your own table, the agreeable taſte of the white-four. The juice of this pomroyal being of ſuch a predominant quality, as to communicate its flavour, in a very diſtinguiſhed manner, to all the cyder with which it is in any due degree mixed, providence ſeems to have ordained it for this very purpoſe.

Various are the practices of people in ſtopping up their cyder; ſome doing it early, and others leaving it open till Chriſtmas, and longer, if the weather continues mild, or the froſt be not ſevere.

Due regard ought to be had to the nature of the fruit, and the time of pounding: for as the cyder which is firſt made may, at Chriſtmas, be twice as old as the laſt pounding; ſo, coming from a more early fruit, and therefore ſooner diſcharging its windy effluvia, (the only uſe and end of its being left open at all) it ought, for that very reaſon, to be the ſooner bunged up.

While your cyder continueth unſtopped, a ſlight and looſe covering of board, which may reach from hoop to hoop, ought to be put over the bung-hole, to prevent the duſt, rats, and other annoyances, from breaking the thin film, or unctuous ſubſtance, which inveſteth the ſurface of the cyder; as a guard intended by nature for its preſervation, like oil upon a caſk of Florence wine.

Eſpecial care muſt be taken alſo to fill the hogſhead to the very top of the bung-hole, at the laſt racking; that if any light or flying lees remain in the liquor, they may be removed at the bung: for this is frequently the caſe of mellow cyder: and if thoſe lees are permitted to remain in it, the ſurface of them, by being expoſed to the air, will become four. That tartneſs will, by degrees, render all the cyder (whether it be in a hogſhead, or in a larger veſſel) of the ſame compleſion. Yea, the taint may be perceived to deſcend gradually: for while the cyder is four at the top, it is found a few inches below it, till it deſcends from head to foot, from top to bottom.

This is the grand article in which people are wont to be deceived, and which they are rendered out of love with racking of cyder, how much ſoever they are pleaſed with it, when it happens to anſwer their wiſhes: for when their cyder turns four, they are ſo weak as to imagine that racking takes away the ſpirit of it, and that it muſt then become four of courſe, for want of a body to ſupport it, as they are wont to ſpeak; whereas, in truth, it grows four for want of ſkill how to ſecure it after the laſt racking; by removing the light lees which ſwim on the top of the liquor, before they acquire any the leaſt degree of acidity from the impending air, to which the cyder is expoſed. And if the hogſhead is not full, or the bung-hole is not large enough to admit the doing of this by a ſpoon, the cyder muſt be racked again, though it be as clear as rock-water, or as fine as amber: and racking indeed is the ſureſt way; for ſome of the lees may eſcape the ſpoon, and therefore there is no certain dependance upon it.

And under the article of racking I muſt moreover obſerve, that the perſon employed in racking your cyder, muſt be particularly careful to waſh and dry his ſtraining bags, racking tubs and buckets, leſt they caſt a four look upon him at the time of his next racking. He muſt be as neat in his cellar, as a maid in her dairy. No more marks of a ſloven muſt appear in the veſſels of the one, than of a ſlut in the utenſils of the other. For want of this precaution, as the dairy abounds with a worſe than Corniſh four-milk, ſo the cellar is ſtocked with a deſpicable ſort of vinegar.

CYON, a young tree or ſlip ſpringing from an old one.

CYPRESS-TREE, [*Cupreſſus.*] The ſpecies are; 1ſt, the female, or upright common Cypreſs; 2d, male ſpreading; 3d, Portugal ſpreading; 4th, Virginian, or deciduous; 5th, Dwarf Maryland; 6th, Cypreſs, with narrow ſingle leaves, placed croſsways.

They are all raiſed abundantly by ſeeds, which are obtainable from the cones. The ſeaſon for ſowing them is any time in March, on a bed or border of common light earth; obſerving, if the weather be warm and dry in April and May, to give them a little

water

water now and then. In about ſix or eight weeks they will come up; obſerve to keep them free of weeds, and water them during the ſummer now and then, if there ſhould be occaſion. When two years old, tranſplant them from the ſeed-bed into the nurſery, in rows two feet aſunder, and in three or four years they will be fit for the ſhrubbery.

If the ſeeds were ſown in pots, tubs, or boxes, and plunged into a moderate hot-bed, their growth would be haſtened a month or more.

Garden CYPRESS. Lavender cotton.

Summer CYPRESS, [*Scoparia.*] A ſpecies of gooſe-foot, or wild orach.

CYTISUS, Tree-trefoil. There are many ſpecies of Cytiſus, all propagated freely by ſeeds, and ſome by cuttings. They are elegant and pretty flowering ſhrubs and evergreens. The ſeeds ſhould be ſown in March, and require the common care of weeding and watering. *See Sainfoin*

D.

DABCHICK, A water fowl.

DAFFODIL, [*Narciſſus.*] The ſpecies are; 1. Baſtard Narciſſus, or common Engliſh Daffodil; 2. Poetic, or common white Narciſſus; 3. Incomparable; 4. Primroſe Peerleſs; 5. Yellow, or hoop-petticoat; 6. Small Autumnal; 7. Polyanthus Narciſſus; 8. Jonquil; 9. Odoriferous, or ſweet-ſcented; 10.Ruſh-leaved white; 11. Trilobate Yellow; 12. Minor Yellow winter Narciſſus.

Each ſpecies has ſeveral varieties. They are all bulbous and perennial roots, but their leaves and flower-ſtalks are annual; all of which riſing annually in ſpring, immediately from the crown of the bulb, firſt the leaves, and in the midſt of them the flower-ſtalk, one only from each root, entirely naked or leafleſs, each terminated by a ſpatha or ſheath, which opens on one ſide to protrude the flowers, and then withers; the flowers are all hexapetalous, each furniſhed with a nectarium in the centre, and are univerſally hermaphrodite; they are large and conſpicuous, appearing moſtly in the ſpring ſeaſon, generally from March or April until June, ſucceeded by ripe ſeed in July; then the leaves and flower-ſtalks decay, and the roots deſiſt from growing for ſome time; at which period of reſt it is the only proper time to take up, or tranſplant the roots from one place to another, or to ſeparate the off-ſets; for they all multiply abundantly by off-ſet young bulbs from the main root, inſomuch that a ſingle bulb will, in one or two years, be encreaſed into a large cluſter of ſeveral bulbs, cloſely placed together, and which, every ſecond or third year, ſhould be taken up at the above period, in order to be ſeparated; and each off-ſet ſo ſeparated commences a diſtinct plant, which being planted again in autumn, produces flowers the following ſummer, alike in every reſpect to thoſe of their reſpective parent bulbs.

All the ſpecies are ſo hardy, that they proſper in any common ſoil of a garden: obſerving, however, to allow the finer ſorts of *Polyanthus Narciſſus*, in particular, principally a warm dry ſituation; all the others may be planted any where in open dry borders and flower-beds.

The firſt ſeven ſpecies are thoſe moſt commonly known in the Engliſh gardens; all of which produce ornamental flowers; but the Polyanthus Narciſſus is among the floriſts, eſteemed the chief of the Narciſſus tribe, both on account of its mode of flowering, in a large cluſter from each ſpatha, and from the vaſt ſource of variety it affords in the different properties of its flowers; ſo that almoſt every eminent floriſt cultivates this ſpecies, and its varieties, with great aſſiduity, and are often particularly induſtrious in raiſing new varieties from ſeed, eſpecially the Dutch floriſts; and when any new variety is ſo obtained, it propagates itſelf plentifully by off-ſets of the root like the other ſorts, whereby the ſtock in two or three years will be greatly encreaſed.

The

The beſt general ſeaſon for planting all theſe bulbs is autumn, from about the beginning or middle of September, until November, in which they will flower conſiderably ſtronger, as well as furniſh a greater increaſe of off-ſets than thoſe planted later, or not till ſpring: if, however, ſome roots are retained out of ground until February, they will ſucceed thoſe of the autumnal planting in flowering, whereby you may vary and prolong the continuance of the bloom; but theſe late-planted roots always flower weaker, ſome not at all, and at beſt with inferior beauty, and ſhorter continuance, and furniſh but a bad increaſe of roots; therefore always conſider autumn as the proper planting ſeaſon for the principal blow.

In planting them, obſerve the following modes of diſpoſition:

Thoſe you deſign to diſpoſe in the open borders or other compartments, in aſſemblage with any other bulbous flowers, &c. we ſhould adviſe to be depoſited in little patches, of about three or four roots in each, planting them either with a blunt dibble, or hole them in with a garden trowel, four inches deep; in which mode of diſpoſition they will ſhew their flowers more conſpicuouſly and ornamental than if planted ſingly, as each patch of plants will diſplay their flowers in a cluſter, which will ſtrike the eye moſt agreeably.

When intended to plant a quantity in beds by themſelves, in order to exhibit a full bloom all together in one place, as is often practiſed to the fine Polyanthus Narciſſus, Jonquils, &c. have the beds four feet wide, with alleys of a foot and a half, or two feet wide between; in which beds plant the roots in rows length-ways, nine inches aſunder; planting them either with a blunt-ended dibble, or drill them in with a hoe, about four inches deep, and ſix diſtant in each row, covering them regularly with the earth, and take the ſurface ſmooth.

Having planted the roots in either of theſe methods, all the culture they require is to be kept clean from weeds; and they will all flower in due perfection the following ſpring and ſummer.

But the Polyanthus Narciſſus, and Jonquil, being of the multiflorous kinds, and conſidered of ſuperior value and beauty; to blow them in the higheſt perfection, curious florifts beſtow particular care in their culture; ſome prepare beds of compoſt, as for the fine hyacinths, &c. and manage them in the ſame manner, particularly the Polyanthus Narciſſus: remark, however, that in default of ſuch prepared compoſts, &c. you need not be under any great anxiety, for they generally ſucceed very well in any good, light, rich earth of a garden, in a warm, funny, ſheltered ſituation, with the beds a little elevated above the common level, out of the reach of copious moiſture in winter; ſo having the ground formed into four-feet-wide beds, in which plant the roots in rows nine inches aſunder; and in winter, and early in ſpring, give occaſional ſhelter of mats from cutting froſts, and other inclement weather, eſpecially after the flower-buds appear above ground.

All the ſorts of theſe bulbs, planted in either of the above methods, may be ſuffered to remain in the ground two or three years, or more, unremoved; when, by their being increaſed by off-ſets into large bunches, each will ſend up ſeveral flower-ſtalks, and ſhew a large cluſter of flowers, appearing conſiderably more conſpicuous and beautiful than when the flower-ſtalks riſe ſingly: remark, however, it is proper to take up the bulbs in general every third or fourth year, in order to ſeparate the off-ſets, which in that time will be increaſed ſo greatly in number, that the bulbs preſſing cloſe againſt one another, the inner ones will be ſo much compreſſed and weakened, as greatly to impede their efforts for flowering.

The only proper time of the year for taking up all the ſorts, is ſoon after they have done flowering, when their leaves and flower-ſtalks aſſume a ſtate of decay; at which time of lifting the bulbs, ſeparate them all ſingly, and the ſmaller off-ſets from the larger, reſerving the large roots for planting again in the principal compartments, and the ſmaller may be depoſited in nurſery-beds for a year or two, to gain ſtrength, when they will become proper blowing roots, and may be taken up at the proper ſeaſon, in order for planting where wanted.

When the roots are lifted at the above proper ſeaſon, they may either be planted again directly, or in a month or ſix weeks after; or may be cleaned and dried, and retained out of the ground in a dry room, two or three months, or longer, if occaſion ſhall require; but, as before ſuggeſted, we ſhould adviſe the principal part to be committed to the earth again in autumn, i. e. in September, October, or November.

The Polyanthus Narciſſus, and the large Jonquills, are alſo in great eſteem for blowing in glaſſes of water, in rooms, in winter, and early in ſpring, before thoſe in the open ground come into bloom; any of the other ſpecies may alſo be flowered in the ſame manner; obſerving to procure ſuch roots as were lifted at the proper ſeaſon.

The glaſſes for this uſe are a ſort of bottle, of about two or three gill ſize, narrow and upright, ſix or ſeven inches high, with wide mouths to fit the bulbs, one for each glaſs, and are ſold at all the glaſs ſhops. The ſeaſon for uſing them is any time in winter, or early in ſpring, from October or November, till February or March: obſerving to fill them with freſh ſoft water, ſo full that the bottom of the bulb may juſt touch it; ſo place one bulb in each glaſs, and place the glaſſes in any light warm room near the windows, where the ſun comes: the roots will ſoon ſend out fibres downward into the water, and leave the flower-ſtalks at top, and flower ſtrong and agreeably in the dead ſeaſon of winter, and beginning of ſpring, attended with a delightful fragrance.

The water ſhould always be kept up to the proper height in the glaſſes, adding an entire freſh ſupply every three weeks or a month.

Many of theſe bulbous-rooted plants may be ſeen blown in the aforeſaid manner, in great perfection, in winter and ſpring, in the ſeed-ſhops in London, particularly the Polyanthus Narciſſus, and fine Jonquils, Hyacinths, &c.

The ſame plants may alſo be brought to early bloom in pots. Plant the bulb in pots of light rich earth, which place in a warm room, as directed for the glaſſes, placing them in plates of water occaſionally, when the earth wants moiſtening, and take them out again, when moiſt enough; and thus they will blow at an early ſeaſon.

But ſuch as have the advantage of ſtoves, or hot-beds under glaſſes, need only carry their glaſſes or pots of bulbs thither, ſetting the former on ſhelves, and plunging the latter into the bark-bed, &c. they will have fine flowers from December till the end of March, without much trouble.

We muſt obſerve, that to enjoy the pleaſure of this winter floral-ſcene of theſe kinds, the largeſt bulbs are always to be choſen, otherwiſe it will be impoſſible to compaſs it with any degree of perfection.

The bulbs made uſe of for this purpoſe, although they rarely ſerve for the ſame uſe again, will not be loſt, but may be continued in vigour for increaſe, provided they are taken out of the glaſſes or pots as ſoon as the flowers are gone off, and after cutting off their tops and fibrous roots, plant them in beds of mould, to ſtand till the proper lifting ſeaſon; in the mean time they will there multiply by off ſets, and thus prove a nurſery to ſupply your pots and glaſſes.

The propagation of all the ſorts of Narciſſus is affected principally by their abundant off-ſets from the roots; alſo by ſeed to obtain new varieties.

By Off-ſets.—All the ſorts increaſe plentifully by off-ſet bulbs from the main roots annually; and the proper time for ſeparating them is in ſummer, when they have done flowering, and the leaves and ſtalks begin to decay; at which time the roots may either be taken up every year or two, to ſeparate the off-ſets, but ſhould not remain longer unremoved than three years, when each root will be then multiplied by its off-ſets into a large cluſter, and, as we before noticed, it is neceſſary to lift them, eſpecially the principal ſorts, to divide the increaſed parts; reſerving the main bulbs to plant for the ſucceeding year's bloom; and the off-ſets ſhould be ſet in nurſery-rows, drilled in three inches deep, and ſix from row to row; to remain to have one or two years growth, when they will have become large bulbs, capable of producing flowers in full perfection; and being then taken up at the proper ſeaſon, may be planted in autumn following, in any place where required.

By

By Seed.—This mode of propagation is rarely practiſed to any but the Polyanthus Narciſſus, and that principally for the ſake of new varieties. We would obſerve, however, that this work of raiſing them from ſeed is exceedingly tedious, as it will be often ſix or ſeven years before the ſeedlings will flower in perfection. It is nevertheleſs practiſed by many curious floriſts, more particularly thoſe of Holland, who exceed all the world in their patience and induſtry in raiſing ſeedling bulbous flowers, for increaſing the number of new varieties, which they often ſell at a high price.

The following is the method of raiſing ſeedlings of the Narciſſus kind.

The ſeed ripens in June or July, which ſow ſoon after in pots or boxes of light rich earth, half an inch deep; then place them to have only the morning ſun till October, at which time place them in a full ſunny ſituation for the winter, allowing them ſhelter in ſevere froſt. In March or April they will come up, give frequent ſprinklings of water, and occaſional ſhade from the mid-day ſun at their firſt appearance; and as the warm ſeaſon advances, move the pots to an eaſtern aſpect, to have only the morning ſun till ten or eleven o'clock. In June or July the leaves will decay, when ſtir the ſurface lightly, and clear off the decayed leaves, all weeds and moſſineſs, then ſift a little fine mould over the ſurface, half an inch thick, repeating it again in October or November; and here let them remain undiſturbed till the third year, each year repeating the above work; and in the third ſummer, at the decay of the leaves, take up the bulbs, and ſeparate the largeſt, which plant in beds, by drilling, in rows five or ſix inches aſunder, and three deep; and the ſmall bulbs you may ſcatter, mould and all, on the ſurface of another bed, and cover them two or three inches deep with fine earth, which, after a year's growth, may be tranſplanted in rows.

In theſe beds let the ſeedlings remain till they ſhew flowers, and after the ſecond year's bloom you will be able to judge of their properties, when mark the good ſorts; and manage them as directed for the blowing roots.

Lily DAFFODIL, [*Amarillis.*] The ſpecies are, 1. Autumnal; 2. Atamuſco; 3. Jacobæan Lilly; 4. Guernſey; 5. Bella-donna; 6. Mexican; 7. Ceylon; 8. African Scarlet; 9. Spring Yellow Lily Daffodil; 10. Oriental, or Brunſwiggia.

The roots are univerſally bulbous, moſtly very large, and commonly oblong. The flower-ſtem riſes annually from the root, in moſt ſorts naked, and unattended by leaves, and attain different heights, from three inches to two feet, and at the termination or ſummit of each ſtem, is produced the flower-bud, which is a ſheath or ſcabbard, that burſts and protrudes the flower or flowers, which are large, and compoſed each of ſix oblong petals, of the liliaceous form, appearing chiefly in autumn, and when they fade the leaves come up, which are generally long and narrow, ſome large and flaggy, and which, together with the main bulbs and off-ſets, continue growing until May or June, when the leaves decay, which is the time to remove and tranſplant the roots, and ſeparate the off-ſets for propagation.

The Yellow Autumnal Amarillis attains but three or four inches in height, ſeveral ſtems riſing in ſucceſſion, each ſupporting one large yellow flower, in September and October.

The Amarillis Atamuſco ſends up one ſtem, ſix inches high, elevating one large beautiful flower, carnation-coloured, changing almoſt white, appearing in ſummer or autumn.

The Guernſey Amarillis is one of the fineſt flowers that can be ſeen. The ſtem riſes a foot and half high, terminated by an oblong ſcabbard, from which burſts forth the cluſter of flowers; the colour a bright ſhining red, ſpangled with golden ſpecks, and a deep red vein running along the middle of all the petals. It flowers in October, and continues a month in full luſtre.

The Mexican Amarillis riſes a foot high, crowned by two, three, or four large flame-coloured flowers in March or April.

The Ceylon Amarillis demands eſteem both for its beauty and delightful fragrance. The ſtem attains two feet in height, ſurrounded by ſix or eight ſnowy white flowers, having all

the petals beautifully ſtreaked with lines of purple

The Jacobæan Amarillis is a flower of ſuperior beauty, and ſingularity of form. The flower-ſtalk attains fifteen inches ſtature, crowned by the flower, there being only one, which is very large; the colour a beautiful ſcarlet, with crimſon filaments, and yellow antheræ; the petals are irregular, and their determination is curious, three of which droop, two ſtand horizontally, and one erect; the whole nods on one ſide of the ſtalk. The plant flowers in ſpring, autumn, or winter; and it is peculiar to the ſpecies, that after having ſent up a flower-ſtem on one ſide of the bulb, it frequently ſends up one or two more, in ſucceſſive order, from the other ſides.

The Oriental Amarillis ſends up a robuſt ſtem a foot high, terminated by a large ſwelling ſcabbard, which protrudes a conſiderable ſpherical cluſter of fine red flowers, each of which have five of its petals turned inward, and the ſixth ſtands outward. It flowers late in autumn.

The bulbs of all theſe plants may be purchaſed at moſt of the nurſeries, and planted in Auguſt and September.

The two firſt ſorts may be planted in any dry warm border, eſpecially the firſt, where they will flower annually; the other being ſomewhat impatient of ſevere froſt, it is alſo neceſſary to plant ſome in pots, to have occaſional ſhelter in winter.

The Guernſey Lily requires protection from exceſſive wet and froſt, ſo ſhould be planted in pots, to be removed to occaſional ſhelter during their bloom, and from the rigour of winter.

Great numbers of theſe bulbs are imported annually from the iſland of Guernſey, for ſale; they generally arrive in July, which, if procured and planted before the middle of Auguſt, ſome of the large roots will probably flower the following October. The proper ſized pots wherein to plant theſe bulbs are twenty-fours, which fill with light rich ſandy earth, plant one root in each pot three inches deep, and place the pots where they may be ſcreened from the mid-day ſun during the hot weather, giving occaſional moderate waterings, and about the middle of September, when the flower-bud will begin to make its appearance, remove them to the full ſun, to remain till their flowers begin to expand, then place them to have occaſional protection from rains and boiſterous winds, either in a green-houſe, garden-frame, or any airy room.

When the flower fades, remove them into a garden-frame for the winter, to have occaſional ſhelter of the glaſſes in times of violent rain, froſt, ſnow, &c.

As it is peculiar to this ſpecies to flower ſomewhat reluctantly, inaſmuch that probably not five roots in twenty will perform that office the ſame ſeaſon; therefore, permit the bulbs to remain unremoved three years, managing them as above, and they will afford a more conſiderable bloom the ſucceeding autumns. It is, however, always eligible culture to tranſplant the bulbs once in the above period, into freſh earth, and ſeparate the offſets, which plant either in pots, or in a bed of light dry ſoil, giving occaſional ſhelter in winter, and in three years they will attain a flowering ſtate, when they are to be treated as already directed.

The Bella-donna Amarillis is tolerably hardy, and will ſucceed in a warm dry border, with occaſional ſhelter from froſt. It is however adviſeable to plant ſome alſo in pots, and manage them as directed for the Guernſey Lily. If it is indulged with a ſtove, it generally flowers with greater luſtre.

The Mexican, Ceylon, Jacobæan, and Oriental Amaryllis, are of tender temperature, which, though they may be preſerved through the winter in a warm green-houſe, rarely flower, unleſs the pots are plunged in a good hot-bed, under frames and glaſſes, towards the time of their reſpective ſeaſons of flowering. All theſe ſorts, however, ſucceed beſt in a ſtove, and where there are ſuch conveniences; it is eligible culture to indulge the plants with that temperament of heat, when they will not fail to produce their beautiful flowers annually, and the Jacobæan Amaryllis often two or three times in that period.

All the ſorts are propagated by the off-ſets, or ſmaller bulbs, that ariſe annually from the ſides of the main roots, which ſhould be tranſplanted when their leaves decay, and the off-

ſets ſeparated for propagation, and planted by themſelves, and in two or three years they will attain a due ſize for flowering, when they are to be managed as above directed.

Sea DAFFODIL, [*Pancratium.*] The ſpecies are; 1. Common Sea Daffodil; 2. Illyrian Multiflorous Sea Daffodil; 3. Ceylon ſingle-flowered; 4. Double-flowered Mexican; 5. Amboyna Sea Daffodil; 6. Carolina Sea Daffodil.

The two former are hardy, and proſper in the open ground, but muſt have a warm dry ſituation, and a light ſoil, and ſheltered from ſevere froſts, where they will abide for many years by the roots renewing their leaves and flower-ſtalks annually, and increaſed by off-ſets. The others are tender exotic plants, and muſt be kept in the hot-houſe. They are perennial in root, but annual in ſtalk.

All the ſorts have great elegance in their flowers, and moſt of them are enriched with a delightful fragrance, and demand our attention for culture in the pleaſure-garden and ſtove.

The two hardy ſorts are proper for the pleaſure-garden, but ſhould have a warm dry ſituation, and light ſoil: the ſeaſon for planting them is autumn, that is, the roots being taken up when their leaves decay, ſhould be planted again ſoon after; placing them about four inches deep, and they will flower the year following; ſuffering the roots to remain unremoved for two or three years; when they will be increaſed by off-ſets, and ſhould be taken up and ſeparated.

Obſerve, in ſevere froſts, it will be proper to cover the ground over the roots with litter, to protect them.

The five tender ſpecies muſt be planted in large pots, and placed in the hot-houſe: the ſeaſon for planting and tranſplanting them is when their leaves decay: obſerve this, and plant one root in each pot, which plunge in the bark-bed of the ſtove, where let them always remain; and here they will flower ſtrong at their uſual ſeaſons, and multiply exceedingly by off-ſets.

All the ſorts are propagated by off-ſets of the roots, like other bulbs, which may be ſeparated every ſecond or third year, or according as they multiply; the proper time for which is, when their leaves decay; planting the off-ſets of the hardy ſorts in nurſery beds for a year, then tranſplant them where they are to remain; thoſe of the tender kinds plant in ſeparate pots, plunging them in the bark-bed. Thoſe of all the ſorts will flower in perfection the ſecond year, and in their turn furniſh a proper ſupply of off-ſets for increaſe.

DAG. Dew.

DAIRY. See BUTTER, CHEESE, MILK.

DAISY, [*Bellis.*] The ſpecies are, 1. The common perennial Daiſy, with a naked ſtalk and ſingle flower; 2. The annual Daiſy, with leaves on the lower part of the ſtalk; 3. The Garden Daiſy.

The firſt ſort is the common Daiſy, which grows naturally in paſture land in moſt parts of Europe, and is often a troubleſome weed in the graſs of gardens, ſo is never cultivated.

The ſecond ſort is a low annual plant, which grows naturally on the Alps, and in the hilly parts of Italy. This ſeldom riſes more than three inches high, with an upright ſtalk, which is garniſhed with leaves on the lower part, but the upper part is naked, ſupporting a ſingle flower like that of the common daiſy, but ſmaller.

The Garden Daiſy is generally ſuppoſed to be only a variety of the wild ſort, which was firſt obtained by culture. This may probably be true; but there has not been many inſtances of the wild ſort having been altered by culture; nor has the garden Daiſy been obſerved to degenerate to the wild ſort, where they have been ſome years neglected, though they have altered greatly with regard to the ſize and beauty of their flowers; therefore we ſhall not conſider them as diſtinct ſpecies, but ſhall only mention the varieties which are cultivated in the gardens.

1. The red and white Garden Daiſy, with double flowers; 2. the double variegated Garden Daiſy; 3. the Childing, or Hen and Chicken Daiſy; 4. the Cockſcomb Daiſy, with red and white flowers.

The Garden Daiſies flower in April and May, when they make a pretty variety, being intermixed with plants of the ſame growth. They ſhould be planted in a ſhady border, and a loamy ſoil, without dung, in which they may be preſerved without varying, pro-

provided the roots are tranſplanted and parted every autumn, which is all the culture they require, except the keeping them clear from weeds.

Greater, o *Ox-eye* DAISY, [*Leucanthemum, Bellis Major.*] This is frequent in fields, and among corn, flowering in May and June. The leaves have a glutinous, ſubſaline, roughiſh taſte. They are ſaid to be detergent, reſolvent, aperient, and alſo moderately aſtringent. Geoffroy relates, that the herb, gathered before the flowers have come forth, and boiled in water, imparts an acrid taſte, penetrating and ſubtle like pepper; that this decoction is an excellent vulnerary and diuretic.

DALLOP. A tuft or clump.

DAM. The female parent of animals not human.

DAM. A mole, or bank to confine water.

DAME's VIOLET, [*Heſperis,*] Rocket, Queen's Gilliflower. There are ſeveral ſpecies of this plant, which flower in June and July, and perfect their ſeeds in Auguſt; they are propagated by ſowing the ſeeds in March and April, by dividing the roots in Autumn, and by cuttings of the flower-ſtalks in the manner following: Having procured a quantity of theſe kind of cuttings, from about three to five inches long, plant them in a ſhady border, putting them two parts out of three into the ground, about three inches aſunder, and give water; let the waterings be frequently repeated, and many of the cuttings will be well rooted, and form ſhoots at top in ſix or eight weeks; but to promote their rooting more effectually, they may be covered cloſe with hand or bell-glaſſes, as ſoon as planted, whereby they will ſtrike much ſooner; obſerving, when they begin to ſhoot at top, to raiſe the glaſſes to admit air, to which harden them fully by degrees.

Sometimes cuttings of the flower-ſtalks of thoſe that have flowered, cut down as ſoon as the flower begins to fade, and divided into lengths, and planted as above, will alſo grow, though they will not produce ſo good plants as thoſe formed of the young ſtalks early in the ſummer.

DAMSON, or DAMASCEN, [*Prunum Damaſcenum.*] A ſmall black plumb, brought originally from Damaſcus, whence its name.

DAMASK ROSE. This elegant flower is frequent in our gardens. Its ſmell is very pleaſant, and almoſt univerſally admired; its taſte bitteriſh and ſubacrid. In diſtillation with water, it yields a ſmall portion of a butyraceous oil, whoſe flavour exactly reſembles that of the roſes. This oil, and the diſtilled water, are very uſeful and agreeable cordials. Hoffman ſtrongly recommends them as of ſingular efficacy for raiſing the ſtrength, chearing and recruiting the ſpirits, and allaying pain; which they perform without raiſing any heat in the conſtitution, rather abating it when inordinate. Damaſk roſes, beſides their cordial aromatic virtue, which reſides in their volatile parts, have a mildly purgative one, which remains entire in the decoction left after the diſtillation. This, with a proper quantity of ſugar, forms an agreeable laxative ſyrup, which has long kept its place in the ſhops.

DANDELION, [*Dens Leonis, Leontodon.*] This plant is common in fields, and uncultivated places: it has ſeveral narrow, dentated leaves lying on the ground, with a ſlender naked ſtalk ſuſtaining a yellow flower. The root, leaves, and ſtalk, contain a bitter milky juice: they promiſe to be of uſe as aperient and detergent medicines, and have ſometimes been directed in this intention with good ſucceſs. Boerhaave eſteems them capable, if duly continued, of reſolving almoſt all kinds of coagulations, and opening very obſtinate obſtructions of the viſcera.

DANEWORT. A name given in ſome counties to dwarf elder.

DANK. Damp, moiſt, wet.

DAPPLE. Marked with various colours.

DARNEL, [*Lolium.*] A troubleſome weed, the ſame as cockle.

DARNEL GRASS. A troubleſome weed or graſs, of which there are two kinds, the white and red, growing with ſtalks and ears not very unlike barley in appearance.

DATE-TREE, [*Palma Dactylifera.*] An evergreen-tree, brought from Africa, and the eaſtern warm countries.

This ſingular tree, like the reſt of the Palm tribe, has no other branches than its large leaves, each of which being a compoſition of a leaf and branch,

branch, always arifing from the top, and as the old leaves fall, the ſtem forms itſelf and advances in height; but although the leaves grow very tall in a few years, yet the ſtem advances but ſlowly, and can never be expected to arrive at a flowering and fruiting ſtate in this country; it, however, merits a place in our hot-houſe collections for its ſingularity.

It muſt always be kept in pots of rich earth, and placed conſtantly in the ſtove; and if there plunged in the bark-bed, it will make the greater progreſs: obſerving to give proper waterings, and ſhift it occaſionally into larger pots.

The propagation of this plant is by ſeed, procured from abroad, which ſow as ſoon as poſſible, in pots of light rich earth, and plunge them in a tan hot-bed, or in the bark-bed in the ſtove; giving moderate waterings, they will ſoon come up, and, when a few inches high, prick them into ſeparate ſmall pots, plunging them into the hot-bed, or in the bark-bed, as aforeſaid; where they may remain, giving frequent waterings, and ſhift them into larger pots, according as their progreſs of growth may require. The berries of this tree are the dates of the ſhops.

DATE-PLUMB-TREE, [*Diospyros.*] Of this there are two kinds, 1. the Indian; 2. the Virginian, otherwiſe called Piſhamin, Perſimon, or Pichumon Plumb.

The firſt ſort is ſuppoſed to be a native of Africa, and was tranſplanted from thence into ſeveral parts of Italy, and alſo the ſouth of France. The fruit of this tree is by ſome ſuppoſed to be the Lotus, which Ulyſſes and his companions were enchanted with. It is a tree of middling growth in the warm parts of Europe, where it riſes upwards of thirty feet high; in the botanic garden at Padua, there is one very old tree, which has been deſcribed by ſome of the former botaniſts, under the title of Guaiacum Patavinum. This tree produces plenty of fruit every year, from the ſeeds of which many plants have been raiſed.

The ſecond ſort is a native of America, but particularly in Virginia and Carolina; the ſeeds of this are frequently brought to England, where the trees are now become pretty common in nurſeries about London. This riſes to the height of twelve or fourteen feet, but generally divides into many irregular trunks near the ground, ſo that it is very rare to ſee a handſome tree of this ſort. It produces plenty of fruit in England, but they never come to perfection here. In America the inhabitants preſerve the fruit till it be rotten, (as is practiſed by medlars in England, when they are eſteemed a pleaſant fruit.

Both ſorts are propagated by ſeeds, which will come up very well in the open ground; but if they are ſown upon a moderate hot-bed, the plants will come up much ſooner, and make a greater progreſs. Theſe are both hardy enough to reſiſt the greateſt cold of this country, after the plants have acquired ſtrength.

DAUKE. Deadly carrot. *Daucus. See Wild Carrot.*

DAWN. The time when the morning firſt appears.

DAY-LABOUR. Work done by the day.

DAY-LABOURER. One who does work by the day.

DAY-LILY, [*Hemerocallis.*] Lily Aſphodel. A kind of lily which derives its name from the diurnal duration of its flowers, and by being preceded by new ones daily on the ſame plants for a fortnight or three weeks. The roots are perennial, but the leaves and ſtalk annual. They flower in June, and ripen the ſeeds in Auguſt, and may be propagated by parting the roots; the beſt time for doing which is autumn. There are ſeveral ſpecies.

DEAD-NETTLE. See ARCHANGEL.

DEADLY CARROT. See CARROT. *Dauk.*

DEADLY NIGHTSHADE. See NIGHTSHADE.

DEAL-TREE. See FIR.

DEAN. A kind of pear.

DECEMBER. The laſt month of the year. In this month we would adviſe, if not before done, all the land deſigned for turnips to be fallowed down, and the clover and young graſs to be well dunged.

Products of the Kitchen Garden this Month.

Red, white, and Savoy cabbages, ſome brocoli and brown cole.

Aſparagus upon hot-beds, made the beginning of November.

Several

Several ſorts of ſallad-herbs under glaſſes, or upon hot-beds, as creſſes, lettuce, raddiſh, muſtard, &c. as alſo mint and tarragon, if planted on a moderate bed in October; alſo endive and celiery blanched.

Carrots, parſnips, potatoes, turnips, ſkirrets, ſcorzonera, and beet roots.

Onions dried, leeks, ſorrel, chard, beet, with ſavory, thyme, ſage, and many other herbs for ſoup.

Fruits in prime, or yet laſting.

Apples.—The Nonpareil, Golden Pippin, Aromatic Ruſſet, Wheeler's Ruſſet, Pike's Ruſſet, Kentiſh Pippin, Holland Pippin, Haut-bonne, Rennet Griſe, with divers other ſorts.

Pears.—The Colmar, St. Germain, St. Andrew, Virgoulé, Ambrette, Leſchaſſerie, Epine d'Hyver, St. Auguſtine, Beuré d'Hyver, Louiſe-bonne, L'Amadotte.

For baking or ſtewing; the Catillac, Parkinſon's Warden, Union, with ſome others of leſs note.

As alſo Medlars, Services, ſome Grapes, and other fruits, where they have been carefully preſerved.

Plants in flower.

Some ſingle Anemonies, Polyanthuſes, Primroſes, Stock Gilliflowers, Narciſſuſes, Helleboraſter, or bears-foot, Alyſſon, red-flowered Spring Sowbread, Tangier Fumitory, narrow-leaved Golden Rod, Aconite, and Snowdrops at the latter end.

Medicinal plants, which may now be gathered for uſe.

Savin, Bearsfoot, the roots of Beet, Elecampane, Fennel, Henbane, Lovage, Spignel, Butterbur, Hogs-fennel, Hart's-tongue, Polypody, Solomon's Seal, Sopewort, Scorzonera, Skirret.

Plants now in flower in the ſtove or green-houſe.

Leonurus, Candy Tuft-tree, yellow Indian Jaſmine, Aleppo Cyclamen, Geranium, Spaniſh and Arabian Jaſmine, double-flowered Indian Creſs, dwarf Sun-flower, African Shrubby Mallow, Senſitive Plants, Mexican Clary, African Wood Sorrel, Solanum of ſeveral ſorts, Alkekengi, and the Amomum of Pliny, &c.

Hardy trees and ſhrubs in flower.

Lauruſtinus, Arbutus, Spurge Laurel, Glaſtonbury Thorn, Virginian Groundſel-tree, upright blue-berried Honeyſuckle, Mezereon, Pyracantha in fruit.

DECIDUOUS, Falling, not perennial: an epithet applied to ſuch trees and ſhrubs as ſhed their leaves in the autumn. Thus the oak, the elm, the beech, &c. are called deciduous trees.

DELVING. Digging.

DEMAIN, or DEMESNE, in common ſpeech, is the lord's chief manor-place, with the lands thereto belonging, which he and his anceſtors have, from time to time, kept in their own manual occupation; but according to law, all the parts of the manor, excepting what is in the hands of free-holders, are ſaid to be Demains.

DENSHIRING, or DEVONSHIREING. See BURNBAKING.

DEVIL's BIT, [*Morſus Diabeli.*] A weed or plant commonly found in meadows and fields, bearing flowers of a pale purple colour, and having a faint ſmell, and a nauſeous bitteriſh taſte. It is a ſpecies of ſcabious.

DEVIL IN A BUSH, [*Nigella.*] Fennel-flower, a very troubleſome weed among the corn, eſpecially in Italy, France, and Germany, where it abounds much more than in this country. It riſes with ſlender ſtalks, near a foot high, which ſometimes branch out at the bottom, and ſometimes are ſingle, garniſhed with a very few fine cut leaves, ſomewhat like thoſe of dill. Its flower is generally blue, and its ſeeds are rough and black. This, together with their being nearly of the ſame ſize with the grains of wheat, renders it diffieult to ſeparate them from the corn, when the plant has been cut and houſed with it; they blacken the meal, and debaſe its value. This plant is annual, and therefore may be extirpated by rooting it out before it can ſeed, which is commonly in Auguſt. There are two or three kinds, with double flowers, kept in gardens for ornament, which are propagated by ſeeds.

DEVIL's DUNG. See ASAFETIDA.

DEW. The moiſture perceived on the ground, on the leaves of plants, blades of graſs, &c. in a morning.

DEWBERRY. A ſpecies of bramble or black-berry.

DEWLAP. The fleſh which hangs down from the throat of oxen.

DIABETES, A morbid copiouſneſs of urine, or the making water in too great

quantities. This diſorder is very common in horſes, and often terminates in death.

Horſes ſubject to a diabetes, or profuſe ſtaling, if old, or of a weak conſtitution, are ſeldom cured; they ſoon loſe their fleſh and appetite, grow feeble, their coat ſtaring, and they die rotten. Of a young horſe there are more hopes, but he muſt not be indulged with too much water, or moiſt food; at the ſame time give him the following drink:

Take jeſuit's bark four ounces; biſtort and tormentel root, of each two ounces; boil them in two gallons of lime-water to the conſumption of half, and give a pint three times a day.

Let the horſe drink two or three quarts a day of lime water; and if theſe medicines ſhould not ſucceed, give a quart of ſtrong alum-poſſet, three or four times a day.

DIAPENTE, A powder much uſed in diſeaſes of cattle.—Take of round birthworth roots, gentian roots, bayberries, myrrh, and ivory-ſhavings, each equal parts, and make them into a powder.

DIAPHRAGM, Midriff, or Skirt, as ſome call it, in a horſe or bullock, is a muſcular ſubſtance that divides the upper cavity, or cheſt, from the lower belly.

DIBBLE. A ſetting-ſtick, or inſtrument to make holes in the ground for ſetting plants, &c.

DIGGING. Digging ground may be conſidered as a ſort of garden tillage, or neceſſary preparation of the ſoil, for the reception of all ſorts of ſeeds and plants, and which ſhould be duly performed annually, either in autumn, winter, or ſpring, particularly for every new crop, and is alſo beneficial to crops of perennial ſtanding, whether eſculent flowers or ſhrubs.

This operation is performed two different ways, plain digging, and digging by trenches, commonly called trenching.

Plain Dgging.—This is beginning at one end of any piece of ground, bed, or border, and dig it one ſpade deep, right back ſpit and ſpit regularly to the place where you finiſh; the method is this, begin as aforeſaid at one end of the piece of ground you intend to dig, and with your ſpade open a trench quite acroſs, one good ſpade wide, and one deep, carrying the earth to the end or place where you finiſh; then, keeping your face to the opening, proceed to digging one ſpade deep regularly from one ſide of the piece to the other, turning the ſpits neatly into the trench; and the next courſe againſt theſe; and ſo keep digging ſtraight back, ſpit and ſpit, ſtill preſerving an open trench, a good ſpade width and depth, between the dug and undug ground, that you may have full room to give every ſpit a clean turn, taking all the ſpits perpendicular, and not take too much before the ſpade, eſpecially in ſtiff land, or where the ſurface is full of weeds, or is much dunged; ſo giving every ſpit a clean turn, the top plump to the bottom, and the bottom to the top, that the weeds or dung on the ſurface may be buried a due depth, and that the clean freſh earth may be turned up.

As you proceed, break all large clods, and preſerve an even ſurface, carrying both ſides and middle on equally, unleſs one ſide ſhall be hollow, then carry on the hollow ſide firſt, in a kind of gradual ſweep, inclining the ſpits of earth rather that way, which will gradually raiſe that ſide, and reduce the high one; obſerving the ſame if both ſides are high, and the middle hollow, or both ſides hollow and the middle high, always keeping the lower ground advancing gradually before the higher, by which you will always maintain a uniform level, whether horizontal or declining.

The ſame ſhould alſo be obſerved in beginning to dig any piece of ground, that if one corner is much lower than the other, carry on the lower part ſomewhat firſt, in a kind of eaſy ſweep or ſlanting direction, as far as neceſſary; likewiſe in finiſhing any piece of digging, that if one corner ſhall be low, and the other high, carry the digging gradually round upon the lower ſide, ſo as to finiſh at the higheſt corner; and having digged to the end, or that part of any piece of ground where you intend to finiſh, then uſe the earth digged out of the firſt trench, to make good the laſt opening equal with the other ground.

In plain digging dunged ground, if the dung is quite rotten, you may either dig clean through, giving each ſpit a clean turn, to bury the dung

plump in the bottom of the trench; but if you cannot readily do this, trim the dung a ſpade's width at a time into the furrow or open trench, and ſo dig the ground upon it, which is rather the moſt effectual method, whether rotten or long freſh dung.

In the courſe of digging, all root-weeds which are perennial, ſhould be carefully picked out, particularly couch-graſs and bear-bind, the Convolvulus Sepius, for the leaſt bit of either will grow, increaſe greatly in ſummer, and prove very troubleſome weeds.

But ſlight-rooting weeds on the ſurface being turned clean to the bottom, will rot, and never trouble you again.

Digging by Trenches, or Trenching.—This is called trenching, becauſe the ground is digged in regular trenches, trench and trench, of two or three ſpade's width, and one, two, or more deep, in the following manner.—

Begin at one end of the piece of ground, and open a trench by line and ſpade two full ſpades width at leaſt, and one or two deep, and wheel the earth to the place where you ſhall finiſh, then mark out a ſecond trench of the ſame width, pare all weeds on the ſurface into the bottom of the firſt, and then beginning at one end of the ſecond, and ſtanding ſide-ways to the other, dig it the full width and depth as above, turning the earth into the firſt trench, obſerving, that if you go two ſpades deep, dig the top ſpit along firſt, then beginning again on the end, dig the ſecond courſe; then mark out a third trench, dig it into the ſecond, and ſo proceed, trench and trench, to the end of the ground; remarking, that if you would have each courſe of ſpits in their ſeveral trenches their full depth, it is proper to ſhovel up the crumbs or looſe earth at bottom of each courſe; ſo may dig either one ſpade deep and the crumbs, or two and crumbs, as ſhall ſeem neceſſary, but by no means go below the good ſoil; and one good full ſpade deep, with a good paring at top, is for common trenching, ſufficient for general crops of moſt ſorts of plants, and more than that is only neceſſary on particular occaſions, and for particular plants.

I would, however, obſerve, that by trenching occaſionally two ſpades deep, where the ſoil admits, by turning the bottom ſpit to the top, renews the ſoil, and by turning the exhauſted or worn-out earth to the bottom, that depth for two or three years, gives it a ſort of reſpite to recruit new vigour in its vegetative quality, that being again trenched up to the top, will produce crops the more abundantly, and in greater perfection.

It is, indeed, good culture when practicable, to trench two moderate ſpades deep, with or without the crumbs, for carrots and parſnips, and ſuch like roots, which ſtrike deep into the ground; and for liquorice, three full ſpades deep is neceſſary; for the roots, the uſeful part, often ſtrike down four feet deep.

The merit of trenching in general is ſuperior to plain digging for principal crops, or any plantations, in that the top ſoil, all weeds and dung are more effectually buried in the bottom and the freſh ſoil at bottom more readily turned to the top, which is of conſiderable importance in the growth of all ſeeds and plants; therefore, in digging ground for any general crops or plantations of young trees, &c. we would adviſe to dig it principally by trenches, one good ſpade deep at leaſt, or two occaſionally, eſpecially when neceſſary to renew the ſoil, or as you ſhall judge proper for long-rooted eſculents, as carrots, &c. or plantations of choice fruit-trees.

In all trenching, whether one, two, or more ſpades deep, always, previous to digging, pare the top of each trench two or three inches deep, or more, with all weeds and other litter into the bottom of the open one, which not only makes clean digging, and encreaſes the depth of looſe ſoil, but all weeds, as alſo the ſeeds of thoſe that may have ſcattered on the ſurface, are regularly buried at ſuch a depth, that the weeds themſelves will rot, and their ſeeds cannot vegetate.

In trenching dunged ground, if you trench but one ſpade deep, bury the dung of each trench regularly in the bottom; but if two ſpades deep, it will be eligible to bury the dung between the two ſpits, that is, trimming back the dung, dig the firſt courſe, turning it into the bottom of the open trench, then trim in the dung upon that

that, and dig the ſecond courſe; and turn it in upon the dung, and ſo proceed trench by trench.

When intending to trench for ſpring crops, or even for an autumn or winter plantation, it is good culture to perform it ſome conſiderable time before, to lie fallow till the time for ſowing or planting, to meliorate by the weather, but more particularly for ſpring crops, ſo that if it is trenched up in rough ridges in winter, to lie till ſpring, and then levelled down, proves very beneficial to plants of all ſorts.

We would alſo adviſe, that all trenching in winter, intended for ſpring crops, be trenched up in rough ridges, that is, inſtead of forming a level ſurface, lay the earth of each trench in a ſharp ridge, as you advance with the work, laying the ſpits of earth rough, that the ſoil may lie hollow to receive the greater benefit from the ſun, air, and froſt, to meliorate and enrich its quality.

The above method of ridging the trenches, is univerſally practiſed by the London kitchen-gardeners, even if the trenching is done in ſpring, and is to lie but a week, or two or three days, for it is ſoon levelled down when to be ſown or planted, and it greatly improves the ground.

The ridges are ſoon levelled down in ſpring, or when the ground is wanted for ſowing or planting, obſerving to chuſe dry weather for this work, levelling them regularly ridge and ridge lengthways, ſtirring all the ground, and preſerve an even ſurface; and if the ground is for ſowing with ſmall ſeeds, do not level down much more than you can ſow the ſame day, for fear of rain coming to render the ſurface cloggy, or the ſun and winds dry it too much, at moſt land is always in beſt order for ſowing while it is freſh ſtirred, for it not only falls to pieces more readily in raking, to cover the ſeed more effectually, but freſh ſtirred land promotes a quick and free germination in the ſeed.

Gardeners that have large grounds often hire the digging by the rod, the prices generally according to the nature of the ground, whether light, looſe, clean, and eaſy to be digged, or of a ſtiff nature, and whether it is clean or foul with weeds, or not dunged, or dunged, and whether by plain digging, or digging by trenches.

The prices by plain digging, that for light, clean, free-working ground, is, about London, commonly two-pence, or two-pence halfpenny per rod, and if dunged, three-pence. But ſtiff, ſtubborn-working land is often three-pence, or four-pence, without dung; and where ground is very full of perennial weeds, ſuch as couch-graſs, bear-bind, and the like, which ſhould all be picked out by hand, an extra allowance is generally given per rod, a halfpenny or penny, according as the ground is more or leſs foul.

The prices by trenching is, that for one ſpade deep, and a top paring, commonly from two-pence halfpenny to four-pence, according to the nature of the ground, and whether dunged or clean, or foul with weeds, though clean free-working ground is generally digged with dung one ſpade deep for three-pence, and, if two ſpades deep, from four-pence to ſix-pence or eight-pence.

A man will dig by plain digging, of light, free-working, clean ground, eight, ten, or twelve rods a day, from ſix to ſix; though in ſome of the light clean ground about London, we have known a man turn up fifteen or twenty rods a day, from five to ſeven; on the other hand, in ſtiff ſtubborn ſoils, a man may work hard for ſix or eight rods in a day of twelve hours. And that digging by trenches, or trenching, if only one ſpade deep, without the crumbs, or ſhovelling at bottom, a man will dig almoſt as much as by plain digging; and by double-digging, or two ſpades depth, from four to ſix rods a day may be good work, though in harſh-working ground, a man may labour hard to get up four rods a day.

DIGITATED. Branched out into diviſions like fingers.

DIKE, A ditch. It alſo ſignifies a dam or mound to hinder inundations.

DILL, [*Anethum.*] The name of an herb cultivated in the kitchen-garden, and nearly reſembling fennel.

Dill muſt be ſown where it is to remain, for it will not bear tranſplanting. The ſoil ſhould be light, and the ſeeds ſown in the autumn, ſoon after they are ripe; for they ſeldom grow well if they are kept out of the ground till ſpring. When the plants are come up, they ſhould be thinned to the

diſtance of eight or ten inches from each other, that they may have room to put forth their lateral branches; and if they are afterwards kept clear from weeds by good hoeing, they will not require any farther care. When their ſeeds begin to be formed, ſuch of the pods as are intended to be put into pickle for cucumbers (for that is their chief culinary uſe) ſhould be cut; and when the ſeeds of the remainder deſtined for ſowing are ripe, they ſhould be dried upon a cloth, and then beaten out. If they are ſuffered to ſow themſelves, they will produce in the ſpring a multitude of young plants, which will want no other culture than thinning them with a hoe, and keeping them clear from weeds.

Their taſte is moderately warm and pungent; their ſmell aromatic, but not of the moſt agreeable kind. Theſe ſeeds are recommended as a carminative, in flatulent colics, proceeding from a cold cauſe, or a viſcidity of the juices. The moſt efficacious preparations of them are, the diſtilled oil, and a tincture or extract made with rectified ſpirit.

DINGLE. A ſmall clough or valley between two ſteep hills.

DISC, or DISK, in botany, is an aggregate of partial flowers, forming a circular plane in a compound flower.

DITCH. A trench cut round the fences of a field.

Every good farmer will keep his ditches well cleaned out, as well to keep his lands dry if they are watery, as to preſerve his fences the more ſecure. After a proper quantity is thrown up for the defence of his hedges, the reſt of the mud affords an excellent manure, as it conſiſts of the putrid particles of animals and vegetables, mixed with the fineſt and richeſt mould; and therefore proves a great improvement to any ſoil, particularly the light and dry. But this mud ſhould be expoſed to the air for ſome time, that the ſeeds of the weeds generally contained in it may have time to vegetate, or putrify, before it be laid on the land.

DISTAFF-THISTLE, [*Atractylis.*] There are three kinds of this plant, two are annual, the other perennial. They are propagated by ſeeds.

The perennial is known by the name of Carline Thiſtle, and grows ſpontaneouſly in the ſouthern parts of France, Spain, Italy, and the mountains of Swiſſerland, from whence the dried roots are brought to us. This root is about an inch thick, externally of a reddiſh brown colour, corroded as it were on the ſurface, and perforated with numerous ſmall holes, appearing when cut as if worm-eaten. It has a ſtrong ſmell, and an acrid, bitter, aromatic taſte. Carline is looked on as a warm diaphoretic and alexipharmac; and has been for ſome time greatly eſteemed by foreign phyſicians, but never came much into uſe among us: the preſent practice has entirely rejected it; nor is it often to be met with in the ſhops. Frederic Hoffman, the elder, relates, that he has ſeveral times obſerved a decoction of it in broth occaſion vomiting.

To DISAFFOREST, ſignifies no more than to turn land from being foreſt to ſome other uſe.

DISBOSTATION, is a turning of wood-ground into arable or paſture.

DISTILLATION. Water diſtilled over from certain plants, &c. by a boiling heat, becomes more or leſs impregnated with their flavour and virtue. The diſtilled liquor owes the qualities it acquires to a portion of the oil of the ſubject elevated and mingled with it.

The virtues, capable of ariſing in this proceſs, are thoſe only which conſiſt in warmth, pungency, and ſmell or flavour; and hence ſuch ſubſtances as are eminently endued with theſe, are the proper ſubjects for diſtilled waters to be drawn from: ſuch are, ſpices, warm ſeeds and berries, fragrant herbs, flowers, and fruits, and ſome of the acrid plants.—Cathartic, emetic, aſtringent, bitter, ſweet, cooling, emollient, nutritious qualities, are in vain expected to come over the helm.

Some vegetable matters, even of the more odoriferous kind, undergo ſuch an alteration from the aqueous medium, and the degree of heat neceſſary in this operation; that though the ſubject loſes all its fragrance, yet the diſtilled liquor has little or nothing of it, but proves both in ſmell and taſte diſagreeable.

In order to collect the volatile virtues of theſe kinds of vegetables, the chemiſts have contrived another proceſs;

ceſs; which Boerhaave ſeems particularly fond of. The ſubject is included in proper veſſels, without any additional matter, and expoſed to a heat no greater than that of the ſummer's ſun: the vapour, which ariſes in this degree of warmth, and condenſes in the receiver, is ſuppoſed to contain the more fragrant, ſubtile, and aromatic parts of the plant; and to be in reality, the effluvia that would exhale from it in the open air, caught and collected by the means of art.

This proceſs, however, is, upon trial, found defective; the liquors obtained by it proving greatly different in ſmell from the natural effluvia of the ſubject. And, indeed, the principle it is founded upon appears to be erroneous. It is not the ſun's heat alone, that raiſes and impregnates the air with the odorous effluvia of vegetables; this fluid itſelf, as a menſtruum, diſſolves and imbibes them.

The natural effluvia of vegetables, therefore, which may be looked upon as an infuſion of them made in air, may have very different effects from thoſe parts of them which are capable of being elevated in diſtillation. Thus, though the effluvia of poppies ſhould procure ſleep, or bring on lethargic diſorders, and thoſe of the walnut-tree bind the belly, (as they are reported to do) it is not to be expected that their diſtilled waters ſhould do the like. Lemery relates, from his own knowledge, that ſeveral perſons were purged, by ſtaying long in a room where damaſk roſes were drying; an effect daily experienced from aqueous infuſions of theſe flowers, but never from their diſtilled water.

DITTANDER, [*Lepidium.*] Pepperwort. This grows naturally in moiſt places in many parts of England. The ſeed ripens in Auguſt. The whole plant has a hot biting taſte like pepper, for which it is not unfrequently uſed by the poorer kind of people, and hence called poor-man's pepper.

There are ſeveral other kinds brought from different parts of France and Spain, Sicily, Perſia, Aleppo, Virginia, and the Weſt-Indies. They are all propagated by ſowing the ſeeds in Autumn, and many of them muſt be defended from the froſts in winter.

DITTANY. A ſpecies of organum, or marjoram. It grows naturally in Candia, and is eaſily propagated by planting cuttings or ſlips in any of the ſummer months. In ſmell and taſte the leaves reſemble lemon thyme, but have more of an aromatic flavour, as well as a greater degree of pungency. When freſh, they yield a conſiderable quantity of an excellent eſſential oil.

Baſtard DITTANY. See BASTARD.

DITTO. The ſame.

DOCK, [*Rumex.*] There are abundant kinds of dock, and amongſt them are claſſed the patience rhubarb and monk's rhubarb. They are very troubleſome weeds, and require great care to eradicate, as every bit of the root left in the ground will grow, and the ſeeds which they produce are very numerous. Only the two rhubarbs are raiſed in gardens for medicinal uſe, and are eaſily enough propagated by ſeeds.

DOCKING. The act of cutting off the tails of horſes.

This operation is in general very ſucceſsfully executed by the common methods, which are known to every farrier. But ſometimes a miſcarriage enſues by an inflammation and gangreen ſucceeding. Theſe accidents probably ariſe from the tendons of the tail ſuffering by an injudicious application of the knife or ſearing-iron, or in an improper ſeaſon for the operation. Neither the very hot or cold months are proper, for reaſons ſufficiently obvious. The operation ſhould always be performed by inciſion, or the chopping engine: the knife being paſſed through the tail from above, whilſt it lays on the block; for when the cutting inſtrument is applied underneath, the blow is given on the tail, which, by bruiſing the tendons, may be naturally ſuſpected to occaſion bad ſymptoms. The ſearing-iron ſhould be ſmooth, and better poliſhed than thoſe generally uſed, and ought to be rubbed clean on a woollen cloth before it be applied to the ſtump; otherwiſe the ſparks which fly from the iron, are apt to occaſion great pain, attended with the ſwelling both of the ſheath and fundament: nor ſhould it ever be applied flaming hot, for then it brings the burnt part away with it,

and

and requires a re application, in order to form a fresh eschar on the vessels; by which means the bone is frequently left too much exposed, so that it is often a considerable time before it is covered.

Farriers seldom apply any thing to the stump, which need only be anointed with the wound ointment, and when the eschar is digested off, may be washed with allum or lime-water: but if an inflammation ensues, with a discharge of thin matter, a proper digestive, composed of Venice-turpentine, rubbed with the yolk of an egg and tincture of myrrh, should be applied, with a poultice of bread and milk over it. The rump should be frequently bathed with oil of roses and vinegar, and a large quantity of blood taken away. If the fundament be at all swelled, and the inflammation at all suspected to be communicated to the bowels, let cooling emollient clysters be injected two or three times a day. Should a gangreen ensue, add Ægyptiacum to your dressings, and spirits to the fomentation: and apply over all the strong-beer poultice, with London treacle, twice a day.

DOCTOR TINKAR's WEED, [*Trioſteum,*] *False Ipecacuanha.* This plant is a native of Virginia, where their roots were introduced as an emetic, by Dr. Tinkar, whence its name. It is preserved in several gardens in England, and is hardy enough to thrive in the open air. It is propagated by parting the roots, and sowing the seeds, on a moist light soil in autumn.

DODDED *Sheep.* Sheep without horns.

DODDER, [*Cuscuta.*] This is of the class of plants called parasitical, or which grow out from the body of others. It has no leaves, consisting only of a number of juicy filaments matted together. There are two sorts of it, *cuscuta major*, which grows commonly in heaths on furzes, nettles, &c. and likewise in fields of flax, and other manured plants; and the *cuscuta minor*, or *epithymum*, so called from its being found only upon thyme. This last is preferred for medicinal use, and is usually brought from Leghorn and many parts of the Turkish dominions, with tops and stalks of thyme amongst it. Epithymum has a pretty strong smell, and a roughish somewhat pungent taste. Its virtues remain as yet to be determined: the ancients ranked it among cathartics; but those who have given it in that intention have been generally disappointed.

DODMAN. The Shell-snail, a provincial term.

DODRED *Wheat.* Red wheat without beards.

DOG. A very useful well-known animal.

DOGSBANE, [*Apocynum.*] There are several kinds of dogsbane found in America, the West-Indies, East-Indies, and Guinea; they are trailing herbaceous plants, bearing pods filled with seeds, which are for the most part compressed, and lie over each other like tiles on a house: these have each a long plume of a cottony down, fastened to their crowns, by which, when the pods are ripe and open, the seeds are wafted by the wind to a considerable distance; so that, in the country where these plants naturally grow, they are some of the most troublesome weeds.

The down of these plants is in great esteem in France, for stuffing of easy chairs, making light quilts, which are warm and extremely light, so are very proper covering for those afflicted with the gout; as the down is so extremely light and elastic, that it occasions no weight. This the French call Delawad, and in the southern parts of France, where some will thrive in the open air, and perfect their seeds, there are many plantations made of these plants for the sake of the down. They may be propagated by seeds, layers, or cuttings.

DOGBERRY-TREE, or DOGWOOD. See CORNELIAN CHERRY.

DOGROSE. See BRIAR.

DOGS MERCURY, [*Mercurialis Canina.*] A perennial plant, growing wild in the woods and hedges in many parts of England.

DOG-GRASS. Couch grass.

DOGS-TOOTH, [*Erythronium.*] Dogs-tooth violet. A plant that flowers annually in April, and may be propagated, by off-sets from the roots, any time between June and September.

DOG's-STONES, [*Orchis.*] Foolstones. Satyrion. There are eight or nine different species, and several varieties of each species, which are all hardy perennials. They grow naturally,

rally, ſome ſorts in meadows, woods and paſtures; others in dry, ſterile, uncultivated places; but for the beauty and ſingularity of the flower, deſerve a place in the garden. They flower in May, June, and July. The ſeaſon for removing them is after they have done flowering, when their leaves and ſtalks decay.

From a late diſcovery it appears, that from the root of the different kind of Orchis of our own country, (particularly the male Orchis, which is found growing naturally in woods and ſhady places in many parts of England) may be prepared a powder to reſemble Salep that comes from Turkey: the alimentary virtues of which are well known, as well as its exorbitant high price, which confines it, in a great degree, only to perſons of affluent circumſtances; but as many of the ſpecies of Orchis are indigenous plants of Britain, growing ſpontaneouſly in moſt parts of the kingdom, and as they flouriſh in almoſt any dry barren ſoil, by a little culture, all ranks of people might, in a ſhort time, be accommodated with this nutritious vegetable for making ſalep powder; and for encouraging its propagation, the ſociety of arts and ſciences in London have repeatedly offered premiums.

Their propagation may be tried both by ſeed and by off-ſets of the roots.

By ſeed.—This muſt be very carefully collected in the places where the plants grow naturally; and ſow it directly in the garden, in a border of light earth, and rake it in with a light and even hand; and if it grows freely, the plants may either be thinned and remain where ſowed, or, when a year or two old, may plant them out in rows a foot aſunder.

By roots.—As before obſerved, the roots may be procured in plenty from the places of their growth, taking them up when their leaves decay in ſummer, and plant them directly where they are to remain, three inches deep; here they will probably increaſe by off-ſets, like other bulbous roots, which may be taken up every two or three years, at the proper ſeaſon, in order to ſeparate the off-ſets, planting the whole again as ſoon as poſſible, placing the off-ſets in beds by themſelves.

When deſigned to cultivate theſe plants for uſe, the roots ſhould be depoſited in beds, in rows ten or twelve inches aſunder, and the depth as before-mentioned.

DOG's-TONGUE, [*Cynogloſſum.*] Hound's-tongue. The leaves of this plant are, in ſhape, thought to reſemble a tongue, whence its name. It is cloathed with a whitiſh down; and grows wild in ſhady lanes. The roots have a rank diſagreeable ſmell, and rough bitteriſh taſte, covered with a glutinous ſweetiſhneſs. The virtues of this root are very doubtful: it is generally ſuppoſed to be narcotic, and by ſome to be virulently ſo. Others declare that it has no virtues of this kind, but look upon it as a mere glutinous aſtringent. The preſent practice takes no notice of it in any intention.

There are ſeveral ſpecies, ſome annual, and others perennial; the former of which are propagated by ſeeds, and the other by rooting ſtalks, cuttings of which may be planted in ſpring, ſummer, or autumn.

DOGWOOD *of Jamaica*, [*Robinia Alata.*] A ſpecies of Robinia or falſe Acacia.

DOGWOOD *of Virginia*, [*Borbonia.*] A ſpecies of bay, called the Carolina Bay. See BAY.

DOKE. A deep furrow.

DOLE, or DOOL. A long narrow green in an open field left unploughed.

DOLPHIN-FLY. A fly deſtructive to beans. The black dolphin-fly often deſtroys a crop of beans; and to prevent this, one or more perſons ſhould be ſent into the field, with a ſharp hook or ſickle, to cut off the tops.

DORE. Dores are a ſort of inſects that are great deſtroyers of all kinds of corn, both white and pulſe, whilſt it lies dry on the ground, and before it ſprouts; for when it begins to ſprout, they will no more touch it; and the way they do it is like piſmires, to creep in at the ſmall crevices of the earth, and finding the grain, feed thereon as long as it continues dry; and though they are no hoarders, yet they are great feeders, and ever chuſe out the fulleſt and beſt corn, and leave the

the water, which is a double injury to the husbandman. Wherefore, the way to cure or prevent these dores or black-clocks, is to let the land, immediately before the corn is fold, be lightly sowed with sharp lime, the smell or taste of which proves a present poison to them, and they die.

DOSOME, applied to a fatting beast, signifies thriving.

DOUBLE-LEAF. See BIFOIL.

DOUBLE-TONGUE. A species of butcher's broom.

DOVE's-FOOT. Geranium.

DOWNY *Leaf*. Woolly leaf.

DRAFF. Grains of malt.

DRAG. A heavy kind of harrow.

DRAGON, [*Dracontium*.] A plant brought from the West Indies, where it grows naturally with trailing stalks, which put out roots at every joint, fastening to the trunks of trees, walls, &c. and thus rise to the height of thirty feet, and is easily propagated by cuttings. There are two other sorts, one brought from Ceylon, and the other from the West-India islands, but both require the assistance of the stove to preserve them during winter.

DRAGON-TREE, [*Draco*.] A species of palm growing naturally in the Cape de Verd islands and the Madeiras, whose inspissated juice becomes a red powder very like the eastern dragon's blood.

DRAGON'S-BLOOD, [*Sanguis Draconis*.] A resin brought from the East-Indies, either in open drops, wrapt up in flag leaves, or in large masses, composed of smaller tears. The writers on the materia medica in general give the preference to the former, tho' the latter is not unfrequently of equal goodness: the fine dragon's-blood of either sort breaks smooth, free from any visible impurities, of a dark red colour, which changes upon being powdered into an elegant bright crimson. Several artificial compositions, covered with the true dragon's-blood, or Brazil wood, are sometimes in the room of this commodity: some of these dissolve, like gums, in water; others crackle in the fire, without proving inflammable; whilst the genuine sanguis draconis readily melts and catches flame, and is not acted on by watery liquors. It totally dissolves in pure spirit, and tinges a large quantity of the menstruum of a deep red colour; it is likewise soluble in expressed oil, and gives them a red hue less beautiful than that communicated by anchusa. This drug, in substance, has no sensible smell or taste; when dissolved, it discovers some degree of warmth and pungency. It is usually looked upon as a gentle astringent, and sometimes directed as such in extemporaneous prescriptions against seminal gleets, the fluor albus, and other fluxes: in these cases, it produces the general effects of resinous bodies, lightly incrassating the fluids, and somewhat strengthening the solids.

DRAIN. A channel or trench cut in the earth, to drain off water from wet land. *See Bog Land — pasture.*

DRAPE. A cow whose milk is just dried up. *Drank. See Wise Cat.*

DRENCH. A mixture or draught given to a cow or horse, by means of a horn, cut for that purpose.

DRILL-PLOUGH. An instrument for sowing corn in drills, rows, &c.

DRILL-RAKE. An instrument to drill pease.

DRESSING. Manuring, laying on dung, &c.

DRIFT. The act of driving.

DRIFT *of the Forest*, is an exact view and examination taken at certain times, as occasion shall serve, to know what beasts are there; that none be common there, but such as have right, and that the forest be not over-charged with the beasts of foreigners.

DRIFT-SAND, is a good dressing for young clover.

DRIVING *of Bees*. This is done in September, after they have done breeding, (else will the honey be corrupted by the skaddons in the combs) by placing the hive you intend to take, with the bottom upwards, between three or four stakes, and set the hives you intend to drive your bees to over the same, binding them with a long towel; then often clap the under hive between your hands in the evening, and let them stand till the morning, and clap it again; set the full hive on the stool a little bolstered up, that the bees may have the free ingress and egress; then clap the empty hive again, and get as many bees out as you can, which will repair to the other hive. It is somewhat troublesome to perform.

perform, yet beneficial in ſuch caſes, where there is a great ſtock of honey, and a few bees in one hive, and a ſmall ſtock of honey in another; whereby the hives of moſt of them may be ſaved, who will ſo readily change their hungry for a more plentiful habitation.

DRONE. The male bee that makes no honey.

DROPSY. A diſeaſe incident to horſes, and is of two kinds; one the product of a feveriſh diſpoſition terminating on the ſkin, as often happens in epidemical colds; the other is dropſical, where the water is not confined to the belly and limbs, but ſhews itſelf in ſeveral parts of the body, by ſoft ſwellings yielding to the preſſure of the finger. This laſt kind uſually proceeds from foul feeding, or from the latter graſs and fog, that often comes up in great plenty, with continued cold rains, and breeds a ſluggiſh viſcid blood. In the former caſe, we have ſeen the limbs and whole body enormouſly ſwelled, and very hard, the belly and ſheath greatly diſtended; which were as ſurprifingly reduced in four and twenty hours, by ſlight ſcarifications within ſide the leg and thigh, with a ſharp penknife, and three or four ſtrokes on the ſkin of the belly on each ſide the ſheath; from theſe ſcarifications there was a conſtant and ſurprifing large dripping of water, which ſoon relieved the horſe; when a few purges completed its recovery.

In the other ſpecies of dropſy, the curative intentions are to diſcharge the water, recover the craſis or ſtrength of the blood, and brace up the relaxed fibres throughout the whole body. To this end, purge once a week or ten days, and give intermediately either of the following drinks or balls:

Take black hellebore, freſh gathered, two pounds; waſh, bruiſe, and boil it in ſix quarts of water to four; then ſtrain out the liquor, and put two quarts of white wine on the remaining hellebore, and let it infuſe warm forty-eight hours; then ſtrain off, mix both together, and give the horſe a pint night and morning.

Take nitre two ounces, ſquills powdered three drams, or half an ounce; camphire one dram, honey enough to form into a ball, to be given once a day alone, or waſhed down with a horn or two of the above drink.

Take of the leaves and bark of elder, of each a large handful; chamomile flowers half a handful; juniper berries bruiſed two ounces; boil them in a quart of water to a pint and a half, to which add honey and nitre, of each one ounce.

Give this drink every night, or night and morning, and, to complete the cure, and ſtrengthen the whole body, give a pint of the ſubſequent infuſion every night and morning for a fortnight, faſting two hours after it.

Take gentian root and zedoary, of each four ounces; chamomile flowers and the tops of centaury, of each two handfuls; jeſuits bark, powdered, two ounces; juniper berries four ounces; filings of iron half a pound: infuſe in two gallons of ale for a week, ſhaking now and then the veſſel.

DROPWORT, [*Filipendula.*] This plant grows wild in fields and chalky grounds. The root conſiſts of a number of tubercles, faſtened together by ſlender ſtrings; their taſte is rough and bitteriſh, with a ſlight degree of pungency. Theſe qualities point out its uſe in a flaccid ſtate of the veſſels; and a ſluggiſhneſs of the juices; the natural evacuations are in ſome meaſure reſtrained or promoted by it, where the exceſs or deficiency proceeds from this cauſe. Hence ſome have recommended it as an aſtringent in dyſenteries, immoderate uterine fluors, &c. others as a diuretic; and others as an aperient and deobſtruent in ſcrophulous habits.

Water DROPWORT, [*Enanthe.*] This plant is very common by the ſides of the Thames, each ſide of London, as alſo by the ſides of large ditches and rivers in many parts of England: this plant commonly grows four or five feet high, with ſtrong jointed ſtalks, which, being broken, emit a yelloviſh fœtid juice; the leaves are ſomewhat like thoſe of the common hemlock, but are of a lighter green colour. The roots divide into four or five large taper ones, which, when ſeparated, have ſome reſemblance to parſ-

nips; for which ſome ignorant perſons have boiled them, whereby themſelves and family have been poiſoned.

This plant is one of the moſt poiſonous we know; the juice, which is at firſt like milk, turns afterwards to a ſaffron colour; if a perſon ſhould ſwallow ever ſo little of this juice, it will ſo contract every part it touches, that there will immediately follow a terrible inflammation and gangrene; and, which is worſe, there has not yet been found any antidote againſt it; for which reaſon we ought to be very careful to know this plant, in order to avoid it, for fear we ſhould take it for any other like it, which would certainly prove fatal.

The poiſonous quality of this plant hath led ſome perſons to believe it to be the Cicuta of the ancients; but according to Wepfer, the Sium alterum oluſatri facie of Lobel, is what the ancients call Cicuta, as may be ſeen at large in Wepfer's book de Cicuta.

There are ſeveral ſpecies of this plant, all of a poiſonous quality.

DROUGHT. Dry weather.

DUB. A pool or pond of water.

DUCK. The duck is one of thoſe fowls which nature has deſigned partly for the land, and partly for the water, but is more of the water kind than the gooſe. It not only has feet formed for ſwimming, but the legs are ſo placed, that it walks very indifferently, waddling as it goes, and is naturally more in the water than on land.

The huſbandman who is ſenſible that the more he obſerves the courſe and deſign of nature, the better he will ſucceed in all things, will perceive from this, that whether he ſhall keep ducks, or in what number he ſhall keep them, are queſtions in which he muſt be determined altogether from the circumſtances of his farm.

As the duck will be content with puddles, he will find that he may keep ſome of them wherever there is the leaſt water; that is to ſay, he may keep ſome ducks every where, for he can keep no creature without it; but where there is plenty of water, and roving room upon it, it is there the ducks will thrive, and eſpecially where it is a running water.

The only time in which the duck requires any care, is while ſhe is ſitting; becauſe then, being kept from going in ſearch of her food, ſhe will need to have ſome ſet before her; but at this time the coarſeſt and moſt ordinary kinds will do; at other ſeaſons ſhe will live very well upon the ſcattered corn about the yard, the offal of the houſe and kitchen, and what the current of a running-water is continually bringing down to her. The duck is a very general and coarſe feeder; ſcarce any thing comes amiſs to her; yet her fleſh is delicate. Among her good qualities may be reckoned this, that ſhe is leſs miſchievous than any other fowl; and ſhe lays abundance of eggs, which are as good as thoſe of the hen, and hatches very numerous broods, which are fit for the market in the ſame manner as the gooſe, at two ages, when young, and when grown up; and in either caſe they are very eaſily fattened.

There are ſeveral kinds of ducks kept in England, but the greater part of them for curioſity; ſo that the induſtrious huſbandman need not give himſelf any trouble about them: the two kinds he is to regard, are the common tame duck, and the wild duck kept tame, for this breed will become ſo familiar from cuſtom of ſeeing people, and being among others, that they are as manageable as the other.

Of the tame ducks there are ſeveral breeds, which, though they differ but in ſlight particulars, are yet worth the farmer's notice as diſtinct from one another, becauſe of their different qualities or way of living. In general the wild breed require more water, and the tame will do much better than they to be kept in the yard almoſt entirely, as muſt be the caſe at many farm houſes. Among the tame are theſe differences; there is a narrow-beaked breed, which is hardier than the common kind, and will do with yet leſs water; and there is a breed that have the beak more turned up at the end; theſe are found, upon experience, to be the better layers. They do not bring up their numerous broods ſo well as ſome of the others, but when eggs are the principal conſideration, they are to be preferred.

The common tame duck does the beſt in gardens and orchards, for there

there is none of them that is ſo cunning in picking up the worms, ſnails, or other inſects, or that devours them in ſuch quantity.

It is a very great quantity of eggs that may be had in the ſeaſon from the kind juſt mentioned; and ſhe will in the end ſit very well, though the others better. In general it is found more profitable to ſet a hen on duck eggs, than any kind of duck whatever, becauſe the old one leads them when hatched, too ſoon to the water; where, if the weather be chill, ſome will be loſt. They follow the hen a good while upon the land, and ſo get hardy before they venture.

About thirteen eggs is the proper number to let a duck ſit upon. The hen will cover as many of theſe as of her own, and will bring them up as well, ſo that every way ſhe is more profitable for that purpoſe.

When the ducklings are hatched, they require no care if the weather be tolerably good; but if they happen to be produced in a very rainy ſeaſon, it is right to take them under cover a little, eſpecially in the nights; for though the duck naturally loves water, it requires the aſſiſtance of its feathers, and till they are grown, is eaſily hurt by the wet.

The fattening of ducks at any age is very eaſy, and whether it be the duckling or the grown duck, the method to be uſed is exactly the ſame. They are to be put into a quiet dark place, and kept in a pen, where they are to have plenty of corn and water; any kind of corn will do, and with this ſingle direction, they will fatten of themſelves extremely well in fifteen or twenty days, and will bring a price that very well repays their feeding.

DUCK's-FOOT, [*Podophyllum.*] This plant grows naturally in many parts of North America. The root is compoſed of many thick tubers, which are faſtened together by fleſhy fibres, and propagate greatly under ground, ſending out many ſmall branches, that ſtrike downward. In the ſpring ariſe ſeveral foot-ſtalks about ſix inches high, which divide into two ſmaller, each ſuſtaining one leaf, compoſed of five, ſix, or ſeven lobes, the five middle being deeply indented at the top; theſe join together at their baſe, where the foot-ſtalk meets, which is faſtened to the under ſide of the leaf like the handle of a target; the leaves are ſmooth, and of a light green. At the diviſion of the foot-ſtalk comes out the flower, with a large impalement, covering it like a ſheath; the flower hath nine pretty large, concave, white petals, which are roundiſh at the top, and plaited on their borders. In the center is ſituated a large, roundiſh, oval germen, crowned by a plaited obtuſe ſtigma, ſurrounded by a great number of ſhort ſtamina, terminated by oblong, erect, yellow ſummits.

This plant propagates ſo faſt by its creeping roots, as that few perſons are of the trouble of ſowing the ſeeds.

DUCK-MEAT, } [*Lentis Paluſtris.*]
DUCK-WEED, } A plant common in ſtanding waters.

DUN. A colour partaking of different ſhades, from brown towards white and black.

DUNG. The excrements of animals, putrified vegetables, &c. uſed in improving land.

There are two admirable properties in dungs, viz. the one is to repair the decays of worn out or exhauſted ſoils, and to meliorate and fatten the earth and render it fertile; the other is to produce a certain degree of heat when formed into hot-beds, which, in ſome meaſure, ſupplies the office formed by the heat of the ſummer's ſun, by producing crops of choice plants, fruits, and flowers in winter, or early in ſpring, that could not be obtained in the natural ground before ſummer; the former of which properties (as manure) is effected both by new and old or rotten dungs, and that of various ſorts; but the latter property (for hot-beds) is only to be found in one particular ſort, i. e. horſe-dung, including the wet litter and dung together, as it comes from the ſtables, and while it is newly made, before it rots and loſes its heat.

Dungs for manure.—Various ſorts are recommended and uſed, according to the qualities they are deſigned to reſtore, meliorate, and enrich.

As for example; ſome lands are very moiſt, heavy, ſtubborn, and cold; to improve which, ſome dungs are of a hot light quality, as that of horſes, ſheep, and pidgeons, &c. though for gardens, horſe or ſtable dung, tolerably rotted, either alone, or mixed

with light materials, is the beſt of all to uſe in any conſiderable quantity for ſuch land: on the other hand, ſome ground is light, dry, and hot, and requires moiſt, fat, and cooling dungs, as that of oxen, cows, hogs, &c. to render the ſoil fatter, and more compact to retain its virtue. However, a mixture of all theſe, i. e. horſe, and neat or cow dung, &c. tolerably rotted, will ſuit almoſt every ſort of ſoil, or either of them alone, eſpecially if thoroughly rotten, will prove beneficial to moſt kind of garden land.

Horſe-dung, however, is certainly the beſt improvement for cold land that can be procured, and may be uſed ſucceſsfully both new and rotten; not however uſed new or ſtrawey for carrots, parſnips, or other eſculent roots of ſimilar growth, but for any other above-ground crops; new horſe dung, juſt as it comes from the ſtable, may be uſed to much advantage in cold moiſt land, which, in ſuch ſoils, frequently ſucceeds better than that which is quite rotten, as that of old hot-beds, or of the like nature.

We may alſo conſider horſe-dung the moſt uſeful of any for gardens, and is the moſt common dung uſed as manure in many places, eſpecially after having rotted in dunghills, or having been previouſly uſed for hot-beds in winter and ſpring, for early and tender crops; which crops being all gone by autumn, or winter following, when the dung of the hot-bed will have become rotten and buttery, and is then carried off as manure, into the different departments of the garden, &c. and when thus rooted, is beneficial for all ſorts of ſoils, and is very enriching.

And as to cow or oxen dung, although it is particularly beneficial in light looſe ſoils, yet, when well rooted, it will alſo prove a good manure for any; and with this, and horſe and ſtable-dung, as alſo hogſtye-dung together, mixed, makes an excellent manure for moſt ſorts of land.

Hogs dung being very fat, is by ſome recommended as the moſt beneficial of all ſorts of dungs, and, when well rotted, has often proved excellent for fruit trees, in a light ſoil, eſpecially for apples and pears, but when thoroughly rotted, may be uſed to advantage for all ſorts, in light dry land.

Sheep and deer dung have been found great improvers of cold clayey land.

The dung of pigeons and other poultry, being hot and full of ſalts, is found good for cold wet clayey lands, but before uſing, it would be an advantage, if expoſed abroad in the dunghill ſome conſiderable time to rot, ſweeten, and to mollify the fiery heat natural to thoſe dungs; and if then mixed with light earth, ſand, or aſhes, to keep it from clinging, and then, after having lain ſix, eight, or twelve months, ſtrew it over the ground in autumn or winter, in moderate quantities, being dug in lightly, it will tend much to facilitate vegetation in cold heavy ſoils.

Human ordure, mixed with other dungs, and earths, by way of compoſt, and expoſed to the air ſome time, will prove beneficial to cold, ſour, ſtubborn land.

For other ſorts of dungs, &c. uſed as manure, ſee MANURE.

All dungs uſed on gardens, ſhould be applied principally, either in autumn, winter, or ſpring; and if it is horſe or neats dung, or a mixture of both, or of hogs dung, or the like, it ſhould be laid at leaſt from about three to ſix inches thick all over the ſurface, but on poor land, if double that thickneſs, it will prove the more beneficial to the ground; but the hot fiery dung of poultry ſhould be uſed more ſparingly, and that only to cold heavy land.

DUNGHILL. A heap of dung or manure, collected about farms, &c.

DUNG-MEER, } Dunghill, or
DUNG-MIXEN, } the place where dung is heaped together.

DURZED OUT. An epithet applied in the northern countries to corn beaten out of the ears, by the wind turning it in the field, or other accidents.

DWALE. Deadly nightſhade.

DWARF-BAY, [*Daphne.*] Spurge laurel, mezereon. See MEZEREON.

DWARF CISTUS, [*Helianthemum.*] There are no leſs than twenty-four different ſpecies of this plant, ſome annual, others perennial; they are propagated by ſeeds ſown in April. They flower in July, and the ſeeds ripen in Auguſt. One ſort, a native of the warm parts of America, requires

quires to be kept in a ſtove; the reſt are all hardy.

Dwarf Almond. See Almond.

Dwarf Oak, [*Quercus Eſculus.*] See Oak.

Dwarf Elder, [*Ebulus.*] See Elder.

Dwarf Trees. Theſe are fruit trees grafted near the root, that they may form heads, not more than from about four to ſix or eight feet high.

Under this head may be conſidered not only dwarf-ſtandards, but alſo all ſorts of dwarfs for eſpaliers, and walls, which are alſo grafted or budded low, to provide branches near the ground, ſo as to cover every part of the eſpalier or wall, from the bottom upward, moſt of which ſort of dwarf-trees are grafted or budded upon dwarf ſtocks, or ſuch as are but moderate ſhooters, particularly for dwarf ſtandards, to preſerve them as dwarfiſh as poſſible. And in which the graft or buds are inſerted, within about ſix, eight, or twelve inches of the bottom, and the firſt ſhoots from the graft or bud, are in ſpring, when a year old, headed down to five or ſix eyes, to force out lower ſhoots to form the firſt ſet of branches near the root, as a foundation for the upper part, and by ſhortening theſe alſo, as above, if neceſſary, a farther ſupply is produced, to give the tree its firſt regular form, whether as a dwarf-ſtandard, or for eſpaliers, or walls.

Dwarf-ſtandards, therefore, are formed at firſt as above, not trained fan-faſhion like eſpaliers, or wall trees, but promoted to branch out low every way into a circular head, without being trained to any kind of fence, and are therefore properly ſtandards, tho' of dwarfiſh ſtature.

Theſe were formerly in great eſtimation, and trained in three different ways or ſhapes, viz. 1. Concave Dwarfs; being trained concave or hollow in the middle, having all the branches ranged circularly round the ſtem in an aſcending direction, ſo as to form the heart of the tree hollow or concave; 2, Convex, or conical Dwarfs, being trained convex or full in the middle, ſo as to form a cloſe conical head; 3, Horizontal Dwarfs, being trained horizontally, i. e. all the branches trained flat, or in an horizontal poſition, all around parallel to the ſurface of the earth; but the concave form is the moſt eligible; but neither of the methods are at preſent in much practice, and the mode of training dwarfs in eſpaliers, is now almoſt univerſally adopted in their ſtead; which indeed, are every way preferable, both for convenience and bearing. However, a few trees ſhould be admitted in large grounds for variety, and may be diſpoſed ſingly, one here and there, upon large borders, or on open ſpaces of graſs ground.

They ſhould be no where planted nearer together than twenty feet, particularly the concave and horizontal dwarfs.

The ſorts of fruit-trees commonly uſed for dwarf-ſtandards, are apples, pears, plumbs, cherries, and ſometimes apricots; but any ſort of fruit-trees may be trained in that form, as one direction ſerves for all.

The method of forming them.—And firſt of the concave Dwarfs.

To have proper concave dwarfs, it is neceſſary to graft them upon dwarf ſtocks, that they may be moderate ſhooters, and be of as dwarfiſh ſtature as poſſible; as for example, apples ſhould be grafted upon paradiſe ſtocks, and pears upon quince ſtocks, &c. and the graft or bud to be inſerted within ſix or eight inches of the ground: ſo as the ſtem may not exceed a foot or fifteen inches in height, and may form branches within that diſtance from the ſurface of the earth.

Having therefore grafted or budded them as above, obſerve, that the firſt ſhoots from the graft or bud, are to be ſtopped or ſhortened in ſpring, when a year old, to about five or ſix inches in length; or to ſo many eyes or buds, from which to procure from four, at leaſt, to ſix or eight ſtout lateral ſhoots, to give the tree its firſt regular formation. When theſe laterals are a year old, and about two feet long, they ſhould be then trained in a horizontal poſition in different directions on each ſide of the ſtem, by means of ſtakes; at the ſame time top the end of each ſhoot, and trim off the lower buds or eyes, to promote a farther ſupply of three or more ſhoots only towards the ends of each of them; and this ſupply of ſhoots thus again procured,

procured, are, from having one ſummer's growth, to be trained gradually in an aſcending direction, at equal diſtances all around, ſo as to form the heart of the tree into a regular concave or hollow; to aſſiſt which, and effect a more regular concavity, ſome wide hoops muſt be placed within ſide, ſupported by ſtakes; and as the branches advance in length, train them up to the hoops, ſuffering no branch to croſs its neighbour, but train them all parallel to each other, ſix or eight inches diſtance, in an aſcending poſition as aforeſaid; obſerving, if a farther ſupply of ſhoots are ſtill neceſſary to form the tree all around, at the above diſtance, then ſhortening the laſt produced ſhoots muſt again be practiſed, either wholly or in part, as ſhall appear expedient, to force out, in the proper places, the quantity wanted; afterwards train the whole at full length, as directed below in their general pruning, and they will then form all along their ſides ſhort thick ſhoots, ſcarce an inch long, called fruit-ſpurs, as hereafter mentioned.

As to their general pruning, obſerve, in the courſe of that operation, that after the tree is furniſhed with a proper quantity of branches to form the tree into its proper figure all around, the ſhoots or branches are not afterwards to be ſhortened; obſerving, however, that when neceſſary to ſhorten any, either to force out a farther ſupply of young wood to train up for bearers, or to preſerve uniformity, always make the cut on the inſide, ſo as to preſerve the uppermoſt eye, or that immediately next the cut, outward, that the leading ſhoot may advance in that direction, as hereby the concave form of the tree will be better maintained.

However, the ſhortening the ſhoots of theſe trees ſhould be ſparingly practiſed, particularly apples, pears, plumbs, and cherries, eſpecially after having obtained branches enough to form the tree all round, at ſix or eight inches diſtance, as before obſerved; for ſhortening promotes a great ſuperfluity of ſtrong ſhoots, and prevents the branches from forming ſpurs or fruit-buds, i. e. ſhort thick ſhoots, half an inch or an inch long; for all theſe ſort of trees before ſpecified, moſtly produce their fruit upon ſpurs, which generally firſt form themſelves towards the extremity of the ſhoots or branches; ſo that by ſhortening, you cut away the parts where they would have firſt appeared, and, inſtead thereof, ſtrong unneceſſary wood will ſhoot forth, and greatly retard the tree in forming for bearing.

Therefore obſerve the caution, never to practiſe ſhortening the branches of the kinds of dwarf-trees, but to promote a ſupply of more ſhoots when wanting, or take off cankered parts, or ſuch as have grown much too long, or that grow acroſs the others; and which ſhould be done in the winter pruning, cutting ſuch parts down to the next moſt ſuitable ſhoot, properly ſituated to ſupply the place of the part cut away.

No branch muſt be ſuffered to grow acroſs another, but when ſuch appears, let it be cut out, or ſo far retrenched, as to preſerve regularity.

All ſhoots riſing in the middle of the tree, that may interfere with the concavity, ſhould be annually taken off cloſe, either in the ſummer as they are produced, or in the winter pruning. Likewiſe, after the tree is formed and furniſhed with a proper quantity of branches all around, at equal diſtances, all ſhoots ariſing from the ſides of the branches, ſhould be alſo diſplaced annually, unleſs any ſhall appear neceſſary, to fill any preſent or apparent future vacancy, or to ſupply the place of any irregular or worn-out branch; in which caſe, leave in the proper places ſome of the moſt promiſing beſt-placed young ſhoots, training them up between the old branches; obſerving, however, that all ſhoots evidently ſuperfluous, or unneceſſary, ſhould, if poſſible, be diſplaced in ſummer, according as they are produced, which will prove more beneficial both to the form and proſperity of the trees and fruit, than if wholly deferred till the winter; however, do not omit that operation annually, either in ſummer or winter, at either time cutting off all the above-hinted ſuperfluities quite cloſe, and not leave any ſtump, as from every eye of which ſhoots would ariſe and cauſe a great confuſion of wood.

If the tree produce vigorous ſhoots at its extremity, it is neceſſary to leave in ſummer ſome ſtrong lower ſhoots till

till winter, to check the luxuriance of theſe at top, then take them off according to the above rules.

Be careful at each pruning, to obſerve if there is any appearance of a vacancy, or any very irregular, ill-bearing, or worn-out branch, or other wood that may want renewing; in which caſe, leave occaſionally ſome well-placed young ſhoots towards the lower parts, training them up between the older branches, to be coming on gradually to a bearing ſtate, to ſupply the place of bad ones, or any accidental vacancy.

Obſerve alſo at each pruning, to preſerve, with the utmoſt care, all the fruit-ſpurs, i. e. thoſe ſhort robuſt ſhoots of half an inch, or ſometimes an inch or two long, for it is from theſe only we are to expect the fruit, which will be evident by obſervation; but if any of theſe are become very long, ragged, or ſtumpy, or croud others of more eligible growth for bearing, it is proper to thin or regulate them occaſionally, as you ſhall ſee neceſſary.

The principal pruning ſeaſons are, the ſummer pruning, which is performed any time in June or July, to clear out all evident ſuperfluous ſhoots of the year; and the winter pruning is any time from November to March, to clear out alſo all ſuperfluous ſhoots omitted in ſummer, and is alſo the only proper ſeaſon to prune out all large branches where neceſſary, either by being ſuperfluous, irregular, bad bearers, or decayed.

Convex or conical Dwarfs. To form theſe, they muſt be graſted or budded low, as directed for the concave dwarfs, and the firſt ſhoots to be alſo ſhortened in ſpring, when a year old; to procure a further ſupply of ſeveral ſtout lower ſhoots, to form the firſt courſe of branches at about a foot or fifteen inches from the ground, and that, inſtead of forming the heart of the tree concave, like the former kind of dwarf, train the centre ſhoot up to the middle for a ſtem, and ſuffer it to branch out at every twelve or fifteen inches, as it advances in height, training each ſet of branches a little horizontally.

Thus the tree may be formed into ſeveral ſets of branches, one above another, which ſhould be ſo ordered, that the lower-moſt ſet be extended the wideſt, and the next ſet immediately above it be a little ſhorter, the next ſhorter than that, and ſo on to the uppermoſt ſet, whereby the tree will aſſume a beautiful conic form; and by obſerving nearly the ſame rules of general pruning, as laid down for the concave dwarfs, they will produce plenty of fine fruit.

Horizontal Dwarfs.—Theſe are graſted within about twelve or eighteen inches to two feet of the ground, and their firſt ſhoots ſhortened, as for the concave and conical Dwarfs, to promote a regular ſupply of branches at that diſtance from the bottom; which, when about a yard long, are to be trained in a horizontal poſition, ſuffering no upright to advance in the middle, but train the whole perfectly flat or horizontal on every ſide of the ſtem, continuing them, as they advance in length, always in the ſame poſition, and thus they will ſpread themſelves circularly many feet each way, and produce abundance of fruit.

The ſame mode of pruning is to be here obſerved as directed for the concave dwarfs, ſo that a repetition here would be ſuperfluous.

DYERS WEED, [*Luteola Reſeda,*] Weld, Wold. This plant is cultivated for the uſe of the dyers. It communicates a beautiful yellow colour to ſilks, woollens, &c.

The root, which is compoſed of a few ligneous fibres, does not pierce deep; from this root it puts forth leaves about four inches long, and half an inch broad, of a lively green, ſoft to the touch, which ſpread circularly near the ground, with ſome gentle wavings at their edges, but obtuſe at their points. Its ſtem, which riſes from amidſt theſe leaves, to the height of three feet, or even more, if the ſoil and culture be very good, often branches out, and is garniſhed with leaves like thoſe below, though ſmaller in proportion as they approach the flowers, which grow in long looſe ſpikes at the end of the branches or ſtem. Theſe flowers, which appear at the latter end of June, are each of them compoſed of three ſmall irregular petals, of a greeniſh yellow, to which ſucceed a globular berry of the ſame colour, terminated by three points, and in which are incloſed ſmall brown

ſpherical

ſpherical ſeeds. Theſe ſeeds ripen in September. The plant becomes entirely yellow when it is dry, and the whole of it, but eſpecially the berry, is uſed in dying. The ſlendereſt weld, and particularly if it inclines to a ruſſet colour, is accounted the beſt: that which is larger, and of a dull green, is much leſs eſteemed.

This plant grows naturally along the ſides of highways, upon dry banks, and on old walls, in many parts of England, France, Spain, and other countries where the winters are not very ſevere; but the cultivated ſort is far preferable to the wild, both for the quantity and the goodneſs of the colour which it yields. It will thrive tolerably on almoſt any ſoil, provided it be dry and warm; but the richer the land is upon which it is ſown, the greater will be the produce; and in proportion to the care with which it is cultivated, the more vigorous and fit for dying will it be.

The ground ſhould be in fine tilth at the time of ſowing it, and unleſs it be very poor indeed, it will not require dung. The ſeed ſhould be that of the preceding year; for if it be older, great part of it will not grow. Both Mr. Worlidge and M. Du Hamel are of opinion, that weld ſeed ſhould, on account of its ſmallneſs, for it is but little bigger than that of purſlane, be mixed with aſhes, buck-wheat, oats, or ſome other ſimilar ingredient, in order the better to avoid ſowing it too thick; for the plants of weld thrive beſt when they are about ſix inches aſunder. Some ſow it on barley or oats, after they have been ſown and harrowed, this requiring only a buſh to be drawn over it; for it ſhould not be covered deep. A gallon of weld-ſeed, thus uſed in the broad-caſt way, will be ſufficient to ſow an acre of land. It will not grow much during the firſt ſummer, when it is thus ſown; but it will thrive apace after the corn is taken off. Mr. Miller, however, juſtly obſerves, that the beſt way is to ſow it without any other crop.

The beginning or middle of Auguſt is a proper ſeaſon for ſowing weld in this country. The only care that it requires whilſt growing, is to keep it clear of weeds which might choak it, or at leaſt weaken its growth.

The French, in general, ſow their weld in March, and pull it up in July or Auguſt of the enſuing year, when part of its ſeeds are ripe, and the plant is ſtill of a greeniſh yellow: they then dry it, and threſh it upon cloths, to get the ripeſt of the ſeed, and after this they tie the ſtalks up in bundles, and ſell them to the dyers. But Mr. Miller rightly judges, that the beſt time to pull the weld for uſe is when it begins to flower, that is to ſay, about the latter end of June; becauſe, like all other vegetables, it is then in its greateſt vigour, and conſequently beſt ſuited to yield the greateſt quantity of dye. For a produce of new ſeeds, it is much better to ſow a ſmall piece of land on purpoſe, or to ſet apart for this end a ſuitable portion of the field of which the plants are intended for uſe, rather than let the whole ſtand too long, that is to ſay, till part of the ſeeds are ripe; becauſe, by letting the plants ſtand till then, their quality is injured far beyond the value of the ſeeds that are got from them (the berries being the part which yields the fineſt dye); and beſides, the ſeeds thus obtained will of courſe be a mixture of ripe and half-ripe ones, on the growing of which there cannot be a due reliance. The common way of drying theſe plants, is to ſet them upright in ſmall handfulls in the field, and when they are dried, to tie them up in bundles. They muſt alſo be houſed dry; and care muſt be taken to ſtack them ſo cloſely, that there may be room for the air to paſs between them, to prevent their fermenting.

The plants which are intended for ſeed ſhould be pulled as ſoon as their ſeeds are ripe, and then be dried and beaten out for uſe; for if this is deferred, or if they are let ſtand too long the ſeeds will ſcatter.

The method of cultivating this plant at Oiſſel, in Normandy, where great quantities of it are raiſed for exportation to Holland, independent of the conſumption in France, is thus related by M. Dambourney, in the Memoirs of the Royal Society of Agriculture at Rouen.

"In the month of July, juſt after the kidney-beans then in bloom have been hoed for the ſecond time, and earthed up, eſpecially if there be an appearance of approaching rain, weld-

ſeed

ſeed is ſown among them, very thin, as equally as poſſible. Careful huſbandmen bury this ſeed, by dragging over it a ſmall buſh of thorns. Whilſt the weld riſes, the beans ripen and are gathered; after which the ground remains, of courſe, planted with weld only. This is hoed about Michaelmas, then left in that condition during the winter; and in the enſuing month of March, when the danger of froſts is judged to be over, it is hoed again, to extirpate ſuch weeds as may have come up in the mean time. Towards the end of June, in this ſecond year, when the weld has done bloſſoming, when its berries form, and when the plant begins to turn yellow, advantage is taken of the firſt fair day after a rainy one to pull it up. Two men will then pull up as much of it in one day, as four men can when the ground is dry and hard. It is carried off in large bundles; but theſe are untied before the weld is laid up for keeping, and the plants are ſpread out and ſet upright againſt walls or hedges well expoſed to the ſun, the heat of which completes their drying in two days. They are then laid upon a cloth, to prevent the loſs of the ſeed, which drops very eaſily out of the now open capſules; and finally, after being tied up again in bundles, weighing about thirty pounds apiece, they are piled up looſely in a barn, or other well-covered place, where they complete their ripening, and generally ſhrink to leſs than half of their former weight.

"Weld raiſed on rich ground is apt to be greaſy, and too full of ſtalks; that which grows in ſandy places is of a better quality, and has only one main ſtem; but in return, the produce here is much leſs than in the former caſe.

"As ſoon as the weld has been pulled, ſheep are turned in upon the land, to eat up the graſs it may have produced: it is then ploughed once; and after another ploughing at the end of October, it is ſowed with wheat, or great rye, without uſing any other compoſt or dung. If the land is light and deſtined for ſpring corn, turnips may be ſown upon the firſt ploughing after the weld; for they will have time to grow big enough to be pulled before the ploughing for oats or ſmall rye, which laſt crops, it will be proper to help with a little ſhavings or raſpings of horn.

"If it be intended to raiſe weld after peaſe, the ground ſhould be plowed, and the ſeed ſown very thin; to do which the more effectually, this ſeed, like that of turnips, ſhould be taken up only in pinches between the middle finger and the thumb, and the fore finger ſhould remain extended, the better to help its ſpreading when it is dropped. The ſeed ſhould be ſown in rows ſufficiently diſtant for the plants to have full room to grow; and the beſt way is to leave an alley after every third row. When ſown it is harrowed in, and the only farther care that the weld requires, is to keep the plants free from weeds, by hoeing the ground at Michaelmas and in March, as before directed.

"The weld which is ſown after peaſe, does not injure the land it grows on; and therefore, in this caſe, as after the kidney-beans, wheat may be ſown in October without any previous manure."

E.

EAR. The ſpike of corn which contains the ſeed.

To EAR. To plough, to till.

Jews EAR, [*Auricula Judæ.*] This is a low creeping plant, covered with a kind of blackiſh hairs. It grows wild in dry paſture grounds, and flowers in June and July. The leaves have a rough ſubacrid taſte; they are recommended as aſtringents, but practice pays no regard to them.

EARING. Ploughing, tilling.

EARTH. The ground, conſiſting of different modifications, as clay, ſand, loam, &c. See CLAY, SAND, LOAM.

Japan EARTH, [*Terra Japonica.*] This is very improperly called an earth, being an inſpiſſated juice of the fruit of a kind of palm-tree, brought from the Eaſt Indies. It is of a dark reddiſh colour, and when pure, totally diſſolves in water, and nearly in ſpirits of wine. It is a mild aſtringent, and frequently employed as ſuch in alvine fluxes, uterine profluvia, in laxity and debility of the viſcera in general, and in coughs proceeding from thin acrid defluxions. Its taſte is more agreeable than that of moſt other ſubſtances of this claſs; chewed for ſome time, it leaves a kind of ſweetiſhneſs in the mouth.

EARTH-BOARD. That part of the plough which turns over the earth.

EARTH-BANKS, In huſbandry, &c. are a very common fence about London, and in ſeveral other parts of England. Where ſtones are not to be had cheap, theſe are to be preferred to all other fences, both for ſoundneſs and duration.

The beſt manner of making them is this: dig up ſome turf in a graſſy place, a ſpit deep, or nearly the breadth of the ſpade, and about four or five inches thick; lay theſe turves, with the graſs outward, even by a line on one ſide, and on the backſide of theſe lay another row of turf, having a foot ſpace of ſolid ground on the outſide, to prevent the bank from ſlipping in, if it ſhould be any ways faulty. On the outſide of this make a ditch, or elſe let the ſides be lowered both ways with a ſlope two feet deep, and there will be no paſture loſt by the fence, becauſe it will bear graſs on both ſides.

The earth that is dug out of the ditches, or from the ſlope, muſt be thrown in between the two rows of turf, till the middle is made level with the reſt; then lay on two more rows of turf in the ſame manner; and with more of the earth fill up and make level as before. Let this method be continued till the bank is raiſed four feet high, or more, if neceſſary, only obſerving, that the higher it is to be carried, the wider the foundation muſt be made. As the bank is carried up, the ſides muſt not be raiſed perpendicular, but ſloping inward both ways, ſo that at the top it may be about two feet and a half wide. This ſort of fence, when made with leſs care, and faced with clay, is left naked, and ſerves very well in ſome places; but when it is thus managed with the turf, the joinings of the ſeveral pieces are hid in a little time, by the growth of the maſſy part of the turf on each ſide, and it makes a beautiful fence, of as green and pleaſant a colour as the reſt of the field.

EARTHING, In gardening, ſignifies covering the roots of plants with earth, as is practiſed with aſparagus, or banking againſt their ſides with earth, in order to blanch their leaves, as is done with cellery, &c. or drawing the earth up to the plants with a hoe, as is practiſed with peaſe, beans, cabbages, &c.

EARTH-NUT, [*Bunium.*] Pig-nut. This plant grows naturally in moiſt paſtures, and in woods in many parts of England; of this there is a variety, ſuppoſed to be larger than that which grows naturally here. It hath a tuberous ſolid root, which lies deep in the ground. The leaves are finely cut, and lie near the ground. The ſtalk riſes a foot and a half high, which is round, channelled, and ſolid; the lower part being naked, but above, where it branches out, there is one leaf placed below every branch. The flowers are white, and ſhaped like thoſe of other umbelliferous plants; the ſeeds are ſmall, oblong, and when ripe are channelled.

The roots of this ſort are frequently dug up, and, by the poorer ſort of people, are eaten raw, having much reſemblance in taſte to the cheſnut, from whence it had the title of Bulbocaſtanum.

EARTH-PEA. See EVERLASTING PEA.

African EARTH-PEA, or EARTH-NUT, [*Arachis.*] This plant is found in the European ſettlements of America; but many perſons who have reſided in that country affirm, they were originally brought by the ſlaves from Africa.

It multiplies very faſt in a warm country, but being impatient of cold, it cannot be propagated in the open air in England; therefore, whoever has an inclination to cultivate this plant, muſt plant the ſeeds in a hot-bed in the ſpring of the year, and when the weather proves warm, they may be expoſed to the open air by degrees.

grees. The branches of this plant trail upon the ground, and the flowers, (which are yellow) are produced ſingle upon long foot-ſtalks; and as ſoon as the flower begins to decay, the germen is thruſt under ground, where the pod is formed and ripened, ſo that unleſs the ground is opened they never appear. The roots of this plant are annual, but the nuts or ſeeds ſufficiently ſtock the ground in a warm country, where they are not very carefully taken up.

EARTH-FLAX. A kind of fibrous foſſil.

EARTH-WORM. A worm bred in the ground. *See Grub. Mad.*

EAVES. The edges of the roof that over-hang the walls of a building.

EBONY, [*Ebenus.*] This plant grows naturally in Crete, and ſome of the iſlands of the Archipelago. It bears flower of the pea kind in June and July, and the ſeeds ripen in Auguſt. It requires to be kept in pots to be removed to the green-houſe in winter. It is propagated by ſeeds ſown in Autumn or Spring.

ECURIE. A place covered for the houſing or lodging of horſes; a ſtable.

EDDER. The ſmall ſhoots of oak, hazle, aſh, &c. uſed for binding the tops of hedges.

To EDDER *a Hedge*, To bind the top together.

EDDISH. Graſs growing in the ſtubble after the corn is cut.

EDGE. The extremity of a border; the ſharp or thin part of a blade.

EDGINGS. Theſe are ranges of very ſmall dwarfiſh ever-green plants, as box, thrift, &c. cloſely planted along the edge of borders or beds, ſerving both for uſe and ornament.

Edgings are particularly neceſſary to the edges of ſuch borders or beds as immediately verge walks or alleys of gravel, ſand, ſhells, or other looſe materials; and are uſeful to form and preſerve a boundary diſtinction betwixt the borders and walks, and to preſerve the earth of the borders from being forced out upon the walks or alleys, and the ſoil of the walks from the borders; both of which would otherwiſe be the caſe, leſs or more, every time of doing the neceſſary work, and at every hard ſhower of rain. Edgings are therefore particularly neceſſary in flower-gardens, and to the borders immediately verging principal walks, to maintain uniformity and neatneſs; and, conſidered as ornamental, that being ever-green, and if planted in a cloſe neat range along the edge of the border, all of an equal width, not more than two inches broad, and one or two high, and always kept within the compaſs of about three inches in width and height, without gaps and irregularities, but all the way cloſe, and even at the ſides and top, they have a pretty effect, whether box or thrift, &c. and as ſome ſorts of plants proper to be employed for Edgings, are of the flowery tribe, ſuch as thrift, daiſies, pinks, &c. they, beſides the property of being ever-green, are very ornamental in their flowers, which, of each ſort, are numerous, and continue ſix weeks or two months in great beauty.

But the beſt edging in the world is the dwarf ſhrubby box, it being the moſt effectual, moſt eaſily kept in order, and the moſt durable, retains its leaves and full verdure at all ſeaſons, proſpers in all ſoils and ſituations, is never hurt by any weather, and will endure many years, always cloſe and regular, with the culture of ſhearing or clipping once or twice every ſummer at top and ſides.

The next to box for Edgings, is thrift, which alſo grows very cloſe, low, and in verdure all the year, and flowers beautifully two months in ſummer, but being rather apt to ſpread ſoon out of bounds, requires to be reduced, by cutting in conſiderably on each ſide, or by replanting it afreſh every two or three years; and its general culture as an edging is, to trim it a little with garden-ſhears on each ſide and top every ſummer, as ſoon as done flowering, cutting off all the withered flower-ſtalks, performing it always in moiſt weather.

Daiſies, pinks, catchfly, and ſeveral other low herbaceous evergreen flowery perennials, are alſo ſometimes employed for edgings, which have a pretty effect when in flower; but as in one year they ſpread greatly out of compaſs as edgings, ſhould be taken up and replanted every ſpring or autumn, but more particularly the daiſies; and the others, if they ſtand longer than

one year, ſhould be cut in on each ſide annually after flowering, to preſerve uniformity.

Sometimes ſome ſorts of dwarf buſhy annuals are ſowed for ſummer edgings in ſmall gardens, ſuch as the dwarf Virginia ſtock, heart's-eaſe, or *viola tricolor*, candy tuft, and ſeveral other low buſhy annual flowers; but the former of them is moſt ſuitable for an edging, as it grows low, buſhy, and does not ramble, is very flowery, and continues long in bloom.

Several ſorts of ſhrubby aromatics are alſo uſed for edgings, as thyme, ſavory, hyſſop, ſage, lavender, and rue, all of which are ever-greens, and may be kept low by cloſe ſhearing, but then they become woody, ſtubbed, and naked; but theſe are alſo ſometimes planted as edgings in kitchen gardens, for œconomical purpoſes.

Parſley alſo forms a good ever-green edging, for the edges of the quarters and borders of kitchen gardens; and if the true curled ſort is ſowed, it will be very ornamental as well as profitable.

As to the method of planting or forming edgings; if box, the plants are generally planted in ſmall perpendicular trenches, placing them cloſe together, as at once to form a complete edging. Thrift, daiſies, pinks, &c. are commonly planted by dibble, at about two or three inches diſtance in the line, though, to form a compact edging at once, they may be planted ſo cloſe as to touch each other; pink edgings may alſo be formed by ſowing the ſeed in a drill along the edge, half an inch deep, ſo ſuffer the plants to remain. Annual flower edgings are alſo formed in the ſame manner. Thyme, ſavory, and hyſſop edgings, may alſo either be formed by ſowing the ſeed, or by plants or ſlips; ſage and lavender, chiefly by planting young ſlips; and rue the ſame, or by ſeed.

All edgings, the ſhrubby kinds in particular, ſhould be neatly ſhorn or clipped with garden-ſheers, at top and ſides every year in ſummer, and ſome ſorts require it twice in that time, to preſerve them perfectly neat, ſuch as box, and moſt other ſhrubby kinds.

Never ſuffer box edgings to exceed two or three inches in width, nor above three or four high; and thrift and the other herbaceous edging to get more than three or four inches wide.

EDGE-GROWN, come up uneven, not ripening all together.

EDGE-TOOL. A tool made ſharp to cut with.

EFT. A ſmall kind of lizard, living both by land and water.

EGG. The produce of feathered animals.

EGG-PLANT, [*Melongena.*] See *Mad* APPLE.

EGLANTINE, [*Roſa Eglantina.*] Sweet Briar. See ROSE.

EIGNE. Unalienable, entailed.

ELDER, [*Sambucus.*] This genus conſiſts of hardy deciduous trees and ſhrubs, and herbaceous perennials, proper for ſome uſeful purpoſes in gardening, and for diverſifying hardy plantations: alſo for domeſtic and medical uſes in their leaves, flowers, and fruit; are all garniſhed with large winged leaves and numerous ſmall roſaceous flowers, moſtly in cymoſe umbrels towards the ends of the branches, ſucceeded by large bunches of black and other coloured berries in autumn.

The kinds are, 1. Common Black Elder; 2. Red-berried Elder; 3. Dwarf Elder; 4. American Elder.

The firſt has three varieties, viz. with white and green berries, and with variegated leaves.

The Dwarf Elder grows wild in ſome countries in England. The eye diſtinguiſhes little difference betwixt it and the alder-tree, except in the ſize; the alder being a pretty large tree, and the dwarf elder only a herb tree of four feet high. The leaves, root, and bark, have a nauſeous, ſharp, bitter taſte, and a kind of acrid ungrateful ſmell: they are all ſtrong cathartics, and as ſuch are recommended in dropſies, and other caſes, where medicines of that kind are indicated. The bark of the root is ſaid to be ſtrongeſt, the leaves the weakeſt; but they are all too churliſh medicines for general uſe: they ſometimes evacuate violently upwards, almoſt always nauſeate the ſtomach, and occaſion great uneaſineſs of the bowels. By boiling they become (like the other draſtics) milder, and more ſafe in operation. Fernelius relates, that by long coction they entirely loſe their purgative virtue. The berries of this plant are likewiſe purgative, but leſs virulent than the other parts. A rob prepared from them, may

may be given to the quantity of an ounce as a cathartic, and in ſmaller ones as an aperient, and deobſtruent in chronic diſorders. In this laſt intention it is ſaid to be frequently uſed in Switzerland, in the doſe of a dram.

They are eaſily propagated, by planting the cuttings any time from September to March.

Marſh ELDER, Guelder-Roſe. A ſpecies of the Viburnum, or Wayfaring-tree. See GELDER-ROSE.

Spaniſh ELDER, [*Saururus.*] Lizard's tail. This is preſerved by botaniſts for the ſake of variety, but as it has no beauty, it is very rarely admitted into other gardens; it is propagated by its creeping root, which may be parted either in autumn, ſoon after the ſtalks decay, or in the ſpring before the roots begin to ſhoot; it loves a moiſt ſoil, and a ſhady ſituation.

ELECAMPANE, [*Enula Campana, Inula.*] This is a very large downy plant, ſometimes found wild in moiſt rich ſoils. The root, eſpecially when dry, has an agreeable aromatic ſmell; its taſte, on firſt chewing, is glutinous, and as it were, ſomewhat rancid; in a little time it diſcovers an aromatic bitterneſs, which by degrees becomes conſiderably acrid and pungent. Elecampane root poſſeſſes the general virtues of alexipharmacs. It is principally recommended for promoting expectoration in humoural aſthmas and coughs: liberally taken it is ſaid to excite urine, and looſen the belly. In ſome parts of Germany, large quantities of this root are candied, and uſed as a ſtomachic, for ſtrengthening the tone of the viſcera in general, and for atenuating tenacious juices. Spirituous liquors extract its virtues in greater perfection than watery ones: the former ſcarce elevate any thing in diſtillation: with the latter an eſſential oil ariſes, which concretes into white flakes: this poſſeſſes at firſt the flavour of the Elecampane, but is very apt to loſe it in keeping. An extract made with water, (a preparation now kept in the ſhops) poſſeſſes the bitterneſs and pungency of the root, but in leſs degree than one made with ſpirit.

It is propagated either by ſeeds or off-ſets. There are many ſpecies cultivated in the gardens, for the ſake of variety, brought from different parts of Europe and America.

ELEMI. A reſin brought from the Spaniſh Weſt-Indies, and ſometimes from the Eaſt-Indies, in long roundiſh cakes, generally ſwrapped up in flag leaves. The beſt ſort is ſoftiſh, ſomewhat tranſparent, of a pale whitiſh yellow colour, inclining a little to greeniſh, of a ſtrong, not unpleaſant ſmell. It almoſt totally diſſolves in pure ſpirit, and ſends over ſome part of its fragrance along with this menſtruum in diſtillation. Diſtilled with water, it yields a conſiderable quantity of a pale-coloured, thin, fragrant eſſential oil. This reſin gives name to one of the officinal unguents, and is at preſent ſcarce any otherways made uſe of; though it is certainly preferable for internal purpoſes, to ſome others which are held in greater eſteem.

ELEUTHERIA. See CASCARILLA

ELM, [*Ulmus.*] The ſpecies are; 1. The ſmall-leaved, or true Engliſh Elm; 2. the Engliſh Elm, with large rough leaves; 3. the French Elm; 4. the rough-barked Dutch Elm; 5. the Corniſh Elm; 6. the red Elm from Canada; 7. the Scots Elm in England, called the Witch Elm; 8. the Engliſh Elm, with ſtriped leaves.

The five ſorts firſt-mentioned, are propagated by layers or ſuckers, the former of which is by much the better method, as the trees, ſo raiſed, will in their firſt ſtages, advance more in growth, and make handſomer plants than thoſe taken from the roots of old trees; neither will they ſo ſoon, or in ſo great a number produce ſuckers, which retards the growth of the tree.

Moſt of the ſorts of Elms ſend up many ſuckers from the roots, but moſt plentifully in the Engliſh and Dutch ſorts; and which, if taken up carefully with the roots, they will form good plants; therefore in autumn, winter, or ſpring, having recourſe to any large trees that ſend up plenty of ſuckers, let theſe be digged up, with as many fibres as poſſible; and of which, chuſing only ſuch as are well rooted, trim them for planting, by cutting them down at top to ſix or eight inches; lay them in ſmall trenches or drills, five or ſix inches deep, one row in each, half a foot apart, and the drills

drills about half a yard aſunder; giving waterings in ſpring and ſummer; and here let them remain two years, to form good roots, then tranſplant them in wide nurſery rows.

All the ſorts of Elms may be eaſily raiſed by layers, previouſly preparing a quantity of ſtools, to produce ſhoots, ſituated near the ground, for laying. The proper ſeaſon for laying them is autumn or winter, performing it by ſlit-laying; and as ſoon as all are layed, and moulded in, top every layer with a knife, down to one eye above ground, and the work is finiſhed.

Thus thoſe layers will readily take root in ſpring and ſummer following, and ſhoot at top probably two or three feet long by the next autumn, when they ſhould be detached from the ſtools, and planted in nurſery rows, a yard aſunder, and half a yard diſtant in the rows; and when they begin to ſhoot, train them with one leading ſhoot only.

ELSHIN. A pail, kit, or bucket.

EMASCULATE, To deprive of the male organs; to geld.

EMBROCATION. A medicine to bathe any diſeaſed part with.

EMBRYO. The offſpring yet unfiniſhed in the womb.

EMERY. A ſpecies of iron ore, employed in cleaning and poliſhing ſteel.

EMPALEMENT. See FLOWER.

ENCHANTER's NIGHTSHADE, [*Circæa.*] This plant has a creeping root, and riſes to the height of eighteen inches, and grows naturally in woods and hedges in England. Another ſort has been brought from the Alps, but they are ſeldom kept in gardens except for variety.

ENDEMIAL. Peculiar to a country.

ENDIVE, [*Cichorium.*] Succory. The ſpecies or varieties are; 1. Green curled Endive; 2. White curled Endive; 3. Broad-leaved Endive. All the varieties may be conſidered both as annuals and biennials. Conſidered as annuals, that if ſown early in ſpring, or even any time before the beginning of June, the plants very commonly fly up to ſeed the ſame ſummer, in their minor or half-grown ſtate, and periſh in autumn. As biennials, that if ſown in June or July, the plants acquire perfection in autumn, continue till the ſpring following, then ſhoot up ſtalks for flower and ſeed, and ſoon after periſh; ſo, at moſt, they are never more than biennial.

It is the inner leaves of all the varieties that are the uſeful parts, which, when blanched white, to render them criſp and tender, and to reduce them from a naturally ſtrong, to an agreeable bitter taſte, are then fit for uſe.

They are valued chiefly as principal furniture for autumn and winter ſallads, and for ſome culinary uſes; and their principal ſeaſon of perfection is from the latter end of Auguſt until Chriſtmas, or longer, according to the temperature of the ſeaſon; though the curled kinds generally reſiſt the froſt of our ordinary winters, and remain in tolerable perfection till March or April.

The propagation of each variety is by ſeed annually in an open ſpot of ground, from which the plants are to be tranſplanted a foot diſtance, in open beds and borders, to remain to grow to full ſize, when their leaves are to be tied together, to promote their blanching white.

The principal ſeaſon for ſowing theſe ſeeds is from the beginning of June to the end of July; and to have a regular ſupply of plants, it is proper to perform three different ſowings, at about three weeks or a month's interval, obſerving, that if ſown before the firſt week in June, the plants are apt to run to ſeed the ſame year, without acquiring perfection; and, if ſown later than July, they have not time enough to grow to any tolerable ſize, before the approach of winter; however, where the plants are required as early as poſſible, you may perform an earlier ſowing, but the earlieſt ſhould never be before the middle of May, and even that ſowing is apt to fly up ſoon to ſeed, ſo muſt never depend on this ſowing for a main crop; therefore, for the general autumn, winter, and ſpring crops, we adviſe the firſt ſowing to be in the firſt week in June, the next in the laſt week of the ſame month, and the third and laſt about the fifteenth or twentieth of July; and each of theſe ſowings will afford different drawings or tranſplantings; for it is eligible to make five or ſix plantations at leaſt, at different intervals, whereby

whereby a regular ſucceſſion of good Endive will be obtained from Auguſt untill April.

All the ſowings ſhould be performed in an open expoſure, and the richer the ground the better, which, after being dug, form into a bed or beds four feet wide; directly ſow the ſeed by broad-caſt moderately thin, and tread and rake it in with a large rake.

The plants will come up in ten or twelve days, when, if the weather is dry, give occaſional waterings; keep them clear from weeds, and when they riſe in cluſters, thin them to two inches diſtance, that they may not draw each other weak, and when about a month old, tranſplant the largeſt in the following manner.

When the plants of each ſowing are from three to four or five inches high, they are then of a proper ſize for planting out, which ſhould be at once in the place where they are finally to remain; they ſhould be allowed a ſpot of as rich ground as you can afford, and an open expoſure is moſt eligible for the main crops that are planted out in June, July, and Auguſt; but for thoſe intended principally for ſpring ſervice, which are planted out in September, ſhould be ſet near the ſhelter of a ſouth wall or hedge. At each time of planting chuſe moiſt weather, if poſſible, and let the ground be then neatly dug one ſpade deep; divide it into four feet wide beds, and rake the ſurface ſmooth; then draw out a quantity of the ſtouteſt plants from the ſeed-bed, with their roots as entire as you can, and if the plants have run up with long leaves, trim their ſtraggling tops all of equal length, then plant them by line and dibble four rows in each bed, at a foot diſtance in the rows; and that the plants may have the more room to ſpread, ſet them in the quincunx order, finiſhing the work with a good watering, unleſs the weather is very ſhowery, when you may ſpare yourſelf that trouble, though, at any rate, a little water at planting ſettles the earth cloſe to their roots, and is of much advantage; if the weather is dry, the waterings ſhould be repeated every other day for a week, or till the plants have taken root.

In this manner it is adviſeable to make a freſh plantation every fortnight, from June to the middle of September, by which practice you will obtain a regular ſucceſſion of Endive, in due perfection, from Auguſt till the following ſpring, proper either for family ſervice, or for market.

When there is a neceſſity of planting any out in very dry weather, it is proper to draw flat ſhallow drills a foot diſtance; ſo ſet the plants therein a foot aſunder, that when water is given, the drills will detain it about the plants, and the earth will retain a moiſtneſs longer than the level ground.

As to the general culture of the different crops, keep each plantation clean from weeds, by hoeing between the plants carefully in dry weather; and when the plants are nearly full grown, a quantity of the largeſt ſhould have their leaves tied up for blanching, which is to be repeated in ſucceſſive order, and the following is the directions.

The great excellence in good Endive is to have the inner parts of the plants finely whitened or blanched, without which they would be tough and diſagreeably bitter; the plants of themſelves naturally incline to whiteneſs in the hearts, but this may be greatly promoted and improved by art, when the plants are arrived at full growth. Different methods are practiſed, ſuch as tying the leaves of each plant up together, taking up the plants, and replanting them directly, almoſt up to their tops, in ridges of dry earth, laying boards or tiles flat-ways on the plants; but this latter is the moſt unnatural and ineffectual of all methods, and the beſt of all is the tying up the leaves, which in a fortnight will be blanched. The proper period to begin this work is, when the plants are nearly full grown; that is, when they are ſo much advanced, that the leaves of the different plants interfere, and their hearts are full and buſhy; but they are not all to be tied up at once, only a due ſupply of the largeſt and forwardeſt plants once every ten or twelve days, according to the demand either for private uſe or market. Dry weather, if poſſible, ought to be choſen for this work, and when the plants themſelves are alſo dry, then having ſome ſtrong braſs ſtrings, or oſier twigs, gather all the leaves of each plant up regularly, diveſting them of damaged ones, and with theſe materi-

als tie them close together a little above the middle, or within about three inches of the top, being careful not to bind them too straight.

In fifteen or eighteen days, some of the forwardest plants of each tying will be tolerably well blanched, but in about three weeks they will be in excellent order.

To blanch them in ridges of earth. This is sometimes practised in winter, when there is danger of severe frost setting in; for by burying the plants almost to their tops, they are more out of the power of frost. In November or December, or when you apprehend hard weather is approaching, let a warm-lying piece of light dry ground be trenched up in one or more sharp ridges, two or three feet wide at bottom, and near as much in height, and side-ways to the sun, making the sides as steep as possible, that wet may run quickly off; then, in a dry day, take up a quantity of your full-grown plants with their roots entire, divesting them of damaged leaves, and then gathering each plant close in your hand, place them horizontally in the sunny side of the ridge of earth almost to their tops, and about six or eight inches each way distant, which is room enough, as it is only just to blanch them; here they will take root and blanch effectually, observing, that when severe frosty weather prevails, it would be of much advantage to cover the ridge with dry long litter, to secure the plants, and prevent the earth from being frozen hard, that they may be readily taken up when wanted.

In very severe weather, it would also be of much advantage to bestow covering on some of the best plants in the full ground; and where there is only a few for family use, it may be easily effected either by mats or dry long litter, being careful to remove the covering as soon as the weather alters.

ENFEOFF. To invest with possessions.

ENFRANCHISE. To invest with the privilege of a citizen or freeman.

EPIDEMIC, } Generally pre-
EPIDEMICAL, } vailing; affecting great numbers; universal.

EPILEPSY. See *Falling* EVIL.

EPIPHYLLOSPHERMOUS *Plants*. Plants which bear their seed on the back part of their leaves.

EQUINOX. The exact time in which the sun enters the first part of the signs Aries and Libra, in which our days and nights are equal; this is twice a year, about the 21st of March, and the 23d of September, called the vernal and autumnal Equinox.

ERGOT. A sort of stub, like a piece of soft horn, placed behind and below the pastern joint.

ERSH. The stubble after the corn is cut.

ERYNGO, [*Eryngium,*] *Sea Holly*. This is an hardy herbaceous flowering perennial, of which there are several species. The common Sea Holly grows plentifully on some of our sandy and gravelly shores; the roots are slender and very long; of a pleasant sweetish taste, which on chewing them for some time, is followed by a light degree of aromatic warmth and acrimony. They are accounted aperient and diuretic, and have also been celebrated as aphrodisiac; their virtues however are too weak to admit them under the head of medicines.

Stinking ERYNGO, [*Eryngium Fœtidum.*] Fever-weed. This plant grows naturally in the West-Indies, where it is much used as a febrifuge, from whence the name of Fever-weed. The plant is biennial, but will not thrive in England in the open air. It is propagated by seeds.

ESCULENT. Eatable, fit for eating.

ESCHALOTE, [*Cepa Ascalonica.*] Shallot. A species of onion much cultivated in gardens.

These plants are propagated by offsets from the roots, and planting them in a light soil; for though they will grow in almost any ground, they will increase most plentifully there.

The best time for setting is toward the end of January. They must be taken up as soon as their leaves begin to wither; for they will rot if left long after in the ground.

ESCALLION. Scallion. The scallion, or escallion, is a sort of onion which never forms any bulbs at the roots, and is chiefly used in the spring for green onions, before the other sorts sown in July are big enough; but this sort of onion, how much soever in use formerly, is now so scarce as to be known to few people, and is rarely to be met with. The gardeners near London substitute another sort for this, which

which are thoſe onions which decay and ſprout in the houſe; theſe they plant in a bed early in the ſpring, which in a ſhort time will grow large enough for uſe, when they draw them up, and after pulling off all the outer coat of the root, they tie them up in bunches, and ſell them in the market for ſcallions.

The true ſcallion is eaſily propagated by parting the roots, either in ſpring or autumn; but the latter ſeaſon is preferable, becauſe of their being rendered more fit for uſe in the ſpring; theſe roots ſhould be planted three or four in a hole, at about ſix inches diſtance every way, in beds or borders three feet wide, which in a ſhort time will multiply exceedingly, and will grow in almoſt any ſoil in any ſituation.

ESPARCET. Saintfoin.

ESPALIERS. Ranges of dwarf fruit-trees, trained to a trillage of wood-work in ſuch order as to form a kind of hedge.

Eſpaliers are commonly arranged in a ſingle row round the boundaries of the kitchen garden, there ſerving a double or treble purpoſe, both profitable, uſeful, and ornamental; they produce plentifully of large fine fruit, without taking up much room, or any incommoding the ground, and being in a cloſe range, hedge-like, they wonderfully ſhelter the eſculent crops in the quarters; and having borders immediately under them on each ſide, afford different aſpects for different plants, as they ſhall require at different ſeaſons of the year; as in the winter for ſhelter, the ſpring for forwardneſs, and the ſummer for ſhade; and as to the ornament and variety, what can be more delightful in ſpring, in the excurſion of the walks, than the charming appearance the trees make when covered with their ſnowy bloom, differing in themſelves in thoſe of different genera, ſpecies, and varieties; in ſummer, to ſee the fruits of the different ſorts advancing gradually to perfection; and in autumn, how pleaſing to find the various kinds arrive ſucceſſively at maturity; and as the trees are arranged all of an equal height, not exceeding ſix or ſeven feet, cloſely furniſhed with branches ranged at regular diſtances one above another, from the very ground upward, the fruit hereby exhibits itſelf to great advantage, and being low, and the branches fixed, is not liable to be blown down by wind.

An Eſpalier has this advantage over a wall tree, that it has liberty to form branches or fruit ſpurs on both ſides, which in the wall-tree cannot be effected but on one.

The ſorts of fruit uſually employed to form Eſpaliers, are principally apples, pears, and plumbs; but ſeveral other ſorts may alſo be uſed to increaſe the varieties, as quinces, apricots, cherries, almonds, mulberries, vines, figs, filberts, &c.

Obſerve always, however, to contrive all thoſe trees in the ſame line or range, that are nearly of the ſame growth, for the ſake of uniformity.

They ſhould be planted principally on thoſe borders ſerving as the immediate outer boundary to the quarters of the kitchen-garden, and immediately verging the principal walls; they may alſo be planted in pleaſure-grounds, &c. if thought convenient. The width of the borders may be about ſix feet, and the line of Eſpaliers placed four feet at leaſt, from the outer edge, and nineteen or twenty diſtant in the row, eſpecially for apples, pears, and plumbs, though twenty-five feet is not too much; but the trees planted at that diſtance, taking a long time before they approach each other to fill the Eſpalier, they appear ſtraggling and irregular, that few perſons plant them more than eighteen or twenty feet aſunder; if, however, they are planted only fifteen or eighteen feet diſtance, they will meet and form a cloſe Eſpalier ſooner by ſome years, and when they begin to interfere and incommode each other, the interfering branches of every other tree may be gradually cut away annually in winter pruning, to give the intermediate trees room to advance and meet each other, and at laſt the others may be taken quite away, and the remaining trees ſtanding at thirty or ſix and thirty feet diſtance will have full ſcope to ſpread.

All trees intended for Eſpaliers, that are propagated by grafting and budding, ſhould be grafted or budded within ſix inches of the ground, to procure lower branches to furniſh the Eſpalier, quite from the bottom re-

gularly upward; and the firſt ſhoots from the graft or bud, ſhould alſo in ſpring, when a year old, be headed down within five or ſix inches of the graft, to force out a ſupply of five or ſix more good ſhoots at that part, for the reaſon juſt mentioned; and whe- the trees are then in the nurſery, or planted in the Eſpalier, its ſhoots or branches ſo obtained, ſhould, the ſame ſummer or autumn, when eighteen inches or two feet or more long, be trained along as they advance to ſtakes placed for that purpoſe, laying the ſhoots to the right and left horizontally in the poſition proper to give them the firſt neceſſary form as Eſpalier-trees; if trees are raiſed in nurſeries for ſale, the above practice is eligible, whereby the trees are rendered more ſaleable, and their value encreaſed; and if the firſt heading does not furniſh the ſupply of lower branches required, you may practiſe a ſecond heading, either in whole, or only ſome of the middle-moſt ſhoots, as you ſhall judge neceſſary. Afterwards they muſt be trained all principally at full length.

When the trees in the nurſery are from two to four or five years old from the grafting or budding, being furniſhed with ſix, eight, ten, or more good branches near the bottom, properly ſituated for ranging two ways, according to the line of the Eſpalier, they are then fit for planting out finally for that purpoſe, obſerving the diſtances as before-mentioned. If apples and pears upon dwarf ſtocks, fifteen or eighteen feet may be ſufficient; but if upon free ſtocks, twenty-one feet at leaſt is neceſſary; plumbs ſhould alſo be planted eighteen feet diſtant at leaſt in the line; cherries, apricots, figs, mulberries, vines, &c. never leſs than fifteen feet diſtance, but if eighteen the better; as ſoon as they are planted, place ſtakes, ranging the way of the row, and to which tie the branches with oſier twigs, thoſe of each tree horizontally to the right and left, keeping an equal number on each ſide, at ſix or eight inches diſtant, one above another, and at full length; except a farther ſupply of more branches may be wanting, to furniſh the bottom and middle of the tree, then ſhortening is to be practiſed according to the rules before-mentioned, to obtain the proper ſupply; afterwards train all the branches at full length, till all thoſe of each tree meet, and all redundant ſhoots more than the allotted horrizontals are to be diſplaced.

Another method of forming Eſpaliers, ſometimes practiſed, is after having headed down the firſt ſhoots, and ſuppoſe the tree in conſequence furniſhes about three bottom ſhoots, the two ſide ones are trained horizontally, the way of the Eſpaliers, and the mid- one is trained upright; if five ſhoots, two muſt go to each ſide, and the middle one perpendicular: this perpendicular ſhoot muſt ſtill be directed upwards, to furniſh more lateral ſhoots for horizontals, which muſt be trained horizontally to each ſide, as above, ſtill continuing your upright in the middle; obſerving however, if the upright ſhoot ſhould not throw out horizontals low enough, it ſhould be ſhortened, whereby it will furniſh freſh ſhoots at any deſired height, two or four of which, according to the number produced, are to be uſed for horizontals, and one ſtill directed up the middle of a ſtem, and ſo continue increaſing your number of horizontals annually, ranging from each ſide of the ſtem, at ſix or eight inches, one above another, from bottom to top of the Eſpalier.

In planting Eſpaliers, in reſpect to the treillage for training the branches upon, you may either only place four or ſix common ſtakes to each tree, in a line, juſt to train the branches the firſt two or three years, till the trees are ſomewhat advanced; then taking theſe away, form a regular treillage-work; or if you are anxious to preſerve uniformity, a general treillage may be formed at once, at firſt planting of the trees.

Theſe treillage-works, for the above purpoſe, may be of different degrees of taſte for uſe and ornament, according to your fancy or convenience: the cheapeſt, and the ſooneſt made, is that of ſtraight ſtakes driven into the ground a foot diſtance, and ſawed level at top, five or ſix feet high; and ſlips of deal, or poles arranged along the top of the whole length, and ſo train the branches of the trees along from ſtake to ſtake.

But for the ſake of ornament, a regular frame or treillage may be formed of

of ſquare timbers, and, to have it more durable, the principal poſts might be of oak, two or three inches ſquare, and rails carried from poſt to poſt, the firſt about eighteen inches from the bottom, one at top, and a third in the middle ſpace; then thin ſquare ſlips of lath, or ſmall aſhen poles, or the like, are fixed upright to the rails on the ſide next the trees, a foot aſunder, and paint the whole with oil-colour, to render it more ornamental and durable.

To either of the above treillage-work, the Eſpalier-trees are to be trained in a regular manner, bringing the lowermoſt branches down horizontally within eight or ten inches of the ground, tying them to the uprights of the treillage; the next courſe ſix or eight inches above theſe, in the ſame poſition; the ſame of the next and every ſucceeding courſe all the way up, preſerving an equal number on each ſide, ranging exactly in the ſame horizontal poſition, and diſtance from bottom to top, training them always along at full length, except there be a want of wood in any part; then, to force out the ſupply wanted, ſhorten ſome contiguous ſhoots to five or ſix inches, either the ſame ſummer it is produced in June, otherwiſe not till ſpring following, and ſo continue every year increaſing the number of horizontals, and place them properly, till the trees are furniſhed with branches one above another, from the bottom to the top of the treillage.

As to the general pruning of Eſpalier-trees, obſerve, that the branches are, for the general part, to be trained always at full length, for ſhortening more than juſt neceſſary to procure an occaſional ſupply of wood, would not only produce a confuſion of branches, but as the trees always produce their fruit upon ſpurs, which, if the branches are trained at full length, generally firſt form themſelves towards the upper part, and gradually along the ſides at each eye; that by ſhortening it would cut away the ſaid firſt fruitful parts, and from the lower eyes, that inſtead of forming ſpurs, force out ſtrong unneceſſary wood, and ſcarce any fruit; and this is the reaſon we ſee ſo many ill-formed Eſpalier-trees, many people thinking ſhortening the ſhoots is neceſſary to ſtrengthen them as they call it, and hereby the tree throws out vaſt quantities of wood every ſummer, which they either then, or in winter or ſpring pruning, cut out, generally leaving a ſtump of each ſhoot about an inch or two long, and from every eye of theſe ſtumps, more ſtrong ſhoots riſe the year following, and theſe are alſo ſtumped off in the ſame manner, and ſo they continue from year to year, by which means the tree is filled with large cluſtering ragged ſpurs, formed entirely of the ſtumps of ſhoots: therefore, always keeping in mind to continue all the ſhoots and branches principally at full length, and when neceſſary to cut out any ſuper-abundant wood, always take it off quite cloſe, never leaving any ſtump, and conſtantly encourage the fruit-ſpurs, which are natural ſhoots from about half an inch to one or two in length; obſerving however, when any of theſe are worn out, or grown cankery, or become very long, as to project conſiderably foreright, they ſhould be cut out cloſe, to make room for thoſe of better growth.

Eſpaliers ſhould have two principal dreſſings annually, i. e. ſummer and winter pruning.

In ſummer the trees often produce numbers of ſhoots more than are wanted, or that can be trained in; therefore, keeping in mind the proper diſtances and general poſition of the neceſſary branches to form each tree, begin early in June, and clear off all ſuperfluities as they are produced, that is, all fore-right ſhoots iſſuing from the front and back of the branches; and thoſe of very luxuriant growth, ſhould always be diſplaced, rubbing or cutting them off cloſe; not, however, reducing any of thoſe ſhoots produced immediately from the end of the branches, which muſt be left entire, to extend the branch in length, and form a further ſupply of fruit-ſpurs. All other ſhoots, however good and well-placed, ariſing from the ſides of the horizontals, and that are evidently ſuperabundant, i. e. more than what can be trained in, conſiſtent with the allotted diſtances, and regular poſition of the general horizontals, or bearing-branches, ſhould alſo be taken off; obſerving however, to preſerve here and there a good ſhoot towards the lower part of the branches, in the moſt vacant ſpaces, or where bad branches

occur, training them up between at full length till winter pruning; and if then not wanted, may be cut out; for it is neceſſary always, at any rate, to leave ſome as a reſerve till winter, in caſe of any unforeſeen vacancy happening. In the above manner go over the Eſpalier-trees, of all ſorts, twice every ſummer, at leaſt, the firſt time early in June as aforeſaid, and again in July. In the firſt dreſſing in June, which, if there are any vacancies want filling, you may pinch any contiguous ſtrong young ſhoot of the year, to three or four eyes, whereby it will furniſh the like number of ſhoots the ſame ſeaſon, which you may train into the vacant ſpace.

The above ſummer dreſſings are not only beneficial to the trees, but, clearing out uſeleſs wood, admits the ſun and air to effect the growth and ripening of the fruit.

In performing the ſummer dreſſings, if you begin betimes, before the young wood becomes long and woody, all redundances may be rubbed off cloſe by hand; but if the ſhoots are firſt ſuffered to be of conſiderable length, or hardened, the knife muſt be uſed, always rubbing or cutting cloſe.

Winter pruning.—This may be performed any time from the fall of the leaf in November, till March; in this pruning a general regulation is to be obſerved, both to old and new branches when neceſſary, therefore examine firſt the ſtate of all the main horizontals, if any are decayed, or much cankered, take them out, either to their origin, or to ſome healthful young branch ariſing from them below the defect; likewiſe an old naked branch, not furniſhed with bearing ſpurs, nor ſupport-branches, that are, ſhould alſo be cut out, where there are large cluſtering ragged ſpurs, formed by the remaining ſtumps of ſhortened ſhoots, as before obſerved, cut them alſo off cloſe, being careful to preſerve all the natural fruit-ſpurs already deſcribed. Examine alſo ſuch young ſhoots that were trained up in the ſummer dreſſing, ſuch of them that are well placed, and towards the lower part of the main branches, and are likely to be wanted to fill any preſent or future vacancy, are to be left and trained up regularly at full length; for it is neceſſary always to have ſome young branches in training between the principal ones, in different parts, where you ſhall judge neceſſary, without crowding, to be coming forward gradually to a bearing ſtate, to ſupply the place of ſuch as are apparently in a decaying ſtate, or but bad bearers; all other young ſhoots left in ſummer, that are not wanted for the above purpoſe, ſhould now be cut out cloſe, obſerving, as in the ſummer pruning, that all ſhoots ariſing ſingly, immediately from the ends of the horizontals, muſt now alſo be left entire, that is, leaving only one to each branch as a leader, and to extend the reſpective branches in full length, to fill the extent of Eſpalier allotted; ſo that every branch and ſhoot ſo reſerved for training in, muſt, except in caſe of a vacancy, alſo ſtill be continued along at full length, they will then naturally form fruit-ſpurs at almoſt every eye or bud all along their ſides.

For the branches of apples, pears, plumbs, cherries, &c. always produce their fruit upon ſpurs, which generally begin to form when the branches are two or three years old, provided the branches are left entire, but if ſhortened, they never form properly.

Having winter-pruned the trees, you muſt then proceed to freſh tie all the horizontals, old and new, in a neat manner, to the treillage, ſtill preſerving an equal number on each ſide of every tree, and all at regular diſtances of ſix or eight inches, and their poſition ſo much horizontal, as their extremities may not be above ſix or eight inches higher than the bottom parts, training every branch as ſtraight as an arrow, clean from the bottom to the extremity, tying them neatly to each upright of the treillage.

The beſt material for tying the branches of Eſpaliers, is oſier, chuſing the ſmall twigs of about eighteen inches, or two feet long; which, if you have none of your own growing, you may purchaſe cheap enough at the baſket-makers. The yellow oſier is the beſt, if it can be obtained.

The mode of tying up is, put the the twig around behind the treillage, keeping the biggeſt end faſt, bring the other end round the branch to meet it, twiſting it about the big end once or twice, cloſe to the branch, and turn the point in betwixt that and the tying, draw

draw it right, then cut both ends even, to about an inch; in this manner every branch muſt be tied to all the uprights of the treillage its length reaches.

ESTRAY, in law, any beaſt, not wild, that is found within a lordſhip, and owned by no-body; in which caſe, being cried according to law in the two next market towns adjacent, and not claimed in a year and a day by the owner, it becomes the property of the lord of the manor or liberty wherein it was found.

ESTREAT, in law, a true copy, note, or duplicate of an original writing or record, eſpecially fines, amercements, penalties, &c. ſet down and impoſed in the rolls of a court, to be levied by the bailiff, or other officer.

ESTREPEMENT, in law, any ſpoil made by tenants for life on any lands, &c. to the prejudice of the reverſioner. It is alſo taken to ſignify the making barren land, by continual ploughing and ſowing, and thereby drawing out the heart of the ground without manuring, or rather good huſbandry, by which means it is impaired.

ETCH, the ſame with Erſh.

ETERNAL FLOWER, [*Gnaphalium.*] Goldy-locks. Mr. Miller reckons no leſs than eighteen ſpecies of this plant, one of which is Caſſidony, already mentioned. They are all herbaceous and ſmall ſhrubby flowering perennials, riſing of different ſtatures, from ſix or eight inches, to four or five feet; adorned with white hoary leaves, and terminated by white compound flowers, which are remarkable for preſerving their beauty for years after they are gathered. They begin to flower in June, and continue till the end of the ſummer. They are propagated by ſlips or cuttings of their ſhoots.

EVER-GREENS. All ſorts of trees, ſhrubs, and herbaceous plants, that retain their green leaves the year round, may be denominated Ever-greens, tho' it is moſt commonly underſtood of trees and ſhrubs, of which there are great numbers in our gardens and plantations, employed for ornament, variety, and as foreſt-trees for timber, many of which are adapted to grow in any part of the habitable world; and, in general, their leaves are harder and leſs ſucculent than thoſe of deciduous trees. They are not in the leaſt influenced by the clemency or inclemency of ſeaſons, but preſerve them in conſtant verdure through the year; the old leaves remaining a long time after the formation of the new ones, and do not drop them at any determinate time.

Many herbaceous perennials enjoy the ſame privilege with the ever-green trees in retaining their leaves, and reſiſt the ſeverities of winter; ſome even can diſpenſe with earth for ſome conſiderable time, ſuch as the houſeleeks, navel-worts, aloes, &c. being replete with juices, which the leaves imbibe from the humidity of the atmoſphere, ſufficient for effecting the purpoſes of vegetation.

EVERGREEN *Honyſuckle.* See HONEYSUCKLE.

EVERGREEN *Oak.* See OAK.

EVERGREEN *Privet.* See PRIVET.

EVERGREEN *Roſe.* See ROSE.

EVERGREEN *Thorn.* [*Pyracantha.*] This plant grows naturally in the hedges in the South of France and Italy, and flowers come from the ſide of the branches in large umbels; they are ſmaller than thoſe of the common hawthorn, and of a dirty white; theſe are ſucceeded by roundiſh red berries, which ripen in the winter, and being mixed with the ever-green leaves, make a pretty appearance. It is propagated by ſeeds or layers.

EVERLASTING PEA, [*Lathyrus.*] Chickling vetches, ſweet pea. The ſpecies are, 1. Broad-leaved perennial Lathyrus, or everlaſting pea; 2. Odoriferous, or ſweet-ſcented pea; 3. Tangier pea; 4. Crimſon graſs vetch; and from theſe are produced a numerous variety.

All theſe ſpecies of Lathyrus are herbaceous, and of hardy growth; their ſtalks long, ſlender, and furniſhed with cirrhi, or claſpers, for the purpoſe of climbing and ſupporting themſelves; the firſt ſort is pirennial, or everlaſting in root, but annual in ſtalk; and the other are annual in ſtalk and root, riſing from ſeed in ſpring, and wholly periſh in autumn. They all merit culture as flowering plants, but the perennial ſort is the moſt valuable, both for its durability in root, and long continuance in bloom; the annual ſorts, however, flower very ornamentally, and by three or four different ſowings, may be made to flower all ſummer and autumn.

The

The flowers of all the ſpecies are papilionaceous, or butterfly-ſhaped, having four irregular petals, that is, a vexilium, or ſtandard, two ſide wings, and a keel at bottom, ſucceeded by a long compreſſed pod, filled with pea-like ſeeds.

Falling EVIL, Epilepſy. In this diſeaſe the horſe falls down ſuddenly. His teeth and his eyes become fixed, but his head and body is ſhook and extremely agitated; froth bubbles out of his mouth, his flanks heave and labour, and ſometimes there is an involuntary excretion of the dung and urine; all which ariſe from an involuntary and diſorderly motion of the blood and animal ſpirits, ruſhing with greater impetuoſity into a muſcle of one ſide, than that which is its antagoniſt, ſo as to occaſion a vellication and contraction of that muſcle; and becauſe there is not an equal quantity of blood and ſpirits detached into the oppoſite muſcle, therefore that member cannot be extended as well as contracted, but drawn one way, and the part affected will continue immoveable, excepting in theſe violent ſhocks and agitations.

The cauſes may be, firſt, whatever waſtes and exhauſts the body, or any of its parts, as the taking away too much blood, violent purging or hard labour, long ſickneſs; ſecondly, whatever fills the body too much, and gives origin to obſtructions in the blood-veſſels or brings a debility and weakneſs into the ſtomach; and, laſtly, wounds, or whatever elſe cauſes pain and inflammation.

As to the cure, it is the ſame with that of an apoplexy or vertigo; only this general rule is to be obſerved, that when it proceeds from lowneſs, evacuations by blooding and purging are to be laid aſide, excepting where ſome circumſtances may make a moderate uſe of them.

Sleeping EVIL, Lethargy. The ſleeping evil in horſes, is the ſame that we call the lethargy in our own ſpecies, and it will be as fatal to them as it is to ourſelves, if not remedied in time. The cauſe is their eating a great quantity of coarſe food, and having leſs work than uſual.

It ſhews itſelf by their being ſluggiſh, and continually ſleeping or dozing. The remedy is the following ball:—

Pound in a marble mortar a handful of the plant called Wall-pepper, or ſharp Stone-crop. It is a common creeping plant upon walls and bears yellow flowers. Put to this a very little white wine, and ſqueeze out the juice. Grind in a mortar four ounces of elecampane powder, and one dram of powder of pellitory of Spain; add the juice to theſe, and then put in a quarter of a pound of Caſtile ſoap, work and beat all well together; and then put in liquorice powder by a little at a time, to bring it to a ſoft paſte. Keep this in a pot, and every morning, before he has taken any food, give him a piece of it as big as a large wal-nut, greaſed. Let him drink milk and water, warmed, after it, and keep him ſtirring.

Colt EVIL. See COLTEVIL.

Poll EVIL. The Poll Evil is an impoſthume which ariſes on the poll of the horſe, and, for the moſt part, is cauſed by the fretting of a new halter or collar, &c. At firſt it requires no other method of cure than what is common to other boils and inflamed tumours, viz. by ripening and bringing it to matter; but ſometimes it degenerates to a ſinuous ulcer, though that be generally owing to want of ſkill.

There is a ſmall ſinus under the noll-bone, where the matter is apt to lodge, unleſs care be taken to keep the part firm with bandage; but, inſtead of that, the farriers generally thruſt in a long tent, which raiſes the fleſh, and opens a way into the ſinus; and by this means, an ulcer is created where there needs be none; all, therefore, that is further neceſſary on this head, is to caution the practitioner againſt ſuch ill methods; and if the tumor has a very large cavity within it, it is much better to lay it ſomewhat open, than to thruſt foreign ſubſtances into it; and, if it acquires an ulcerous diſpoſition, it muſt be treated as ſuch.

Hungry EVIL, Ravenous appetite. See FOUL-FEEDING.

EUPHORBIUM. A gummy reſin exuding from a large oriental ſhrub. It is brought to us immediately from Barbary, in drops of an irregular form; ſome of which, upon being broken, are

are found to contain little thorns, ſmall twigs, flowers, and other vegetable matter; others are hollow, without any thing in their cavity; the tears in general are of a pale yellow colour externally, ſomewhat white within ſide; they eaſily break between the fingers. Lightly applied to the tongue, they affect it with a very ſharp biting taſte; and, upon being held for ſome time in the mouth, prove vehemently acrimonious, inflaming and exulcerating the fauces, &c. Euphorbium is extremely troubleſome to pulverize; the finer part of the powder, which flies off, affecting the head in a violent manner. The acrimony is ſo great, as to render it abſolutely unfit for any internal uſe. Several correctors have been contrived to abate its virulence, but the beſt of them are not to be truſted to; and as there ſeems to be no real occaſion for it, unleſs for ſome external purpoſes, we think, with Hoffman and others, that it ought to be expunged from the catalogue of internal medicines.

EUPHORBIUM, [*Euphorbia.*] Spurge. Burning thorny plant. An herbaceous ſhrubby ſucculent plant, of which are reckoned up no leſs than thirty-two ſpecies by Mr. Miller. They are tender exotics, and require the aſſiſtance of the ſtove and green-houſe. All the ſpecies of Euphorbia are very ſucculent in ſtalks and branches, abounding with a milky juice, ſo extremely acrid, as to burn linen, or bliſter the hand or any part of the ſkin, where applied; and the branches being ſo ſucculent, cuttings thereof, if preſerved dry, may be kept out of the ground ſeveral months if neceſſary, and then planted, will readily emit roots and grow.

They are all natives of the hot parts of Africa, Aſia, and America, and retained here in our ſtoves as plants of curioſity, for the great ſingularity of their ſtrange growth.

In their culture here, they muſt be kept always in pots of very light ſandy or rubbiſhy poor ſoil, and placed upon the ſhelves in the hot houſe.

They are all eaſily propagated by cuttings of their branches any time in ſummer; take off the cuttings with a knife, from three to five or ſix inches long; lay them on a dry ſhelf till the wound is dried up and ſkinned over, as for other ſucculent cuttings; when this is effected, plant them ſingly in ſmall pots of dry ſandy ſoil, and plunge them in the bark-bed, give a little water once or twice a week, and they will ſoon be well rooted, and may then be placed upon the ſhelves in any part of the ſtove.

They muſt be allowed larger pots occaſionally, once every year or two, but never put them into any too large; waterings will be neceſſary now and then, which in winter is ſufficient once a week, and not oftener than twice in ſpring, and about two or three times a week in the heat of ſummer.

EUPHRASY. Eyebright.

EWE. The female of the ſheep. Mr. Ellis, in his Treatiſe on Sheep, has given us the following ſecret, which he poſitively aſſerts will make ewes take ram at any time of the year.

"Separate, ſays he, ſix or more of your ewes from the flock, and give to each half a pint of ſtrong ale, or the ſame quantity of good October, mellow, ſilky beer, and not that which is ſharp by ſtaleneſs; and for giving it in the eaſieſt and ſafeſt manner, you may run the ale or beer through a funnel into the ewe's mouth; and when the ewes have been all thus ſerved, put them into a proper place, not too large, nor too narrow, that the ewes may be confined with one or more rams, that have been before a little better kept than ordinary for this purpoſe. Out of ſix ewes, that I have known to take ram in this manner, not one of them has failed proving with lamb. By the above method, and the aſſiſtance of a ſufficient number of hands, an hundred ewes may be thus doſed with ſtrong drink, and if rams enough are provided, they will all preſently take ram."

EXERCISE. A proper agitation given to an animal body, in order to produce ſalutary effects.

Exerciſe duly given to horſes that are well fed, is not only the beſt means of all others to prevent ill habits, but to preſerve them in a perfect ſtate of health; for exerciſe converts the food into good and wholeſome nouriſhment; it promotes the circulation of the blood, and all the glandular diſcharges, ſo as greatly to enliven the body, and to make way for freſh ſupplies of aliment. It invigorates the ſpirits, gives ſtrength and firmneſs to the muſcles

muſcles and ſinews, and enables a horſe to endure labour. And when exerciſe is given abroad in an open air, it adds greatly to a horſe's vigour, and prevents any diſpoſition to putrid coheſions in the blood, which a cloſe ſtagnated air often produces, and this eſpecially when horſes are young, and their appetites ſtrong; for, indeed, when horſes grow old, their appetites are more moderate, and reſt is oftentimes more agreeable to them than labour. Nevertheleſs, exerciſe is, more or leſs, abſolutely neceſſary for all horſes, young or old: for we may obſerve, even old horſes, when they lie much ſtill, though they are not apt, as young horſes, to turn directly ſick, and fall into fevers; yet as their blood grows poor, and languid with age, they become ſubject to many infirmities, as ſwellings of their ſheath and bellies, with other dropſical ſymptoms, and ſometimes to obſtinate corruptions on their ſkins, which exerciſe in a proper degree often prevents.

Horſes, by their natural activity, are every way ſuited to exerciſe and labour, and in that reſpect are more uſeful than any other of the brute creatures; only it depends on us how they are to be treated, both for their own preſervation, and our benefit; and their food ought always to be proportioned according to their exerciſe. But the time and manner of a horſe's exerciſe is to be regarded; for if he happens either to be worked at an unſeaſonable time, or beyond his ſtrength, it will be more injurious to him than if he had not been worked at all. Therefore this general caution is always needful, viz. never to ride a horſe hard, or put him upon any violent exerciſe when he hath been newly fed, and has his belly full of meat or water; but ſhould be moved out at firſt gently, and he will naturally mend his pace, as his food and water begins to aſſuage, when his rider may urge him on to further ſpeed, as his buſineſs may require.

We need not tell any one, that when a horſe is hot with riding, or any other ſharp laborious exerciſe, he ſhould be cooled by degrees, this being known to almoſt every ſtable-boy from cuſtom and uſe, though it is often neglected through ignorance or idleneſs, or done with little judgment. And, therefore, when a man has travelled hard upon a journey, or when horſes have been driven hard in a coach or chaiſe, it is not ſufficient, after they come to their bating place, or to the end of their day's journey, to walk them about in hand for half an hour, or more, which is uſually done, but their pace ſhould alſo be ſlackened for a mils or two before they come in, and after that, ſhould alſo be walked ſome time in hand, that they may cool gradually before they are brought into the ſtable, with a thin cloth laid over each, if they have been uſed to it. This is the ſafeſt way for young horſes, that have been kept well, and have worked but little. And when ſuch horſes come late to the end of their day's journey, or when the weather is ſo bad, that they cannot be walked about in hand, they ſhould then be rubbed all over their bodies and limbs, till they are quite cool, without taking off their harneſs and ſaddles, and when cloathed; for when all the ſmalleſt blood-veſſels are replete and full, as they muſt unavoidably be in all ſtrong and eſpecially in long continued exerciſe, and the blood extremely heated, and running like a torrent, and ſudden chill or damp will produce ſtoppages and obſtructions, where the veſſels are the moſt minute and ſmall, or wherever there is the greateſt weakneſs and relaxation, ſometimes inwardly in the lungs, ſometimes in the liver and kidneys, and ſometimes in the ſtomach and guts, and other membranous parts; and this is uſually followed with inward pain and inflammation, or with great dulneſs and heavineſs, which, in the end, often produce many untoward diſorders; or if the limbs happen to be weak and relaxed, the blood and juices will ſoon drop down and ſtagnate there, ſo as to produce ſwellings, and ſometimes ulcerations, that are troubleſome enough to remove, eſpecially in thoſe that have been little accuſtomed to ſuch kind of labour; for habit and uſe, in continued exerciſe, alters the caſe very much, becauſe that ſtrengthens and invigorates the nerves and ſinews, as we obſerve in ſome hackney or job horſes, which are ſo ſeaſoned to their work, that ſcarce any thing can hurt them. Indeed, ſome of the job-horſes, that we ſee endure ſo much labour,

labour, are naturally ſtrong and very hardy, and have at firſt been carefully managed by their owners, who are not able to bear the loſs of cattle, as gentlemen or men of fortune; and, therefore, we ſee them generally both begin and end their work with great coolneſs, and when they chance to meet with horſes that they find unable to go through their hard work. they uſually make their buſineſs only a mere play, that they may not loſe their fleſh, until they can diſpoſe of them to the beſt advantage. Another neceſſary caution for the preſervation of our horſes is, never to feed them too ſoon after they have been heated with exerciſe.

EXOTIC. Foreign; not produced in our own country.

EXPERIMENT. Trial.

EXPOSURE. The ſituation or aſpect of a garden or wall, with reſpect to the ſun and winds; it is therefore as various as the points of the compaſs, being either direct, as eaſt, weſt, north, or ſouth, or declining, as ſouth-eaſt, ſouth-weſt, &c. A garden ſloping to the ſouth is ſaid to have a ſouth expoſure or aſpect, or a wall with trees facing the eaſt is ſaid to have an eaſt expoſure; the ſouth-eaſt, or ſouth-ſouth-eaſt points, are generally reckoned the beſt expoſures for gardens, by reaſon they will enjoy the benefit of the morning ſun, and be leſs expoſed to the injuries of the weſt and ſouth-weſt winds, which in this climate are the moſt violent; the next beſt aſpect is the ſouth, particularly if the land is moiſt, but if it be of a dry nature, its product is very apt to be burnt up in hot ſummers, though it extremely well ſuits winter crops. With reſpect to walls, we would give the preference to the ſouth or ſouth-weſt expoſure for tender fruits; for although the eaſtern aſpect receives the invigorating rays of the ſun in the morning, yet the tender bloſſoms are very liable to be deſtroyed by the dry eaſterly winds, which generally prevail at the time the trees are in flower; therefore, a wall with trees inclining a little to the weſtward of the ſouth hath this advantage, that the bloſſoms receive but little damage from the froſts, which melt before the ſun comes to ſhine on them, and fall off like dew, without doing much harm; however, as there will be contrary aſpects, theſe may be planted with ſuch ſorts of fruits as do not require ſo much heat to ripen them; and wherever there are north aſpected walls, they are only fit for baking pears or plumbs, morello cherries for preſerving; or ſome duke cherries may be thus continued longer in the ſeaſon, as there is a month difference between the ripening on one ſide of the wall and on the other.

EXTRAPAROCHIAL, out of any pariſh; privileged or exempt from the duties of a pariſh.

EXUVIÆ. Caſt-ſkins; caſt-ſhells; whatever is thrown off by animals or vegetables.

EYE. The organ of ſight in an animal body, or that which repreſents objects to the mind.

The goodneſs or badneſs of the eyes in horſes, is a thing wherein the beſt judges are ſometimes miſtaken; for moſt people regard the clearneſs and tranſparency of the eye, which indeed ought to be conſidered; but it is worth obſerving, that horſes, before they are ſix years old, have not that tranſparency in their eyes which they arrive at afterwards: becauſe, while they are young and growing, their juices are viſcid and balſamic; ſo that their eyes look thicker and clearer, in proportion as their blood and juices happen to be more or leſs in a good ſtate. The ſame may be obſerved in all horſes that have colds, when the veſſels of the eyes are full; the eyes at that time look thick, and ſometimes inflamed, and a blow on the eye, or a bite, will have the ſame effect, when there is not the leaſt danger of blindneſs.

It is not, therefore, always the clearneſs of the eye that denotes its goodneſs, but a man is always to form his judgment from other indications, particularly from the form and manner of the eye, which includes not only the body of the eye, but the eye-lids, eye-brows, and all the parts belonging to it. Many good eyed horſes have a heavineſs in their countenance, with a lowering brow, yet great numbers of this aſpect go blind with cataracts when they are about ſeven years old, or between ſeven and eight, or ſometimes later. Theſe are the moſt ſuſpicious, where there is a bunch or fullneſs between the upper eye-lid and the eye-brow, with a fullneſs round the under

eye-lid; ſo that the eye appears as if it was inviron'd in a ring. Such horſes are often fleſhy about the head and jaws, which, upon every cold, or rather ſlight accident, expoſes them to defluxions in their eyes.

When the eye is extremely flat, or ſunk within its orbit, it is always a bad ſign, even though there be no defluxions or humour upon it. A ſmall pig-eye is none of the beſt, nor a large gogling eye. The one often periſhes for want of nouriſhment, occaſioned by ſome defect in the nerves or the arteries that ſupply it with blood; the other by being too much expoſed to accidents, and by having too great ſupplies of nouriſhment.

That eye is almoſt always weak which is of a longiſh oval figure, eſpecially where the two corners are narrow, like the ſhape of an almond. When the coat or membrane, that riſes from the under part of the eye happens to be large and thick, ſo as to preſs the eye-ball, and the caruncle or kernel on the inward corner next the noſe is ſpungy and moiſt, though there is ſometimes a remedy for this defect, yet ſuch horſes in the end generally go blind.

When the eyes are bad, the muſcles or movers of the eyes are generally weak; ſo if the eye looks dead and lifeleſs, the beſt way of trial is to hold up the horſe's head in the ſame manner as when a drench is to be given, which will draw the eye upward; and if it remains there fixed and immoveable, or has a languid motion, it is a pretty ſure ſign the eye is bad. And this trial will, for the moſt part, hold good whether the eye be moiſt or dry.

Some regard the colour of the eye, which, however, is different according to the difference of colour in horſes; and indeed we are ſo far to regard the colour, that if the iris or circle that ſurrounds the pupil or ſight of the eye be diſtinct, and of a pale variegated cinnamon colour, it always denotes a good eye. For the iris is always moſt diſtinct, where the humours of the eyes are moſt clear and pellucid; and thoſe horſes have the beſt eyes, which in colour reſemble the eyes of a ſheep or goat; but few horſes arrive to that perfection of colour and tranſparency, till they are at leaſt ſix years old or upwards. On the other hand, if the iris or circle round the pupil be of a dark muddy colour, and does not appear diſtinct and variegated, till one approaches very near the eye, and if the narrow ſky-coloured verge, which we obſerve more or leſs in moſt horſes on the outſide of the iris, happens to be of a milky hue, it is no good ſign. Nevertheleſs, wall-eyed horſes have for the moſt part good eyes.

Some, in examining the eyes, have a regard to the colour of the horſe, which we take to be no ſure way of judging; for as there are good horſes of all colours, ſo there are good-eyed horſes of all colours. The grey, eſpecially the pigeon or dove-coloured grey, are the moſt ſuſpected; alſo the iron-grey, the dun, &c. But we think we may ſay from experience, that whatever colour is the moſt common among the horſes, ſo as to exceed in number, abounds moſt with bad eyes; and we have obſerved as many bad-eyed horſes among the black coach breed as any other.

Moſt people, in examining a horſe's eyes, lead him under a gate-way, or ſome ſhade, that they may ſee perfectly the colour and tranſparency of the eye; but the beſt way is to obſerve his countenance when he comes firſt out of a dark ſtable into a ſtrong light; for if he has any weakneſs in his eyes, he will wrinkle his brow, and look upward to receive more light; and if the pupil at the ſame time be large, it is a bad ſign; and therefore the beſt way is to look to a horſe's eyes firſt in the ſhade, to obſerve the dimenſions of the pupil, and if that leſſens upon his coming out into a ſtrong light, it is almoſt an infallible ſign that the eye is good.

Some ſuſpect all horſes that ſtartle to have bad eyes; indeed many bad-eyed horſes are apt to ſtartle: but a horſe that ſtarts and looks upwards, lifting his feet high when he moves, as if afraid to touch the ground, ſuch is more likely to have bad eyes than one that ſtartles; for many horſes ſtartle merely out of fear, and we imagine not a few from ſome defect in viſion, viz. from ſeeing objects indiſtinctly at ſome diſtance, in all which caſes the eyes may be ſtrong and durable, though many fancy them to be weak. But if a horſe frequently ſtartles when no

objeſt

object is before him that might cauſe him to ſtartle, we may then ſuſpect his eyes to be but indifferent.

Upon the whole, that eye is genenerally good where the eye-lids are thin, where the outward coat or tunicle of the eye is alſo thin and delicate, where the caruncle next the noſe is ſmall and dry, where the eye is tranſparent and ſprightly, when a horſe has a bold reſolute look, and takes notice of objects without fear. On the other hand, when a horſe moves his ears backwards and forwards, and ſeems ſurpriſed at every noiſe or motion of the hand; when he raiſes his feet high, is uncertain in his walk or ſtep, and unequal in his goings; when his eyes appear full and ſwoln with a fleſhy circle round them, or when they are ſunk or flat, or of a longiſh oval figure; when the outer coat is thick, and covers a great part of the eye-ball, and the glands or kernels of the eye are ſpungy and moiſt, all theſe denote the badneſs of the eyes, and are often the forerunners of blindneſs.

Eye *of a Tree.* A ſmall pointed knot to which the leaves adhere, and from which the ſhoots or ſprigs ſpring forth.

Eye. Among gardeners, implies the ſmall bud or ſhoot inſerted into a tree.

EYEBRIGHT, [*Euphraſia.*] This is a very low plant, growing wild in moiſt fields. It has for ſome time been celebrated as an ophthalmic, both taken internally, and applied externally. Hildanus ſays, he has known old men of ſeventy, who had loſt their ſight, recover it again by the uſe of this herb. Later practitioners, however, have not been ſo happy as to obſerve any ſuch good effects from it. At preſent it is totally and juſtly diſregarded.

EYEWORT. Eyebright.

EYE-WATER. Water to cure diſorders in the eyes.

For watery and inflamed eyes, the following is a good preſcription after bleeding and purging:

Take of white vitriol half an ounce, water four pints, boil it till the vitriol is diſſolved, and then filtre the liquor.

F.

Fall of leaves in Autumn. See Deciduous.

FABACEOUS. Of the nature of a bean.

FALDAGE. This is a privilege which many Lords anciently retained to themſelves of ſetting up ſheep-folds or pens in any fields, without their manors, the better to manure them; and this not only with their own, but with their tenants ſheep, which is called *Sectafaldæ.* This Faldage, in ſome places, is called a Fold-courſe, or Free-fold.

FALDFEE. Fee or compoſition for faldage.

FALLOW. Land ploughed and tilled, but not ſown. This is abſolutely neceſſary at ſome times to be done, to recover the exhauſted ſtrength of the ground. Turnips, vetches, buckwheat, &c. are ſometimes ſown on the fallow before a crop; and are properly termed meliorating crops. Lands in a fallow want more or leſs ploughing, according to the foulneſs, never leſs than three, often five or ſix times for turnips, or till the land be thoroughly clean and well broken.

Fallow. A colour, a pale red or pale yellow.

FALSE-QUARTER. A rift, crack, or chink, on the outſide, but moſt commonly on the inſide of an horſe's hoof, which is an unſound quarter, ſeeming like a piece put therein, and not all of one entire piece. It comes ſometimes by ill-ſhoeing and paring; ſometimes by gravelling, or a prick with a nail or ſtub, which will make him halt, and wateriſh blood will iſſue out of the chink or rift. The beſt method of cure is to turn the horſe to graſs.

FAN. An inſtrument, which by its motion, cauſes wind, being uſeful in winnowing corn. *See Blowing.*

FAN-

FANTOME CORN. Thin or light corn.

FARCY. A diſtemper to which horſes are too often ſubject. It is a diſeaſe of the blood-veſſels, generally following the courſe of the veins, and, when inveterate, thickens their coat and integuments.

At firſt one or more ſmall ſwellings or round buds, like grapes or berries, ſpring out over the veins, and are often exquiſitely painful to the touch; in the beginning they are hard, but ſoon turn into ſoft bliſters, which, when broke, diſcharge an oily or bloody ichor, and turn into very foul and ill-diſpoſed ulcers. In ſome horſes it appears on the head only; in ſome on the external jugular; in others on the plate vein, and runs downwards on the inſide of the fore-arm towards the knee, and very often upwards towards the briſket; in ſome the Farcy ſhews itſelf on the hind parts, about the paſterns, and along the large veins on the inſide of the thigh, riſing upwards into the groin, and towards the ſheath; and ſometimes the Farcy makes its appearance on the flanks, and ſpreads by degrees towards the lower belly, where it often becomes very troubleſome.

When the Farcy appears on the head only, it is eaſily cured, eſpecially when it is ſeated in the cheeks and forehead, the blood-veſſels being here ſmall; but it is more difficult when it affects the lips, the noſtrils, the eyes, and kernels under the jaws, and other ſoft and looſe parts, eſpecially if the neck-vein becomes chorded. When it begins on the outſide of the ſhoulder or hips, the cure is ſeldom difficult; but when the Farcy ariſes on the plate-vein, and that vein ſwells much, and turns chorded, and the glands or kernels under the arm-pits are affected, it is hard to cure; but more ſo when the crural veins within-ſide of the thigh are chorded, and beſet with buds, which affect the kernels of the groin, and the cavernous body of the yard. When the Farcy begins on the paſterns or lower limbs, it often becomes very uncertain, unleſs a timely ſtop is put to it; for the ſwelling in thoſe dependant parts grows ſo exceſſively large in ſome conſtitutions, and the limbs ſo much diſfigured thereby with foul ſores and callous ulcerations, that ſuch a horſe is ſeldom fit for any thing afterwards, but the meaneſt drudgery. But it is always a promiſing ſign, wherever the Farcy happens to be ſituated, if it ſpreads no farther. It is uſual to affect one ſide at a time, but when it paſſes to the other, it ſhews great malignancy; when it ariſes on the ſpines, it is then for the moſt part dangerous, and is always more ſo to horſes that are fat and full of blood, than to thoſe that are in more moderate caſe. When the farcy is epidemical, as ſometimes happens, it riſes on ſeveral parts of the body at once, forms naſty foul ulcers, and makes a profuſe running of greeniſh bloody matter from both noſtrils, and ſoon ends in a miſerable rot.

From this deſcription of the Farcy, it will appear how greatly thoſe may be diſappointed, who depend on ſome ſingle ſpecific drink or ball for a certain cure; for the ſymptoms are ſometimes ſo favourable, as eaſily to be conquered by a very ſimple management; and when it ariſes ſuperficially upon the ſmaller veſſels, it will often go off, with moderate labour, without any other means than bleeding. Such inſtances as theſe may eaſily give a reputation to things of no great efficacy, and bring them into eſteem; but whoever has acquired any true notion of the Farcy, will know, that this diſtemper is not to be conquered but by ſuch things as are fully adapted to the various ſymptoms that occur in the different ſtages of it. To avoid, therefore, the perplexity that ariſes from the various complications ſo uſual in the Farcy, we ſhall conſider it in its different ſtates or degrees, viz. when it ſeizes only the ſmaller veſſels; when the larger veins are chorded, and the feet, paſterns, and flanks affected; and laſtly, when the Farcy, beginning on one ſide only, breaks out on the other alſo, and affects the whole body.

When the Farcy makes its firſt appearance on the head, it riſes on the cheeks and temples, and looks like a net-work, or ſmall creeping twigs full of berries. Sometimes it inflames the eye, and ſometimes little bliſters or buds run along the ſide of the noſe. It ariſes often on the outſide of the ſhoulder, running along the ſmall veins with heat and inflammation; and ſometimes a few ſmall buds appear near the

the withers, and on the outſide of the hip. In all theſe appearances, the diſeaſe being ſuperficial, and affecting only the ſmaller veſſels, is eaſily conquered by the following method, when taken in time; for the ſimpleſt Farcy, if neglected, may degenerate into the worſt ſort.

This diſtemper then being of an inflammatory nature, and in a particular manner affecting the blood-veſſels, muſt neceſſarily require large bleeding, particularly where the horſe happens to be fat and full of blood. This always checks the beginning of a Farcy, but is of ſmall ſervice afterwards; and if a horſe is low in fleſh, the loſs of too much blood ſometimes proves injurious. After bleeding, let the horſe have four ounces of cream of tartar and lenitive electuary, which may be given every other day for a week, to cool the blood, and open the body; and then give nitre, three ounces a day, for three weeks or a month, and anoint the buds and ſwellings with the following ointment twice a day:

Take ointment of elder four ounces, oil of turpentine two ounces, ſugar of lead half an ounce, white vitriol powdered two drams; mix together in a gally-pot.

The buds ſometimes by this method are diſperſed, leaving only little bald ſpots, which the hair ſoon covers again. When they break and run, if the matter be thick and well digeſted, they will ſoon be well: but, in order to confirm the cure, and to diſperſe ſome little lumps, which often remain for ſome time on the ſkin without hair, give the liver of antimony for a month, two ounces a day for a fortnight, and then one a day for the other fortnight. By following this method, a Farcy, which affects only the ſmall veſſels, may be ſtopped in a week or ten days, and ſoon after totally eradicated.

When the Farcy affects the larger blood-veſſels, the cure is more difficult; but let it always be attempted early; therefore, on the plate, thigh, or neck-veins appearing chorded, bleed immediately on the oppoſite ſide, and apply the following to the chorded vein:

Take oil of turpentine in a pint bottle ſix ounces, oil of vitriol three ounces; drop the oil of vitriol into the oil of turpentine by a little at a time, otherwiſe the bottle will burſt; when it has done ſmoaking, drop in more oil of vitriol, and ſo on till all is mixed.

This mixture is one of the beſt univerſals in a beginning Farcy; but where it is ſeated in looſe fleſhy parts, as the flanks or belly, equal parts of the oil of vitriol and turpentine are neceſſary.

Rub the parts firſt with a woollen cloth, and then apply ſome of the mixture over the buds, and wherever there is any ſwelling, twice a day. Give the cooling phyſic every other day, and then three ounces of nitre every day for ſome time. This method muſt be continued till the buds digeſt, and the chord diſſolves; and when the ſores run plentifully, the matter digeſts well, and the lips and edges are no ways thick or callous, you may expect a ſpeedy recovery; yet, to confirm the cure, and prevent a relapſe, give the liver of antimony, or crude antimony, as before directed; and to heal the ſores and ſmooth the ſkin, dreſs with bees-wax and oil.

When the Farcy begins on the flanks, or towards the lower belly, it often takes its riſe from a ſingle puncture of a ſharp ſpur. The pain and ſmarting is one ſure ſign to diſtinguiſh the Farcy from common accidents. The ſtaring of the hair, which ſtands up like a tuft all round the buds or bliſters, and the matter that iſſues from the buds, which is always purulent, and of a clammy greaſy conſiſtence, are other certain ſigns. After bathing with the mixture above-mentioned, till the ulcers are ſmooth and healing, ſhould the ſwelling not ſubſide, to prevent the ſpreading of the buds, and to diſperſe them, bathe with either of theſe mixtures as far as the centre of the belly; and at the ſame time give a courſe of antimonials, as will preſently be preſcribed.

Take ſpirits of wine four ounces, oil of vitriol and turpentine, of each two ounces, white wine vinegar or verjuice, ſix ounces.

Or the following:

Take ſpirits of wine rectified four ounces, camphire half an ounce, vinegar or verjuice ſix ounces, white

white vitriol, diſſolved in four ounces of ſpring water, one ounce, mixed together.

In the lower limbs the Farcy lies ſometimes concealed for a great while, and makes ſo ſlow a progreſs, that it is often miſtaken for greaſe, or for a blow or kick, and goes by the general appellation of a humour ſettled there. In order to diſtinguiſh the one from the other, we ſhall obſerve that a kick, or bruiſe, is generally attended with a ſudden ſwelling, or a contuſed wound, which for the moſt part digeſts eaſily; the greaſe is alſo a ſmooth ſwelling that breaks out above the bending of the paſterns backwards; but the Farcy begins on the paſtern-joint uſually with one bud, and runs upwards like a knotty crab-tree.

Very ſimple means have ſometimes ſtopped it, before it has begun to ſpread; a poultice with bran and verjuice bound round the part, and renewed once a day, will often alone ſucceed; and if proud fleſh ſhould ariſe, touch it with oil of vitriol, or aqua-fortis, an hour before you apply the poultice; for when the diſtemper is local, as we ſuppoſe it here, it is to be conquered by outward applications.

When the diſtemper grows inveterate, and reſiſts the above method, and the veſſels continue chorded, Gibſon recommends the following mixture:

Take linſeed oil half a pint; oil of turpentine and nitre, of each three ounces; tincture of euphorbium and hellibore, of each two drams; the ſoldier's ointment, or oil of bays, two ounces; oil of origanum, half an ounce; double aqua-fortis, half an ounce. After the ebullition is over, add two ounces of Barbadoes tar.

Rub this into the chorded veins, and where there is a ſwelling, once in two or three days; but if the orifices are choaked up with proud fleſh, or the ſkin ſo much thickened over the ulcers as to confine the matter, in either caſe it is neceſſary to make an open paſſage with a ſmall hot iron, and deſtroy the proud fleſh, after which it may be kept down by touching with oil of vitriol, aqua-fortis, or butter of antimony. A ſalve may alſo be prepared with quickſilver and aqua-fortis, rubbing any quantity of the former with enough of the latter, to the conſiſtence of a liniment; ſmear the ulcers with this whenever they appear foul, and you will find it preferable to moſt other eating ingredients.

Our farriers, after opening the buds, put in uſually a ſmall quantity of corroſive ſublimate or arſenic, which they call coring out the Farcy; this may anſwer where the buds are few, and not ſituated near large blood-veſſels, joints, or tendons: others uſe Roman vitriol, or ſublimate and vitriol, in equal quantities: but let it be remembered, that many a horſe has been poiſoned by theſe medicines ignorantly uſed, and in too large quantities; which ſhould be a caution to huntſmen not to ſuffer their hounds to feed on the carcaſes of farcied horſes, as the greateſt part of a pack have been poiſoned by that means.

We ſhall now mention ſome of the deſperate methods, and more violent kinds of medicines given by ſome internally: thus, from four to eight ounces of lapis caliminaris, to which two ounces of tutty, finely powdered, were added, with other metallic ſubſtances, have been given. Some give a pound of barrel ſoap, boiled in ſtale beer, with ſavin, rue, and other herbs of that intention. Others go yet further, being determined to kill or cure, by giving drinks prepared with green vitriol, roche-allum, Roman vitriol, oil of vitriol, boiled in chamber-lie, with hemp-ſeed, hemlock, and common ſalt. Thoſe who uſe nothing but the decoctions or juices of herbs, ſuch as wormwood, rue, or elder particularly, ſtand a much better chance for a cure, if given in time; but when the diſtemper is grown inveterate, nothing comes in competition with mercurial and antimonial medicines.

The following balls are proper in every ſtate of the Farcy; and when the diſtemper has been in its infancy, before the ſkin was much defaced, has often cured it in a week or two, by giving them only once or twice a day; but in an old farcy, they ſhould be given for two or three months together.

Take of native cinnabar, or cinnabar of antimony, eight ounces; long birthwort, and gum-guaiacum powdered, of each 4 ounces; make into a paſte with honey, and form into balls of the ſize of a large

a large walnut, and roll them into liquorice powder.

The tediouſneſs of this courſe has encouraged the giving of mercurials; and indeed, where they are directed with ſkill, they muſt be attended with ſucceſs; the ſtronger preparations, as the red and white precipitates, and turbith, being combined with ſharp ſaline parts, may be hazardous and injurious, but the latter given in ſmall quantities have been found very ſucceſsful in ſuch kind of inveterate diſorders. Mr. Gibſon ſays, he has given it to a dram at a doſe, where the limbs have been greatly ſwelled; that in forty-eight hours the ſores were all dried up, and the limbs reduced; but that it made the horſe ſo violently ſick for ſeveral days, and ſcoured him to ſuch a degree, that it could not be repeated.

One would have thought, that the ſucceſs attending this medicine ſo ſuddenly might have encouraged Gibſon to have made further trials in ſmaller quantities; which, had he done, it is more than probable he would not have been diſappointed; for the grand ſecret in giving mercurials, as alteratives, is the introducing them into the blood, without operating on the ſtomach and bowels; and to do this effectually, they muſt be given in ſmall quantities, and ſo bridled, as to controul their force on the firſt paſſages. Taken in this manner, they will mix gradually with the blood and juices, and operate both effectually and ſafely.

The method we would recommend is as follows:—Give one ſcruple, or half a dram of turbith, mixed into a ball, with an ounce of Venice ſoap, every other night for a fortnight; then abſtain a week or ten days, and repeat it again. Should this ball purge, or make the horſe ſick, mix it up with two drams of philonium, or with four or five grains of opium, or camphor; with theſe reſtrictions, it may be given for ſome weeks; but ſhould the horſe's mouth be found tender or ſore, you muſt refrain giving, till that complaint is removed by gentle purges; and then return to it again in ſmall quantities; for as the effects of mercurials are very different in the different conſtitutions, both of horſes as well as men, ſo the quantity muſt be varied in proportion to the operation, which is not intended here to be ſenſible, but to work imperceptibly no the blood and juices, correcting them as a powerful alterative. During the whole courſe, particular care ſhould be taken that he gets no cold.

Two ounces of quickſilver, divided with an ounce of turpentine, and made up into four balls, with diapente and gum-guaiacum, of each two ounces, and a ſufficient quantity of honey, have, for this purpoſe, been ſucceſsfully given, one ball twice a week; but gentle purgatives ſhould be interpoſed, to prevent a ſalivation, which ſome horſes are very prone to, on taking mercurials, though in ſmall quantities.

Dr. Bracken recommends the knots and chords to be rubbed with the mercurial ointment before they break, in order to diſperſe them, and, after breaking, to dreſs the ſores with equal parts of Venice turpentine and quickſilver; if by theſe means the mouth ſhould become ſore, treat as above. This method ſeems to be effectual with proper care.

The following is alſo recommended by the ſame gentleman:—

Take butter of antimony and bezoar mineral, of each an ounce, beat up with half a pound of cordial ball, and give the bigneſs of a walnut, or three quarters of an ounce, every day, for two or three weeks, faſting two or three hours after it.

Water FARCY. See DROPSY.

FARDING-BAG. The firſt ſtomach of a cow, or any other ruminating animal.

FARE, FARROW, } The number of pigs a ſow brings at a litter.

FARM. A portion of land cultivated by the owner or tenant.

FARM-HOUSE. The houſe belonging to a farm.

FARM-YARD. The place adjoining to a farm-houſe, where cattle are foddered, and ſeveral other neceſſary works, belonging to the farm, are performed.

FARTHING-DALE, or *Fardingdale*. The fourth part of an acre of land, now commonly called a rood.

FATHOM. Six feet in meaſure.

FATHOM *of Wood*. A parcel of wood ſet out, fix whereof make a charcoal-fire.

FAT, [*Adeps.*] The fat which lies between the fleſhy pannicle and the mem-

membrane of the muſcles; is diſtinguiſhed from that which covers the call by its oilineſs, and is ſaid to be generated of the more unctuous particles of the blood, working through the veſſels, and detained there by the cloſeneſs of the ſaid pannicle. It is not one continued covering in horſes, as in bullocks, and ſome other animals, but chiefly fills up the interſtices of the muſcles externally, and is not only a defence, as the other teguments are, but ſerves to make a horſe look plump, ſmooth, and beautiful.

FAT, or *Vat*. A veſſel for the purpoſe of fermentation, &c.

FAUCET. The hollow part of the tap, in which the peg or ſpigot is inſerted.

FAUFEL. The fruit of a ſpecies of palm.

FEABERRY. Gooſeberry.

PRINCE's FEATHER. See AMARANT.

FEATHERFEW, [*Matricaria.*] This is a celebrated antihyſteric. Simon Paulli relates, that he has experienced moſt happy effects from it in obſtructions of the uterine evacuations. I have often ſeen, ſays he, from the uſe of a decoction of Matricaria and chamœmel flowers, with a little mugwort, hyſteric complaints inſtantly relieved, the diſcharge ſucceed plentifully, and the patient, from a lethargic ſtate, return as it were into life again. Matricaria is likewiſe recommended in ſundry other diſorders, as a warm ſtimulating bitter. All that bitters and carminatives can do, ſays Geoffroy, may be expected from this. It is undoubtedly a medicine of ſome uſe in theſe caſes, though not equal to chamœmel flowers alone, with which the Matricaria agrees in ſenſible qualities except in being weaker.

There are five ſorts; but that which is moſt commonly uſed in medicine is the Parthenium, or Matricaria vulgaris ſeu ſativa. It grows naturally in lanes, and upon the ſides of banks in many parts of England, but it is frequently cultivated in phyſic gardens to ſupply the markets. The ſtalks riſe upwards of two feet high; they are round, ſtiff, and ſtriated; the leaves are compoſed of ſeven lobes, which are cut into many obtuſe ſegments; the ſtalks and branches are terminated by the flowers, which are diſpoſed almoſt in the form of looſe umbels. The flowers are compoſed of ſeveral ſhort rays, which are white like thoſe of the chamomile, ſurrounding a yellow diſk, compoſed of hermaphrodite florets, which form a hemiſphere, and are encloſed in one common ſcaly empalement, which are ſucceeded by oblong, angular, naked ſeeds.

FEBRUARY. The ſecond month in the year, containing, in leap year, twenty-nine days, in others only twenty-eight.

Product of the Kitchen Garden.

Cabbages, ſavoys, borecole, brocoli, carrots, parſnips, turnips, redbeets, ſkirrets, ſalſafy, cardoons, coleworts, ſpinach, potatoes, Jeruſalem artichokes, onions, leeks, garlick, rocambole, eſchallots, ſage, parſley, ſorrel, cabbage-ſprouts. On the hot-bed, all ſorts of ſallad herbs, endive, celery, chervil, winter-ſavory, lavender, thyme, roſemary, pot marjoram, burnet, chard-beet, &c.

Fruits in prime, or laſting.

Pears. — Winter Boncretien, Beſſy de Laſſoy, Citron de Hyver, Winter Ruſſelet, Lord Cheyne's green pear, Portail, Double Fleur, Carmelite, St. Martial; and for baking, the Cadillack, Onion or Pickering, Engliſh Warden, and the black pear of Worceſter.

Apples. Aromatic, Holland, French, Kentiſh, Golden, and Stone Pippins; Golden, Pill's, and Wheeler's Ruſſet; John apple, Harvey apple, Winter Pearmain, &c.

Plants now in flower in the Pleaſure Garden.

Winter aconite, bearsfoot, true black hellebore, green-flowered ditto, ſnowdrops, ſpring crocuſſes, ſingle anemonies, ſowbread, ſingle wall-flower, early tulips, ſome hyacinths, hepaticas, polyanthuſes, heart's-eaſe, perennial Adonis, violets, and ſome others.

Hardy Trees and Shrubs in flower.

Lauruſtinus, red and white mezereon, white-flowered almond, cornelian cherry, manna aſh, box tree, alaternus, or ever-green privet, and ſome others.

Medicinal Plants, which may now be gathered for uſe.

Silver fir; black, white, and golden maidenchair, chick-weed, aſſarabacca, ground

ground ivy, ſpurge laurel, cypreſs and pine-tree cones, aſh-coloured ground liver-wort, tree moſs, cup moſs; and, if the ſeaſon be forward, violets, colts-foot flowers, and water-creſſes. The birch will now be fit to keep for its juice.

Plants in flower in the Green-houſe and Stove.

Yellow Indians, ilex-leaved and Spaniſh jaſmine, heath-leaved baſtard alaternus, balſam-tree, ſome geraniums, ſome ſingle merrygolds, ſeveral ſorts of aloes, Aleppo ſowbread, African ſhrubby cacalia, Mexican lily, &c.

FECES, or FOECES. Dregs, lees, ſediment; excrement.

FEED. As much corn as is given to a horſe at one time.

FEEDING. See COW, HORSE, SHEEP, &c.

FEEDING *Horſes at Graſs.* The proper time for the giving the huſbandman's horſe green food, is in the beginning of May, and the time for taking him up is towards the end of Auguſt. Let the horſes be turned out firſt in the heat of the day; and if it be a wet or cold ſeaſon, let him take them in at night, till it is dryer or more favourable.

The moſt healthy practice is to work them as uſual, while they are at graſs, taking them up in the morning, and giving them a moderate feed of corn and chaff, two hours before they are collared, and repeating the ſame after they come from work. This is of double uſe, as it keeps them in great heart; and ſomewhat dries the green and moiſt food in their bodies.

In ſome places, freſh food is given the horſes in racks, and land is ſown for this purpoſe with clover, ray-graſs, and trefoil together; this keeps them in good heart under the tighteſt duty. Lucerne and ſaintfoin may be cut to advantage in the ſame manner.

FEEDING *Cows at Graſs.* The danger of cattle being turned at random into freſh cloveris, that they will eat of it till they burſt. For this reaſon it is beſt to feed them with it freſh mown, in proper quantities firſt, that they may be a little uſed to it, before they are turned in to take their fill. The novelty of the taſte is one thing that recommends it, and they are like children in the ſhop of a grocer, whoſe only danger is till they are uſed to the ſweet things; after which they will not eat to hurt themſelves.

Some conſideration muſt alſo be had as to the ſtate of the cattle, for ſome will bear a rich nouriſhment better than others; and as for ſuch as ſeem to be moſt likely to receive miſchief from it, the beſt way is to give them ſtraw with it at firſt, and bring them to the rich food alone by ſlow degrees.

When they are turned into the field of clover, it ſhould be done gradually, and this rule holds good concerning thoſe which are well enough to be truſted in at once, as well as ſuch as muſt have this preparation.

The right method is firſt to turn them in about the middle of a hot day, when they have eaten before, and the leaves of the clover are a little flagged. The great danger of this food is, when it is eaten in too great quantities, and when the dew is upon it; therefore, care muſt be taken that the clover is dry, and that they don't eat too much. They ſhould be ſuffered to be in the clover but half an hour the firſt day; the next day they ſhould be left an hour, and ſo on till they are accuſtomed to it.

Some regard is to be had to the weather in this reſpect; for experience ſhews, that clover is very apt to damage cattle in wet weather, and much leſs ſo in dry. We have before ſpoke of the danger of letting horſes eat of it while the dew is on the leaves. Any wet with clover, makes it more dangerous than when dry, and it is from this that the caution riſes.

FEEDING *of Fowls.* See FOWL-FEEDING.

FEET. Plural of foot. See FOOT.

FEE-FARM. Tenure by which lands are held from a ſuperior or Lord.

FELLOE, } The circumference of a
FELLY, } wheel.

FELLER. The ſkin.

FELLING. Cutting down trees, &c. When any tree is intended to be cut down for timber, the firſt thing to be taken care of is a ſkilful diſbranching, or lopping off ſuch limbs as may endanger it in its fall, many trees being annually ſpoiled for want of a previous care of this kind; and, therefore, in very large arms, chop a nick under them cloſe to the bole, and then meeting it with downright ſtrokes, it will be ſevered without ſplitting. Take

care alſo to cut the tree as near the ground as poſſible, unleſs you deſign to grub them up, the doing of which will be of advantage both to the timber and to the wood; for timber is never ſo much valued, if it be known to grow out of old ſtocks.

FELLWORT. Gentian.

FELONWORT, [*Solanum Fignoſum.*] Bitterſ-weet. A ſpecies of nightſhade.

FEME-COVERT. A married woman

FEME-SOLE. An unmarried woman

FEN. A general name for boggy marſhy land.

FEN. A diſorder to which hops are ſubject. It conſiſts of a quick-growing mould, or moſs, which ſpreads itſelf with great rapidity, and occaſions dreadful ravages in the hop-grounds.

FEN-BERRY. A kind of blackberry.

FENCE. No article whatſoever, in the huſbandman's whole concern, is of more importance to him than that of hedges; they are the firſt object which naturally ſhould ſtrike his imagination, as they are the defence and guard of all the reſt.

In all encloſed lands the farmer muſt keep up a good fence, if he expects to reap the fruit of his labours. The conſequences of one little defect may do him more injury, by letting in cattle upon his crop, than would have been the coſt of a moſt perfect and thorough repair.

There are many ſhrubs of which hedges may be made, but there is one kind almoſt univerſal, that is, the white thorn. In ſuch places as this generally uſed ſhrub will not agree with, the holly, black thorn, elder, furze, and ſeveral others, are to be called in; but the common method is with this. When the hedge is made with white thorn, the careful huſbandman will not think it finiſhed when he has ſet that alone; he will plant in it, at proper diſtances, timber, or fruit-trees, and they will riſe to a conſiderable profit: but this, like all other advantages, will be proportioned to the care he employs, and to his attention to the rules laid down for that purpoſe.

As to timber trees, he is not to plant any at random, for one kind ſuits one ſoil, and another another; nor is there any one that may not be very valuable to him, if it be rightly managed.

As he will want, in due time, a good quantity of white-thorn plants, or ſets, let him prepare for them in this manner. Let him make choice of a ſquare piece of ground, any waſte corner will do; and, to chuſe, it ſhould be upon a poor and dry ſoil. This he is to uſe as his nurſery. It muſt be within a good fence, that cattle cannot get into it; but there requires no other care, except that it ſtand defended from the north and weſt.

In November let this be ploughed up, and prepared for the ſeeds, and early in the ſucceeding ſpring let them be ſown, the ground having been well weeded during the winter.

Let furrows of five inches deep be made, at two feet diſtance, and in theſe ſow the ſeeds of the common haws, gathered the autumn before, and kept dry during the winter.

As ſoon as they appear above the ground, which will not be till the ſecond year, weed them carefully between the rows, and immediately after give the ground a good watering; and repeat this weeding and watering at times as ſhall be found neceſſary, till the young plants are got up to a tolerable height, and their ſtems at the bottom are about as thick as a man's thumb.

The huſbandman, having thus furniſhed himſelf with a ſufficient quantity of ſets ready for his purpoſe, is to take a view of the ground, and examine its ſoil and ſituation, that he may know in what manner to ſet about his work.

The firſt thing to be done is, to mark out the courſe of the ditch, and its breadth. It is to be three feet wide at the top, and its depth is to be two feet. It is beſt to allow but a foot breadth at the bottom of the ditch, when it is a yard wide at the top. This will give ſuch a ſlant to each ſide, that the hedges will not ſo eaſily break in, and will cramp the legs of the cattle ſo, that as they can neither walk eaſily, nor turn about in the ditch, they will not get that habit of going into it.

The breadth and depth already mentioned, are, in general, ſufficient for the ditch in a common incloſure; but where, from any particular circumſtance, it is judged convenient to

make

make it larger, it muſt be carried on in the ſame proportions.

When the breadth of the ditch is thus marked out, let the labourer be ſet to dig; and that he may prepare the bank properly for the quick that is to be ſet on it, let him lay the turf regularly, with the graſſy ſide downwards, upon that ſide of the ditch on which the hedge is to be raiſed.

Upon this turf, thus turned bottom upwards, let him ſpread the beſt of the mould; and having thus prepared a bed for the quick, let the firſt row of it be brought in and laid.

Let the ſets be well choſen; let them be ſtrait, ſmooth, even-growing ſhoots, and well rooted; and let them be brought freſh taken up.

The bank being thus far prepared, and the quick ready, let it be lain carefully in. The ſets muſt be laid on this bed at a foot diſtance, and with the end inclining a little upwards.

Let the courſe of the bank be meaſured, and at every thirty feet make a mark. At each of theſe marks plant a thriving young tree of oak, aſh, elm, or whatever kind is found to ſucceed beſt in the neighbouring ſoil; or of ſuch fruit trees as will agree with it, taking care to ſet it upright and ſteady.

One row of quickſets being thus laid, let them be covered well with ſome more of the beſt mould; and upon this let there be laid a covering of turf, turned bottom upwards, and laid even, and in a workman-like manner.

Upon this turf ſpread another covering of the beſt of the mould, to make a bed for a ſecond row of quick. This bed is to be in the whole a foot thick over the firſt row; and when the bank is well raiſed to this height, another parcel of ſets are to be brought freſh, ſtrait, and well-rooted, as before directed. Theſe are to be laid in the ſame manner as the firſt, with the ends inclining a little upwards, and placed at a foot diſtance one from the other; each being laid in the middle of the ſpace that is between every two of the firſt row.

When theſe are carefully laid, they muſt be covered with more good mould, three or four inches thick, and then the ſoil that is dug out of the bottom of the ditch, is to be laid over this earth, and the bank finiſhed with it.

The ditch is now dug, and the earth thrown up is all employed, the quickſets and young trees are planted, and the bank is made. The hedge and ditch therefore are finiſhed, and there requires nothing more to be done but to ſecure them from injuries.

For the defence and ſhelter of theſe ſets, a dead hedge is to be made at the top of the bank. This is a hedge of dead wood, faſtened by dead ſtakes, which, being well wrought together, will ſtand very ſecurely, till the quick is of ſuch a height and ſtrength, as to need no defence upon its own account, and to be a ſufficient enclоſure to the land.

For the dead hedge, a proper quantity of buſh wood is to be provided, and a proportionable number of ſtakes. Theſe are the better the ſounder wood they are made of.

Theſe ſtakes muſt be driven in at two feet and a half diſtance, and the workman ought to ſee that each ſtands firm and faſt. Then let him begin the hedge. He muſt lay the ſmall buſhes at the bottom in ſuch a manner, that they may cover the quick when it firſt ſhoots, and be a defence to it againſt the bitings of cattle, that may chance to get down into the ditch. This is the firſt care; after this the long buſhes are to be laid in, and the longeſt of all at top, twiſting them in between the ſtakes.

When the hedge is thus carried to its due height, let a parcel of long and ſlender poles be provided, and the tops of the ſtakes bound in with them on each ſide; this is what is called in the country phraſe, eddering a hedge; and this finiſhes the work.

There are two ſeaſons in the year for planting a quickſet hedge, and only two, for it will not ſucceed in any others. Theſe are early in ſpring, or late in the autumn.

For the ſpring planting, the laſt week in February, and the firſt in March, are the beſt; for the autumn the whole month of October, and the firſt and ſecond week in November: a quickſet planted at either of theſe ſeaſons will grow, but by what we have ſeen from frequent experience, we prefer the ſpring plantation.

The next ſpring after the laying of quick, let the farmer go over the whole bank, firſt examining the dry hedge.

If he find it looſe any where, let this be remedied by driving a new ſtake, or faſtening the old ones; and if any other deficiency appear, let him ſee it repaired in the ſame manner.

When he has rectified what was amiſs in this, let him view, deliberately and ſeparately, the quickſets. He muſt now ſee freſh ſets put in the place of the dead ones; and trim up the others with due care.

Some adviſe the planting the fruit or timber trees in the hedge at this time; and others recommend the doing that, when it was at two, three, or four year's growth; but from what we have ſeen in practice, we greatly prefer the planting them at the making of the bank, at the ſame time with the quick: for thus they take their growth together; and there is no diſturbance of the fence, as there muſt be in planting them when all is ſettled.

Before the farmer takes a view of his young quickſet, let him order it to be weeded. This muſt be done carefully and thoroughly; and it muſt be repeated at times; for the quick, while it is young, ſhould have all the nouriſhment the ground can yield, and not be ſtarved by the weeds. This clearing will give the owner a diſtinct view of the condition of the ſet, that he may know what to ſupply.

If, by any accident, ſheep have got at it, or other cattle, it will be diſcovered by the tops being eaten off, and cropped irregularly, and mangled at the ends. In this caſe there is but one method to reſtore any hope of a good hedge; the whole growth muſt be evenly cut off, within an inch and half of the ground; and there will then be a new and freſh ſet of ſhoots that ſpring, which would not have happened from the gnawed ends, at leaſt not with any degree of regularity or beauty.

Let the induſtrious huſbandman remove its redundances, and ſupply the defect. Let him with his knife take off ill-ſhaped and ſtraggling branches. Let him ſee that no unneceſſary dead wood be left at the bottom, for that will choak the quick. And let him carefully root up all thoſe tangling weeds, which are ſo common in hedges, and at once ſpoil their beauty, and injure their growth.

The principal of thoſe weeds which are deſtructive to hedges, are four. White bryony, black bryony, travellers joy, and bind-weed; theſe all cover the hedges to a great extent.

From this time very little care is required till the hedge is of a growth for plaſhing; this is not till eight or ten years after the planting.

We will ſuppoſe the hedge planted and dreſſed, as already deſcribed, to be grown to eight, ten, or twelve years ſtanding. It will by this time be looſe and irregular in its growth, there will be vacancies at the bottom, and gaps in many places, and it will be full of thick and old ſtumps and ſtubbs, as well as of young ſhoots.

Upon a view of the condition of the hedge, the huſbandman is to conſider in what manner he is to go to work. The ſtubbs are uſeleſs; but among the reſt he muſt conſider, that he is to reſerve ſome ſhoots for laying down, and others to ſerve by way of ſtakes. For the firſt purpoſe he is to ſelect thoſe which are longeſt and freſheſt; and ſuch as are of a middle growth; for the ſtakes, he is to leave ſuch as are ſomewhat larger, and ſtand properly, and grow tolerably ſtraight for the firſt five or ſix feet. It matters not for the reſt, becauſe they are to be cut off at that height; their uſe requiring no more.

When the huſbandman has thus conſidered, let him go to work. He is to cut away all the old ſtubbs within two inches of the ground, ſtriking them off ſloping. After this let him go on thinning his hedge, by cutting away all but the proper ſhoots for ſtakes, which he is to ſtrike off at the height he deſigns his hedge, and the long ſhoots for laying, which he is to leave entire.

As there will not be enough of theſe ſhoots for ſtakes, growing as they ſhould do; he muſt make ſome others to drive into the ground, where there is a deficiency.

When the uſeleſs ſtuff is thus cut away, a ſpade may be got between the ſhoots; and the labourer is to be employed to clean away and new-make the ditch. Let him dig this juſt as it was at firſt, making the top wide, the bottom narrow, and the ſides ſloping.

As he is at work upon this, let him clear away all filth from about the roots of the quick; and where the earth has mouldered away from them, add ſome

ſome of the beſt that comes out in digging the ditch, preſſing it well into the hollows.

A great deal of the better mould from the ditch will be thus uſed in filling up holes, and facing of the bank, the reſt is to be laid at the top; for if the ſides be loaded, they will break with the rains, and what falls off will choak up the ditch; and as it would be only hurtful thus laid on the ſides, it is of great ſervice when laid on the top, heightening the bank, and greatly improving the fence.

The trees are to be lopped in the uſual manner, if timber trees; and if fruit-trees, to be pruned up above the reach of the cattle.

The ditch is now cleaned, the bank repaired, and the ſtakes ready. Let the new ones be well and firmly driven, where there are not a ſufficient number of the upright ſhoots left for that purpoſe; and theſe being diſpoſed, the work is ready for the plaſher.

He is to take each of the long ſhoots which are left ſtanding ſeverally, and bending it gradually he is to give it a ſloping cut with his bill half through; it will then fall eaſily, and he is to weave it in between ſtake and ſtake carefully.

When he has thus worked in all the ſhoots left for that purpoſe, he is to go over his work, and trim off the ſtraggling ſprigs, to render it uniform and even.

A great deal of the ſucceſs of this work depends upon the method of laying theſe boughs, when they are cut through ſo far as to obey the hand of the workman. If they be laid too low and too thick, as many do, through an opinion of ſtrengthening the hedge, the ſap is all ſent into the ſhoots; and the plaſhes ſtarve and will decay. On the other hand, if they be laid too high, then they draw in all the nouriſhment; and the ſhoots are ſtarved. Both theſe accidents are to be avoided in a middle courſe. It is not the farmer's intereſt to ſtarve the ſhoots to feed the plaſhes, nor to ruin the plaſhes for the ſhoots; he is to derive a proper quantity of nouriſhment into both; and this will be done by laying them in a middling way. Beſides, this has another advantage, that if the plaſhes are not too deep cut, and are laid thus evenly, or nearly upon a level, the ſap is not all directed to their ends, but ſends up ſhoots from every part.

This abundance of young ſhoots will alſo be promoted by the proper cutting of the branches of the plaſhed boughs. They are to be cut off ſhort at five or ſix inches length on each ſide of the hedge; and this will make them ſend out ſide ſhoots of their own, as well as promote the growth of others, to the great beauty and ſtrength of the hedge.

As to the ſeaſons of plaſhing of hedges, there is but one proper. Some do it in October, and pretend particular advantages from that time; but let the huſbandman truſt to experience, and aſſure himſelf, that the only right ſeaſon is the month of February.

While the hedge is growing up from the plaſhing, it will be proper to have the ſame eye upon it as at firſt; taking care, in ſpring and fall, to cut away the ſtraggling branches, and to root out weeds: thus the fence will grow regular, thick, and clean; and from this renewing, in the ſame manner as from its firſt riſe, will exceed, in every reſpect, thoſe of the neighbourhood, which are not looked after with the ſame degree of care.

FENNEL, [*Fœniculum.*] The ſpecies are, 1. Common fennel; 2. ſweet fennel; 3. Azorian fennel, or Finochio. The firſt is a very common plant in gardens; the ſecond is the medicinal ſort. Both theſe are eaſily propagated by ſowing the ſeeds in autumn.

The ſweet fennel is ſmaller in all its parts than the common, except the ſeeds, which are conſiderably larger. The ſeeds of the two ſorts differ likewiſe in ſhape and colour; thoſe of the common are roundiſh, oblong, flattiſh on one ſide, and protuberant on the other, of a dark almoſt blackiſh colour: thoſe of the ſweet are longer, narrower, not ſo flat, generally crooked, and of a whitiſh or pale yellowiſh colour. Both ſorts are cultivated in our gardens: the common is a perennial plant: the ſweet periſhes after it has given ſeed; nor do its ſeeds come to ſuch perfection in this climate as thoſe which we receive from Germany.

The ſeeds of both the fennels have an aromatic ſmell, and a moderately warm, pungent taſte; thoſe of the *fœniculum dulce* are in flavour moſt agreeable, and have alſo a conſiderable degree

gree of ſweetiſhneſs; hence our college have directed the uſe of theſe only. They are ranked among the four greater hot ſeeds, and not undeſervedly looked upon as good ſtomachics and carminatives. The root is conſiderably leſs warm, but has more of a ſweetiſh taſte than the ſeeds. It is one of the five roots called openers; and has ſometimes been directed in aperient apozems. Boerhaave obſerves, that this root exactly agrees in taſte, ſmell, and medical qualities, with the celebrated Ginſeng of the Chineſe; and therefore thinks it may very juſtly ſupply its place. The leaves of fennel are weaker than either the roots or ſeeds, and have very rarely been employed for any medicinal uſe.

The Finochio is ſown in the middle of March, or beginning of April, and to continue a ſucceſſion till winter, repeat the ſowings every month till July; chuſe an open ſpot of rich light ground, and by line and hoe draw ſhallow drills, two feet diſtant; ſcatter the ſeeds thinly along the bottom, and cover them near a quarter of an inch deep with finely broken mould, and when the plants are an inch or two high, ſmall hoe them to kill weeds, and thin them to three inches, and in two or three weeks after cut them out to treble that diſtance, that the baſe of the ſtem may have room to ſwell.

When the ſtalks are conſiderably ſwelled at bottom, earth them up on each ſide, and in two or three weeks that part will be very white and tender.

Hog's FENNEL, [*Peucedanum.*] There are ſeveral ſorts of this plant growing naturally in ſome parts of England and France, and preſerved in the botanic gardens. They may be all propagated by ſeeds ſown in autumn, ſoon after they are ripe. The roots were formerly held in ſome eſtimation, but preſent practice entirely diſregards it.

Giant FENNEL, [*Ferula.*] This plant is pretty common in the Engliſh gardens; and, if planted in a good ſoil, will grow to the height of ten or twelve feet, and divide into many branches. The lower leaves of this ſort ſpread more than two feet every way, which are ſubdivided into many ſmall ones, garniſhed with very long narrow ſmall leaves, of a lucid green. From the center of the plant comes out the flower-ſtalk, which, when the plants are ſtrong, will be near as large as a common broomſtick, and will riſe ten or twelve feet high, with many joints; if the ſtalks are cut, there iſſues from the veſſels a fœtid yellowiſh liquor, which will concrete on the ſurface of the wound. The ſtalks are terminated by large umbrels of yellow flowers, which come out the latter end of June, or in the beginning of July, which are ſucceeded by oval compreſſed ſeeds, having three lines running longitudinally on each ſide. Theſe ripen in September, and the ſtalks decay ſoon after.

There are ſeveral kinds of the above plant, all propagated by ſeeds ſown in autumn.

Scorching FENNEL. Deadly carrot.

Sweet FENNEL. See FENNEL.

FENNEL-FLOWER, [*Nigella.*] See DEVIL IN A BUSH.

FENUGREEK, [*Fœnum Græcum, Trigonella.*] This is an annual plant, which riſes with a hollow, branching, herbaceous ſtalk, a foot and a half high, garniſhed with trifoliate leaves, placed alternately, whoſe lobes are oblong, oval, indented on their edges, and have broad furrowed foot-ſtalks. The flowers come out ſingly at each joint from the wings of the ſtalk; they are white, of the butterfly-kind, and ſit very cloſe to the ſtalk; theſe are ſucceeded by long compreſſed pods, ſhaped ſomewhat like a broad ſword, ending in long points, having a broad membrane on one edge, filled with ſquare yellow ſeeds, indented on one ſide like a kidney. The whole plant has a very ſtrong odour.

This plant has not as yet been cultivated in any quantity for uſe in England, as it has generally proved a very uncertain crop, occaſioned by the inconſtancy of the weather here, for in cold wet ſeaſons the plants are frequently killed before the ſeeds ripen; and if any of them live long enough to perfect their ſeeds, the pods change of a dirty colour, and the ſeeds turn black and unſightly, eſpecially when much rain falls about the time of their ripening; therefore the ſeeds, which are imported from the continent, are always preferred to thoſe of our own growth.

But as the conſumption of theſe ſeeds is very great in England, and ſome perſons may be inclinable to make trials

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to cultivate the plants here; we ſhall here give ſuch directions for the management of this plant, as from experience has been found to ſucceed beſt.

The ground in which this plant thrives beſt, is a light hazel loam, not enriched with dung; this ſhould be cleaned from the roots of weeds, and well ploughed twice, and harrowed fine before the ſeeds are ſown. The beſt time to ſow the ſeeds is in the beginning of September, in ſhallow drills like peaſe. The rows ſhould be two feet aſunder, and the ſeeds ſhould be ſcattered one inch diſtant from each other in the drills; for if the plants are too cloſe together in the ſpring, they may be eaſily thinned with the hoe when the ground is cleaned. When the ſeeds are ſown at the above-mentioned time, the plants will appear in three weeks or a month after; and if the weeds appear at the ſame time, the ground ſhould be hoed over as ſoon as poſſible in dry weather, to deſtroy the weeds; and when the plants are grown an inch high, the earth ſhould be drawn up to their ſtems, in the ſame manner as is practiſed for peaſe. This will ſecure their ſtems from being injured by ſharp cutting winds; and if a ridge of earth is drawn up on the north or eaſt ſide of each row, it will protect the plants from the pinching winds which blow from both thoſe quarters; for though this plant will not be in any danger from the froſts in the ordinary winters, yet, in very ſevere froſts they are ſometimes killed; but, as this plant will live in any ſituation, where peaſe will ſtand through the winter, there will be no greater hazard of the one crop than the other.

In the ſpring of the year, the ground muſt be hoed again in dry weather to kill the weeds, and the plants ſhould be again earthed up in the like manner as peaſe, with whoſe culture this plant will thrive; but there muſt be great care taken to keep the ground as clean from weeds as poſſible, for if they are permitted to grow, they will ſoon advance above the plants, and greatly weaken them; and when their pods begin to form, they cannot be too much expoſed to the ſun and air, whereby they will be leſs liable to ſuffer from moiſture.

When the ſeeds are ſown in autumn, the plants will grow much ſtronger, and have many more ſide branches than thoſe which come up in the ſpring, ſo will produce a much greater crop of ſeeds; and theſe will produce their flowers five or ſix weeks earlier, ſo will have a better ſeaſon to ripen; but in order to have them better ripened, the top of the plants ſhould be cut off with garden-ſhears about the middle of June, by which time the pods will be formed on the lower part of the ſtalks, which will be greatly forwarded by topping of the ſtalks in the ſame way as is commonly practiſed for garden-beans; for where the plants are ſuffered to extend in length, the lower pods often miſcarry, or are leſs nouriſhed, and thoſe on the top of the ſtalks are late before they ripen; ſo where the topping of the plants is omitted, the pods at bottom will open and caſt out their ſeeds, before thoſe above will be ripe; therefore, to preſerve the firſt and cut off the other, will be found the beſt method, for by ſo doing, the pods will ripen equally, and much earlier in the ſeaſon.

If the ſummer proves warm, the ſeeds will ripen in Auguſt, and the plants ſhould then be cut off, and laid to dry for five or ſix days, in which time they ſhould be turned two or three times, that the pods may dry equally; then the ſeeds may be either threſhed out in the field, or the haulm may be houſed in a barn, to be threſhed in a more convenient time.

There are two or three different ſorts, natives of Sicily, Spain, and Ruſſia, which are cultivated in the botanic gardens, and are all propagated in the ſame manner.

FENNY-LAND. Marſhy, boggy land, covered with water.

FEOFFMENT. The act of granting poſſeſſion.

FERMENTATION. A ſlow motion of the inteſtine particles of a mixed body, ariſing uſually from the operation of ſome active acid matter, which rarifies, exalts, and ſubtilizes the ſoft and ſulphureous particles, as when leaven or yeaſt rarifies, lightens, and ferments wort, bread, &c.

FERN. The name of one of the worſt of weeds, and one of the moſt difficult to deſtroy, where it has a deep ſoil to root in. Mr. Mortimer ſays, he has ſeen its root eight or ten feet deep in ſome grounds; and adds, that the

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the beſt way of killing it is by cutting it often while it is in graſs; that the moſt proper ſeaſons for this purpoſe are, ſpring, Midſummer, and Michaelmas; that is, when the circulation of the ſap is ſtrongeſt. Moſt of the roots being then cut aſunder, and thereby deprived of the channels through which nature intended to convey the ſap, will bleed to death, or if it ſtagnates in them, they will ſoon rot. The fern itſelf, if cut when full of ſap, and left to rot upon the ground, will greatly improve the ſoil, and mellow it ſo as to prevent its binding: or, if it be burnt when ſo cut, it will yield a much greater quantity of ſalt than any other vegetable. If it be ploughed up, plentiful dunging of the land, and ſprinkling it well with aſhes, have been found to kill this weed: but the moſt certain cure for it is urine. In ſeveral parts of the North, where they keep their fern under, and deſtroy a great deal of it, by mowing it frequently when green, they alſo find that rolling of it is of great ſervice; and, when they burn it, the poor people make the aſhes of it up into balls, with a little water, dry them in the ſun, and uſe them in waſhing their linen, for which they think them nearly as good as ſoap. Often treading down theſe plants, and feeding ſheep on them, is ſaid to be almoſt an infallible way of killing the fern.

Trees planted among fern will thrive very much, though it be on a hot gravel; the fern ſhading their roots, and keeping them moiſt and cool.

Sweet FERN, [*Scandix.*] Shepherd's Needle, Venus-comb. An annual plant, growing naturally in ſtiff lands among corn. The leaves are finely divided into ſmall ſegments, and have long foot-ſtalks; the ſtalks riſe ſix inches high. The flowers are ſmall, white, and like thoſe of wild chervil, and ſit upon the top of the beak or horns, which are the rudiment of the pod. At the bottom of the ſmall umbel five leaves embrace the ſtalk, with broad and ſhort foot-ſtalks, which are afterwards cut into ſmall ſegments like the reſt: the ſeed is long, and runs into a ſmall point, reſembling a large needle, but the umbels have great reſemblance to the umbels of Muſk Crane's-bill. If the ſeeds are permitted to ſcatter, there will be a plentiful ſupply of young plants.

FERTILE. Fruitful, abundant.

FERTILITY. Abundance, fruitfulneſs.

FESCUE. The name of a genus of graſs, of which there are ſeveral ſpecies; as the flote-feſcue, ſheep's feſcue, &c. See FLOTE-FESCUE, SHEEP'S-FESCUE.

FESILS. A kind of baſe grain.

FESTING-PENNY. Earneſt given to ſervants when hired.

FETTERS. Chains for the feet.

FEVER. A diſeaſe that frequently attacks ſeveral ſorts of cattle, particularly horſes.

The ſymptoms which denote the horſe to be afflicted with a fever, are, great reſtleſſneſs, the creature ranging from one end of the rack to the other; his flanks heat; his eyes are red and inflamed; his tongue parched and dry; his breath hot, and of a ſtrong ſmell; he loſes his appetite, and nibbles his hay, but without chewing it, and is frequently ſmelling to the ground; the whole body is hotter than ordinary, (though not parched, as in ſome inflammatory diſorders) he dungs often, little at a time, uſually hard, and in ſmall bits; he ſometimes ſtales with difficulty, and his urine is high coloured; he ſeems to thirſt, but drinks little at a time, and often; his pulſe beat full and hard, to fifty ſtrokes and upwards in a minute.

The firſt intention of cure is bleeding, to the quantity of two or three quarts, if the horſe is ſtrong and in good condition; then give him a pint of the following drink four times a day; or an ounce of nitre, mixed up into a ball with honey, may be given thrice a day, inſtead of the drink, and waſhed down with three or four horns of any ſmall liquor.

> Take of baum, ſage, and chamomile flowers, each a handful; liquorice root ſliced half an ounce; ſalt prunel, or nitre, three ounces; infuſe the whole into two quarts of boiling water, and when cold, ſtrain it off; then ſqueeze into it the juice of two or three lemons, ſweeten it with honey.

As the chief ingredient to be depended upon in the drink is the nitre, it

it may, perhaps, be as well given in water alone; but as a horſe's ſtomach is ſoon palled, and he requires palatable medicines, the other ingredients may, in that reſpect, have their uſe. Soleyſel for this purpoſe adviſes two ounces of ſalt of tartar, and one of ſal-armoniac, to be diſſolved in two quarts of water, and mixed with a pail of common water, adding a handful of bran or barley-flour, to qualify the unpleaſant taſte. This may be given every day, and is an uſeful medicine.

The following may alſo be given for this purpoſe:

Take Ruſſia pearl-aſhes one ounce, diſtilled vinegar one pint, ſpring water two pints, honey four ounces; give a pint three or four times a day.

This neutral mixture, and the nitre drink before-mentioned, may be taken alternately; they are both efficacious remedies, and in ſome caſes may properly enough be joined with the camphire drink.

His diet ſhould be ſcalded bran, given in ſmall quantities; which, if he refuſes, let him have dry bran ſprinkled with water: put a handful of picked hay into the rack, which a horſe will often eat, when he will touch nothing elſe: his water need not be much warmed, but ſhould be given often, and in ſmall quantities: his cloathing ſhould be moderate, too much heat and weight on a horſe being improper in a fever; which ſcarce ever goes off in critical ſweats (as thoſe in the human body terminate) but by ſtrong perſpiration.

If, in a day or two, he begins to eat his bran, and pick a little hay, this method, with good nurſing, will anſwer; but if he refuſes to feed, more blood ſhould be taken away, and the drinks continued; to which may be added two or three drams of ſaffron, avoiding at this time all hotter medicines: the following clyſter ſhould be given, which may be repeated every day, eſpecially if his dung be knotty and dry.

Take two handfuls of marſh-mallows, and one of chamomile flowers; fennel-ſeed an ounce; boil in three quarts of water to two, ſtrain off, and add four ounces of treacle, and a pint of linſeed oil, or any common oil.

Two quarts of water-gruel, fat broth, or pot liquor, with the treacle and oil, will anſwer this purpoſe; to which may be added a handful of ſalt. Theſe ſort of clyſters are properer than thoſe with purging ingredients.

The following opening drink is very effectual in theſe fevers, and may be given every other day, when the clyſters ſhould be omitted; but the nitre-balls, or drink, may be continued, except on the days theſe are taken.

Take of cream of tartar and Glauber's ſalts, each four ounces; diſſolve in barley-water, or any other liquor: an ounce or two of lenitive electuary may be added, or a dram or two of powder of jalap, to quicken the operation in ſome horſes.

Four ounces of Glauber's ſalts, or cream of tartar, with the ſame quantity of lenitive electuary, may be given for the ſame purpoſe, if the former ſhould not open the body ſufficiently.

The diet ſhould be regular; no oats given, but ſcalded or raw bran ſprinkled; the beſt flavoured hay ſhould be given by handfuls, and often by hand, as the horſe ſometimes cannot lift up his head to the rack.

Dilute the blood with plenty of water, or white drink; let his diet be warm bran maſhes, and his hay ſprinkled. Should the fever riſe, which will be known by the ſymptoms above deſcribed, give him an ounce of nitre thrice a day in his water, or made up in a ball with honey. Let his body be kept cool and open, with the opening drink, given twice or thrice a week; or an ounce of ſalt of tartar may be given every day, diſſolved in his water, for that purpoſe, omitting then the nitre. After a week's treatment in this manner, the cordial ball may be given once or twice a day, with an infuſion of liquorice root ſweetened with honey; to which may be added, when the phlegm is tough, or cough dry and huſky, a quarter of a pint of linſeed or ſallad-oil, and the ſame quantity of oxymel of ſquills.

Fevers *in Cows*. The ſymptoms are, trembling, reſtleſſneſs, weakneſs, and ſtaggering in the gait; the eyes become heavy and inflamed, often red or

yellow, in that part called the white; the head is heavy and lumpiſh, the beaſt is dull and ſtupid, uttering ſighs and moans as if in great pain, and fetches breath with difficulty; the mouth and tongue are very hot and dry, unleſs foaming, which ſometimes happens; the food is neglected with a loathing, the ſkin is hot, and the hairs ſtare and ſeem to ſtart an end, and frequently the ſkin breaks out in ſudden ſweats.

The cure muſt be begun with bleeding, which of all things is moſt likely to leſſen the inflammation, and eaſe the difficulty of breathing.

The beaſt ſhould be kept at home, and very ſhort of food, and warm maſhes often changed and ſet before them, made with bran or oatmeal and water, with ſome nitre and honey diſſolved in them.

After bleeding, in caſe the beaſt has not lately dunged, let a clyſter be thrown up warm, made with gruel, oil, &c. and repeated occaſionally.

After this, give one of the following balls once in about ſix hours.

Nitre, turmeric, liquorice powder, each one ounce; honey, enough to make a ball or two for a doſe.

Or either of the following drinks:

No. 1.—Nitre and cream of tartar, each half an ounce, in ſome warm gruel, ſweetened with honey, every ſix hours.

No. 2.—One ounce of crude ſal ammoniac every ſix hours in ſome warm ale.

Dr. James's powder for cattle we have heard much commended, but from our own experience we pronounce nothing.

We would by all means adviſe the ſtall to be kept cool in ſummer, but warm in winter, admitting air which may be kindly, but not chilling.

FEVERFEW. See FEATHERFEW.

FEVER-WEED. See *Stinking* ERYNGO.

FEUILLAGE. A bunch or row of leaves.

FEUILLAMORT. The colour of a faded leaf, generally pronounced Philemort.

FEUTERER. A dog-keeper.

FEWEL. Firing.

FICOIDES, [*Meſembryanthemum.*] Fig Marygold.

This genus compriſes a numerous tribe of curious ſucculent flowering plants for the green-houſe, annual and perennial, all with ſucculent ſtalks and branches, ſome trailing and herbaceous, others erect and ſhrubby, and others without a viſible ſtalk. One annual ſpecies is the diamond Ficoides, or Ice-plant, which riſes with a ſhort, thick, ſucculent ſtalk, dividing low into many trailing, very ſpreading, ſucculent branches, beſpangled all over with icy pimples, very pellucid and glittering; oval, undulate, alternate, papuloſe, or pimply glittering leaves; and, from the ſides of the branches, numerous, almoſt cloſe-ſitting, white flowers, tinged with red or crimſon; ſucceeded by plenty of ſeed in autumn.

This ſingular and curious plant is cloſely covered with large pellucid pimples, full of moiſture, ſhining brilliantly like diamonds or bubbles of ice; whence it derives the name as above; it is in great eſteem by the curious for its ſingularity, and highly merits a place amongſt the tender annuals of the pleaſure-garden.

The other annual is the Fig Marygold of Naples, or Egyptian Kali.

The other ſpecies of Fig Marygold, amounting to forty-four in number, are all perennials. They are natives of Africa, and in this country require the aſſiſtance of the green-houſe.

The flowers of all are monopetalous, but each is finely divided almoſt to the bottom into numerous narrow ſegments, appearing like ſome ſorts of Marygolds, and which, in their native Africa, are ſucceeded by a fruit ſhaped ſomewhat like a fig.

The propagation of the annuals is by ſowing the ſeeds on a hot-bed in the ſpring, like the Amaranthus.

The propagation of the others is by cuttings managed as for the cutting other tender exotics.

FIDDLE-DOCK, [*Rumex pulcher.*] A kind of dock growing near London. It is a biennial, and periſhes ſoon after it ripens its ſeeds.

FIDDLE-WOOD, [*Citharexylon.*] There are two ſpecies of this tree growing common in the Weſt-India Iſlands, where it grows to be a large timber tree, and is very uſeful in building. It requires the aſſiſtance of a ſtove to bear our winters. It is propagated by ſeeds or cuttings.

FIELD. A piece of ground enclosed for tillage or pasture.

FIELD BASIL. [*Acinos.*] A kind of Basil.

FIG-TREE, [*Ficus.*] The common fig-tree of our gardens consists only of one species, very comprehensive in the varieties of its fruit, is of the deciduous tribe, moderately hardy, producing fruit in great perfection against walls, also tolerably in espaliers and standards; but besides this sort, there are several other tender exotic species, sometimes retained in our hot-houses, for variety.

The common fig produces its fruit upon the young shoots of the former year, rising immediately from the eyes of the shoots, appearing first like small buds, which increase gradually in size till July, August, and September, when they arrive at full growth, are large, somewhat pear-shaped, and as it approaches to ripeness, the skin changes gradually from a greenish to blueish, purplish, blackish, whitish, or yellow colours, in different varieties, full of a purplish, reddish, whitish, or yellow pulp, becomes very soft, juicy, and extremely rich and luscious.

The principal varieties of this fruit are:—

Common Fig. A large oblongish, dark, purple-blue fruit; the tree a great bearer, and ripens in great perfection in August, either on standards or walls.

Brown or Chesnut Fig. A large globular, shortish, chesnut-coloured fruit, having a purplish delicious pulp, ripen in July and in August.

Black Ischia Fig. A middle-sized, shortish, flat-crowned, blackish fruit, having bright pulp; ripe the middle of August.

Green Ischia Fig. A large oblong, globular-headed, greenish fruit, slightly stained through by the pulp to a reddish brown colour; ripe the end of August.

Brown Ischia Fig. A small pyramidal, brownish, yellow fruit, having a purplish very rich pulp; ripe in August and September.

Malta Fig. A small, flat-topped, brown fruit; ripe the middle of August and September.

Round Brown Naples Fig. A globular, middle-sized, light-brown fruit, with brownish pulp; ripe the end of August.

Long Brown Naples Fig. A long, dark-brown fruit, having a reddish pulp; ripe in September.

Great Blue Fig. A largish blue fruit, having a fine red pulp.

Black Genoa Fig. A large, pear-shaped, black-coloured fruit, and bright red pulp; ripe in August.

Divided-leafed Fig-tree, having the leaves deeply divided into many narrow segments, valuable principally for the shrubbery for the variety of its leaves.

There are many other varieties, but it is unnecessary to recount them, some of them being nearly alike, and many of them will not ripen perfectly in our gardens.

Most of the above varieties of figs will bear plentifully against walls of a south, east, or west aspect, and will also bear very well in espaliers; they will likewise, in fine dry summers, produce tolerable good crops on standards, in a full exposure, either as full standards, half-standards, or dwarfs, and sometimes produce greater crops of fruit than those trained against walls.

All the varieties of these trees prosper in any common soil of a garden, prepared by common digging, or trenching one or two spades deep.

They may be planted at fifteen or twenty feet distance, against walls and espaliers; and as standards, at any distance not less than fifteen feet from one another.

The propagation of fig-trees is effected with great ease three different ways, viz. by suckers arising from the root, by layers, and by cuttings.

Considered as wall and espalier trees, they should be allowed a sunny situation, being necessary to forward the ripening of the fruit, and promote a rich flavour. They ripen earliest in a full south exposure, but they will also succeed very well in an east and west aspect; and as to distance, fifteen or twenty feet is necessary; against a high wall the former distance is sufficient, but if they are rather low, twenty feet should be allowed.

With respect to pruning, two principal dressings is requisite annually, to those against walls, &c. that is, a summer and winter pruning and training.

Summer dressing.—The trees commonly produce great numbers of young shoots every summer, frequently many

more than are neceſſary; ſome of the moſt irregular and ill-placed ſhould be taken off, and the reſt trained in cloſe, and at full length for next year's bearing, that, by this regulation, the ſun and air may be more effectually admitted, to promote the free growth and regular ripening of the fruit, the main object. June, July, and Auguſt are the months for this work of ſummer dreſſing, obſerving, that in performing the operation, to take off only ſuch ſhoots as are very irregular, and ſuch as cannot be poſſibly trained in; for in theſe trees, it is proper to retain in ſummer, when practicable, three times more than may ſeem neceſſary for the winter or ſpring training, becauſe the ſhoots, being rather of a ſucculent pithy nature, many of them are often killed in winter; ſo that, by reſerving them all till the general pruning in ſpring, there may be a ſufficiency eſcape to chuſe from, to furniſh the tree, and if more than neceſſary, they are eaſily cut out; therefore, in this dreſſing, take off principally only the foreright and other very irregular and evidently uſeleſs ſhoots, rubbing or cutting them off quite cloſe; let the others be trained to the wall or eſpalier, between the main branches at full length, ſtill continuing them ſo, as they advance.

Obſerve, however, in the ſummer dreſſing, that if there is any great want of wood in any part, you may in June pinch or top any contiguous young ſhoots, whereby it will furniſh a ſupply of collaterals the ſame ſeaſon, to ſupply the vacancies.

If the above operation of ſummer dreſſing is begun early, before the ſhoots become woody, the redundant young wood may be rubbed off without employing a knife.

Winter, or general pruning.—Having obſerved above, that many of the young branches of Fig-trees are liable to be more or leſs damaged in ſevere winters; in conſequence thereof, it is adviſeable to defer the general pruning till ſpring, reſerving till then all the ſhoots retained in the ſummer dreſſing, and out of the whole, enough may eſcape the froſt for your purpoſe; and, if more than enough, the better, there will be the more to chuſe from; but if the general pruning was performed in autumn, or early in winter, and no more ſhoots left than what are juſt neceſſary to furniſh the wall or eſpalier, and many of theſe ſhould be deſtroyed by the inclemency of the weather, there is no reſerve left to ſupply the deficiencies; we therefore adviſe the general pruning to be deferred till February or March.

This work of winter-pruning conſiſts of regulating the branches in general, old and young, taking out crowding and naked old branches, thinning and ſelecting the proper ſupply of young ſhoots, cutting out all weak and ill-ripened ones, and all dead wood.

With reſpect to the regulation of the principal branches, there ſhould be about eight or ten inches diſtant, that where they have been trained conſiderably cloſer, they ſhould now be thinned, and the contiguous ones all unnailed, that the whole may be trained regularly at the proper diſtance; at the ſame time examine if there are any old naked branches, i. e. ſuch as have advanced a conſiderable length, without furniſhing hardly any proper bearing ſhoots, or young branches furniſhed with ſuch; and that, provided there is proper young wood favourably ſituated to ſupply their place, ſuch old naked branches ſhould be occaſionally cut out at this pruning, to the place from whence they proceed, or at leaſt down to the firſt beſt young ſhoot or branch, cutting them quite cloſe, never leaving any ſtump, ſo train the proper branches and ſhoots in its ſtead; having particular attention, that every branch terminates in a young ſhoot, either ariſing immediately from its extremity, or in default thereof, or that the end of the extreme ſhoot is dead, or that the branch is too long for its allotted ſpace, it may be ſhortened to the next firſt, ſecond, or third good ſhoots below, if any, as ſhall ſeem convenient, leaving each ſhoot at full length, unleſs its end is dead, when it muſt conſequently be cut down to the live wood.

From the principal branches paſs to the ſupply of young wood, produced and trained in the preceding ſummer, which, if they have eſcaped the froſt, there will be probably many more than are neceſſary now to be retained; and keeping in view that they are the only bearers, and a proper ſupply muſt be trained now for the next ſummer's fruit;

fruit: every branch muſt not only terminate in one at full length, by the rules elucidated above, but collateral ones ſhould alſo be here and there retained, ſome towards the bottom of the branches, others nearer the middle, and ſome more towards the extreme parts, &c. advancing at proper diſtance one after another, as it were in ſucceſſive order, between the principal branches; whereby, beſides the ſupply of fruit they will thus furniſh in every part, you will alſo have your wall or eſpalier ſo regularly filled with advancing young branches, that as old branches become naked, or too extenſive for the ſpace of walling or eſpalier allotted, as may be the caſe in ſome part or other of the tree every ſeaſon, there is always a reſource of theſe young branches coming up gradually to ſucceed them; therefore, at every general winter or ſpring pruning, ſelect in the different parts of the tree, as above, a proper ſupply of the beſt ſhoots, ſuch as are robuſt, and their buds near together, and ariſe from the upper or under ſides of the branches, convenient for training in, at the ſame time cutting off all long foreright, and other ill-placed ones, and all others however good, that are redundant or ſuperfluous, cutting every thing quite cloſe to the ſurface of the branches, leaving all the ſelected ſhoots at full length, where practicable, for the reaſons already aſſigned; never ſhortening any only in caſe of dead parts, or want of an immediate further ſupply of ſhoots in any part to fill a vacancy.

Having therefore finiſhed this general pruning, let all the branches and ſhoots be faſtened in regular order to the wall or eſpalier, each at full length, and as ſtraight as poſſible, preſerving all the main branches eight or ten inches diſtant.

Standard Fig-trees, whether dwarfs or half or full ſtandards, after being trained to their proper form, may be planted either in the borders or open quarters of the kitchen garden, or in pleaſure-ground, detached from other trees, and not nearer than fifteen or twenty feet to each other.

As to culture, thoſe in ſtandards require very little training or pruning; all that is neceſſary, is only taking out any very irregular branch, or when their general branches are too much crowded, to thin them diſcretionally, taking out the worſt and moſt irregular growing; obſerving alſo the ſame of the young ſhoots, where they are greatly crowded, thin out ſome of the ill-placed ones, and ſuch as are weak and ill-ripened, obſerving, that the ſhoots and branches are always to be left entire, except in caſes exhibited in the wall and eſpalier culture, as that of cutting off the dead ends of ſhoots, &c. and thus they will often bear plentifully, and ripen their fruit frequently in as great perfection as againſt walls.

The following tender ſpecies of Ficus are preſerved in ſome of our hot-houſes, viz. by way of curioſity.

Sacred Fig, or Indian God-tree. Ficus with a woody ſtem, branching twenty or thirty feet high, heart-ſhaped entire leaves, ending in long acute points.

This is held in great veneration in India, where it is called the religious tree.

Sycamore and Mulberry-leaved Egyptian Fig-tree. Ficus with a robuſt ſtem, branching twenty or thirty feet high, and large, roundiſh, heart-ſhaped, entire leaves.

Bengal Fig-tree. Ficus with ſeveral ſtems, dividing into many implicated branches, riſing twenty or thirty feet high, ſtriking root from their lower parts, with large, oval, obtuſe, entire leaves.

Long-leaved India Fig. Ficus with a robuſt ſtem, branching twenty or thirty feet high, and long, ſpear-ſhaped, entire leaves.

Dwarf Indian Fig. Ficus with trailing rooting ſtalks and branches, and oval, acute-pointed, entire leaves.

All theſe ſpecies are natives of hot countries, where moſt of them form large trees, but in our ſtoves appear as ſhrubs, and their fruit is of no value.

To preſerve them here they muſt be kept in pots and retained in the ſtove. Their propagation is by cuttings, in ſummer, planted in pots of light ſandy earth, and plunged in the bark-bed.

Indian FIG, [*Opuntia.*] Prickly-pear. This is found growing naturally on the ſides of the roads about Naples, Sicily, and Spain, and has long been introduced into the gardens in England; the joints or branches are oval or roundiſh, and have ſmall leaves coming out

in

knots on their ſurface, which fall off in a ſhort time; and at theſe knots are three or four ſhort briſtly ſpikes, which do not appear, unleſs cloſely viewed; but on being handled, they enter the fleſh, and ſeparate from the plants, ſo are troubleſome, and often difficult to get out. It produces flowers and an oblong fruit, whoſe ſkin or cover is ſet with ſmall ſpikes in cluſters; the inſide is fleſhy, of a red or purple colour, in which are lodged many black ſeeds. It flowers in July and Auguſt; but unleſs the ſeaſon is very warm, it will not ripen its ſeeds in England.

There are ſeveral other ſpecies of this plant found in the warmer parts of America and the Weſt Indies, one of which is the Cochineal Opuntia, which is found in Jamaica, as well as in New Spain. They may be all propagated by cutting off the 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, you ſhould plunge the pots into a moderate hot-bed, which will greatly facilitate their taking root. You ſhould alſo refreſh them now and then with a little water, but be very careful not to let them have too much, or be too often watered, eſpecially before they are rooted. When the plants begin to ſhoot, you muſt give them a large ſhare of air, by raiſing the glaſſes, otherwiſe they 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 water, 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 as to break them down.

Infernal FIG, [*Argemone.*] Devil's Fig; prickly poppy. An annual plant, common in the Weſt-Indies, eaſily propagated by ſowing the ſeeds in the ſpring.

FIGS. Spungy excreſcences, which moſt commonly grow out on the feet of ſuch horſes as are high and hollow, with large fleſhy heels; they are cauſed by all the common accidents that happen to the feet, as ſurbating, foundring, &c. and oftentimes they are the conſequence of a long-continued gourdineſs in the legs and paſterns. Their ſeat is, for the moſt part, at the top or ſide of the fruſh; but when they are ſuffered to grow old, or are dried up with ſtrong ointments, they take another courſe, and ſpread to the corner of the heel. They are, as moſt other excreſcences of that kind, bred and

and nouriſhed of the ſame matter which ſuſtains and nouriſhes the ſinewy and nervous parts, and are only to be cured by extirpation.

Therefore, if the Figs be on the ſide of the fruſh, pare away ſo much of the roof as may give room to reach the ſore with a fleam or a launcet, then cut the ſoal about the fig, and take them clean out, avoiding, as much as poſſible, to wound the large blood-veſſels. Let your firſt dreſſing be made of dry hurds to ſtop the bleeding; two or three days thereafter remove your dreſſing; and if any part of the excreſcence be left, you may deſtroy it by applying Egyptiacum, ſpread on bolſters or pledgits of hurds, mixing with every ounce of the ſaid ointment half a dram of arſenic or corroſive ſublimate, enlarging or diminiſhing the quantity of the latter as you find your horſe able to bear it, or the circumſtances of the ſore may require; and then heal up the ſore with a good digeſtive and ſpirituous application.

But if the fig has its inſertion into the ſinewy or griſtley ſubſtances in thoſe parts, you muſt take up the ſoal; and if any part of the griſtle be corrupted, you may cut it off with a razor, or other ſharp inſtrument. If the bone be ulcerated and carious, you may touch it with a hot iron, and then dreſs it with pledgits dipped in a tincture of myrrh, aloes, and frankincenſe, and alſo with warm turpentine and honey of roſes, until the bone is covered; always heal up the ſore with ſome good digeſtive.

FIG-MARYGOLD. See FICOIDES

FIGWORT, [*Scrophularia.*] This plant grows naturally in woods, and under hedges in moſt parts of England, ſo is ſeldom admitted into gardens. It has a ſpreading root, compoſed of many knobs, from which ariſe ſeveral four-cornered ſtalks near three feet high, garniſhed with heart-ſhaped leaves, ſawed on their edges; they are placed by pairs, of a dark-green, or browniſh colour on their upper ſide, but pale on their under, having an odour of elder. The flowers are produced in ſmall cluſters from the ſides of the ſtalks oppoſite, forming a kind of looſe ſpike to the top; they are of one petal, of a dark purple colour, ſhaped almoſt like a lip flower; the upper lip or creſt being a little arched, the two ſide ſegments ſpread open, and the under ſegment is recurved. Theſe are ſucceeded by roundiſh capſules, ending in acute points, having two cells filled with ſmall ſeeds. This was formerly eſteemed for ſcrophulous complaints, but is now diſregarded.

There are ſixteen other ſorts introduced into the botanic gardens from different parts of Europe and America, and are all propagated by ſowing the ſeeds in the ſpring.

FILBERT, [*Corylus.*] Nut-tree. The ſpecies are; 1. The common hazel-nut; the common wood-nut, with a red ſkin; the large cluſter wood-nut; the cob-nut, remarkable for its ſize; the long nut, and the Barcelona or Spaniſh nut. 2. The filbert, white and red ſkinned. 3. The dwarf Byzantine nut.

All the ſorts are hardy, and will grow in almoſt any ſituation and ſoil, and are eaſily propagated by nuts, layers, or ſuckers.

FILLER, or THILLER *Horſe*; that faſtened immediately to the cart, and which ſupports the ſhafts.

FILLEY. A female or mare colt.

FIMBLE HEMP. Early ripe hemp.

FINE BENT, [*Agreſtis Capillaris.*] A fine ſpecies of bent graſs, found in many of the hilly parts of the kingdom. See GRASS.

FINOCHIA. Azorian Fennel. See FENNEL.

FIRE-BLAST. A diſeaſe to which hops are ſubject.

FIRE-BOTE. A quantity of fuel.

FIRING. An operation often performed on different parts of a horſe. It is done in the following manner:—when the firing-iron is red hot, the farrier applies it to the thinneſt part of the horſe's ſkin, in one or more places, according to the nature of the diſeaſe.

Firing, or cauterizing, is often neceſſary, after ſtrains, and other accidents, which may occaſion a long continued weakneſs, or where there is a fullneſs, and the part is grown hard and callous, eſpecially about the joints, ſinews, and nervous parts, thoſe parts being compoſed of an infinite number of fibres and nervous threads, which lie ſo cloſe together, that nothing but what is of the moſt powerful nature is ſufficient to relieve them when obſtructed. This is performed, in the moſt effectual manner, by burning the outſide,

outſide, and giving vent to the incloſed matter to diſcharge itſelf; and ſometimes proves beneficial, when all other helps have been found ineffectual.

FIRING-IRON. A piece of iron about a foot long, one end of which is made flat, and forged like a knife, the back of it being half an inch thick, and the edge about the eighth of an inch.

FIR-TREE, [*Abies.*] The ſpecies are; 1. The Norway, or ſpruce Fir-tree; 2. The black American ſpruce Fir-tree; 3. The white American ſpruce Fir-tree; 4. The ſilver Fir-tree; 5. The Balm of Gilead Fir-tree; 6. The Hemlock ſpruce Fir-tree.

About the middle of March, ſow the firſt, ſecond, and third ſorts on beds, in a ſhady, well-ſheltered border, but much thinner than the pines, as they are to remain two years.

The three other ſorts do not riſe by a fortnight, at leaſt, ſo ſoon as the above do; and as they make very little progreſs the firſt year, all art and induſtry ſhould be uſed to promote their growth as much as poſſible, otherwiſe many of them will be ſpewed out of the ground, and the weaker plants entirely killed, if the following winter is ſevere. The beſt ſecurity, therefore, againſt all theſe common accidents being to ſow early, let them be ſown a fortnight ſooner than the three preceding kinds, that is, by the beginning of March, the weather permitting. The ground for the ſeeds of theſe plants cannot be too rich a natural ſoil, or too finely prepared; it muſt alſo be looſe and dry, and, if not of that quality originally, it muſt be rendered ſo, by mixing it with ſand, and elevating the beds ſix or ſeven inches above the alleys, to draw away the moiſture.

The Balm of Gilead, and Hemlock Spruce, are a little tenderer at firſt than the other ſorts, and will be much aided in their growth, if the beds are hooped over, and covered with mats for five or ſix weeks after the plants appear above ground, both in the middle of the day when the ſun is warm, and at night when the air is cold or froſty; and, during that time, they will require a gentle watering every ſecond evening when it does not rain.

At ſowing all the kinds of Firs, neglect not to clap over the beds with the back of a ſpade. This makes the ſurface ſmooth and level, prevents the ſeeds from being irregularly ſcattered in drawing on the earth with the rake, and is, in ſeveral other reſpects, of advantage.

As theſe plants bring up the huſk of the ſeed on their tops, the ſmall birds, who are very fond of them, will deſtroy all, or the greateſt part, if they are not guarded againſt. Procure a parcel of old fiſhing-nets, and ſpread them over the beds, ſupported by cuttings of copſe-wood, or other prunings of trees, laid acroſs ſtakes; and thoſe nets are to be purchaſed at any ſea-port town for a mere trifle.

In the autumn after ſowing, go over your beds, and, with your fingers, carefully pick off all moſſy hard-cruſted particles, replacing them with an equal quantity of the richeſt beſt prepared ſoil; over which ſift ſome chaff, or rather ſaw-duſt that has lain ſome time and loſt its fiery quality. This will keep the plants warm, and prevent the ground from ſwelling with the froſt, which, if it does, is apt to ſpew them up: it will likewiſe be neceſſary, in hard froſt or violent rains, to throw a mat over the two laſt kinds, but regularly uncover them in mild weather.

In the ſucceeding ſpring, and during the months of May and June, the plants will ſtill be much invigorated by frequent waterings, and in autumn let the beds be treated as in the former; for tho' the ſeedlings are from this time till ſpring in a ſtate of reſt, and can, from no culture be aſſiſted in their growth till then, yet the muſty parts contracted on the ſurface, will, by the winter rains, be waſhed into the earth, which it will contaminate, and communicate diſeaſes to the plants, from which they will ſlowly recover. This circumſtance, though in general little attended to, is yet of the greateſt importance to all ſeedling trees.

From the ſeed-bed, at two years old, in the ſpring when their buds begin to ſwell, theſe plants may be removed. Plant them in rows fifteen inches aſunder, and ſix or ſeven inches diſtant in the rows.

Theſe plants, being now four years old, muſt be tranſplanted to another ſpot of good land, and placed in rows two feet and a half aſunder, and fourteen or ſixteen inches diſtant in the row; water them at planting, and

continue

continue it, once a week, five or ſix times, when it does not rain, keeping the ground clear of weeds in ſummer, and mellow by autumn and ſpring digging, in which ſituation they may remain three years.

From thence remove them again in ſpring at the uſual time, ſhortening their ſtraggling roots moderately, and plant them in rows four feet aſunder, and two feet in the row, to remain three years longer.

If required larger, remove them again, and plant them at ſix feet aſunder every way, to remain two, but not above three years more; by which time, in good land, and under the culture here directed, the three firſt-mentioned kinds will be from fourteen to ſixteen, and the Silver Fir from ten to twelve feet high. Thus managed, theſe trees will riſe with ſuch abundant balls of earth about their roots, as will prevent their receiving the leaſt injury at removal, nor will their future growth be in the ſmalleſt degree retarded by it.

The three firſt-mentioned Spruce Firs will grow tolerably well in dry, gravelly, or rocky ground, but much more affect that which is deep, where, though very coarſe, and barren in the production of vegetables, they will grow freely.

The Silver Fir, the moſt magnificent tree of all the ever-green tribe that our climate produces in full perfection, it is in vain to plant in hot, dry, or rocky ſituations, where they commonly not only loſe their top ſhoots, but their under branches ſoon become ragged, and, in place of that lively ſhining verdure peculiar to them in a ſoil they affect, they become of a pale languid hue.

Theſe trees, like the other more common ſorts intended for timber only, ſhould not, as they commonly are, be planted cloſe together in thickets, but require a free circulation of air, otherwiſe their intermingled branches will deſtroy one another.

The Balm of Gilead Fir never grows to a large ſize in this country. It requires a generous deep-feeding ſoil, and ſheltered ſituation, to which, from its ſingular beauty and elegance, it is juſtly intitled, and it claims our culture and care.

The Hemlock Spruce Fir is a pretty plant, but delicate, and, to ſucceed well with us, muſt have a good ſoil, and warm ſituation. It will always be improved by tying its leading ſhoot to a ſtake annually as it advances.

Scotch FIR. See PINE.

FISTULA. A deep narrow ulcer; lay it open with a knife, but cut away no fleſh, and afterwards dreſs it with ointment of gum elemi, baſilicon, &c.

FISH-GLUE, [*Ichthyocolla.*] Iſinglaſs.

FISTIC-NUT, [*Nux Piſtachia.*] The tree which produces it grows ſpontaneouſly in Perſia, Arabia, and ſeveral iſlands of the Archipelago; it bears likewiſe the cold of our own climate, ſo as to have produced fruit not inferior to that which we receive from abroad. Piſtachio-nuts have a pleaſant, ſweet, unctuous taſte, reſembling that of almonds. They are ranked amongſt the analeptics, and are by ſome much eſteemed in certain weakneſſes, and in emaciated habits.

FITCHES. See VETCH.

FIVE-LEAVED-GRASS. Cinquefoil. See CINQUEFOIL.

FLAG. See IRIS.

Sweet-ſcented FLAG, [*Acorus, Calamus Aromaticus.*] This flag reſembles, as to its leaves, the common iris, but in other reſpects differs greatly from it. The ſtalk grows at a little diſtance from the leaves; the lower half, up to where the flowers come forth, is roundiſh; the part above this broad like the other leaves; the flowers are very ſmall, whitiſh, and ſtand in a kind of head about the ſize of the finger. This plant grows plentifully in rivulets and marſhy places, about Norwich and other parts of this iſland; in the canals of Holland; in Switzerland, and in other countries of Europe. The ſhops have been ſupplied from the Levant with dried roots, which are not ſuperior, if equal, to thoſe of our own growth.

The root of acorus is full of joints, crooked, ſomewhat flatted on the ſides, internally of a white colour, and looſe ſpongy texture. Its ſmell is ſtrong; the taſte warm, acrid, bitteriſh, and aromatic; both the ſmell and taſte are improved by exſiccation. This root is generally looked upon as a carminative and ſtomachic medicine, and as ſuch is ſometimes made uſe of in practice. It is ſaid, by Haller, to be ſuperior in aromatic flavour to any other vegetable that is produced in theſe northern cli-

mates: ſuch as we have had an opportunity of examining fell far ſhort, in this reſpect, of many of our common plants. There is ſomething manifeſtly unpleaſant in its flavour, inclining, as Geoffroy juſtly obſerves, to that of leeks or garlic; nor have our experiments diſcovered any preparation of it that was truly grateful: the moſt agreeable is a preſerve made as candied eryngo-root. In this form it is ſaid to be employed at Conſtantinople, as a preſervative againſt epidemic diſeaſes. The leaves of this plant have a ſweet fragrant ſmell, more agreeable, though weaker, than that of the roots.

Corn FLAG, [*Gladiolus.*] This grows naturally in corn-fields, and beſides the common Engliſh ſort, there are three or four other kinds kept in the gardens for variety. They are all propagated by off-ſets from the root.

Yellow Water FLAG. Baſtard acorus. This grows common in watery places.

FLAIL. A well-known implement of huſbandry, uſed in threſhing all ſorts of corn.

FLANK. That part of a quadruped near the hinder thigh.

FLAX, [*Linum.*] The ſpecies are fourteen in number; but the only three for the purpoſes of culture are the common Flax, the Siberian perennial Flax, and the biennial or Iſtrian Flax.

The firſt ſort is an annual plant. Its root is ſmall and fibrous, and periſhes as ſoon as the ſeed is ripened, the ſtalk is round and ſmooth, and it riſes to three or four foot in height. The leaves are ſmall and narrow, and of a pale green. The ſtalk grows ſtrait and ſingle to the top, where it divides into three or four little branches, and on theſe grow the flowers, and after them the fruit, containing ſeveral ſeeds. The flowers are large and blue, ſo that when the plant is in flower a whole field together, it makes a very beautiful appearance.

Good ſeed may be obtained from ſeedſmen of reputation in London, imported from the Levant, Flanders, &c.

As to the choice of ſoil, a rich loam is by much the moſt proper for flax, and inſtead of following almoſt any other crop, though with the beſt dreſſings, to prepare for it, it is much the beſt to ſow it on new broke up ground.

There are two methods of ſowing flax, by broad-caſt and drill, the latter of which we prefer.

The great damage done to flax in its growth is by weeds; and theſe can no way be deſtroyed ſo perfectly as by the horſe-hoeing method. The reaſon that weeds do ſo much damage to flax is, that in its firſt ſhoots it is for ſome time very weak. In the common methods of huſbandry the weeds riſe with it, and they being ſtrong, and the flax weak, they get the better of it; rob it of its nouriſhment, ſtunt it in its growth, and it never recovers.

In the common way of ſowing by hand, three buſhels of ſeed are uſually allowed to an acre, when it is the freſh eaſtern ſeed, and all very fine and full, half a buſhel leſs will do; in the drill way, one buſhel is enough for an acre, and the ſtalks riſe more numerous, and grow tenderer and finer for it.

As ſoon as the ſeed is in the ground, let the huſbandman prepare for hoeing. He is not ſo much to mind the ſhooting of the flax, as the riſing of the weeds; and this is a ſeaſon when they will be very ſpeedy and very numerous. The young crop ſhould have all the nouriſhment the land affords, therefore theſe are to be deſtroyed in the very act of riſing. Let the intervals be turned up with the hoe-plough, upon the firſt appearance of any weeds, and this will anſwer ſeveral excellent purpoſes; it will deſtroy thoſe weeds, and at the ſame time prepare the earth of the intervals, to admit the roots of the flax freely, and they will be well ſettled in it in the midſt of their proper nouriſhment, before any ſecond crop of weeds can riſe.

As ſoon as the flax has got a little height, let hoers be ſent in with hand-hoes to clear away the partitions; and thus the growth will have all the nouriſhment the earth can afford for its firſt ſhoot, which will be vaſtly ſtronger than it is to be obtained any other way. By theſe means the flax will get ſuch a footing in the ground, before any other crop of weeds can riſe, that it will be too ſtrong for them. As they would have ſtarved the flax before, that will now ſtarve ſuch of them as riſe in the partitions, ſo that it would do without any more hoeing there; however, there is no harm in repeating it by the hand hoe, in thoſe ſmall ſpaces; and as to the intervals, the huſbandman is to keep a watchful eye upon

upon them, and to repeat the horſe-hoeing as often as he ſees any parcel of them riſe, that would exhauſt the ground, and tend to impoveriſh the crop.

Theſe repeated horſe-hoeings are ſo many freſh dreſſings of the ground, ſo that the crop has new benefit every time. No growth requires this aſſiſtance ſo much as flax, therefore the horſe-hoeing huſbandry can never be more proper than for this ſpecies; and the encreaſe in growth will very well pay the trouble and expence.

The farmer has nothing to do but to watch its ripening, and to gather it. This, however, is an article on which he muſt beſtow a great deal of attention. There is a peculiar period at which flax is fit to be gathered, and this muſt be watched, and the opportunity ſeized as ſoon as it offers; all before this being wrong, as well as after it. We ſhall endeavour, as particularly as ſuch a thing can admit of a deſcription, to ſettle the exact time.

In the firſt place it is to be conſidered, that the uſe of flax is of a particular kind. Other crops are raiſed for their ſeed or their roots, but this for the ſtalk, which is to be manufactured in a ſingular manner, and will yield to the operation better or worſe, according to the exact time at which it was pulled.

In other kinds, the ripeneſs of the ſeed, or the bigneſs of the root, are the marks of their being fit for gathering, but in this it is the due condition of the ſtalk. Thoſe marks are viſible and obvious to the eye; this is the more difficult to be known, and therefore it muſt be watched the more narrowly.

The farmer is to conſider, that although the greateſt part of his flax is to be pulled for the ſtalk, it is proper to let ſome ſtand for ſeed.

This makes a different period of gathering; for if the whole were to ſtand till the ſeed was ripe, it would be of little worth. Therefore, let the owner ſet off a part for ſtanding for ſeed, and let this be upon the edge of his ground that is beſt defended from winds, and where there is moſt ſun. If there be a part open to the ſouth, and backed by a good hedge, this is the place. Let him mark out by ſtakes what quantity he will have there for ſeed, and then watch the reſt for ripening, only giving directions to the pullers to ſpare the ſeed parcel. This particular part is to ſtand till the ſeed veſſel is quite dry, and ready to open, and the ſeeds, upon opening it, are found to be full and firm. This degree of ripeneſs is eaſy enough known, ſo there needs no great care on that head; but before this, he muſt look narrowly into the other.

When the two conſiderations of ſeed and ſtalk are thus ſeparated, they will be both better underſtood and better managed. The huſbandman is to let his ſeed quarter ſtand its time, but he muſt have an eye upon the other as it riſes to flower.

In the common method of huſbandry, the flax flowers irregularly in the ſame field; ſome of the ſeed having been buried deeper, and ſome ſhallower, there has been more or leſs time required for their riſing; and the ſame difference is preſerved in their coming to flower. Alſo ſome of the ſeed lying ſingle and at a diſtance, and there being heaps in other places from this random method of ſowing, that alſo will make its ſhare in the variation; for ſuch as ſtand ſingle will flower a week before thoſe which are in cluſters, becauſe of their having more ſtrength.

From theſe different cauſes, a field of flax ſown by hand flowers very irregularly, ſome plants ſooner, others later; and this is a vaſt diſadvantage in a crop which ſhould be pulled at one exact time, and that time determined only by the flowering.

This affords one inſtance, among many, why the drill huſbandry is much better than the common for the raiſing of flax; for in that method, all the ſeeds being let in at the ſame depth, and diſpoſed with an even regularity, both the above-mentioned occaſions of the difference in coming to flower are prevented; and it is a beautiful ſight to look upon a field of this growth, raiſed in this way, the whole crop being of the ſame form, and the ſame height throughout their growth, and all burſting out into a celeſtial blue together. There is nothing reſembles the brightneſs and beauty of ſuch a crop in bloom, but a perfect clear ſky in ſummer.

This is a very obvious mark, and this is the token for gathering. When the flax is raiſed ſingly for the manu-

facture, it is to be pulled as ſoon as ever it is in full flower, the proper time is before one flower falls.

Let the owner therefore only watch its bud; when that burſts, let him have his pullers ready, and as ſoon as all the plants are in full flower, and there appears the firſt mark of fading in any of them, let them be ſent into the field. The more there are of them the better, for the work would be to pull it all in one day if poſſible.

As they pull it up, they muſt gather it into handfuls, and tying theſe together, they muſt be ſet up in the field at diſtances one from another. In this condition they are to ſtand till they are thoroughly dry; the ſun and air ſoon do this perfectly, and they grow firm but not harſh in the drying.

As ſoon as perfectly dry, the handfuls are to be houſed, and they are then ready either for ſale to the manufacturers, or for the uſe of the owner if he will work them himſelf, by which he may be very well aſſured he will get the greateſt profit.

When the flax has been well dried after the pulling, the next operation is what is called rating of it. As to the houſing the bundles, that is a matter merely of convenience. If every thing be prepared, and the huſbandman manufacture it himſelf, he may take it directly from the field to the water; if otherwiſe it is houſed, to keep it out of the way of harm.

Rating of flax is ſteeping it in water, in order to looſen its bark or rind. The thready part of the ſtalk is all that is to be uſed, and therefore the firſt thing to be done is to ſeparate the rind from it, that not being thready, or any way uſeful.

Experience ſhews, that the beſt manner of doing this is by ſoaking it in water, and that is the rating of flax. It is done thus:—They lay the bundles in a ſhallow pond or ditch, dug for that purpoſe, putting ſome light weight upon them to keep them under the water, and every other day they are to be turned.

When they have lain thus ſix days, they are to be taken out, if the bark be ſufficiently looſened. This is eaſily known by rubbing one of the ſtalks from the middle of the bunch between the fingers: if the bark part eaſily they have been rated enough, if not, they muſt lie a day or two longer, but uſually, at that ſeaſon of the year, ſix days are ſufficient, ſometimes it is done in five.

When taken out of the water, the bundles are to be ſpread abroad and dried, and they will thus be prepared for the braking. This is the ſecond operation they go through, in order to being prepared for linen. This is performed by a particular inſtrument made for that purpoſe, and called a brake. It is notched at the end, or throughout, according to the various methods in different places, and with this the thready part is ſeparated from the bark, and looſened. The method is to begin at the root, and go all the way up to the top.

When the flax has been thoroughly broke by the brake, it hangs in threads and ſcattered pieces, and is then ready for the third operation, which is the ſwingling. This is a kind of beating, and is to be performed with an edged ſtick, called for that reaſon a ſwingle. This ſeparates the fibres more, and it always lays them more regularly, and by this the flax is prepared for the fourth operation, which is the beating.

For this purpoſe the ſwingled flax is laid on a block, and laboured with a beetle, or it is put into a trough, and beat with a hammer, and this beating is continued till the whole ſubſtance of it is made ſoft and pliable.

When the flax has been ſufficiently beat, it is fit to be hackled or combed. This is done ſomewhat in the manner of combing of wool, what are uſed in this caſe for flax being called hackles.

It is to be worked thoroughly thro' theſe, one after another, till all the ſhort ſtuff is got out; and all the long and fine fibres are made ſmooth, and lie evenly together in form of ſo many threads; in this condition it is fit to be ſpun.

This is the whole proceſs in forming the ſtalk of the flax, gathered at a proper degree of maturity, into thread, and thence into linen; the whole is very familiar, and can admit of no miſunderſtanding.

Thoſe who raiſe the flax for the ſtalk and ſeed both, have a neceſſary operation which we have not yet named, becauſe in this practice we adviſe, all that

that is concerned in the ſtalk only, the ſeed being preſerved in parcels kept for that purpoſe.

This is called ripling, and it is thus done:—The flax being pulled when the ſeed begins to be brown, for that is the time according to this practice; when the bundles have ſtood up ſeven or eight days, and are pretty well dried, they are to paſs through the ripple; this is a kind of combing of the ſtalks. The ripples are made of wood, and have their teeth ſo cloſe, that when drawn over the ſtalk, they ſtick at the heaps or ſeed veſſels, and pull them off. When this is done, the bundles are to be put into the water, as has been directed already; and as to theſe ſeeds not being yet altogether dry, they are to be laid by in an airy room till ſpring, and when the whole is to be threſhed in the common way, to ſeparate the ſeeds from the huſks.

This operation, in ſome degree, prepares the ſtalks for rating: but it is not neceſſary. According to our advice, no regard is to be had to the ſeed of that flax that is raiſed for manufacturing; and therefore the bundles, when they are moderately dried, are to be put into the water, where the leaves will fall off about the third day, and ſometimes the ſtalks will be ready for their firſt dreſſing the day but one afterwards, and ſometimes the very day after.

The time of taking them from the water, is one of the critical points in the managing and manufacturing of flax, it muſt therefore be watched accordingly.

When the bark will part, and the threads eaſily ſeparate, it is fit for taking out, and that time ſhould not be let ſlip.

If this happen the third day, there is no occaſion for any more rating, and if not in this condition on the ſeventh, it muſt lie longer. We have given the common full time it is in preparing in this operation, but the condition of the flax is to guide the workman, not any particular number of days of lying.

Flax ſeed yields to the preſs a conſiderable quantity of oil; and, boiled in water, a ſtrong mucilage: theſe are occaſionally made uſe of for the ſame purpoſe as other ſubſtances of that claſs; and ſometimes the ſeeds themſelves in emollient and maturating cataplaſms. They have alſo been employed in Aſia, and, in times of ſcarcity, in Europe, as food; but are not agreeable, or in general wholeſome. Tragus relates, that thoſe who fed on theſe ſeeds in Zealand, had the hypochondres much diſtended, and the face and other parts ſwelled, in a very ſhort time; and that not a few died of theſe complaints. *See alſo Hemp.*

Purging FLAX, [*Linum Catharticum.*] Mountain Flax. This is a ſpecies of flax growing not above four or five inches high, found wild upon chalky hills, and in dry paſture grounds. Its virtue is expreſſed in its title; an infuſion in water or whey of a handful of freſh leaves, or a dram of them in ſubſtance when dried, are ſaid to purge without inconvenience.

Toad FLAX, [*Linaria.*] This grows wild upon banks and about the ſides of fields. It is ſaid by ſome to be a powerful diuretic; whence it is named by Tragus, Herba Urinalis; by others to be a ſtrong carthatic, inſomuch that Bruniſelius has called it by a German name expreſſing this quality, Schieſskraut. Experience ſcarcely warrants either of theſe appellations; nor does common practice take any notice of the plant.

There are ſeventeen different ſpecies cultivated in the botanic gardens, and are all propagated by ſeeds.

FLAX-WEED. Toad Flax.

FLEABANE, [*Conyza.*] The ſpecies are; 1. Common greater Fleabane; 2. Pyrenæan Fleabane; 3. Shrubby Fleabane of Crete; 4. Yellow tree-like Fleabane.

The firſt is a biennial plant, growing naturally on dry places in ſeveral parts of England. The ſecond is a native of Italy, and preſerved in botanic gardens for variety. The third and fourth ſorts require to be defended from the open air in a green-houſe, during the cold months of the year. They are propagated by ſeeds and cuttings.

African FLEABANE, [*Tarchonanthus.*] This plant grows naturally at the Cape of Good Hope, and alſo in India; it has a ſtrong woody ſtalk, which riſes to the height of twenty feet, ſending out many ligneous branches at the top, garniſhed with leaves, which are in ſhape like thoſe of the broad-leaved ſallow, having a downy ſurface like thoſe of ſage, and their under

under ſides are white; theſe greatly reſemble in ſmell the roſemary leaves when bruiſed. The flowers are produced in ſpikes at the extremity of the ſhoots, which are of a dull purple colour, ſo do not make any great appearance. The uſual time of its flowering is in autumn; but they continue great part of winter, and are not ſucceeded by ſeeds here. Theſe plants are preſerved to make a variety in the greenhouſe, during the winter ſeaſon, by thoſe who are curious in collecting of foreign plants. They retain their leaves all the year.

It is too tender to live through the winter in the open air in England, but requires no artificial heat, therefore may be placed in a common greenhouſe with myrtles, oleanders, and other hardy exotic plants in winter, and in ſummer may be expoſed with them in the open air, and treated in the ſame manner as they are. It may be propagated by cuttings.

FLEAM. An inſtrument uſed by farriers, &c. to draw blood from animals.

FLEAWORT, [*Pſyllium.*] This is a ſort of plantain, growing wild in the warmer climates, and ſometimes met with in our gardens. It differs from the common plantains in having its ſtalks branched, with leaves upon them; hence it is named by Ray *plantago caulifera*. Theſe ſeeds have been uſually brought from the ſouth of France; they are ſmall, and ſuppoſed to reſemble in ſhape a flea, whence the Engliſh name of the plant. Theſe ſeeds have a nauſeous, glutinous taſte: boiled in water, they yield a conſiderable quantity of mucilage, which is ſometimes made uſe of in emollient glyſters and the like. Alpinus relates, that among the Egyptians, this mucilage is exhibited in ardent fevers, and that it generally either looſens the belly, or promotes ſweat.

FLEAK. A hurdle; a moveable gate, made of rods, &c.

FLEECE. The quantity of wool ſhorn from one ſheep.

FLET-MILK. Skim-milk.

FLIX. Down; ſoft hair.

FLIX-WEED, [*Sophia Chirurgorum.*] This plant grows naturally in uncultivated places, riſes to about a foot and a half high, garniſhed with winged leaves, divided into many very narrow ſegments. It was formerly recommended as a vulnerary, but is not now eſteemed.

FLOCK. A company of ſheep or birds.

FLOCK. Wool, as a flock bed.

FLOOR. The bottom pavement of boards, or ſtone, as a barn-floor.

FLORIFEROUS. Bearing flowers.

FLOTE FESCUE GRASS. An excellent graſs for cattle, growing in watery places.

The Flote-feſcue affords excellent food for horſes. Mr. Stillingfleet, quoting a piece publiſhed in the Amæn. Acad. vol. iii. entitled *Plantæ Eſculentæ*, takes notice, that the author of it ſays, art. 90, "That the ſeeds of this graſs are gathered yearly in Poland, and from thence carried into Germany, and ſometimes into Sweden, and ſold under the name of manna ſeeds. Theſe are much uſed at the tables of the great, on account of their nouriſhing quality and agreeable taſte."

Our ingenious countryman, in his addition to this paſſage, has the following words:—

"Mr. Dean, a very ſenſible farmer at Ruſcomb, in Berkſhire, aſſured me, that a field, always lying under water, of about four acres, that was occupied by his father when he was a boy, was covered by a kind of graſs that maintained five farm-horſes in good heart, from April to the end of harveſt, without giving them any other kind of food, and that it yielded more than they could eat. He, at my deſire, brought me ſome of the graſs, which proved to be the Flote-feſcue, with a mixture of the marſh-bent. Whether this laſt contributes much towards furniſhing ſo good a paſture, I cannot ſay. They both throw out roots at the joints of the ſtalks, and therefore likely to grow to a great length. In the index of dubious plants, at the end of Ray's Synopſis, there is mention made of a graſs, under the name of *gramen caninum ſupinum longiſſimum*, growing not far from Saliſbury, twenty-four feet long. This muſt, by its length, be a graſs with a creeping ſtalk; and that there is a graſs in Wiltſhire, growing in watery meadows, ſo valuable, that an acre of it lets from ten to twelve pounds, I have been informed by ſeveral perſons. Theſe circumſtances incline me to think it muſt be Flote-feſcue; but what-

whatever grafs it be, it certainly muft deferve to be enquired after.

" There is a clamminefs on the ear of the Flote-fefcue when the feeds are ripe, that taftes like honey, as I have often found; and for this reafon, perhaps, they are called manna-feeds.

" Linnæus Flor. Suec. art. 95, fays, that the bran of this grafs will cure horfes troubled with bots, if kept from drinking for fome hours." So far the very ingenious Mr. Stillingfleet.

From what has been faid above, we may conclude, that the Flote-fefcue is one of the beft graffes that we can cultivate for the ufe of our horfes, and the more efpecially, as it appears to thrive beft in wet, low meadows, where many other graffes would not grow.

There are at Clacton-Lodge, in the county of Eflex, not far from Thorp, fome low meadows, which are every year flooded for months together, during the winter feafon. Thefe meadows are covered with a grafs of a remarkable fattening quality; for when old cows have been turned into them, though they were ever fo poor and low in flefh, they have, in a very fhort fpace of time, grown remarkably fat; and when killed, their meat would appear as fine, and tafte as well, as that of any fteer or ox; therefore it is reafonably to be fuppofed, that the grafs growing in thefe meadows, is no other than that of the Flote-fefcue. See an account of a new kind of grafs in the Farmer's Magazine, vol. iii, page 232, 259, 289, 290.

FLOSCULOUS. Compofed of flowers.

FLOTTEN. Skimmed, as milk.

FLOWER. A flower is defined to be formed of all the parts of fructification neceffary for the generation of all trees and plants, and confifts of the following principal parts.

The *Calix*, empalement or cup; the outer green leaves immediately furrounding the corolla or petals.

The *Corolla*, petals, or flower-leaves; the fine-coloured leaves placed within the calix, and which immediately furround the ftamina, &c.

The *Stamina*, or male organs; the ftender thread-fhaped parts, fupporting the antheræ, placed immediately within the corolla, and furround the piftillum.

The *Piftillum*, or female organs; confifting of the germen, ftyle, and ftigma, and are placed within the antheræ, and commonly occupy the center of the flower.

The *Pericarpium*, the fruit or feed-veffel, formed of the germen of the female organ, and fucceeds to maturity after all the other parts of the flower are decayed.

The *Semen*, or feeds, lodged within the pericarpium, or in default thereof, in the bottom of the calix.

But as many flowers have neither calix nor corolla, they are ftill to be confidered as a flower, provided it is furnifhed with the antheræ, or tops of the male organ, and the ftigma or fummit of the ftyle, the female organ, for the effence of a flower confifts in thefe two principal organs, antheræ and ftigma.

In many plants, however, we have not been able to difcover any refemblance of flower or fruit, fuch as the ferns, moffes, mufhroom, &c. but it is probable they are all furnifhed with fimilar parts, although their minutenefs, or concealed fituation within the plant, prevents any difcovery thereof.

FLOWER-DE-LUCE. See IRIS.

FLOWER *Gentle*. See AMARANTH.

FLOWER-FENCE. See BARBADOES FLOWER-FENCE.

Four o'Clock FLOWER. See MARVEL OF PERU.

Sun FLOWER. See SUN-FLOWER.

FLOWERAGE. Store of flowers.

FLOWER-GARDEN. A garden, principally fet apart for the cultivation of flowers.

FLOWERET. A fmall flower.

FLOWKWORT. The name of a plant.

FLUE. A fmall pipe or funnel to a chimney.

FLUE. Down; foft fur.

FLUELLIN, [*Elatine.*] Female Speedwell. This is a low creeping plant, growing wild in corn-fields. The leaves have a very bitter, roughifh tafte. They were formerly accounted excellent vulneraries, and of great ufe for cleanfing and healing old ulcers, and fpreading cancerous fores. Some have recommended them internally in leprous and fcrophulous diforders; as alfo in hydropic cafes. It gives name to one of the officinal honeys; but the plant

plant itſelf is never uſed in the preſent practice, and this preparation of it is in no great eſteem.

FLUMMERY. A kind of food made with oatmeal and water, boiled thick.

FLUX *in Cows.* The cure.—Boil an ounce of logwood in three pints of water, till it is reduced to one pint, adding, during the boiling, half an ounce of gum arabic; ſtrain and mix it with one ounce of ſtarch, and the ſame quantity of the electuary of bayberries for a drink, to be repeated in three or four hours; and the following ball every four hours:

Mithridate, Armenian bole, each half an ounce; Gum tragacanth, in powder, and ſtarch, each three drams; conſerve of roſes, enough to form a ball.

FLY *on Turnips.* To prevent this, let the ground be well dunged before the ſeed is ſown, and if not manured enough, fold your ſheep upon it; this occaſions the turnips to grow away very faſt, ſo that they will ſoon be too rank and too ill-favoured for the fly.

To deſtroy the fly, ſome recommend drawing a bough of the elder-tree backwards and forwards over the turnips; and we can, from our own experience, recommend the ſowing of wood-aſhes, taken dry from a lime-kiln, to be ſown over the turnips when the dew is on them in the morning by break of day.

FLY *on Sheep.* A troubleſome maggot; to cure which, take of good corroſive ſublimate half an ounce, diſſolve it in two quarts of rain water, and add to it four ounces of ſpirits of turpentine; anoint the maggots with this water, and it will preſently kill them.

FOAL-TEETH. See AGE OF A HORSE.

FODDER. Hay, ſtraw, &c. given to cattle.

FOGGE. Long rowetty graſs.

FOISSEN. The natural juice of graſs, &c.

FOLD. The moveable incloſure in which ſheep are confined.

FOLIACEOUS. Conſiſting of leaves.

FOLIATION. That part of the flower of a plant which conſtitutes the compaſs of the flower.

FOLIAGE. Leaves.

FOLE-FOOT. Coltsfoot.

FOOD *of Plants.* Many philoſophers have endeavoured to diſcover the proper food of plants, or what are the particles which they extract from the ſoil. Lord Bacon was of opinion, that water was all in all. Van Helmot is alſo very poſitive in this, and alledges as proofs, the conſiderable growth of mint, and ſeveral other plants, in water, and his well-known experiment on a willow-tree. Van Helmont planted this tree, which weighed five pounds, in two hundred pounds of earth dried in an oven, and watered it with rain or diſtilled water, after carefully covering the caſe in which it ſtood with a perforated tin cover, to prevent the admittance of any other earth. Five years after, weighing the tree, with all the leaves it had produced in that time, he found its weight amount to one hundred and ſixty-nine pounds three ounces; while the weight of the earth was only diminiſhed about two ounces.

Mr. Boyle, Mr. Evelyn, &c. ſeem of this opinion.

Dr. Mayhew aſcribed the nouriſhment to air, and Dr. Woodward's experiments ſeem to confirm the opinion. The ingenious Dr. Hunter, of York, thinks oil is the proper food of all plants, when incorporated with water.

"I am led to believe (ſays he) that all vegetables, from the hyſſop upon the wall, to the cedar of Lebanon, receive their principal nouriſhment from oily particles, incorporated with water, by means of an alkaline ſalt or abſorbent earth. Till oil is made miſcible, it is unable to enter the radical veſſels of vegetables, and on that account providence has bountifully ſupplied all natural ſoils with chalky, or other abſorbent particles; I ſay natural ſoils, for thoſe which have been aſſiſted by art, are full of materials for that purpoſe, ſuch as lime, marle, ſoap-aſhes, and the volatile alkaline ſalt of putrid dunghills. It may be aſked, whence do natural ſoils receive their oily particles? I anſwer, the air ſupplies them. During the ſummer months, the atmoſphere is full of putrid exhalations, ariſing from the ſteam of dunghills, the perſpiration of animals and ſmoak. Every ſhower brings down theſe oleaginous particles for the nouriſhment of plants. Water is thought by ſome to be the food of vegetables, when in reality

reality it is only the vehicle of nourifhment: water is a heterogeneous fluid, and no where to be found pure; it always contains a folution of animal or vegetable fubftances; thefe conftitute the nourifhment of plants, and the element in which they are minutely fufpended, acts only as a vehicle in guiding them through the fine veffels of the vegetable body. The hyacinth, and other bulbous roots, are known to perfect their flowers in (apparently) pure water. Hence fuperficial obfervers have drawn an argument in favour of water being the food of vegetables; but the truth is, the roots, ftem, and flowers of fuch plants are nourifhed by the mucilaginous juices of the bulb diluted by the furrounding water. This mucilage is juft fufficient to perfect the flower, and no more. Such bulbs neither form feeds, nor fend forth off-fets. At the end of the feafon they appear weak, fhrivelled, and exhaufted, and are unfit to produce flowers the fucceeding year. A root of the fame kind, that has been fed by the oily mucilaginous juices of the earth, effentially differs in every particular; it has a plump appearance, is full of mucilage, with off-fets on its fides. All rich foils, in a ftate of nature, contain oil, and in thofe lands which have been under the plough for fome years, it is found in proportion to the putrid dung that has been laid upon them, making an allowance for the crops they have fuftained. To fet this matter in a clearer light, let us attend to the effects of manures of an oily nature, and we fhall foon be fatisfied that oil, however modified, is one of the chief things concerned in vegetation. Rape duft, when laid on land, is a fpeedy and certain manure, though an expenfive one, and will generally anfwer beft on a lime-ftone foil, or land that has been moderately limed. This fpecies of manure is much efteemed by the farmer; it contains the food of plants ready prepared; but as it is not capable of loofening the foil by any fermentation, the lands on which it is laid ought to be in excellent tilth.

"Farmers that live in the neighhood of cities and large towns, ufe abundance of foot; it is an oily manure, but different from the former, containing alkaline falt, and calculated as well for opening the foil, as for rendering the oily parts mufcible with water. It is alfo obferved, that pigeons dung is a rich and hafty manure; thefe animals feed chiefly upon grains, and oily feeds, it muft therefore be expected, that their dung contains a large proportion of oil. Swines dung is of a faponaceous and oily nature, and perhaps the richeft of the animal manures; when made into compoft, and applied with judgment, it is excellent for arable lands. The dung of cows and fheep is preferable to that of horfes at grafs, owing to the quantity of animal juices mixed with their food in chewing. And here I beg leave to remark in general, that the fatter the animal, *cæteris paribus*, the richer the dung. Human ordure is full of oil, and a volatile alkaline falt; by itfelf, it is too ftrong a manure for any land: it fhould therefore be made into a compoft before it is ufed. The dung of carneverous animals is plentifully ftored with oil. Animals that feed upon feeds and grain come next, and after them follow thofe which fubfift upon grafs only.

"In order to ftrengthen my argument in favour of oil being the principal food of plants, I muft here beg leave to obferve, that all vegetables, whofe feeds are of an oily nature, are found to be remarkable impoverifhers of the foil, as hemp, rape, and flax; for which reafon, the beft manures for lands worn out by thefe crops, are fuch as have moft oil in their compofition, but then they fhould always be laid on with lime, chalk, marle, or foap-afhes, fo as to render the oily particles mifcible with water. The book of nature may be difplayed to fhew that oily particles conftitute the nourifhment of plants in their embryo ftate; and, by a fair inference, we may fuppofe, that fomething of the fame nature is continued to them as they advance in growth. The oily feeds, as hemp, rape, line, and turnip, conift of two lobes, which, when fpread upon the furface, form the feminal leaves. In them the whole oil of the feed is contained. The moifture of the atmofphere penetrates the cuticle of the leaves, and mixing with the oil, conftitutes an emulfion for the nourifhment of the plant. The fweetnefs of this balmy fluid invites the fly, against which no fufficient remedy has yet

been discovered. The oleaginous liquor being consumed, the seminal leaves decay, having performed the office of a mother to her tender infant. To persons unacquainted with the strict analogy between plants and animals, this reflection will appear strange: nothing, however, is more demonstrable: the leguminous and farinaceous plants keep their placenta, or seminal leaves within the earth, in which situation they supply the tender germ with oily nutriment, until its roots are formed, and grown sufficiently strong to penetrate the soil."

FOOLSTONES. See DOGSTONES.

FOOT. That part which supports an animal.

FOOTROT, } Sheep are liable
FOOTWORM, } to breed worms between the feet; but this, like the other accidents, is principally when they are kept in wet or damp pastures. It is very painful to them, and will make them pine away.

It is perceived by their frequently holding up one foot, and by their setting it but tenderly down.

In this case, let the foot be washed clean, particularly between the toes, and there will be seen a little lump like a tuft of hair. This is the head of the worm. It is to be taken out with care, for it is of a tender substance, and if it be broke in the foot, it will occasion an inflammation. The best method is to open the flesh on each side of it, and then, by means of a pair of knippers, to take it very gently out.

Then dress the wound with tar and grease melted together in equal quantities, and turn the sheep loose.

It is better to put it into a fresh pasture; for if the same disorder returns, it is generally worse.

FORCING-FRAME. A sort of glass-case, or light building, fronted with glass frames, in which to force flowers and fruits to early perfection, by aid of artificial heat, either of dung, tanner's-bark, or actual fire.

The general construction of each sort of these frames is exhibited under separate heads, according to the materials of heat used in forcing them, viz. by dung-heat, bark-bed-heat, and by fire-heat.

By Dung-heat.—This is not only the most simple and cheapest kind of Forcing-frame in its construction, but also considerably the cheapest in working, with respect to the article heat, as it may be forced effectually by substantial linings of hot dung against the back and ends.

This frame is formed with an upright back and ends of deal planking, and a sloping front of moveable glass lights; the length may be ten, twenty, or thirty feet, or more; the width from three to five, and five or six high; let the frame-work be of inch-deal planking, tongued, and closely joined, that no steam from the dung may penetrate into the frame; rising five or six feet high behind, and but ten to twelve inches high in front, raising both ends answerable to the front and back; the glass-work to range, from the upright in front, sloping upward towards the back wall, to about a foot width at top, there resting the ends upon proper frame-work of wood, and bars or bearers three inches wide, must range from the back to front, for the support of the lights, as in common hot-bed frames, and the top of all to be boarded wind and water tight; within side may be two or three ranges of narrow shelves along the back and ends, for pots of small plants, and the bottom levelled, on which to place pots of larger kinds; or you may have shelves rising one behind another, quite from the front half way up to the back wall, so may place the lowest plants in front, the others in order behind them, rising gradually to the tallest in the back row.

From the above general sketch, you will easily form an idea of the proper construction of a dung-heat Forcing-frame, you may improve as you shall see convenient.

This kind of frame is much used about London, where dung is so plenty and easily obtained; and is there particularly used for forcing roses, or any other small flowering plants, whose flowers have merit in beauty or fragrance—may also try pots of dwarf-cherries, peaches, &c. also pots of gooseberries, currants, and strawberries, carnations, pinks, and the like; having all the sorts in pots separately, and in which they are to be placed in the frame.

The season to begin to work this frame is January and February, and may be continued occasionally till May; but

but for any kind of fruit-trees, the beginning of February is time enough, though thoſe plants of any kind, that are deſigned to be forced, may be placed in the frame a month or two before forcing time, to be occaſionally protected with the glaſſes in hard froſts, but at other times let them enjoy the full air till you begin forcing.

The method of working this frame is thus: after having placed the pots of plants in regular order, the talleſt behind, and the loweſt in front, &c. then put on the lights, and having a due quantity of freſh ſtable dung, full of heat, prepared as for common dung hot-beds, let it be piled up cloſe againſt the back and ends, a yard-wide at bottom, drawing it gradually into a foot width at top of the frame, finiſhing it ſomewhat ſloping, to throw off wet; obſerving, that according as the dung ſettles or ſinks down, a freſh ſupply muſt be added at top, to maintain the lining to the full height of the frame.

This lining will effectually throw in a fine quantity of growing heat, and ſoon ſet all the plants in motion; obſerving to give air in the middle of fine days, by ſliding one or more of the lights a little down; give alſo moderate watering occaſionally in mild ſunny weather, and cover the glaſſes in cold nights with mats.

In three or four weeks, when the heat begins to decreaſe conſiderably, it muſt be renewed, either by entire freſh dung, or if new dung is ſcarce, by ſhaking up the old, taking the worſt away, and mix the remainder with a due quantity of new, working the whole again in a pile cloſe againſt the back and ends as before, which work muſt be repeated every three weeks or month, or as often as you ſhall ſee occaſion; for the heat muſt be conſtantly preſerved to a regular briſk temperature.

A frame of the above conſtruction may be appropriated entirely for fruit-trees, planting them in a border prepared within the frame againſt the back wall, and trained in the manner of wall-trees to a trellis, ranged five or ſix inches from the back erection; in which may be planted early dwarf-cherries, peaches, nectarines, apricots, grapes, figs, currants, &c. ſo may be worked by dung-heat againſt the back of the frame, as above directed; beginning in February, and continuing the glaſſes on, as well as ſupport the dung heat, until May, and there is no doubt, with good management, but that the different ſort of fruit may be brought to perfection early.

By Bark-bed heat.—This kind of Forcing-frame is worked by aid of tanners-bark hot-bed, formed in a pit within-ſide the whole length.

This frame may be formed either of wood or brick-work, and fronted, &c. with ſaſhes of glaſs like the former; the length may be ten, twenty, or thirty feet, or more; eight or ten wide, and ſix or eight high; and may be conſtructed either nearly like the dung-heat frame, ſix or eight feet high behind, and one in front, the ends conformable, and ſloping frames of glaſs-work raiſed from the front, ſloping either quite to the top of the back wall, or to incline only about one-half towards that part, meeting a tyled roof at top half way, which ſhould be raiſed high enough in front to throw the water off behind, as well as to admit as much ſun as poſſible to every part of the frame; or it may be conſtructed with an upright front of glaſs, head high, and a ſloping roof of glaſs-work, ranging from the upright front to the top of the back wall, which is rather the moſt eligible form, both for convenience and benefit of the plants; either of which conſtructions may be erected detached, or againſt a ſouth wall already built, which will ſerve for the back, and ſave ſome expence; the ends may either be of wood or brick, but would be much better if glazed like the front, &c. and the glaſs-work in every part ſhould be made to move on and off, as well as to ſlide backward and forward, to give air, and to do other neceſſary work; and at one end next the back wall may be a door to enter occaſionally; and within-ſide muſt be a pit for the bark-bed, three feet deep, continued the whole length and width, except about a foot and half alley to go in to perform the neceſſary culture, as well as to view and gather the produce of different plants.

The pit within is to be filled with new tan any time in winter or ſpring, you intend to begin forcing, though January is ſoon enough, and the beginning of February is not too late; the bark will ſupport a growing heat

three months, and if then ſtirred up to the bottom, will renew its heat, and continue it two months longer.

In this frame you may plunge in the bark-bed, pots of roſes, or any other choice flowering ſhrubs you would force into an early bloom; likewiſe may place pots of ſtrawberries towards the front and top glaſs, and pots or troughs of kidney-beans may be placed in any part of the frame; alſo pots of dwarf fruit-trees, before-mentioned, pots of double pinks, carnations, and any other moderate-growing fibrous-rooted perennials, as well as any ſorts of bulbous or tuberous-rooted flowers, as narciſſuſſes, jonquils, tulips, anemonies, ranunculuſes, and various other ſorts.

The heat of the bark-bed will effectually warm the internal air ſufficiently to forward any ſorts of hardy flowers and fruits to perfection at an early ſeaſon, obſerving, that although they do not always flower and fruit ſo abundantly as in the full ground, yet, if there is but a few of any ſort, a month or two before their natural ſeaſon, they, if for ſale, will ſufficiently pay; and if for private uſe, they will always be acceptable as a rarity and curioſity in the family.

Freſh air muſt be admitted in fine funny days at all opportunities, by ſliding ſome of the glaſſes more or leſs open, keeping all cloſe on nights.

Give water alſo occaſionally in moderate quantities.

When the heat of the bark declines conſiderably, do not omit forking it over to the bottom, which will revive the decaying heat ſix or eight weeks longer.

A bark-heat Forcing-frame, nearly of the above dimenſions, might be contrived entirely for forcing valuable fruit-trees, having a border within-ſide along the back wall three or four feet wide, there plant young bearing dwarf fruit-trees of any ſorts before-mentioned, at ſix or eight feet diſtance, in the manner of wall or eſpalier-trees, training them alſo in the ſame manner as directed for the reſpective ſorts, in their natural ſtate of growth. The bark-pit ſhould here be almoſt entirely ſunk; in the beginning of February fill the pit with new bark, which will ſoon ſet the trees into bloom, and will ripen their fruit early: and the late ſorts of fine grapes, which do not ripen kindly here in the full ground, may be brought to perfection.

But the moſt eligible general Forcing-frame for various ſorts of plants, is one of the above-mentioned conſtructions, having alſo flues for fire-heat; the walls muſt be of brick-work, having three or four returns of flues formed of the ſame materials, running the whole length of the back wall within, to make fires occaſionally in ſevere froſts, or on cold nights; alſo in very cold damp weather, which will be a great improvement in very early forcing, ſo that this kind of frame will be nearly of the plan of a ſtove or hot-houſe.

In default, however, of any of the above kinds of bark-heat Forcing-frames one might be effected by a common bark-pit, filling it a yard deep with tan, and in which you may plunge pots of roſes, or any other ſhrubs, any ſort of low herbaceous, flowering plants, fibrous, or bulbous-rooted kidney-beans, ſtrawberries, &c.

By Fire-heat.—This kind of Forcing-frame is worked by actual fire, burned in a furnace behind at one end or middle, from thence communicating the heat by flues or funnels, running the whole length of the back wall in three, four, or more returns one above another, and is often employed for ripening ſeveral of the more valuable tree-fruit at an early ſeaſon; or for forwarding ſuch to perfection, as do not ripen freely in our climate without ſuch artificial aids, particularly ſome ſorts of grapes; and in which frame the whole bottom ſpace muſt be good earth, two ſpades deep, for the reception of the trees, &c. for they are to be planted fully in the ground.

This frame muſt be formed of brick-work, at leaſt the back or main wall, for the convenience of having fire and flues, and the whole front, &c. muſt be glaſs like the other ſorts; the length may be from twenty to forty or fifty feet, or more, though one fire will not warm more than that length; the width may be from four or five, to twelve or fifteen feet, and eight or ten high. It may be contrived either of moderate width for one row of trees only, to range againſt the back wall, or may be capacious enough to have a range of dwarf-trained trees behind,

as juſt mentioned, and ſome young half or full ſtandards, ranging alſo from the back to the front, or entirely for ſtandards, eſpecially thoſe of cherries.

If it is therefore intended to have a narrow frame for only a row of trained trees behind, the width from four to five or ſix feet is ſufficient, having the back or main wall formed of brick or ſtone, as aforeſaid, eight or ten feet high, with ſeveral flues within-ſide, returned over each other, running the whole length of the wall; in the front muſt be a low wall a foot high, on which to lay a plate of timber, and from which is ranged glaſs frames or lights, in one continued ſlope to the top of the back wall, there received into proper frame-work; but, for the greater convenience, the lights may be in two tiers or ranges, an under and upper tier, the upper range made to ſlide up and down over the others, but ſo as all the glaſs-work can be moved away occaſionally, to admit the full air to the trees after the work of forcing; the whole bottom-ſpace within this frame muſt be of good loamy earth, or any good garden-mould, two ſpades deep, which muſt be dug or trenched in the common way, then plant a range of trees within five or ſix inches of the wall, and two or three yards aſunder, erecting a trellis behind them, upon which, to train the branches as againſt a wall or eſpalier; beſides theſe trees, there may be other inferior plants ſet in the border in front of the trees, as ſtrawberries, dwarf kidney-beans, dwarf peas, mazagan beans, &c. dwarf roſes, or the like, that will not riſe high enough to ſhade the fruit-trees in the back range.

A Frame of this conſtruction, forty or fifty feet long, may be worked by one fire; but if longer, two furnaces for fires will be requiſite.

But to have a more capacious frame both for training trees and ſtandards, may be of any length, from twenty to fifty feet, or more, but muſt be ten or fifteen feet wide, having an upright back wall of brick, ten feet high, with flues as above directed, and a low wall in front a foot high, on which is erected upright glaſs-work, four or five feet perpendicular, and from the top of theſe, a ſloping roof of glaſs frames, continued to the top of the back wall, ſupported upon proper bearers three feet ſix inches diſtance, having the top glaſſes in two ranges, an under and upper range, as before adviſed, both of which, and thoſe of the upright in front, made to ſlide, and move away occaſionally; in this frame there will be room to walk under the glaſs-work in any part, and there will be alſo due room for the trees, both dwarfs and ſtandards, and then having the whole ground-ſpace within-ſide of pliable loamy earth, as in the other frame; you may plant your trees ſome in one range againſt the back wall, as peaches, nectarines, apricots, grapes, figs, &c. eight feet aſunder, erecting a trellis for training them upon; and in front of theſe may be planted rows of young cherries, both full ſtandards, half ſtandards, and dwarfs, the full ſtandards to have five or ſix feet ſtems, the half ſtandards three or four, and the dwarfs one or two foot ſtems; each ſort, both trained trees and ſtandards, to be planted when about from three to four or five years old, as ſoon as they acquire a bearing ſtate, having regular heads of two or three feet extent at firſt planting. Having procured the trees, and the ground ready for their reception, may then plant one range of the choicer ſorts againſt the back wall, two or three yards aſunder, the others in rows from back to front, at eight feet diſtance, the talleſt behind, and the loweſt in front, at three or four feet diſtance in each row, making each row range againſt the intervals of the trained trees behind; or if they are all full and half ſtandards, there will be more room for ſeveral ſorts of ſmaller plants under them; and as their branches will be nearer the top glaſſes, may be of particular advantage, and in the intervals may be planted ſome low currants, gooſeberries, raſberries, ſtrawberries, dwarf-beans, kidney-beans, &c. But in a frame of theſe dimenſions, ſome plant it entirely with ſtandards, more particularly cherries, as being more moderate ſhooters, and ſooneſt arrive to a bearing ſtate, ſo as to bear any tolerable quantity of fruit to defray the expence, planting them five or ſix feet diſtance, ſometimes ſtandard plumbs, apricots, peaches, and nectarines are alſo planted.

A frame of theſe dimenſions, twenty

five

five feet long, may be worked by one fire; but if much more than thirty feet in length, two furnaces for fires, with each its ſet of flues, will be neceſſary.

With reſpect to the age of the trees for both the above kinds of fire-heat Forcing-frames, they ſhould be from three to four or five years old, with regular heads of two or three feet extent each way, and juſt arrived at a tolerable bearing ſtate; no very vigorous ſhooters muſt be admitted, but ſuch only that aſſume a moderate regular growth, and are to be trained in the nurſery until they have acquired a proper ſize, each as directed under their reſpective genera, whether as wall-trees or ſtandards, or trees proper for the purpoſe may be had at all the public nurſeries; they are to be tranſplanted into the frame in October or November, to remain for forcing, but ſhould be permitted to have a year or two's growth here before you begin forcing them, that they may be firmly rooted, during which time all the glaſſes ſhould be entirely away, that the trees may have the full air till forcing time is nearly arrived.

In both the above kinds of Forcing-frames, may alſo plant ſome grape-vines on the outſide of the front glaſſes, in the full ground, and their ſtems trained through holes, and conduct the ſhoots along up the inſide, towards the glaſs-work, to a ſort of ſlight trellis; keeping the branches quite thin, and they will ripen early fruit in great perfection.

It ſhould however be remarked with reſpect to grapes, that when intended to have in your Forcing-frames any of the large late kinds, which do not ripen here without the aid of ſhelter and artificial heat, it will be more adviſeable to have them in a department by themſelves, becauſe they often do not ripen till late in autumn, ſo often require the glaſſes to be continued over them occaſionally all the ſummer, eſpecially in wet and cold weather; and ſometimes, if the autumn proves wet and cold, they require aid again of gentle fires made them on nights, to promote their ripening perfectly; in which caſes, where other trees, whoſe fruit are ripe and gone in ſummer, planted in the ſame department, it would force them at an untimely ſeaſon, and greatly weaken them.

The ſeaſon for beginning to make the fires for forcing the trees, in either of the above-deſcribed fire-heat frames, is any time in January, though about the middle, or towards the latter end of that month is, for the general part, rather the moſt ſucceſsful time to begin the general forcing to have a good crop; for if the trees are forced very early, there will be ſome danger of their miſcarrying, as if they ſhould come into bloſſom, when ſevere weather prevails, that air cannot be freely admitted, they ſeldom ſet any tolerable crop of fruit; therefore, by beginning to make the fires about the time above directed, the trees will be in bloſſom about the middle of February, when we may expect ſome fine ſunny days for the admiſſion of a moderate portion of freſh air, which is eſſentially neceſſary to promote the natural impregnation of the fruit, and improve its free growth; for if kept too cloſe, they are apt to drop off in their infant ſtate.

The fires are to be lighted in the evening about four or five o'clock, and if kept burning till twelve, it will ſufficiently heat the flues to warm the internal air of the houſe till next day in the evening, unleſs very cold, froſty, or cloudy damp weather ſet in, then a moderate fire may be made occaſionally alſo in a morning, but by no means force the trees too much, for a moderate warmth will prove the moſt ſucceſsful; and thus continue the fires occaſionally till April or May, but leſs in proportion as the weather grows warmer.

Freſh air muſt be occaſionally admitted in fine days, by ſliding ſome of the glaſſes a little open; and, as the trees advance to bloſſom and fruit, the days grow longer, and the power of the ſun greater, allow a greater proportion of air accordingly.

Thus your trees will be in full bloſſom in February, and ſome ſorts will ripen fruit in April, particularly cherries and ſtrawberries in plenty; you may alſo expect early apricots, peaches, and nectarines, in May and June, plumbs and grapes in June and July; but the curious late ſorts of grapes, which do not ripen here without ſhelter and artificial heat, will not be ripe till September;

tember; but theſe ſhould always have a ſeparate department.

After the fruit of the different ſorts are all gathered, the glaſſes ſhould be taken entirely away, that the trees may have the full air during ſummer, and in December they ſhould be placed upon the frame again, ready for forcing in January.

With reſpect to pruning the trained trees, i. e. ſuch that are trained as wall-trees againſt the trellis, &c. they are to be pruned and trained, every ſummer and autumn, each ſort according to its kind, as other wall-trees; and as to the ſtandards, their reſpective pruning is principally in autumn, to cut out any irregular growth, and thinning out any crowding ſhoots, for the branches muſt be kept thin and regular, clear of each other, ſix or eight inches diſtance; and any ſtragglers which extend in length conſiderably more than its neighbour of the ſame tree, ſhould be reduced to order; and as the branches in general become ſo long, as to preſs againſt the glaſſes, or ſpread too much, they ſhould alſo be reduced a little, to preſerve them within due compaſs, obſerving always, when ſhortening the ſtandards, it is neceſſary to cut to a bud, ſituated on the outſide of the ſhoot or branch, making the cut on the inſide.

Every autumn, after pruning the trees, the borders muſt be digged carefully one ſpade deep.

It muſt be remarked, that the trees in theſe frames, if annually forced, are not ſo durable, nor plentiful bearers, as thoſe in the full air; therefore, when you ſhall ſee any become weak, ſickly, or bad bearers, others ſhould be ready in training, or procured from the nurſeries, to plant in their ſtead, and in this no time ſhould be loſt.

But to continue the ſame trees more effectually in health, and in a bearing ſtate, ſome have a double portion of walling and framing planted, but more particularly that of the firſt-deſcribed fire-heat frame, which is ſometimes contrived to move or ſlide along from one place to another, for one frame-work and glaſſes to ſerve two portions of walling, ſo that being alternately worked, one part one year, the other the year after, each portion of trees will have a year of reſt in their natural growth, and will ſucceed each other in due order for forcing, whereby the health and vigour of the trees will be better ſupported, and each year a greater crop of fruit may be expected, than if the ſame trees were ſucceſſively forced every year.

FOREST. A wide, uncultivated tract of ground, with wood.

Forest *Trees*, are either deciduous or ever-green.

The deciduous ſorts are, — Elm; Beech; Plane; Maple; Oak; Aſh; Lime; Hornbeam; Walnut; Cheſnut; Horſe-Cheſnut; Larch; Virginian Tulip-tree; Acacia; Wild Cherry; Bird Cherry; Poplar; Lote, or Nettle-tree; Laburnum, or Bean Trefoil; Birch; Service; Judas; Elder; Tacamahacca; Willow.

The ever-green Foreſt-trees are, — Pine; Fir; Cedar; Cypreſs; Arbor-vitæ; Cork-tree; Ever-green Oak; Holly; Yew; Laurel; Bay; Arbutus, or Strawberry-tree; Box.

FORESTALLER. One that anticipates the market; one that purchaſes before the market to enhance the price.

FORGET-ME-NOT. Ground Pine.

FORK. An inſtrument divided at the end into points, for the purpoſe of moving ſtraw, hay, &c.

FOSTEL. A way leading from the main road to a large houſe.

FOUL FEEDING. A voracious appetite to which ſome horſes are ſubject; and, though not properly a diſeaſe, is often the cauſe of various maladies. It is generally the effect of ſome latent diſtemper, as vermin, which have a quite different effect on ſome horſes to what they have on others; for as horſes of a lax habit of body often loſe their appetites by worms, and are frequently griped and ſickly in their bowels; ſo horſes of ſtrong rigid conſtitutions, that can bear the irritation thoſe animals make in their inteſtines, are often voracious in their appetites, and continually craving after food.

Foul-feeders, however, differ in ſome things from thoſe which have voracious appetites; for as the latter crave only after their common food, and can hardly ever be ſatisfied, ſo the former will leave their hay to eat their litter, and ſeem to like it the better when it is well ſauced with their own dung and urine; and, therefore, they may be properly ſaid to have a vitiated or depraved appetite. Though this does

not

not always proceed from a voracious appetite, yet the firſt is often productive of the latter, and may probably be occaſioned by enlarging the capacity of the ſtomach and inteſtines to ſuch a degree, that nothing will ſatisfy their cravings, but what has weight and ſolidity; for the ſame kind of horſes will eat mould and wet clay, or any kind of foul naſty weeds out of the ditches, and in the ſtable will eat ſtinking muſty hay, which the generality of horſes will refuſe.

There are others of depraved appetites, that are neither foul nor voracious feeders, ſuch as we often obſerve eat dry loam or mud out of the walls, which perhaps denotes ſome vitiated juices in their ſtomach; and this alſo is frequently owing to vermin, or at leaſt to a bad digeſtion, though, perhaps, not to any imbecility in their conſtitutions; for though theſe horſes have a longing after thoſe extraneous things, yet their appetites at the ſame time ſeldom fail: but as this is often owing to full feeding, with the want of ſufficient exerciſe, ſo we often ſee them recover and quite loſe that vitiated taſte, when they come to ride a journey, or go upon any other conſtant exerciſe.

The beſt method in all theſe caſes of a vitiated or depraved appetite, is to begin with purging, and to diſſolve chalk in their water, and afterwards to give them good exerciſe. The ſame method may be complied with to thoſe that feed voraciouſly. To theſe the following draught may alſo be given to blunt their appetites:

Take a large handful of the roots of marſh-mallows, cummin-ſeeds, and fenugreek-ſeeds, of each an ounce; liquorice-roots ſliced, half an ounce; boil in three pints of water till the roots are ſoft and ſlimy, then pour off the decoction, and diſſolve it in an ounce of gum-arabic, and add four ounces of linſeed-oil.

Let the horſe have half a pint of this every morning faſting, till his appetite abates. If the horſe be lean, which many voracious feeders are, he will gather more fleſh under this management, and as his fleſh increaſes, his appetite will abate.

As to foul feeders, many of theſe begin with voraciouſneſs, and when they come to be ſtinted, take to eating of their litter to fill their ſtomachs, and in time take a great liking to it; and it is obſervable, that many of the horſes that go broken-winded have this evil faculty; and therefore we would adviſe any one who has a foul-feeding horſe, to keep his ſtall as clean as poſſible, to let no wet dirty litter lie under him, nor to put his litter under the manger, but to beſtow it on ſome other horſe, otherwiſe they will paw it out, and feed upon it greedily; but clean ſtraw that has not been ſoaked with urine and filth, will never hurt any horſe; for though there is no harm in the urine, yet when the ſtraw has been ſoaked in it with the dung, it often turns into a wad, or like a ſponge in their bowels, and cauſes great diſorders. But when their wet litter is taken away every morning, it may be the means to make them leave off that ill habit.

FOWLS. Poultry in general.

Fowls *Dung*. The dung of all poultry is of a very hot nature, full of volatile ſalts, and therefore extremely proper for cold lands, being light of carriage, and a little of it going a great way. It is moſt commonly uſed for diſtant grounds, where it is ſprinkled on wheat or barley, after they are come up, or upon the latter at the time of ſowing. Mr. Mortimer thinks forty buſhels ſufficient for an acre. It is uſed to moſt advantage when dried and powdered, and is very efficacious in keeping froſt out of the earth. Its effects are ſudden, but they do not laſt long. Hens dung is very rich, though not ſo hot as pigeons dung, nor is it ſo eaſy to ſow, becauſe it hangs more together, neither can it be ſo eaſily collected. The opinion that gooſe-dung is rather hurtful than beneficial to corn or graſs, is an ancient error, as is proved by Mr. Worlidge, who ſays, he was credibly informed, that a flock of geeſe having made a track acroſs a field of wheat during the winter, and nibbled the corn clear from the ground in their daily paſſage in ſuch a manner, that the wheat upon it proved the next year much finer than any other part of the field. He alſo mentions a field which had been given to the town of Sutton,

Sutton, in Northamptonſhire, for feeding geeſe, whoſe dung made it one of the richeſt paſtures he ever ſaw, inſomuch, that all ſorts of cattle fed on it very greedily; nor could he hear from any of the inhabitants, that ſo much as one beaſt received the leaſt injury from it. He adds that his own horſes, kept in a piece of paſture on which geeſe lay very much, eat the graſs beareſt where the fowls had dunged moſt, and that he never found it to do them any hurt, except making them too fat.

Perhaps the reaſon why the dung of geeſe has been ſaid to occaſion barrenneſs, flowed from obſervations where it had been laid too thick; for being of a hot fiery nature, it will, if laid on in too large quantities, deſtroy the graſs, but if ſpread thin in the winter, it will prove a very rich and valuable manure, eſpecially if mixed with cooling earth, and left for ſome time to putrify.

FOX-GLOVE, [*Digitalis.*] This plant grows wild in woods, and on uncultivated heaths: the elegant appearance of its purple flowers, which hang in ſpikes along one ſide of the ſtalk, has gained it a place in ſome of our gardens. The leaves have been ſtrongly recommended externally, againſt ſcrophulous tumours; and likewiſe internally in epileptic diſorders: what ſervice they may be capable of doing in theſe caſes, we have no experience. Several examples are mentioned by medical writers of their occaſioning violent vomiting, hypercatharſes, and diſordering the whole conſtitution; inſomuch that Boerhaave accounts them poiſonous. Their taſte is bitter and very naufeous.

There are ſeveral ſpecies cultivated in gardens, which may be propagated by ſowing the ſeeds in autumn.

FOX-TAIL-GRASS. See Cow-wheat.

FOX-EVIL. A diſeaſe in which the hair falls off.

FRAMBOISE. Raſpberry.

FRANKINCENCE, [*Thus.*] A ſolid, brittle reſin, brought to us in little glebes or maſſes, of a browniſh or yellowiſh colour on the outſide, internally whitiſh, or variegated with whitiſh ſpecks; of a bitteriſh, acrid, not agreeable taſte, without any conſiderable ſmell. It is ſuppoſed to be the produce of the tree which yields the terebinthina communis; and to concrete on the ſurface of the terebinthinate juice ſoon after it has iſſued from the plant.

FRANKLIN. A ſteward; a bailiff of land.

FREEHOLD. Lands or tenements held in fee.

FREEMARTIN. A barren heifer; a twin cow-calf is ſaid always to be a Freemartin.

FRENCH-BEAN. See Bean.

French *Barley.* See Barley.

French *Cowſlip.* Auricula.

French *Honeyſuckle,* [*Hedyſarum.*] There are ſeveral ſpecies of this plant, biennial and perennial; the biennial have large deeply ſtriking roots, upright, hollow, very branchy ſtalks, three or four feet high, bearing beautiful flowers in June and July, and ripening their ſeeds in Auguſt. They may be propagated by ſowing the ſeeds in March or April. They riſe the firſt year, flower the next, and then periſh.

Other ſorts are perennial in root, but annual in ſtalk and leaves. They are alſo propagated by ſeeds.

French *Lavender.* Caſſidony. See Cassidony.

French *Marygold.* See African Marygold.

French *Mercury.* A ſpecies of Mercury.

French *Willow,* [*Epilobium.*] Willow herb. There are ſeveral ſpecies of this plant growing wild in many parts of England, ſeldom cultivated in gardens. Of this ſpecies is the plant called *Codlins and Cream.*

FRIAR's COWL. Arum. See Arum.

FRINGE TREE, [*Chionanthus.*] Snowdrop tree. This ſhrub is a native of South Carolina, where it grows by the ſides of rivulets to the height of about ten feet, bearing thin leaves of the ſize of the laurel, and in May ſhewing forth beautiful cluſters of white fringed flowers.

This is a moſt beautiful ſhrub for the ornamental plantations of a pleaſure-ground, and may be propagated by layers or ſeeds: if by ſeeds, they ſhould be procured from America, which ſhould be as ſoon as they arrive, in large pots of freſh loamy earth, half an inch deep.

FRITH. An arm of the ſea running into land.

FRITILLARY. Crown imperial.

FROG-BIT, FROG-GRASS, } An herb.

FROUDIFEROUS. Bearing leaves.

FROST-NAIL. A nail with a prominent head, driven into a horſe's ſhoe, to prevent ſliding on the ice or ſnow.

FRUCTIFEROUS. Bearing fruit.

FRUCTUOUS. Fruitful.

FRUIT. The produce of a tree or plant, in which the ſeeds are contained.

FRUIT-TREE. The different kinds are—Almond, Peach, Nectarine, Hazel Nut, Filbert, Beech, Cheſnut, Fig, Walnut, Medlar, Mulberry, Plum, Apricot, Cherry, Pear, Apple, Quince, Currant, Gooſeberry, Raſpberry, Vine, and all their different varieties, ſome of which are almoſt without number.

FRUITERY. A fruit-loft: a repoſitory for fruit.

FRUIT-TIME. Autumn; time for gathering fruit.

FRUMENTY. Food made of wheat boiled in milk.

FRUSH, *Running Fruſh.* This is a ſcabby and ulcerous diſpoſition in the Fruſh, which ſometimes cauſes it to fall off by degrees. It may be known both by the eye and ſmell, reſembling that of old rotten cheeſe. It is not dangerous, but very troubleſome, as it cauſes a continual itching.

In order to the cure, you muſt pare the foot with your buttreſs as near as you can, then waſh the part with lime-water or alum-water hot; then apply a charge made of ſoot, vinegar, and the whites of eggs, and waſh the parts ſometimes with vitriol-water; at laſt, when you perceive the itching gone, pour melted tar all over the frog, and keep the foot clean from dirt and filth.

FUEL. Firing; fewel.

FULLER'S EARTH. A native earth found in many parts of England, and much uſed by fullers in cleaning and ſcouring their cloth. It is of a very fat nature, and very full of that vegetative ſalt that helps the growth of plants; and therefore may be uſed with advantage, where it is found in plenty on ſome ſorts of land.

FUMITORY, [*Fumaria.*] This is a common weed. There are ſeveral ſpecies of this plant, among which are the bulbous-rooted, pod-bearing, &c. which are cultivated in gardens for the ſake of variety.

FURLONG. The eighth part of a mile.

FURROW. A trench made by a plough.

FURZE. [*Ulex.*] Whins or Gorze. This plant propagates itſelf very faſt, by ſhedding its ſeeds, and where it is once rooted, it is difficult to eradicate. The only way to extirpate them, is by paring off, and burning the ſurface of the ground.

This is by ſo much the more adviſeable, as theſe ſeeds will otherwiſe remain a long while ſound in the earth, and grow whenever they are brought up by ploughing; and alſo becauſe the ſmalleſt fragments of this plant will ſtrike out freſh roots, and ſhoot up anew: but when a good thickneſs of the ſurface is pared off, and burnt, the ſeeds are ſo effectually deſtroyed, and the roots are killed to ſo conſiderable a depth, that neither can again give riſe to new plants; and if a few of theſe do appear, the ſummer fallow will put an entire end to their growth. Their increaſe may likewiſe be prevented by good manuring, with marle, chalk, or lime, eſpecially in ſandy ſoils, which are the moſt apt to produce this plant, and which are, at the ſame time, the moſt benefited by thoſe helps.

However, this very plant, formerly deemed a great nuiſance, is now cultivated to advantage on light, ſandy, dry ſoils, which would otherwiſe turn to little account. The tops of the common Engliſh furz, bruiſed a little, to take off, or to blunt their prickly tips, have been found to be excellent fodder, even for lean ſickly beaſts, and particularly horſes, which they have frequently recovered, and plumped up in a ſhort time. This cuſtom is much practiſed in ſeveral foreign countries, where furze is cultivated purpoſely for fodder, and the peaſant thinks it a happineſs, that his breaking their ſpikes with a mallet enables him to give this wholeſome green food to his cattle in the winter, when often no other ſucculent plant can be had fit for that uſe. The mills which Sir Capel Hanbury has lately erected for this end in Wales, with a patriotic ſpirit, well ſuited to his diſtinguiſhed zeal for the public welfare, will ſave the countryman that laborious taſk, and prove highly beneficial to thoſe who follow his judicious example.

When

When furze are raiſed on purpoſe for the food of cattle, and eſpecially on ſoils like the above-mentioned, their ſeeds ſhould be ſown in February, March, or April, and the ground ſhould be prepared as for barley. Six pounds of them will be ſufficient for an acre of land, and they ſhould be but barely covered over. The young plants muſt be preſerved from cattle during the firſt year, and they will be fit to mow or cut in the next. October is the proper time to begin cutting them. They will continue to ſhoot till Chriſtmas, and be fit for uſe till March. Horſes eat them as readily as they do hay, after they have been bruiſed, or pounded, ſo as to take off their ſharp points; and it is ſaid that an acre of ground will produce fifteen tons of this fodder, and that it will go as far as an equal quantity of hay. Some mix the bruiſed furze with chopped ſtraw; an hundred of ſtraw to a ton of furze; but only the growth of the year ſhould be cut for cattle.

Poor hungry gravelly ſoils, which would not have let for five ſhillings an acre, have been rendered worth 20s. an acre, by ſowing them with furze ſeed, in places where fuel has been ſcarce; this being frequently uſed for heating ovens, burning lime and bricks, and alſo for drying malt, but it is not worth cultivating in countries where fuel of any kind is cheap, or upon ſuch lands as will produce good graſs or corn.

Some years ago the common furze uſed to be ſown for hedges about fields, and where the ſoil was light, the plants ſoon became ſtrong enough for a fence againſt cattle; but as theſe hedges grow naked at the bottom in a ſhort time, and the plants frequently failed, ſo as to leave conſiderable gaps, this practice has of late been diſuſed. The ſpecies commonly called French Furze is the beſt for this purpoſe, becauſe it thickens more near the ground, and grows to a greater height: but its ſhoots are not tender enough for cattle to eat them. This is alſo conſidered as the moſt difficult to extirpate: though Mr. Bradley, who tells us he had ſeen fields of one hundred and fifty acres planted with it in Devonſhire, ſays, that it may be killed by cutting the woody ſtalks within a foot of the root in ſummer time; for that it will not then ſpring up again like the ſmall wild furze or whins, by which name Mr. Markham diſtinguiſhes the ſmaller from the larger ſort. This begins to blow in the middle of January, and continues in bloſſom all the ſummer; while the Engliſh furze does not bloom till towards the end of the ſpring, and finiſhes the bloſſoming at the ſame time as the other.

The Marquis of Tourbilly obſerves, that cows, oxen, and moſt other cattle, as well as horſes, feed heartily upon, and are well fed by, the bruiſed tops of furze; and that we may be ſure corn will do well where-ever this plant is met with: for be the ſurface of the ground what it will, the ſpontaneous growth of the furze always indicates a depth of good mould underneath; and the continual dropping and rotting of the leaves, will infallibly improve and enrich the ſurface. The flowers of the furze are excellent for bees.

FURY-BALL. A kind of fungus, which, when preſſed, burſts and ſcatters duſt.

FUZZEN. See FOISSEN.

G.

GABEL, A tribute or cuſtom paid to the king or lord; in France it is a tax upon ſalt.

GABLE. The end of a building where the rafters are upright from each ſide of which the roof deſcends.

GAD-FLY. A ſtinging fly.

GALAGE. A ſhepherd's clog.

GALE, [*Myrica.*] Sweet willow; candleberry myrtle. See CANDLEBURY TREE. There are ſeveral ſpecies propagated by cuttings.

GALANGAL, [*Galanga.*] This root comes to us in pieces ſcarce an inch long, and not half ſo thick, full of joints, with ſeveral circular rings on

the outſide; of an aromatic ſmell, and a bitteriſh, hot, biting taſte. Galangal is a warm, ſtomachic bitter: it has been frequently preſcribed in bitter infuſions, but the flavour it gives is diſagreeable, nor are the ſpirituous tincture or extract leſs naufeous.

Engliſh GALANGAL, [*Cynarus longus.*] This is a plant of the graminifolious kind; it is ſometimes found wild in marſhy places in England; the roots have been generally brought to us from Italy. This root is long, ſlender, crooked, and full of knots; outwardly of a dark-brown or blackiſh colour, inwardly whitiſh; of an aromatic ſmell, and an agreeable warm taſte; both the taſte and ſmell are improved by moderate exſiccation. Cyperus is accounted a good ſtomachic and carminative, but at preſent very little regarded.

GALBANUM. The concrete juice of an African plant, of the ferulaceous kind. This juice, as brought to us, is ſemipellucid, ſoft, tenaceous; of a ſtrong and to ſome unpleaſant ſmell. The bitter ſort is in pale-coloured maſſes, which, on being opened, appear compoſed of clear white tears. Geoffroy relates, that a dark greeniſh oil is to be obtained from this ſimple by diſtillation, which, upon repeated rectifications, becomes of an elegant ſky-blue colour. The purer ſorts of galbanum are ſaid by ſome to diſſolve entirely in wine, vinegar, or water; but theſe liquors are only partial menſtrua with regard to this juice; nor do ſpirit of wine, or oil, prove more effectual in this reſpect: the beſt diſſolvent is a mixture of two parts ſpirits of wine, and one of water. Galbanum agrees in virtue with gum ammoniacum; but is generally accounted leſs efficacious in aſthmas, and more ſo in hyſterical complaints.

GALLS, [*Gallæ.*] Theſe are excreſcences found in the warmer countries upon the oak tree: They are produced by a kind of inſect (which wounds the young buds or branches) and afterwards ſerve as a lodgment for its eggs; the animal within the gall, eats its way through; thoſe which have no hole are found to have the inſect remaining in them. The beſt galls come from Aleppo; theſe are not quite round and ſmooth like the other ſorts, and have ſeveral tubercles on the ſurface. Galls have a very auſtere ſtyptic taſte, without any ſmell; they are very ſtrong aſtringents, and as ſuch have been ſometimes made uſe of both internally and externally, but are not much taken notice of by the preſent practice.

GALL OAK. See OAK.

GALLERY. A kind of covered walk in a garden, formed into porticoes or arches, with horn-beams, lime-trees, or the like.

GALLING *of a Horſe's Back.* A diſorder occaſioned by heat, and the chafing or pinching of the ſaddle.

This ſeldom happens when the ſaddle fits, and is ſtuffed properly; when it does, the horſe ſhould not be rode afterwards. Rub the inſide of the ſaddle with hard-ſoap well; waſh the part with vegeto-mineral water.

GALLON. A meaſure of capacity both for dry and liquid things, containing four quarts; but theſe quarts, and conſequently the gallon itſelf, are different, according to the quality of the thing meaſured; for inſtance, the wine gallon contains 231 cubic inches, and holds eight pounds avoirdupoiſe of pure water: the beer and ale gallon contains 282 ſolid inches, and holds ten pounds three ounces and a quarter avoirdupoiſe of water; and the gallon for corn, meal, &c, $272\frac{1}{4}$ cubic inches, and holds nine pounds thirteen ounces of pure water.

GALLOWAY. A horſe not more than fourteen hands.

GALLOWS *of a Plough.* A part of the plough-head, ſo called by farmers, from its reſemblance to the common gallows, as conſiſting of three pieces of timber, of which one is placed tranſverſely over the heads of the other two.

GAMBOGE, [*Gambogia.*] A ſolid concrete juice, brought from the Eaſt-Indies in large cakes or rolls. Geoffroy ſeems particularly fond of this medicine, and informs us, that he has frequently given it, from two to four grains, without its proving at all emetic; that from four to eight grains, it both vomits and purges, without violence; that its operation is ſoon over; and that, if exhibited in a liquid form, and ſufficiently diluted, it ſtands not in need of any corrector; that, in the form of a bolus or pill, it is moſt apt to prove emetic, but very rarely has this effect, if joined along with *mercu-*

rius

rius dulcis. He nevertheleſs cautions againſt its uſe where the patient cannot eaſily bear vomiting.

GAME. Animals appropriated for hunting, ſhooting, &c.

GAME-COCK. A cock bred to fight.

GANDER. The male of the gooſe; one gander is enough for five geeſe.

GAP. A breach or opening made in a hedge.

GARBLING. Picking out the worſt from the beſt.

GARDENS are frequently diſtinguiſhed into flower-gardens, fruit-gardens, and kitchen-gardens: the firſt being deſigned for pleaſure and ornament, ſo ſhould be placed in the moſt conſpicuous parts, i. e. next to, or juſt againſt, the back front of the houſe; the two latter being principally intended for uſe and ſervice, are placed leſs in ſight.

Though the fruit and kitchen-gardens are often mentioned as two diſtinct gardens, and have by the French gardeners, as alſo by ſome of our own countrymen, been contrived as ſuch, yet they are now uſually in one; and with good reaſon, ſince they both require a good ſoil and expoſure, and to be placed out of the view of the houſe. As the kitchen-garden ſhould be incloſed with walls, that no perſon may have acceſs to it who have no buſineſs in it, for the ſake of preſerving the product, ſo theſe walls anſwer the purpoſes of both.

In the choice of a place to plant a garden, the ſituation and expoſure of the ground are the moſt eſſential points to be regarded; ſince, if a failure be made in that point, all the care and expence will in a manner be loſt.

The ſecond thing to be conſidered in chuſing a ſpot for a garden, is a good earth or ſoil.

It is ſcarce poſſible to make a fine garden in a bad ſoil; there are indeed ways to meliorate ground, but they are very expenſive; and ſometimes, when the expence has been beſtowed of laying good earth over the whole ſurface, the whole garden has been ruined, when the roots of the trees have come to reach their natural bottom.

The quality of good ground is neither to be ſtony or hard to work; neither too dry nor too moiſt, nor too ſandy and light, nor too ſtrong and clayey, which is the worſt of all for gardens.

The third requiſite is water. The want of this is one of the greateſt inconveniencies that can attend a garden, and will bring a certain mortality upon whatever is planted in it, eſpecially in the greater droughts that often happen in a hot and dry ſummer.

GARE. Coarſe wool.

GARGET, or GARGOL. A diſtemper incident to hogs, and is known by the creature's hanging down of his head, and carrying it on one ſide, moiſt eyes, ſtaggering, and loſs of appetite.

It is occaſioned by a corruption of the blood, engendered by the eating of rotton fruits, garbidge, carrion, or rank graſs, wherein is much hemlock, &c.

In order to cure this diſeaſe, let the creatures be firſt blooded both under the tail and under the ears, and then the following drink given them.

Take of chamber-lye one pint; rue and ſouthern-wood, cut ſmall, of each a handful; wood-ſoot from an oven, and common ſalt, of each a ſpoonful; hen's dung, near two ſpoonfuls; flour of brimſtone one ounce; ſtir the whole together, and give two or three horns to each, proportional to their ſize. It is alſo good for a cow to cure the gargle or murrain.

Or you may uſe the following drink in the room of the above:

Take angelica, rue, ſtave-wort, or hog's madder, and May-weed, of each one handful; ſhred them very ſmall, and boil them very well in a pint of milk, and when it is cold enough, add to it a pennyworth of ſallad-oil, and the ſame quantity of treacle.

GARGIL. A diſtemper in geeſe, and the worſt of any they can be ſubject to, ſtopping the head, and proving mortal to them: but the ordinary and certain cure is, to take three or four cloves of garlick, and beating them in a mortar with ſweet butter, make little long balls thereof, and give two or three of them at a time to the gooſe faſting, and let her be ſhut up cloſe for two hours after.

GARLICK. A well-known plant, cultivated in gardens, and eaſily propagated by parting the cloves or ſmall bulbs

bulbs of its root, and planting them in the ſpring, about four or five inches aſunder. They will thrive in almoſt any ſoil or ſituation; but in rich ground their increaſe will be ſurpriſing. About the beginning of June their leaves ſhould be tied in knots, to prevent their ſpindling or running to ſeed; and this will alſo tend to enlarge their bulks. As ſoon as their leaves begin to wither and decay, which will be about the middle of July, the roots ſhould be taken up, and kept dry for uſe.

There is a wild ſort of Garlick, called crow-garlick, or cow-garlick, that often does great damage to corn in dry ſandy grounds, but will not, according to Mr. Liſle, grow in clays. That gentleman tells us, that he knew a farmer in ſome of whoſe fields it grew in ſuch abundance, that his wheat taſted ſtrong of it, and was thereby damaged from ſixpence to a ſhilling in the buſhel.

Wild Garlick, Crow-garlick, cow-garlick, buckram. See Garlick.

GARNER. A granary, or repoſitory for corn.

GARTH. A yard or backſide; a little cloſe or homeſtead.

GARZIL. Hedging wood.

GATE. A frame of bars of wood, turning on hinges, to afford and obſtruct paſſage.

GATEWAY. The paſſage through gates.

GATTEN-TREE, } Dog-
GATTERIDGE-TREE, } wood; cornelian cherry-tree.

GAVEL. A row or ſwarth of corn-ground.

GAVELKIND. A cuſtom whereby the lands of the father are equally divided at his death among all his ſons.

GAVELOCK. A pitch or iron-bar for entering ſtakes into the ground.

GAWLE. Gale; candleberry-tree.

GAVLING. This is a diſtemper incident to dogs. The preſent cure is, to take May-butter, yellow wax, and a little unſlacked lime, beaten together like a ſalve, and to anoint the ſore place.

GAWN. A ſmall tub, or lading veſſel.

GEE. A word of encouragement to horſes, to make them go on.

GEERS. Harneſs.

GEESE. There are three or four diſtinct breeds of geeſe in different parts of the kingdom, though they are not ſo much regarded as the ſame kind of differences among other fowls.

The large grey gooſe that is bred in the fen countries, is preferable to any other kind both for fleſh and feather, and it grows to the biggeſt ſize of any. We have beſide this a ſmaller grey gooſe, and a ſmall dark-coloured.

This is to be obſerved, that ſome of theſe breeds are more under a neceſſity of water than the others. The ſmall-bodied dark-coloured gooſe, of which kind there are ſome almoſt black, will do where there is ever ſo little, but they are the leaſt profitable kind of any. The large grey gooſe requires moſt to have plenty of water; nor does it any where ſucceed ſo well as where there are running ſtreams: the leſſer grey, which is often pied, will do with leſs than this, though it will not thrive unleſs there be ſome plenty.

In the application of theſe diſtinctions to uſe, the farmer muſt obſerve, that if he will have many geeſe where there is not abundance of water, he ſhould chuſe the ſmall grey kind; but when he has water enough, let him always take care to breed the firſt-mentioned ſort, which is much the beſt.

Beſide water, a great advantage for the breeding of geeſe, is a good quantity of common: they will on theſe places provide for themſelves in a manner, without the regard or trouble of the owner; and it is on the common fen lands in Lincolnſhire, Somerſetſhire, &c. that they keep thoſe vaſt flocks or droves, as they phraſe it, of them, for the ſake of their feathers. They pull theſe in ſome places once, in others twice, a year, and find a ready market for their produce. They call this ſheering of their geeſe.

Nothing agrees ſo well with the nature of the gooſe as plenty of room, or a damp common. They will always breed of themſelves once a year, and in ſome places twice, bringing up the broods with leſs trouble or loſs than any other fowl whatever.

The general and natural time of the gooſe's breeding is in Spring, and the earlier the better for the owner. For this reaſon the farmer who keeps them about his houſe, will do well to beſtow ſome care and attention upon this head, although they would raiſe their broods if he did not.

Some

Some geeſe will not lay above nine or ten eggs; ſome will go as far as ſeventeen: they rarely exceed that number; and if they do, the beſt method is to take ſome of them away before they ſit. A gooſe will very well cover fifteen, ſeventeen is the utmoſt ſhe can; and there commonly is better huſbandry in ſetting her on fifteen, for when there are too many, they only cool one another.

There are two reaſons why that gooſe is beſt which lays earlieſt; the one is, that ſhe will ſet earlieſt, and the green geeſe will be ready in the deareſt ſeaſon; the other is, that ſhe has the beſt chance for a ſecond brood that year. But there are diſadvantages as well as conveniencies in this, for the eggs that are laid in a very cold ſeaſon rarely turn out to ſo good account as thoſe ſomewhat later.

When the gooſe is about laying, ſhe is ſeen to be carrying ſtraws about continually in her mouth. This is for the making her neſt, in which the owner will do well to aſſiſt her, eſpecially in the early broods. Let him find out for her a convenient place, warm and quiet, and let him there make her a neſt of ſtraw and nettle roots, whoſe ſmell ſhe likes, and it alſo does good to the young.

In this ſhe will lay; and when he obſerves ſhe continues upon the neſt ſome conſiderable time after ſhe has laid, it will ſtand as a proof that ſhe is about to ſet.

The gooſe ſhould be ſuffered to ſit upon her own eggs, for ſhe will not do it well if ſhe perceives any deceit in this, though they be of the ſame kind.

The geeſe ſucceed well enough that lay where none knows of it, yet they will be greatly aſſiſted, and the brood, from the ſame number of eggs, will always be larger, if the ſame ſort of care be taken of them that is allowed to other poultry at the time of their ſetting.

For this reaſon the careful houſewife will ſee when her gooſe riſes from the neſt, to ſet a quantity of proper food before her, that ſhe may find it without trouble, and ſome large veſſel of water, that ſhe may waſh herſelf. The beſt food is bran ſcalded, or oats. When ſhe ſets near a pond or river, ſhe ſhould not be hindered from bathing herſelf, for ſhe will not ſet kindly if ſhe be not allowed to follow nature; and this bathing of herſelf at large is much better for her than the waſhing in any veſſel that can be ſet; though that is a very needful expedient where other water is not near.

The time of a gooſe's ſetting is from ſix and twenty to thirty days, according to the ſeaſon. They generally ſet a day or two longer in colder than in warm weather, and ſometimes the difference amounts to three or four.

The beſt way of breeding up the goſlings from the egg is this:—Let them be kept within doors ten days, in which time they are to be fed with barley-meal in milk, or with ground malt, or bran ſcalded with milk. After this they ſhould be ſuffered to go out in the middle of the day, and at about a fortnight old, the gooſe ſhould be ſuffered to intice them to the water.

They are thus to be tended and fed occaſionally, till they have got ſtrength enough to defend themſelves againſt vermin, and are able to provide for themſelves after the example of their parents. For ſeveral days after their firſt going out, they ſhould be brought into the houſe at night, and ſhould have ſomebody to watch them, for they are poor defenceleſs creatures, and a prey to every thing; but when they are ſo far grown up as to feed well, and walk ſtoutly, they may be left without danger to ſhift for themſelves. With leſs care than this, broods of geeſe will often ſucceed very tolerably, but this is no great matter, and it in a manner enſures their ſafety.

There are two different periods at which the gooſe is fattened for the market; firſt, when it is very young; and, ſecondly, when it is grown. It is diſtinguiſhed at theſe times by two different names; at the one it is called the green gooſe, and at the other the ſtubble gooſe. For the preparing it in the moſt advantageous manner for either of theſe, it is to be fattened by a proper manner of feeding.

The right age for taking up the goſling in order to fatten it for a green gooſe, is at five weeks; ſome take it up at a month, and others at ſix weeks old, for this purpoſe, and either way does very well; but, for a general rule, the middle time between thoſe two is beſt. The proper food for them is ground malt, or oats boiled, given in

good plenty three times a day with milk, or milk and water for the drink. If they be ſhut up in a quiet dark place they thrive the faſter; and by this means they may be brought into excellent condition in a fortnight or three weeks.

For the fattening of the ſtubble gooſe, the ſame method and the ſame food are to be uſed, and in a fortnight or three weeks keeping, it will be ready for the market.

If, while a gooſe is in fattening, it nauſeates its food, and does not thrive as it ſhould, let there be ſet before it a diſh of ſmall and clean gravel. It will peck up this at times, and by that means recover its appetite.

GELDING. A caſtrated horſe.

GELTGIMMER. A barren ewe.

GELDER-ROSE, [*Viburnum.*] A ſpecies of Viburnum, or Way-faring tree. It is called Marſh-Elder, and grows naturally in marſhy grounds. It bears a globular flower. Another kind is a native of Carolina, which riſes with a ſhrubby ſtalk, to the height of eight or ten feet, with white flowers and red berries.

They are propagated chiefly by layers in autumn.

GENET. A ſmall-ſized well-proportioned Spaniſh horſe.

GENTIAN, [*Gentiana.*] This plant grows naturally in Switzerland and the mountainous parts of Germany. It grows to the height of four or five feet. The leaves are of an oblong oval ſhape, and bears yellow flowers, which come out in whirls at the joints. It grows likewiſe in ſome parts of England, but the dried roots are moſt commonly brought from Germany, &c. The root is a ſtrong bitter, and as ſuch very frequently made uſe of in practice. In taſte it is leſs exceptionable than moſt of the other ſubſtances of this claſs: infuſions of it, flavoured with orange peel, are ſufficiently grateful. It is the capital ingredient in the bitter wine, tincture, and infuſion of the ſhops.

A poiſonous root has been lately diſcovoured among ſome of the Gentian brought to London; the uſe of which occaſioned violent diſorders, and ſometimes death. This is eaſily diſtinguiſhable by its being internally of a white colour, and void of bitterneſs. This poiſonous ſimple ſeems to be the root of the Thora Valdenſis of Ray, the Acconitum Primum Pardalianches of Geſner; a plant, which Lobel informs us, the inhabitants of ſome parts of the Alps uſed formerly to empoiſon darts with.

There are ſeveral ſpecies of this plant, one of which grows naturally on the Alps, a low plant, bearing large bell-ſhaped deep azure flowers, and is called Gentianella.

GENTIANELLA, [*Gentiana Acaulis.*] Alpine Gentian. See GENTIAN.

GENUS. A claſs, a kind, comprehending many ſpecies.

GEOFE, or GOFE. A mow of hay or corn.

GEORGICS. Matters relating to Agriculture.

GERMANDER, [*Chamædrys.*] This is a low ſhrubby plant, growing naturally in France and Germany, having a few ſhort branches, with oval leaves, and reddiſh-coloured flowers. The leaves, tops, and ſeeds have a bitter taſte, with ſome degree of aſtringency and aromatic flavour. They are recommended as ſudorific, diuretic, and emmenagogue, and for ſtrengthening the ſtomach and viſcera in general. With ſome they have been in great eſteem in intermitting fevers; as alſo in ſcrophulous and other chronic diſorders.

Tree GERMANDER, [*Teuorium.*] A ſhrub growing in the South of France, &c. with a ſtalk riſing to the height of two or three feet, bearing flowers of a dirty white colour, propagated by cuttings planted in Spring.

Water GERMANDER, [*Scordium.*] This grows naturally in the Iſle of Ely, and ſeveral other fenny parts of England. It has hairy indented leaves, and purple flowers growing cloſe to the bottom of the leaves. It is a medicinal plant, and ſuppoſed to be deobſtruent, ſudorific, diuretic, &c. but preſent practice pays little regard to it.

GERM, } Bud, tender ſhoot.
GERMEN, } see Acrospire.

GHERKIN. A pickling cucumber.

GIBBE. A worn-out animal.

GIGGS. Small ſwellings or bladders on the inſide of the lips and palate of a horſe.

They are cured by ſlitting them open with a knife or lancet, and waſhing them afterwards with ſalt and vinegar.

GILL,

GILL. A rivulet. A quarter of a pint in meaſure.

GILL *go by the Ground.* Ground-Ivy.

Clove GILLYFLOWER. See CARNATION.

Queen's GILLYFLOWER. See DAME'S VIOLET.

Stock GILLYFLOWER, [*Cheiranthus.*] This is a very beautiful flower; the kinds are, 1. Wall flower, with its variations of dwarf yellow, large yellow, bloody, white, ſtraw-coloured, and variegated; 2. Hoary ſtock; 3. Ten weeks ſtock; 4. Dwarf or Virginia ſtock, with abundance of varieties.

The firſt ſpecies with all its varieties are robuſt buſhy evergreen triennials and perennials, flowering principally in May, June, and July, often exhibiting their flowery ſpikes two or three feet high. The ſingle ſorts produce plenty of ſeed, from whence both ſingle and double flowering plants are produced; the double kinds may be propagated by ſlips, cuttings, and layers, in May or June.

The hoary ſtock has ſeveral varieties, as red or Queen's ſtock; the ſcarlet or Brompton ſtock, which in its double ſtate makes a moſt noble and grand appearance, the flowers being often as large as ſmall roſes, numerous and cloſely placed, frequently growing to the height of four feet, and exhibiting a full bloom for five or ſix weeks. The purple or Twickenham ſtock, with purple ſingle and double flowers; and the white ſtock. All which are hardy evergreen biennials or perennials, blowing in May, June, and July; the ſingles produce plenty of ſeed in Autumn, from whence ſingle and double flowering plants are produced.

The varieties of the ten-weeks ſtock are, the common hoary leaved, and the wall flower leaved; theſe are annuals, and the ſingle ſorts produce plenty of ſeed in Autumn. They flower from July till Autumn.

Dwarf annual or Virginia ſtock ſeldom riſes more than ſix inches high, ſending out many branches from the root, which ſpread near the ground, and grow irregular.

They may all be propagated by ſowing the ſeeds in common ground in the ſpring, and afterwards tranſplanting; the beautiful double ſorts of the perennials may be propagated by cuttings, ſlips, or layers.

There may be reckoned ſome other ſpecies, but theſe are the moſt in requeſt.

The flowers of the wall-flower are ſaid to be cordial, anodyne, aperient, and emmenagogue.

GILL *run by the Street.* Soapwort.

GIMMER'S-LAMB. An ewe lamb.

GINGER, [*Zinziber.*] This plant is propagated by parting of the roots, but requires the aſſiſtance of a ſtove to preſerve it. It is a native of the Eaſt-Indies, but is now cultivated in the Britiſh colonies of the Weſt and the warmer parts of America. The roots are uſed in medicine, and for culinary purpoſes, as a warm aromatic.

Wild GINGER, [*Zerumbet.*] This plant grows naturally in India, the roots are larger than the true ginger, but knotted in the ſame manner; it is propagated as ginger.

GINSENG. A root brought to us from China and America; great virtues are aſcribed to it by the Aſiatics, as a cordial and reſtorative.

GIRASOLE. Turnſole.

GIRTH. The band of the ſaddle which fixes it on, going round the horſe's belly from ſide to ſide.

GIRTH. Compaſs; ſize round.

To GISE *Land.* To take cattle to feed. *To Agist. Second.*

GITH. Guinea pepper.

GLADE. A lawn or opening in a wood.

GLADEN. Sword graſs.

GLANDERS. A diſtemper in horſes which generally proves fatal. At firſt, when it is only an ozena, or ulcer of the internal membrane of the noſe, it is eaſily cured; but when of long continuance, it is very dangerous and contagious.

All horſes that are ſaid to die of the glanders, are in fact deſtroyed by a pulmonary conſumption, the lungs being deſtroyed. In the firſt ſtage of this malady the following remedy may be uſed:

Take a bundle of green aſh twigs about an inch diameter; burn them to a flaming coal on a clean hearth, then quench them in a gallon of beer, ſo as to make a ſtrong lye. Raiſe the horſe's head, and with a drenching horn pour three ſpoonfuls of it down each noſtril twice a day till he is well.

In the ſecond ſtage, when the lungs

are

are contaminated, this remedy cannot be pronounced effectual; in this caſe, the following has been often known to ſucceed:

Mix powder of myrrh, ginger, and ſulphur together in a warm meſh of bran; place this meſh in a little tub under the horſe's noſe without letting him eat it. Cover his head over with a blanket or rug ſo that all the air he breathes may be ſtrongly impregnated with the ingredients. When the meſh is grown cool enough, put it into a horſe-hair or cloſe bag, like thoſe the hackney coachmen uſe for feeding their horſes on their ſtands in London; draw the bag over the horſe's noſe, and tie it over his head.

By the time it is cold, have another ready to apply hot in the ſame manner, and repeat the proceſs ſix or eight times the firſt day. This will draw a large quantity of mucus (or ſlime) from the noſe of the beaſt, and greatly relieve him. Renew the application every third day, and it will generally prove effectual.

GLANDIFEROUS. Applied to trees bearing acorns or maſts, as oak, beech, &c.

GLASSWORT, [*Kali.*] The plant from whence pot-aſh is made. See ALKALINE SALT. It grows on the ſea coaſts in many parts of Europe.

GLASTONBURY THORN. This ſpecies of thorn produces ſome branches of flowers in winter, and flowers again in the ſpring, and in no other reſpect differs from the common hawthorn.

GLEANING. Picking up the ears of corn left behind by the gatherers.

GLEBE. Properly ſignifies the ſoil or ground in general; but is particularly applied to the land poſſeſſed as part of the revenue of an eccleſiaſtical benefice.

GLEN. A valley; a dale,

GLOBE DAISY, [*Globularia.*] Blue daiſy; there are ſeveral ſpecies of this plant growing naturally in Italy and Germany; the flowers grow on foot-ſtalks ſix inches high, of a globular form. They are propagated by parting the roots.

GLOBE CROWFOOT, [*Trollius.*] Globe ranunculus, Locker gowlans. A plant found wild in ſeveral counties of England and Wales, with a ſtalk riſing near two feet high, and bearing a large yellow flower, ſhaped like the crowfoot of a globular form; it flowers in May and June, and the ſeeds ripen in Auguſt.

GLOBE AMARANTH. *See* AMARANTHOIDES.

GLOBE THISTLE, [*Echinops*] There are three or four ſpecies which blow with blue or white globular flowers, propagated by ſeeds ſown in the ſpring. One ſort, a native of Greece, is beſt propagated by its creeping roots.

GLYSTER. *See* CLYSTER.

GOAD. A pointed inſtrumentto drive oxen.

GOAR VETCHES. Summer vetches. *See Tares.*

GOAT. A genus of animals, the characters of which are theſe: that it is covered with hair, not with wool; that its horns are leſs crooked than thoſe of the ſheep, and that it has a beard hanging down from its chin, and is of a ſtrong ſmell.

Goats may be of great advantage to the farmers in ſome parts of the kingdom, as they will live in rocky barren countries, where nothing elſe can get a ſupport for life. They will climb the ſteepeſt rocks, and there browſe upon briars, heath, and ſhrubs of various kinds, which other creatures will not taſte of. They will feed on graſs in paſtures; but as they love browſing on trees much better, great care muſt be taken to keep them from valuable plantations.

The greateſt advantage of theſe creatures is their milk, which they yield in large quantities; and which is accounted the beſt milk of all animals. They mix this and cow's milk together in many parts of the kingdom, and a very valuable kind of cheeſe is made of it. Beſides this, the kids or young goats are very fine food, and the beſt kinds bring forth two or three at a time, and that twice a year.

Goats hair is alſo valuable, and may be ſheared as the wool from ſheep, it is excellent for making ropes to be uſed in the water, as they will laſt a great while longer than thoſe made the common way. A ſort of ſtuff is alſo made of it in ſome places. The beſt kind of goats for keeping to advantage ſhould be choſen in this manner: the male ſhould have a large body, his hair ſhould

Goat's Beard - See under May weed, Barley -

ſhould be long, and his legs ſtrait and ſtiff; the neck plain and ſhort, the head ſmall and ſlender, the horns large, the eyes prominent, and beard long. The female ſhould have a large udder, with large teats, and no horns, or very ſmall ones. They ſhould be kept in flocks, that they may not ſtraggle; and they ſhould have good ſhelter both ſummer and winter, the heat and cold being both prejudicial to them. They ſhould be coupled in December, and ſhould have no litter in winter, but only a paved floor kept clean. The kids are to be brought up for the table in the ſame manner as our lambs are. They are recommended to lie among horſes, their ſmell, as ſuppoſed, preventing many diſtempers in thoſe cattle.

GOATS-BEARD, [*Tragopogon.*] There are ſeveral ſpecies of this plant growing wild in the meadows of England, Auſtria, and Germany, &c. the different ſpecies bear yellow and blue flowers; they are propagated by ſeeds.

GOATS RUE, [*Galega.*] This plant grows wild in Italy, and produces a kind of kidney ſhaped ſeeds. There are two or three kinds, but not much in eſtimation.

GOATS STONES. Fool ſtones, Orchis.

GOATS THORN. See *Tragacanth.*

GODSGOOD. Yeaſt, barm.

GOLD OF PLEASURE, [*Miſagrum.*] This is an annual plant growing naturally in the corn fields in the ſouth of France and Italy, with a ſtalk riſing to the height of eighteen inches or two feet, having looſe ſpikes of yellow flowers ſucceeded by capſules which are filled with red ſeeds. There are three or four ſpecies which are all propagated by ſeeds ſown in Autumn.

Golden Flower Gentle. Amaranthus.

GOLDEN ROD, [*Solidago.*] This plant is found wild on heaths and in woods, producing ſpikes of yellow flowers; in Auguſt the leaves have a moderately aſtringent bitter taſte, and are recommended in diſorders proceeding from a laxity of the viſcera. There are near thirty ſpecies of this plant cultivated in gardens, ſome of which flower in July, and others which continue in ſucceſſion till November and even till Chriſtmas. They are propagated by parting the roots, and by ſeeds ſown after they are ripe.

GOLDEN RENNET. An apple ſo called.

GOLDILOCKS. See *Caſſidony.*

GOLDING. An apple ſo called.

GOOLE. A ditch.

GOME. Coom.

GOOSE. *See* GEESE.

GOOSEBERRY TREE, [*Groſſularia.*] There are three or four different ſpecies and abundant varieties of this plant cultivated for the fruit. They are propagated by cuttings, the beſt time for which is in autumn.

American or *Barbadoes* GOOSEBERRY, [*Pareſcia.*] This is a trailing plant, which bears a fruit about the ſize of a walnut, having tufts of ſmall leaves on it, and a whitiſh mucilaginous pulp within. It may be propagated by cuttings during the ſummer months, but requires the aſſiſtance of the ſtove or bark bed during the winter months.

GOOSE GRASS. *See* CLIVERS.

GOOSE FOOT, [*Chenopodium.*] Wild orach. There are ſeveral ſpecies of this plant, ſome of which are very troubleſome weeds growing naturally on dunghills and in ditches in many parts of England; others, as the ſummer cypreſs, &c. are beautiful ornaments to a garden.

The oak of Jeruſalem, the oak of Cappadocia, Mexican orach, and ſtone crop tree, are all ſpecies of gooſe-foot.

GORZE, } Furze. *See* FURZE.
GOSS, }

GO TO BED AT NOON. Goats-beard.

GOULANS. Corn marygold.

GOURD, [*Cucurbita.*] The ſpecies are, 1. Long gourd; 2. Greater round gourd, or pompion; 3. Watery gourd; 4. Squaſh. The two firſt ſorts may be propagated by ſowing their ſeeds in April on a hot bed, and the plants tranſplanted on another moderate bed, where they ſhould be brought up hardily, and have a great deal of air to ſtrengthen them; and when they have got four or five leaves, they ſhould be tranſplanted into holes made upon an old dunghill, or ſome ſuch place, allowing them a great deal of room to run, for ſome of the ſorts will ſpread to a great diſtance.

There are ſeveral varieties of this fruit, which differ in their form and ſize, but they ſeldom continue to produce the ſame kinds of fruit for three years together.

The third ſort is very common in moſt parts of America, where it is cultivated

vated as culinary fruit; of this ſort there are alſo ſeveral varieties, which differ in their form and ſize; ſome of theſe are flat, others round; ſome are ſhaped like a bottle, and others are oblong, their outer cover or rind being white when ripe, and covered with large protuberances or warts. The fruit are commonly gathered when they are half grown, and boiled by the inhabitants of America to eat as a ſauce with their meat. The fourth ſort is alſo very common in North America, where it is cultivated for the ſame purpoſes as the third. This very often grows with a ſtrong, buſhy, erect ſtalk, without putting out runners from the ſide as the other ſorts, but frequently varies; for after it has been cultivated a few years in the ſame garden, the plants will become trailing like the others, and extend their branches to as great a diſtance.

Bitter GOURD. See *Bitter Apple*.

Indian Tree GOURD. Calabaſh tree. *See* CALABASH.

Sour GOURD, [*Adanſonia.*] Monkies bread. This tree was firſt deſcribed by Proſper Alpinus, in his book of Egyptian plants; but it is now known to grow in ſeveral other countries, particularly at Senegal in Africa, where there are many trees now growing, whoſe ſtems are of a much greater bulk than any other trees yet known. Mr. Adanſon, who was four years in that country, to examine the natural productions of it, meaſured the ſtems of ſeveral of theſe trees, which were from ſeventy-five to eighty feet in circumference; the greater branches of theſe trees, he ſays, are equal to the largeſt trees he had ever ſeen in Europe.

The fruit is almoſt as large as a man's head, the ſhell is woody and cloſe, having a greeniſh downy coat; it is divided into ten, twelve, or fourteen cells within, which contain a good number of kidney ſhaped ſeeds, as large as the tip of a man's little finger; theſe are cloſely ſurrounded with a mealy pulp of an acid taſte.

As this tree is a native of very hot countries, the plants will not thrive in the open air in England in ſummer, therefore they muſt be continually kept plunged in the bark bed in the ſtove; and in warm weather the freſh air ſhould be admitted to them every day, but in winter they muſt be kept warm; while the plants are in a growing ſtate, they muſt be frequently refreſhed with water, but when they are deſtitute of leaves, it muſt be given ſparingly, for too much wet will then rot their roots. It loves a light rich loamy ſoil.

Herb of GRACE. Rue.

GRAFTING. A mode of propagation particularly uſed for moſt ſorts of fruit trees, being the only certain method to continue the approved varieties in their kind, and is alſo uſed for propagating many ſorts of flowering ſhrubs and timber trees.

With reſpect to the ſtocks, or trees, on which to perform the operation of grafting, it is moſt commonly performed upon the ſtems of young trees, raiſed from the ſeed, layers or cuttings for that purpoſe; though they are the moſt commonly raiſed from ſeed, except in particular caſes; and when deſigned for the purpoſe of grafting upon, are always denominated ſtocks, which, when from about the ſize of a gooſe quill, to an inch or more in diameter, are of due ſize for receiving the grafts; obſerving that previous to the inſertion of the grafts, the head of each ſtock muſt be cut off, from within about ſix inches to as many feet of the ground, according whether the tree is deſigned for a dwarf, or a half, or full ſtandard; and one graft is commonly inſerted into each ſtock, though in large ſtocks ſometimes two or more grafts are inſerted: remarking, that if intended to raiſe dwarf trees, the ſtock, at the time of grafting, muſt always be headed down within a few inches of the ground, for the inſertion of the graft; and for ſtandards, the heading of the ſtock for the inſertion of the graft may either be near the ground, and train up one of the firſt ſhoots from the graft to form a ſtem; or if you deſign the ſtock to form the ſtem, as is common for ſtandard cherries, &c. it muſt be ſuffered to grow ſix or ſeven feet high, ſo head it at four, five, or ſix feet height for the reception of the grafts.

Grafting is alſo performed upon old trees, or ſuch as already bear fruit, particularly when it is deſigned to change the ſorts, or have more than one ſort on the ſame tree; or to renew the whole, or any particular branch of a tree; in either caſe, inſerting the graft

graft into the upright branches, ſometimes heading the branches down for its reception, and ſometimes inſerting it into their ſides without heading them down. But as there are five or ſix different methods of grafting, each is exhibited.

As to the method of raiſing the different ſorts of ſtocks for grafting, it is moſt commonly by ſeed, kernels, or ſtones of the reſpective fruits, ſowed in autumn or ſpring, in beds of good earth, covering them with mould about an inch or two deep, according to their ſorts or ſizes; they will come up early in ſummer, and be fit to plant in nurſery rows, two feet aſunder, in winter and ſpring following; and in the ſpring after, many of them will be fit to whip graft; but when they are from two to five or ſix years old, they will be ſuitable for one or other of the ſeveral methods of grafting.

Stocks are alſo ſometimes raiſed by layers and cuttings of the young ſhoots of particular trees of each reſpective genus, when deſigned to have ſtocks for grafting particular varieties of fruit upon.

Stocks are likewiſe raiſed from ſuckers ariſing from the roots of the trees of the reſpective ſorts, tranſplanting them into the nurſery in autumn; to remain a year or two, and then may be grafted.

The grafts or cions, with which the grafting is effected, are young ſhoots of the laſt ſummer's growth, for they muſt not be more than one year, and ſuch as grow on the outſide branches, and robuſt but moderate ſhooters, ſuch alſo as are firm and well ripened, ſhould always be choſen from healthful trees, obſerving, that the middle part of each ſhoot is always the beſt grafts; cut at the time of grafting, to five or ſix inches in length, or ſo as to have four or five good eyes or buds, but ſhould preſerve them at full length till grafting time, then prepared as hereafter directed.

They ſhould be collected or cut from the trees in February, in mild weather, before their buds begin to ſwell, or advance much for ſhooting: in collecting them, chuſe ſuch as have not made any lateral or ſide ſhoots; cut them off at full length, and if they are not to be uſed as ſoon as they are collected, lay their lower ends in ſome dry earth in a warm border till grafting time, and if ſevere weather ſhould happen, cover them with dry litter.

The proper tools and other materials uſed in grafting are,

A ſtrong knife for cutting off the heads of the ſtocks, previous to the inſertion of the graft, alſo a ſmall hand-ſaw for the occaſional uſe in cutting off the heads of large ſtocks.

A common grafting knife, or ſtrong ſharp penknife, for cutting and ſhaping the grafts ready for inſertion; alſo to ſlope and form the ſtocks for the reception of the grafts.

A flat grafting chiſſel and ſmall mallet for cleſting large ſtocks, in cleft-grafting, for the reception of the graft.

A quantity of new baſs ſtrings for bandages, for tying the grafted parts cloſe, to ſecure the grafts, and promote their ſpeedy union with the ſtock.

And a quantity of grafting clay, for claying cloſely round the grafts after their inſertion and binding, to defend the part from being dried by the ſun and wind, or too much liquified by wet, or pinched by cold; for theſe parts ought to be ſo cloſely ſurrounded with a coat of clay in ſuch a manner as effectually to guard them from all weathers, which would prove injurious to young grafts, and deſtroy their cementing property, ſo as to prevent the junction; therefore a kind of ſtiff loamy mortar muſt be prepared of ſtrong fat loam, or in default thereof, any ſort of tough binding clay, either of which ſhould be laid in an heap, adding thereto about a fourth of freſh horſe dung free from litter, and a portion of cut hay, mixing the whole well together, and add a little water, then let the whole be well beaten with a ſtick upon a floor, or other hard ſubſtance; and as it becomes too dry apply more water, at every beating turn it over, and always continue beating it well at top till it becomes flat; which muſt be repeated more or leſs according to the nature of the clay, but ſhould be ſeveral times beaten the firſt day; and next morning repeat the beating, ſtill moiſtening it with water, and by thus repeating the beating ſix or eight times every day for two or three days, or every other day at leaſt for a week, it will be in proper order for uſe; obſerving it ſhould be prepared a week at leaſt before

fore it is uſed, but if a month it will be better.

The ſeaſon for performing the operation of grafting is February and March, though when the work is performed in February, it for the general part proves the moſt ſucceſsful; more eſpecially for cherries, plumbs, and pears. March grafting is well adapted for apples.

There are different methods of grafting in practice, termed, whip grafting, cleft-grafting, crown-grafting, cheek-grafting, ſide-grafting, root-grafting, and grafting by approach or inarching, but whip grafting & cleft-grafting are moſt commonly uſed, and whip-grafting moſt of all, as being the moſt expeditious and ſucceſsful of any.

Whip-Grafting. This being the moſt ſucceſsful method of all grafting is the moſt commonly practiſed in all the nurſeries; it is always performed upon ſmall ſtocks, from about the ſize of a gooſe-quill, to half an inch or a little more or leſs in diameter, but the nearer the ſtock and graft approach in ſize the better; it is called whip-grafting, becauſe the grafts and ſtocks being nearly of a ſize, are ſloped on one ſide, ſo as to fit each other, and tied together in the manner of whips, or joints of angling rods, &c. and the method is as follows:

Having the cions or grafts, knife, bandages, and clay, ready, then begin the work by cutting off the head of the ſtock at ſome clear ſmooth part thereof; this done, cut one ſide ſloping upward, about an inch and half, or near two inches in length, and make a notch or ſmall ſlit near the upper part of the ſlope downward, about half an inch long, to receive the tongue of the cion; then prepare the cion, cutting it to five or ſix inches in length, forming the lower end alſo in a ſloping manner, ſo as exactly to fit the ſloped part of the ſtock, if cut from the ſame place, that the rinds of both may join evenly in every part; and make a ſlit ſo as to form a ſort of tongue to fit the ſlit made in the ſlope of the ſtock: then place the graft, inſerting the tongue of it into the ſlit of the ſtock, applying the parts as evenly and cloſe as poſſible; and immediately tye the parts cloſely together with a ſtring of baſs, bringing it in a neat manner ſeveral times round the ſtock and graft; then clay the whole over near an inch thick on every ſide, from about half an inch or more below the bottom of the graft, to an inch over the top of the ſtock, finiſhing the coat of clay in a kind of oval globular form, rather longways up and down, cloſing it effectually about the cion, and every part, ſo as no ſun, wet, or wind may penetrate, to prevent which, is the whole intention of claying; obſerving to examine it now and then, to ſee if it any where cracks or fails off, and if it does, it muſt be inſtantly repaired with freſh clay.

This ſort of grafting may be alſo performed, if neceſſary, upon the young ſhoots of any bearing tree, if intended to alter the ſorts of fruits, or have more than one ſort on the ſame tree.

By the middle or latter end of May, the grafts will be well united with the ſtock, as will be evident by the ſhooting of the graft; then the clay ſhould be wholly taken away, but ſuffer the baſs bandage to remain ſome time longer, until the united parts ſeem to ſwell, and be too much confined by the ligatures; then take the tying wholly off.

Cleft Grafting. This is called cleft-grafting, becauſe the ſtock being too large for whip-grafting is cleft or ſlit down the middle for the reception of the graft; and is performed upon ſtocks from about one to two inches diameter.

Firſt with a ſtrong knife cut off the head of the ſtock, or if the ſtock is very large, it may be headed with a ſaw; and cut one ſide ſloping upwards about an inch and a half to the top; then proceed with a ſtrong knife or chiſſel, to cleave the ſtock at top, croſs-way the ſlope, fixing the knife or chiſſel, towards the back of the ſlope, and with your mallet ſtrike it, ſo as to cleave the ſtock about two inches, or long enough to admit the graft, keeping it open with the chiſſel; this done, prepare the cion, cutting it to ſuch length as to leave four or five eyes, the lower part of which being ſloped on each ſide, wedge faſhion, an inch and a half, or two inches long, making one ſide to a thin edge, the other much thicker, leaving the rind thereon, which ſide muſt be placed outward in the ſtock; the cion being thus formed, and the cleft in the ſtock being made and kept open with the chiſſel, place the graft therein at the

the back of the ſtock the thickeſt ſide outward, placing the whole cut part down into the cleft of the ſtock, making the rind of the ſtock and graft join exactly; then removing the grafting chiſſel, each ſide of the cleft will cloſely ſqueeze the graft, ſo as to hold it faſt; it is then to be bound with a ligature of baſs, and clayed over, as obſerved in whip-grafting, leaving three or four eyes of the cions uncovered.

If intended to graft any pretty large ſtocks or branches by this method, two or more grafts may be inſerted in each; in this caſe the head muſt be cut off horizontally, making no ſlope on the ſide, but ſmooth the top, then cleave it quite acroſs, and place a graft on each ſide, as the ſtock may be cleft in two places, and inſert two grafts in each cleft; they are thus to be tied and clayed as in other methods.

This method of grafting may be performed upon the branches of bearing trees, when intended either to renew the wood, or change the ſort of fruit.

Towards the latter end of May, or the beginning of June, the junction of the graft and ſtock in either methods, will be effectually formed, and the graft begin to ſhoot, when the clay may be taken off, and in a fortnight or three weeks after, take off alſo the bandages.

Crown-Grafting. This kind of grafting is commonly practiſed upon ſuch ſtocks as are too large to cleave, and is often performed upon the large branches of apples and pear trees, &c. that bear fruit, when it is intended to change the ſorts, or renew the tree with freſh-bearing wood, and is termed crown-grafting, becauſe the ſtock or branch being headed down, ſeveral grafts are inſerted at top all around betwixt the wood and bark, ſo as to give it a crown like appearance; obſerving that this kind of grafting ſhould not be performed until March, or early in April, for then the ſap being in motion renders the bark and wood of the ſtock much eaſier to be ſeparated for the admiſſion of the graft.

The manner of performing this ſort of grafting is as follows:

Firſt cut off the head of the ſtock or branch with a ſaw horizontally, and pare the top ſmooth, then having the grafts, cut on one ſide of each flat, and ſomewhat ſloping, an inch and half long, forming a ſort of ſhoulder at top of the ſlope to reſt upon the crown of the ſtock; and then raiſing the rind of the ſtock with a wedge, ſo as to admit the cion between that and the wood two inches down, which done, place the grafts with the flat ſide next the wood, thruſting it down far enough for the ſhoulder to reſt upon the top of the ſtock, and in this manner may be put three, four, five, or more grafts in one large ſtock or branch.

When the grafts are all thus inſerted, let the whole be tied tight and well clayed, obſerving to leave two or three eyes of each graft uncovered, but raiſing the clay an inch above the top of the ſtock, ſo as to throw the wet quickly off, without lodging about the grafted parts, which would ruin the whole work.

Crown-grafting may alſo be performed, by making ſeveral clefts in the crown of the ſtock, and inſerting the grafts round the top into the clefts.

The grafts will be pretty well united with the ſtock, and exhibit a ſtate of growth by the end of May, or beginning of June, and the clay may then be taken away.

The trees grafted by this method will ſucceed extremely well, but for the firſt two or three years, have this inconvenience attending them, of being liable to be blown out of the ſtock by violent winds, which muſt be remedied by tying long ſticks to the body of the ſtock or branch, and each graft tied up to one of the ſticks.

Cheek-Grafting. Cut the head of the ſtock off horizontally, and pare the top ſmooth, then cut one ſide ſloping an inch and half, or two inches deep, and cut the lower part of the graft ſloping the ſame length, making a ſort of ſhoulder at top of the ſloped part; it is then to be placed upon the ſloped part of the ſtock, reſting the ſhoulder upon the crown of it, bind it with baſs, and finiſh with a covering of clay, as in the other methods.

Side-Grafting. This is done by inſerting grafts into the ſides of the branches without heading them down, and may be practiſed upon trees to fill up any vacancy, or may do it for variety, to have ſeveral ſorts of apples, pears, plumbs, &c. upon the ſame tree.

It is performed thus: fix upon ſuch parts of the branches, where wood is wanting

wanting to furniſh the head, or any part of the tree, there ſlope off the bark and a little of the wood, and cut the lower end of the grafts to fit the part as near as poſſible, then join them to the branch, and tye them with baſs, and clay them over.

Root-Grafting. This is done by whip-grafting cions upon pieces of the root of any tree of the ſame genus, and plant the root where it is to remain; it will take root, draw nouriſhment, and feed the graft.

Grafting by Approach, or *Inarching*. This ſort of grafting is, when the ſtocks deſigned to be grafted, and the tree from which you intend to take the grafts, either grow ſo near, or can be placed ſo near together, that the branch or graft may be made to approach the ſtock, without ſeparating it from the tree, till after its union or junction with the ſtock; ſo that the branch or graft being bent to the ſtock, they together form a ſort of arch; it is called grafting by approach or inarching, and as being a ſure method, is commonly practiſed upon ſuch trees as are with difficulty made to ſucceed by any of the former ways of grafting, as hinted in their propagation.

When intended to propagate any kind of tree or ſhrub by this method of grafting, if the tree, &c. is of the hardy kind, and growing in the full ground, a proper quantity of young plants for ſtocks muſt be ſet round it; and when grown of a proper height, the work of inarching muſt be performed, or if the branches of the tree you deſign to graft from are too high for the ſtocks, in that caſe ſtocks muſt be planted in pots, and a ſlight ſtage muſt be erected around the tree, of due height to reach the branches, and the pots containing the ſtocks muſt be placed upon the ſtage.

As to the method of performing the work, obſerve that in this method of grafting, it is ſometimes performed with the head of the ſtock cut off, and ſometimes with the head left on till the graft is united with the ſtock, though by previouſly heading the ſtock, the work is much eaſier performed; and having no top, its whole effort will be directed to the nouriſhment of the graft; having however the ſtocks properly placed, either planted in the ground, or in pots around the tree to be propagated; then make the moſt convenient branches approach the ſtock, and mark on the body of the branches the parts where they will moſt eaſily join to the ſtock, and in thoſe parts of each branch pare away the bark and part of the wood two or three inches in length, and in the ſame manner pare the ſtock in the proper place for the junction of the graft, then make a ſlit upward in the branch, ſo as to form a ſort of tongue, and make a ſlit downward in the ſtock to admit it; let the parts be then joined, ſlipping the tongue of the graft into the ſlit of the ſtock, making the whole join in an exact manner, and tye them cloſely together with baſs, and afterwards cover the whole with a due quantity of clay, as before directed in the other methods.

After this, let a ſtout ſtake be fixed if poſſible, for the ſupport of each graft, to which let that part of the ſtock and graft be faſtened, which is neceſſary to prevent their being diſjoined by the wind.

The operation being performed in ſpring, let them remain in that poſition about four months, when they will be united, and the graft may then be ſeparated from the mother-tree; in doing this, be careful to perform it with a ſteady hand, ſo as not to looſen or break out the graft, ſloping it off downwards cloſe to the ſtock; and if the head of the ſtock was not cut down at the time of grafting, it muſt now be done cloſe to the graft, and all the old clay and bandage muſt alſo be cleared away, and replaced with new, to remain a few weeks longer.

Obſerve, however, that if you ſhall think the grafs are not firmly united with the ſtock, in the period of time above-mentioned, let them remain another year till autumn, before you ſeparate the grafts from the parent-tree.

By this kind of grafting, you may raiſe almoſt any kind of tree or ſhrub, which is often done by way of curioſity, to engraft a fruit-tree upon any common ſtock of the ſame fraternity or genus, whereby a new tree bearing fruit is raiſed in a few months; this is ſometimes practiſed upon orange and lemon trees, &c. by grafting bearing branches upon ſtocks raiſed from the kernels of any of the ſame kind of fruit, or into branches of each other, ſo as to have oranges, lemons, and citrons all on the ſame tree.

GRAIN. A ſingle ſeed of corn. Corn in general.

Oily GRAIN, [*Seſamum.*] There are two or three ſpecies of this grain cultivated in the Levant and in Africa, as a pulſe, and within a few years carried into Carolina, as food for the negroes. It is an annual plant, riſing with a ſquare herbaceous ſtalk two feet high; the flowers terminate the ſtalks in looſe ſpikes, which are followed by an oval capſule with four cells which contain the ſeeds, that ripen in autumn.

They may be cultivated in England by ſowing the ſeeds in ſpring, and managing them as other tender exotics.

GRANARY. A repoſitory for corn.

GRANGE. A houſe or farm furniſhed with granaries and barns for holding corn, ſtables for horſes, ſtalls for cattle, &c.

GRANIFEROUS *Pods*, Are ſuch as contain ſmall ſeeds reſembling grain.

GRANIVOROUS. An epithet given to animals that feed on corn or ſeed.

GRAPES. The fruit of the vine.

Seaſide GRAPE, [*Coccoloba.*] This is a native of the Weſt-Indies, and the warmer parts of America; it grows upon the ſandy ſea-ſhores, from whence the inhabitants have given it the title of the ſea-ſide or mangrove grape: this ſends up ſeveral woody ſtalks from the root, which riſe eight or ten feet high, with a light brown ſmooth bark, garniſhed with leaves which are placed alternately; they are very thick and ſtiff, almoſt round, from five to ſeven inches diameter, of a lucid green on their upper ſide, and veined on their under, ſtanding upon ſhort foot-ſtalks. The flowers come out from the wings of the ſtalks; they are diſpoſed along the foot-ſtalk in long ſlender bunches, like thoſe of the common currant; theſe bunches are five or ſix inches long.

The flowers are white, and the petal is cut into ſix parts; theſe are ſucceeded by berries about the ſize of a common grape, of a purpliſh red colour, incloſing a nut of the ſame ſhape. There are two or three different ſpecies growing at Carthagena, La Vera Cruz, and Campeachy.

Theſe plants riſe eaſily from ſeeds, if they are ſown in pots, and plunged into a hot-bed of tan; but as they do not produce fruit in England, the ſeeds muſt be procured from the Weſt-Indies. When the plants are come up about two or three inches high, they ſhould be each tranſplanted into a ſeparate ſmall pot, and plunged into a freſh hot-bed of tan, where they muſt be ſhaded from the ſun until they have taken new root: after which they muſt be treated in the ſame manner as other tender plants from hot countries, giving them a proper ſhare of air in warm weather, and gently refreſhing them with water; but they ſhould not have too much wet, for they do not perſpire much, their leaves being of a very cloſe contexture. In autumn theſe plants ſhould be removed into the hot-houſe, and plunged into the bark-bed, otherwiſe they will not make great progreſs; therefore they ſhould always remain in the tan-bed, giving them plenty of air in ſummer when the weather is warm.

The leaves of theſe plants continue in verdure all the year, ſo make a fine appearance in the hot-houſe in winter.

GRAPE HYACINTH, [*Muſcari.*] Muſk hyacinth. This is a bulbous rooted plant growing naturally in France, Italy, and Germany, there are four or five ſpecies all eaſily propagated by off-ſets.

GRASS. A general name for moſt of the herbaceous plants uſed for feeding of cattle. See COUCH-GRASS, RYE-GRASS, CLOVER, SAINTFOIN, LUCERN, &c.

GRASS of PARNASSUS, [*Parnaſſia.*] This is a flowering plant met with in ſome meadows, and may be tranſplanted in pots into the garden, and if placed in a ſhady ſituation will flouriſh very well. It may be propagated by parting the roots.

Three-Leaved GRASS. Trefoil, or clover.

Five-Leaved GRASS. See CINQUEFOIL.

Viper GRASS, [*Scorzonera.*] This is a carrot rooted plant, with a ſtalk riſing about three feet, branching at top, and garniſhed with a few narrow leaves, the flowers, which are of a yellow colour, are ſucceeded by oblong cornered ſeeds, with a roundiſh ball of feathery down at top. The roots abound with a milky juice of a bitteriſh ſubacrid taſte; and hence may be of ſome ſervice, for ſtrengthening the tone of the viſcera, and promoting the fluid ſecretions. They were formerly celebrated as alexipharmacs, and for throwing

out the meaſles and ſmall-pox; but have now almoſt entirely loſt their character.

There are ſeveral ſpecies which may be all propagated by ſowing the ſeeds in April.

GRASS-LEASE. Graſs lands, or lands appropriated to graſs, for feeding of cattle.

GRATTEN. A term uſed in Cornwall, to imply the mowing of graſs, the firſt year after the land has been manured with ſea-ſand; and this operation they call mowing in gratten.

GRAVEL. A congeries of ſmall pebbles, which being mixed with a ſtiff loam, makes laſting and elegant walks in our gardens.

Opinions, with regard to the choice of gravel, are various; ſome are for having it as white as poſſible, and in order to render it the more ſo, cauſe the walks to be often rolled with ſtone-rollers, which add a whiteneſs to the ſurface. But this renders them very troubleſome to the eyes, by reflecting too ſtrongly the rays of light: ſuch gravel therefore, that will lie ſmooth, and reflect the leaſt, ſhould be preferred. Again, ſome ſcreen the gravel too fine, but this is an error; for if it be caſt into a round heap, and the great ſtones only are raked off, it will be the better. There are many kinds of gravel which do not bind, and by this means cauſe a continual trouble of rolling, to little or no purpoſe; as for ſuch, if the gravel be looſe or ſandy, you ſhould take one load of ſtrong loam and two of gravel, and ſo caſt them well together.

For the depth of gravel-walks, ſix to eight inches may do well enough; and a foot in thickneſs will be ſufficient for any; but then there ſhould always be a depth of rubbiſh laid under the gravel, eſpecially if the ground be wet.

Some turn up gravel-walks into ridges, in December, in order to kill the weeds; but this is very wrong, ſince it never anſwers the end; and therefore, if conſtantly rolling them after the rain and froſt will not effectually kill the weeds and moſs, you ſhould turn the walks in March, and lay them down at the ſame time.

In order to deſtroy worms that ſpoil the beauty of gravel or graſs-walks, ſome recommend the watering them with water made very bitter, by ſteeping walnut-tree leaves in it; but if, in the firſt laying of the walks, there be a good bed of lime-rubbiſh laid at the bottom, it will prove the moſt effectual method to keep out the worms, for they never harbour near lime.

GRAVELLY SOILS. Gravel is very frequent at ſmall depths in the earth, and ſometimes it is ſeen in the ſame manner in the ſurface: that is, naked, and without any mixture of earth. What is called gravel, is a cluſter or quantity of flints and pebbles. Theſe, when they happen to make the upper ſurface of the earth, lie in the place of a ſoil, though they cannot be called a ſoil properly. They can afford no nouriſhment for plants, nor do any grow wild among them, except upon the ſea-ſhore ſome few that have roots ſo long that they penetrate into the ground underneath, through a foot or two in depth of theſe looſe ſtones.

Such a covering of the earth therefore, compoſed of numbers of flints and pebbles alone is gravel: but, as in the former caſes, a gravelly ſoil is a compoſition of mould, ſand, clay, or ſome other ſubſtance with this gravel.

The ſoil thus compoſed, is diſtinguiſhed into ſeveral kinds, according to the nature of the earthy, or other matter that is mixed with it; and hence the farmers name theſe different kinds, clayey gravels, loamy gravels, or ſandy gravels.

The clayey gravels are a tough and diſagreeable ſoil. The pebbles break the ſubſtance of the clay, and give way for the rains to come in, and for the roots of plants to penetrate, but there wants a mixture of earth for the foundation and ſupport of the growth.

Theſe are beſt manured with marle, but a right kind is to be choſen. It muſt be the light brittle marle that moulders to powder in water. The larger ſtones are to be picked off theſe lands, and this dreſſing repeated at convenient times, and with this aſſiſtance, few ſoils exceed it in fertility.

Loamy gravels are in their nature preferable greatly to the former; they are a mixture of clay, ſand, fine earth, and pebbles: the larger ſtones are to be picked off from theſe, and the land is to be dreſſed in the ſame manner as the poorer ſort of loamy ſoils, as has been ſhewn already.

The ſandy gravels, when they are beſt

beſt, are but indifferent ſoils, that is, when there is the greateſt proportion of the fine earth mixed with the ſand, and the pebbles; but when they are poor in their kind, they are hardly worth cultivating, for the rain waſhes the ſand down among the pebbles, and the manure with it; and the ſoil gets into the condition of a native and naked gravel, ſuch as has been before mentioned.

If the farmer have ſuch land upon his hands, or chuſe to meddle with it, he muſt propoſe to be at a great deal of expence, before he can expect any conſiderable return. The only reaſonable way of going about an improvement, is firſt to make a loam of it, and then to enrich it with dung and other materials.

This is the view he muſt have in his work, and to this purpoſe he muſt begin by dreſſing it with clay. This he muſt take care to incorporate well with the ſand and pebbles, and when he has made it as it were a different ſoil by theſe means, he muſt dung it well, for now it will hold the manure; or if marle can be had, that will be an excellent dreſſing.

In Bedfordſhire, where they have ſome clayey gravels, they dreſs them in a different way from all thoſe hitherto named. Their manure is chalk, and they blend this well with the ſoil by frequent ploughings. Experience ſhews this to be no bad method, and upon a fair compariſon between the crops of theſe lands, and of thoſe of a like nature dreſſed with marle, the difference appears to be, that the effect of the marle is greater at firſt, but that of the chalk is more laſting. The farmer therefore who has both theſe kinds of dreſſings in his power, is to be guided in the choice by his own circumſtances.

They have an opinion, that the effect of chalk, though it laſts ſo long, is fatal to the land in the end; but this is a miſtake. It is owing either to their not ſeeing far enough before them, or to their ignorance of a proper management at the end of the time.

It is true, that the ſtrength which chalk gives to a clayey gravel, though it laſts a great while, does not hold for ever: but is this a wonder? to be ſure land dreſſed any way will wear out at laſt, but when it comes to this, let it be laid down for clover or ray-graſs; and proceed as before directed.

The farmers ſeeing the effect of chalk ſo great, think it will hold for ever, and their own folly is the cauſe of the complaint.

In general, the gravelly ſoils need leſs ploughing than many others. Thoſe of the clayey kind demand more than the reſt; the ſandy very little. They are all forward ſoils, but in different degrees according to their natures: the ſandy gravel puſhes the growth as much as any whatſoever. It requires a great deal of care in dreſſing, but when that is done it anſwers very well: it is a light ſweet ſoil, and is hurt by much ploughing.

The expenſive warm dreſſings brought from London, ſuch as horn-ſhavings, coney-clippings, and the like, lie a great while in theſe ſoils, and continue their efficacy. On the other hand, the folding of ſheep on them takes the quickeſt effect, but it is the ſooneſt exhauſted. The farmer who attends to this, will ſee that there is no giving a general advice on this head, but that he muſt conſider his own ſituation, as well as the condition of the ſoil. One manure may be proper if he be like to hold the land a great while, another if his time be uncertain, for there is no occaſion that he ſhould be at a great expence, for his ſucceſſor to reap the profit, as often happens.

Where the gravel is ſandy and with a little clay, the beſt dreſſing of all others is pure ſoft mud from the cleaning of ditches: when the clay is in a greater proportion, marle is better; and when yet more, then chalk is to be uſed as ſaid before.

GRAY. A colour; a mixture of white and black.

GRAYMILL. Gromwell.

GREASE. When a horſe's heels are firſt obſerved to ſwell in the ſtable, and ſubſide, or go down on exerciſe, let care be taken to waſh them very clean every time he comes in, with ſoap-ſuds, chamber-lye, or vinegar and water, which, with proper rubbing, will frequently prevent or remove this complaint: or let them be well bathed twice a day with old verjuice, or the following mixture, which will brace up the relaxed veſſels; and if rags dipped in the ſame are rolled on, with a proper bandage for a few days, it is moſt likely the ſwellings will ſoon be removed by this method only, as the

See Pitch, Tar-Coom-Sheep-Marking &c.

bandage will ſupport the veſſels till they have recovered their tone. To anſwer this end alſo, a laced ſtocking, made of ſtrong canvaſs, or coarſe cloth, neatly fitted to the part, would be found extremely ſerviceable, and might eaſily be contrived by an ingenious mechanic.

Take rectified ſpirit of wine four ounces, diſſolve it in half an ounce of camphor, to which add wine-vinegar, or old verjuice, ſix ounces; white vitriol, diſſolved in a gill of water, one ounce; mix together, and ſhake the phial when uſed.

But if cracks or ſcratches are obſerved, which ooze and run, let the hair be cliſt away, as well to prevent a lodgment (which becomes ſtinking and offenſive by its ſtay) as to give room for waſhing out dirt or gravel, which, if ſuffered to remain there, would greatly aggravate the diſorder.

When this is the caſe, or the heels are full of hard ſcabs, it is neceſſary to begin the cure with poultices, made either of boiled turnips and lard, with a handful of linſeed powdered, or oatmeal and rye-flour, with a little common turpentine, and hog's lard, boiled up with ſtrong beer grounds, or red wine lees. The digeſtive ointment being applied to the ſores for two or three days, with either of theſe poultices over it, will, by ſoftening them, promote a diſcharge, unload the veſſels, and take down the ſwelling, when they may be dried up with the following:

Take white vitriol and burnt allum, of each two ounces; Ægyptiacum one ounce; lime water, a quart, or three pints: waſh the ſores with a ſponge dipped in this, three times a day, and apply the common white ointment, ſpread on tow; to an ounce of which may be added two drams of ſugar of lead.

Or the following waſh and ointment may be uſed for the purpoſe:

Take half an ounce of Roman vitriol, diſſolved in a pint of water; then decant off the clear into a quart bottle, add half a pint of camphorated ſpirits of wine, the ſame quantity of vinegar, and two ounces of Ægyptiacum.

Take honey four ounces, white or red lead powdered two ounces verdigreaſe in fine powder one ounce; mix together.

Some, for this purpoſe, apply allum-curd; others a ſtrong ſolution of allum in verjuice, with honey; and many of theſe forms may be eaſily contrived. But let it be remembered, that as ſoon as the ſwelling is abated, and the moiſture leſſened, it would be very proper to keep the legs and paſterns rolled up with a firm bandage, or linen roller, two or three fingers wide, in order to brace up the relaxed veſſels, till they have recovered their natural tone.

GREEK VALERIAN, [*Polemonium.*] This plant hath winged leaves, which are compoſed of ſeveral pair of lobes placed alternately. The ſtalks riſe near a foot and a half high; they are hollow, channelled, and are garniſhed with winged leaves, of the ſame form with the flower, but decreaſe upward in their ſize; they are terminated by bunches of flowers, ſome are white and others blue, which ſit very cloſe; they have one petal, which has a ſhort tube, cut into five roundiſh ſegments at top; they are of a beautiful blue colour and have each five ſtamina, which are terminated by yellow ſummits. Theſe flowers appear the latter end of May, and are ſucceeded by oval acute-pointed capſules, with three cells, filled with irregular ſeeds, which ripen in Auguſt.

There is a ſort with creeping roots growing naturally in North America. They are propagated by ſowing the ſeeds in the ſpring.

GREEN-HOUSE. A garden building fronted with glaſs, ſerving as a winter reſidence for tender plants from the warm parts of the world.

A very conſiderable ſhare of the vegetable creation grow naturally in diſtant warm climates in open fields, &c. at all ſeaſons, which in their culture in this climate require protection in winter; obſerving, however, thoſe of the green-houſe department being only from the warmer parts of the world, require protection only from froſt, not needing aid of artificial heat, like ſtove-plants, from the hotteſt regions, except in very intenſe weather; when the aid of a moderate fire, burning either within the houſe, or in a furnace without, in the end or back wall, communicating

communicating the heat to flues or funnels ranged along the inside. Tho' there may not be occasion for any fire once in two or three years, yet it is advisable in constructing a green-house to erect flues to use occasionally, which will prove serviceable, not only in severe frosts, but also in long moist foggy weather; a moderate fire now and then will dry up the damps, which would otherwise prove pernicious to several of the tender kinds of plants.

Every good garden should be furnished with a green-house well supplied with exotic plants, and some care and taste is required in the selection of the proper plants.

A green-house should generally stand in the pleasure ground, and if possible, upon a somewhat elevated and dry spot, full to the south, and where the sun has full access from its rising to setting; the building is commonly of brick or stone, having the front almost wholly of glass-work: and must range lengthways east and west, with the front directly facing the south, and should generally be constructed upon an ornamental plan. As to its general dimensions, with respect to length, width, and height, it may be from ten to fifty feet or more long, according to the number of plants you design it shall contain; and its width may be from ten or fifteen to twenty-four feet; tho' for a middling house fifteen or eighteen feet is a sufficient width; and its height in the clear should be nearly in proportion to the width: but as to the erecting rooms over it, as is commonly directed, I should advise to have none, as being not only an unnecessary expence, but gives the building a heavy look, for all garden buildings should have a light airy appearance.

The walls in the back and ends should be carried up two bricks, or about eighteen inches thick; though if the building is to be more than fifteen feet high, the walls should be two bricks and a half thick; and at one end of the back wall, without side, it is eligible to erect a furnace for burning fires occasionally, as before observed, communicating with flues within, ranging in three or four returns along the back-wall, also one flue running along the front and end walls, close to or just under the floor; all of which will be extremely serviceable in time of intense frosts, and very damp foggy weather; and as to the front of the building, it should have as much glass as possible, and a wide glass door should be in the middle, both for ornament and entrance, and for moving in and out the plants; and it would be convenient to have also a smaller private door at one end; the width of the windows for the glass sashes, may be five or six feet, and the piers between the sashes may be either of timber, six, eight, or ten inches wide, according to their height, or if of brick or stone work, must be two feet wide at least, to be duly substantial, sloping both sides of each pier inward, that by taking off the angles, a freer admission may be given to the rays of the sun: for the same reason have the bottom of the sashes to reach within a foot of the floor of the house, and their top reach almost as high as the cieling; and if brick or stone piers two feet wide, shutters may be hung within side to fall back against each pier: the roof may either be half glass-work, next the front, the other half slated, especially if the upright or front piers are of timber; and shutters to cover the top glasses may be contrived to slide under the slated roof: but if the piers are of brick or stone, it is common to have the roof entirely either slated or tiled, but slating is the most ornamental, either for a half or whole roof; and the ceiling within should be lathed, and which, as well as the whole inside wall, should be well plaistered and white-washed.

But in the modern construction of green-houses, in order to have as much glass as possible in front, the piers between the sashes are commonly made of timber only, from six to eight or ten inches thick, according to the height, so as to admit as great a portion of light and heat of the sun as may be; and on the same consideration, continue glass work sloping half way up the roof, the other half slated, as before observed; and sliding shutters also contrived to slide under the slated roof, to draw down occasionally in severe weather, or in time of hail storms, to defend the glasses; and for the front, may have either wooden or canvas shutters, or large canvas cloths upon rollers to let them down occasionally, or in default thereof, nail up garden-mats in severe weather.

Some-

Sometimes green-houſes for large collections of plants have two wings, of ſmaller dimenſions, added to the building, one at each end, in a right line, ſeparated ſometimes from it by a glaſs partition, with ſliding ſaſhes for communication, and the front almoſt wholly of glaſs-work, and half glaſs roofs as above hinted; thus by theſe additional wings, the green-houſe conſiſts of three diviſions, whereby the different qualities and temperatures of the various plants can be more eligibly ſuited. The middle or main diviſion may be for all the principal and more hardy, woody or ſhrubby kinds, which require protection only from froſt; one of the wings may be appropriated for the ſucculent tribe, and the other wing for the more tender kinds that require occaſional heat in winter, yet can live without the conſtant heat of a ſtove.

On whatever plan the green-houſe is conſtructed, let the whole inſide, both cieling and walls, be neatly finiſhed off with plaiſter and white-waſh, and all the wood work painted white; and the bottom paved with large ſquare paving tiles.

The neceſſary utenſils of the green-houſe are principally ſome treſſels or ſtands for the ſupport of boards, on which to arrange the pots of plants, ſo as to have their heads range in a gradual ſlope from the back part to the front; but as ſome of the plants may be tall and in large tubs, and either do not require ſtands, or cannot be eaſily placed thereon, ſuch muſt be regulated as you ſhall ſee convenient.

GREEN-BROOM. *See* BROOM.

GREEN-GOOSE. A young gooſe.

GREEN SCOURING. A diſeaſe to which ſheep and bullocks are very often ſubject. The beſt remedy for this diſorder is verjuice; a wine glaſs is enough for a ſheep, and a pint for a bullock.

Winter GREEN, [*Pyrola.*] This hath a perennial root, from which ſpring out five or ſix roundiſh leaves about an inch and a half long, and almoſt as broad, of a thick conſiſtence, of a deep lucid green, and entire, ſtanding upon pretty long foot-ſtalks. Between theſe ariſe a ſlender upright ſtalk near a foot high, naked great part of the length, ending in a looſe ſpike of flowers, which are compoſed of five large, concave, white petals, ſpreading open like a roſe, but the two upper leaves are formed into a kind of helmet. In the center is ſituated a crooked pointal, bending downward, attended by ten ſlender ſtamina, terminated by ſaffron-coloured ſummits.

There are ſeveral ſpecies growing naturally in America, and all of them very difficult to cultivate; for being removed from the barren ſoil where they generally grow to a better, they ſeldom laſt long.

GREEN-GAGE. A plumb ſo called.

GREEN-SWARD. Graſſy turf.

GREEN-WEED. Dyers weed.

GRICE. A little pig.

GRIN. A feton made to diſcharge like an iſſue.

GRIP. A ſmall ditch, cut acroſs a meadow or ploughed-field, in order to drain it. It is otherwiſe called a water-furrow.

GRIP. A handful of corn when reaping.—The corn is in *grip* when the handfuls are lying down before it is tied up in ſheaf.

GRIPES. *See* CHOLIC.

GROATS. Unground oats, when the huſks are off; unbroken oatmeal.

GROMWELL, [*Lithoſpermum.*] A plant found wild in dry fields and hedges. Its ſeeds are roundiſh, hard, of a whitiſh colour, like little pearls; and from theſe circumſtances have been ſuppoſed peculiarly ſerviceable in calculous diſorders. Their taſte is merely farinaceous. The bark of the root gives a purple tincture, but the colour does not long remain. There are ſeveral ſpecies all propagated by ſeeds.

GROSE. Twelve dozen, 144.

GROTTO, } A cave made for plea-
GROT, } ſure.

GROVE. A ſmall wood impervious to the ſun.

GROUND. A field. A general name for land, be the ſoil what it will. See CLAY, SAND, GRAVELLY SOIL.

GROUND-IVY, [*Hedera terreſtris, Glechoma.*] This plant goes by many names, as Ale-hoof, Turn-hoof, Gill-go-by-the-ground, &c. Ground-ivy is a low plant, frequent in hedges and ſhady places. It has an aromatic, tho' not very agreeable ſmell; and a quick, bitteriſh, warm taſte. This herb is an uſeful corroborant, aperient, and detergent; and hence ſtands recommended againſt laxity, debility, and obſtructions of the viſcera: ſome have had a great opinion of it for cleanſing and healing

healing ulcers of the internal parts, even of the lungs; and for purifying the blood. It is cuſtomary to infuſe the dried leaves in malt liquors under the name of gill ale, which it readily communicates its virtue to, and likewiſe helps to fine them down: ſcarce any other herb has this effect more remarkable than ground-ivy.

GROUND PINE, [*Chamæpitys.*] This is a low hairy plant, clammy to the touch, of ſtrong aromatic reſinous ſmell, and a bitter roughiſh taſte. It is recommended as an aperient and vulnerary, as alſo in gouty and rheumatic pains.

GROUNDSEL, [*Erigerum.*] This is a common weed, which, notwithſtanding its being annual, is met with at all times of the year. The juice, or an infuſion of it in ale, is generally ſaid to be a mild and ſafe emetic; but unleſs taken in very large quantities, it has no effect this way. The freſh herb, beat into a very coarſe pulp, and applied externally cold, to the pit of the ſtomach, is ſaid by ſome to occaſion ſtrong vomiting: but we, with Haller, think that this notion is founded on an erroneous experiment.

GROUNDSEL, [*Senecio.*] There are a great number of plants under this name brought from different parts of the world, and cultivated in botanic gardens, which are eaſily propagated by ſeeds and parting the roots. Some are tender and require to be kept in a green-houſe.

African GROUNDSEL, [*Cacalia.*] Alpine coltsfoot.

GRUB. The name of a large maggot, produced from the eggs of a certain ſpecies of butterfly. It is of a large ſize, and often does great injury to the corn by undermining it, and preying on its roots. It produces the beetle, and is by ſome called the rook worm, becauſe rooks are particularly fond of it. The beſt way of deſtroying the grub, is good and frequent ploughings,* which will clear the ground, however infeſted with this inſect, for ſome years at leaſt.

GRUBBING. The clearing of lands from the roots and ſtumps of trees, buſhes, &c.

Mr. Worlidge rightly obſerves, that the beſt and cheapeſt method of grubbing up thorny ſhrubs, broom, graſs, &c. is ingeniouſly delivered by Gabriel Platt. The inſtrument he has recommended for this purpoſe reſembles a 3-grained dung-fork, but much larger and ſtronger, according to the bigneſs of the ſhrubs, &c. the ſtale thereof reſembling a large and ſtrong lever. This inſtrument being placed about half a foot or any other reaſonable diſtance from the root of the ſhrub, &c. and driven to a good depth, with a ſtrong hedging beetle, then raiſed by laying under it a ſtone or log of wood, it is pulled down by means of a rope faſtened to the upper end of the ſtale, and the whole buſh wrenched up by the roots.

GUAVA, [*Pſidium.*] The common red guava hath a pretty thick trunk, which riſes twenty feet high, covered with a ſmooth bark; the branches are angular, garniſhed with oval leaves, having a ſtrong midrib, and many veins running toward the ſides, of a light green colour, ſtanding oppoſite upon very ſhort foot-ſtalks. From the wings of the leaves the flowers come out upon foot-ſtalks, about an inch and a half long.

After the flower is paſt, the germen becomes a large oval fruit, ſhaped like a pomegranate, having one cell, crowned by the empalement of the flower, and filled with ſmall ſeeds: the fruit when ripe has an agreeable odour. They are much eaten in the Weſt-Indies, both by men and beaſts; and the ſeeds, which paſs whole through the body, and are voided with the excrement in hot countries, grow, whereby the trees are ſpread over the ground where they are permitted to ſtand. This fruit is very aſtringent, and nearly of the ſame quality with the pomegranate, ſo ſhould be avoided by thoſe perſons who are ſubject to be coſtive.

The large white ſort grows naturally in the iſlands of the Weſt-Indies, and is often found intermixed with the former, ſo is ſuppoſed to be only an accidental variety ariſing from the ſame ſeeds. This differs from the former, in the colour of the midrib of the leaves, which in this are pale, but thoſe of the former are red. The flowers and fruit of this are larger, and the inſide of the fruit is white.

The leaves of the ſmall white guava are like thoſe of the larger, but the branches of the tree are not ſo angular; the flowers are much ſmaller, and the fruit is no larger than a middling gooſeberry,

gooſeberry, but when ripe, has a very ſtrong aromatic flavour. This flowers in June, and the fruit ripens in autumn.

Theſe plants are propagated by ſeeds, which when brought over in the entire fruit, gathered full ripe, as will more certainly ſucceed; theſe ſhould be ſown in pots filled with kitchen garden earth, and plunged into a hot-bed of tanners bark; in about ſix weeks the plants will appear (if the ſeeds are good) when they muſt have free air admitted to them, in proportion to the warmth of the ſeaſon; when the plants have obtained ſtrength enough to be removed, they ſhould be each planted in a ſmall pot, filled with the like earth, and plunged into a freſh hot-bed, ſhading them from the ſun until they have taken new root; then they ſhould have a large ſhare of free air admitted to them every day in warm weather, to prevent their drawing up weak; they muſt alſo be frequently refreſhed with water in ſummer. In the autumn they muſt be plunged into the tan-bed in the ſtove: during the winter they ſhould be kept in a moderate warmth and not have too much water; in ſummer they will require plenty of wet, and in hot weather a great ſhare of air. With this management the plants will produce flowers & fruit the third year, and may be continued a long time.

GUAIACUM, [*Guaiacum.*] Lignum vitæ, pockwood. A tree growing in many parts of the Weſt-Indies, the wood is very ponderous, of a cloſe compact texture; the outer part is of a yellow colour, the heart of a deep blackiſh green, or variegated with black, green, pale, and brown colours: the bark is thin, ſmooth, externally of a dark greyiſh hue: both have a lightly aromatic, bitteriſh, pungent taſte; the bark is moſt acrid and ungrateful. The reſin (which exudes from inciſions made in the trunk of the tree) is brought to us in irregular maſſes, uſually friable, of a duſky greeniſh, and ſometimes of a reddiſh caſt, with pieces of the wood among them: its taſte is more acrid and pungent than that of the wood or bark. Their general virtues are thoſe of a warm ſtimulating medicine: they ſtrengthen the ſtomach and other viſcera, and remarkably promote the urinary and cuticular diſcharge: hence in ſcorbutic, cutaneous, and other diſorders proceeding from obſtructions of the excretory glands, and where ſluggiſh ſerous humours abound, they are eminently uſeful: rheumatic and other pains have often been relieved by them. The reſin is the moſt active of theſe drugs; and the efficacy of the others depends upon the quantity of this part contained in them; the reſin is extracted from the wood in part by watery liquors, but much more perfectly by ſpirituous ones; the latter elevate nothing in diſtillation; with the former a ponderous eſſential oil ariſes, poſſeſſing the odour and flavour of the guaiacum; hence the watery extract of this wood, kept in the ſhops, proves not only leſs in quantity, but conſiderably weaker than one made with ſpirit. This laſt extract is of the ſame quality with the native reſin, and differs from that brought to us only in being purer.

This tree is propagated by ſeeds as other tender exotics.

GUINEA CORN. See Millet.

Guinea Henweed, [*Petiveria.*] This is a very troubleſome weed in the Weſt-India iſlands, it has a ſtrong fœtid ſmell on being handled; where wanted for curioſity it may be propagated by ſeeds ſown on a hot bed in the ſpring and afterwards inured to the air by degrees.

Guinea Pepper. See Capſicum.

Guinea Wheat, [*Zea.*] Maize, Indian corn, Turkey corn. It is called by the natives of America weachin. The ear is a ſpan long, compoſed of eight or more rows of grain; according to the quality of the ſoil, and about thirty grains in a row; ſo that each ear at a medium produces about two hundred and forty grains, which is an aſtoniſhing increaſe; it is of various colours, red, white, yellow, black, green, &c. and the diverſity frequently appears, not only in the ſame field, but in the very ſame ear of corn, though white and yellow be the moſt common; ſtrong thick huſks ſhield the tender ear from cold and ſtorms, and in many of the provinces of North-America, the ſtalk grows ſeven or eight feet high, and proportionably ſtrong, and thick; it is obſervable, that the maize dwindles, the farther you advance to the northward, whence it appears, that warm climates are more

more congenial to its nature; and indeed its luxuriance in the hotteſt climes on the coaſt of Africa, ſufficiently evinces the Indian corn to be a native of the more ſouthern latitudes. The ſtalk is jointed like a cane, and is ſupplied with a juice as ſweet as that of the ſugar cane: but from the experiments that have been made, it appears to be incapable of being rendered uſeful in that reſpect. Every joint is marked with a long leaf or flag, and at the top ſhoots a branch of flowers like rye bloſſoms; the uſual time of ſowing, or as it is here called of planting, is from the middle of April to the middle of May; but in the northern countries the corn is not put in the ground before June, yet the harveſt is ripe in due ſeaſon, owing to the extreme warmth of the ſummer months. This corn the Indians boil till it is tender, and eat with fiſh, fowl, or fleſh, as bread; ſometimes they bruiſe it in mortars, and then boil it, but the moſt uſual method is to dry the corn high without burning, to ſift and beat it in mortars into fine meal, which the Indians eat either dry or mixed with water; the Engliſh bake it into bread in the ſame manner as flour, but the beſt food made from it is called Samſi, the corn being ſteeped in water for half an hour, beat in a mortar until it is thoroughly cleared of the huſk, then ſifted, boiled and eaten with milk, or butter and ſugar, like rice, which is not only an agreeable, but a wholeſome ſtrengthening diet.

There is nothing more to be obſerved in the culture, but only to keep it clear from weeds by frequent hoeing; and when the ſtems are advanced, to draw up the earth in a hill about each plant, which will ſtrengthen them and preſerve their roots. When the corn is ripe, they cut off the ſtalks cloſe to the ground, and after having gathered off the ſpikes of grain, they ſpread the ſtalks in the ſun to harden and dry, which they afterwards uſe, as we do reeds in England, for making fences, covering ſheds, &c. Though not a very good bread corn, it is an excellent food for cattle, hogs, and poultry.

Had Mr. Tull, the inventor of the horſe-hoeing huſbandry, known it, or rather had he lived in a country where it was commonly cultivated, he would have eſteemed it particularly as the plant of all others moſt adapted to that mode of culture; and very many farmers in New-England are got into the method, finding it more expeditious and leſs expenſive.

GUM SUCCORY, [*Chondrilla.*] This plant grows naturally in Germany, Helvetia, and France, on the borders of the fields, and is ſeldom preſerved in gardens, becauſe the roots are very apt to ſpread and become troubleſome weeds; and the ſeeds having down on their tops, are carried by the wind to a great diſtance, ſo that the neighbouring ground is filled with the plants; the roots of this ſtrike deep into the ground, and ſpread out with thick fibres on every ſide, each of which when cut, or broken into many parts, will ſhoot up a plant, ſo that when this plant hath obtained poſſeſſion of the ground, it is very difficult to root it out. The root ſends out a great number of ſlender ſtalks, which at the bottom are garniſhed with oblong ſinuated leaves, but thoſe above are very narrow and entire. The flowers are produced from the ſides and top of the branches, which are like thoſe of lettuce, and are ſucceeded by ſeeds of the ſame form, crowned with down. It flowers in July, and the ſeeds ripen in September.

GUM ARABIC. A gum iſſuing from the Egyptian acacia tree brought to us from Turkey; its virtues are to ſheath acrimony, hence it is ſerviceable in gravelly and nephritic complaints, coughs, and when the mucus of the inteſtines is abraded. Gum from the cherry tree or plumb tree, has nearly the ſame virtue.

GUM ELEMI. *See* ELEMI.

GUM AMMONIAC. See Ammoniac.

GUTTER. A paſſage for water.

H.

HACK. A pick or mattock.

To HACK *Peaſe*. To cut them up with a fickle.

HAFT. A handle.

HAIR. One of the common teguments of the body.

HALM, or HAULM. The ſtraw of peaſe and beans.

HALTER. A hempen rope or ſtring contrived to faſten a horſe in a ſtable, &c.

HAMLET. A ſmall village.

HAM. The thigh of a hog ſalted.

HAME. The wooden part of a horſe's collar.

HAND. In meaſure, four inches.

HARDBEAM. *See* SERVICE.

HARE-BELL. Engliſh hyacinth, which grows naturally in woods and hedges, of a blue and white colour.

HARES-EAR, [*Buplemum.*] This is a biennial plant, growing naturally in chalky land amongſt wheat. There are four kinds introduced into botanic gardens, which are brought from the Alps and Pyrenees, which are annuals.

HARE's-FOOT-TREFOIL, [*Trifolium Arvenſe.*] This is an annual plant, and grows naturally upon dry gravelly land, and is ſeldom eaten by cattle, conſequently is unfit for paſture.

HARE's LETTUCE, [*Sonchus.*] Sow Thiſtle.

HARE's STRONG. Hogs fennel.

HARNESS. The furniture of a horſe for draught.

HARMEL, [*Peganum.*] Wild Aſſyrian rue. This plant grows naturally in Spain and Syria; it has a root as large as a man's little finger, which by age becomes woody. The ſtalks decay every autumn, and new ones ariſe in the ſpring; theſe grow about a foot long, and divide into ſeveral ſmall branches, which are garniſhed with oblong thick leaves cut into ſeveral narrow ſegments; they are of a dark green, and of a gummy bitteriſh taſte. The flowers are produced at the end of the branches, ſitting cloſe between the leaves, & are compoſed of five roundiſh white petals, which open like a roſe, which afterwards become a roundiſh three-cornered capſule, having three cells, which contain ſeveral oval acute pointed ſeeds. It is propagated by ſeeds, which ſhould be ſown thinly on a bed of light earth, the beginning of April.

HARROW. An inſtrument for breaking the clods of earth, and covering the corn when ſown. It is a ſort of wooden drag, made in the form of a ſquare, with large iron teeth or tines.

HARTWORT, [*Tordilium, Seſeli.*] There are ſeveral ſpecies of this plant which grow wild in the warmer parts of Europe, and ſome are found in different parts of England. They are propagated by ſeeds ſown in autumn.

HARTWORT *of Ethiopia.* This plant grows to the height of four or five feet, forming a regular evergreen buſh. It is propagated by cuttings in the ſpring.

HARTSHORN, [*Plantago.*] *See* BUCKSHORN.

HARTS-TONGUE, [*Lingua Cervina.*] Theſe plants commonly grow out from the joints of old walls and buildings, where they are moiſt and ſhady, and alſo upon ſhady moiſt banks, but ſeldom cultivated in gardens. There is a very great variety of theſe plants, both in the Eaſt and Weſt-Indies, but there are very few ſpecies of them in Europe; all the hardy ſorts may be propagated by parting their roots, and ſhould have a moiſt ſoil and ſhady ſituation.

HARTS-TREFOIL. Melilot.

HARTS-PENNY-ROYAL, [*Pulegium Cervinum.*] This is ſomewhat ſtronger and more agreeable than the common penny-royal.

To HATCHEL *Flax*. To beat it with an inſtrument ſo called.

HATTOCK. A ſhock of corn.

HARVEST. The ſeaſon when corn is ripe and cut.

HARVEST-MAN. A man employed

ployed for the purpoſe of getting in the corn at harveſt.

HATCHET-VETCH, [*Securidaca.*] This is an annual plant, with trailing herbaceous ſtalks riſing to the height of eighteen inches, and growing naturally among the corn in Spain and Italy. It may be propagated by ſowing the ſeeds in the ſpring.

HAVER. Oats; a provincial word.

HAW. A cloſe; a ſmall field;—the common name for the fruit of the white-thorn;—alſo, a ſwelling of a ſpongy texture, growing in the inner corner of a horſe's eye.

HAWTHORN, [*Spina Alba.*] White-thorn. This plant is univerſally well known. *See* FENCES. The berries and flowers of the hawthorn have been recommended for nephritic complaints, but at preſent little regard is paid to them.

HAWKWEED, [*Hieracium.*] There are a great many ſpecies of this plant, ſome of which grow wild in many parts of England, others, exotics, are cultivated in the gardens for variety, and the beauty of the flowers. They are propagated by offſets from the roots.

HAY. The general name of graſs when cut up and dried for the uſe of cattle, whether meadow or artificial.

HAY-BOTE. A liberty, which a tenant for life or a term of years, has of taking buſhes, wood, &c. for repairing fences, gates, and the like. It alſo ſignifies the liberty of cutting wood, for making rakes and forks uſed in making hay.

HAYN or *Hayn up.* The action of incloſing with a hedge, in order to preſerve graſs-grounds from cattle.

HAYWARD. One who keeps the common herd of the town; one part of his office is to look that they neither break nor crop the hedges of incloſed grounds. He is a ſworn officer in the Lord's court.

HAZEL. The wild nut. *See* FILBERT.

HAZLE-MOULD. A moderately compact earth, containing a large quantity of reſin-coloured ſand.

HEAD-LAND. The land running acroſs the others at the head of the field, left for the turning of the plough.

HEADSTALL. Part of the bridle that covers the head.

HEART's-EASE, [*Viola Tricolor.*] A ſpecies of wild violet growing naturally among corn in ſome parts of England. It is an annual plant, and may be propagated by ſeeds or parting the roots.

HEATH, [*Erica.*] There are three or four ſpecies of heath, which grow wild upon barren and uncultivated places in many parts of England.

Blackberried HEATH, [*Empatrum.*] This little ſhrub grows wild upon the mountains of Staffordſhire, Derbyſhire, &c.

HEATH PINE, [*Coris.*] This plant grows wild about Montpellier, ſeldom riſing above ſix inches high, flowering in June. It may be propagated by ſlips and cuttings.

HEDGE. *See* FENCE.

HEDGER. One that makes and mends hedges.

HEDGE-HOG PLANT, [*Medicago Intortexta.*] A ſpecies of ſnail trefoil, which may be propagated by ſowing the ſeeds in the ſpring.

HEDGE-HOG THISTLE. *See* MELON THISTLE.

HEDGE HYSSOP, [*Gratiola.*] This plant is found growing naturally on the Alps, and other mountainous parts of Europe, growing with a ſquare upright ſtalk near a foot high, producing yelloviſh flowers at the ſides of the ſtalks at each joint. It is eaſily propagated by parting the roots; there are two other ſpecies brought from North and South America.

HEDGE MUSTARD, [*Eryſimum.*] This plant grows naturally by the ſide of foot-paths and on old walls in moſt parts of England, and when it gets into gardens is a troubleſome weed.

HEDGE NETTLE, [*Galeopris.*] Stinking dead nettle. A common annual plant or weed growing in many parts of England, of which there are three or four ſpecies.

Shrubby HEDGE NETTLE, [*Praſium.*] This plant riſes to the height of near three feet, the ſtalk is covered with a whitiſh bark, the flowers, which appear in whorls round the ſtalk, are white. In another ſpecies, which is a native of Sicily, the white flowers are ſpotted with purple. They are only cultivated for variety, and may be propagated by ſowing the ſeeds in April.

HEDGING BILL. A long-handled bill uſed to cut and mend hedges.

HEIFER. The cow before ſhe has had a calf.

HELIOTROPE, [*Heliotropium.*] Turnſole. This is an annual plant, and there are ſeveral ſpecies; ſome not above ſix or ſeven inches high, and others from three to four or five feet high. The ſpecies moſtly approved is the Peruvian ſweet-ſcented heliotrope, which has a ſhrubby ſtalk growing to four or five feet high, branching numerouſly with ſpear-ſhaped oval leaves, and numerous cluſtered ſpikes of pale blue ſweet-ſcented flowers, appearing great part of the year and bearing ſeeds in autumn. It is eaſily propagated by ſeed and cuttings planted in ſpring and ſummer.

BLACK HELLEBORE, [*Helleborus Niger.*] The root of hellebore is acrid and bitter. Its acrimony, as Dr. Grew obſerves, is firſt felt on the tip of the tongue, and then ſpreads immediately to the middle without being much perceived on the intermediate part: on chewing it for a few minutes, the tongue ſeems benumbed, and affected with a kind of paralytic ſtupor, as when burnt by eating any thing too hot: the fibres are more acrimonious than the head of the root which they iſſue from. Black hellebore is a powerful and vehement cathartic; and as ſuch has been celebrated for the cure of maniacal, and other diſorders, proceeding from what the ancients call *atra bilis*: but it is now ſeldom made uſe of in theſe intentions; practitioners having introduced in its place, ſome other ſubſtances, no leſs efficacious, though perhaps more ſafe. It does not however appear, that our black hellebore acts with ſo much violence as that of the ancients: whence many have ſuppoſed it to be a different plant, and indeed the deſcriptions which the ancients have left us of their hellebore, do not agree to any of the ſorts uſually taken notice of by modern botaniſts. Another ſpecies has been diſcovered in the eaſtern countries, which Tournefort diſtinguiſhes by the name of *helleborus niger orientalis, ampliſſimo folio; caule prælto, flore purpuraſcente*, and ſuppoſes to be the true ancient hellebore, from its growing in plenty about mount Olympus, and in the iſland Anticyra, celebrated of old for the production of this antimaniacal drug: he relates, that a ſcruple of this ſort, given for a doſe, occaſioned convulſions. Our hellebore is at preſent looked upon principally as an alterative, and in this light is frequently employed, in ſmall doſes, for attenuating viſcid humours, promoting the uterine and urinary diſcharges, and opening inveterate obſtructions of the remoter glands: it often proves a very powerful emmenagogue in plethoric habits, where ſteel is ineffectual or improper. An extract made from this root with water, is one of the mildeſt, and for the purpoſes of a carthatic, the moſt effectual preparation of it; this operates ſufficiently, without occaſioning the irritation which the pure reſin is accompanied with. A tincture drawn with proof ſpirit contains the whole virtue of the hellebore, and ſeems to be one of the beſt preparations of it, when deſigned for an alterative: this tincture, and the extract, are kept in the ſhops.

Baſtard HELLEBORE. *See* BASTARD HELLEBORE.

White HELLEBORE, [*Veratum, Helleborus Albus.*] This plant grows ſpontaneouſly in Switzerland, and the mountainous parts of Germany. The root has a naſeous, bitteriſh, acrid taſte, burning the mouth and fauces: wounded when freſh, it emits an extremely acrimonious juice, which mixing with the blood, even by a ſlight wound, is ſaid to prove mortal: the powder of the dry root, applied to an iſſue, occaſions violent purging; ſnuffed up the noſe, it proves a ſtrong, but not always a ſafe ſternutatory. This root, taken internally, acts with extreme violence as an emetic, and has been obſerved, even in a ſmall doſe, to occaſion convulſions and other terrible diſorders. The ancients ſometimes employed it in very obſtinate caſes, but always made this their laſt reſort. Modern practice ſeems to have almoſt entirely rejected its internal uſe; there are two or three ſpecies in the gardens, which may be propagated by offsets or ſeeds.

HELM. A hovel. Straw prepared for thatching.

HELLWEED. Dodder.

HELMET FLOWER, [*Scuttellaria.*] Skullcap. The ſtalk of this plant, which is ſquare and hairy, riſes to the height of two or three feet, and is furniſhed with heart-ſhaped leaves ſawed on the edges; the flowers are diſpoſed in ſpikes of a blue, purple, and white colour. They grow wild in Italy, Crete,

Crete, and the Levant; and in North America. Another ſpecies found on the Alps & Appennines has a ſhrubby ſtalk trailing on the ground. All the ſpecies are propagated by ſeeds ſown in Autumn.

HEMLOCK, [*Cicuta.*] This is a large umbelliferous plant, common about the ſides of fields, under hedges, and in moiſt ſhady places: the leaves are winged, divided into a great number of ſmall fern-like ſections, of a dark or blackiſh green colour, and appearing as it were rough: the ſtalk is hollow (as is likewiſe great part of the root after the ſtalk has ariſen) and ſpotted with ſeveral blackiſh or purpliſh ſpots. Hemlock is ſometimes applied externally to hard and ſcrophulous tumours; to women's breaſts for preventing their immoderate growth, the generation or coagulation of milk, &c. Received internally, it is accounted poiſonous: nevertheleſs, there are examples of ſeveral ounces having been taken without inconvenience. But in moſt of the hiſtories of the good or ill effects of the cicuta, it is uncertain what the plant employed really was.

Baſtard HEMLOCK, [*Cicutaria.*] Stinking baſtard hemlock. This hath a thick fleſhy root like a parſnip, the leaves are winged with the lobes cut in acute points of a deep green, and when bruiſed of a fetid ſmell, the ſtalks riſe to the height of four or five feet, and are hollow and large. This is ſuppoſed to be the hemlock of the ancients.

HEMP, [*Cannabis.*] This plant requires a rich, light, deep, and dry ſoil, that the roots may have freedom to ſpread; the land ſhould be either freſh broke up or in good heart, and ſhould be exceedingly well tilled and very fine before the ſeeds are ſown. The moſt proper time for doing which is the firſt or ſecond week in April. †There are two methods of ſowing practiſed, the broad-caſt and drill, the latter of which we prefer for ſeveral reaſons; the parting of the rows will add to the nouriſhment of the plants, and above all as the ſame ſeeds will produce male and female plants, which ripen at different times; the plants firſt pulled can be conveniently beſtowed in the alleys between the rows, and leſs damage will be done to the ſtanding plants. The management will be ſimilar to that mentioned under the article FLAX.

The middle or latter end of Auguſt is the ſeaſon for the firſt hemp harveſt, the male hemp or ſummer hemp as it is called will now be fit to ripen, and the farmer ſhould keep his eye on the field, and obſerve when the leaves begin to hang down and turn yellow, and when the male plants have ſhed their farina or duſt, it will be then time to pull, which is performed as flax, only the female ſtalks are to remain till the ſeeds are ripe. The male hemp is to be dried, and then watered.

The female hemp, when the ſeeds are ripe, is to be pulled in the ſame manner, and ſheaved up to dry; when dry to be thraſhed, and then to be watered as the male.

The watering is thus performed; the bundles are carried to a pond or proper watering place, in which ſome ſtakes are driven to keep the hemp in, bundle after bundle, bottom and top alternately; when it has lain long enough, that is, when the leaves come off, which may be known by waſhing a bundle in another part of the pond, which generally happens in four, five, or ſix days, let the whole be waſhed of all the leaves and filth, and the clean ſtalks ſet up on end to drain and dry.

When the hemp is waſhed clean and dried, it is ready for the brake, and the further operations, which are ſimilar to thoſe for flax. *See* FLAX.

HEMP AGRIMONY. *See* article AGRIMONY.

HEN. The female of the houſe-cock. *See* CHICKEN.

HEN-ROOST. The place where fowls go to at night.

HENBANE, [*Hyoſciamus.*] White and black. Theſe plants ſtand recommended for ſundry external purpoſes, and by ſome likewiſe internally againſt dyſenteries and hæmorrhagies: but there are ſo many examples of their pernicious effects, that common practice has very deſervedly rejected them. They are ſtrong and virulent narcotics, greatly diſorder the ſenſes, occaſioning deliria and madneſs, either deadly or of long duration. Haller tells us of one who eat of all the poiſons of the phyſic garden, the napelli, apocyna, bella donna, without injury, but was maſtered by this; that after its common effects as a narcotic had abated, a paralyſis of one of the legs remained; and that Boerhaave had his ſenſes diſordered

ordered by only making a plaiſter from this plant. There are other examples alſo, though from leſs unexceptionable authorities, of henbane proving narcotic, though none of it was received into the body.

HERB BENET, [*Geum, Caryophyllata.*] Avens. This is a rough plant found wild in woods and hedges. The root has a warm, bitteriſh, aſtringent taſte, and a pleaſant ſmell, ſomewhat of the clove kind, eſpecially in the ſpring, and when produced in dry warm ſoils; Parkinſon obſerves, that ſuch as is the growth of moiſt ſoils has nothing of this flavour. This root has been employed as a ſtomachic, and for ſtrengthening the tone of the viſcera in general: it is ſtill in ſome eſteem in foreign countries, though not taken notice of among us. It yields on diſtillation an elegant odoriferous eſſential oil, which concretes into a flaky form.

HERB CHRISTOPHER. *See* CHRISTOPHER.

HERB GERARD. *See* ANGELICA.

HERB PARIS, [*Herba Paris.*] True-love or one berry. This a low plant, growing wild in ſhady woods. It is ſaid, but on no good grounds, to be an alexipharmac. Geſner relates, that its juice has killed poultry; and its ſmell and taſte manifeſtly agree with thoſe of the more virulent narcotic herbs.

HERB TWOPENCE, [*Nummularia.*] Moneywort. This grows ſpontaneouſly in moiſt watery places, and creeps on the ground, with two little roundiſh leaves at each joint. Their taſte is ſubaſtringent, and very lightly acid: hence they ſtand recommended by Boorhaave in the hot ſcurvy, and in uterine and other hæmorrhagies. But their effects are ſo inconſiderable, that common practice takes no notice of them.

HERB ROBERT, [*Geranium.*] This plant is found wild in moiſt meadows; it is a ſpecies of geranium.

HERB WILLIAM. *See* BISHOPS WEED.

HERRIOT. By the laws of countries, it appears, that at the death of any great men of the nation, ſo many horſes and arms were to be paid, as they were in their life time obliged to keep for the King's ſervice: but now it is taken for the beſt beaſt a tenant has at the time of his death, due to the Lord by cuſtom, being a horſe, ox, &c. and in ſome manors the beſt piece of plate, jewels, or goods, were taken. Herriot is of two ſorts, 1. Herriot cuſtom, where herriots have been paid by cuſtom, after the death of the tenant; 2. Herriot ſervice, when a tenant holds by ſuch ſervice a right to pay herriot at the time of his death; for this the Lord may diſtrain, but for the other he may ſeize but not diſtrain. If the Lord purchaſe part of tenancy, herriot ſervice is extinguiſhed, but not the herriot cuſtom.

HERBACEOUS. Of the nature of an herb.

HERBAGE. Graſs, paſture in general. It is uſed to ſignify the tythe and right of paſture.

HERMODACTYL, [*Hermodactylus.*] This plant is a ſpecies of the Iris, the root is of the ſhape of a heart flatted, of a white colour, compact, yet eaſy to cut or powder; of a viſcous ſweetiſh taſte, with a light degree of acrimony. Hermodactyls were of great repute among the ancients as a cathartic; but thoſe we now meet with in the ſhops have very little purgative virtue: Neuman declares he never found them have any effect at all. The plants are propagated by the roots.

HERD. A number of beaſts together, generally black cattle.

HERDSMAN. A keeper of herds, one employed in tending cattle.

HERMANNIA. This is an evergreen ſhrub, of ſeveral ſpecies, growing from eighteen inches to ſix or ſeven feet high, blowing with yellow flowers, which appear in April and May, and the ſeeds ripen in Auguſt. They require the aſſiſtance of the green-houſe, and are propagated by cuttings & ſeeds.

HIDE. The ſkin of beaſts, but particularly applied to thoſe of large cattle, as bullocks, cows, horſes, &c.

HIDE *of Land*, Is ſuch a quantity of land as may be ploughed with one plough within the compaſs of a year, or ſo much as would maintain a family; ſome call it ſixty, ſome eighty, and ſome an hundred acres.

The diſtribution of this kingdom by hides of land, is very ancient, mention being made of it in the laws of King Ina. Henry I. had three ſhillings for every hide of land, in order to raiſe a dowry for his daughter: this tax was called hidage.

HIDE-BOUND.

HIDE-BOUND. A diſtemper in horſes, when the ſkin ſticks ſo faſt to the back and ribs, that the hand cannot ſeparate the one from the other, without great difficulty; his body is at the ſame time lean, his back-bones ſtand up, his guts are for the moſt part deficient in moiſture, and his dung dry, and more offenſive than common.

If a horſe become hide-bound by hard riding and ill keeping, he may be cured by good keeping. If it be the effect of a fever, or ſome other diſeaſe, if that be cured which is the cauſe, the effect will ceaſe; but if he has no fever upon him, and he is hide-bound only from lowneſs of blood and ſpirits, give him boiled barley, white-water, or the like, and when his fleſh is raiſed, harden it with good oats or beans, and moderate exerciſe.

HIGHTAPER. White mullein. Cow's lungwort.

HINDBERRIES. Raſpberries.

HIPPOCRAS. Aromatic wine; wine with ſpices.

HIPS. Dog roſe.

HOE. A tool made like a cooper's adz, to cut up weeds in gardens, fields, &c. This tool is commonly called the hand-hoe.

This inſtrument is of great uſe, and ſhould be more employed in hacking and clearing the ſeveral corners, cracks, and patches of land, in ſpare times of the year, which would be of great advantage thereto.

Horſe HOE. A large kind of hoe, drawn by horſes, and uſed to ſtir the intervals in the drill huſbandry, and clear the corn from weeds.

HOG. A well-known animal, whoſe great recommendation to the farmer is, the cheapneſs of his food, which ſets the hog above almoſt any other animal in his eſteem; little is to be bought for that creature, & he conſumes very little of the ſtock of whatever kind, any thing contenting him that is eatable, though his appetite is greater than that of any other animal. If food is to be raiſed for the hog, it comes very eaſy; coleworts, crooked carrots, bean-ſhells, and any of the coarſer vegetables, anſwer the purpoſe; they grow any where, and are ſown with little trouble; and the worſt of theſe will keep the hog; in which condition he ſupplies the family and the market, to a very good account.

The fleſh ſerves the farmer in a variety of forms, and when the more marketable parts are diſpoſed of, there remains a great deal that anſwers the purpoſe.

The refuſe of every thing ſerves them for food, as whatever is thrown from the barn, the kitchen, or the dairy.

Having named the good qualities of the hog, it is proper alſo to mention the bad: the farmer who is about to buy in his ſtock, ſhould know at once the advantages and diſadvantages attending every kind, that he may purchaſe accordingly. The hog is the moſt ravenous of all the creatures commonly kept about houſes. They ſpoil and deſtroy more than they eat, if they are not kept within due bounds, and with proper care; and their rooting up the ground is a very troubleſome and miſchievous quality. No creature is more apt to break the farmer's fences than the hog; and between this and his tearing up the ground, and trampling things to pieces, the miſchief he would do if left at large, would be endleſs, and all his value would not pay for it.

Theſe are his ill qualities, they are therefore to be guarded againſt; and in proportion as the farmer is in danger of being more hurt by them, and has it leſs in his power to prevent them by a proper method of keeping the creature, by ſo much the more cautious ought he to be in the buying any large number of theſe animals.

Their rooting up the ground is prevented by putting rings in their noſes; and their breaking fences in ſome degree by their being yoked.

The breeds may be diſtinguiſhed into three. 1. The wild hog, which is ſmall but hardy: it will feed upon leſs than any other, and its meat, though ſmaller in quantity, is preferable to that of any other. 2. The common hog, which is larger, longer legged, and bigger boned than the wild, and affords an excellent bacon. 3. The low big-belly'd hog, which is of late become very common in moſt parts of England. This lives cheap, is leſs miſchievous than the others, and breeds very faſt. But is inferior to the common ſwine in its advantages to the farmer, all things being conſidered together.

Of theſe ſeveral kinds the low hog is to be choſen by thoſe who live in and about large towns, to run about the ſtreets,

ſtreets, where it takes care of itſelf, and does better, being of a quieter diſpoſition than the others: the farmer in the country is to chuſe the common hog as beſt ſuited to his purpoſe, being the largeſt in its growth, bringing forth a ſufficient number at a litter, and being eaſily fatted for the ſervice of his family, or for the market.

In ſome particular counties theſe creatures thrive better than in others, particularly in Hampſhire, Leiceſterſhire, and Warwickſhire. It will be therefore prudent, if it can be done with convenience, to buy the hogs for breed from theſe places; and let the purchaſer be very particular on this occaſion in reſpect of their ſhape.

Let them be choſen with long and large bodies, deep ſides and bellies, and very thick thighs; let the neck be thick, the noſe ſhort, and the chine thick and well ſet with large and ſtrong briſtles.

When the farmer has taken care about a proper kind of hog for ſtocking his yard, and underſtands thus how to chuſe them, let him next be careful in ſuiting the number to the bigneſs of his yard, and to the quantity of proviſion he will be able to ſupply them with. And in this the care is, that he do not take in too many; for no creature breeds faſter than the hog, and if he does not uſe moderation in the ſetting out, he will be over-run with them.

This great increaſe depends partly upon the number the ſow brings forth at a litter, and partly from the ſhortneſs of the time ſhe goes with young. One of theſe creatures will have four litters in a year, and they will bring from eight to twenty at a time. So large a number as the laſt is not common, nor indeed is it natural, for the creature can bring up no more than ſhe has teats to ſuckle.

When a ſow brings forth more than ſhe can raiſe, they muſt be put to other ſows, if there be any in the yard in a proper condition to ſuckle them; if not, they muſt be deſtroyed, for there is no raiſing them.

The more hogs there are in the yard, the more ravenous they are, for they grow greedy by obſerving the eating of one another; and if there be not ſufficient food for them at the time when they give ſuck eſpecially, they will eat up one another's young, or their own; ſo that of all creatures in the ſtock, the greateſt care is to be taken with regard to theſe, that more are not taken in than can be fed.

Let the farmer chooſe out the largeſt and ſtouteſt of his pigs for the continuing the breed; and one rule of judging early of their qualities in this reſpect is the obſerving which they are that ſuck the foremoſt teats; for they all aim at this, and the ſtrongeſt get them.

After the proper number of the beſt and ſtrongeſt pigs are thus choſen out to be reared as boars and ſows for breeding, ſuch as are not diſpoſed of while pigs for the ſpit, are to be gelt or ſpayed according to their ſex. This prodigiouſly increaſes their fat, eſpecially that of the females.

Great quantities of hogs are raiſed at this time by the brewers and malt diſtillers, becauſe of the convenience of their grains; but of this more need not be ſaid here, the method being known and eaſy, and at this time delivered down among the rudiments of thoſe profeſſions to ſuch as learn them. They are kept clean and well fed, and nothing more is required to their perfect thriving.

There are two different ways of managing the fleſh of the hog for ſervice; the one for pork, and the other for bacon. According to the choice of theſe, the age of the creature is to be different. About nine months old is the proper age for killing pork, and the fineſt time for bacon is when they are a year and a half.

As to the time of their breeding, the ſtouteſt and beſt pigs are to be had from ſows of three, four, or five years old, but they will begin to breed at a year old, and will very well continue till they are ſeven: the three years we have named are however the prime. The age of the boar is to be conſidered by thoſe who would keep up a good breed, as well as that of the ſow; he ſhould not be leſs than two years old, nor more than five.

The boar is no loſs at the end of this time; he may be ſold for brawn, if an opportunity offers; if not, he may be gelt, and will fatten very well: nor does the operation, though performed ſo late, do him any harm.

A great deal of prudence is required in the management of this creature. An error any way in reſpect to their food, is very prejudicial; for the gene-

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ral courſe of their lives, it matters not much what it is, but due care muſt be had about the quantity. If they are allowed too little, they will be continually ravenous and miſchievous, and if they are fed too plentifully, they will not be healthful. They ſhould be kept in heart and ſtrength by moderate feeding, till the time they are to be fattened up for killing; and on this article depends, in every reſpect, a great part of the profit that ſhall ariſe from them to the owner.

As to the manner of feeding hogs, the beſt method is to keep them for the moſt part in the yard: their food there ſhould be waſh every morning and evening, ſuch as diſh-water with grounds of drink, and a few grains or other offal: for the reſt of the day they may be occaſionally ſuffered to graze, eſpecially in damp ſedgy grounds, and the refuſe of the garden is to be thrown to them in the yard. Such of this as they do not eat, they will tread to pieces, and with their dung and urine it will become excellent manure.

Hogs feed excellently in woods, and under hedges in autumn, when the wild fruits are ripe and falling; they eat every kind; hips, haws, ſloes, acorns and beechmaſt, and theſe are a very natural and excellent food for them. If hogs could be fed thus conſtantly, their fleſh would be ſweeter and better taſted than it is in the common way of fattening them; but in ſome places there is but little of this food; then it falls out only at one ſeaſon of the year, and the creature is not well to be truſted. When all things concur, the fleſh of a hog thus fed is excellent: ſome think this food alone will not give the required firmneſs to the fat, but experience ſhews they are miſtaken.

When hogs are to be fatted in the ſtye, cleanlineſs is a very great article. They muſt alſo be fed often, and not too much ſet before them at a time, for their ravenous appetites will lead them to eat more than they can digeſt. Their food muſt be freſh and good, they muſt have as much freſh and ſweet water as they chuſe to drink, and be kept quiet. In this manner they will fatten ſoon and well; their fat will be firm, and their fleſh well taſted.

Nothing anſwers ſo well in all reſpects for the fattening of hogs as the fruit of the wild trees; they have air and exerciſe while they get it, they live clean, and it is their natural food: theſe are great reaſons, but where there is not a convenience of getting this food, or the ſeaſon of the year does not ſuit, the way is to fatten them up altogether in ſtyes, and this is to be done with peaſe, or when they happen to be dear, the meal of offal corn will anſwer the purpoſe: theſe are to be mixed up with whey or ſkim milk, or milk and water, and the creature will never fail to fatten upon any of them.

It will take about a month to fatten a hog in this way, ſuppoſing him to have been in a good condition before. Peaſe, when they are to be had, are to be preferred to the other foods; and there is ſuch an opinion of their effect in giving firmneſs, and a clean taſte to the fat of the bacon, that in places, or at times when they happen to be dear, although the hog be fatted up with other things, they generally give him a good quantity of peaſe the laſt week.

Hogs will ravenouſly eat the buds of many trees, particularly the aſh and ſycamore, and it is a practice in ſome places to beat down ſycamore leaves for their food, upon which they will fatten.

The inconvenience from hogs rooting up the ground, has been mentioned already, and the common method of preventing it, which is by putting a ring in their noſe; but as this is often ineffectual, and a great deal of miſchief is ſometimes done very unexpectedly by theſe creatures, we ſhall propoſe, to the imitation of the farmer in general, a method much more ſecure, which has been long practiſed in Staffordſhire, and ſome of the neighbouring counties, although it has not got into uſe in all parts of the kingdom.

Inſtead of the ring they uſe a forked iron, armed at each point with a pin like the half of an arrow head. This being thruſt through the edge of the hog's noſe, cannot be got back, and they cap the bottom or ſquare part of the fork that lies upon the noſe with a long and hollow ring, which turns round upon it; ſo that the creature can never take hold enough to turn up the earth. This is a contrivance very eaſy, and it ſhows its own uſe. The damage hogs often do by rooting up the ground is ſufficiently known, and

many have found how unfit the common method by rings is to prevent it. This will never fail perfectly to anſwer its intent, and ought therefore to be univerſal.

Clover is an excellent food for the hog, but it is not beſt to make it the only food, for it is apt to give a yellowneſs to the fleſh, which hurts it in the market. The beſt method of giving hogs clover is, at the ſame time that they are feeding at other hours of the day on other things. Thus let them be turned out of the ſtye without their breakfaſt of waſh in the morning, that they may have a good ſtomach for the clover, and at the right ſeaſon be driven into the field with the horned cattle. At evening let them be brought home, and fed with waſh mixed with grains or corn, or let them have, inſtead of the waſh, a great deal of ſkim milk or whey. This is the manner in which hogs may be fed to the greateſt advantage upon clover: and it is a very good method of managing them.

Bran and pollard fatten hogs, but the fleſh is not ſo firm: nothing for this purpoſe anſwers like the pea or bean; a great variety of foods might be mentioned for a creature that will eat any thing, but there are none of them come up to theſe, which are natural to the animal.

The beſt food is ſkim milk, whey, and the artificial graſſes. After a week or ten days, it will be proper to add bran or grains to the whey or milk; and ſoon after this they may have peaſe and beans in moderation, and this will increaſe their growth, and make their fleſh better. After this, if they have been pig'd in an early ſeaſon, they will come in for a ſhare of the ſtubbling and beechmaſt, which will at once raiſe them beyond expectation.

A great deal of advantage in this reſpect is owing to the ſeaſon of being pig'd; the ſpring, or early in the ſummer, is the beſt time for thoſe that are intended to be brought up; thoſe that are farrowed near winter, if ever ſo much care is taken of them, growing ſlowly, they are often ſtunted in their growth; and they are always more ſubject to diſeaſes than thoſe which come at a more favourable time.

Hog. A ſheep of a year old.

HOGGRELL. Hog ſheep.

HOGS FENNEL. See FENNEL.

HOGS PLUMB, [*Spondias.*] Jamaica plumb. This is a ſpecies of plumb-tree growing to the height of twelve or fourteen feet in the Weſt-Indies. Another ſort grows to the height of thirty feet, which bears yellow plumbs an inch and half long.

HOGWEED, [*Boerhaavia.*] There are three ſpecies of this plant which are annual, and one perennial, the former grow to the height of two, three, and four feet, the latter is a trailing plant. They are all propagated by ſeeds, and are too tender to bear the open air in England.

HOLLOW ROOT. Fumatory.

HOLLY, [*Ilex.*] The ſpecies are, 1. The common holly. 2. The hedgehog holly. 3. The Carolina or Dahoon holly. Of the firſt ſort there are ſeveral varieties, with variegated leaves. The common holly grows naturally in woods and foreſts, where it riſes ſometimes to the height of thirty feet. It is propagated by ſeeds which do not come up the firſt year; the varieties may be propagated by graſting and budding.

The ſecond ſort grows naturally in Canada, and the third is a native of Carolina. They are both propagated as the firſt, but the berries of the Dahoon muſt be imported from Carolina.

Knee HOLLY, [*Ruſcus.*] This plant is common in woods in many parts of England, the ſtalks riſe to the height of three feet, ſending forth ſeveral ſhort branches with prickly leaves; the flowers are of a purple colour, and are ſucceeded by berries almoſt as large as cherries, which ripen in winter and are of a deep red colour.

There are ſeveral ſpecies of this plant kept in the gardens; they are all hardy evergreens, and are eaſily propagated by parting the roots.

Sea HOLLY. *See* ERYNGO.

HOLLYHOCK, [*Alcea.*] This plant, though a native of a warm climate, bears the air of England very well, and is a proper ornament for a large garden. It is eaſily propagated by ſeeds ſown in April.

HOLY HERB. Vervain.

HOLY ROSE, [*Ciſtus.*] Rock roſe.

HOLT. A wood.

HOLM. An iſland in a river.

HOLM. Holly.

HOME-STALL. The houſe and its appurtenances, as yard, barn, &c.

HONEY.

HONEY. The ſweet production of the bees. *See* BEE.

HONEY DEW, *or* MILDEW. The mildew which lights upon hops is a white dew, that falls in ſummer at ſunriſe, chiefly when the hops are in flower. Its fall is ſo unequal, that it ſometimes embraces a whole diſtrict, and ſometimes only part of it. This dew dries up the hops, withers and conſumes their leaves, and conſequently ruins the crop. "There is" (ſay the authors of the Journal Oeconomique, whoſe account of this diſtemper, to which hops are extremely liable, we ſhall copy here) "no other remedy from nature againſt this miſchance, except rain ſufficient to waſh the plant, and clear it entirely from this fatal dew: but as rain ſeldom comes quite ſeaſonably to the relief of the plant thus affected, artificial means have been ſought, for inſuring it againſt this accident. Some have ſurrounded their hop grounds with hogs-dung; others have employed perſons to go through the ground with veſſels full of beech-aſhes, and to throw them upon the hops while the mildew was falling; and both ſides, profiting by their experience, pretend to have found a ſpecific preſervative againſt the bad effects of the mildew. They have even proceeded ſo far, as that each ſide affirm their's to be the only remedy. Thoſe who uſe hog-dung ſay, that the aſhes may probably hinder the action of the dew upon the plant, but that they muſt, at the ſame time, ſtop up its pores, and deprive the ſoil of its humidity; a circumſtance equally ruinous to the plant: and that beſides, beech is not to be found every where, and if it muſt be brought from afar, the remedy would in ſome meaſure become impracticable, by the ſcarcity and difficulty of procuring it. The partizans of the aſhes ſay, that they cannot comprehend how hog-dung laid round the hop-ground in the ſpring, ſhould preſerve ſuch virtue as to deſtroy the bad quality of this mildew in the ſummer. In ſhort, to render this diſcuſſion compleat, each ſide alledges, that the trials which they have made of the other's remedy, did not ſucceed.

HONEYSUCKLE, [*Periclymenum.*] The principal varieties of this plant are, 1. Engliſh wild honeyſuckle, or woodbine. 2. The Dutch or German honeyſuckle. 3. The Italian honeyſuckle. 4. The evergreen or trumpet flowered honeyſuckle. The firſt ſort grows wild in woods and hedges, and produces abundance of flowers, which are improved by garden culture. The German honeyſuckle produces beautiful red flowers of a fragrant ſmell in June and July. The flowers of the Italian honeyſuckle are white, with varieties of red early and late blowing and yellow. The fourth ſort is diſtinguiſhable by the flowers growing in whorled ſpikes, of a deep ſcarlet colour of great beauty, but little fragrance.

All the ſorts are propagated by layers or cuttings; by layers in autumn, winter, or ſpring. By cuttings any time from March to October.

Upright HONEYSUCKLE, [*Loniſera.*] The ſpecies of this plant are, 1. The alpine upright red-berried honeyſuckle, with a ſhrubby, ſhort, thick, upright ſtem. 2. Blue-berried upright honeyſuckle, which flowers in May. 3. Black-berried upright honeyſuckle, branching three or four feet high, flowering in May. 4. Xyloſteum or fly honeyſuckle, branching ſeven or eight feet, the branches having whitiſh bark, flowering in June. 5. Tartarian honeyſuckle riſing three or four feet. 6. Yellow flowered Acadian honeyſuckle, flowering in May and June, and continue ſometimes to autumn. 7. Shrubby St. Peter's-wort, which flowers in Auguſt. They may all be propagated by cuttings.

French HONEYSUCKLE. See *French* HONEYSUCKLE.

HONESTY, [*Lunaria.*] This is an annual plant, riſing with a branching ſtalk two or three feet high, covered with a reddiſh hairy bark, garniſhed with heart-ſhaped leaves. The flowers appear in cluſters, and are followed by roundiſh flat pods, which contain two rows of kidney-ſhaped ſeeds. There are two or three ſpecies, all propagated by ſowing the ſeeds in Autumn.

HONEY FLOWER, [*Melianthus.*] There are two ſpecies; the greater, and the ſmaller, or ſtinking honey flower. They are both natives of the Cape of Good Hope. The firſt riſes with ſoft hollow ſtalks to the height of ſix or ſeven feet. The flowers of a chocolate colour are produced in long ſpikes from the top of the ſtalks. This is eaſily propagated by ſuckers.

The second sort rises to the height of five or six feet, the flowers come from the sides of the stalks in loose hanging bunches. This may be propagated by cuttings planted on an old hot-bed.

HONEYWORT, [*Cerinthe.*] This is an annual plant with smooth branching stalks a foot and a half long, with oval prickly leaves and yellow flowers. There are several varieties, all propagated by seeds.

HOOK. An instrument to reap with.

HOPS, [*Lupulus.*] All hops love a rich mellow soil, and to make a hop-garden, the land should be well prepared with manure and tillage; the best situation for a hop-garden is under the shelter of a hill open to the south, and well defended to the east and north.

When the land is very well prepared in October, or else in March or even April, let the spots be pointed out at the square distance of about seven feet; here let holes be dug and three or four sets planted in each hole, chusing good strong shoots for the purpose, which should be about ten inches long, and have four joints or buds, planting them as soon as you can. Let the middle of each hole be filled with a compost of old rotten dung, and rich virgin mould mixed together, to the depth of a foot or more. About a thousand hills are the number for an acre of ground.

The plantation being thus formed, the next care is to keep it clean from weeds by hoeing: the first hoeing will be requisite in May, choosing dry weather, and as you proceed, draw a little mould round about each hill to form a greater body of earth immediately about the plants, continuing the hoeing during the summer as there shall be occasion.

The plants will shoot forth into vine tolerably strong, early the same year; so that in May small poles may be placed to each hill, for them to run upon, as hereafter directed, and they will produce a few hops the same year, though some do not pole them at all the first season, only twist the vine into a bunch in June at top of each hill, regardless of any crop, as it is apt to weaken the young plants.

The next necessary work is in spring following to dress or prune the hops, and February and March is the proper season, when the ground is to be dug or ploughed, and the earth about the hills of plants be removed away near to the stocks or roots, clearing it quite away from the tops of the principal roots with an iron picker, for the convenience of pruning close to the head of the stock; then with a sharp knife trim off all the shoots of last year, or the remaining part of them, close to the heads of the stocks or sets; clearing away also all young suckers, and directly trim in the earth around each hill, and cover the top of the stocks with mould two or three inches thick; and this is to be every year repeated.

After this the plants will soon shoot forth into vine, or bine, when long poles, about fifteen or twenty feet in length, must be placed for them to run upon: April or the beginning of May, when the shoots are a foot long, is the season for this work; three poles must be set to each hill, around the outside, let deep into the ground, by making holes for them with an iron crow, so as to place them with their tops inclining a little outward from each other, to keep the plants from entangling, and a space between two of them be left open toward the south, to admit the sun more freely.

The hops being thus poled, they will for the general part naturally twine themselves about the poles, observing to direct such with the hand as do not readily catch hold of themselves, turning them the way of the sun's motion, and tie them loosely with dried rushes or other soft bandage, training two or three vines to each pole, and all above that should be plucked up, if the plantation be old; but if young, wrap them up together in the middle of the hills.

The next work is summer-digging, in the beginning of June, which is digging about the hills, and casting up some fine earth around and upon each, which is sometimes repeated again the beginning of July, to make all the hills of a proper substance, for the better nourishing of the plants.

After the plants are grown up, if you find any of them under-poled, taller poles must be placed near those that are too short, to receive the vines from them; for unless they have due length of pole, they will not yield a full crop; and if the vines are very strong

ſtrong, and over-top the poles, it is common to ſtrike off the heads of the ſhoots with a ſwitch, whereby they throw out many lateral branches, well charged with cluſters of fruit.

In July the hops will blow, and towards the end of Auguſt will begin to ripen; the tokens of which are the bunches of fruit imparting a ſtrong hop-like ſcent, dry and hard to the touch, and browniſh colour of the ſeed.

At theſe tokens of maturity the hops are fit for gathering, when they ſhould be picked with all poſſible expedition, for a ſudden ſtorm of wind, or great rains, would do conſiderable damage, by breaking down the vine and diſcolouring the hop.

This work of picking the hops muſt be performed in dry weather if poſſible.

A certain number of hills in a ſquare ſpace is to be cleared at a time, generally about eleven, and a large ſquare bin, or wooden frame, eight feet long by three broad, having a cloth within hanging on tenter-hooks, is to be placed in the centre to receive the hops; then proceeding to the work of picking, cut up the vine of the above number of hills, and pull up the poles, uſing a wooden inſtrument like a lever, having at one end a forked piece of iron with teeth on the inſide, which will readily raiſe them out of the ground; then laying two poles at a time acroſs the bin, two or three perſons may ſtand on each ſide to pick the hops therein, picking them very clean without leaves and ſtalks; and as the bin is filled, it muſt be emptied two or three times a day, as there may be occaſion, into a hop-bag, and carried to the kiln to dry.

The kiln for drying hops is the ſame as a malt kiln, covered with a hair cloth, on which they ſpread the hops, which ſhould be ſpread ten or twelve inches thick; and a charcoal fire is commonly uſed, continuing a ſteady even fire, not fierce, but rather increaſe it by degrees, and in about nine hours let the hops be turned, and in two or three hours more they may be taken off, by that time the brittleneſs of their ſtalks, and eaſy falling of the leaves, determine them to be ſufficiently dried.

They are then to be carried into dry upper rooms, to lie three or four weeks to toughen, otherwiſe they would become powder in bagging.

The bagging is performed in large bags made of about four ells and a half of ell-wide coarſe cloth; about a handful of hops is firſt tied into each corner at bottom, to ſerve as handles; the bag is then faſtened to a hole of due width in the floor, made for that purpoſe, having a hoop faſtened to the mouth of the bag, on which it reſts on the edges of the hole; then a perſon puts the hops into the bag, while another is continually treading them down till the bag is full; the bag is then unfaſtened from the hoop, and let down, and the mouth cloſed up, tying a handful of hops alſo in each corner, as in the bottom part; they are then ready for market.

The moſt conſiderable plantations of hops in England, are in Kent, and Surry, and ſome parts of Suſſex and Hampſhire, but more particularly Kent, where the hop gardens exhibit a moſt delightful appearance in ſummer, and from which county it is amazing to ſee the number of great waggon loads daily brought to London in September and October, principally to the borough of Southwark, where are the great magazines of them for the ſupply of the brewery; great quantities are alſo brought by water and depoſited in warehouſes in Thames-ſtreet, belonging to the hop-factors.

A plantation of hops will continue in good bearing ſeveral years, provided the ground is properly manured.

The proper manure is well-rotted dung, or a compoſt of dung and earth together, prepared ſome time for that purpoſe; and of either, from about twenty to forty cart loads is the common allowance for an acre; the former quantity is generally allowed when dung is ſcarce, laying it only along the hills of plants to be dug in, in winter or ſpring, but the beſt way is to allow about forty load, and dig or plough it in any time from October till March; and ſuch a dreſſing need not be repeated but once in two or three years.

Every year after the ground is cleared from the hops, care ſhould be taken of the poles, which, if they could be laid under any covered place, would greatly preſerve them; but for want of ſuch convenience, they are placed in parcels upright in the open air, firſt fixing three or ſix poles firmly in the ground,

ground, in a triangular manner, wide at bottom, and tied together at top; then ſet as many of the reſt of the poles about them as ſhall ſeem convenient in each parcel.

As the poles decay, they muſt be recruited with new ones.

The poles may be of any wood, but the ſorts commonly uſed are aſh, birch, maple, ſycamore, willow, poplar, and cheſnut, the latter of which is the moſt durable of all.

It requires about three thouſand poles to an acre, allowing three to each hill.

HOREHOUND, [*Marrubium.*] Theſe plants have a very ſtrong, but not diſagreeable ſmell, and a roughiſh very bitter taſte. Beſides the virtues which they poſſeſs in common with other ſtrong bitters, they are ſuppoſed to be peculiarly ſerviceable in humoural aſthmas and coughs, the yellow jaundice proceeding from a vifcidity of the bile, and other chronical diſorders. They are certainly a powerful aperient and deobſtruent, promote the fluid ſecretions in general, and, liberally taken, looſen the belly.

Black HOREHOUND, [*Ballota.*] This is a common weed, growing on the ſides of banks, with varieties of white and purple flowers.

Baſe HOREHOUND, [*Stachys.*] This is a low plant with creeping roots, growing wild in ditches. Some ſpecies are kept in botanic gardens, and propagated by ſeeds ſown in March.

Baſtard HOREHOUND. Ironwort.

Water HOREHOUND, [*Lycopus.*] This grows plentifully on moiſt ſoils by the ſides of ditches in many parts of England.

HORNBEAM. *See* SERVICE Tree.

HORNED POPPY. Celandine.

HORSE. It is not the purpoſe here to conſider the horſe as the racer, or in the menage, but as the uſeful ſervant of the huſbandman, who is to buy him for his purpoſes, with remembrance, that if he can breed from him, ſell him at an advantage, or any other way make him produce a certain profit, it is all within the compaſs of his profeſſion. We would no more have the farmer a jockey, than we would have him a ſportſman; but ſo much of every branch that regards this animal, as may be uſeful to himſelf, without tranſgreſſing the bounds of his proper profeſſion, we would have him know, and ſo much we ſhall endeavour to inform him.

The horſe for the plough muſt be ſtrong, no matter for his ſhape. But for the cart, ſome care ſhould be uſed in the choice, and in the ſize. Theſe ſhould be big breaſted, large bodied, and ſtrong limb'd; and they ſhould always be bought of a moderate ſize, not only that they may match with one another; but that others may eaſily be got to match with them when any die, become uſeleſs, or are ſold out.

The having horſes for ſlow draught all of a ſize, or nearly ſo, is a very conſiderable article; for otherwiſe the team never work equally, nor at eaſe to themſelves; and the huſbandman has not the advantage of half their ſtrength, though they go through an equal fatigue: the tall horſes hanging up the low, and it being altogether impoſſible that they ſhould draw evenly together.

It is a benefit in the horſe intended for this ſervice to be ſluggiſh: the fitteſt for it are ſuch as require the whip rather than ſuch as are ready to draw more than needful.

One thing more we ſhall obſerve to the farmer, which is, that he avoid that very common fault, the making one horſe ſerve for different uſes. Nothing is ſo wrong. Let him never put a ſaddle upon his cart or draught horſes, for it alters them in their pace, and renders them aukward and troubleſome in their ordinary and proper labours.

Mares are naturally more profitable than horſes, becauſe beſide, their labour and ſervice, they yearly will bring forth a colt. But let not the young farmer reſolve at once, for this reaſon, upon the buying that ſex, he muſt look further. If he has a great deal of paſture ground, in proportion to his arable, then he will do right to ſtock himſelf with mares; but on the contrary, where the arable land is the greateſt quantity, and the paſture but little, he will find it much more to his advantage to have ſtone-horſes or geldings.

When the nature of the farm thus recommends it to the huſbandman to purchaſe mares rather than horſes, he is to remember that it is of more importance to him to conſider their ſhape: becauſe on that will, in ſome meaſure, depend the value of the breed.

Let

Let him chuſe his mares with a good forehand; the neck, breaſt, and ſhoulders, are in this reſpect to be his principal regard; for as to the reſt of the ſhape, it is not of ſo much conſequence.

But though he does not much regard the ſhape, let the body be large; for it is a great advantage for the foal to have room while it is growing in the mare's belly.

The foals that the huſbandman ſhall have from mares thus choſen, will pay him very well for his care.

After his ſhape, let the purchaſer obſerve his going, and examine carefully his pace. That horſe is beſt for his ſervice that takes the ſtouteſt and beſt ſtride with his feet. He is neither to trot nor gallop, all his buſineſs is a foot pace; and for this purpoſe the horſe that takes the largeſt ſteps always goes eveneſt and eaſieſt, and rids ground the faſteſt.

The horſes being purchaſed for the farm, according to the ſeveral neceſſary labours of the plough, the cart, or carriage, the next thing to be conſidered is their management; and this is very eaſy. Theſe creatures, which are deſtined to coarſe ſervice, require nothing of thoſe pampered methods which are needful to the fine horſes, that are rendered delicate by idleneſs. They require nothing of thoſe walkings and great care, and nice dreſſings; but what they do require, let the farmer ſee they have duly and regularly.

Let them be well dreſſed, and their bellies well filled: for otherwiſe they will never be able to go through their taſks of drudgery. Let their ſhoes and their backs be conſtantly looked to; and little or nothing more is neceſſary.

Let their food be ſweet hay, with a little corn and chaff, ſingle or mixed together, according to the owner's convenience: once in a week or ten days let him always give them ſome warm grains and ſalt: this will keep them in health, for they will eſcape moſt of the common diſorders of horſes, by their conſtant exerciſe and labour, with this little needful care.

For what may be further needful, according to the particular circumſtances and condition of the horſe, we ſhall in a few words obſerve: that if bleeding appear requiſite, ſpring or fall is the time, or both. If there be danger of any diſorder about his head, it is good now and then to burn a little frankincenſe under his noſe, when he is about to lie down at night. In the heat of ſummer it is very good to take a labouring horſe into deep water, and ſwim him now and then.

It will do no horſe any harm to be bled every ſpring and fall; but if once this be made into a cuſtom, let it be regularly obſerved: for ſo ſure as it is omitted he will have ſome diſorder. Nature expects theſe artificial diſcharges, if they have been brought into a cuſtom, as regularly as if they were her own, and can no more do without them.

A fat horſe ſhould drink often, and but a little at a time; but if an horſe be lean, let him drink as he pleaſes.

A great deal of rubbing does a great deal of good: every horſe likes it, and every horſe is greatly benefited by it. A horſe ſhould always be turned to graſs once a year; for it cools his blood, ſcours off all foul humours, and prepares his ſtomach to receive the full nouriſhment from his other food. Nothing tends ſo greatly to the preſerving the huſbandman's cattle as this; nor is there any thing ſo prejudicial to them as the omiſſion.

In the choice of a horſe for the ſaddle, let the huſbandman obſerve to get one of as good a ſhape as his price will afford; for it is a general and very good rule, that the value of a horſe for the road may be judged of by his truth of form.

Let him ſee that his head be lean, his eyes prominent or full, and his neck well raiſed. Let his chine be alſo well riſen, his joints ſtrong, and his paſterns ſhort and ſtrait, and ſo ſtrong as not to bend in going: and let his hoofs be ſound, tough, and hollow.

Laſt of all, let him examine his temper and diſpoſition. In this he ſhould be moderate: too dull a jade is as bad as a run-away. The huſbandman wants his nag for ſervice, and let him chuſe him ſuch as will do his buſineſs freely, without continual whipping and ſpurring; and yet will not be eager to go on when there is no occaſion.

This care having been taken in the buying of the horſe, the next concern is the feeding of him. His general food ſhould be fine hay in winter, and ſweet graſs in ſummer; and to theſe are to be added dry oats and beans, according

according to his ſtomach or occaſions. When he is upon exerciſe, let him be watered two hours before he is taken out to ride, and let him be rubbed, dreſſed, and fed; and after this let him be bridled up, and ſtand an hour before he is mounted.

At ſetting out on a journey, obſerve always that the reaſonable method is to travel moderately in a morning, till the horſe be warmed, and then to encreaſe the ſpeed as occaſion requires.

At night the horſe ſhould be watered two miles before he comes to his journey's end: and then let him be brought in warm; and let him be ſet up in a warm ſtable, well rubbed, and well littered.

Let him have no meat while he is in a ſweat in any part, but when he is dry let him be rubbed and fed, according to his ſtomach and duty.

If at any time the road horſe wants appetite, let the rider obſerve to change his food, for theſe creatures love variety as well as ourſelves; and will often be tempted to eat new meat when they would not have touched the old. If this does not anſwer, let there be a ſmall quantity of white wine, ſalt, and vinegar mixed together, and let his tongue and noſtrils be rubbed with it; this ſeldom fails to recover his appetite.

After this, let the rider look well to his back and to his feet. Let him ſee that the ſaddle does not gall, nor the girths pinch him; that the ſhoes be large enough, and that they ſit faſt and eaſy.

The beſt ſeaſon of the year for putting the ſtallions and mares together is about the middle of March. The reaſon of this is, that the time of foaling is of great conſequence: for the foal that falls in March is much more profitable than that which falls in May, it having the advantage of a part of the cold of that ſeaſon, and the whole enſuing winter to harden it. Experience ſhews, that this is of great conſequence: for the colts foaled in March are always found to ſtand better, and be leſs liable to accidents and injuries, than thoſe which fall later in the year.

A great deal of care ought to be taken to keep the mares tame, and a very good way to effect this, is by giving them daily ſome work, for this accuſtoms them to be tended and handled: whereas, when they run free the great eſt part of their time, as is the caſe very frequently among thoſe who can ſpare their labour, they are difficult to be kept in order; to be removed from one paſture to another, as occaſion requires, or to have the foals properly tended.

A great deal of nicety is uſed in the breeding horſes for the finer employments, but it is the huſbandman we are directing, and he may, in the manner we have ſhewn, avoid the trouble and expence of houſing his mares, and all that ceremony commonly practiſed; and he will often have better foals than thoſe who obſerve the moſt exact rules; as we ſee frequently, nay commonly, the children of ordinary people more healthy and ſtrong than thoſe of quality, who are brought into the world with a great deal more pomp and ceremony.

When mares are kept altogether for breeding, it may be proper to beſtow ſome more care and expence upon them than uſually is done when they breed and work together; and it is the owner's buſineſs then to keep them as cloſely to it as may be. In this caſe it is a good method to feed them richly for a fortnight before their foaling, which will give them ſtrength and plenty of milk: it will make them ready alſo the quicker to take horſe again.

Where a mare is thus managed, ſhe may be led to the ſtallion three weeks after her foaling, and her foal may run by her till ſhe comes again.

The weaning of a foal, at whatever age or particular time it be done, is an article of great conſequence; and upon the proper conducting of it depends in a great degree the future value of the creature. If care be not taken in the article of weaning, and in the ſummering and wintering the colt for three years afterwards, he will never be worth nearly what he might under this right management.

The colt that is to be weaned ſhould be taken from its dam over night, and driven into ſome warm and ſheltered place out of her hearing; it muſt be fed carefully, and well in the morning; and from that time thoroughly attended for four or five days: in that ſpace it will have forgot the dam; and may be turned out to take its chance: but

care

care muſt be taken to keep it out of hearing of the dam for that whole ſummer, after which there will be no need of any particular caution.

Such colts as are intended for geldings, are to be gelt at the time of their weaning, and then the ſame care ſerves, and as ſoon as thoſe few days already directed are over, the part will be healed, and will occaſion no further trouble.

After this the colts ſhould be ſeparated from the fillies, and each parcel turned out apart into ſome open paſture where they may have room, and a free good air; and may run at liberty till they are fit to be broke for the ſaddle, or for the ſervice of huſbandry.

Some practice the gelding of their colts much younger than we have here directed, and when that can be done with convenience, it is altogether as well. They do it while they ſuck, and as ſoon as the teſticles come down, ſometimes gelding them at a fortnight old or leſs.

When it is done at this time, there ſeldom are any bad accidents attend it: but on the other hand, all the damage that appears is a little ſwelling of the parts after cutting; and this goes down when they have been kept carefully three or four days, which is what we have adviſed to be done on account of their weaning.

Horſes muſt be well fed, if they are expected to go through a great deal of work; and large horſes will never be ſo upon poor paſtures. This is a fundamental rule for the farmer, and he muſt always keep it in his memory. It is not eaſy to ſay what number of horſes will anſwer the huſbandman's purpoſe, for any certain quantity of ground. This has been attempted, but the differences between one kind of land and another, in the degree of labour they require, makes it impoſſible to determine with certainty. Upon a general view perhaps it may be reaſonable to ſay, that in land of a middle ſort, about one horſe to every ten acres will anſwer the careful and ſkilful huſbandmans's purpoſe. He that wants knowledge and management, may uſe twice as many, without doing half his buſineſs.

When the number of horſes for the ſtocking of the farm has been ſettled as well as it may be, the next care is the proportioning the work among them: and on this depends a great deal of the profit that is to be made by this ſort of cattle.

The young ones we have ſaid, are to be worked but gently. They may be continually kept doing ſomething at the harveſt, feed time, and fallowing, but they are never to do any thing hard. There are ſufficient articles of drudgery in the farmer's buſineſs, and theſe he is to throw upon ſuch horſes as will never be worth any thing by ſale. He is to keep a proper number of theſe for hard work, and though they be aged or blind they will anſwer his ends, provided they are well fed. The ſlight work of the others, in the mean time, only accuſtoms them to their geers, and makes them bring the better profit upon the ſale.

The huſbandman who falls into the method of buying up young colts, from the breeding counties, in order to ſell them again at five years old, muſt take a great deal of care in the choice he makes of them: for ſuch as they are, ſuch they will grow up; and the farmer who breeds, muſt in the ſame manner be careful of his ſtallions and mares, according to the rules given before, otherwiſe he may be greatly diſappointed, when he comes to the fair with them for ſale.

The proper time for giving the huſbandman's horſe green food, is in the beginning of May, and the time for taking him up is toward the end of Auguſt. Let the horſes be turned out firſt in the heat of the day, and if it is a wet or cold ſeaſon, let him take them in at night, till it is dryer or more favourable.

The moſt healthful practice is to work them as uſual, while they are at graſs, taking them up in the morning and giving them a moderate feed of corn and chaff two hours before they are collared; and repeating the ſame after they come from work. This is of double uſe, as it keeps them in great heart, and ſomewhat dries the green and moiſt food in their bodies.

Another very good method is to ſow ſome ground purpoſely for this uſe with the three ſeeds of clover, raygraſs and common trefoil together; and cut it freſh for their eating in the racks: and this keeps them freſh, and in good heart, under the tighteſt

duty. In theſe ſeveral methods alſo, by the help of ſtraw, there is a great deal of dung made for the ſervice of the fields.

HORSE HOEING. The advantage which the earth receives from tillage are of two kinds, the deſtroying of weeds, and the breaking and dividing the particles of the ſoil, in ſuch a manner that they may afford more nouriſhment to the uſeful growths. Theſe advantages cannot be obtained by any other method ſo perfectly, as by horſe-hoeing; and therefore, in the nature of the thing, horſe-hoeing huſbandry is preferable to any other kind.

The plough prepares the ground for a crop; but it goes no farther, for it cannot be uſed in the common way of huſbandry, after the crop is up: but the crop may receive greater benefit from the tillage of the land while it is growing, than it could in the preparation.

When the earth is well prepared for a crop, it is broken and rendered looſe, but from this time it naturally clods together, and grows more compact. Plants require more nouriſhment when they are grown to ſome height, than when they are very young; but in this common practice they have leſs: becauſe the ſoil grows worſe and worſe from the time of ſowing. The horſe-hoe breaks and tills the land while the crop is growing; and by that means gives the plants a new ſupply, when they moſt want it.

Ploughing and hoeing differ in this more than in the form or ſhape of the inſtruments with which they are done: a hoe may anſwer the uſe of a plough in breaking the ground before ſowing, and a plough may be uſed, as it really is in this method, to tear up the weeds while the crop is upon the ground. It is in this period of performing it, that the work actually differs. As ploughing is the preparing land for the ſowing of a crop, hoeing is the tilling it when that crop is growing to maturity.

If land be tilled ever ſo well before hand, that will not prevent the growth of weeds, for although the roots of all that grew there before were deſtroyed, the ſeeds of others are continually brought by the wind, and the better the condition of the land is, the ſurer they will be to grow.

To the farmer's misfortune, thoſe weeds which are moſt troubleſome and miſchievous, have ſeeds winged with down, ſo that they fly to great diſtances. Of theſe kinds are thiſtles, ſow-thiſtles, coltsfoot, and many others the moſt troubleſome that can infeſt a crop.

No care in tilling the land before hand can defend it againſt theſe; on the contrary, the fitter it is for the crop, the fitter it is alſo for them: the more firmly they will take poſſeſſion, and the more quickly they will multiply, therefore ſomething is needed afterwards. The labour of weeders is very expenſive, and in the common way of ſowing they cannot avoid greatly damaging the crop. When the ſeed is drilled, it is eaſy to get between the rows, even with a large inſtrument; and the advantage is evident, and the work cheaper.

We ſee the benefit that herbs receive from a careful tranſplanting, this ariſes from the cutting off the ends of their roots, and the placing them among new dug, that is, new tilled earth. This would be impoſſible in many caſes; for who could think of tranſplanting a crop of corn; but the ſame advantage is given it when it is planted in regular rows by the drill, and the earth is ploughed up between by the hoe plough; for in this caſe the extreme roots are cut off, ſo that the plant is urged to ſend out more, and there is new tilled earth for their reception.

The advantages ariſing from the hoeing a garden crop, in the common way, with a hand hoe, are very great; and theſe are all communicated to a field of any uſeful growth, by the hoe plough properly uſed, only in a more perfect manner.

Some people who follow the new method rob themſelves of half its benefit, by their fear of ſetting about it with ſpirit. They drill their ſeed in rows a foot and half diſtant, and then cut up the earth lightly with a horſe-hoe between. This is of the nature of the garden hoeing, and is of great advantage, but let it be done properly, and it will be of much greater.

If wheat be drilled in treble rows, with partitions between each row of ſeven inches, and there be an interval of five foot between every three rows, and the next three; in this caſe the corn itſelf will prevent the growth of weeds

weeds in the partitions, and the ground in the intervals may be tilled deep and well with the hoe plough, and the crop will be twice as good as in the other way.

HORSE CHESNUT. *See Horſe* CHESNUT.

HORSE MINT, [*Mentaſtrum.*] This and ſeveral other ſorts of mint are found wild in moiſt meadows, marſhes, and on the brinks of rivers. They are much leſs agreeable in ſmell than ſpearmint, and have more of a hot unpleaſant bitterneſs.

HORSE-RADISH, [*Raphanus Ruſticanus.*] This plant is ſometimes found wild about river ſides, and other moiſt places; for medicinal and culinary uſes, it is cultivated in gardens; it flowers in June, but rarely perfects its ſeeds in this country. Horſe-radiſh root has a quick pungent ſmell, and a penetrating acrid taſte; it nevertheleſs contains in certain veſſels a ſweet juice, which ſometimes exudes upon the ſurface. By drying, it loſes all its acrimony, becoming firſt ſweetiſh, and afterwards almoſt inſipid: if kept in a cool place, covered with ſand, it retains its qualities for a conſiderable time. The medical effects of this root, are to ſtimulate the ſolids, attenuate the juices, and promote the fluid ſecretions: it ſeems to extend its action through the whole habit, and affect the minuteſt glands. It has frequently done good ſervice in ſome kinds of ſcurvies and other chronic diſorders proceeding from a viſcidity of the juices, or obſtructions of the excretory ducts. Sydenham recommends it likewiſe in dropſies, particularly thoſe which follow intermittent fevers. Both water and rectified ſpirit extract the virtues of this root by infuſion, and elevate them in diſtillation: along with the aqueous fluid, an eſſential oil ariſes, poſſeſſing the whole taſte and pungency of the horſe-radiſh. The college have given us a very elegant compound water, which takes its name from this root.

The propagation of this plant is by roots, cuttings of which, taken from the top an inch or two long, or even any part of the root cut into ſets that length, each having an eye or bud, will readily grow and become a plant.

But although any part of the root will thus readily grow, the beſt ſets for planting are cuttings taken from the top of the roots with the head or crown to them, either of the principal roots, or their off-ſets or ſide-ſhoots, as alſo the ſmall off-ſets ariſing immediately from the ſtools; therefore, when intended to make a freſh plantation, it is proper, according as the roots are taken up occaſionally for uſe, to reſerve a quantity of the largeſt off-ſets, and lay them in the earth till wanted; then cut the tops off for planting two or three inches long; the tops of the main roots may alſo, when taken up, be cut off an inch or two long, and preſerved as above for the ſame purpoſe; but this latter is only practicable in private gardens; for, if the kitchen gardeners were to cut off the tops of their marketable roots, it would render them unſaleable; ſo, in this caſe, recourſe is commonly had to the off-ſets above deſcribed.

The ſeaſon for planting them is any time in open weather from November till ſpring, though the month of February or beginning of March is to be preferred, eſpecially in wet or ſtubborn ground.

HORSE VETCH, [*Hippocrepis.*] Horſe-ſhoe vetch. This is an annual plant met with in Italy and Spain, with yellow butterfly flowers, which are ſucceeded by a pod in the form of a ſickle or horſe-ſhoe, about two inches long. It flowers in June and July, and the ſeeds ripen in September. There is a kind growing wild on chalky lands in England, which has a perennial root.

HORSETAIL, [*Cauda Equina.*] This is common in watery places. It is ſaid to be a very ſtrong aſtringent: Geoffry tells us that not only the herb itſelf in form of powder, but likewiſe water diſtilled from it, are very efficacious medicines againſt fluxes and hæmorrhagies: they are both equally inſipid, and probably of equal efficacy.

HOSE IN HOSE. A ſpecies of cowſlip. *See* COWSLIP.

HOT BED. The ordinary hot-beds which are commonly uſed in the kitchen gardens, are made with new horſe-dung, in the following manner:

Firſt, there is a quantity of new horſe-dung from the ſtable (in which there ſhould be part of the litter or ſtraw, which is commonly uſed in the ſtable, but not in too great proportion to the dung,) the quantity of this mix-

ture muſt be according to the length of the bed intended, which, if early in the year, ſhould not be leſs than one good load for each light; this dung ſhould be thrown up in a heap, mixing therewith ſome ſea-coal aſhes, which will be of ſervice to continue the heat of the dung; it ſhould remain ſix or ſeven days in this heap, then it ſhould be turned over, and the parts well mixed together, and caſt into a heap again, where it may continue five or ſix days longer, by which time it will have acquired a due heat; then in ſome well ſheltered part of the garden, a trench ſhould be dug out in length and width proportionable to the frame intended for it, if the ground is dry, about a foot or a foot and a half deep; but if wet, not above ſix inches; then the dung ſhould be wheeled into the opening, and every part of it ſtirred with a fork, to lay it exactly even and ſmooth through every part of the bed; as alſo to lay the bottom of the heap (which has commonly leſs litter) upon the ſurface of the bed; this will prevent the ſteam from riſing ſo plentifully as it would otherwiſe do. To prevent this, and the heat from riſing ſo violently as to burn the roots of whatever plants are put into the ground, it will be a very good way to ſpread a layer of neats-dung all over the ſurface of the horſe-dung, which will prevent the mould from burning. If the bed is intended for cucumbers or melons, the earth ſhould not be laid all over the bed at firſt, only a hill of earth ſhould be firſt laid in the middle of each light, on which the plants ſhould be planted, and the remaining ſpace ſhould be filled up from time to time, as the roots of the plants ſpread. But if the hot-bed is intended for other plants, then after the bed is well prepared, it ſhould be left two or three days for the ſteam to paſs off before the earth is laid upon the dung.

In the making of theſe hot-beds, it muſt be carefully obſerved to ſettle the dung cloſe with a fork; and if it be pretty full of long litter, it ſhould be equally trod down cloſe in every part, otherwiſe it will be ſubject to heat too violently, and conſequently the heat will be much ſooner ſpent, which is one of the greateſt dangers theſe ſort of beds are liable to. During the firſt week or ten days after the bed is made, the glaſſes ſhould be but ſlightly covered in the night, and in the day time they ſhould be raiſed to let out the ſteam, which is ſubject to riſe very copiouſly while the dung is freſh; but as the heat abates, ſo the covering ſhould be increaſed.

But although the hot-bed deſcribed is what the kitchen-gardeners commonly uſe, yet thoſe made with tanner's bark are much preferable, eſpecially for all tender exotic plants or fruits, which require an even degree of warmth to be continued for ſeveral months, which is what cannot be effected by horſe-dung only. The manner of making theſe beds is as follows:

There muſt be a trench dug in the earth about three feet deep, if the ground be dry; but if wet, it muſt not be above ſix inches deep at moſt, and muſt be raiſed in proportion above ground, ſo as to admit of the tan being laid three feet thick. The length muſt be proportioned to the frames intended to cover it, but that ſhould never be leſs than eleven or twelve feet, and the width not leſs than ſix, which is but a ſufficient body to continue the heat. This trench ſhould be bricked up round the ſides to the above-mentioned height of three feet, and ſhould be filled with freſh tanner's bark, (i. e. ſuch as the tanners have lately drawn out of their vats, after they have uſed it for tanning leather,) which ſhould be laid in a round heap for a week or ten days before it is put into the trench, that the moiſture may the better drain out of it, which, if detained in too great a quantity, will prevent its fermentation; then put it into the trench, and gently beat it down equally with a dung-fork; but it muſt not be trodden, which would alſo prevent its heating, by ſettling it too cloſe; then you muſt put on the frame over the bed, covering it with the glaſſes, and in about a fortnight it will begin to heat; at which time may be plunged pots of plants, or ſeeds into it, obſerving not to tread down the bark in doing it.

HOUNDS-TONGUE, [*Cynogloſſum.*] The leaves of this plant are in ſhape thought to reſemble a tongue, whence its name; they are cloathed with a whitiſh down: it grows wild in ſhady lanes. The roots have a rank diſagreeable ſmell, and rough bitteriſh taſte, covered with a glutinous ſweetiſhneſs.

The

The virtues of this root are very doubtful: it is generally ſuppoſed to be narcotic, and by ſome to be virulently ſo; others declare, it has no virtue of this kind, and look upon it as a mere glutinous aſtringent. The preſent practice takes no notice of it in any intention.

HOUSE-BOTE. An allowance of timber out of the lord's woods, for the repairs of a houſe.

HOUSE-LEEK, [*Sedum.*] This is a low, fleſhy plant, growing on old walls and on the tops of houſes. It ſtands recommended as a cooler, tho' its ſenſible qualities diſcover no great foundation for any virtue of this kind; the taſte is herbaceous, with a ſlight degree of pungency. It is remarkable of this plant, that its juice purified by filtration (when it appears of a dilute yellowiſh colour) upon the admixture of an equal quantity of rectified ſpirit of wine, forms a beautiful white, light coagulum, like the finer kinds of pomatum: this proves extremely volatile; freed from the aqueous phelm, and expoſed to the air, it in a very little time totally exhales. From hence it is concluded (in the medicor. Sileſiac. ſatyræ) that houſe-leek contains a volatile alcaline ſalt: but there are many ſubſtances beſides theſe ſalts which coagulate with ſpirit of wine.

HOVEL. A ſhed open on the ſides, and covered overhead.

HOVEN. A diſeaſe common to cattle, on eating too greedily of green clover. It conſiſts in the paunch of the creature being ſwelled to a very great degree, which often, if not prevented, puts an end to the creature's life. The ſureſt method of curing this terrible diſeaſe, is that of making an inciſion into the paunch of the beaſt, and by that means the wind, which cauſed the ſwelling, will eſcape through the orifice, and the creature recover.

A correſpondent of the editors of the Muſeum Ruſticum has given the following account of his performing this operation.

"I took, ſays he, a ſharp-pointed pen-knife, and fixing my eye on the moſt prominent part of his belly, thruſt the blade through the integuments, quite into the abdomen: there iſſued out a great guſt of wind very fetid, with ſome water of a reddiſh colour: the bullock ſeemed eaſier, but far from well; for the wound preſently cloſed up, and admitted no more air to eſcape; ſo that I was under the neceſſity of ſtabbing him twice more in different parts of the belly, before he was thoroughly relieved, which, by the help of a clyſter after the laſt ſtab, was preſently brought about: and here give me leave, gentlemen, before I leave this ſubject, to give a few cautions to thoſe who may be under the neceſſity, one time or other, of performing this very uſeful operation: reflection and experience warrant me in them, therefore I ſhall freely proceed.

"Firſt then, if it be performed with a pen-knife, not to be fearful in puſhing the blade a proper length, till you find wind iſſue out; for if the wind be in the cavity of the belly, you cannot poſſibly hurt the gut, the whole body of the wind being between you and it, which no reaſonable bladed pen-knife can touch; and if the wind ſhould be pent up in the inteſtine, you muſt penetrate it before the beaſt can be relieved. To this laſt, perhaps, it may be objected, that we run the hazard of killing the beaſt by wounding the gut; but I am far from thinking ſo, as I have ſeen many wounds of the inteſtine, both in man and beaſt, very happily cured: yet granting there might be ſome danger in it, ſtill we are certain, if the poor beaſt can get no relief, it muſt die; and ſo circumſtanced, ſurely, gentlemen, a doubtful remedy is better than none at all.

"Another caution is, that where theſe wounds are made in the belly with a proper pen-knife, it is not adviſeable to have them ſown up; for where there is a continual motion or action, as there is in the muſcles of the belly and parts adjacent, ſuch a practice is not only unwarrantable, but cruel; and why ſhould we not behave with humanity to the brute ſpecies, as well as any other?

"My laſt caution and advice is, that upon all theſe occaſions, when the beaſt is relieved of his wind, a proper clyſter ſhould be thrown up immediately, as hot as he can bear it: theſe clyſters ſtrangely relieve them, by acting as a warm, comfortable bath to their diſtempered bowels, and emptying the ſame of the load of muck within them."

HULLS. The chaff, or huſks of corn.

HUMBLE-PLANT. See SENSITIVE PLANT.

HURDLES. Are certain frames made either of ſplit timber, or of hazel rods, wattled together, to ſerve for gates in incloſures, or to make ſheep-folds, &c. &c.

HURDS, or HORDS of flax or hemp. The coarſer parts ſeparated in the dreſſings from the tear or fine ſtuff.

HURLE-BONE. In a horſe, a bone near the middle of the buttock, very apt to go out of its ſockets with a hurt or ſtrain.

HURT, HURTLE-BERRIES. *See* BILLBERRIES.

HURT-SICKLE, BLUE-BOTTLE.

HUSBANDRY. The buſineſs or employment of a farmer, or perſon who cultivates land, &c.

Huſbandry is divided into two kinds, and diſtinguiſhed by the epithets old and new. The former is that which has been practiſed in all countries from the moſt early times; and the latter, that introduced by the ingenious Mr. Tull, and often called the horſe-hoeing huſbandry. *See* HORSE-HOEING.

Experience ſhews, that land, though ever ſo well tilled in the autumn, when wheat, for example, is ſown, hardens and ſoddens in the winter; its particles, beaten down by heavy rains, and ſunk by their own weight, approach each other daily more and more; the roots of the plants cultivated have conſequently leſs and leſs room to extend themſelves in queſt of their neceſſary food; and their interſtices in the earth become, of courſe, ſo few and cloſe, that they are not able to pierce through them, whilſt weeds ſpring up, and rob them of their nouriſhment. By this means the earth, reduced to nearly the ſame condition as if it had not been ploughed at all, is unable to aſſiſt the plants ſown in it in the ſpring, when they ought to ſhoot with the greateſt vigour. They conſequently then ſtand moſt of all in need of the plough to deſtroy the weeds, to lay freſh earth to the roots in the room of that earth which they have exhauſted, to break the particles of the ground anew, ſo as to enable their roots to ſpread, in order to their gathering an ample proviſion of food, which then does them the greateſt ſervice.

In the common huſbandry, the whole attention is to provide a great ſtore of nouriſhment for the wheat, at a time when it ſcarcely conſumes any, as it then produces only a few blades, after which it is left to itſelf, at a ſeaſon when it might, and ſhould be moſt aſſiſted by proper culture; a management as prepoſterous as it would be to give a child a great deal of food, and diminiſh it gradually as he grows bigger; or, to uſe Mr. Tull's compariſon, to give ſilk-worms, before they are hatched, treble the full ſtock of leaves neceſſary to maintain them, till they have finiſhed their ſpinning, and not to allow them any when they really want being fed.

The great advantage of having land in fine tilth before it is ſown, is univerſally acknowledged: but we muſt not ſtop at thoſe firſt preparations.—Plants require a continuation of culture while they grow, and muſt not be forſaken till they have maintained their full maturity.

HYACINTH, [*Hyacinthus.*] Theſe are a low bulbous rooted perennial plant, comprehending ſome hundreds of beautiful varieties, the principle ſpecies are, 1. The Oriental Hyacinth, with ſingle and double flowers, and of white, red, fleſh-coloured, purple and blue colours. 2. Wood Hyacinth, or Harebell. 3. Nodding-flowered Spaniſh Hyacinth. 4. Amethyſtine Hyacinth. 5. Muſk Hyacinch. 6. Tufted Hyacinth. 7. Feathered Hyacinth. 8. Grape Hyacinth. 9. Branching Grape Hyacinth.

The ſecond ſpecies, or Harebell, is a common wild flower, growing plentifully in fields, but ſeldom admitted into the gardens. Each ſpecies has a great number of varieties of different colours.

All theſe ſpecies, and their reſpective varieties, are hardy bulbous rooted perennials, of great duration in root, but annual in leaf and ſtalk; the leaves ariſing from the root in ſpring, and amidſt them the flower-ſtalk; but one generally from each bulb, is naked, or without leaves, and the upper part is terminated by the flowers, commonly in a ſort of ſpike; in ſome extended wide at bottom, upon their pedicles, diminiſhing gradually to the top, in a pyramidal form, as obtains in moſt of the varieties of the Oriental Hyacinth; flowering principally in April and May, ſucceeded

ſucceeded by plenty of ripe ſeeds in June and July; then the leaves and ſtalks decay, and the roots loſe their fibres, and become inactive for a month or ſix weeks; during which period is the time to lift the roots, as may be neceſſary in ſome ſorts annually, eſpecially the Oriental kinds, and in others every two or three years, to ſeparate the increaſed off-ſets from the main bulbs, and to tranſplant them into freſh prepared beds, &c. and being taken up at the above period of reſt, may be kept out of ground till autumn, or even untill ſpring on particular occaſions; tho' they flower ſtrongeſt when planted again the October or November following.

All the nine ſpecies and reſpective varieties are ſo hardy, as to grow freely in any of the open beds or borders in the full ground, flower and produce ſeed annually; and moſt of them increaſe exceedingly by off-ſets of the roots.

With reſpect to their uſe in gardens, all the ſpecies and varieties are proper to be employed as furniture to adorn the open borders and flower-beds; the fine varieties of the Oriental Hyacinth are commonly cultivated in beds by themſelves: the common kinds of them, however, along with the other ſpecies, may alſo be planted in aſſemblage with other hardy bulbous ſpring flowers, in the common borders; diſpoſing all of them towards the front in patches, three or four roots together in each patch, placing them three or four inches deep; in which mode of diſpoſition they will effect a conſpicuous variety in April and May.

But the Oriental Hyacinth, the chief of the Hyacinth tribe for beauty, elegance, and variety, is by floriſts commonly depoſited in beds by themſelves, both for the conveniency of viewing them more commodiouſly, and to have occaſional ſhelter from the rigours of winter, and during the time of their bloom; for altho' they are hardy enough to ſucceed without any protection, yet they being rather of a delicate temperature, by allowing them ſhelter on particular occaſions, they are made to blow much larger and fairer, and the bloom continued longer in beauty; and as the fine varieties poſſeſs a degree of pre-eminence, and are often purchaſed at a great price, it is certainly moſt neceſſary to allow them all poſſible aſſiſtance to blow them in perfection.

They are ſold in great variety by all the ſeed dealers. The prices are from three-pence per root, up to five or ten pounds, or more; and ſome varieties are in ſuch high eſteem among floriſts, that twenty or thirty pounds is ſometimes given for a ſingle bulb.

The Dutch ſorts are in moſt eſteem; that is, thoſe that are imported annually from Holland, for thoſe people excel all Europe in raiſing the greateſt variety from ſeed, and alſo in blowing them in the greateſt perfection; owing either to ſome ſecret in their mode of culture, or that the nature of their ſoil is peculiarly adapted to the growth of the bulbs; but let that be as it may, great quantities are annually imported from that country by the dealers, and ſold by moſt of the eminent ſeedſmen, who have catalogues of the names of the varieties, and their prices annexed, which are various according to their ſorts.

As many perſons may not have inclination for cultivating the high-rated varieties, there are many of the inferior ſorts that produce very pretty flowers, which may be had at moderate prices, and may be cultivated either in beds, or in the open borders, in common with other hardy bulbous-rooted flowers without any protection, and will blow freely, though probably not ſo large and elegant as thoſe fine varieties indulged with the nice management of a profeſſed floriſt, as hereafter mentioned; yet will exhibit a very beautiful bloom, and make ſome of the prettieſt ornaments in the flower borders.

Having once obtained ſome roots of any of the varieties, you may increaſe your ſtock annually by off-ſets, which they, however, do not yeild ſo freely as ſome other bulbs, ſo muſt make the moſt of every one that offers; and they all furniſh plenty of ſeed every year, by which new varieties may be raiſed, for all the new ſorts are always firſt obtained by that mode of propagation; and each reſpective variety ſo obtained, is afterwards increaſed by off-ſets of the root. The raiſing them, however, from ſeed, is tedious in practice, for the ſeedling bulbs are hardly brought to flower in

leſs

leſs than four or five years; but as by this means the ſtock may be greatly increaſed, and many new good flowers acquired, it rewards for the toil, in enjoying the pleaſure of ſeeing flowers of one's own raiſing, and the ſtock greatly multiplied either for pleaſure or profit.

The principal properties that conſtitute a good Hyacinth of the Oriental kind, is, the ſtem perfectly upright, of moderate length, and ſo ſtrong and well proportioned, as to ſuſtain the weight of the florets without bending. The florets ſhould be large, ſwelling below, expanded above, and numerous, ten or fifteen at leaſt, but are often twenty or thirty in number, and ſhould be placed equally round the ſtem, the pedicles on which they grow, longer below than above, diminiſhing gradually in length upward, ſo as to repreſent a pyramid, each pedicle ſo robuſt as to ſupport the florets without drooping.

The propagation of all the varieties is by off-ſet from the root, like other bulbous-rooted perennials; and by ſeed, to obtain new varieties, both of which methods of propagation as hereafter directed. We will firſt exhibit their general culture.

With reſpect to the culture of this celebrated ſpecies of Hyacinth and varieties; let it be remarked, that they ſucceed beſt in a light ſoil, and will proſper in any common earth of a garden of that temperature, but delight more particularly in ſandy ground; allow them, however, as light a ſoil as your garden poſſibly affords, in a dry, open, ſunny, ſituation, diſtant from the drip of trees; for theſe bulbs, if planted in ſtrong, or very moiſt land, are apt to rot in winter, or become diſeaſed; if, therefore, the ſoil of your flower-borders or beds are of a ſtrong heavy quality, that part deſigned principally for Hyacinths, may be meliorated by adding light materials, ſuch as any light ſandy earth, from the ſurface of ſome field, common, or other place, (not out of deep pits) or drift or ſea-ſand, or any upper ſandy ſoil, or light earthy compoſt; and ſhould the ſoil of the borders, &c. be of a very light, ſharp, ſandy nature, a portion of light, pliable, loamy earth, and neat's dung, or well-rotted dung of old hot-beds, will make a fine compoſt for the Hyacinth, being previouſly added long enough for the dung to be converted into mould. After all, if the common earth of the borders is of a moderately light pliable nature, as above obſerved, and has occaſionally been manured with rotten dung, it will ſuit the common ſorts very well without any other preparation than good digging, &c. obſerving, in either caſe, to work the ground well one ſpade deep at leaſt, if the depth of ſoil admits, raiſing the bed or border a little above the general level to avoid copious moiſture, and rake the ſurface ſmooth.

But the floriſts generally prepare a favourite compoſt for their rare kinds of Hyacinths, which is principally this: light ſandy loam, or any ſandy earth from a paſtured field or common, the top ſpit not more than ten or twelve inches deep, of which about one third to one of drift or ſea-ſand, from the ſurface, and the ſame quantity of rotten neat's dung; mixing and caſting the whole in a heap ridge ways, in ſome dry ſunny expoſure, to lie a year at leaſt, or if two the better. But to the above materials, ſome add alſo a quantity of rotten leaves of trees, thoroughly rotten, tanner's bark, or any perfectly rotten earthy wood, or rotten ſaw-duſt; all of which together greatly improve the compoſition: though as theſe are not always readily obtained, the other compoſt is frequently uſed with great ſucceſs. With either of theſe compoſts, a bed is prepared in September, or early in October, four feet wide, and two deep, ſo that a cavity muſt be digged that width and depth, and filled up entirely with the compoſition, ſix inches above the common level to allow for ſettling, leaving it a fortnight or a month to ſettle, and is then ready for the reception of the Hyacinths.

The virtuoſi in theſe plants are careful never to plant the fine ſorts two years together in the ſame bed or earth, for by planting them every year in a freſh bed, or freſh-prepared compoſt, it greatly improves the ſize and beauty of the flowers.

The proper ſeaſon for planting them is either in October, or firſt fortnight in November, and thoſe then planted, ſhoot early in ſpring, and flower ſtrong at their uſual ſeaſon, April and May; but thoſe planted later in autumn, or are

are continued out of ground till January or February, for a late bloom, will flower weaker and with inferior beauty; ſo that the principal part ſhould always be planted at the time firſt-mentioned.

If it is deſigned to plant any of the common, or more ordinary kinds, to adorn the open borders contiguous to principal walks, or lawns near the habitation, to increaſe the variety in aſſemblage with other bulbous rooted ſpring-flowers, as early tulips, narciſſuſes, anemonies, ranunculas, &c. they ſhould be diſpoſed towards the front, at about fifteen inches from the edge, in patches of three roots in each, placed four inches deep; and the patches may be from about one yard to three or four diſtance: here let them ſtand to take their chance, without any further care, and they will flower in their uſual ſeaſon; and in this mode of diſpoſition will ſtrike the eye moſt agreeably among the other flowers then in bloom.

But the fine doubles and other valuable varieties are commonly depoſited in beds by themſelves, as before obſerv'd, for the convenience of affording them occaſional protection from inclement weather, theſe beds ſhould be four feet wide, and well wrought to the depth before mentioned; and if there is any danger of water ſtanding, or much moiſture in winter, raiſe them five or ſix inches above the general level; but if dry ground two or three inches is ſufficient, finiſhing them gradually rounding in the middle, allowing two-feet-wide alleys between bed and bed. In each bed you may plant four or five rows, lengthways, about nine inches diſtant in each row, and four or five inches deep: as to the mode of planting it may either be in drills drawn the above depth, or by dibble, or by bedding them in, i. e. with the ſpade or rake, trimming the earth evenly from off the top of the bed, five inches deep, into the alleys; then draw lines along the ſurface the above diſtance, place the roots upon the lines, bottom downwards, nine inches aſunder; which being done, cover the roots over with the earth, which was drawn off the bed for that purpoſe, as evenly as poſſible, to the proper depth; and as ſoon as they are planted, in either method, let the ſurface of the bed be raked ſmooth, and the work is done.

The bulb being planted, the next care is to protect the choiceſt ſorts in the beds occaſionally, during winter, from ſevere froſt, to enſure the greater ſucceſs; for although the bulb itſelf is hardy enough, yet very intenſe froſt is ſometimes apt to affect the young new-ſhot fibres of the root, alſo the ſummit of the young advancing flower-bud, and occaſion it to blow weaker than it otherwiſe would; therefore when ſevere froſt ſets in, it is eaſy to guard thoſe in beds; but thoſe diſpoſed about the borders in patches, are not ſo eaſily ſheltered: but, indeed, they will all blow tolerably well without that precaution. Thoſe in beds, however, may be readily protected by a covering of ſtraw, or any kind of dry ſtrawy litter, three or four inches thick, or may previouſly arch the beds with hoops or rods, or with moveable arched frames of open work, and covered with mats; obſerving in either mode of covering, to practiſe it only in ſevere froſts, for there will be but little danger of moderate froſts penetrating deep enough to do any hurt; nor ever permit the covering to remain a day longer than the ſeverity of the froſt continues, the free air being an important article for the welfare of the plants.

Towards ſpring, when the flower-buds are beginning to appear above-ground, the beds of the fine ſorts, if intended to allow them all poſſible protection from inclement weather, ſhould, if not done in winter, be arched over, to be covered every night with mats, particularly at the appearance of ſharp froſts, or when there is cold cutting winds, being careful to take them off every morning in mild weather.

In March the flower-ſtems will advance very faſt in ſtature: according as thoſe of the beſt ſorts arrive nearly at their full height, it is proper to ſupport them, by placing a ſmall ſtick, fifteen or eighteen inches long, down to each plant, being careful not to thruſt it into the bulb, and ſo tye the ſtems neatly to each ſtick, whereby the ſpikes of flowers, which being heavy, would otherwiſe be borne down by wind or wet, will be preſerved in an upright poſition.

When they arrive to bloom, the curious ſorts that are in beds may be preſerved much longer in beauty, by being ſcreened occaſionally from the ſun and rain, by a ſort of awning or umbrella of mats or canvaſs; obſerving they ſhould be ſhaded only from the mid-day ſun from about ten to three or four o'clock, and only from exceſſive rains and boiſterous winds, for they ſhould enjoy the morning and evening ſun, and the benefit of moderate ſhowers; theſe covers are ſometimes contrived like a tent, of width and height enough for company to walk under them to view the flowers, and that the plants may enjoy the benefit of free air; having the ſides to let down and up at pleaſure, like curtains; as alſo the top to draw off occaſionally to admit moderate warm ſhowers; thus may theſe flowers be continued in their fulleſt beauty three or four weeks, and exhibit a fairer bloom than thoſe that are fully expoſed.

After the flowers, however, begin naturally to fade, remove all covering entirely away, that the bulbs and increaſing off-ſets may receive all poſſible benefit from the free air.

After the ſeaſon of flowering is over, the next care is to take up the bulbs, in the floriſt's language called, lifting the roots; for the fine ſorts ſhould be taken up at this period, both to ſeparate any off-ſets for encreaſe, and for the benefit of the main bulbs, which will always flower ſtronger than ſuch as are ſuffered to remain two or more years unremoved; ſo always take up the large blowing-roots annually after flowering.

The proper time for this work of lifting the bulbs, is in ſummer, ſoon after they have done flowering, when their leaves begin to turn yellow, as then the bulbs have had nearly their full growth for that ſeaſon; and ſhould by no means remain longer in the ground, as they would be apt to imbibe moiſture, and become ſpongey, and have tendency to rot after removal. Dry weather muſt be choſen, and a trowel or ſmall ſpade is proper for lifting them, taking them up one and one; and break off the ſtem with an inch or two of its origin, which being thick and very ſucculent, the moiſture thereof might return again into the bulb, to its detriment; then lay them in an airy room, out of the mid-day ſun, to dry off the groſs moiſture gradually, and to ripen the bulbs to a due hardneſs, appearing of a purpliſh tinge, otherwiſe they are apt to rot, being more impatient of humidity than almoſt any other kinds of hardy bulbs: but the floriſts generally ripen the choicer kinds of theſe bulbs, after lifting, in a ridge of dry earth in the full air, to promote a more perfect ripeneſs in the whole bulb, as the groſs humidity will be more effectually drawn off by the heat of the ſun, without being expoſed immediately thereto; to do this, part of the earth of the bed where they grow, is directly formed into a low ridge lengthways, roundiſh at top, and both ſides ſloping to caſt off the water; in this ridge place the bulbs, as ſoon as poſſible, bottom downward beſide each other, and cover them with earth an inch or two deep; being thus placed, let them remain about three weeks, during which time, if heavy rains fall, cover the ridge with mats, to keep the earth and roots as dry as poſſible; and thus the ſun's heat thro' the earth, will evaporate the watery parts of the bulb, and harden it ſo effectually, that no danger of rotting is much to be feared, neither before nor after they are planted again; obſerving, that when the bulbs, by either of the above modes of ripening them, aſſume a bright purple colour, it is notice of matureneſs, this colour being peculiar to theſe bulbs, but the more ſtrong and lively the purple tinge appears, denotes the greateſt perfection.

When the bulbs are, however, properly ripened in either of the above methods, let them be taken up and ſeparated from any off-ſets, well cleared from earth, looſe ſkins, and fibres at bottom; then, after expoſing them an hour or two in the ſun, put them up in boxes ſingly, or upon dry ſhelves out of the ſun, to remain till the ſeaſon for planting them again, obſerving the ſame method as before directed.

Propagation by Off-ſets.—All off-ſets appearing about the main bulbs at the lifting ſeaſon, are to be carefully ſeparated from them, either as ſoon as they are taken up, or after the bulbs have lain to ripen, kept ſeparate, and planted in September or October, in beds by themſelves, in rows ſix inches aſunder, and two or three deep, where let

let them remain a year or two; then take them up at the proper lifting ſeaſon in ſummer, and manage as directed the large blowing roots.

Raiſing them from Seed.——The raiſing theſe bulbs from ſeed, is practiſed by the curious to obtain new varieties, as well as increaſe their ſtock; obſerving, that from the time of ſowing, it will be four or five years before the bulbs will produce flowers; the ſeed ripens in June or July, which may eaſily be ſaved from your own plants, ſuffering ſome of the fineſt ſingles, and half doubles to ſtand to ripen in perfection.

The proper ſeaſon for ſowing it is September and October; and it will come up in ſpring following.

It grows freely in open ground, in a bed or border of light earth, or if no great quantity is to be ſown, it may be ſowed in pots or boxes, which will be convenient to move occaſionally to different ſituations at different ſeaſons. In either method chuſe light rich earth, make the ſurface ſmooth, ſow the ſeeds evenly, and cover them an inch or an inch and a half deep; if they are ſowed in pots or boxes, let thoſe be plunged to the rims in a dry place, and in November remove them either under a hot-bed frame to have occaſional ſhelter in winter, or cover them at the approach of hard froſt with ſome light dry litter, uſing the ſame precaution alſo to thoſe ſowed in beds, but let them be fully expoſed in all mild weather.

The plants will come up in the ſpring, appearing firſt with very ſmall leaves; keep them very clean from weeds all the ſummer, ſift a little earth over the bed in autumn, and in winter uſe the ſame precaution as before; and in the ſecond ſummer, in June, when their leaves begin to decay, take up the young bulbs, to be planted out in nurſery-beds, which may be done in Auguſt or September, planting them in ſmall drills two inches deep, having the drills three or four inches aſunder: here let them ſtand two years, ſifting half an inch of earth over the ſurface in autumn, and give occaſional covering in winter; after this they are to be taken up at the uſual lifting-ſeaſon, managed as the other bulbs, and planted in autumn where you deſign they ſhall flower.

The other eight ſpecies and varieties of Hyacinths, though inferior to the oriental kind, yet conſidered as flowery perennials for embelliſhing the common borders, &c. effect an agreeable variety, when diſpoſed in little cluſters, in aſſemblage with other low ſpring-flowers: planting them in autumn, any time before Chriſtmas, towards the front, three, four, or five roots in a patch, about three inches deep, and they will all flower in ſpring following. They may be ſuffered to remain unremoved two or three years, when they will be increaſed by off-ſets into large bunches, and ſhould then be taken up at the decay of the flowers and leaves in ſummer, to ſeparate the off-ſets, planting the large roots again in the borders, as before, in autumn; and the very beſt of the off-ſets that you may have occaſion for, may be planted in nurſery-beds for a year or two.

Their propagation is effected plentifully by the off-ſets, as above-mentioned, which all the ſorts produce in great plenty, and which may be taken up every ſecond or third year, when the leaves decay, and the off-ſets ſeparated and managed as above directed.

HYACINTH *of Peru*. *See* SQUILL.

HYPOCISTIS. A fleſhy production, growing in the warmer climates from the roots of different kinds of ciſti; its inſpiſſated juice. This juice is an aſtrigent, ſimilar to acacia, but ſomewhat ſtronger. At preſent, it is ſcarce otherwiſe made uſe of than as an ingredient in ſome of the old compoſitions.

HYSSOP, [*Hyſſopus.*] This plant is eaſily propagated by ſlips or ſeeds. The leaves have an aromatic ſmell, and a warm pungent taſte. Beſides the general virtues of aromatics, they are particularly recommended in humoral aſthmas, coughs, and other diſorders of the breaſt and lungs; and ſaid to notably promote expectoration.

Hedge HYSSOP. *See* HEDGE HYSSOP.

I.

JACK-BY-THE-HEDGE [*Alliaria.*] Sauce alone. This is frequent in hedges and ſhady waſte places, flowering in May and June. The leaves have a bitter acrid taſte, and, when rubbed betwixt the fingers, a ſtrong ſmell, approaching to that of garlick. They are eſteemed aperient and diuretic. Boerhaave directs the uſe of this plant in diſeaſes where acidities abound, in cold ſcurvies where there is no tendency to putrefaction, and in pleuriſies where there is danger of a gangrene. Externally, it is recommended by Hildanus in mortifications; by Chomel, in cancerous ulcers; and by Boerhaave, in both: The latter reports, that in theſe caſes he has frequently experienced its good effects. Hildanus uſed to gather the herb for theſe purpoſes in the ſpring, and expoſe it for a day to the action of a dry air in a ſhady place: Being then committed to the preſs, it yielded a juice poſſeſſing the ſmell and taſte of the alliaria: this, he informs us, with a little oil on the ſurface, keeps in perfection for years.

JACOBS-LADDER. *See* GREEK VALERIAN.

JALAP. *See* BINDWEED.

Baſtard JALAP. Marvel of Peru.

JAMESWORT. *See* RAGWORT.

JAMMOCK. Oaten bread made into larges loaves.

JANUARY. The firſt month of year, containing 31 days.

Product of the Kitchen Garden.

You have now cabbages, ſavoys, broccoli, parſnips, turnips, carrots, potatoes, leeks, cellery, endive, onions, garlick, ſhalots, beets, ſkirrets, borecole, and ſpinage: and in hot-beds, aſparagus, which was planted in November; as alſo divers ſorts of ſallet-herbs, as lettuce, creſſes, turnip, rape, radiſh, muſtard, mint, &c. &c.

Fruits in prime, and now laſting.

Pears: St. Germain, Virgoulee, Winter Boncretien, Colmar, Double-Flower, Epine de Hyver, Martin Sec, Royal de Hyver, Citron de Hyver, Ambrette, Mervaile de Hyver, with many others of leſs note: And for baking, the Cardillac, black pear of Worceſter, Engliſh Warden, and Pickering.

Apples: Golden Pippen, Nonpareil, French Pippen, Golden Ruſſet, Wheeler's Ruſſet, Kentiſh Pippen, Holland Pippen, Aromatick Pippen, Harvey Apple, Winter Pearmain, Monſtrous Rennet, Pear Ruſſet, Aromatick Ruſſet, with many others. Alſo nuts, almonds, ſervices, ſome medlars, &c.

Plants now in Flower in the open air.

Winter aconite, helleboraſter, true black helebore, ſome ſingle anemonies, early winter hyacinth, polyanthus's, primroſe, ſnow-drops; and, in a warm ſituation, the round-leaved ſpring cyclamen, Duke Van Tol Tulip, &c.

Trees and Shrubs now in Flower.

Laurus-tinus, Glaſtonbury-thorn, mezerion, clematitis Bœotica, ſtrawberry-tree, cornelian cherry, &c.

Plants in Flower in the Green-Houſe and Stove.

The ſmall and large pearl, cuſhion, hedge-hog, tongue, ſuccotrine, and ſome other ſorts of aloes; double naſturtium, alaternoides ericæ folio, Perſian cyclamens; ſeveral ſorts of ficoides; ſome geraniums, chryſanthemums, Senecio Africanus folio retuſo, African gladiolus, hæmanthus, with ſome others.

JARDON. A name given by farriers to a ſwelling on the out-ſide of the back of a horſe.

It generally proceeds from blows and kicks of other horſes; but frequently happens to managed horſes, by ſetting them on their haunches; it is ſeldom attended with much lameneſs, unleſs is has been neglected, or ſome little proceſs of the bone broken.

It

It ſhould be firſt treated with coolers and repellents, ſuch as hot vinegar, verjuices, &c. but if any ſwelling continues hard and inſenſible, the beſt way is to bliſter or fire; but mild bliſters alone generally ſucceed.

JASMINE, [*Jaſminum*]. The ſpecies are, 1. The Common White. 2. The Italian Yellow. 3. Common Yellow. 4. Catalonian. 5. Yellow Indian. 6. Azorian, or Ivy-leaved. 7. Cape Jaſmine.

The firſt ſort is eaſily propagated by laying down the branches which will take root in one year, and by cuttings planted in autumn. The ſecond ſort, which may be propagated in the ſame manner, is a more tender plant. The third ſort is eaſily propagated by ſuckers or layers. The fourth may be propagated by budding, or inarching, or the firſt. Theſe require the aſſiſtance of the green-houſe, as myrtles and oranges. The fifth and ſixth require only to be ſheltered from ſevere froſts. The ſeventh is eaſily propagated by cuttings, which if taken from the young branches, and planted in pots filled with a loamy ſoil, and plunged into a moderate hot-bed, covering them cloſe down with hand-glaſſes, will ſoon put out roots: then they may be tranſplanted each into a ſeparate ſmall pot, filled with the like loamy earth, and plunged again into the hot-bed to forward their putting out new roots. When theſe young plants have obtained ſtrength, they may be treated hardily; for ſome plants have been kept under a common frame, where the pots have been plunged into an old bed of tanner's bark which had no heat, others have been kept through the winter in a glaſs-caſe without any artificial heat, both which have ſucceeded, and the plants have flowered very well, and they have been more vigorous than thoſe which were treated tenderly. This flower, when fully blown, is as large as a middling damaſk roſe, having a very agreeable odour; on the firſt approach it is ſomething like that of the orange-flower, but when more cloſely ſmelt to, has the odour of the common double white narciſſus. The ſeaſon of this plant flowering in England, is in July and Auguſt, but in its native country it is ſuppoſed to flower great part of the year; for Captain Hutchinſon, who brought the plant over from the cape of Good Hope, ſaid there was a ſucceſſion of flowers on it till the ſhip arrived in a cold climate, which put a ſtop to its growth.

African JASMINE, [*Lautana Africana.*] This is a flowerig evergreen brought from the Cape of Good Hope, bearing flowers moſt part of the year, and is eaſily propagated by cuttings.

Scarlet JASMINE, [*Bignonia.*] Trumpet flower. There are ſeveral ſpecies of this plant, ſome of which bear the open air, others require a green-houſe, and ſome a ſtove. They are all propagated by cuttings and layers.

Red JASMINE, [*Plumeria.*] This is a tender exotic plant, of which there are four or five ſpecies, all propagated by ſeeds.

Perſian JASMINE, [*Syringa Perſica.*] This ſhrub riſes to the height of ſix or eight feet, bearing flowers of a pale purple colour, in large panicles, about the latter end of May. There is a variety with white flowers. It is propagated by ſuckers.

JAUNDICE. A diſtemper incident to horſes, and generally called by farriers, the yellows.

Horſes are frequently ſubject to this diſtemper, which is known by a duſky yellowneſs of the eyes; the inſide of the mouth and lips, the tongue and bars of the roof of the mouth looking alſo yellow. The creature is dull, and refuſes all manner of food; the fever is ſlow, yet both that and the yellowneſs increaſe together. The dung is often hard and dry, of a pale yellow, or light pale green. His urine is commonly of a dark dirty brown colour; and, when it has ſettled ſome time on the pavement, it looks red like blood. He ſtales with ſome pain and difficulty, and if the diſtemper is not checked, ſoon grows delirious and frantic. The off-ſide of the belly is ſometimes hard and diſtended; and in old horſes, when the liver has been long diſeaſed, the cure is ſcarce practicable, and the diſeaſe ends fatally with a waſting diarrhœa: but when the diſtemper is recent, and in young horſes, there is no fear of a recovery, if the following directions are obſerved.

Firſt of all, bleed plentifully; and give a laxative clyſter, as horſes are apt to be very coſtive in this diſtemper

diſtemper; and the next day give him this purge.

Take of Indian rhubarb, powdered, one ounce and a half; ſaffron two drams, ſuccotrine aloes ſix drams, ſyrup of buckthorn a ſufficient quantity.

If the rhubarb ſhould be found too expenſive, omit it, and add the ſame quantity of cream of tartar, and half an ounce Caſtile ſoap, with four drams more of aloes. This may be repeated two or three times, giving intermediately the following balls and drink.

Take of Æthiop's mineral half an ounce; millepedes the ſame quantity; Caſtile ſoap one ounce; make into a ball, and give one every day, and waſh it down with a pint of this decoction.

Take madder root and turmerick, of each four ounces; burdock root ſliced, half a pound; Monk's rhubarb four ounces; liquorice ſliced two ounces: boil in a gallon of forge water to three quarts; ſtrain off, and ſweeten with honey.

Balls of Caſtile ſoap and turmerick may be given alſo for this purpoſe, to the quantity of three or four ounces a day, and will in moſt recent caſes ſucceed.

By theſe means the diſtemper generally abates in a week, which may be diſcovered by an alteration in the horſe's eyes and mouth; but the medicines muſt be continued till the yellowneſs is entirely removed. Should the diſtemper prove obſtinate, and not ſubmit to this treatment, you muſt try more potent remedies, viz. mercurial phyſic, repeated two or three times at proper intervals; and then the following balls:

Take ſalt of tartar two ounces, cinnabar of antimony four ounces, live millepedes and filings of ſteel of each four ounces, Caſtile or Venice ſoap half a pound: make into balls of the ſize of pullet's eggs, and give one night and morning, with a pint of the above drink.

It will be proper, on his recovery, to give him two or three mild purges, and, if a full fat horſe, to put in a rowel.

The jaundice or yellows in cows is the moſt frequent diſorder that this uſeful beaſt is liable to, and peculiarly demands care, as it often brings on murrain, laſk or ſcowering, dropſy, &c. but is ſoon diſcovered by the gall's running all over the cellular membrane, and tinging the eyes, and is the ſame diſeaſe as the jaundice in man; the beaſt becomes ſluggiſh, and the cow loſes her milk and loaths her food, and ſhe becomes weak and totters in her gait; and the hair ſtarts.

The remedies depend on the ſtate of the dung. If the beaſt does not ſcower, but has dunged orderly,

Take a handful of celandine, boil it in a quart of water to a pint; to the ſtrained liquor add one ounce of turmeric, and half an ounce of coriander ſeeds in powder, for a drink every morning;

Or, Take liquorice root, anniſeeds, and turmeric root, each in powder, one ounce, for a doſe every morning in warm ale.

If the beaſt ſhould ſcower at the ſame time, add a handful of mugwort, or wormwood, one ounce of tormentil root, and boil a few minutes in a pint of water; add one ounce of armenian bole, and half an ounce of mithridate, for a doſe; giving a reſtrigent clyſter every night.

If the beaſt ſhould be very weak, and neglect her food, (which ſhould be good hay) let ſome ſlices of bread ſoaked in ale be frequently given; this will ſupport amazingly, and be of the moſt infinite ſervice in a ſcowering; with the yellows, green meat ſhould be particularly avoided, and bran with a handful of rice in it be ſet before her for food.

ICEPLANT. A ſpecies of ficoides.

JERUSALEM ARTICHOKE. *See* ARTICHOKE.

JERUSALEM SAGE, [*Pulmonaria Maculoſa.*] Spotted Lungwort. This is met with in gardens, the leaves are of a green colour ſpotted with white; of an herbaceous glutinous taſte, without any ſmell. They ſtand recommended againſt ulcers of the lungs, phthiſes, and other like diſorders: nevertheleſs experience gives little countenance to theſe virtues, nor does the preſent practice expect them.

JERUSALEM COWSLIP. Lungwort.

JESUITS-BARK. *See Peruvian* BARK.

JEWS-EAR. *See Jews* EAR.

JEWS-MALLOW, [*Corchorus.*] This plant is ſaid to be ſown by the Jews about Aleppo, as a pot-herb. There are ſeveral ſpecies, but too tender to bear the open air in England. They are propagated by ſeeds.

IMMORTAL EAGLE FLOWER. *See* BALSAMINE.

INARCHING. Grafting by approach.

INCLOSURE. The ſeparation of common grounds into diſtinct poſſeſſions.

Incloſures aſcertain to every man his juſt and due property, and thereby prevent an infinity of treſpaſſes, injuries, and other ſources of ruinous litigation. They keep the land warm, and add to its fertility, by ſcreening it from violent and nipping winds, which otherwiſe frequently deſtroy whole crops; and they alſo defend it from thoſe drying and ſcorching winds, which ſo often blaſt at once the huſbandman's, till then well-grounded, expectation. They afford ſhade in the ſummer, and ſhelter in the winter, for cattle, which would otherwiſe deſtroy more with their feet than they eat with their mouths, and which, for want of theſe, might, as Mr. Worlidge obſerves, loſe more of their fat or fleſh in one ſultry day, than they gain in three cold ones. Their cuttings afford fuel to the induſtrious huſbandman, and, if carefully planted and preſerved, they will here and there furniſh him with timber for his carts, ploughs, and other utenſils, beſides ſometimes uſeful fruits. They are an excellent encouragement to good huſbandry, and a great remedy againſt beggary, by employing many poor people in the labour which either the making, or the mending of them conſtantly requires, and which is amply repaid by the increaſe of crops.

INCUBATION. Sitting on eggs to hatch them.

INDIAN ARROWROOT. See ARROWROOT.

INDIAN CRESS. *See Indian* CRESS.

INDIAN CORN. *See* GUINEA WHEAT.

INDIAN FIG. *See Indian* FIG.

INDIAN LEAF, [*Malabathrum.*] This leaf is of a green colour, firm texture, very ſmooth on one ſide, leſs ſo on the other, on which run three remarkable ribs through its whole length. Lemery and Pomet affirm, that theſe leaves have no perceptible ſmell or taſte; Herman and others, that they have a very great ſhare of both: thoſe met with in our ſhops have little or no ſmell till they are well rubbed, when they emit an agreeable ſpicy odour: on chewing they are found to have a faint taſte, ſomewhat of the clove kind. This drug is of no farther uſe in medicine, than as an ingredient in the mithridate and theriaca; and is, when in its greateſt perfection, much inferior to the mace, which our college direct as a ſuccedaneum to it.

INDIGO. This forms a moſt eſſential branch of trade in Carolina, is a plant not unlike our fern when grown, and is ſcarcely diſtinguiſhable from lucerne graſs when young, its leaves are pennated, the flowers conſiſt of five leaves, and are of a papilionaceous kiud, the uppermoſt petal being larger and rounder than the reſt, and lightly furrowed on the ſide; in the middle of the flower is produced the ſtile, which afterwards becomes a ſeed-pod. They cultivate three ſorts of indigo on different ſoils, firſt the French or Hiſpaniola indigo, which has a long tap-root, requires a deep rich ſoil, and is principally cultivated in the internal parts of the country, which lie moſt ſoutherly, being the leaſt hardy, and not well bearing the winters of Carolina to the northward.

The ſecond is the Bahama or falſe Gautimala, which bears the winter better, is a ſtronger plant, and more fruitful, and is capable of being cultivated on the worſt ſoils in the country, but is inferior to the firſt in quality of its dye. The third ſort is a native, and is conſequently more cultivated than the others.

The time of ſowing their indigo is after the firſt rains which ſucceed the vernal equinox: The ſeed is ſown in drills about eighteen or twenty inches apart, when it comes up it muſt be carefully kept from weeds and worms; when full grown it is about eighteen inches high, and when beginning to bloſſom it is fit for cutting, which will be about the beginning of July: Towards the end of Auguſt they cut again, and about Michaelmas, if all things happen right, a third cutting is obtained: The general produce on

good

good land is from forty to ſixty pounds per acre, and a negro on an average can manage two acres of the plants, and finiſh the manufacture of the drug. In the cutting, great care is requiſite to preſerve the farina of the plant, as great part of the beauty of the drug depends on that circumſtance.

The apparatus for indigo tho' conſiderable, is not expenſive, for beſides a pump, the whole conſiſts of vats and veſſels of cypreſs wood, which the country itſelf produces: when cut, the plant is brought and laid in a large vat called a ſteeper, which is filled with water, and here left from twelve to ſixteen hours, according to the weather, when it begins to ferment, ſwell, riſe, and grow ſenſibly warm; to prevent its fermenting over the vat, pieces of wood are fixed to keep it down to its proper height; when the liquor begins to ſink below the point, they ſuppoſe the fermentation to be arrived at its due pitch, and it begins to abate; the overſeer then opens a cock, and lets off the liquor into another veſſel, which they term the beater.

This liquor ſtrongly impregnated with the particles of the indigo, they work and agitate about in the beater with wicker baſkets without bottoms, and continue this agitation without ceaſing till it froths, heats, and ferments above the edge of the beater; to allay this fermentation, a little oil is poured in, and the beating again renewed, for twenty, thirty, or forty minutes, or until a ſmall muddy grain begins to appear, which is the indigo granulating.

To diſcover this the better, and to find when the liquor is ſufficiently agitated, they put ſome of it continually in glaſſes, or on plates, and from thence make their obſervations, and when they ſuppoſe the granulation near at hand, they add a little lime water from another veſſel, which conſiderably quickens the work; the liquor appears of a purple hue, the whole becomes muddy, and the indigo granulates more completely. It is now ſuffered to ſettle, and the clearer part is let off into other veſſels, letting off the water ſtill as it ſettles, until only the muddy part remains, which is put into bags of coarſe linen, where it remains till the moiſture is entirely drained off; after this, it is cautiouſly expoſed to the ſun in boxes or frames, till it is completely dried, and forms the drug called indigo.

INOCULATING, or BUDDING. This is commonly practiſed upon all ſorts of ſtone fruit in particular, ſuch as peaches, nectarines, cherries, plumbs, &c, as alſo upon oranges and jaſmines, and is preferable to any ſort of grafting for moſt ſorts of tender fruit. The method of performing it is as follows: You muſt be provided with a ſharp penknife, having a flat haft (the uſe of which is to raiſe the bark of the ſtock to admit the bud,) and ſome ſound baſs mat, which ſhould be ſoaked in water to encreaſe its ſtrength, and make it more pliable; then having taken off the cuttings of the trees you would propagate, you ſhould chuſe a ſmooth part of the ſtock about five or ſix inches above the ſurface of the ground, if deſigned for dwarfs, but if for ſtandards they ſhould be budded ſix feet above ground; then with your knife make an horizontal cut croſs the rind of the ſtock, and from the middle of that cut make a ſlit downwards about two inches in length, ſo that it may be in the form of a T; but you muſt be careful not to cut too deep, leſt you wound the ſtock: then having cut off the leaf from the bud, leaving the foot-ſtalk remaining, you ſhould make a croſs cut about half an inch below the eye, and with your knife ſlit off the bud, with part of the wood to it, in form of an eſcutchen: This done, you muſt with your knife pull off that part of the wood which was taken with the bud, obſerving whether the eyes of the bud be left to it or not (for all thoſe buds which loſe their eye in ſtripping, ſhould be thrown away, being good for nothing:) then having gently raiſed the bark of the ſtock where the croſs inciſion was made, with the flat haft of your penknife cleave the bark from the wood, and thruſt the bud therein, obſerving to place it ſmooth between the rind and the wood of the ſtock, cutting off any part of the rind belonging to the bud, which may be too long for the ſlit made in ſtock; and ſo the having exactly fitted the bud to the ſtock, you muſt tie them cloſely round with baſs mat, beginning at the under part of the ſlit, and ſo proceed to the top, taking

king care that you do not bind round the eye of the bud, which ſhould be left open.

When your buds have been inoculated three weeks or a month, you will ſee which of them have taken; thoſe of them which appear ſhrivelled and black being dead, but thoſe which remain freſh and plump you may depend are joined; at this time you ſhould looſen the bandage, which if not done in time, will pinch the ſtock, and greatly injure, if not deſtroy the bud.

The March following you muſt cut off the ſtock about the bud, ſloping it that the wet may paſs off, and not enter the ſtock; to this part of the ſtock left above the bud, it is very proper to faſten the ſhoot which the bud makes in ſummer, to ſecure it from being blown out; but this part of the ſtock muſt continue on no longer than one year, after which it muſt be cut off cloſe above the bud, that the ſtock may be covered thereby.

The time for inoculating is from the middle of June until the middle of Auguſt, according to the forwardneſs of the ſeaſon, and the particular ſorts of trees to be increaſed; which may eaſily be known by trying the buds, whether they will come off well from the wood. But the moſt general rule is, when you obſerve the buds formed at the extremity of the ſame year's ſhoot, which is a ſign of their having finiſhed their ſpring growth.

JOB's-TEARS, [*Coix.*] It is an annual plant, which ſeldom ripens its ſeeds in England, unleſs the ſeaſon proves very warm; from a thick fibrous root is ſent out two or three jointed ſtalks, which riſe two feet high, garniſhed with ſingle, long, narrow leaves at each joint, reſembling thoſe of the reed; at the baſe of the leaves come out the ſpikes of flowers, ſtanding on ſhort foot-ſtalks; the ſeed is hard, ſmooth, and of a grey colour, greatly reſembling the ſeeds of Gromwell, from whence this plant has been by ſeveral writers titled Lithoſpernum.

INOM, or INNOM BARLEY. Such barley as is ſown the ſecond crop after the ground is fallowed.

INSECT. A general name for the ſmaller kinds of animals.

With regard to the generation of inſects, the world is now in general convinced, that they are not bred from corruption, but from eggs, though the contrary was believed by the ancients.

Malpighi, Swammerdam, and Redi, have abundantly confuted the doctrine of equivocal generation, as well as the chimerical transformation of the caterpillar into the butterfly, and have ſhewn, that all the members of the butterfly were incloſed under the nympha or ſkin of the caterpillar, as the parts of a plant are in the ſeed.

Inſects take particular care to depoſit their eggs or ſemen in ſuch places where they may have a ſufficient incubation, and where the young, when hatched, may have proper food till they can ſhift for themſelves. Thoſe whoſe food is in the water, lay their eggs there; thoſe to whom fleſh is a proper food, in fleſh; and thoſe to whom the fruits or leaves of vegetables are food, are accordingly depoſited there, but conſtantly the ſame kind in the ſame tree. As for others that require a greater degree of warmth, they are provided by the parent with ſome place in or about the body of other animals, as the feathers of birds, hair of beaſts, ſcales of fiſh, in the noſe, in the fleſh, nay ſome in the bowels of man, and other creatures. And as for others, they make them neſts, by digging in the earth, wood, &c. carrying in and ſealing up proviſions that ſerve for the production of their young, and for their food when produced.

There is obſerved in flies, butterflies, &c. a kind of glue, by which the female faſtens her eggs to the bearing buds of trees, &c. ſo as not to be hurt by rain or froſt.

Mr. Andry, in his treatiſe De la Generation des vers dans le Corps de l'Homme, takes notice, that the ancients were miſtaken in denying that inſects breathed, on account of their wanting lungs; for modern obſervations convince us, that inſects have a greater number of lungs than any other animals. They alſo thought that they had no blood, as many of them had no red liquor like ours; but it is not the colour, but the uſe of the liquor that is to be regarded. They alſo believed that they had no hearts; whereas our microſcopes now diſcover that, when inſects have ſeveral lungs, they have alſo ſeveral hearts; and this in particular is obſervable in ſilkworms, who have a continued chain of hearts

from the head almoſt to the extremity of the tail; and, as is apparent from ſeveral inſects, who give ſigns of life, long after they are divided into ſeveral parts.

Inſects want no parts that are either neceſſary or convenient for their uſe, or to render them compleat in their kind. Some affirm that earth-worms, and thoſe round-tailed worms, which are found in the inteſtines of men, horſes, &c. as alſo ſnails and horſe-leeches, are hermaphrodies; but that ſuch worms as become flies, and that ſilk-worms, are not ſo, being of no ſex, but neſts full of real animals, which in time come out with wings.

Several ſorts of inſects do irreparable injury to the huſbandman, though ſo very minute as hardly to be diſcovered.

Among others, a ſmall kind of worm gets into the roots, chiefly of oats and wheat, and, working upward, deſtroys all the inſide of the plant, which periſhes ſoon after. M. Duhamel ſuſpects it to have been an inſect of this kind that deſtroyed vaſt quantities of wheat in the neighbourhood of Geneva, and of which M. de Chateauvieux ſent him the following account. "Our wheat, ſays that illuſtrious huſbandman, in the month of May 1755, ſuſtained a loſs which even that cultivated according to the New Huſbandry did not eſcape. We found in it many little white worms, which afterwards became of a cheſnut colour. They poſt themſelves between the blades, and eat the ſtems. They are uſually found between the firſt joint and the roots. Every ſtalk which they attacked grew no more, but became yellow and withered. The ſame misfortune befel us in the year 1732. Theſe inſects appeared about the middle of May, and made ſuch havock that the crop was almoſt deſtroyed."

Mr. Liſle mentions, that on the 13th and 14th of June, in pulling up wheat in ear, and ſow-thiſtles, he obſerved, among the upper part of the roots of theſe, knots or cluſters of graſs lice, or green locuſts, as he calls them, which appeared whiteſt when they were but juſt come to their ſhape, and as yet under ground: and among moſt of theſe cluſters he obſerved a fly at her incubation, very turgid, of a whitiſh matter; ſhe being then blowing theſe inſects. Her wings were black, and he thought her plainly the ſame as the locuſts, excepting that it had wings. He did not find more than one fly at any one root.

We too often find, in our kitchen gardens, a ſort of vermin called vine-fretter. They fix upon the roots of leguminous plants, which afterwards gradually turn yellow, and die. M. Tillet ſays, he has obſerved the ſame inſect in the roots of wheat.

The cuckow-ſpit, or ſpit-forth, as it is commonly termed, lodges itſelf principally in the joints of plants, ſeldom appears before the latter end of May, and is moſt common when rain has fallen after a ſeries of dry weather. M. Poupart, in his account of this little creature, ſays, that as ſoon as it is out of its egg, it goes to a plant, which it touches with its fundament, and faſtens there a white drop of liquor full of air; that it drops a ſecond near the firſt, then a third, and ſo on till it covers itſelf all over with a ſcum or froth, which keeps it from the heat of the ſun, or ſpiders that would ſuck it. But Mr. Liſle takes this liquid to be nothing but the nightly dew, which falls on the fork or joint of the plant, where the little inſect works it into froth with its proboſcis, as with a bellows.

St. JOHN's-BREAD. See BEAN-TREE.

St. JOHN's-WORT, [*Hypericum.*] This grows wild in woods and uncultivated places throughout England. Its taſte is rough and bitteriſh; the ſmell diſagreeable. Hypericum has long been celebrated as a corroborant, diuretic, and vulnerary; but more particularly in hyſterical and maniacal diſorders: it has been reckoned of ſuch efficacy in theſe laſt, as to have thence received the name of *fuga demonum*. It is obſervable, that the flowery tops tinge expreſſed oils of a red colour (which very few vegetable ſubſtances will do) and communicate a blood red to rectified ſpirit. The oil tinged by them is kept in the ſhops.

Sweet JOHN. A narrow-leaved Sweet-William. *See* CARNATION.

JOHN-APPLE. An apple ſo called.

JONQUIL. *See* DAFFODIL.

JUG. Meadow or paſture.

IPECACOANHA. A root brought from the Spaniſh Weſt-Indies. It is divided into two ſorts, Peruvian and Brazilian: but the eye diſtinguiſhes three,

three, aſh-coloured or grey, brown, and white. The aſh-coloured, or Peruvian ipecacoanha of the ſhops, is a ſmall wrinkled root, bent and contorted into a great variety of figures, brought over in ſhort pieces, full of wrinkles, and deep circular fiſſures, quite down to a ſmall white woody fibre that runs in the middle of each piece; the cortical part is compact, brittle, looks ſmooth and reſinous upon breaking: it has very little ſmell; the taſte is bitteriſh and ſubacrid, covering the tongue, as it were, with a kind of mucilage. The brown is ſmall, and ſomewhat more wrinkled than the foregoing, of a brown or blackiſh colour without, and white within; this is brought from Brazil. The white ſort is woody, has no wrinkles, and no perceptible bitterneſs in taſte. The firſt ſort (the aſhcoloured, or grey ipecacoanha) is that uſually preferred for medicinal uſe. The brown has been ſometimes obſerved, even in a ſmall doſe, to produce violent effects. The white, though taken in a large one, has ſcarce any effect at all: Mr. Geoffroy calls this ſort baſtard ipecacoanha, and complains that it is an impoſition upon the public. To what ſpecies of plant the ipecacoanha belongs, has not as yet been determined. Geoffroy, Neuman, Dale, and Sir Hans Sloane, inform us, that the roots of a kind of apocynum (dog's bane) are too frequently brought over in its ſtead: and inſtances are given of ill conſequences following from the uſe of theſe roots: if the marks above laid down, particularly the aſh colour, brittleneſs, deep wrinkles, and bitteriſh taſte, be carefully attended to, all miſtakes of this kind may be prevented.

Ipecacoanha was firſt brought into Europe about the middle of laſt century, and an account of it publiſhed about the ſame time by Piſo; but it did not come into general uſe till about the year 1686, when Helvetius, under the patronage of Lewis XIV, introduced it into practice. The root is one of the mildeſt and ſafeſt emetics we are acquainted with; and has this peculiar advantage, that if it ſhould not operate by vomit, it paſſes off by the other emunctories. It was firſt introduced among us with the character of an almoſt infallible remedy in dyſenteries, and other inveterate fluxes; as alſo in diſorders proceeding from obſtructions of long ſtanding; nor has it loſt much of its reputation by time. It dyſenteries, it almoſt always produces happy effects, and often performs a cure in a very ſhort ſpace of time. In other fluxes of the belly, in beginning dyſenteries, and ſuch as are of a malignant kind, or where the patient breathes a tainted air, it has not been found equally ſucceſsful: in theſe caſes it is neceſſary to continue the uſe of this medicine for ſeveral days, and to join with it opiates, diaphoretics, and the like. This root, given in ſubſtance, is as effectual, if not more ſo than any of the preparations of it: the pure reſin acts as a ſtrong irritating emetic, but is of little ſervice in dyſenteries; whilſt an extract prepared with water is almoſt of equal ſervice in theſe caſes with the root itſelf, tho' it has little effect as an emetic. Geoffroy concludes from hence, that the chief virtue of ipecacoanha in dyſenteries depends upon its gummy ſubſtance, which lining the inteſtines with a ſoft mucilage, when their own mucus has been abraded, occaſions their exulcerations to heal, and defends them from the acrimony of the juices: and that the reſinous part, in which the emetic quality reſides, is required where the morbific matter is lodged in the glands of the ſtomach and inteſtines. But if the virtues of this root were entirely owing to its mucilaginous, or gummy part, pure gums or mucilages might be employed to equal advantage. Water, aſſiſted by a boiling heat, takes up from all vegetables a conſiderable portion of reſinous along with the gummy matter: if the ipecacoanha, remaining after the action of water, be digeſted with pure ſpirit, it will not yield half ſo much reſin as at firſt: ſo that the aqueous extract differs from the crude root only in degree, being proportionably leſs reſinous, and having leſs effect, both as an emetic, and in the cure of dyſenteries. The virtues of ipecacoanha, in this diſorder, depend upon its promoting perſpiration, the freedom of which is here of the utmoſt importance, and an increaſe of which, even in healthful perſons, is generally obſerved to ſuppreſs the evacuation by ſtool. In dyſenteries, the ſkin is for the moſt part dry and tenſe, and perſpiration

obſtructed: the common diaphoretics paſs off without effect through the inteſtinal canal: but ipecacoanha, if the patient, after a puke or two, be covered up warm, brings on a plentiful ſweat. After the removal of the dyſentery, it is neceſſary to continue the uſe of the medicine for ſome time longer, in order to prevent a relapſe: for this purpoſe, a few grains, divided into ſeveral doſes, ſo as not to occaſion any ſenſible evacuation, may be exhibited every day; by this means the cure is effectually eſtabliſhed. And indeed ſmall doſes, given even from the beginning, have been often found to have better effects in the cure of this diſeaſe than larger ones. Geoffroy informs us, from his own experience, that he has obſerved ten grains of the powder to act as effectually as a ſcruple or two; and therefore confines the doſe betwixt ſix and ten grains.

IRONWOOD, [*Syderoxilum.*] This is a native of warm climates, and will not bear the air of England, unleſs preſerved in ſtoves; it may be propagated by layers and ſeeds.

IRONWORT, [*Sideritis.*] This plant will bear the open air, and may be propagated by ſeeds. It is only admitted into the gardens for the ſake of variety.

JUDAS-TREE, [*Cercis.*] The ſpecies are, 1. The common Judas Tree. 2. The Canada Judas Tree. 3. The Carolina Judas Tree, with pointed leaves.

The firſt of theſe is a native of the warmer parts of Europe, and abounds in Italy, Spain, and the ſouthern parts of France.

The ſecond ſort is common in Virginia, New-England, Canada, and moſt of the northern countries of America, where it is called Red Bud, from the beautiful colour of its flower-buds.

The third ſort is a common plant in the woods of Carolina, but differs from the other two in the form of its leaves, which are pointed, the former being nearly round; the flowers of this too are ſmaller, and the plants, for three or four years, require a little more ſhelter in caſe of hard winters, after which they will bear our climate perfectly well in an ordinary ſituation.

Theſe trees may be propagated by layers, which will make handſome enough plants if properly trained; but the ſeedlings are ſtill better, and ſeeds from the places of their native growth are preferable to thoſe ſaved in Britain, being larger and better ripened.

As ſoon as thoſe ſeeds are either received from abroad, or gathered at home, after having been made quite dry, let them be mixed with looſe ſand, and preſerved from froſt and wet till the latter end of March, as the weather is more or leſs favourable. About this time ſow them on a bed of rich mellow dry ſoil, and cover them half an inch deep. In four or five weeks the plants will begin to appear, when the bed ought to be hooped over, and, when neceſſary, covered with mats, firſt to protect them from the cold froſty winds frequent at that ſeaſon, and exceſſive rains which ſometimes burſt them, and afterwards to ſcreen them from the ſcorching heat of the ſun, which will much accelerate their growth. From their appearance above ground, they muſt be gently, though frequently watered in the mornings while the weather continues cold, but afterwards in the evenings when mild. In this ſituation they will require no more trouble, than, in caſe of a ſevere winter, throwing the mats over them in ſtorms, and removing them regularly as the air becomes temperate.

The ſucceeding ſpring, as ſoon as the buds begin to ſwell, remove the plants from the ſeminary to a nurſery of the ſame kind of well-prepared looſe ſoil; ſhorten the top-roots, and plant them in rows two feet and a half diſtant, and about a foot aſunder in the row; give them a gentle watering, which ought to be frequently repeated in the evenings of dry weather during the ſummer months, and keep the ſoil about them clean and mellow. Theſe trees naturally grow in a wild irregular manner, and, when left to unaſſiſted nature, are rather of the buſhy ſhrub kind. To correct this defect, place a ſtake firm by the ſide of each plant; and as it advances in height, tie the leading ſhoot to it with a piece of ſoft baſs, which direction it will afterward retain, and the plants will grow ſtraight and regular. In caſe the following winter ſhould prove ſevere, it may be neceſſary to throw ſome peaſe-ſtraw over the ground, to keep the froſts from injuring the roots, and,

and, the ſucceeding ſpring, let it be dug into the ground between the rows. At this time let all the low-growing branches of the former year be cut cloſe away, that they may not impede the vigorous growth of the leading ſhoot, which muſt be conſtantly tied to the ſtake as it advances in height; but though the loweſt, all the ſmall branches are not to be taken away, that the main one may not be drawn too tall and ſlender, but advance with bulk proportioned to its height. If theſe circumſtances are attended to, the plants will only require the additional trouble of keeping them clean during their abode here.

The Judas-tree ſhould not remain longer than two years in the ſame nurſery from the ſeed-bed, and therefore, the ſucceeding ſpring, may either be planted out where they are to remain, or (which Mr. Boutcher rather adviſes) be committed to another nurſery, and planted at greater intervals, for two years longer, where they may be treated in the ſame manner as has been directed; by which time, they will be large, handſome, hardy plants.

JUG. A drinking veſſel with a ſwelling belly.

JUJUBES, [*Jujubæ.*] A half-dried fruit brought from France. Jujubes have a pleaſant ſweet taſte. They are recommended in an acrimonious ſtate of the juices; in coughs from thin ſharp defluxions; and in heat of urine: but they are at preſent, among us, a ſtranger to medicinal practice, and to the ſhops.

JULIANS. Dame's flower.

JULY. The ſeventh month of the year, containing 31 days.

Product of the Kitchen Garden.

Artichoak, cauliflowers, cabbages, carrots, beans, peaſe, kidney-beans, turnips, lettuces, cucumbers, melons, all ſorts of ſallet, finochia, onions, garlick, rocambole, parſley, chervil, beets, horſe-radiſh, early potatoes, burach, radiſhes, marygolds, aromatic herbs, &c.

Fruits in prime, and now laſting.

Pears: Primative, Robine, Petit Muſcat, Cuiſſe Madam, Muſcadelle-rouge, Orange Muſk, and ſome others. The black pear of Worceſter, and Lord Cheyne's green pear, if well preſerved, remain yet in being.

Apples: Codlin, margaret apple, white juneating, Stubbard's apple, ſummer coſtin, ſummer pearmain, pomme de Rambour. The John apple, ſtone pippin, and oaken pin, yet remain of the former year.

Cherries: Kentiſh, Duke, Gaſcoign's-heart, Carnation, Lukeward, Ox-heart, Amber-heart, Coroon, white Spaniſh, amber, and black-cherries.

Peaches: Brown and white Nutmeg, and Anne Peaches.

Nectarines: Fairchild's early nutmeg, Newington, Roman red, Elruge, and the Brunion.

Plumbs: Jaun Hative, Morocco, Orleans, blue Primordian, Violet, Royal, Blue Perdrigon, Mirabelle, Imperial, white Matchlefs, Maitre Claude, Green Gage, Fotheringham, Damaſcine, Drap d'Or, Gros Damas Violet, Cheſton, with ſome others.

Apricots: The Orange, Roman, Breda, Algier, Bruxelles, and Turkey.

Gooſeberries, raſpberries, and currants, and in cold ſituations, white, green, and Chili ſtrawberries.

And in the Stove, the Anana or Pine Apple.

Plants now in Flower in the Pleaſure Garden.

Carnations, pinks, female balſamine, Marvel of Peru, bean caper, capſicum indicum, everlaſting pea, ſweet-ſcented pea, golden rod of ſeveral kinds, French Marygold, African, amaranthus's, amaranthoides, ſcarlet lychnis, double roſe campion, Virginian ſpiderwort, annual ſtock-july-flower, China pink, double ptarmica or ſneezewort, larkſpurs, ſome ſorts of ſtarwort, ſun-flower of different kinds, moly's, virgin's bower, ſcarlet martagon, double white lily, day lily, ornithogalum, peach-leaved campanula, red valerian, French willow, acanthus, lychnideas two or three kinds, poppies of divers kinds, great gentian, ſweet ſultan three kinds, Indian ſcabious, Venus looking-glaſs, nigella, Venus navelwort, thorn apple, dwarf annual ſtock, dwarf lychnis, lupines of ſeveral ſorts, linarias ſeveral ſorts, white hellebore, Spaniſh figwort, antirrhinum or calves ſnout of ſeveral ſorts, hieraciums of ſeveral kinds, and ſome others of leſs note.

Hardy Trees and Shrubs now in Flower.

Several ſorts of roſes, Dutch, latered, ever-green, Engliſh long-blowing, ſcarlet Virginian, and late white honeyſuckles, Spaniſh broom, Virginian acacia,

cia, the tulip-tree, ſhrub cinquefoil, common white, yellow, and dwarf yellow jaſmines, ſpirea with yellow leaves, ditto with marſh elder-leaves, Cateſby's climber, double and ſingle pomegranates, paſſion-flower, trumpet flower oleaſter or wild olive, agnus caſtus, althæa frutex, bladder ſena, cytiſſus lunatus, ciſtuſes two or three kinds, Canary hypericum, phlomis or ſage tree two or three ſorts, with ſome others.

Plants in Flower in the Green-Houſe and Stove.

Oranges and lemons, myrtles, amomum Plinii, barba Jovis or ſilver buſh, ciſtus halim folio, ciſtus ledon, two or three ſorts; Spaniſh yellow Indian azorian, Arabian and ilex-leaved jaſmines, geraniums of ſeveral ſorts, tree ſcabious two ſorts, colutea Æthiopica, apocynums of ſeveral kinds, blue and ſcarlet cardinal's flower, caſſias of two ſorts, Acacia Indica Aldini; Guidonia Ulmi facie, the ſenſitive and humble plants, coral-tree, lotus argentea cretica, and lotus hæmorrhoidalis anonis, two or three ſorts, granadillas two or three ſorts, coffee-tree, white Spaniſh broom, Fabago Africana arboreſcens flore ſulphureo, &c. Oleanders red, white, ſweet-ſcented and double-flowered, frittillaria craſſa both ſorts, ſeveral ſorts of ficoides, ſmall creeping cereus, Cotyledons of ſeveral ſorts, ſedums ſeveral kinds, Ketmias of ſeveral ſorts, tithymals of ſeveral ſorts, Ricinus or palma Chriſti, Ricinoides folio multifido, blue umbellated throat wort, convolvuluſes ſeveral ſorts, double Indian naſturtium, myrto ciſtus, polygala fruteſcens, digitalis acanthoides, heliotropium ſcorodoniæ folio, gnaphalium maritimum, elychryſums ſeveral ſorts, caltha Africana croci folio, &c. Anemonoſpermos of ſeveral ſorts, Dorias ſeveral ſorts, blue African umbellated hyacinth, Indian reed of two or three ſorts, aloes of ſeveral ſorts, Yucca, phalangium foliis cepaceis, Zeylon lily, dracunculoides, baſſellas, tetragonocarpos, viburnums two or three ſorts, olives, rhamnuſes two or three ſorts, papaya, ſiſyrinchium, Indian figs of ſeveral kinds, momordica, caper-tree, phytolacca, with ſome others.

Medicinal plants which may be now gathered for uſe.

Fomentil, Winter ſavory, ros ſolis, ſneezewort, clown's woundwort, origanums, toadflax, worm-wood, wild and wood ſage, clary, endweed, goat's rue, waterdock, maſtic, ſweet cicely, purſlane, with moſt of thoſe mentioned for June.

JUNE. The 6th month of the year containing 30 days.

The Products of the Kitchen Garden.

Cauliflowers, cabbages, beans, peaſe, artichokes, carrots, turneps, cabbage, brown Dutch, Imperial, Sileſia, white and black cos; royal and green cabbage lettuces; all ſorts of young ſallet herbs, as creſſes, chervil, corn ſallet, muſtard, rape, turnep, &c.

All ſorts of ſweet herbs, as lavender, thyme, winter ſavory, hyſſop, marum, ſtæchas, &c. as alſo ſage, clary, roſemary, origanum, penny-royal, mint, baum, and many other ſorts of medicinal plants; as alſo purſlain, cucumbers, melons, finochia, parſley, ſorrel, with many others.

Fruits in prime, or yet laſting.

Gooſeberries, ſtrawberries, raſpberries, currants, Duke, Kentiſh, Flanders heart, black heart, lukeward and Spaniſh cherries; maſculine apricot, early nutmeg peach; and in the forcing frames ſeveral ſorts of peaches, nectarines, grapes, apricots, &c. and in the ſtove, the ananas or pine apple.

Fruits continuing.

Golden ruſſet, ſtone pippin, Deux Anns or John apple, oaken pin, and ſome other apples; as alſo Lord Cheyney's winter green, black pear of Worceſter, double flower, Royal de Huyver, winter Boncretien, Burgamot Bugi, Engliſh Warden, and ſome other ſorts of pears, if well preſerved.

Plants now in Flower in the Pleaſure Garden.

Stock July-flowers of ſeveral ſorts, white wall-flower ſingle and double, French honey-ſuckle white and red, lobels, catch-fly, Venus navel-wort, flos Adonis, double and ſingle ſweet-williams, double perennial catch-fly, ſeveral ſorts of daizies, bulbous-fiery lily, martagons ſeveral ſorts, ſea daffodil, bloody cranes-bill, ſeveral ſorts of bulbous iris's, Canterbury bell, peach-leav'd bell-flower, nettle-leaved bell-flower with blue and white flowers, ſingle and double; red, white, and garden valerian; buphthalmums of ſeveral ſorts, leucanthemum or ox-eye daizy, red and white batchelor's button double and ſingle, double and ſingle roſe campions both white and red, double ragged robin, lych-

nis,

nis from the Alps with deep red flowers growing in an umbel, ſeveral ſorts of Molys, ornithogulums, Savoy and Tradeſcant's ſpider-wort, French willow, tree primroſe, poppies of various kinds, columbines of various colours, ſcarlet lychnis, Spaniſh fig-wort, Fairchild's mule, lychnideas, fraxinella white and red, monk's wood, great blue bottle, blue feathered hyacinth, double-white mountain ranunculus, larkſpurs of ſeveral kinds, Indian ſweet-ſmelling ſcabious, ſweet ſultan, ſweet peaſe, everlaſting peaſe, ſeveral ſorts of thrift, ſea holly, mountain ſmooth-leav'd and Alpine blue ſea hollies, golden rod of two or three kinds, Sir George Wheeler's tutſan, Nigella, or fennel-flower of ſeveral kinds, hieraciums ſeveral ſorts, ſunflower, white lily, ſtrip'd white lily, candy tuft, dwarf lychnis, fox-gloves, gladioluſes ſeveral kinds, white hellebore, female balſamine, French marygold; Africans, Indian Pinks; flammula Jovis, periwinckles, broad-leav'd upright lily of the valley flower'd, and deep-red apocymums or dog's-banes, yellow perennial and white Tangier fumitories, day lily, ſea rag-wort, ſome carnations, with ſeveral other of leſs note.

Trees and Shrubs which are hardy, now in flower.

Scorpion and bladder ſena, roſes of ſeveral kinds, double and ſingle virgin's bower, Ciſtuſes of ſeveral ſorts, moon trefoil, Spaniſh broom, ſyringa, oleaſter, or wild olive, ſpirea ſalicis folio, common white, dwarf, and common yellow jaſmines; Italian, late red, German evergreen, Engliſh long-flowering, and common or late white honey-ſuckles; nettle-tree, lime-tree, ſpirea opuli folio, Cateſby's climber or Carolina kidney-bean tree, upright ſweet Canada raſberry, woody night-ſhade, mallow-tree, althæa frutex, tulip-tree, ſhrub cinquefoil, Spaniſh tree germander, perennial ſhrubby lamium or baſe horehound, with ſome others of leſs note.

Plants now in Flower in the Green-Houſe, Garden, and Stove.

Oranges, lemons, citrons, myrtles, olives, geraniums of ſeveral ſorts, ſcarlet althæa, barba Jovis, yellow Indian, Spaniſh, ilex-leav'd, and Arabian jaſmines; ſedums of ſeveral kinds, ficoïdes of ſeveral ſorts, cotyledons, aloes of ſeveral kinds, ſome ſorts of paſſion-flowers, French phyſick nut, coffee tree, dwarf pomegranate, oleanders, three-leav'd ſumach, Indian cane, cytiſſuſes, ciſtuſes of ſeveral ſorts, amomum Plinii, ſeveral ſorts of apocynum or dogs-bane, dwarf American campanula, anemonoſpermoſes of ſeveral ſorts, polygana Africana, white Spaniſh broom, colutea Æthiopica flore Phœnicio, African tree ſcabious, ſenſitive plant, alcea fruteſcens flore rubro, melianthus or honey-flower, tree ſage, with ſeveral others.

Medicinal Plants.

Mullein, ſpeedwell, figwort, water betony, ſun-dew, ſarvile, ſelf-heal, penny-royal, red poppy-flower, pellitory, catmint, water-lily, ſpearmint, peppermint, ſcabious, yarrow, devil's-bit, feverfew, melilot, burnet, mallow, black and white horehound, burnet-ſaxifrage, ſage of virtue, red ſage, dittander, mountain flax, tanſey, ſtone-crop, hare's-foot trefoil, St. John's-wort, hyſſop, aliſander, aſh leaves, herb-robert, muſk crane's-bill, dove's-foot crane's-bill, broom, hedge muſtard, hemp agrimony, broad and narrow-leaved plantain, dragon's tarragon, lavender cotton, ladies bed-ſtraw, common and Roman wormwood, lavender ſpike, lime-tree flowers, bear's-breech, comfreys, ſpinach, maudlin, houſe-leek, mother of thyme, agrimony, hemlock, water hemlock, vervain, thyme, marſh-mallow, ſuccory, ladies-mantle, pimpernel, dwarf-elder, reſt-harrow, blue-bottles, roſemary, marygolds, ſilver-weed, germander, orpine, ſowbreadroot, foxglove, mugwort, borage, bugloſs, ſowthiſtle, garden orach, ſtinking orach, ſhepherd's purſe, honey-ſuckle, betony, carduus benedictus, calamint, avens, knot-graſs, camomiles, hound's-tongue, eye-bright, roſes, elder-flowers, ſtæchas, and brook-limes.

JUNIPER, [*Juniperus.*] This grows naturally in many parts of England; it is a low ſhrub, ſeldom riſing more than four or five feet high, ſending out many ſpreading branches, covered with a brown bark, garniſhed with narrow awl-ſhaped leaves, ending in acute points, placed by threes round the branches, which are of a greyiſh colour, and continue through the year; the male flowers ſometimes are ſituated at diſtances on the ſame plant

plant with the female, at other times they are upon diſtinct plants: the female flowers are ſucceeded by roundiſh berries which are firſt green, but when ripe are of a dark purple colour. The berries ripen in the autumn.

The wood, the berries, and the gum, are uſed in medicine; the gum is titled ſandaracha.

JUPITER's-BEARD, [*Barba Jovis.*] Silver-buſh. This is a ſhrub growing to the height of ten or twelve feet, the leaves are white and hairy, the flowers of a bright yellow colour appear in June. It is propagated by ſeeds and cuttings.

IVY, [*Hedera.*] This is a climbing ſhrubby plant, growing commonly from the trunks of trees, on old walls. The leaves have very rarely been exhibited internally, notwithſtanding they are recommended againſt the atrophy of children: their taſte is nauſeous, acrid, and bitter. Externally they have ſometimes been employed for drying and healing ichorous ſores, and likewiſe for keeping iſſues open. The berries were ſuppoſed by the antients to have a purgative and emetic quality: later writers have recommended them in ſmall doſes, as diaphoretics and alexipharmacs; and Mr. Boyle tells us, that in the London plague the powder of them was given with vinegar, with good ſucceſs, as a ſudorific: but we apprehend that the virtue of the compoſition was rather owing to the vinegar than to the powder.

There is ſpecies of ivy common in North-America, which has been brought into England, that climbs like the Engliſh ivy, but ſhoots to the length of twenty feet in a ſeaſon; it may be propagated by cuttings; it is generally called Virginian or American creeper.

Ground IVY. *See* GROUND IVY.

GUM IVY. This gum or reſin was ranked by the ancients among the depilatories; from this claſs, which it certainly had no title to, it has ſince been removed to that of conglutinaters of wounds, to which it has no very juſt one.

K.

KALI. Glaſswort.

KEDLACK. Charlock.

KEEVE, or KIVER. A flat veſſel to work beer in, &c.

KEG. A ſmall veſſel or caſk.

KELL. A web, in which inſects invelope themſelves.

KELP. The ſalt or aſhes of glaſſwort.

KERNEL. The eatable ſubſtance encloſed in a ſhell.

KEXES. Hemlock.

KID. The young of the goat.

KIDNEY-BEANS. *See French* BEANS.

KIDNEY-BEAN-TREE, [*Glycine.*] This climbing plant is raiſed for ſale in ſeveral nurſeries near London, where it is known by the name of Carolina Kidney-bean-tree. It is propagated by laying down the young branches in October, which will be rooted by that time twelvemonth, and may then be tranſplanted either into a nurſery for a year to get ſtrength, or to the place where they are to remain for good, which ſhould be in a warm light ſoil and ſheltered ſituation, where they will endure the cold of our ordinary winter very well; and if their roots be covered with ſtraw, fern, peaſe-haulm, or any other light covering, there will be no danger of their being deſtroyed by great froſt.

KIDNEYWORT. Navelwort.

KINE. Cattle.

KINNEL. A powdering tub, a ſalting trough.

KING's-SPEAR. *See* ASPHODEL.

KIT. A milking pail with two ears and a cover.

KITCHEN-

KITCHEN-GARDEN. A good kitchen-garden is almoſt as neceſſary in the country, as a kitchen to a houſe; for without one, there is no way of being ſupplied with a great part of neceſſary food, the markets in the country being but poorly furniſhed with eſculent herbs, and thoſe only upon the market-days, which are ſeldom oftener than once a week; ſo that unleſs a perſon has a garden of his own, there will be no ſuch thing as procuring them freſh, in which their goodneſs conſiſts; nor can any variety of theſe be had in the country markets, therefore whoever propoſes to reſide in the country ſhould be careful to make choice of a proper ſpot of ground for this purpoſe; and the ſooner that is made and planted, the produce of it will be earlier in perfection; for fruit trees and aſparagus require three years to grow, before any produce can be expected from them; ſo that the later the garden is made, the longer it will be before a ſupply of theſe things can be had for the table.

The great thing to be conſidered is, to make choice of a good ſoil, not too wet nor over dry, but of a middling quality; nor ſhould it be too ſtrong or ſtubborn, but of a pliable nature, and eaſy to work; and if the place where you intend to make the kitchen-garden ſhould not be level, but high in one place and low in another, we would by no means adviſe the levelling it; for by this ſituation you will have an advantage which could not be obtained on a perfect level, which is, the having one part of dry ground for early crops, and the low part for late crops, whereby the kitchen may be the better ſupplied throughout the ſeaſon with the various ſorts of herbs, roots, &c. And in very dry ſeaſons, when in the upper part of the garden the crops will greatly ſuffer with drought, then the lower part will ſucceed, and ſo vice verſa; but we would by no means direct the chuſing a low moiſt ſpot of ground for this purpoſe, for although in ſuch ſoils garden herbs are commonly more vigorous and large in the ſummer ſeaſon, yet they are ſeldom ſo well taſted or wholſome as thoſe which grow upon a moderate ſoil; and eſpecially, ſince in this garden your choice fruits ſhould be planted, it would be wrong to make choice of a very wet ſoil for this purpoſe.

This garden ſhould be fully expoſed to the ſun, and by no means overſhadowed with trees, buildings, &c. which are very injurious to fruit trees; but if it be defended from the north wind by a diſtant plantation, it will greatly preſerve the early crops in the ſpring. But theſe plantations ſhould not be too near nor very large, for we have generally found, where kitchen-gardens are placed near woods or large plantations, they have been much more troubled with blights in the ſpring than thoſe which have been more expoſed.

The quantity of ground neceſſary for a kitchen-garden muſt be proportioned to the largeneſs of the family, or the quantity of herbs deſired: for a ſmall family, one acre and a half of ground may be ſufficient; but for a large family, there ſhould not be leſs than four or five acres; becauſe, when the ground is regularly laid out, and planted with eſpaliers of fruit-trees, this quantity will be found little enough, notwithſtanding what ſome perſons have ſaid on this head.

This ground muſt be walled round, and if it can be conveniently contrived, ſo as to plant both ſides of the walls which have good aſpects, it will be a great addition to the quantity of wall fruit: and thoſe ſlips of ground which are without ſide of the walls, will be very uſeful for planting of gooſeberries, currants, ſtrawberries, and ſome ſorts of kitchen plants, ſo that they may be rendered equally uſeful with any of the quarters within the walls; but theſe ſlips ſhould not be too narrow, leſt the hedge, pale, or plantation of ſhrubs which incloſe them, ſhould ſhade the borders where the fruit-trees ſtand: the leaſt width of theſe ſlips ſhould be twenty-five or thirty feet, but if they are double that it will be yet better, the ſlips will be more uſeful, and the fruit-trees will have a larger ſcope of good ground for their roots to run. The walls ſhould be built about ten or twelve feet high, which will be a ſufficient height for moſt ſorts of fruit.

The ſoil of this garden ſhould be at leaſt two feet deep, but if deeper it will be ſtill better, otherwiſe there will not

not be depth enough for many ſorts of eſculent roots, as carrots, parſnips, beets, &c. which run down pretty deep in the ground; and moſt other eſculent plants delight in a deep ſoil, as well as many plants whoſe roots appear ſhort, yet if their fibres, by which they receive their nouriſhment, are traced, they will be found to extend to a conſiderable depth in the ground; ſo that when theſe are ſtopped by meeting with gravel, chalk, clay, &c. the plants will ſoon ſhew it, by their colour and ſtinted growth.

In the diſtribution of this garden, next the ſouth and other good aſpected walls, the borders ſhould be at leaſt eight or ten feet broad, whereby the roots of the fruit-trees will have greater liberty than in ſuch places where the borders are not above three or four feet wide; and upon theſe borders you may ſow many ſorts of early crops, if expoſed to the ſouth; and upon thoſe expoſed to the north, you may have ſome late crops; but we would by no means adviſe the planting any ſort of deep-rooting plants too near the fruit-trees, eſpecially peaſe and beans; though for the advantage of the walls, to preſerve them in winter, and to bring them forward in the ſpring, gardeners in general are too apt to make uſe of theſe borders, which are near the beſt aſpected walls, to the great prejudice of their fruit-trees; but for theſe purpoſes it is much better to have ſome reed hedges fixed in ſome of the warmeſt quarters, cloſe to which you ſhould ſow and plant early peaſe, beans, &c. where they will thrive as well as if planted near a wall, and hereby the fruit-trees will be entirely freed from ſuch troubleſome plants.

The walks of this garden ſhould be alſo proportioned to the ſize of the ground, which in a ſmall garden ſhould be ſix feet, but in a large one the middle walks ſhould be ten or twelve; on each ſide of the walk ſhould be allowed a border four or five feet wide between the eſpalier and the walk, whereby the diſtance between the two eſpaliers will be greater, and theſe borders, being kept conſtantly worked and manured, will be of great advantage to the roots of the trees; in theſe borders may be ſown ſome ſmall ſallad, or any other herbs which do not continue long, or root deep, ſo that the ground will not be loſt.

The walks of theſe gardens ſhould not be gravelled, for as there will be conſtantly an occaſion to wheel manure, water, &c. upon them, they would ſoon be defaced, and rendered unſightly; nor ſhould they be laid with turf, for in green walks, when they are wheeled upon or much trodden, the turf is ſoon deſtroyed, and thoſe places where they are much uſed become very unſightly alſo; therefore the beſt walks for a kitchen-garden are thoſe which are laid with a binding ſand; but where the ſoil is ſtrong and apt to detain the wet, there ſhould be ſome narrow under-ground drains made by the ſide of the walks to carry off the wet, otherwiſe there will be no uſing of the walks in bad weather; and where the ground is wet, ſome lime rubbiſh, flints, chalk, or any ſuch material as can be procured with the leaſt expence, ſhould be laid at the bottom of them; and if neither of theſe can be had, a bed of heath or furze ſhould be laid, and the coat of ſand laid over it, by which the ſand will be kept drier, and the walks will be found and good in all ſeaſons. Theſe ſand walks are by much the eaſieſt kept of any, for when either weeds or moſs begin to grow, it is but ſcuffling them over with a Dutch hoe in dry weather, and raking them over a day or two after, and they will be as clean as when firſt laid; or if the walks are covered with the duſt taken from the great roads, it will bind and make a firm walk.

The beſt figure for the quarters to be diſpoſed, is a ſquare or an oblong, where the ground is adapted to ſuch a figure; otherwiſe they may be triangular, or of any other ſhape, which will beſt ſuit the ground.

When the garden is laid out in the ſhape intended, if the ſoil be ſtrong, and ſubject to detain moiſture, or be naturally wet, there ſhould always be under-ground drains made, to carry off the wet from every quarter of the garden, for otherwiſe moſt ſorts of kitchen plants will ſuffer greatly by moiſture in winter; and if the roots of the fruit-trees get into the wet, they will never produce good fruit, ſo that there cannot be too much care taken to let off all ſuperfluous moiſture from the kitchen-garden.

In one of thoſe quarters, which is ſituated

ſituated neareſt to the ſtables, and beſt defended from the cold winds; or if either of the ſlips without the garden wall, which is well expoſed to the ſun, lies convenient, and is of a proper width, that ſhould be preferred, for a place to make hot-beds for early cucumbers, melons, &c. The reaſon for our giving the preference to one of theſe ſlips, is, firſt, there will be no dirt or litter carried over the walks of the kitchen-garden in winter and ſpring, when the weather is generally wet, ſo that the walks will not be rendered unſightly; ſecondly, the view of the hot-beds will be excluded from ſight; and laſtly, the convenience of carrying the dung into theſe ſlips, for by making of a gate in the hedge or pale, wide enough for a ſmall cart to enter, it may be done with much leſs trouble than that of burrowing it thro' the garden; and where there can be a ſlip long enough to contain a ſufficient number of beds for two or three years, it will be of great uſe, becauſe by the ſhifting of the beds annually, they will ſucceed much better than when they are continued for a number of years on the ſame ſpot of ground; and as it will be abſolutely neceſſary to fence this melon-ground round with a reed hedge, it may be ſo contrived as to move away in pannels, and then that hedge, which was on the upper ſide the firſt year, being carried down to a proper diſtance below that which was the lower hedge, and which may remain, there will be no occaſion to remove more than one of the croſs hedges in a year; therefore, I am perſuaded, whoever will make trial of this method, will find it the moſt eligible. The moſt important points of general culture conſiſt in well digging, keeping clean, and manuring the ſoil, and giving proper diſtance to the trees and plants, according to their different growths. The dunghills ſhould alſo be kept clear from weeds, for it will be to little purpoſe to keep the garden clean, if this is not obſerved; for if the ſeeds of weeds are ſuffered to ſcatter upon the dung, they will be brought into the garden, whereby there will be a conſtant ſupply of weeds yearly introduced, to the no ſmall damage of your plants, and a perpetual labour occaſioned to extirpate them again. Another thing which is abſolutely neceſſary to be obſerved, is, to carry off all the refuſe leaves of cabbages, the ſtalks of beans, and haulm of peaſe, as ſoon as they have done bearing, for the ill-ſcent which moſt people complain of in kitchen-gardens, is wholly occaſioned by theſe things being ſuffered to rot upon the ground; therefore when the cabbages are cut, all the leaves ſhould be carried out of the garden while they are freſh, at which time they may be very uſeful, for feeding of hogs, or other animals, and this will always keep the garden neat, and free from ill-ſcents. As for all other neceſſary directions, they will be found in the articles of the ſeveral ſorts of kitchen plants, which renders it needleſs to be repeated in this place. MILLER.

KNAPWEED. Bluebottle. *See Bale Weed*

KNEE-HOLLY, or KNEE-HOLM. *See Knee* HOLLY.

KNIGHTS-CROSS. Campion.

KNOT-GRASS, [*Centinodium.*] A kind of couch-graſs.

KNOT-BERRIES. Blackberries.

L.

LABDANUM. A reſinous ſubſtance exuding upon the leaves of the *ciſtus ladanifera Cretica flore purpureo, Tourn.* This reſin is ſaid to have been formerly collected from the beards of goats, who broufed the leaves of the ciſtus: at preſent a kind of rake, with ſeveral ſtraps or thongs of ſkins fixed to it, is drawn lightly over the ſhrub, ſo as to take up the unctuous juice, which is afterwards ſcraped off with knives. It is rarely met with pure, even in the places which produce it; the duſt blown upon the plant by the wind, mingling with the tenacious juice. The inhabitants are alſo ſaid to mix with it a certain black ſand. In the ſhops two ſorts are met with: the beſt (which is very rare) is in dark coloured, almoſt black maſſes, of the conſiſtence of a ſoft plaiſter, which grows ſtill ſofter upon being handled; of a very agreeable ſmell, and of a light pungent bitteriſh taſte: the other ſort is harder, not ſo dark coloured, in long rolls coiled up: this is of a much weaker ſmell than the firſt, and has a large admixture of fine ſand, which in the labdanum examined by the French academy, made up three-fourths of the maſs. Rectified ſpirit of wine almoſt entirely diſſolves pure labdanum, leaving only a ſmall portion of gummy matter which has no taſte or ſmell: and hence this reſin may be thus excellently purified for internal purpoſes. It is an uſeful ingredient in the ſtomachic and cephalic plaſters of the ſhops.

LABOUR. In the management of a farm great regard is to be paid to the article of labour; by a ſyſtem of œconomy only can a farmer obtain the reward of his toil, and a profit from his farm. This, if not reduced into the narroweſt poſſible compaſs, will, like a moth in a garment, deſtroy every thing that is good. The maſter's eye muſt ſuperintend the whole, and his hand muſt join in the execution too, if he would have his plans ſucceed. Labourers want looking after, and the man who will do well without, is a jewel of ineſtimable value. Labour on a farm is as various as the day of time, and continues from the firſt day of January to the laſt day of December, from the riſing to the ſetting ſun.

Ploughing, ſowing, reaping, and thraſhing, do not conſtitute the whole of the huſbandman's care; ditching, draining, hedging, planting, hoeing, weeding, and abundance of others, come in for their ſhare of attention and the exertion of diligence.

As the expence of labour will be very different in ſome counties from others, we would adviſe all farmers to employ men by the piece; and it is their fault to employ men a ſecond time, who fail to do well the firſt.

LABOURER. A man hired to work by the day or week, or employed by the acre, rod, pole, &c.

LABURNUM, [*Cytiſus.*] *See* BEAN TREFOIL. Theſe trees are propagated by ſowing their ſeeds (which they annually produce in plenty) in March, on a bed of freſh earth, covering them about half an inch thick; and in four or five weeks, the plants will appear above ground, when ſome gentle waterings in dry weather will much promote their growth.

The following February or March, remove them from the ſeed-bed to the nurſery; ſhorten their roots, which are naturally carrotty, but which are not injured by cutting them freely when young; plant them in lines, two feet and a half diſtant, and a foot aſunder in the line; keep them clean; dig the ground between the lines in autumn and ſpring, and let them remain two ſeaſons.

From hence remove them, in October or February, to another quarter: ſtill continue to reduce the roots that incline downwards, and ſmooth the extremities of the ſpreading ones; prune off all ill-placed lateral branches, but

but leave ſome of the ſmalleſt at proper diſtances; for this tree, making prodigious ſhoots when the ſide-boughs are all cut off, bends with its own weight, and is afterwards with difficulty redreſſed. This being properly performed, plant them in lines, five feet diſtant, and two feet aſunder in the line; manage them as before directed, and prune them annually to their proper form; in which ſituation they may remain three or four years, as occaſion requires, by which time they will produce their flowers, and make an agreeable appearance in whatever plantation they are placed. BOUTCHER.

LAC, [*Lacca.*] Improperly called gum lac; a ſort of wax of a red colour collected in the Eaſt Indies, by certain inſects, and depoſited on ſticks faſtened for this purpoſe in the earth. It is brought over, either adhering to the ſticks, or in ſmall tranſparent grains, or in ſemitranſparent flat cakes: the firſt is called ſtick lac, the ſecond ſeed lac, and the third ſhell lac. On breaking a peice of ſtick lac, it appears compoſed of regular cells like the honeycomb, with ſmall corpuſcles of a deep red colour lodged in them: theſe are the young inſects, and to theſe the lac owes its tincture, for when freed from them its colour is very dilute. The ſhell and ſeed lacks, which do not exhibit any inſects or cellular appearance upon breaking, are ſuppoſed to be artificial preparations of the other: the ſeed ſort is ſaid to be the ſtick lac bruiſed and robbed of its more ſoluble parts; and the ſhell to be the ſeed lac, melted and formed into cakes. The ſtick lac therefore is the genuine ſort, and ought alone to be employed for medicinal purpoſes. This concrete is of great eſteem in Germany, and other countries for laxity and ſponginеſs of the gums, proceeding from cold, or a ſcorbutic habit: for this uſe the lac is boiled in water, with the addition of a little allum; which promotes its ſolution, or a tincture made from it with rectified ſpirit. This tincture is alſo recommended internally in the fluor albus, and in rheumatic and ſcorbutic diſorders: it has a grateful ſmell, and not an unpleaſant, bitteriſh, aſtringent, taſte. The principal uſe of lac among us is in certain mechanic arts as a colouring drug, and for making ſealing-wax.

LACTARY. A milk houſe or dairy.

LACED THYME. Dodder of thyme. *See* DODDER.

LADIES APPLE. The name of an apple.

Ladies BEDSTRAW. See *Bedſtraw.*

LADIES BOWER, [*Clematis.*] *See* CLIMBERS.

LADIES COMB, [*Scandix.*] Shepherd's needle, ſweet fern. *See* FERN.

LADIES HAIR. *See* MAIDEN-HAIR.

LADIES MANTLE, [*Alchemilla.*] This plant grows wild in many parts of England. The leaves are as if plaited or folded together, ſo as to have given occaſion to the Engliſh name of the plant. All the parts of alchemilla diſcover to the taſte a rough glutinous quality; and hence may be of ſervice in diſorders proceeding from a laxity of the ſolids, and thin acrimonious ſtate of the fluids. This herb was formerly much eſteemed in ſome female weakneſſes, and in fluxes of the belly; as alſo for conglutinating wounds and ulcers; at preſent it is very rarely made uſe of.

LADIES SEAL, [*Tamus.*] Black Bryony.

LADIES SMOCK, [*Cardamine.*] A plant found in meadows in many parts of England, with purple and white flowers. There are varieties with double flowers admitted into the gardens, and are propagated by parting the roots in autumn.

LADIES THIGH. The name of an apple.

LADIES TRACES, [*Orchis.*] Dogſtones, orchis.

LADDER TO HEAVEN. Lilly of the valley.

LAIR. Paſture. A place in which a horſe, &c. feeds. *See Laid.*

LAMB. The young ſheep. Of the management of lambs in ſnowy weather, we have the following obſervations in the Farmer's Magazine, vol. 3, page 19. I have often heard it ſaid, that we ſhould profit by our misfortunes; this I have frequently done, particularly on the occaſion I am about to mention.

"I am but a young farmer, and, of courſe, have been, by my inexperience, led into many miſtakes. A few years ago, I bought five-ſcore lambs, with an intent to keep them for ſtore ſheep.

I turned them on my lands, where they did very well till the weather happened to be ſnowy.

As ſoon as the ſnow had covered the ground, I began to be alarmed leſt my lambs ſhould be ſtarved, and accordingly ordered one of my men to carry ſome ſweet hay, and lay it in different parts of the field for them to eat; but in this I did very wrong, for the ſnow was not yet ſo deep, but that the lambs could, by ſcraping with their feet, clear it away, and get at a little graſs. This made them refuſe the hay, to which they took a diſtaſte; and as more ſnow afterwards fell, I loſt that year no leſs than thirty-eight lambs by downright hunger, and the reſt were with great difficulty ſaved; for I was obliged to try many methods of teaching them to eat the hay.

I drew a little twiſted hay acroſs their mouths; but this, though a common method, had very little effect. I then rubbed ſome hay till it was ſoft and ſilky, putting it into their mouths, and holding them ſhut; this indeed, taught a few to eat, but not many. At laſt I was obliged to buy half a ſcore old ſheep, for which I paid a good price, and turn them in among my lambs. As the ſheep eat the hay faſt enough, the lambs ſoon followed the example; and by this means I ſaved above half my ſtock.

My over caution was the occaſion of my loſs; for had I left the lambs, without giving them any hay till the ſnow had been deep, and they had been pinched with hunger, they would have readily taken to eating of hay.

As my loſs was conſiderable, it dwelt on my memory, and I took care never to make the like miſtake again; in conſequence of which care, I have always of late years, met with great ſucceſs in the lambs I have ſince bought.

I am ſenſible, that many of your readers will think that I might have ſaved myſelf the trouble of writing, as to have ſent you a matter of ſuch ſmall conſequence; but I hope you will be quite of a different opinion, as you cannot but be ſenſible, that by inſerting ſuch cautions in your uſeful work, you will do infinite ſervice to young farmers." *See* SHEEP.

LAKEWEED. See *Biting* ARSMART.

LAMBS LETTUCE. *See* CORN-SALLAD.

LAMENESS *in Cows*, proceeds from many cauſes; from an impoſthume or abſceſs in the foot between the claws; this is called the low, foul, or wyſpe, and is cured by cutting into it with a ſharp penknife: afterwards dreſs it with a little yellow baſilicon on tow, or with greaſe and tar mixed together.

Lameneſs ſometimes proceeds from the cramp in the ſinews and muſcles. For the cure, bathe the part well with the following embrocation twice a day.

Take white-wine vinegar, one pint, ſpirits of ſal ammoniac, four ounces, mixed; or

Take camphorated ſpirits of wine, and beſt wine vinegar, each equal parts.

If the lameneſs proceed from an abſceſs or impoſthumation in any part, which ſhould be carefully examined into, when the immediate cauſe cannot be diſcovered, bathe the ſwelling with vegeto-mineral water; if, inſtead of diſperſing, it ſuppurates and comes to matter, let it be opened with a lancet, fleam, or ſharp penknife, and then waſhed and kept clean by the vegeto-mineral water.

When the lameneſs proceeds from pricks with a nail, &c. the nail ſhould be taken out, but none of the ſubſtance removed, if it can poſſibly be avoided. Let the part be waſhed clean with vegeto-mineral water, and if occaſion require, then let it be dreſſed with baſilicon on tow, covering the foot or part injured with a cloth.

If the part be much ſwelled, a turnip poultice ſhould be applied and renewed occaſionally.

Cleanlineſs is a neceſſary article to be obſerved, when lame in the foot, therefore the feet ſhould regularly be waſhed with water and ſoap or oatmeal.

LAMPAS, is an excreſcence in the roof of the mouth, which hinders a horſe from feeding, and happens uſually to young horſes. It is cured by applying a hot iron made for that purpoſe, and is ſucceſsfully performed in all parts of the kingdom. There is no need of any caution, but only that the farrier do not penetrate too deep, ſo as to ſcale the thin bone that lies under the upper bars, for that would be attended with very troubleſome and dangerous ſymptoms.

LAN-CHEAP. An ancient cuſtomary

mary fine, either in money or cattle, at every alienation of land, lying within ſome manor, or within the liberty o ſome borough.

LANSAC. The name of a pear.

LAND. Among ploughmen, is that diſtance or bed between the furrows on which corn is ſown, and in ſome counties conſiſts of three, four, five, or more turns or bouts of the plough.

LAND, In agriculture, in general means ſoil capable of vegetation, whether meadow, paſture, or arable; the due management of which conſtitutes the good farmer. The different kinds of land or ſoil are thoſe which take their chief properties from clay, loam, ſand, ſtone, gravel and chalk.

To improve land which cannot be eaſily manured, a correſpondent to the Farmer's Magazine writes thus. "In moſt large eſtates, in hilly countries eſpecially, there are conſiderable tracts of land ſo circumſtanced, as to be out of the reach of the uſual methods of improvement. They are either too remote from the farm yard, or difficult of acceſs on account of ſteep hills or bad roads. Such lands have no chance of being manured with dung, marle, aſhes, or any thing elſe, the carriage of which would be tedious, laborious, and expenſive. They are conſidered as waſte lands, and not worth half a crown an acre, and are ſuffered to be over-run with brambles, broom, furze, &c. from one generation to another, though capable of bearing good corn, if proper methods were purſued to that intent.

"I have at this time more than a hundred acres of land thus circumſtanced, which ſerve no other purpoſe than to ſummer a few ſheep and young cattle. This is the uſe to which theſe lands have been put time immemorial, conſequently I could get no more rent for them; but I have of late years determined to try to improve them.

"I cannot convey a better idea of my method than by giving an account of the means I am now purſuing. My firſt attempt was on ſixty acres, thirty of which lay on the north ſide of a deep valley, the aſcent to which was ſo ſteep that it is not practicable to carry on any manure but on horſes backs; and this would be too expenſive.

"The laſt tenant had left it in a woful plight, having, as he ſaid, ploughed and ſowed as long as he could get two corns for one: a miſerable condition indeed! My next tenant told me, after two years trial, it was to no purpoſe to ſow or plant it any more, unleſs I would be at the expence of a good dreſſing of dung upon it to improve it. This I reſolved not to do, for I have no idea of any thing being an improvement, that does not pay the extra expence, and increaſe the net profit for the trouble.

"I therefore told him, as it would not anſwer the expence of carrying manure on it, I would try another method, from which I promiſed myſelf better ſucceſs than he had met with from it hitherto.

"The two upper fields, about eleven acres, had lain more than a year ſince the laſt crop was taken off; and had nothing growing on them but thiſtles, horſe-daiſies, and other weeds, the natural produce of the ſoil. I therefore ſet a couple of ſtrong ploughs to work and ploughed the two fields deep and well. The ploughing was ſeveral times repeated in the ſpring at proper intervals, until the following July. By this time they were got tolerably clean, open, and in good condition. The ſoil of theſe fields was very different; ſome parts were very dry, others wet and ſpringy. The firſt was a poor lean flaty ground, the latter a cloſe tough moory earth, with an imperfect marle that held water like a diſh. I had the wet ground drained as well as I could, and the ditches cleaned, and had the earth carried on the flaty part at a proper time. I then ordered the moiſt field to be ſown with rye-graſs, and the dry with trefoil and burnet.

"The ſummer following, as ſoon as the crops were pretty full blown, I mowed and made them into hay, which I ſtacked in a corner of my upper field.

"The fields were then laid up till October, when I turned in a dozen mares and their foals, with ſome young cow cattle to have the run of the whole thirty acres during the winter. I alſo erected a hovel in the moſt ſheltered part of the field. A rack was put up, and when the graſs was grown bare, the rack was filled with hay as often as was neceſſary. I alſo littered the hovel with ſtraw now and then, which

was

was cleaned out once a week, and the dung thrown in a heap. In this manner the cattle remained till the end of February.

"While this was doing, another of the fields was managed in the ſame manner; as the extent of paſture increaſed, ſo I increaſed the number of cattle to be wintered on it, and at the end of the ſecond winter there was dung enough to manure one of the fields. After lying two or three years in graſs, I ſowed each field with black oats, and the year following I ſummer fallowed for turnips, which being fed off with ſheep produced ſucceſſively good crops of barley, clover, and wheat, obſerving to winter as many cattle there as I could.

"Theſe thirty acres, in the condition I firſt undertook to improve them, were not worth more than half a crown an acre, but by the above management they are now worth ten ſhillings at leaſt; and by a continuance of the ſame means are capable of ſtill greater improvement.

"This piece of management, though on a ſmall ſcale, ſhews plainly what an impediment to improvement is the letting out lands into very large farms. Many large farmers have ſeveral hundred acres, which are conſidered as waſte, or moors of very little value, only fit for young cattle to run upon; but if an eſtate of a thouſand pounds a year were divided into ten farms, it would be very practicable to make fifteen hundred pounds a year of it.

"The kind of management I have deſcribed comes the neareſt to dividing large farms into ſmall, or middling ſized. The improvement conſiſts in every part being perfectly occupied, and the produce ſpent on the lands on which they grow. This is never done or aimed at by a farmer who occupies two or three thouſand acres of land. He will not be attentive to the improvement of that part of the farm which lies ſeveral miles diſtant from home, when he has lands contiguous to his yard, on which he can lay all his manure at a ſmall expence, and to manure the other would be a very heavy one. This is not all: the extra expence of tillage will be equally heavy, as his men and horſes have ſo far to go, to and from work, that it takes up much of their time."

Another correſpondent in the Farmer's Magazine gives the following method

Of laying Land down to Graſs. I think nothing is of greater importance to huſbandmen, than a neat and judicious method of laying land down to graſs; yet in a general light, notwithſtanding the numerous modern improvements, there is no kind of buſineſs worſe executed. It is a misfortune to be lamented, that the generality of farmers are ſtrangers to, or unacquainted with, the nature of plants; while prejudice, the ever baneful parent of error, has ſuch powerful effect on ſome men's minds, that it is ſcarce poſſible to lead them out of the beaten track, however erroneous, which perhaps their anceſtors have purſued. To thoſe people who love improvements, it muſt be very unpleaſing to ſee land that is known to be in its nature good, laying for a long ſeries of years (as is often the caſe) almoſt bare and uſeleſs, after having been ſown down with graſs ſeeds. Indeed, oftentimes, the primary cauſes of theſe unpleaſing, but more unprofitable fields, proceeds from the land having continued too long in tillage, and not having had a proper rotation of meliorating crops, but exhauſted, or worn out of heart, by that pernicious and ever to be condemned method, of taking two, or as I have in ſome places ſeen practiſed, three ſucceſſive crops of white corn. When this has been adopted, the injudicious method of managing graſs ſeed I am lamenting, is only a ſecondary cauſe of the evil complained of, yet certainly produces very ill effects. I have heard many people boaſt of their land having continued 80 or 100 years in tillage, and with the aid of manure, ſay, they will grow corn yet! even the laſt winter, a gentleman ſhewed me a large field of his, which he boaſtingly averred had been under tillage 200 years. But how abſurd is ſuch a method of management as this? if you have a poor labourer, who has ever ſo ſtrong a conſtitution, yet by ſucceſſive toilſome days and reſtleſs nights, if he be ever ſo well fed, you may eaſily break that conſtitution, and loſe the man; but give him proper intervals of reſt, and though his toil be ſevere, he may prove uſeful even to old age.

age. Many people crop their moor-land allotted to them by diviſions, ſo long as it will grow a ſtraw, not timely dreading the effects that muſt inevitably follow when laid down to graſs. It is very common to ſow upon land for continuance five or ſix pounds of red clover, with about ten buſhels of hay-ſeeds per acre; while, to my certain knowledge, a great part of the latter are often nothing but annuals, the perſon not knowing the diſadvantage attending them, and the above quantities the only graſſes ſown. Now the red clover itſelf, being a biennial plant, (i. e. of two years duration) and ſo great a quantity of it ſown, accounts for the land looking well the firſt and ſecond year after ſowing; and, to many people's aſtoniſhment, after that period, rapidly declining, till either great quantities of dung, which is expenſive, or a long ſeries of years, equally ſo, cauſe it to be ſtocked with natural graſſes. It muſt ſurely then be wrong, when land is deſigned to lay in graſs for continuance, to ſow any kind of annual or biennial plants; for though they may flouriſh the firſt and ſecond years, if the land be in good heart and fine tilth, yet, as they are of ſhort duration, they certainly, when ſown, will exclude or ſtop the growth of the perennials, which are, in this caſe, the only proper graſſes to be ſown. Every huſbandman, undoubtedly, ought to ſuit his graſſes to the nature of his ſoil; and nothing can be a ſurer criterion in this reſpect, than obſerving what graſſes grow ſpontaneouſly on the ſides or corners of his tillage fields in the greateſt perfection. Theſe, one may reſt aſſured, are peculiar to the ſoil, and the ſeeds of ſuch kinds ſown will anſwer beſt. Some regard ought to be had to this circumſtance, viz. whether the land be chiefly deſigned for meadow or paſture; if for meadow, the farmer ſhould appropriate ſuch plants as will be neareſt in perfection together: if for paſture, a ſucceſſion of graſſes. To this poſition it may be objected, that few huſbandmen are ſufficiently acquainted with the nature, &c. of plants, yet that difficulty might in time be greatly obviated. If among other methods, a little book were publiſhed, ſo as to be purchaſed at a low rate, having all the moſt uſeful plants engraven thereon, and coloured from nature, with a compendious table, ſomething like the following, wherein, at one view, the farmer might ſee the colour, form, nature, and duration of the plants, with the ſoil they reſpectively ſuit beſt, he could be under no difficulty of appropriating proper ſeeds to his land.

Names of the Plants	Soil that ſuits.	Ripe.	Colour of the flower	What kind.	Month of flowering	Native of	Broad-Caſt, or Drill.
Hop Trefoil	moſt kinds	June & July	yellow	perennial	May & June	Britain	broad-caſt
Red ditto	ditto	ditto	purple	biennial	ditto	Brit. but ſeed from Holland	ditto
White ditto	ſand, gravel or loam	ditto	white	perennial	ditto	ditto	ditto
Lotus	dry ſoil	Auguſt	yellow	perennial	June & July	Britain	ditto
Meadow Poa	moſt kinds	ditto	wh. br.	ditto	ditto	ditto	ditto
Lucerne	moiſt	July	purple	perennial	June	Medea	drill.

"Numbers of people, particularly authors on huſbandry, have aſſigned an invariable quantity of graſs ſeeds to be ſown upon an acre of land, not inſinuating that different ſoils not only require different graſſes, but according to circumſtances, a very great difference in the quantity. Lord Kaimes adviſes 30lb. of white clover to be ſown upon an acre; "but, (ſays his Lordſhip) for immediate paſtures, I would adviſe 10lb. of white clover, 5 of yellow, 2 of ribwort, and 12 of rye-graſs." Now Mr. Young as warmly recommends 10lb. of white clover, 10 of burnet, and 10 of rye graſs, with a little ſaintfoin. Indeed, all the authors I have peruſed vary in this moſt material circumſtance.

"Hence, without ſome better guide than univerſal authorſhip, it is apparent one may eaſily be led into errors.

Each author, undoubtedly, ſuppoſes his method a good one; and admitting this as a fact for a particular place, it can only be ſo in a partial, not a general light. When various graſs ſeeds, and various quantities, are ſown under different methods of culture, and upon different ſoils, and the reſult of the experiments laid before the public, it muſt be an excellent guide to the farmer, who then need not ſubmit to the operation of blind chance, but reſt on that more ſolid and ſure baſis the teſt of experiment.

" To aſſign then a certain quantity of ſeeds for all kinds of land, muſt certainly be an erroneous rule, as daily experience, the moſt infallible guide, militates againſt it: but I think it may be advanced thus far, that red clover ſown on old or poor clayey ſoils, inſtead of an oat crop, (which I deem on ſuch ſoils the moſt impoveriſhing) or on light ſoil upon barley, will ſeldom fail, with good management, if it lies in a proper ſituation, and mixed with a little rye graſs and hop trefoil, and cut green, will be exceedingly ſerviceable for ſoiling draught horſes, &c. Clover is not of an impoveriſhing nature, as ſome people alledge it is; but one of the beſt improvers of ſuch ſoils as I am deſcribing ever yet diſcovered. It derives its principal ſupport from the under ſtratum. Lucerne and ſainfoin are very excellent graſſes for the ſoils they ſuit; but as they are too much confined to local circumſtances, prove not ſo generally uſeful as clover. When red clover is deſigned for a ſingle crop or two, and then the lay ploughed up, it is exceedingly beneficial to light lands, as it conſolidates the earth, and tends much to the production of a good wheat crop: and on clayey ſoils, particularly when depaſtured, is for the ſame end advantageous. I have often obſerved, that upon ſuch kind of ſoils, when the lay is broken up, the crop of wheat will be always in proportion to the number and goodneſs of the ploughings, the more the better; but reverſely for light ſoils. White clover is rather more delicate than the red, but will, like it, anſwer on moſt kinds of ſoil; its chief uſe is for paſtures. It has a repent ſtem, and, being a perennial, makes it very valuable; but unleſs for ſeed, it ſhould always be ſown with other graſſes peculiar to the ſoil. I love to ſow, for continuance, a good quantity of this graſs, but that varies according to the uſe intended, the mode of culture, and the nature of the ſoil.

" Several perſons, accounted intelligent huſbandmen, ſow their graſſes for continuance upon a ſummer fallow; but I think, unleſs it be old exhauſted tillage, it has two diſadvantages, viz. loſing a crop of corn, and being liable to be out-grown by weeds. Indeed, upon old tillage, the method is a good one, as it is not like freſh land ſo prone to grow weeds; nor can it be expected that ſuch land can produce ſo rich a crop of corn, as to make the farmer more anxious about it than his crop of graſs. It is a good way to ſow the graſs-ſeed, if ſandy, gravelly, or loamy land, upon barley; but by all means a light ſeed of barley ſhould be ſown. If clayey ſoil, upon beans or wheat; the ſame rule to be obſerved in regard to ſeed. I have known 50 buſhels per acre, Winchester, produced from a Winchester buſhel of barley, beſides an amazing fine ſhew of graſs. In all theſe caſes manure is undoubtedly requiſite, and the different ſorts and methods of laying it upon the land are numerous; but after having a proper manure for the ſoil, the queſtion remains, whether it ſhould be laid in or upon the land; and from what I have ſeen of the operation of manure, it is a good way, if the land has been exhauſted, to plough it in before the ſeeds are ſown, and timely give it a top dreſſing afterward, but if in good heart, to lay it upon the ſurface the firſt winter after ſowing. There are many exceeding uſeful graſſes that will grow on almoſt all kinds of ſoil, ſuch as the Lotus, the great meadow Poa, creſted Dogſtail, &c. but are not to be purchaſed in quantities in the north of England, which is a great pity. If theſe, and ſeveral other perennials, were collected, and ſown ſeparately for the production of ſeed, the expence would ſoon be defrayed to the grower, and he would ſtill deſerve the thanks of the public. In fact, ſo great is the benefit derived not only to individuals, but the community at large, from the improvement of land, that every nerve ought to be ſtrained to aboliſh theſe pernicious practices of continuing it too long in tillage, and ruining it by ſucceſſive exhauſting crops. It is ſelf-evident

evident they are too often the ſources of the tenant's ruin, and the landlord's loſs." *See* CLAY, SAND, GRAVELLY SOILS, MANURE, &c.

LARCH TREE, [*Larix.*] To propagate the larch tree, gather the cones in the month of March or April, and ſpread them in a dry covered place, till the weather become warm, in May or June, when they ought to be expoſed in glaſs caſes at the bottom of windows fronting the ſouth, or any other way moſt convenient, ſo as to receive the warmeſt influence of the ſun: This muſt be repeated (taking them into a warm place every evening before the dews fall) for ſeveral weeks, when the cones will open, and many of the beſt ſeeds come out, by ſhaking them in a wire ſieve; but as all of them will not, therefore ſplit the cones aſunder, by driving a ſmall piece of ſharp iron through the center, from the bottom to the top of them: let theſe be again expoſed to the ſun for a few days, when many more ſeeds will ſhake out, and all that is good of them ſeparate from the huſk, or be eaſily picked off with the point of a knife.

Though the ſeeds of theſe trees in the cone are good for four or five years, yet, when diveſted of that, they loſe their growing quality in a few months; therefore, as ſoon as they are got out, let them be mixed with fine dry ſand, and preſerved in bags till the ſeaſon of ſowing.

In the beginning of March, or as ſoon after as the weather will permit, having prepared a ſhady border, expoſed only to the morning ſun, of looſe, mellow, rich ground, ſow your ſeeds very thin in beds three feet and a half broad, with alleys of eighteen inches; clap the ſeeds gently into the bed with the back of a ſpade, ſo that by making it ſmooth and level, it may receive an equal covering, and ſift over them not more than a quarter of an inch of fine compoſt earth, mixed with one-fourth part of ſea ſand, or if that cannot be had, the fineſt pit-ſand you can procure. If the weather be dry, and not froſty, in a fortnight after ſowing, give them gentle waterings in the evening of every fourth or fifth day, and in ſix weeks they will begin to appear above ground. As theſe plants come up with the ſeeds on their top, which the birds are very fond of, care muſt be taken to guard them from thoſe enemies, who will otherways deſtroy all or moſt of them, but which may eaſily be prevented, by driving a few forked ſtakes round the beds, and throwing a net or other thin covering over them. The plants being fairly above ground, muſt now be refreſhed with a little water every ſecond or third night, for three weeks, when it does not rain: But this muſt be given with care, and as lightly as poſſible, with a watering-pot that has ſmall holes in the roſe of it; for theſe plants, tho' afterwards amongſt the hardieſt trees, are, in their infant ſtate, very delicate; and heedleſsly daſhing on the water from a coarſe watering-pot, would deſtroy great numbers of them. The waterings, as directed after the ſeeds appear, muſt be continued, tho' only once in ten or twelve days, increaſing the quantity when the weather is hotter than uſual, till the end of Auguſt.

The weeds, at their firſt appearance, muſt be carefully picked out, as otherways, in a few days, it will be impoſſible to do it without bringing many of the plants along with them.

It may probably be objected, by ſuch as make no diſtinction in the quality of plants, that we have directed unneceſſary trouble and expence in the culture of this hardy tree, which is now raiſed in ſuch abundance with leſs ceremony: to which we ſhall only anſwer, that, in point of expence, this method is much the cheapeſt, as one pound of ſeed will produce more than ten pounds in the common waſteful way it is treated; and, what is yet of much higher importance, one thouſand plants, thus cultivated, are of more real value than ten thouſand, ſuch as are uſually procured from ignorant nurſerymen.

The end of March, or beginning of April following, theſe plants may be removed from the ſeed-bed to the nurſery; and their roots being ſhortened, laid in rows, about fifteen inches diſtant, and ſix or ſeven inches aſunder in the row, watering them at planting, which may be continued once a week, in dry weather, for five or ſix weeks, when they will be paſt danger; and here they ought only to continue one ſeaſon.

At the ſame time the ſucceeding year, remove them to another nurſery, but now be ſparing of their roots,

taking away only ſuch as croſs each other, with ſome of the ſtraggling hairy fibres, and ſmoothing the extremity of the long ones; plant them in rows, at three feet diſtance, and fifteen or ſixteen inches in the row; water them when planted, keep them clear of weeds during the ſummer, dig the ground between the rows in autumn and ſpring, and in this ſituation, let them remain two years.

By this time, in an ordinary ſoil, the trees will be from five to ſix feet high, and of a proper ſize to tranſplant in large quantities, and in expoſed ſituations, on meagre hungry ground; but where beauty and ſhelter are immediately required in plantations near the houſe, proviſion ought to be made of larger plants: therefore, for this, or ſimilar purpoſes, let ſuch a quantity of theſe trees as may probably be wanted, be removed to another nurſery, and planted at the diſtance of eight feet by ſix, ſtill being ſparing of the roots, which do not, like many other foreſt-trees, admit of being much reduced or wounded; particularly, when large, let them be plentifully watered at removal, dig the ground about them as before mentioned, and here let them remain three years.

Theſe trees will now be from ten to twelve feet high, and of a very proper ſize to remove for ornament, ſhade, and ſhelter, where meant to remain for good, which may be accompliſhed without any great labour or expence. The plants, thus far advanced, ſhould be removed earlier in the ſpring than has been directed for the younger ones, which in ordinary temperate ſeaſons, may be beſt performed about the end of February, or early in March. At this time raiſe them carefully, without injuring any of the principal roots, and only ſmooth the extremities of the ſmall ones with a ſharp knife, letting as much of the earth as poſſible adhere to them; pour in a large watering pot of water into the pit before the tree is placed in it, another after the roots are half covered, and a third after all the earth is properly gathered about it. If the ſeaſon be moiſt, theſe plants will require no farther trouble; but in caſe of long continued hot and dry weather, they ought to be watered once a fortnight in thin dry ſoil, or every third week where it is deep and ſound, and this repeated two, three, or four times, more or leſs, as the weather requires it; but in giving them water, do not pour it too cloſe on the trunk of the tree, but make a drill round it with the hoe, about a foot from it, into which pour the water gently, and draw the earth again over it when the water has ſoaked in.

The Larch tree ſhould never be pruned of a ſingle branch till it is at leaſt fifteen or ſixteen feet high: it is a noble and valuable plant; the bright red bloſſoms it produces in the ſpring, are both beautiful and fragrant, and the proper culture of it claims our particular attention, for many reaſons. It is a native of the Alpine and Pyrenean mountains, and loves an elevated ſituation: it will become a ſtately tree in the pooreſt hungry ſand and gravel, and on the higheſt and bleakeſt hills, where there is but a few inches of ſoil; in ſhort, it rejects no quality of earth that is dry, but in wet lands it will not ſucceed.—*Boutcher.*

LARKSPUR, [*Delphinium.*] The ſpecies are, 1. Unbranched annual Larkſpur with varieties. 2. Branched annual Larkſpur. 3. Tall perennial Bee Larkſpur. 4. Dwarf perennial Bee Larkſpur.

Of theſe four ſpecies the two firſt and varieties are univerſally annual, but the third and fourth are perennial in root and ſtalk, which riſe in ſpring, and decay in autumn.

The names of Larkſpur and Bee Larkſpur are derived from the reſemblance of the tail of the corolla to the ſpur of a lark's foot, and from the nectarium of the perennial ſorts to a bee.

The flowers of all the ſorts are compoſed of five unequal petals, one at top, two ſide-ways, and two at bottom, and a central nectarium; they are moderately large, numerous, and moſtly collected into erect ſpikes, and are very conſpicuous and ornamental.

All the ſorts are very ornamental furniture for the borders and other compartments of the pleaſure-ground, and are ſo hardy, that they proſper in any common ſoil and expoſure, and all the ſorts are raiſed abundantly from ſeed in the full ground.

The two annual ſorts and varieties are raiſed from ſeed ſowed annually in autumn, i. e. September or October, or early in the ſpring, in patches, in the places

places where the plants are to flower; for they do not ſucceed by tranſplantation; obſerving, that thoſe of the autumn ſowing grow ſtronger, flower earlier, and the flowers are generally larger and more durable, than the ſpring-ſown plants. It is alſo however proper to ſow ſome in ſpring, in February or March, to continue a longer ſucceſſion of bloom. The method of ſowing them is, dig with a trowel ſmall patches about nine inches diameter in different parts of the borders, towards the middle, or in the fronts of the ſhrubbery clumps; in each patch ſow eight, ten, or twelve ſeeds, a quarter of an inch deep; and when the plants are an inch or two high, thin thoſe of the unbranched ſorts to about ſix or eight in each patch, and of the branched kinds, to three or four in each place, which is all the culture they require, and in which order of cultivation they will make a fine appearance.

But when intended to have a grand ſhew of them in beds by themſelves, they are commonly ſowed in drills, forming the drills lengthways, the beds a foot aſunder, and half an inch deep, ſo ſcatter the ſeeds thinly along the drills, and rake the earth over them evenly; but the unbranched kinds are the beſt adapted for this mode of culture.

Or they may be ſowed broad-caſt on the ſurface of the bed, and raked in, and when the plants are an inch or two high, thin them by hand or hoe, to three or four inches diſtance, but the branched kinds to treble that diſtance.

To preſerve the varieties of theſe two annual ſpecies from degeneration, all thoſe of bad colours, and that are very ſingle, ſhould be pulled out as ſoon as they ſhew bloom enough to diſcover their properties: for their farina would impregnate the fine ſorts, and cauſe a degeneracy.

The perennial ſorts.—Theſe are alſo raiſed plentifully from ſeeds ſown in autumn or ſpring, in a bed or border of common earth, for tranſplantation. Sow them on the ſurface, and rake them in, and when the plants come up, hand-weed them occaſionally, and thin them to three or four inches diſtance, to remain till October or November; then plant them out where they are to remain to flower: their roots will endure many years, increaſe in ſize, and the larger they are, the greater number of flower-ſtalks they produce, ſo as to exhibit a large ſhew of bloom.—*Mawe.*

LASERWORT, [*Laſerpitium.*] There are ſeveral ſpecies of this plant which grow naturally in the South of France, Italy and Germany, but are ſeldom cultivated in our gardens, yet if deſired may eaſily be propagated by ſowing the ſeeds in the ſpring, keeping them clear of weeds, and tranſplanting them in autumn.

LASK. Looſeneſs, flux, lax, ſcouring. The cauſes of this may proceed, 1. From a preceding coſtiveneſs, rendering the excrements putrid, ſharp, and corroſive. 2. From a want of digeſtion, which may be known by the dung being mixed with bits of undigeſted hay and ſlimy matter. 3. From ſome of the other ſecretions being obſtructed, as ſweat, urine, &c. for when the excrementitious parts of the blood have not a free vent through the common paſſages, they are driven in a more than ordinary quantity into the apertures of the guts, but particularly into the gall-pipe and pancreatick duct; ſo that they may be of different colour and conſiſtency, according to the predominancy of the juices that flow into them. When moſt of it is derived from the inteſtinal glands, the matter will be clear and watery, or clear and glaſſy, not unlike that which Solleyſell obſerves in his third kind of cholick; but when it proceeds moſtly from the gall-pipe and pancreatick duct, it will then be tinctured with a yellowiſh colour; and if there happens to be a very great quantity of the gall diſcharged with the excrements, whatever is voided from the fundament muſt of conſequence be of a deep reddiſh colour, and is the ſame which the abovementioned author terms the red gripes, which conſtitutes his ſixth kind of cholick.

Laſtly, a lax or ſcouring ſometimes happens from viſcous ſlimy matter hindering the chyle from entering into the lacteal or milky veſſels; and in this caſe the excrements are uſually of a pale light complexion, as they conſiſt chiefly of chyle.

But all theſe are only different ſpecies of a diarrhœa; and when the ſcouring

is

is large, as it happens to ſome full-bodied young horſes, a white greaſy matter like fat comes away in the dung, and this is what farriers call molten greaſe, which is of the ſame nature with the greaſy diarrhœa, which ſometimes happens to men of groſs habits as well as to horſes, and ſeems to be occaſioned when the glands of the inteſtines are more than ordinarily opened, whereby that matter is evacuated from the blood into the guts, which ſhould otherwiſe be depoſited among the fat.

But in order to the cure, it ought to be obſerved, that in all thoſe ſcourings that are of the firſt kind, and are only the critical diſcharges of ſome diſeaſe; there are ſeldom or never any bad accidents attending them, unleſs the diſeaſe has been of ſuch continuance as to waſte and attenuate the body; and therefore when the ſickneſs abates by any ſuch diſcharge, the beſt way is not to be over haſty to ſtop it, but it ought rather to be encouraged when it proves imperfect; and that muſt be done by moderately purging. But becauſe all diſcharges that proceed from the inteſtines may degenerate into the worſer ſort, care ought to be taken not to let it run on too long, but it may be ſtopped by the methods hereafter laid down for the cure of the other ſpecies of diarrhœa; we ſhall therefore proceed to the next kind, where a horſe loſes his appetite; and when the want of digeſtion is manifeſt from an imperfect communication of the dung, that is, when ſome part of the food comes away whole as it is eaten.

In this caſe all thoſe things that we have already laid down for ſtrengthening the ſtomach are to be uſed, for which purpoſe we alſo recommend the uſe of diapente, but it is not one doſe that will anſwer the end, for it ought to be repeated every day, and ſo muſt any other ſtomachick medicine before any extraordinary effect can poſſibly be wrought.

And becauſe this diſeaſe is both in the ſtomach and guts, the following clyſter may be given as ſoon as you perceive him begin to recover his appetite, unleſs the looſeneſs begins alſo to abate with the other ſymptoms, and in that caſe it may be let alone.

"Take of red roſe leaves two handfuls, the roots of gentian and round birthwort, of each one ounce, gallangal half an ounce, bay-berries, anniſeeds, and fennel ſeeds, of each two drams. Let the roots, and other hard ingredients, be bruiſed; afterwards boil the whole in three quarts of water for the ſpace of half an hour; or let them be infuſed four hours in boiling water; then pour off the liquor, and diſſolve in it three ounces of the oil in which rue has been boiled, and one ounce of mithridate; which muſt be injected into the horſe's fundament luke-warm."

This may be repeated once or twice; but if the looſeneſs ſtill continues, and the horſe grows weak, it is a very bad ſign, eſpecially if he refuſes to feed.

The next kind is that where the excrements are tinged yellow, or of a deep reddiſh colour, proceeding as we have obſerved, from a too great profuſion of the gall and pancreatick juice, &c.

In this a horſe may be firſt of all purged with the following drench:

"Take red roſe leaves two handfuls, Monk's rhubarb four ounces, Turkey rhubarb three ounces. Let theſe be ſliced and boiled with the roſe leaves, in three pints of water, for the ſpace of an hour; and in the ſtrained decoction diſſolve an ounce and a half of diaſcordium." Or this:

"Take of the beſt rhubarb in powder, two ounces, cream of tartar one ounce, diaphoretick antimony half an ounce; let this be given in a pint of red wine."

After purging has been once or twice repeated, thoſe medicines which promote ſweat, and the other ſecretions, are to be uſed, as they make a revulſion, and conſequently leſſen the diſcharges by dung, wherefore we recommend diaſcordium, mithridate, and Venice-treacle, or London-treacle, which may be exhibited in the following manner:

"Take treacle water one pint, Venice treacle or mithridate two ounces. Let the mixture be well ſtirred about, and given through a horn." Or this:

"Take of diaſcordium three ounces, diſſolve it in a decoction of red-roſe leaves and rue, and give it through a horn; two ounces of Venice-treacle or mithridate, or three ounces

ounces of London treacle, may be given in the ſame manner, taking care at the ſame time to keep the horſe well cloathed, and to have him often combed and rubbed to open the pores, the better to promote ſweat and inſenſible perſpiration."

The following drench may alſo be given with good ſucceſs, to aſtringe and dry up the ſtomach and bowels, &c.

"Take a decoction of red roſe leaves and plantain one quart, treacle-water half a pint, Armenian bole an ounce. Diſſolve in the mixture two ounces of diaſcordium, and of roch allum ſix drams."

This muſt be repeated two or three days ſucceſſively, and unleſs the ſcouring be very violent, it will certainly put a ſtop to it.

But the farrier is to obſerve, that if a horſe has a fever upon him, which does not diminiſh, but increaſes with the looſeneſs; thoſe things which act more immediately upon the bowels are then to be made uſe of; therefore the following clyſter may be injected.

"Take of guaiacum half a pound, ſaſſafras four ounces; boil them in four quarts of ſmith's water wherein they quench their hot irons, until one half of the water is conſumed; then add to the decoction red roſe leaves, the tops or leaves of briar, and the leaves of bramble, of each a handful; or inſtead of theſe two handfuls of plantain; and when it has boiled a quarter of an hour longer, take it from the fire, and in the ſtrained decoction diſſolve four ounces of diaſcordium without honey, and opium half a dram.

Or this:

"Take henbane and white poppy-ſeed, of each four ounces, red roſe leaves two handfuls, pomegranate bark two ounces. Boil them in two quarts of ſmith's forge water to three pints, diſſolve in it four ounces of diaſcordium, or three ounces of mithridate or Venice-treacle, and half a dram of opium."

Or the following may be uſed in haſte, or for a horſe of ſmall value.

"Take a quart of the aforeſaid water, warm it over the fire, and diſſolve in it two ounces of diaſcordium, and the like quantity of roch-allum."

Theſe clyſters are always to be made in a leſſer quantity than thoſe that are purging; and the horſe's tail to be kept cloſe to his tuel, that he may retain them as long as poſſible; and as ſoon as he flings out the firſt, which perhaps may not be in the ſpace of twelve hours, it muſt be followed with another, and ſo on till the looſeneſs is quite ſtopped, which may eaſily be done by the help of theſe clyſters, unleſs his ſtrength be quite waſted, and that he has loſt all ſenſation in his bowels.

We come now to the cure of the laſt ſort of ſcouring which we mentioned, to wit, when the chyle is diſcharged with the excrements; and as this indiſpoſition proceeds from ſlimy matter obſtructing the paſſages into the lacteal veſſels, the propereſt method is by purging, for which purpoſe we recommend the following:

"Take Epſom ſalts ſix ounces, cream of tartar two ounces, diſſolve them in a gallon of water, and give the whole through a horn at ſeveral times."

Let ſalt of tartar and ſal prunella be alſo diſſolved in his common drink, for all thoſe diluters are the moſt proper to waſh off that viſcid matter which adheres ſo cloſely to the guts, and hinders the chyle from entering into its proper veſſels, eſpecially when they are uſed plentifully; but if this ſort of flux ſhould proceed from a ſtrumous obſtruction, as it ſometimes happens to human bodies, it would prove incurable.

As to that which the farriers call molten greaſe, it being for the moſt part the concomitant of every large ſcouring, that ſymptom generally wears off in the proceſs of the diſtemper, and requires no particular management diſtinct from what has been already preſcribed for the third ſort of looſeneſs, viz. purging and aſtringent clyſters, with the aſſiſtance of thoſe things that are proper to promote a breathing through the pores; but becauſe in all violent diſorders of the guts, there is, for the moſt part, a weakneſs in the ſtomach alſo, it can never be amiſs to exhibit ſuch things as are proper to procure a good digeſtion, at the ſame time that other means are uſed to carry off the more urgent ſymptoms; and theſe

theſe ought to be continued, eſpecially to a horſe of value; and indeed it is for want of ſuch helps that many horſes dwindle away, or fall into other diſtempers, after the looſeneſs has in a great meaſure been overcome.

The food that is to be given in ſuch diſorders, ſhould be the cleaneſt and beſt hay, bran moiſtened with claret, and parched barley.—*Gibſon.*

LAST, of hides, 20 dickers of 10 ſkins each.

LAST of rape ſeed or corn, 2 load or 80 buſhels; of pot aſhes, cod, white-herrings, and meal, 12 barrels; of tar and pitch, 14 barrels; of flax and feathers, 17 cwt.; of gunpowder, 24 barrels or 2400lb.; of wool, 12 ſacks or 4368 lb.; of ſtock fiſh, 1000; of red herrings, 20 cades.

LATH, a long, thin, and narrow ſlip of wood, nailed to the rafters of a roof or cieling, in order to ſuſtain the covering

Theſe are diſtinguiſhed into three kinds, according to the different kinds of wood of which they are made, viz. heart of oak, ſap laths, and deal laths; of which the two laſt are uſed for cielings and partitions, and the firſt for tiling only.

Laths are alſo diſtinguiſhed according to their length, into five feet, four feet, and three feet laths; though the ſtatute allows but of two lengths, thoſe of five, and thoſe of three feet, each of which ought to be an inch and a half in breadth, and half an inch in thickneſs; but they are commonly leſs.

LATH-BRICKS, bricks much longer than ordinary, uſed inſtead of laths, for drying malt; for which purpoſe they are extremely proper, as not being liable to catch fire, and retaining the heat much longer than thoſe of wood; ſo that a very ſmall fire will ſerve after they are once heated.

LATHE, a word uſed in ſome counties in England, to ſignify a barn.

LATHE, A machine in which turners fabricate their goods.

LAVATERA. See *Tree Mallow.*

LAVENDER, [*Lavendula.*] There are two or three ſpecies of lavender, the principal of which are, the ſpiked and the narrow-leaved lavender; the leaves of the former are much broader and ſhorter than the latter. They are propagated by ſlips, the beſt ſeaſon for which is in March; they ſhould be planted in a ſhady ſituation, or at leaſt ſhaded with mats until they have taken root; after which they may be expoſed to the ſun; and when they have obtained ſtrength, may be removed to the places where they are deſigned to remain. Theſe plants will abide the longeſt in a dry, gravelly, or ſtony ſoil, in which they will endure our ſevereſt winters; though they will grow much faſter in the ſummer, if they are planted upon a rich, light, moiſt ſoil; but then they are generally deſtroyed in winter, nor are the plants half ſo ſtrong ſcented, or fit for medicinal uſes, as thoſe which grow upon the moſt barren rocky ſoil.

French LAVENDER. *See* CASSIDONY.

Sea LAVENDER, [*Limonium.*] There are ſeveral ſpecies of this plant, which grow naturally in ſeveral parts of England, the ſouth of France, Italy, and the Levant, ſome annual and others perennial; ſome will bear the open air, and others require aſſiſtance from the hard froſts of winter.

LAUREL, [*Laurocerafus.*] The cherry bay. The ſpecies are, 1. The common laurel. 2. The white ſtriped. 3. The yellow ſtriped. 4. The Portugal. The common laurel is propagated by ſeeds or cuttings; but the ſeeds produce the fineſt trees. The ſeeds ſhould be ſown in the beginning of winter ſoon after the berries are ripe, in a ſhady border well prepared, about an inch and a half deep. About the middle of April, when the ſeeds will be in a growing ſtate, the weather being dry, and not froſty, refreſh them with frequent gentle waterings in the morning; and continue this, more or leſs, during the ſummer months, as the ſeaſon ſhall require, changing the morning to evening's watering, as ſoon as the danger of the froſts are over.

The ſucceeding ſpring, the ground being good, and the former ſummer having been favourable, as ſoon as their buds begin to ſwell, remove them from the ſeminary to the nurſery, and lay them with a ſpade in lines two feet aſunder & 9 or 10 inch. in the line, the ſame depth they formerly ſtood; water them at planting, and if you repeat it three or four times at the diſtance of ten or twelve days, the ſeaſon being dry, it will much forward their growth:

growth: let the ground between the rows be pointed over in autumn and ſpring, and cut away any croſs lateral branches during their abode here, which ought to be two years only. If theſe berries have been ſown in poor land, the plants of courſe will have made ſmall progreſs; in that caſe, if they are not too thick, they may remain in the ſeed-bed two years.

To raiſe them from cuttings, plant them in a ſhady border of moiſt (not wet) earth, in lines two feet aſunder. The beginning of April, or middle of Auguſt, let the cuttings be a foot or fourteen inches long, one half of which ſhould be buried in the ground; let the whole leaves be rubbed off, which otherways generally wither and hang on great part of that ſeaſon, and from thence taint the plant. Here they may remain till the ſecond April following, giving them the ſame culture as the ſeedlings.

The ſeedlings and cuttings may now be treated in the ſame manner, and removed to another nurſery, where having ſhortened and cut away all ill-placed roots that croſs each other, and likewiſe pruned off ſuperfluous branches, carefully preſerving and encouraging the principal leading ſhoot, plant them in lines four feet aſunder, and two feet diſtant in the line; take care to cultivate the ground as formerly, and prune them annually in ſuch a manner as will moſt elevate them in the pyramidical form: in this nurſery they may continue three, or not exceeding four years. We have ſpoken hitherto only with regard to ſuch as are intended for tall ſtandard trees; but here let it be obſerved, that ſuch as are meant for covering of walls, forming hedges, or other ſuch purpoſes, may either be applied in theſe ways from the former nurſery, or trained here ſo as at once to anſwer your future deſigns. This tree is commonly dwarfed and diſfigured by letting it grow rough too long, after which they are not to be redreſſed or brought to a proper figure, being much injured by cutting their old wood.

For making large plantations, theſe trees will now be of a competent ſize; but if a reſerve is wanted for diſtant deſigns, remove them to another ſpot, and plant them in the quincunx order, at ſix feet aſunder every way, obſerving the former culture; where after ſtanding two years, they may be removed with ſafety five or ſix years longer.

The two ſorts with ſtriped leaves may alſo be increaſed by cuttings; but their variegation being very faint, in a luxuriant ſoil they will ſoon turn quite plain, and ought therefore to be planted in a poor, hungry, dry ſand or gravel. In order to blend their colours better than they naturally are, make them more glaring, and of longer continuance, remove them annually in poor land for five or ſix years, budding a richly-variegated leaf on the green, or rather a variegated ſtock, which will much brighten, and alſo longer preſerve their colours, than if raiſed from cuttings.

The Portugal laurel will not riſe to half the magnitude of the others, nor is it ſo eaſily reared in the pyramidical form, but is a beautiful and elegant plant, of a very chearful ſhining verdure. It may be propagated either by ſeeds, layers, or cuttings, as the former, but when young, are ſomewhat more delicate, and will be improved by a higher culture, better ſoil, and more ſheltered ſituation for four or five years, after which it is abundantly more hardy.—*Boutcher.*

Portugal LAUREL. *See* LAUREL.

LAUREL *of Alexandria.* Butcher's broom. *See* APPENDIX.

Dwarf LAUREL. See *Spurge* LAUREL.

Spurge LAUREL, [*Laureola.*] This is a ſmall ſhrub, growing wild in ſome of our woods. The leaves, berries, and bark, both of the ſtalks and roots, have an extremely acrid, hot taſte, which laſts for a long time, burning and inflaming the mouth and fauces. Taken internally, they operate with great violence by ſtool, and ſometimes by vomit; ſo as ſcarce to be exhibited with any tolerable degree of ſafety, unleſs their virulence be previouſly abated by boiling.

There is a ſpecies of this plant which forms an ornamental ſhrub in the gardens blowing very early in the ſpring, bearing peach coloured flowers and red berries, this ſhrub is called Mezereon. They are propagated by ſeeds ſown after the berries are ripe, which will be about Auguſt. There are ſeveral other ſpecies, ſome of which require the aſſiſtance of the green-houſe in winter.

LAURUSTINUS, [*Tinus.*] Theſe ſhrubs are propagated by laying down their young branches, which put out roots very freely; ſo that when they are layed in autumn, they will be well rooted by that time twelve months, when they ſhould be taken off from the old plants, and may be either planted where they are to remain, or into a nurſery to grow two years to get ſtrength. The beſt ſeaſon to tranſplant theſe is at Michaelmas, that they may get new root before winter; for as theſe plants begin to flower early in winter, it is a plain indication of their growing at that ſeaſon, ſo they will more ſurely ſucceed than at any other time of the year, though they may be removed in the ſpring with balls of earth to their roots, provided it be done before they begin to ſhoot; they may alſo be removed the latter end of July or the beginning of Auguſt, if rain happens at that time, for after they have done ſhooting, which is ſoon after midſummer, they will be in no danger, provided they are not kept out of the ground any time.

Theſe plants may alſo be propagated by ſeeds, which ſhould be mixed with earth in autumn, ſoon after they are ripe; theſe ſhould be expoſed to the open air, and receive the rain in winter, and in the ſpring they may be ſown on a gentle hot-bed, which will bring up the plants; theſe ſhould remain in the bed till autumn, and then may be tranſplanted and treated in the ſame way as the layers.

LAWN. A plain of meadow or paſture, adjoining to a gentleman's ſeat.

LAY. Arable land laid down to graſs, as clover lay, &c. *See Land.*

LAYERS. Many trees may be propagated by layers; the ever-greens about Bartholomew-tide, and other trees about the month of February.

This is performed by ſlitting the branches a little way, and laying them under the mould about half a foot; the ground ſhould firſt be made very light, and after they are laid, they ſhould have a little water given them.

If they do not comply well in the laying of them down, they muſt be pegged down with a hook or two, and if they have taken ſufficient root by the next winter, they muſt be cut off from the main plants, and planted in the ſeminary, as is directed about ſeedlings.

Some twiſt the branch or bare the rind, and if it be out of the reach of the ground, they faſten a tub or baſket near the branch, which they fill with good mould, and lay the branch in it.

This operation is thus performed:

1ſt. Take ſome of the boughs and lay them into the ground about half a foot deep in fine freſh mould, leaving them with the end of the layer about a foot, or a foot and a half out of the ground, and keep them moiſt during the ſummer ſeaſon; when they will probably have taken root, and be fit to remove: and if they have not by that time taken root, they muſt lie longer.

2dly, Tie a piece of wire hard round the bark of the bough, at the place you intend to lay in the ground, and twiſt the ends of the wire, ſo that they may not untie, and prick the place above the wire through the bark with an awl in ſeveral places, and then lay it into the ground, as before directed.

3dly, Cut a ſlit upwards at a joint, as is practiſed in laying of Carnations, which by gardeners is called tonguing the layers.

4thly, Twiſt the place you deſign to lay in the ground like a withy, and lay it into the ground as directed in the firſt way of laying.

5thly, Cut a place round about the bough (that is deſigned to be laid) an inch or two, at the place that is moſt convenient to lay into the ground, and manage it as is directed in the firſt method of laying.

The ſeaſon for laying hardy trees, that ſhed their leaves, is in October; but for ſuch as are tender, in March; for ever-greens, June or Auguſt are good ſeaſons.

Though layers may be laid at any time of the year, yet the ſeaſons before-mentioned are the moſt proper, for the reaſons following: becauſe they have the whole winter and ſummer to prepare and draw root; for at theſe times of the year the ſun has ſufficient power on the ſap of the tree to feed the leaf and bud; but has not power ſufficient to make a ſhoot.

And if that ſmall quantity of ſap that does ariſe be hindered, as it will by ſome of the preceding ways of laying, the leaves and buds will gently crave of the layer, and by that means will prepare the layer to take root, or

put

put forth roots a little to maintain itſelf, finding it cannot have it from the mother plant.

And therefore, becauſe it wants but little nouriſhment at that time of the year, it is better to lay layers of trees, or to ſet cuttings, than at other times, either in the winter when the ſap ſtirs but little, or in the ſummer when the ſap abounds, or in the ſpring when it begins to riſe, becauſe it is then apt to come too ſuddenly to draw ſap from the layer, before the layer has drawn or prepared for root.

However, the ſpring or ſummer may do well for ſmall plants, becauſe ſuch plants, being but ſhort-liv'd, draw root the quicker.

If you would lay young trees from an high ſtandard, the boughs of which cannot be bent down to the ground, then you muſt make uſe of ozier-baſkets, boxes, or pots, filled with fine ſifted mould, mixed with a little rotten willow duſt, which will keep moiſture to aſſiſt the layer in taking root: This baſket, box, &c. muſt be ſet upon a poſt or treſſel, and the bough muſt be laid according to either of the four firſt ways of laying; but too much head muſt not be left on, leſt that be injured by the wind, or its own motion rub off the tender root; and the ſmaller the boughs are, the leſs way they ſhould be ſet out of the ground; and care muſt be taken to keep them clear from weeds.

The harder the wood is, the better will the young wood take root: but if the wood be ſoft, the older boughs will take root the beſt.

LEAD, [*Plumbum.*] This is the heavieſt of the metals except gold: it melts in a moderate heat, and if kept in fuſion, is ſoon converted partly into fume and partly into aſh-coloured calx *(plumbum uſtum;)* this expoſed to a ſtronger fire, in ſuch a manner that the flame may play upon its ſurface, becomes firſt yellow, and afterwards of a deep red, (*minium* or red lead;) if in this proceſs the fire be ſuddenly raiſed to a conſiderable height, the calx melts, aſſumes the appearance of oil, and on cooling forms a ſoft leafy ſubſtance of a yellowiſh or reddiſh colour *(litharge.)* The proper menſtruum of this metal is aqua-fortis, the vegetable acids likewiſe diſſolve it, but in a very ſmall quantity: a quart of diſtilled vinegar will not take up a dram; expoſed to the ſteam of vinegar, it is by degrees corroded into a white powder *(ceruſſe)* which is conſiderably more eaſy of ſolution. The calces of lead diſſolve, by heat, in expreſſed oils; theſe mixtures are the baſis of ſeveral officinal plaiſters and unguents. Chryſtals of this metal made with diſtilled vinegar (called from their ſweetiſh taſte, *ſugar* of lead) and a tincture drawn from theſe and green vitriol, are likewiſe kept in the ſhops.

Preparations of lead, given internally, are ſuppoſed to incraſſate the fluids, abate inflammations, and reſtrain venereal deſires. The ſugar is a ſtrong aſtringent, and has been exhibited as ſuch with good ſucceſs, in hæmorrhagies, the fluor albus, ſeminal gleets, &c. The tincture is recommended for the like purpoſes; and for checking immoderate ſweats in phthiſical caſes, whence it has uſually been called *tinctura antiphthiſica.* The internal uſe of this metal is nevertheleſs full of danger, and ought never to be ventured upon unleſs in deſperate caſes, after other medicines have been employed without taking effect: it often occaſions violent cholics, and though it ſhould not prove immediately hurtful, its ill conſequences are ſure though ſlow: tremors, ſpaſms, or lingering tabes, too frequently follow.

Red LEAD, [*Minium.*] Lead calcined to redneſs.

White LEAD, [*Plumbum album, ceruſſa.*] This is prepared by expoſing lead to the ſteam of vegetable acids till corroded into a white powdery ſubſtance. It is ſometimes adulterated with a mixture of common whiting; this, if in any conſiderable quantity, may be eaſily diſcovered by the ſpecific lightneſs of the compound; the ſort called flake lead, is not ſubject to abuſe.

Sugar of LEAD, [*Saccharum Saturni.*] The ſugar of lead is much more efficacious than the foregoing preparations, in the ſeveral intentions which they are applied to. Some have ventured upon it internally, in doſes of a few grains, as a ſtyptic, in hæmorrhagies, profuſe colliquative ſweats, ſeminal fluxes, the fluor albus, &c. nor has it failed their expectations. It very powerfully reſtrains the diſcharge; but almoſt as certainly as it does this, it occaſions ſymptoms of another kind, often more

dangerous than thoſe removed by it, and ſometimes fatal. Violent pains in the bowels, or through the whole body, and obſtinate conſtipations, ſometimes immediately follow, eſpecially if the doſe has been conſiderable: cramps, tremors, and weakneſs of the nerves generally ſooner or later, enſue.

Boerhaave is of opinion, that this preparation proves malignant only in ſo far as its acid happens to be abſorbed in the body; for in ſuch caſes he ſays, "it returns again to ceruſſe, "which is violently poiſonous." On this principle it would follow, that in habits where acidities abound, the ſugar of lead would be innocent. But this is far from being the caſe. Lead and its preparations act in the body only in ſo far as they are combined with acid: ceruſſe poſſeſſes the qualities of the ſaccharum only in a low degree; and either of them freed from the acid, have little, if any effect at all.

LEADWORT, [*Plumbago.*] There are two ſpecies of this plant, one growing in France, Italy, and Spain, and the other a native of the Eaſt and Weſt-Indies. The former will bear the open air in England, if placed in a warm ſituation, but the other requires the aſſiſtance of a ſtove in winter. They are both perennials, and may be propagated by ſeeds.

LEAF. A ſimple leaf is that which is not divided to the middle.

A compound leaf is divided into ſeveral parts, each reſembling a ſimple leaf, as in liquorice, &c.

A digitated leaf is a compound leaf divided into ſeveral parts, all of which meet together at the tail, as in the hemp, black-hellebore, &c.

A trifoliated leaf is a digitated leaf, conſiſting of three fingers, as in the trefoil, &c.

A quinquefoliated leaf is a digitated leaf, conſiſting of five fingers, as in the quinquefolium.

A pennated leaf is a compound leaf divided into ſeveral parts, (each of which is called a lobe) placed along the middle rib, either alternately or by pairs. When the middle rib is terminated by an odd lobe, it is ſaid to be unequally pennated, as in the goat's rue, &c. and equally pennated, when it is not terminated by an odd lobe, as in the caſſia; when the lobes are all nearly of the ſame form and bigneſs, it is called an uniform pennated leaf, as in the liquorice; when they are not ſo, they are ſaid to be difform, as in the agrimonia, &c.

A winged leaf is as it were divided into ſeveral pennated leaves, as in the orobus, &c.

A ramoſe leaf is that which is ſtill farther divided than the winged leaf, as in the oſmund royal, female fern, &c.

An entire leaf or lobe is that which has no diviſion on its edges, as in the apple tree, &c.

A ſinuated leaf is that which is cut about the edges into ſeveral long ſegments, as in the common mallow, &c.

A ſerrated leaf is that which is cut about the edges into ſeveral acute ſegments, reſembling the teeth of a ſaw, as in the nettle, &c.

A crenated leaf is that which is cut about the edges into ſeveral obtuſe ſegments, as in betony, &c.

A laciniated or jagged leaf is that which is cut about the edges into ſeveral pretty deep portions, in an irregular manner, as in the horned poppy.

LEAF. Is a diſtemper incident to lambs of ten or fourteen days old. It is ſo called becauſe they will feed commonly upon oak and hawthorn leaves, ſoon after which they will reel and ſtagger about, foaming at the mouth, and ſoon fall down and die; there has yet been no certain remedy found out for this diſorder.

LEAKAGE. The ſtate of a veſſel that leaks, or lets water, or any other liquid ouze in or out.

LEAKAGE. In commerce, is an allowance of 12 per cent. in the cuſtoms allowed to importers of wines for the waſte and damage it is ſuppoſed to have received in the paſſage: an allowance of two barrels in twenty-two is alſo made to the brewers of ale and beer, by the exciſe office.

LEAVES. A leaf is defined to be a part of a plant extended into length and breadth in ſuch a manner as to have one ſide diſtinguiſhable from the other; they are properly the moſt extreme part of a branch, and the ornament of the twigs, and conſiſt of a very glutinous matter, being furniſhed every where with with veins and nerves; one of their offices is, to ſubtilize and give more ſpirit to the abundance of nouriſhing ſap, and to convey it to the little buds.

If

If the ſurface of leaves are altered, by reverſing the branches of trees on which they grow, the plants are ſtopped in their growth, until the foot-ſtalks are turned, and the leaves recover their former poſition. This ſhews how neceſſary it is to ſupport all thoſe weak ſhoots of plants, which are naturally diſpoſed for upright growth, which either twine about the neighbouring trees for ſupport, or put out claſpers, by which they take hold of whatever trees or plants grow near them, and are thereby ſupported; and on the contrary, how abſurd is that practice of tying up the ſhoots of thoſe plants which are naturally diſpoſed to trail upon the ground; in both theſe caſes, nature is reverſed, and conſequently the growth of both ſorts of plants is greatly retarded.

This is one of the great functions for which the leaves of trees and plants are deſigned; but beſides this, there are others of equal importance to the well-being of plants and fruits; the firſt is that of the foot-ſtalks and leaves nouriſhing and preparing the buds of the future ſhoots, which are always formed at the baſe of theſe foot-ſtalks; and during the continuance of the leaves in perfect health, theſe buds increaſe in their magnitude, and in the deciduous trees, are brought to maturity before the foot-ſtalks ſeparate from the buds in autumn; but if by accident the leaves are blighted, or if the entire ſurface of the leaves are cut off, and the foot-ſtalks are left remaining, the buds will decay for want of that proper nouriſhment which is conveyed to them from the leaves; ſo that whenever trees are diveſted of their leaves, or when thoſe leaves are cut, or otherwiſe impaired, though it may in either caſe happen when the buds may be nearly formed, yet if it be before the foot-ſtalks ſeparate naturally from the branches, the future ſhoots will be weakened in proportion to the time when this is done; therefore, from all the experiments which have been made in order to know how ſerviceable the leaves of trees and plants are to their well-being, it has been found, that where the plants have been diveſted of their leaves, or their leaves have been eaten or cut during their growth, the plants have been remarkably weakened thereby. This ſhould teach us not to pull or cut off the leaves of trees or plants on any account, while they retain their verdure, and are in health.

It is very evident that the blades of graſs, which is often mowed, will be rendered finer in proportion to the frequency of mowing, yet the ſpecies of graſs is the ſame with that on the richeſt paſtures; ſo that although this may be a deſirable thing for lawns, &c. in gardens, yet where regard is had to the produce, it ſhould be avoided.

Another principal uſe of the leaves is, to throw off by tranſpiration, what is unneceſſary for the growth of the plants, anſwering to the diſcharge made by ſweat in animal bodies; for as plants receive and tranſpire much more in equal time, than large animals, ſo it appears how neceſſary the leaves are to preſerve the plants in perfect health; for it has been found by the moſt exact calculations, made from repeated experiments, that a plant of the ſun-flower receives and perſpires, in twenty-four hours, ſeventeen times more than a man.

We mention a few, out of the many experiments which have been made by Monſ. Bonnet, of Geneva, to prove that moſt leaves imbibe the moiſture of the air on their under ſurface, and not from their upper; they are as follow:

He gathered the leaves of ſixteen ſorts of herbaceous plants when fully grown; he put ſeveral leaves of each upon the ſurface of water in glaſs vaſes, ſome were placed with their upper ſurface, and others with their under ſurface upon the water; theſe were adjuſted exactly to the ſurface of the water, with great care not to let any moiſture reach their oppoſite ſurfaces, and the ſame care was taken to prevent their foot-ſtalks from receiving any moiſture. The glaſſes in which theſe leaves were thus placed, were kept in a cloſet, where the air was very temperate; and as the water in the glaſſes evaporated, there was from time to time a ſupply of freſh, which was added with a ſyringe, ſo that the leaves were not diſturbed. The leaves were taken from the following plants; the plantain, the mullein, the wake robin, the great mallow, the nettle, the marvel of Peru, the kidney-bean, the ſun-flower, the cabbage, the balm, the cockſcomb, the purple-leaved amaranth

amaranth, ſpinach, and the ſmaller mallow.

Six of theſe ſorts he found continued green a long time, and theſe were with different ſurfaces upon the water: they were of the following ſorts, the wake-robin, the kidney-bean, the ſun-flower, the cabbage, the ſpinach, and the ſmall mallow; among the others the following ſorts were found to draw the moiſture better with their upper ſurface than their under, the plantain, the mullein, the great mallow, the nettle, the cockſcomb, and the purple amaranth.

The leaves of the nettle, whoſe under ſurface was upon the water, were decayed in three weeks, whereas thoſe whoſe upper ſurface was next the water continued two months.

The leaves of mullein, whoſe under ſurface was next the water, did not continue freſh more than five or ſix days, but thoſe whoſe upper ſurface was next the water laſted five weeks.

The leaves of the purple amaranth, whoſe upper ſurface was next the water, continued freſh three months, whereas thoſe whoſe under ſurface was next the water were decayed in a week.

The leaves of the marvel of Peru, and the balm, appeared to have the advantage, whoſe under ſurfaces were next the water.

The leaves of the wake robin and the cockſcomb, whoſe foot-ſtalks only were put into the water, continued freſh a longer time than thoſe which were placed with either ſurface next the water.

The leaves of the great mallow, the nettle, the ſun-flower, the marvel of Peru, and ſpinach, whoſe foot-ſtalks were plunged into the water, continued freſh a ſhorter time than thoſe which had either of their ſurfaces next the water.

The leaves of the mullein, of plantain, and amaranth, which received the water at their foot-ſtalk, continued freſh much longer than thoſe whoſe under ſurfaces was next the water.

It is not difficult to explain the reaſon of this fact, for the orifices of the ſap veſſels in the foot-ſtalks, are much larger than thoſe of either ſurface, ſo that the moiſture inſinuates in greater quantities and with more eaſe, the firſt than by the ſecond way.

After this the ſame gentleman made experiments on the leaves of ſixteen ſorts of trees and ſhrubs of the following ſorts, the lilac, the pear-tree, the vine, the aſpen, the laurel, the cherry-tree, the plumb-tree, the horſe cheſnut, the white mulberry, the lime-tree, the poplar, the apricot, the walnut, the filbert, the oak, and the creeper.

Among theſe ſpecies he found that the lilac and the aſpen imbibed the moiſture on their upper ſurface, equally with their under ſurface: but in all the other ſorts, the under ſurface imbibed it in much greater quantities than the oppoſite. The difference was very remarkable in the leaves of the white mulberry, for thoſe whoſe upper ſurface was laid upon the water faded in five days, whereas the other, whoſe under ſurface was next the water, preſerved their verdure near ſix months.

The vine, the poplar, and walnut-tree, are very remarkable inſtances how little diſpoſed the upper ſurfaces of the leaves of ligneous plants are to imbibe the moiſture; for thoſe of theſe three ſorts, whoſe upper ſurfaces were applied to the water, decayed almoſt as ſoon as thoſe which had no nouriſhment.

In all the experiments made by this curious gentleman upon the various leaves of trees and herbs, it is remarkable, that all thoſe leaves which imbibed their moiſture by their upper ſurface, were ſuch as had that ſurface covered either with hairs or down, and on the contrary, where the under ſurface was garniſhed with either hair or down, the moiſture was imbibed by that ſurface. He likewiſe mentions many experiments made by himſelf, and alſo by Monſ. du Hamel de Monceau, of the royal academy of ſciences at Paris, in rubbing the leaves over with varniſh, oil, wax, and honey, to ſee the effect of theſe upon various leaves, ſome of which were rubbed over on both ſurfaces, others only upon one; ſome only a part of the ſurface, others the edges of the leaves were rubbed over, and in ſome only the foot-ſtalks of the leaves were rubbed therewith. They likewiſe anointed the trunks of ſome trees and ſhrubs, and left the leaves and branches in their natural ſtate.

The reſult of theſe experiments was, that where the leaves were anointed on both ſurfaces with varniſh, they decayed

cayed preſently; and where they were anointed with the other things, in proportion as thoſe were moſt penetrating, ſo the leaves continued a ſhorter time than the others; and where one ſurface only was anointed, they continued much longer than thoſe which were anointed on both; and where the pedicle only was anointed, they continued ſtill longer; but the anointing of the trunks made no ſenſible alteration, excepting in very hot weather; when they both imagine, that the anointing them was of ſervice, by hindering the too great tranſpiration which might weaken the trees; for they obſerved, that thoſe trees which were varniſhed, ſuffered leſs from the violent heat, than the trees which were left in their natural ſtate.

Monſ. Bonnet alſo obſerved, that the tender parts of thoſe leaves which were varniſhed, were deſtroyed by it, and the tough fibres were only left remaining.

We may therefore reaſonably conclude, that one great uſe of leaves is what has been long ſuſpected by many, viz. to perform in ſome meaſure, the ſame office for the ſupport of the vegetable life, as the lungs of animals do for the ſupport of animal life; plants, very probably, drawing through their leaves ſome part of their nouriſhment from the air.

Leaves *of Elm*, were given by the Roman huſbandmen to feed their cattle.

Leaves *of Oak*. Their uſe in a hot-houſe is recommended by Mr. Speechly, gardener to the Duke of Portland, in a letter to Dr. Hunter of York, wherein he ſays "I preſume that the leaves of the oak abound with the ſame quality as the bark of the tree, therefore the ſooner they are raked up after they fall from the trees, the better, as that quality will naturally decreaſe during the time they are expoſed to the weather. After being raked into heaps they ſhould immediately be carried to ſome place near the hot-houſes, where they muſt lie to *couch*. I generally fence them round with charcoal hurdles, or any thing elſe to keep them from being blown about the garden in windy weather. In this place we tread them well, and water them in caſe they happen to have been brought in dry. We make the heap ſix or ſeven feet in thickneſs, covering it over with old matts, or any thing elſe, to prevent the upper leaves from being blown away. In a few days the heap will come to a ſtrong heat. For the firſt year or two that I uſed theſe leaves, I did not continue them in the heap longer than ten days or a fortnight; but in this I diſcovered a conſiderable inconvenience, as they ſettled ſo much when they got into the hot-houſe as ſoon to require a ſupply. Taught by experience, I now let them remain in the heap five or ſix weeks, by which time they are properly prepared for the hot-houſes. In getting them into the pine-pits, if they appear dry, we water them again, treading them in layers exceedingly well till the pits are quite full. We then cover the whole with tan to the thickneſs of two inches, and tread it well till the ſurface becomes ſmooth and even. On this we place the pine-pots in the manner they are to ſtand, beginning with the middle row firſt, and filling up the ſpaces between the pots with tan. In like manner we proceed to the next row till the whole is finiſhed; and this operation is performed in the ſame manner as when tan only is uſed.

"After this the leaves require no farther trouble the whole ſeaſon thro', as they will retain a conſtant and regular heat for twelve months without either ſtirring or turning; and if I may form a judgment from their appearance when taken out, (being always entire and perfect) it is probable they would continue their heat through a ſecond year; but as an annual ſupply of leaves is eaſily obtained, ſuch a trial is hardly worth the trouble, of making.

"After this the pines will have no occaſion to be moved but at the ſtated times of their management, viz. at the ſhifting them in their pots, &c. when at each time a little freſh tan ſhould be added to make up the deficiency ariſing from the ſettling of the beds; but this will be inconſiderable, as the leaves do not ſettle much after long couching. During the two firſt years of my practice I did not uſe any tan, but plunged the pine-pots into the leaves, and juſt covered the ſurface of the beds when finiſhed, with a little ſaw-duſt, to give it a neatneſs. This method was attended with one inconvenience;

venience; for by the caking of the leaves they ſhrunk from the ſides of the pots, whereby they became expoſed to the air, and at the ſame time the heat of the bed was permitted to eſcape.

"Many powerful reaſons may be given why oak leaves (for I have not tried any other kinds) are preferable to tanners bark.

"Firſt, they always heat regularly; for during the whole time that I have uſed them, which is near ſeven years, I never once knew of their heating with violence; and this is ſo frequently the caſe with tan, that I affirm, and indeed it is well known to every perſon converſant in the management of a hot-houſe, that pines ſuffer more from this one circumſtance, than from all the other accidents put together, inſects excepted. When this accident happens near the time of their fruiting, the effect is ſoon ſeen in the fruit, which always comes ill ſhaped and exceedingly ſmall. Sometimes there will be little or no fruit at all; therefore gardeners who make uſe of tan *only* for their pines, ſhould be moſt particularly careful to avoid an overheat at that critical ſeaſon—the time of ſhewing fruit.

"Secondly, the heat of oak leaves is conſtant; whereas tanners bark generally turns cold in a very ſhort time after its furious heat is gone off; this obliges the gardener to give the tan frequent turnings in order to promote its heating. Theſe frequent turnings (not to mention the expence) are attended with the worſt conſequences, for by the continual moving of the pots backwards and forwards, the pines are expoſed to the extremes of heat and cold, whereby their growth is conſiderably retarded; whereas when leaves are uſed, the pines will have no occaſion to be moved but at the times of potting, &c. The pines have one particular advantage in this undiſturbed ſituation: their roots grow through the bottoms of the pots and mat amongſt the leaves in a ſurprizing manner. From the vigour of the plants when in this ſituation, it is highly probable that the leaves, even in this ſtate, afford them an uncommon and agreeable nouriſhment.

"Thirdly, there is a ſaving in point of expence, which is no inconſiderable object in places where tan cannot be had but from a great diſtance, as is the caſe here, the article of carriage amounting to ten ſhillings for each waggon-load. Indeed, this was the principal reaſon that firſt induced me to make trial of leaves.

"My laſt ground of preference is the conſideration that decayed leaves make good manure; whereas rotten tan is experimentally found to be of no value. I have often tried it both on ſand and clay, alſo on wet and dry lands, and never could diſcover, in any of my experiments, that it deſerved the name of a manure; whereas decayed leaves are the richeſt, and of all others, the moſt ſuitable for a garden. But this muſt only be underſtood of leaves after they have undergone their fermentation, which reduces them to a true vegetable mould, in which we experimentally know that the food of plants is contained, but whether that food be oil, mucilage, or ſalt, or a combination of all three, I leave Philoſophers to determine. This black mould is, of all others, the moſt proper to mix with compoſt earth, and I uſe it in general for pines, and almoſt for every thing that grows in pots. For flowers it is moſt excellent. The remainder of this vegetable mould may be employed in manuring the quarters of the kitchen garden, for which purpoſe it is highly uſeful.

"Leaves mixed with dung make excellent hot-beds, and I find that beds compounded in this manner preſerve their heat much longer than when made entirely with dung. In both caſes the application of leaves will be a conſiderable ſaving of dung, a circumſtance very agreeable, as it will be the means of preventing the conteſts frequently obſerved in large families between the ſuperintendant of the gardens and the directors of the huſbandry."

LEANNESS, *Scurf*, *Mangineſs*, and *Miſlike*. Diſtempers in hogs all coming under one head, as they proceed from the ſame cauſe, which is corrupted blood ariſing from lying wet, in filthy rotten litter, and wanting meat; the cure is performed in the following manner: Let the ſwine blood under the tail, and with a wool-card comb off the filth and ſcurf from his back till his ſkin bleed, then mix ſome tar, hogs-greaſe,

hog's-greaſe, and brimſtone well together, and anoint him therewith; clean his ſtye, give him clean litter and warm food, and he will ſoon grow ſound.

LEAP or LIP. Half a buſhel, hence ſeed-leap or ſeed-lip, from whence the corn is ſown, containing half a buſhel.

LEAR. *See* LAIR.

LEASE. A covenant between the farmer and the landlord, by which the farm is lett for a term of years therein expreſſed.

LEASE and RELEASE, As uſed in our law, ſignifies a certain inſtrument, in writing, for the conveyance of a right or intereſt in lands and tenements in fee to another.

LEASH. Among ſportſmen, denotes three creatures of any kind: but chiefly greyhounds, foxes, bucks, and hares.

The term leaſh alſo ſignifies a line to hold in a hunting dog; and a ſmall long thong of leather, by which a falconer holds his hawk.

LEATHER. The ſkin of ſeveral kinds of beaſts, dreſſed and prepared for the uſe of the various manufacturers, whoſe buſineſs it is to make them up. The butcher and others who flay off their hides or ſkin, diſpoſe of them raw or ſalted to the tanner and tawer, and then to the ſhamoy, Morocco, and other kind of leather dreſſers, who prepare them according to their reſpective arts, in order to diſpoſe of them among the curriers, glovers, harneſs-makers, coach-makers, ſadlers, breeches-makers, gilt leather-makers, chair-makers, ſhoe-makers, book-binders, and all in any way concerned in the article of leather.—The three principal aſſortments of leather are tanned or tawed, and oil and allum-leather; and it may be affirmed with great truth, that the ſkins of our own production, and thoſe imported from our colonies, when dreſſed in this kingdom, make the beſt leather in the world, and therefore this is an article of great importance to the trade of the nation.

Though there is no little difference between the dreſſing of ſhamoy-leather, allum-leather, Hungary-leather, Morocco-leather, parchment, and tanning; yet the ſkins which paſs through the hands of theſe ſeveral workmen, ought to have been, for the moſt part, at leaſt waſhed clean from blood and impurities in a running water; ſet to drain, worked with the hands, or pounded with wooden peſtles in a vat; put into the pit, which is a hole lined either with wood or with ſtone and mortar, filled with water in which quick-lime is diſſolved, in order to looſen the hair, that it may be eaſily rubbed off without injuring the ſkin; drawn out, and ſet to drain on the edge of the pit; ſtretched on the leg or horſe, in order to have the hair ſcraped off with a blunt iron-knife, or wooden cylinder; the membranes on the fleſhy ſide, and the ſcabs or roughneſſes on the grain-ſide, pared off with a ſharp knife; and the ſkins rubbed with a whetſtone, to take off any particles of the lime, or any thing elſe that may occaſion hardneſs; thickened by different ſorts of powder, whereby they become greater in bulk, and ſo much lighter as gradually to riſe to the ſurface of the water; ſtretched out, green or half dried, and piled one over another; or put up ſeparate after they are dried, and hung out to air upon poles, lines, or any other way: which muſt be repeatedly done in the dreſſing of ſmall ſkins. This alternate tranſition from the liquid of the air into that of water, and from water in the air, with the aſſiſtance of lime, ſalts, and oils, opens the inmoſt fibres of the ſkin ſo effectually, as greatly to facilitate the introduction of ſubſtances proper for making them pliant, without rendering them thinner.

The allum leather-dreſſer dreſſes all ſorts of white leather from the ox-hide to the lamb-ſkin; for dreſſing the ſadler's leather, he uſes bran, ſea-ſalt, and allum; and for that which the glover uſes, after the common preparatives, he firſt employs bran, and then with ſalt, allum, fine flour, and yolks of eggs mixed in hot water, he makes a ſort of pap, with which the ſkins are ſmeared in a trough.

The ſhamoy leather-dreſſer ſoaks in oil, not only the ſkins of the true ſhamoy (which is a wild goat) but likewiſe thoſe of all other goats. The tanner uſes the bark of young oaks ground in a tanning-mill, in which he ſoaks the ſkins more or leſs, according to the different ſervices expected from them, their chief uſe being to remain firm and keep out water. In certain caſes, inſtead of tan, he uſes redon, which is chiefly uſed for tanning ram, ſheep-ſkins, and dreſſing Ruſſia leather.

LEAVEN. A piece of four dough, uſed to ferment and render light a much larger quantity of dough or paſte.

LEDGER. The principal book in which merchants enter their accounts.

LEDUM. Wild roſemary, in botany, a plant which grows naturally in moiſt places in ſeveral parts of England. It riſes with a ſlender ſhrubby ſtalk, dividing into many branches, which are furniſhed with narrow leaves: the flowers come out in cluſters at the ends of the branches, each having five hollow petals, and ten ſtamina: the fruit is a roundiſh capſule, with five cells, which are filled with ſmall narrow pointed ſeeds.

LEE. In the ſea language, that part of the hemiſphere to which the wind bloweth.

LEEKS, [*Porrum.*] Of this plant there are two ſpecies, the London or garden leek, and the Siberian. They are raiſed by ſowing the ſeeds in the ſpring, and keeping them carefully weeded, and tranſplanting them in June in rows about a foot apart, and ſix inches from each other. If you would ſave the ſeeds of this plant, you ſhould make choice of ſome of the largeſt and beſt you have, which muſt remain in the place where they grow till February, when they ſhould be tranſplanted in a row againſt a warm hedge, pale, or wall, about eight inches aſunder; and when their ſtems advance, they ſhould be ſupported by a ſtring to prevent their being broken down, to which they are very liable, eſpecially when in head, and the cloſer they are drawn to the fence in autumn, the better the ſeeds will ripen; for it ſometimes happens in cold ſummers or autumns, that thoſe which grow in the open garden, do not perfect their ſeeds in this country, eſpecially if there are ſharp froſts early in the autumn, which will entirely ſpoil the ſeed.

When it is ripe (which may be known by the heads changing brown) you ſhould cut off their heads with about a foot or more of the ſtalk to each, and tie them in bundles containing three or four heads, and hang them up in a dry place, where they may remain till Chriſtmas or after, when you may threſh out the ſeeds for uſe. The huſk of theſe ſeeds is very tough, which renders it difficult to bea tout the ſeeds; ſome, therefore, when they have but a ſmall quantity, rub it hard againſt a rough tile, which will break the huſks, and get the ſeeds out better than moſt other methods.

LEES. The more groſs and ponderous parts of liquor which are ſeparated by fermentation and fall to the bottom, as of ale, wine, &c.

LEET. A little court held within a manor, and called the King's court, on account that its authority to puniſh offences originally belonged to the crown, and from thence deſcended to inferior perſons.

LEMNIAN EARTH. A pale red bole, which ſlightly ferments when mixed with acids.

LEMON TREE, [*Limonia.*] A genus of trees with large ſtiff leaves like the citron, without any appendage at the bottom; the flower conſiſts of many leaves, which expand in the form of a roſe; the fruit is almoſt of an oval figure, and divided into ſeveral cells, in which are lodged hard ſeeds, ſurrounded by a thick fleſhy ſubſtance, which, for the moſt part, is full of an acid juice.

All ſorts are propagated by budding or inarching them either on ſtocks of lemons or citrons produced from ſeeds, but they will not readily unite on orange ſtocks; for which reaſon the citrons are preferable to either oranges or lemons for ſtocks, as they readily join with either ſort; and being of larger growth, cauſe the buds of the other ſorts to be much ſtronger than if they were on ſtocks of their own kind.

The culture of the lemon is the ſame with that of the orange tree, with this difference only, the former being hardier than the latter, will conſequently bring their fruit to maturity with us much better than the orange will, and therefore require to have a greater ſhare of freſh air in winter; for which reaſon they ſhould always be placed near to the doors or windows of the green-houſe: and in ſome curious gardens theſe trees have been planted againſt walls, where by covering them with glaſſes in winter, and protecting them from ſevere froſts, they have produced plenty of large fruit: as theſe trees generally produce ſtronger ſhoots, ſo they require more water to be given them than the orange; but as to the tender ſorts, they muſt be treated with a little more care, otherwiſe their fruit will

will fall off in winter, and come to nothing.—The juice of lemons is ſimilar in quality to that of the *aurantia mala*; (oranges) from which it differs only in being more acid. The yellow peel is an elegant aromatic bitter, and as ſuch is frequently employed in ſtomachic tinctures and infuſions: it is conſiderably hotter than orange peel, and yields in diſtillation with water a larger quantity of eſſential oil: its flavour is nevertheleſs more periſhable, yet does not ariſe ſo readily with ſpirit of wine; for a ſpirituous extract made from lemon peel poſſeſſes the aromatic taſte and ſmell of the ſubject in much greater perfection than an extract prepared in the ſame manner from the peels of oranges.

LENTILS. The name of a plant of the vetch or tare kind, cultivated in ſome parts of England as fodder for cattle.

Lentils grow to a foot or a foot and a half high, with ſtalks and leaves like thoſe of tares, but ſmaller; and like them they bear their ſeeds, generally in three or four little pods. Theſe ſeeds are round, hard, ſmooth, and flat, but thicker at the ſides. There are two ſorts of lentils, the white and the yellow; but the latter affords the greateſt quantity of fodder.

The ſeeds of this plant are commonly ſown in March, where the land is dry, but in moiſt ground the time is in April. The uſual quantity of ſeed allowed to an acre of land is from one buſhel and a half to two buſhels. If theſe are ſown in drills in the ſame manner as peaſe, they will ſucceed better, and leſs ſeed will do than when they are ſown broad-caſt. The drills ſhould be a foot and a half aſunder, to allow room for the hoe to clean the ground between them; for if the weeds are permitted to grow among them, they will get above the lentils, and ſtarve them.

LENTISC *or* MASTIC, [*Lentiſcus.*] See MASTIC.

LEOPARDS BANE, [*Doronicum.*] There are two or three ſpecies of this plant not unlike the daiſey, and are ſeldom cultivated in our gardens except for the ſake of variety. They are propagated by parting the roots.

LEPROSY *or* MANGE. This is a diſeaſe of the ſkin, or ſcarfſkin, ſeldom attended with either pain or inflammation. All creatures are liable to foulneſs of the ſkin, when good care is not taken of them; in horſes this is ſometimes attended with or cauſed by other complaints, though ſometimes not.

When there is no other complaint joined with it, the remedies are to be only external. Proceed as follows:

Make ſome very ſtrong ſoap-ſuds, and put in ſome vinegar and ſome powder of white hellebore.

Firſt wipe the horſe very dry, then rub him all over with a bruſh wet with the ſoap-ſuds, and waſh him well with it, by throwing ſome over him, working it well in with the hands, and rubbing him well with a coarſe cloth. After this let him be taken in and dried thoroughly, and give him ſome food and clean litter.

Mix up a pound of flower of brimſtone, a quarter of a pint of oil of turpentine, and as much hog's lard as will make the whole into an ointment. Rub him well with this an hour after he is thoroughly dry from waſhing.

The next day boil a quarter of a pound of white hellebore and a pound of dock root, in a gallon of water, make this into ſuds, by beating it up with a good quantity of ſoap, and waſh him with it, then anoint him well with the ſame ointment as before.

Repeat this every day for ſeven, eight, or nine days, according to the nature of the complaint, and he will ſoon be cured: laſt of all waſh him well with the ſuds, without anointing after it.

This is certain to prove a cure, if there be nothing but the outward complaint; but when it has proceeded from bad food, bad water, and ill management, as well as uncleanlineſs, then the ſame outward method is to be uſed, and he is to have flower of brimſtone and powder of antimony inwardly.

There is no need to alter the medicines when the deſign is the ſame, and there is no way ſo good of giving them. All external foulneſſes are to be cured with eaſe and certainty, and in a very little time, by this method. After he is got well, he ſhould have a doſe or two of phyſic.

LETTUCE, [*Lactuca.*] The varieties are very numerous, but the real valuable ſorts now commonly cultivated, do not amount to above ſix or ſeven; and it is better to cultivate only a few of the known good kinds, than to confuſe the ground with a great

multiplicity of ſorts, unleſs required merely for variety. We will, however, exhibit a liſt of the principal, and leſs material varieties ſeparate.

Principal Varieties. Hardy green cabbage lettuce, white cabbage-lettuce, great admirable white cabbage-lettuce very large, brown Dutch cabbage-lettuce, green cofs-lettuce, white cofs-lettuce, brown Sileſia-lettuce. All the cabbage kinds are of ſpreading growth, but cabbage firmly; and the other ſorts grow upright, and alſo cabbage very large.

All theſe ſeven varieties are excellent lettuces for general culture, though the green, and the white cofs kinds are in moſt eſteem for the general ſummer crops; and the green cofs rather excels all the cofs kinds for ſize and goodneſs; but as all the above varieties both of the cabbage and cofs kinds cabbage exceeding fine, a few of each is worth cultivating in every garden for general uſe; but rather moſt of the cofs kinds for ſummer, and moſt of the others for autumn and winter; and the hardy cabbage, brown Dutch, and green cofs, are proper alſo to ſtand the winter for ſpring ſervice; but if thought proper ſome of each ſort may be uſed for either or all of theſe ſeaſons, except the great admirable cabbage-lettuce, which being rather tender, does not ſucceed for early nor late crops, ſo ſhould be ſown principally in April and May, and will cabbage remarkably fine in July and Auguſt. All the other varieties, however, may be ſowed any time in ſpring, ſummer, or autumn.

Leſs material Varieties. Small early green ball-cabbage lettuce, white ball-cabbage lettuce: both of theſe are varieties of the common green and white cabbage lettuce; green capuchin lettuce, imperial lettuce, large ſpotted cofs-lettuce, black cofs-lettuce, large and ſomewhat ſpreading. All theſe varieties cabbage to firm heads, though inferior to the former claſs of varieties for general uſe; but their culture is all the ſame as the others; and if required for variety, may be raiſed abundantly by ſeed in ſpring, ſummer, or autumn.

All the above varieties of lettuce in each claſs, are tolerably permanent, eſpecially if care is taken to ſave the ſeeds only of the very beſt of each ſort; and the different ſorts always as far diſtant from each other as poſſible, that their farina may not mix and cauſe a degeneracy, for it is by not ſtrictly obſerving this that ſo many are diſappointed in their crops, by having lettuce not of the approved ſorts, and thoſe often ſmall and inſignificant, running to ſeed before they have half cabbaged; therefore great regard ſhould be had in the choice of the plants for ſeed; according to the above hints, by which you may depend on continuing plants of the approved kinds in the utmoſt perfection.

The plants in general may be conſidered both as annuals and biennials, for thoſe ſowed in ſpring and ſummer, attain perfection, run up to ſeed, and periſh the ſame year; but the autumn ſowings will ſtand all winter until ſpring following, when they attain perfection, then ſhoot up for ſeed, and periſh root and all.

All the ſorts are hardy enough to grow in any common ſoil of a kitchen garden, in a free ſituation open to the ſun and air; but being rather impatient of ſevere froſt and wet ſoils in winter, ſhould have a dry warm ſituation in that ſeaſon, and ſome ſhould be kept under frames and other ſhelters, the more effectually to preſerve and forward them for uſe during that ſeaſon and ſpring time.

Their uſe is principally for ſallads, when arrived to full growth and cabbaged, that the inner leaves become blanched, criſp, and ſweet, otherwiſe they would eat tough and bitter taſted; but ſometimes alſo the young open plants of the cabbage-lettuces are uſed in ſpring till the other general crops arrive to perfection: the white cabbage being the moſt elligible for this uſe, as they eat ſweeter than any other ſorts while young and open. Quite young open lettuces are alſo often uſed as ſmall ſallad herbs, ſowing them thick in rows, like creſſes, &c. and gather them for uſe in the ſame manner as for thoſe plants; but this mode of culture is more particularly practiſed in winter and ſpring. Lettuces, however, in general eat no way ſo criſp, ſweet, and palatable, as when fully cabbaged, and are themſelves ſufficient for a ſallad, if thought proper, without the addition of other herbs. The fully cabbaged lettuces are alſo excellent for ſtewing and for ſoups, and other culinary uſes.

—The propagation of all the ſorts of lettuce

tuce is by ſeed annually, and that to continue a regular ſucceſſion of them for uſe at all times of the year, ſix or eight different ſowings at leaſt, are neceſſary; but the principal ſowing-ſeaſon for the main crops, is ſpring, February, March, April, and May; which will furniſh a conſtant ſupply of good lettuces from May till Auguſt or September; and by latter ſowings they are continued longer accordingly: as the plants however, of all the ſowings, after having attained their proper ſize, and are fully cabbaged, ſoon after run up to ſeed, to inſure a continued ſucceſſion as long as poſſible, a ſowing may be performed every three weeks or month, from January until September or October.

The main crops of lettuces ſhould generally be ſown diſtinct from other crops, and each different variety ſeparate; they are commonly ſown thin among other ſmall crops, to ſave ground; ſome of the plants deſigned for tranſplantation into other places, and ſome to remain at good diſtances for cabbaging; ſo are frequently ſown among early radiſhes and ſpinach, alſo among onions, leeks, carrots, parſnips, &c. particularly the upright ſorts of coſs-lettuces; any of the ſorts are likewiſe often ſowed thin among winter ſpinach, but chiefly the common green cabbage, and brown Dutch kinds; but in ſowing any ſorts of lettuces among any of theſe crops, a thin ſprinkling ſhould only be admitted; but when there is plenty of ground, I ſhould be for ſowing the main crops principally diſtinct by themſelves, and the plants thinned out, leaving ſome to remain for cabbaging where ſowed, and tranſplant the reſt into another ſpot of ground.

When intended to have early young open lettuces for ſpring uſe, the white cabbage kinds are the proper ſorts to ſow for that purpoſe, and may begin to thin the young plants for uſe, when their leaves are an inch or two broad, which may be continued as they are wanted, leaving ſome at regular diſtances to arrive at full growth.

For full grown lettuces it is proper to ſow the different ſorts at the ſame time in ſeparate ſpots of ground, whereby you will have a regular ſupply; remarking the ſorts that are the moſt proper for uſe at the different ſeaſons of the year, and the different times of ſowing as above mentioned.

The early ſowings of all the ſorts ſhould be performed on a warm border or ſome dry ſheltered ſituation, to have the crops as forward as poſſible; and if required to have a few early lettuces as forward as can be, they may be greatly forwarded by ſowing them in a ſlender hot-bed in January or February; particularly the white and green coſs-lettuce, and if the young plants of an inch or two high are pricked out into another ſlight hot-bed, it will ſtill bring them more forward; and after having a month's growth ſome may be thinned out in mild weather, and planted a foot diſtance in the open ground; but in default of hot-beds, a few may be ſowed in frames, or under hand glaſſes in a bed or border of natural earth, to have ſhelter on nights and cold weather, which may bring them a little forwarder than thoſe fully expoſed.

But the general ſpring and ſummer-ſowings for the main crops, for ſummer and autumn uſe, and alſo the tranſplantings, ſhould be performed principally in any open ſituation, in the quarters, or large open borders, the more diſtant from ſpreading trees and buſhes the better.

The ſowings of all the ſorts at every ſeaſon is performed principally by broad-caſt on the ſurface; obſerving, as the ſeeds are ſmall and thin, particular care is requiſite in ſowing, to ſpread them regular, and rake them in with an even hand; or thoſe ſowed in hot-beds under frames, may inſtead of raking in, have earth ſifted over them near a quarter of an inch deep; and in about from eight or ten, to fifteen or twenty days after ſowing, in either method, the plants will appear, which are to be managed according to the following directions.

When the plants of each ſowing come up, the principal care is to keep them clean from weeds, thin them where too cloſe, and tranſplant ſome of each ſowing; but as to the earlieſt ſowed plants, which come up early in ſpring, if attacked while very young with ſevere froſt, thoſe in borders may be defended with a light covering of dry long litter occaſionally; and thoſe in hot-beds, or under frames, &c. in the full ground, by covering with the glaſſes. The weeding and thinning the different

different crops of theſe plants may be performed either by hand or hoe; if they are to form a crop of themſelves, weed and thin the plants with the hoe; if they are deſigned for tranſplanting, the weeding and thinning ſhould principally be performed by hand, and ſome of each ſowing ſhould be tranſplanted, to have lettuces in ſucceſſion.

When deſigned to tranſplant any ſort of lettuce, it ſhould be done when the plants are about three or four inches high, not more, for when larger they are apt to flag greatly, and do not root ſo freely as younger plants: moiſt weather will be particularly neceſſary for this work. Take up the plants with care, ſo as to preſerve as much root as poſſible; and proceed to plant them by line and dibble, in rows a foot at leaſt aſunder, but if fifteen or eighteen inches diſtant the better, eſpecially for the larger kinds. As ſoon as they are planted give them water, which ſhould be repeated, if dry weather, ſeveral times for the firſt week or ten days, till the plants have taken freſh root, and begin to advance in growth.

Thus continue planting out a quantity every three weeks, from March, April, or May, until September, or October, whereby you will have a daily ſupply of well cabbaged lettuces eight or nine months in the year; and thoſe planted out late, will ſtand the winter and cabbage early in ſpring.

If the ſummer tranſplantings are planted in ſhallow drills, it will be ſome advantage in facilitating the freſh rooting of the plants, as the drills will confine the water principally about the plants, and alſo retain the moiſture longer than the level ſurface.

Tying up lettuces to forward their cabbaging, and to whiten and render them criſp, is often practiſed on early ſpring and ſummer crops, particularly coſs-lettuces. When the plants are well advanced in growth, and beginning naturally to form their inner leaves for cabbaging, tie all their leaves up cloſe together with a piece of baſs, a little above the middle of the plant, not too ſtrait, but ſo as the whole plant may have room to grow; beſides if tied too cloſe, they are apt to rot in the heart: this work of tying, however, is only neceſſary for ſome of the earlieſt plants of the forward crops, the ſucceeding ones will cabbage faſt enough without that aid; only obſerving, if any ſorts ſhould be backward in cabbaging, as is often the caſe with the black coſs-lettuce, they may always be facilitated therein by the above practice.

Winter lettuces, both for winter uſe, and to ſtand the winter in warm borders and in frames, &c. for ſpring ſervice, are obtained by two or three different ſowings in autumn, from the middle or latter end of Auguſt until the end of September or October.

That is, to have lettuces ſtand for uſe all winter, and early in ſpring, ſow ſome hardy green and white cabbage lettuce, brown Dutch, and green-coſs, about the middle of Auguſt, and beginning of September, in any open ſituation, and the plants will come up in a week or ten days; about the end of September and in October, plant out a parcel of the beſt plants of each ſowing, in a warm dry ſituation, ſix or eight inches aſunder; and at each planting plant alſo ſome under frames at the ſame diſtance, to be covered with glaſſes every night, and in bad weather; or for want of frames, plant them under hand-glaſſes, or in a bed arched over with hoops or rods, to be covered with mats in winter froſts; but if you uſe frames, chuſe them as ſhallow as poſſible, and ſink the back part in the ground, ſo as to be only equal in height with the front, that the ſurface of the bed and plants may be all an equal diſtance from the glaſſes, if not more at firſt, than ſix or eight inches, the better, as it will prevent their drawing up weak and open, which is the caſe when in very deep frames, but in ſhallow ones, they will be more robuſt and cloſe, and being nearer the glaſſes, they will be forwarded more in growth during winter. Under either of the above ſhelters, let the plants enjoy the free air in mild dry weather; but cover them every cold night, with the proper covers, eſpecially after October, alſo in cold and wet weather, particularly thoſe in frames and under glaſſes; thoſe in hand glaſſes may have them almoſt conſtantly over them in winter, tilting up one ſide in mild weather, and only take them entirely off in fine dry days; in ſharp froſty weather keep thoſe under every kind of ſhelter quite cloſe, allowing an additional covering of mats

or

or litter, when the froſt is very intenſe; thoſe in the borders may be defended by ſome light litter, but at no time ſuffer the covering to remain longer on any of the crops than the bad weather continues, but indulge them with free air every mild day. By this method you may have lettuces for uſe moſt part of the winter, and early in ſpring, particularly the cabbage lettuces.

To have lettuces for ſpring uſe, ſome ſeed ſhould be ſowed towards the middle and latter end of Auguſt to ſtand the winter, ſome where they are ſowed, others to be tranſplanted into warm borders, to ſtand without any other ſhelter than that of the walls or other fences; and another ſowing ſhould be performed about the middle of September, to raiſe plants for pricking under frames to have the ſhelter of the glaſſes in winter, to be a reſerve in caſe thoſe in the borders are deſtroyed; if both ſtand, one will ſucceed the other.

In the former caſe, a quantity of the plants, when two or three inches high, in October, or early in November, ſhould be planted out into a warm dry ſituation, in rows north and ſouth, ſix inches aſunder, and here let them remain to take their chance all the winter; out of the whole many of them will probably eſcape the froſt, but in very ſevere weather they may be protected by a light covering of dry long litter, which ſhould be removed again when the froſt breaks. In March or April, if they remain too thick, ſome ſhould be thinned out and planted in another place, in rows twelve or fifteen inches aſunder; theſe crops, thus wintered in the open ground, will come in for uſe in April and May, to ſucceed thoſe ſowed in autumn, and will remain good till the ſpring-ſown plants come in.

Theſe ſowed in September to be wintered in frames, ſhould be planted therein about the latter end of October, or beginning of November, planting them in rows from the back to the front of the frame, at three inches diſtance from each other; cloſe the earth well about each plant, finiſh with a moderate watering all over the plants, and put on the glaſſes, to promote their more ſpeedy rooting anew, but let the lights be ſhoved two or three inches down to give vent to the moiſt vapour ariſing from the mould; when the plants have taken freſh root, and begin to grow, take the glaſſes entirely off, and admit the full air every mild dry day, which muſt be continued throughout the winter ſeaſon, in all dry mild weather, but put them on every night, eſpecially in cold or wet weather; keep the glaſſes always on in froſty weather, except in the middle of ſunny days, but when the froſt is very ſevere, keep them cloſe night and day, placing mats or long litter over the glaſſes, and round the ſides of the frame. During the winter keep all decayed leaves picked off, and as the ſpring and warm weather advances, let them have the benefit of warm ſhowers.

In March tranſplant ſome of them into the open ground, in rows, a foot at leaſt aſunder, water them moderately till they are freſh rooted, obſerving to leave a crop remaining in the frames or winter bed, a foot apart, to ſtand to cabbage, which will come to perfection before the tranſplanted ones, and thoſe that have been fully expoſed all winter.

For want of frames for the above purpoſe, a quantity of the plants may be pricked out under hand or bell-glaſſes in autumn, to ſtand the winter, either by themſelves for a full crop, or may be planted under the hand or bell-glaſſes that are placed over early cauliflowers, as practiſed by the London gardeners, planting them round juſt within the glaſſes, and manage them as directed for the frames; for want either of a ſufficiency of frames or hand glaſſes, plant out a quantity in autumn, in four-feet wide beds, in a warm ſituation, and arch them over with hoops or rods, to cover with mats and litter in bad weather: they will here have a better chance of ſurviving the winter than thoſe fully expoſed, and in ſpring tranſplant a quantity, by way of thinning, into other beds.

Let it be remarked that ſome of the early plants of all the ſorts ſhould principally be choſen for ſeed plants, for thoſe of the latter crops rarely run ſoon enough to ripen ſeeds perfectly before they are attacked by the autumnal rains and cold, which greatly retards the ripening of all ſorts of lettuce ſeed; ſelect the largeſt and beſt cabbaged of each reſpective kind, and keep the different varieties intended for ſeed, at

ſome

ſome diſtance from each other, becauſe if too near, the *ſemen maſculinum* of the different ſorts may mix and fecundate one another, and thereby a degeneracy or mongrel breed will be the conſequence, and the true ſorts would in time be loſt.

The ſeed ripens in Auguſt and September, but that of each plant rarely ripens all equally together, ſo that according as it arrives to perfection, the reſpective branches ſhould be cut off in dry days, and ſpread upon a cloth, or tied in ſmall bunches, and hung up acroſs lines in a dry airy loft, for a week or two to dry and harden; then beat them out, and clean them from the down and other rubbiſh, and expoſe them upon cloths a few days to dry for keeping; then put them up in bags for uſe, and hang them in a dry room.

All ſorts of lettuce produce the greateſt quantities of ſeed in dry warm ſeaſons, and in wet cold autumns they ripen ſeed very ſparingly, and late, and often very indiffent in reſpect to goodneſs for ſowing.

Lambs LETTUCE. *See* CORN SALLAD.

Wild LETTUCE, [*Prenanthes.*] This is a plant of no great beauty, growing on dry walls and dry ſhady banks in many parts of England. There are two or three other ſpecies growing wild upon the Helvetian mountains, and in North America, but are ſeldom admitted into gardens.

LETHARGY. The hog will ſometimes fall into what is called the ſleeping evil or lethargy. He will doze all day long, neglect his food, and pine away.

The remedy is a vomit, and the beſt in the world is this. Gather a good quantity of wall pepper, called alſo ſharp ſtone crop. Bruiſe this in a marble mortar, and preſs out the juice.

Keep the creature faſting all the afternoon and night, and the next morning ſet before him a warm meſs, into which put a pint of the juice of the ſtone crop. He will be tempted to eat by his long faſt, and the hog is not very curious about taſtes. He will vomit ſoon after he has ſwallowed it, and that ſingle doſe will frequently prove a cure. If this be not ſufficient, it muſt be repeated the next day.

LEVERET. A young hare.

LICE. To cure lice on cattle or horſes, boil two ounces of white hellebore root bruiſed in three pints of water to a quart, add to this liquor four ounces of ſulphur vivum in fine powder, and waſh the beaſts with it twice a day. Let them be well looked after, and have good food and good rubbing and currying.

LIFE EVERLASTING. *See* ETERNAL FLOWER.

LIFT. A ſtile to be opened like a gate.

LIGE. Little puſtules or bladders within a horſe's lips. They are cured by bruiſing wormwood and ſkirwit in a mortar with a little honey, and anointing the ſore with it.

LIGNALOES. Aloes wood.

LIGNUM VITÆ. *See* GUAIACUM.

LILAC, [*Syringa.*] The name of a flowering ſhrub, cultivated in the Engliſh gardens, and ſuppoſed to grow naturally in ſome parts of Perſia, but is ſo hardy as to reſiſt the greateſt cold of this country.

There are three varieties of this ſhrub commonly cultivated here, which differ in the colour of their flowers, and alſo in that of their ſhoots and leaves; one of theſe has white flowers, one blue, and the third purple flowers; the latter is commonly known by the title of Scotch lilac, to diſtinguiſh it from the other, and is the moſt beautiful of the three.

Theſe ſhrubs grow to the height of eighteen or twenty feet in good ground, and are divided into many branches; thoſe of the white ſort grow more erect than the other, and the purple or Scotch lilac has its branches more diffuſed than either. The branches of the white are covered with a ſmooth bark, of a grey colour, thoſe of the other two are darker. The leaves of the white are of a very bright green, but thoſe of the other are of a very dark green. They are heart-ſhaped, and are placed oppoſite; the buds of the future ſhoots, which are very turgid before the leaves fall, are of a very bright green in the white ſort, but thoſe of the other two are of a dark green. The flowers are always produced at the ends of the former year, and below the flowers come out ſhoots to ſucceed them; for that part upon which the flowers ſtand decays down to the ſhoots below every winter.

winter. There are generally two bunches or panicles of flowers joined at the end of each ſhoot; thoſe of the blue are the ſmalleſt, and are placed thinner than either of the other. The bunches on the white are larger; the flowers are cloſer placed, and larger than the blue; but thoſe of the Scotch are larger and fairer than either of the others. They flower in May, and when the ſeaſon is cool, theſe ſhrubs will continue three weeks in beauty, but in hot ſeaſons the flowers ſoon fade. Their ſeeds are ripe in September, which if ſown ſoon after, the plants will come up the following ſpring; but as their roots ſend out great plenty of ſuckers annually, ſo few perſons ever take the trouble to propagate theſe plants by ſeeds. They generally flower the third year from ſeed, and are not ſo apt to ſend out ſuckers as thoſe plants which were produced by ſuckers, ſo are much more valuable; for the others put out ſuch plenty of ſuckers, that if they are not annually taken from the plants, they will ſtarve them.

Theſe plants thrive beſt upon a light rich ſoil, ſuch as the gardens near London are for the moſt part compoſed of, for in ſtrong loam, or upon chalky land, they make little progreſs. If the ſuckers are ſmall, when they are taken from the old plants, they ſhould be planted in a nurſery, in rows three feet aſunder, and one foot diſtant in the rows, where they may ſtand a year or two to get ſtrength, and then they ſhould be removed to the places where they are to remain. The beſt time to tranſplant theſe ſhrubs is in autumn.

LILY, [*Lilium.*] The common white lily is ſo well known as to need no deſcription; it grows naturally in Paleſtine and Syria, but has been long cultivated in all the gardens of Europe. It is ſo hardy that no froſts ever injure the roots, and it propagates ſo faſt by offſets from the roots, that it becomes ſo common as to be little regarded, though there is great beauty in the flowers, which have an agreeable odour. Of this ſort there are the following varieties:

The white lily ſtriped with purple.
The white lily with variegated leaves.
The white lily with double flowers.

Theſe are varieties which have accidentally ariſen from culture; the ſort with variegated flowers has been in England more than fifty years, and is now very common in moſt of the gardens, and is by ſome perſons eſteemed for the variety of its purple ſtripes; but as the pure white of the flower is ſtained by the purple, ſo as to appear of a dull colour, many prefer the common white lily to this.

The ſort with variegated leaves is chiefly valued for its appearance in winter and ſpring, for as the leaves come up early in the autumn, which ſpread themſelves on the ground, and being finely edged with broad yellow ſtripes, they make a pretty appearance during the winter and ſpring months. The flowers are the ſame as thoſe of the common ſort, but appear earlier in the ſummer, which may be occaſioned by the roots being weaker than thoſe of the plain ſort, for all variegated plants are weaker than thoſe which are plain.

The white lily with double flowers is leſs valuable than either of the other, becauſe their flowers rarely open well, unleſs they are covered with glaſſes to ſhelter them from the rain and dew, ſo they often rot without expanding. Theſe have not the agreeable odour which the ſingle ſort is valued for, even when they open the faireſt; for as by the multiplicity of petals in the flowers, the parts of generation are deſtroyed, ſo there is a want of the fecundating powder from whence the odour is ſent out.

The white lily with dependent flowers was originally brought from Conſtantinople. This is by ſome ſuppoſed to be only a variety of the common ſort, but is undoubtedly a diſtinct ſpecies; the ſtalk is much ſlenderer than the common, the leaves are narrower, and fewer in number; the flowers are not quite ſo large, and the petals are more contracted at their baſe; theſe always hang downward, whereas thoſe of the common ſort grow erect. The ſtalks of this kind ſometimes are very broad and flat, and appear as if two or three were joined together; when this happens, they ſuſtain from ſixty to an hundred flowers, and ſometimes more.

Theſe ſorts are eaſily propagated by offſets, which the roots ſend out in ſo great plenty as to make it neceſſary to take them off every third year, to prevent their weakening the principal roots. The time for removing of the

roots is at the end of Auguſt, ſoon after the ſtalks decay, for if they are left longer in the ground they will ſoon put out new fibres and leaves, when it will be improper to remove them, becauſe that will prevent their flowering the following ſummer. They will thrive in almoſt any ſoil or ſituation, and as they grow tall and ſpread, ſo they muſt be allowed room; therefore in ſmall gardens they take up too much ſpace, but in large borders they are very ornamental.

The common orange or red lily is as well known in the Engliſh gardens as the white lily, and has been as long cultivated here. This grows naturally in Auſtria, and ſome parts of Italy. It multiplies very faſt by offſets from the roots, and is now ſo common as to be almoſt rejected; however, in large gardens theſe ſhould not be wanting, for they make a good appearance when in flower, if they are properly diſpoſed. Of this ſort there are the following varieties:

The orange lily with double flowers.

The orange lily with variegated leaves.

The ſmaller orange lily.

Theſe varieties have been obtained by culture, and are preſerved in the gardens of floriſts. They all flower in June and July, and their ſtalks decay in September, when the roots may be tranſplanted, and their offſets taken off, which ſhould be done once in two or three years, otherwiſe their bunches will be too large, and the flower-ſtalks weak. This does not put out new roots till toward ſpring, ſo that the roots may be tranſplanted any time after the ſtalks decay till November. It will thrive in any ſoil or ſituation, but will be ſtrongeſt in a ſoft gentle loam not too moiſt.

The bulb-bearing fiery lily, ſeldom riſes much more than half the height of the former; the leaves are narrower, the flowers are ſmaller, and of a brighter flame colour; they are fewer in number, and ſtand more erect. Theſe come out a month before the common ſort, and the ſtalks put out bulbs at every joint, which if taken off when the ſtalks decay, and planted, will produce plants, ſo that it may be propagated in plenty. There are ſeveral varieties of this, which are mentioned as diſtinct ſpecies, but are ſuppoſed to have been produced by culture. Theſe are,

The greater, broad-leaved, bulb-bearing lily.

The many-flowered bulb-bearing lily.

The ſmall bulb-bearing lily.

The hoary bulb-bearing lily.

All theſe ſorts of lilies will thrive under the ſhade of trees, ſo may be introduced in plantations, and on the borders of woods, where they will have a good effect during the time they are in flower.

There is alſo a great variety of the Martagon lily; theſe differ from the common lilies, in having their petals reflexed backward in form of a Turk's turban, from whence many give them the title of Turk's cap. In the gardens of the floriſts, particularly thoſe in Holland, they make a great variety of theſe flowers, amounting to the number of thirty or upward.

All the ſorts of lilies may be propagated by offſets from the roots, which ſome of the ſorts produce in plenty; but there are others which ſend out very few, which occaſions their preſent ſcarcity. The roots of all the ſorts of Martagon may be ſafely taken up when their ſtalks decay, and if there is a neceſſity for keeping the roots out of the ground, if they are wrapped in dry moſs, they will keep perfectly well for two months; ſo that if their roots are to be tranſported to a diſtant place, this precaution of wrapping them up is neceſſary; but where they are to be planted in the ſame garden, there will be no occaſion for this, eſpecially if they are not kept too long out of the ground; for if the place is ready to receive the roots, they ſhould be planted the beginning of October; ſo if the roots are put in a dry cool place, they will keep very good without any farther care; but if the ground is not ready to receive them till later in the year, then it will be proper to cover the roots with dry ſand, or wrap them in moſs to exclude the air, which, if they are much expoſed to, will cauſe their ſcales to ſhrink, which weakens the roots, and is ſometimes the occaſion of their rotting.

Theſe roots ſhould be planted five or ſix inches deep in the ground, eſpecially if the ſoil is light and dry; but where the ground is moiſt, it will be proper

proper to raiſe the borders in which theſe are to be planted, five or ſix inches above the level of the ſurface of the ground; for if the water riſes ſo high in winter as to come near the roots, it will cauſe them to rot; and where the ſoil is naturally ſtiff and ſubject to bind, there ſhould be a good quantity of ſea-coal aſhes or rough ſand, well mixed in the border, to ſeparate the parts, and prevent the ground from binding in the ſpring, otherwiſe the roots will not ſend up very ſtrong ſtalks, nor will they make ſo good increaſe.

As the Canada, Pompony, and the laſt ſort of Martagons, are ſomewhat tenderer than the others, ſo if in very ſevere winters the ſurface of the ground over them is covered with old tanners bark or ſea-coal aſhes, it will be a good way to ſecure them from being injured by the froſt; and in the ſpring the covering may be removed, before the roots ſhoot up their ſtalks.

The roots of all kinds of Martagons muſt never be tranſplanted after they have made ſhoots, for that will ſo much weaken them, (if it does not entirely kill them) as not to be recovered in leſs than two or three years.

All the ſorts of lilies and martagons may alſo be propagated by ſowing their ſeeds, by which method ſome new varieties may be obtained, provided the ſeeds are ſaved from the beſt ſorts, eſpecially the martagons, which are more inclinable to vary than the other lilies.

LILY OF THE VALLEY, [*Convallaria.*] This plant delights in ſhady places, in almoſt any ſituation. It is eaſily propagated by parting the roots at any time from autumn to ſpring.

LILY *Aſphodel.* See DAY LILY.

LILY *Daffodil.* See DAFFODIL.

LILY *of Japan.* Lily Daffodil.

St. Breno's LILY. Day lily.

Guernſey LILY. A ſpecies of Day lily.

Hyacinth LILY. *See* SQUILLS.

May LILY. Lily of the valley.

Mexican LILY. *See* DAFFODIL.

Perſian LILY. Crown imperial.

Superb LILY, [*Glorioſa.*] The ſpecies of this plant are, 1. Superb lily with longer leaves ending with claſpers. 2. Superb lily with oval, ſpear-ſhaped, acute leaves. The firſt ſort grows naturally on the coaſt of Malabar, and alſo in Ceylon; it has oblong fleſhy roots of a whitiſh colour, and a nauſeous bitter taſte, from which ariſes a round weak ſtalk, which requires ſupport to prevent its trailing on the ground. The ſtalks grow to the height of eight or ten feet, garniſhed with ſmooth leaves placed alternate, about eight inches long, and one and a half broad at their baſe, growing narrower till within two inches of the end, which runs out in a narrow point, ending with a tendril or claſper, by which it faſtens to the neighbouring plants for ſupport. At the upper end of the ſtalk the flowers are produced, ſtanding upon ſlender foot-ſtalks; they are compoſed of ſix oblong petals, ending with acute points, which, on their firſt opening, are of a yellowiſh herbaceous colour, ſtanding at firſt erect, but when fully opened, hang downward as the crown imperial and fritillary; the petals turn quite back, and change to a very beautiful red flame colour, their acute points meeting at the foot-ſtalk. It flowers in July, and often perfects its ſeeds in this country; the ſtalks decay in autumn, and the roots remain inactive all the winter. The roots and every part of this plant are very poiſonous, ſo ſhould not be put in the way of children.

The ſecond ſort is a native of Senegal; it hath a climbing ſtalk, which is garniſhed with ſmooth leaves about two inches long and two broad, ending in acute points, with ſhort tendrils or claſpers. The ſtalks as yet have not grown more than four feet high here. The leaves have a ſtrong diſagreeable ſcent on being handled, ſo as to be troubleſome to the head, if too near, or long ſmelt.

Theſe plants are propagated by their roots; thoſe of the firſt ſort creep and multiply pretty faſt. Theſe roots may be taken out of the ground when their ſtalks are decayed, and preſerved in ſand during the winter ſeaſon, but they muſt be kept in the ſtove or a warm room, where they can receive no injury from the cold, and in the ſpring they muſt be planted in pots filled with light earth, and plunged into the tan-bed in the ſtove; but others chuſe to let the roots continue in the ground all the winter, keeping the pots always in the tan-bed; where this is

practiſed the plants ſhould have very little water in the winter, for as they are then in an inactive ſtate, ſo moiſture at that time frequently rots them.

Toward the latter end of March, or the beginning of April, their ſtalks will appear, when there ſhould be ſome tall ſticks put down by them to ſupport them, otherwiſe they will trail over the neighbouring plants, and faſten to them by the tendrils which are at the ends of the leaves. The ſtalks will riſe ten or twelve feet high, if the roots are ſtrong, and ſome of them will produce two or three flowers, which come out from the wings of the ſtalk near the top; theſe flowers make a fine appearance in the ſtove during their continuance, which is ſeldom more than ten days or a fortnight. In the ſummer when the plants are growing, they will require frequently to be watered, but they muſt not have it in too large quantities. The roots which are not taken out of the pots in winter, ſhould be tranſplanted and parted the beginning of March, before they put out new fibres or ſtalks, for they muſt not be removed when they are in a growing ſtate. The pots in which theſe roots are planted, ſhould not be too large, for unleſs they are confined, they will not put out ſtrong ſtalks; the largeſt roots may be planted in two-penny pots, but the ſmall ones will require only pots of about five or ſix inches over at the top.

Water LILY, [*Nymphæa.*] There are two ſorts of this plant, white and yellow, which grow naturally in water in many parts of England; they have large roots, which are faſtened in the ground, from which ariſe the ſtalks to the ſurface of the water, where the leaves expand and float; they are large and roundiſh. Thoſe of the ſecond ſort are heart-ſhaped, the flowers ariſe between the leaves, and ſwim upon the ſurface of the water. The white ſort has a faint ſweet ſcent; theſe appear in July, and are ſucceeded by large roundiſh ſeed-veſſels, filled with ſhining black ſeeds, which ripen toward the end of Auguſt, when they ſink to the bottom of the water.

The beſt method to propagate theſe plants is, to procure ſome of their ſeed veſſels juſt as they are ripe, and ready to open; theſe ſhould be thrown into canals, or large ditches of ſtanding water, where the ſeeds will ſink to the bottom, and the following ſpring the plants will appear floating upon the ſurface of the water, and in June or July will produce their beautiful large flowers. When they are once fixed to the place, they will multiply exceedingly, ſo as to cover the whole ſurface of water in a few years.

LIME. The employing lime in huſbandry, has been one of the great articles of modern improvement in that ſcience: and it is now ſo well underſtood, that there is reaſon to believe the uſe of it will ſoon be univerſal. As there is a great deal of difference between one kind of lime and another, and many niceties to be obſerved in the uſe of it, nothing can be more needful than a regular account of its nature and effects. Lime is one of thoſe things that are able to do great good; and in conſequence it is capable alſo of doing a great deal of harm in the hands of the unſkilful. It would be well that every farmer in England were acquainted with the virtue of lime, but it is neceſſary at the ſame time that he perfectly underſtand how it is to be uſed.

In the firſt place, lime is of ſeveral kinds; for it may be made from a great many different materials, and it partakes of their ſeveral natures.

Lime may be made of lime-ſtone, marble, chalk, ſea ſhells, and many other things; but the two principal kinds are thoſe made of lime-ſtone and chalk. Theſe differ very much in their nature, but we cannot properly ſay that either is beſt, for they ſeverally are fitteſt for different kinds of land: the true knowledge the farmer ſhould have of theſe kinds is, to what purpoſe each is fuited.

We would adviſe every farmer to burn his own lime, and for that purpoſe ſhall give him ſome very eaſy rules for the choice of his materials. In ſome places he may find both lime-ſtone and chalk upon his ground, he ſhould then make both kinds; but if only one ſort of materials can be had, he muſt make amends for that defect, by a more careful ſtudy of the way to uſe it.

Chalk every one knows at ſight: of this we ſhall only ſay, that the hardeſt makes the beſt lime, and this is for the farmer's advantage; for the ſoft marly chalk

chalk is fit for his uſe in its natural condition, and the harder he can make fit by this practice of burning it.

Lime ſtone is much more common than the farmer may imagine. It is of various colours and degrees of hardneſs; but inſtead of referring him to the ſkilful for chuſing it for him, we ſhall give him an eaſy method of doing it for himſelf.

Let him take a ſmall bottle of aqua fortis with him when he goes over his land to look after lime-ſtone, and let him pour a little of it upon every ſtone that looks fit for the purpoſe: it will hiſs and bubble up when it falls on lime-ſtone, but it will run off from all others like water. This the farmer may depend upon as an infallible rule, that every ſtone which makes aqua fortis bubble is fit for lime; and no ſtone but what does, will ever make lime freely, or fit for his uſe.

Having thus found what materials his land affords for this excellent manure, let him build his kiln for preparing it. This is beſt done in a ſquare hole dug for that purpoſe in the ground, in ſome waſte place that lies conveniently for the materials. The kiln is to be in ſhape like a funnel; wide at top and narrower all the way to the bottom. It muſt be firmly built, and lined on the inſide with a wall of lime-ſtone.

Toward the bottom of this kiln there is to be a hole to let out the aſhes of the fuel: and above this there muſt be an iron grate on which to lay the firſt parcel of the materials. Some ſupply the place of a grate by an arch-work of ſtone, the ſame with the lining of the kiln, but the grate is very much the beſt method.

When the kiln is thus prepared, the farmer is to get together, in two parcels, his materials for the lime, whether that be chalk or ſtone; and his fuel.

This fuel he may ſuit to his beſt convenience, for almoſt any thing that will burn will do. Coals or wood ſerve equally well: or very good lime may be made with furze buſhes, peat, or fern; which laſt, though ſo light a weed, burns with a ſurprizing force.

When all is ready, he is to begin by laying a layer of the ſtone or chalk looſely upon the grate, and over that a layer of fuel: thus he is to continue putting a layer of one, and a layer of another, till the kiln is quite full, taking care that the uppermoſt layer be of fuel, not of ſtone or chalk.

All being thus prepared, fire is to be given to the fuel at the aſh hole, and it is to be left to burn up, and the lime will be made of itſelf, without farther trouble.

As to the quantity of fuel, a hundred of three-foot faggots will burn forty buſhels of chalk. If ſea-coal be uſed, ten buſhel will ſtand for the hundred of faggots; and the lime will be made in four and twenty hours.

Lime-ſtone, according to its hardneſs, takes more time, and a larger quantity of fuel; but in general, it anſwers very well to the expence; being, on moſt occaſions, very much preferable to the lime that is made of chalk.

As to the quantity of the lime, chalk loſes about one third of its bulk in burning; ſtone loſes alſo in proportion; thirty buſhels of chalk make twenty of good lime, and ſo in proportion, according to the nature of the ſtone.

Where chippings of marble can be had, they make the fineſt and richeſt lime for manure in the world: but theſe can ſeldom be in the farmer's reach.

In Derbyſhire they throw out, among the refuſe of the lead mines, a kind of ſhining ſtone, which they call ſpar. It looks ſomewhat like chryſtal, only not ſo clear: or like large lumps of bay ſalt. It is whitiſh or browniſh, or of other colours, and ſome of it that riſes in ſquare lumps is uſed for ornamenting of grottos. This is an excellent ſtone for the making of lime. They burn it wherever it is to be had, and dreſs their barreneſt lime-ſtone lands with it: they find one buſhel of this lime as good as two of any other kind whatſoever.

The ſofteſt kind of chalks, and ſome ſorts of marle, may alſo be burnt to lime with great profit. As to the marle, one buſhel of it in lime is of equal virtue with five in the common way: and in the choice of what kind to uſe, the farmer muſt have recourſe to his aqua fortis, ſome will ferment and riſe in bubbles with it, and ſome will not. That which ferments is fit for lime, and the other is not.

Theſe

These soft substances are best burnt with fern, or other light firing, and eighteen hours generally bring them to lime.

Lime is best laid on a summer fallow for turnips, &c. or on a lay a year or two before it is ploughed up; in this manner it will be most beneficial by distributing its properties to the land gradually and equally; perhaps even then it will be better mixed with dung or earth than laid on by itself; it is chiefly beneficial on sandy and gravelly soils, and is laid on from sixty to an hundred and fifty bushels per acre, sometimes two hundred.

Limes when fresh burnt are highly acrimonious and corrosive. In this state they are employed in some external applications as a depilatory; and for encreasing the power of fixt alcaline salts, either for the purposes of a caustic, or to enable them the more readily to dissolve oils. If the lime be exposed for a length of time to the air, it falls by degrees into a powder, and loses greatly of its acrimony. Water poured directly upon quicklime takes up a considerable portion of it: the solution has a somewhat styptic taste, drying the mouth, without any acrimony; nevertheless the remaining calx proves almost insipid. This liquor does not effervesce either with acids or alcalies, but is rendered turbid and milky by both; it prevents the coagulation of milk, and hence is sometimes made use of along with milk diets: agitated with expressed oils, it unites with them into a thick compound recommended by Dr. Slare against burns and inflammations. Lime water, if drank to the quantity of a quarter of a pint three or four times a day, and continued for a length of time, has been found serviceable in scrophulous cases, and other obstinate chronic disorders. It generally promotes urine, and not unfrequently the cuticular discharge: for the most part it binds the belly, and sometimes occasions troublesome costiveness, unless this effect be occasionally provided against by the interposition of proper medicines. It does good service in debility and laxity of the viscera in general; in those of the uterine and seminal vessels it is particularly recommended. Care must be had not to exhibit this medicine too liberally in hot bilious constitutions, or where the patient is much emaciated, or the appetite weak, or at the time of any critical or periodical evacuations. Its principal use is in cold, moist, sluggish, and corpulent habits.

LIME or LINDEN TREE, [*Tilia.*] The species of this plant are, 1. The broad-leaved flowering lime tree. 2. The red-twigged lime tree. 3. The green-twigged lime tree. 4. The small-leaved lime tree, of a tawny green colour both in the leaf and bark. 5. The striped-leaved lime tree.

The first-mentioned sort is the finest plant of the species. The second is next to be preferred; it has also large leaves, grows to be a stately tree, and the shining deep red colour of its bark has a chearful and agreeable effect in winter. The third and fourth sorts are much inferior in beauty, and grow in a loose and straggling manner, nor ever make so strait or lofty trees; they are therefore unworthy of propagation, in comparison of the two former kinds; (nor should we have named them, but to warn the planters of lime trees, to beware of the sorts they purchase, as the nurseries in this country generally abound most in these two last sorts, which, perhaps, not being known to every nurseryman, are all indiscriminately raised and sold together, and which, when placed by the sides of walks, or in the strait lines of avenues, from the irregularity of their form, and difference of growth, very much deface such plantations.)

The lime tree may be propagated by seeds, which ripen in October, and should be carefully preserved in dry sand till March, when they should be sown in a light rich border. It may also be propagated by layers like the elm.

LIME. A species of the lemon growing in the West-Indies, where it is preferred to the lemon.

LIME *for Birds.* See BIRDLIME.

LIMING *Wheat.* An operation of putting wheat into some steep or liquor. Let stone lime be put into water, in the proportion of a bushel of the former to seventy gallons of the latter; stir it well, and the next day pour off the clear water into another vessel, and add three pecks of common salt, to the above quantity, and stir it till all the salt is dissolved, when it will be fit for use. Put the wheat in a basket and steep

ſteep it in the water, ſtirring the wheat for a ſhort time, and ſkimming off the light grains; drain the baſket for a minute or two, according to its ſize, and in a few hours after the wheat may be ſown. Mr. Reynolds ſays, that in the courſe of thirty years, he never knew wheat prove ſmutty that was ſteeped in this pickle.

Colonel Plummer's method has alſo been recommended, which is as follows. Firſt waſh the wheat through three or four ſeveral waters, ſtirring it well each time, and ſkim off the light grains.

Put the water in a tub with a tap; ſtir as much ſalt as will make an egg ſwim; then add as much more, ſtir it very well, and put in two or three pounds of allum beat fine, and ſtir it well.

Uſe it as ordinary brines, only ſteep the wheat thirty or forty hours, for leſs ſignifies nothing.

Take the wheat out the night before you ſow it, and ſift ſome ſlaked lime on it. And add freſh quantities of the ingredients as wanted.

Mr. Bradley obſerves, that many farmers ſteep their wheat in brine, yet have ſmuttywheat, becauſe they do not make their brine ſtrong enough; or take their wheat out too ſoon.

A late writer directs to ſteep the ſeed in rain water, in which bay ſalt is mixed, till it will bear an egg, for thirty hours; and after to ſpread it on a floor, with fine lime mixed with it, and ſtirred together till each ſeed leaves clinging to another, and till it ſeems candyed with lime.

There are great variety of other receipts given to the ſame purpoſe; and that which Mr. Ellis ſeems to value himſelf much upon, mentions the diſſolving three pounds of copperas in two or three gallons of ſcalding water, ſtir it till it is diſſolved, and when juſt warm, pour it over two or three buſhels of wheat. A quarter of an hour after pour over all the wheat ſeed, as much mudgel-hole water as will make the whole ſwim four inches; and ſtirring it ſufficiently, you may ſkim of all the ſeeds of weeds, and the light corns that occaſion ſmut and pepper wheat.

The ſeed is to lie in this liquor for twelve hours, or if wanted, ſix, or four or two hours; then draw it all clear off, and lime it directly for ſowing the ſame morning; but if the ſeed lay and be drained twelve hours firſt it would be better.

Care muſt be taken, if it be not ſowed ſoon, that it be not left to lie long thick together, which ſeems agreed on all hands to be prejudicial, as it would grow before ſowing.

On the other hand, a correſpondent to the Farmer's Magazine, Mr. Cotterel of Warfield, Berks, aſſerts, he does not lime his wheat at all, and has never had any ſmut in it. [vol. iii page 101.]

LINDEN TREE. *See* LIME.

LING. Heath.

LINIMENT. A ſoft ointment or embrocation.

LINEN. To render linen cloth impenetrable to rain, take two ounces of turpentine, of pounded litharge one pound; boil the whole together in two or three pounds of linſeed oil. With the above mixture do over ſome of the fineſt ſort of linen, or luteſtring, and let it dry in the ſun. This proceſs will render it totally impregnable to any ſort of natural water, and far from melting, the ſtuff gets harder by being expoſed to the heat.

LINSEED. The ſeed of flax. *See* FLAX.

LINSEED *Oil*. This and other expreſſed oils are obtained from certain ſeeds and kernels of fruits, by pounding them in a ſtone mortar, and then including them in a canvas bag, which is wrapt in a hair cloth, and committed to the preſs not heated.

The canvas, if employed alone, would be ſqueezed ſo cloſe to the plates of the preſs as to prevent the oil from running down: by the interpoſition of the hair bag, a free paſſage is allowed it.

The expreſſion of the oil is greatly facilitated by heat; hence thoſe who prepare theſe oils for mechanical uſes, heat the plates of the preſs conſiderably. For medicinal purpoſes, this is by no means allowable, as the oil becomes leſs ſoft and palatable, and is ſubject to grow rancid.

Nor muſt the oils be kept in a warm place after the expreſſion. Expoſed but for a few days to a heat no greater than that of the human body, they loſe their emollient quality, become extremely rancid and acrimonious; and in this ſtate, inſtead of ſoftening and relaxing, irritate and inflame.

So

So much are theſe oils diſpoſed to this diſagreeable alteration, that they frequently contract an acrimony before their expreſſion from the ſubject: hence the unctuous ſeeds and kernels are often met with very rancid. This obſervation affords an uſeful caution, to be very careful in the choice of theſe ſubſtances: almonds are particularly liable to inconveniences of this kind.

LION'S LEAF, [*Leontice.*] This is a large tuberous-rooted plant growing in the Archipelago and about Aleppo, where it flowers about Chriſtmas. There are two ſpecies both of them perennials, and propagated by ſeeds.

LION'S FOOT, [*Catananche.*] There are two ſpecies of this plant, one with long narrow hairy leaves with jagged edges; the other hath broader leaves leſs jagged; the firſt is perennial and propagated by ſeeds or ſlips, the other annual, and propagated by ſeeds only.

LION'S TAIL, [*Leonurus.*] This plant is a native of Ethiopia, riſing with a ſhrubby ſtalk ſeven or eight feet high, bearing flowers ſhaped like the dead-nettle, of a beautiful deep golden colour, in October or November. Another ſort is found at the Cape of Good Hope, the flowers of which are not quite ſo deep coloured. Both ſorts are propagated by cuttings.

LIQUIDAMBER. This tree grows plentifully in Virginia, and in ſeveral other parts of North America, where it riſes with a ſtrait naked ſtem to the height of fifteen or ſixteen feet, and branches out regularly to the height of forty feet or upward, forming a pyramidal head. The leaves are angular, and ſhaped ſomewhat like thoſe of the leſſer maple, having five lobes, but are of a dark green colour; a ſtrong, ſweet, glutinous ſubſtance exudes through the pores of the leaves in warm weather, which renders them clammy to the touch.

The flowers are generally produced early in the ſpring of the year, before the leaves are expanded, which are of a ſaffron colour, and grow in ſpikes from the extremity of the branches; after theſe are paſt, the fruit ſwells to the ſize of a walnut, being perfectly round, having many protuberances, each having a ſmall hole and a ſhort tail, which extends half an inch.

This is commonly propagated by layers in England; but thoſe plants which are raiſed from ſeeds, grow to be much fairer trees.

The ſeeds of this tree commonly remain in the ground a whole year before the plants come up, unleſs they are ſown in the autumn; ſo that the ſureſt way to raiſe them is, to ſow the ſeeds in boxes or pots of light earth, which may be placed in a ſhady ſituation during the firſt ſummer, and in autumn they may be removed where they may have more ſun; but if the winter ſhould prove ſevere, it will be proper to cover them with peaſe-haulm, or other light covering, which ſhould be conſtantly taken off in mild weather. The following ſpring, if theſe boxes or pots are placed upon a moderate hot-bed, it will bring up the plants early, ſo that they will have time to get ſtrength before winter: the firſt and ſecond winters it will be proper to ſcreen the plants from ſevere froſt, but afterward they will bear the cold very well.

LIQUOR *to waſh old Deeds, Writings, &c.* Take five or ſix galls, bruiſe them, and put them into a pint of the very beſt white wine, let it ſtand in the ſun two days; you will by trial ſoon ſee whether it is too ſtrong or too weak; dip a bruſh into it, and waſh the part wanted to be cleared up.

LIQUORICE, [*Glycyrrhiza.*] There are three ſorts of this plant, with ſmooth, with prickly, and with hairy pods. The firſt ſort is medicinal, the other two are preſerved for curioſity.

Almoſt all plants thrive beſt in a rich ſoil, but liquorice will not grow inany other. There muſt be one requiſite more in the land for this purpoſe, which is a deep ſoil; for the thriving of liquorice depends altogether upon the free depth of the mould, and its length of root.

We expect to ſee the root a yard or more in length, and it muſt have free paſſage, otherwiſe it will not grow ſtrait; this regularity of ſhape is not only a great beauty, but a real advantage, for the crooked roots are never ſo tender and juicy as the others, nor do they ſo ſoon arrive at their due growth.

The proper ground for liquorice is that which has a deep coat of mellow earth, a black mould that begins directly under the turf, and runs three ſpit deep, without any great mixture of other matter in the way. This is the

beſt

natural ſoil for this valuable plant, but there are others which will do by nature, and others yet that may be ſo prepared by art, as very well to anſwer the purpoſe.

After this fine black mould, the next ſoil in nature is a deep rich loam, that has not much of the clay in its compoſition, and has a good deal of fine garden mould among it.

The third natural ſoil that we ſhall name, as fit for this plant, is the deep, warm, ſandy kind, which is not barren, but with its lightneſs and warmth has ſome richneſs.

In all theſe ſoils the depth ought to be at leaſt a yard, before there is any hard bottom, and that muſt be examined; for if it prove a clay the liquorice will never thrive, becauſe of the coldneſs and dampneſs that naturally attend ſuch an under ſtratum, the wet lodging upon it and ſtarving the whole ſoil.

What the liquorice requires for perfect thriving, conſiſts in four articles; depth to penetrate, lightneſs in the ſoil that it may make its way eaſily, warmth to promote its growth, and richneſs to afford it nouriſhment.

Liquorice, though raiſed in fields, requires a ſort of garden culture. The ſpade is a much more proper inſtrument for preparing the land for its reception, than the plough; for it requires to be broke and rendered fine, to a depth that the field inſtruments can never reach.

There is this comfort however to the huſbandman in reſpect of it, that if the land require a very expenſive tillage, the leſs of it ſerves; a few acres will yield a vaſt produce in this root, and the price is ſo much greater than that of moſt other things he can raiſe, that there is no reaſon to grudge the charges.

When a proper piece of land is pitched on for the purpoſe, let it be thoroughly dunged with good rotten dung; after being ploughed up in autumn, and having lain all the winter to mellow, in the ſpring let it be dug in the following manner:

Let the labourers be ſent in about the middle of February, and let the maſter's own eye be over them, or that of ſome truſty perſon in his ſtead. They muſt dig every part of the earth thoroughly, no leſs than three ſpits deep; and as they lay it, muſt carefully break every lump, though but ſmall, that the ground may be ſmooth and level at the ſurface, and be in a manner as fine as ſand all the way down. This will never be honeſtly done without great looking after, and it is very eſſential that it be ſo done; the expence is conſiderable, but the profit anſwers; and of this the huſbandman may be perfectly aſſured, that by every ſhilling he would ſave in this work, he will loſe ten in the crop.

When the whole piece of ground is thus prepared, the liquorice is to be planted; and in this the ſame care and caution are neceſſary as in the reſt, for the leaſt omiſſion, or the leaſt careleſsneſs, will be attended with loſs. The firſt care in this reſpect is, the choice of proper ſets or plants; and the ſecond is, the placing them properly in the ground.

For the choice all depends upon their being in good condition, and having a good bud, or as the planters call it an eye. They are to be got from the ſeeds, or the heads of the old roots; and their beſt length is a foot, or thereabouts.

The good condition of theſe will be ſeen by their ſoundneſs, freſhneſs, and clean ſurface; and the ſtrength of the bud or eye, is an article in which none can be deceived.

It will be toward the beginning of March, by that time the ground is thus perfectly prepared, and the ſets are choſen, then they are to be planted, in the following manner:

Let there be got ready a gardener's line, of ſuch length as to reach acroſs the ground if ſmall; if larger, it may be removed from diſtance to diſtance, a couple of ſticks ſharpened at one end, and a ball of thick cord, is all that is needful for this purpoſe. Beſide the line, there is to be a ſetting ſtick, which may be of any convenient length at pleaſure, but it is beſt to have it of a certain dimenſion, that it may ſerve as a meaſure; and for this reaſon it ſhould be juſt a foot and half long, with a handle like that of a ſpade, and a point head, with a ſquare piece of iron in the manner of a very large ſpike, hollowed at the large end to receive the point of the wood.

Theſe things being ready, let the ſtake to which one end of the line is faſtened, be ſtuck into the ground a

foot from the edge of the dug part, and the line let looſe, that the other ſtake may be carried to the other end of the ground, or as far as the line will by its length permit, and then it muſt be ſtuck into the ground, drawing the line tight, at the ſame diſtance from the edge of the prepared or wrought part. Thus there will be a ſtrait line drawn along the ſkirt of the ground, within a foot of the raw earth.

Let the planter now, taking his ſets in his apron, and the ſetting ſtick in his hand, begin to plant, placing the firſt ſet at half the ſtick's length from the edge of the ground. When he has ſet this, let him meaſure from it along the line, the length of the ſetting ſtick, and then plant another, and ſo on to the end. This is very familiarly and eaſily done, and the manner is this:

Let the end of the ſetting ſtick, which is pointed with iron, be thruſt into the ground, and preſſed till near the whole be in; let it not be ſtirred about, but juſt enough to make an edge, that the earth may not fall together. The ſetting ſtick being gently drawn out, there will remain an open hole of about ſixteen inches deep; into this a ſet of the liquorice is to be put, thruſting it carefully and evenly in, till the head of it, where the eye or bud is, be one inch beneath the ſurface; then the bottom end will be about the bottom of the hole, and a little mould being drawn over the top, the ſet is compleatly well planted.

One being ſet in, the reſt is very eaſy; the ſetting ſtick is to be laid along the line, its point juſt at the head of the ſet, and its other end marks the place where the next is to be planted: the length of the ſetting ſtick being a foot and half, and that being the moſt advantageous diſtance at which liquorice can be placed in the row.

The ſecond ſet is to be planted exactly in the ſame manner as the firſt, and ſo on till there be a row planted all along the line.

When one row is thus planted, the next is to be ſet into the ground. As the beſt diſtance for liquorice is to plant it in rows a foot and a half, ſo the beſt diſtance of the ſeveral rows one from another, is two foot and a half; and in theſe they are beſt ſet not directly oppoſite one to another, but in the chequer or quincunx order.

To execute this, the firſt row being planted, the ſticks are to be removed two foot and a half diſtant from the firſt. This done, let the planter take a freſh parcel of the ſets into his apron, and taking the ſetting ſtick in his hand, let him make his firſt hole directly oppoſite the middle ſpace between the firſt and ſecond ſet of the former row.

When the firſt ſet is planted there, according to the directions juſt given, let him lay down his ſtick from the top of that ſet, and meaſuring thus the due diſtance of a foot and a half, there plant another.

This he is to continue the whole length of the line; and there will then be a ſecond row at two foot and a half diſtance from the firſt, and each plant in it will ſtand oppoſite to the middle vacant ſpace between every two of the others.

When this ſecond row is planted, the line is again to be removed two foot and a half farther into the field, and a third row is to be planted. The ſeveral ſets in this third row are to be placed directly oppoſite to thoſe in the firſt row; and when this is done, every four plants of the firſt and third row, will have one plant of the ſecond row in their centre.

This method is to be continued interchangeably through the whole field, and this is what is called the quincunx manner of planting; the effect of which is, that every way wherein one looks at the plantation, when the ſtalks are riſen, there appear regular rows of them the whole extent of the field, with regular alleys between them.

The earth is to be finely raked, and the whole ſurface of the field left quite even; nothing appearing upon it. This is its condition in the middle of March, and thus it is to be left, expecting the advantages of ſo regular and judicious a piece of huſbandry.

The heads of the young plants will quickly appear, and they are to be left to themſelves to make their ſhoot.

Toward the latter end of ſpring there will be weeds in abundance in the intervals, and in the ſpaces between plant and plant in the rows. They will be leſs abundant afterwards, becauſe the liquorice will be better eſtabliſhed; but theſe deep-rooted plants do not draw the nouriſhment away from thoſe ſlight annual weeds, like thoſe

thoſe other larger growths that ſpread out nearer the ſurface.

The weeds are at this time to be deſtroyed, which may be very eaſily done with the hand-hoe.

When the weeds are cut up, being annuals, they will almoſt entirely rot, and ſerve as manure. There will be no roots of perennial plants in the ground, for they will have been picked out in the ſeveral dreſſings; the ſeeds of theſe annuals are continually coming in by accident into the ground, and they muſt be deſtroyed as they riſe.

As it will be ſome time before any others riſe to a height after this firſt dreſſing of the ground, there muſt be care taken of them when they do.

This may be done at a very little charge, and the only care needful is to avoid cutting or wounding the liquorice plant. This will keep the field clear during the ſummer; and in autumn, when the leaves are fallen, it will be very well worth while to dig up the whole ground one full ſpit deep between the rows.

Two months after this digging, when all is ſmooth and even, let there be ſcattered a ſmall quantity of very rotten dung all over the field. This will cover the tops of the plants, and defend them from the ſeverity of the froſts, that are now to be expected: and the rains that fall afterward will, in a manner, diſſolve the very ſubſtance of the rotten dung, carrying its riches into the heart of this fine looſe earth, for the full nouriſhment of the plants. Thus let the dung lie till ſpring, and then take an opportunity of a time when the earth is between wet and dry, and will work eaſily. Let the intervals between row and row be all thoroughly well dug again one good ſpit deep as before.

This will bury the rotted dung among the mould, where it will ſtill work by its latent fermentation, and break and divide as well as enrich it farther.

This done, the remainder of the growth is only to be watched and hoed during ſummer, and at autumn the earth is to be once dug between the rows.

The time liquorice root takes from its planting, to grow to the utmoſt perfection is two years and half; that is, three ſummers and two winters, when we name three years for the time of the ground's lying for it, the winter before the planting is included, when the ſoil is preparing for the reception of its roots in ſpring: this half year muſt be counted by the farmer, becauſe it is as entirely neceſſary to be beſtowed upon the crop, as any part of that wherein it is growing.

The time of gathering the roots for ſale, is late in autumn, when the root is full, plump, and very firm to the touch: its colour is deeper on the outſide, and the yellow within is clearer: its juice is thick, and the taſte ſweet.

Liquorice is almoſt the only ſweet that quenches thirſt, whence it was called by the Greeks *adipſon*: Galen takes notice, that it was employed in this intention in hydropic caſes, to prevent the neceſſity of drinking. Mr. Fuller, in his *medicina gymnaſtica*, recommends this root as a very uſeful pectoral, and ſays it excellently ſoftens acrimonious humours, at the ſame time that it proves gently detergent: and this account is warranted by experience.

Juice or Extract of LIQUORICE. Lightly boil freſh liquorice roots in water, preſs the decoction through a ſtrainer, and after the fæces have ſubſided, evaporate it until it no longer ſticks to the fingers, taking care, towards the end of the operation, to prevent an empyreuma.

It is convenient, before boiling the root, to cut it tranſverſely into ſmall pieces, that it may more readily give out its virtues to light coction: if the boiling is long continued, the rich ſweet taſte, for which this preparation is valued, will be greatly injured. For the ſame reaſon, the quantity of water ought to be no larger than is abſolutely neceſſary to extract the virtues of the root: a quart, or at moſt three pints, will be fully ſufficient for a pound of liquorice. It would be of conſiderable advantage to the preparation, and probably (when made in quantity) leſs expenſive to the preparer, to uſe inſtead of the decoction, juice of liquorice, preſſed out betwixt iron rollers, after the manner practiſed abroad for obtaining the juice of the ſugar cane.

Large quantities of extract of liquorice have been uſually brought to us from Spain, and other foreign countries, but it is very rarely met with in the ſhops in perfection; the makers of

this commodity both at home and abroad, being either very ſlovenly in its preparation, or deſignedly mixing it with ſand, and other impurities. When made with due care, it is exceedingly ſweet, not at all bitteriſh or naufeous, more agreeable in taſte than the root itſelf, of a pleaſant ſmell, a reddiſh brown colour; and when drawn out into ſtrings of a bright golden colour, totally ſoluble in water, without depoſiting any fæces.

SPANISH LIQUORICE. Juice or extract of liquorice brought from Spain.

WILD LIQUORICE, [*Aſtragalus.*] Liquorice Vetch. A trailing plant growing wild in many parts of England where chalk abounds, but is ſeldom admitted into gardens.

LITTER. Straw, &c. laid under horſes.

LITHARGE, [*Lythagyrus.*] A preparation of lead, uſually in form of ſoft flakes, of a yellowiſh reddiſh colour. If calcined lead be urged with a haſty fire, it melts into the appearance of oil, and on cooling concretes into litharge. Greateſt part of the litharge met with in the ſhops, is produced in the purification of ſilver from lead, and the refining of gold and ſilver by means of this metal: according to the degree of fire and other circumſtances, it proves of a pale or deep colour; the firſt is called litharge of ſilver, the other litharge of gold.

LITHONTRIPTICS. Medicines which either break, or are ſuppoſed to have the virtue of breaking ſtones in the urinary paſſages.

LIVE EVER. *See* HOUSELEEK.

LIVE IN IDLENESS. The violet ſo called.

LIVE-LONG. Orpine.

LIVER, *Obſtruction of.* This is a diſorder to which cows and oxen are very liable; the farmers are acquainted very well with the ſymptoms of it, though not with the cauſe; it is what they call by the general name of an inward ſickneſs.

The ſigns by which it is known are theſe, an uneaſineſs ſenſible in all their actions; and a lazineſs or unwillingneſs to move. To this is to be added a ſcurfyneſs, and harſh dryneſs of their lips, and a dryneſs of their noſes in a morning.

When cattle are well, if they be obſerved in a morning, there is always a drop of dew, like a pearl, hangs upon the noſe, but when they are ſick it is commonly wanting. In caſe of an obſtruction of the liver, the remedy is this:

Take a pound of great celandine, dug up with the roots, cut it all to pieces, leaves, ſtalks, and roots together, and put it into a pot, with two gallons of water, let it boil up a few minutes; then add half a pound of madder root, ten ounces of turmeric, and four ounces of freſh roots of fennel. Boil theſe very well, and then ſtrain off the liquor.

Get a hat-crown full of wood-lice, they are common enough about decayed timber, and under ſtones. Pound theſe with a pint of white wine, and ſqueeze out the juice, then add this to the ſtrained liquor.

Shake up this every time it is to be uſed, and warm half a pint of it for a doſe. It ſhould be given every night and morning for ten days. This is the uſual time required to perform a perfect cure: it may be ſooner, or it may require a few days longer; but the medicine will hardly fail.

LIVERWORT, [*Hepatica.*] There are four or five ſpecies of this plant, both ſingle and double, which produce abundance of flowers in February and March, before the leaves appear. The colours of the flowers are various, white, red, and blue. The red and blue often become double, the white very ſeldom.

The ſingle ſorts produce ſeeds every year, whereby they are eaſily propagated, and alſo new flowers may be that way obtained. The beſt ſeaſon for ſowing of the ſeeds is in the beginning of Auguſt, either in pots or boxes of light earth, which ſhould be placed ſo as to have only the morning ſun until October, when they ſhould be removed into the full ſun, to remain during the winter ſeaſon; but in March, when the young plants will begin to appear, they muſt be removed again to a ſhady ſituation, and in dry weather ſhould be frequently watered; about the beginning of Auguſt they will be fit to be tranſplanted, at which time you ſhould prepare a border, facing the eaſt, of good freſh loamy earth, into which you ſhould remove the plants, placing them at about ſix inches diſtant each way,

cloſing

cloſing the earth pretty faſt to their roots, to prevent the worms from drawing them out of the ground, which they are very apt to do at that ſeaſon; the ſpring following they will begin to ſhew their flowers, but it will be three years before they flower ſtrong; till then you cannot judge of their goodneſs, when if you find any double flowers, or any of a different colour from the common ſorts, they ſhould be taken up and tranſplanted into the borders of the flower-garden, where they ſhould continue at leaſt two years before they are taken up and parted; for it is remarkable in this plant, that where they are often removed and parted, they are very ſubject to die; whereas, when they are permitted to remain undiſturbed for many years, they will thrive exceedingly, and become very large roots.

The double flowers, which never produce ſeeds, are propagated by parting their roots, which ſhould be done in March, at the time when they are in flower; but you ſhould be careful not to ſeparate them into very ſmall heads, nor ſhould they be parted oftener than every third or fourth year, if you intend to have them thrive, for the reaſon before given. They delight in a loamy ſoil and in an eaſtern poſition, where they may have only the morning ſun.

Aſh-coloured ground LIVERWORT. This plant conſiſts of pretty thick digitated leaves, flat above, of a reticular texture underneath, and faſtened to the earth by ſmall fibres: the leaves when in perfection are of an aſh colour; by age they become darker coloured or reddiſh. It is met with on commons and open heaths, where it quickly ſpreads on the ground. Dr. Mead informs us, that this plant grows in all countries, and has been brought over from America along with the Peruvian bark: that it is found at all times, but ought to be gathered from autumn to winter, as being then in its freſheſt vigour.

This ſimple is ſaid to be a warm diuretic; to the taſte it is not a little naufeous. It is chiefly celebrated for its virtue in the cure of the diſorders occaſioned by the bite of a mad dog. An account of the remarkable effects in theſe caſes of a powder compoſed of the dried leaves and pepper, was communicated to the Royal Society by Mr. Dampier, and publiſhed in the Philoſophical tranſactions, No. 237. This powder was afterwards inſerted into the London Pharmacopœia, under the title of *pulvis antilyſſus*, at the deſire of an eminent phyſician who had great experience of its good effects. The ſame gentleman afterwards publiſhed and diſperſed a paper containing the method of cure, which he had in a great number of inſtances conſtantly found ſucceſsful. In this paper, the directions were to the following effect:

"Let the patient be blooded nine or ten ounces; and afterwards take a dram and a half of the powder every morning for four mornings ſucceſſively, in half a pint of cows milk warm. After theſe four doſes are taken, the patient muſt go into the cold bath, or a cold ſpring, or river, every morning faſting for a month; he muſt be dipt all over, but not ſtay in (with his head above water) longer than half a minute, if the water be very cold: after this, he muſt go in three times a week for a fortnight longer."

In the year 1745, the world was favoured with a new edition of the mechanical account of poiſons, in which we find the ſame method of cure again recommended, as having, in a courſe of thirty years experience, never failed of ſucceſs, where it had been followed before the hydrophobeia begun. It is greatly to be wiſhed that the efficacy of this medicine in preventing theſe terrible diſorders, was abſolutely certain, and proved by inconteſtible facts. Inſtances have been produced of its proving unſucceſsful; and the many examples of the fatality of the diſeaſe, which continually occur, ſeem arguments either of the inefficacy of the medicine, or a ſtrange negligence in applying it. We ſhall only farther obſerve, that Boerhaave, who is in general ſufficiently liberal in the commendation of remedies, ranks this among thoſe inſignificant trifles, which whoever depends upon will find himſelf deceived by.

LIZARD's TAIL. *See* SPANISH ELDER.

LIZENED CORN. Leſſened, thin, blighted, lank corn.

LOAD *of* HAY, 18 cwt. in ſome places 20 cwt.

LOAD *of* CORN, 5 quarter or ten ſacks; but the load, like many other meaſures, differs in different counties.

LOAD *of* TIMBER, unhewed 40 feet, hewed 50 feet.

LOATHING *of* FOOD. *See* APPETITE.

LOAM. A ſoil intermixed with clay and ſand. The character of loam is, that there is a great deal of ſand mixed with the clay; and that there is alſo in theſe ſoils uſually a great quantity of earth.

The loamy ſoils are more common than any other: they differ in colour according to the clays and earths of which they are compoſed; and they differ alſo in richneſs and fertility, according to the quantity of vegetable earth in the compoſition. Even pure loam is not unfit for uſe, for the ſand opens and breaks the clay, ſo as to render it fit for vegetation; as we ſee in thoſe places where ſand is uſed upon clay grounds, by way of manure; but when a conſiderable quantity of vegetable earth is added to this mixture, it becomes very fit for the product of herbage; the clay ſerving to give it a body and keep the other ingredients from mouldering into powder.

Loamy ſoils are of all others the moſt natural, becauſe theſe mixtures of different earths together, are what may be expected every where: and they agree with almoſt all kinds of growths, becauſe they are of a middle nature, and in ſome degree partake of all ſoils.

They have for this reaſon been in general called by ſome natural ſoil, and by others mother earth. As all plants receive their nouriſhment from the earth; according as that earth is ſuited to them, they thrive more or leſs: now though a loamy ſoil will naturally ſupport almoſt any produce of the ground, yet all will not thrive alike in it. The art of the huſbandman therefore muſt be employed by proper manures to ſuit the loamy ſoil in his hands to that particular crop he deſires ſhould grow upon it; and this may be done effectually.

We ſee by experience, that clay and clayey grounds keep in the ſeed a long time, and puſh it ſlowly; on the contrary, ſandy ſoils make it ſhoot at once, and forward it haſtily. The ſame ſeed ſown in clay and ſand, will be a month earlier in the ſhoot in the latter than the former. We ſee alſo, that this backwardneſs of the ſoil, and this overhaſtening quality, are both attended with bad conſequences: and it follows that loamy ſoils muſt be very valuable, as they partake of each, and are in their compoſition, and alſo in their effects, of a middle nature between both.

We ſee that loamy ſoils are ſuited to univerſal uſe, in that all kind of wild plants grow in them. There are ſome plants which grow naturally in clay, and others which live in ſandy ſoils. Now the plants which are natives of the clay, will not live in the ſand; nor will thoſe of the ſand live in clay: but both will live and thrive in loam.

From this and many other obſervations, we ſee that the loamy ſoil is univerſal; and that all ſorts of plants will grow in it. This muſt greatly encourage the farmer who has it in his fields, but this is not to lead him to think it will do without his induſtry. There is difference between growing and thriving. Things muſt not only live but thrive with the farmer, and to this purpoſe he muſt aſſiſt and improve his land when this is the ſoil. It is a comfort that nature has laid a foundation; but the reſt muſt come from the farmer's induſtry.

Loamy ſoils have many different appearances. Some call the under turf earth, loam, let it be of what nature it will, and then the variety is endleſs; but without that miſtake, the kinds are very numerous.

There are clay loams, ſandy loams, gravelly loams, ſtony loams, and chalky loams. What is meant by theſe terms is as follows:

The clay loam is a loamy ſoil in which there is an over proportion of clay to the reſt of the ingredients; for theſe ſoils, as ſaid before, are all of a very mixed kind. The ſandy loam is a loamy ſoil, in which the ſand is in too great a quantity: the gravelly loam is a loamy ſoil, with ſmall pebbles among it; and ſo of the other two, the one having ſtones, the other chalkey matter among it.

The farmer is to conſider each of theſe as a loamy ſoil in the general dreſſing; but he is to alter that a little in each alſo, by adding what is uſeful for

for improving that particular ſoil, which is over-proportioned in the loam. For inſtance, if it be a clayey loam, he is to add, to the uſual dreſſings for loamy ſoils, a quantity of ſand. This will make up the natural deficiency. And in the like manner he is to manage the others.

In Kent they dreſs their clayey loams with chalk; and this is found by experience, to be an excellent method: and they find that the chalk in time mellows down into the clayey matter, ſo as to make in the whole a kind of marle.

With reſpect to the manner of dreſſing loamy ſoil, more regard is to be had to the texture of the ſoil, than its colour; which laſt may be various, while the ſubſtance is in a manner the ſame.

If it be a clayey loam, that is, a loamy ſoil with too much of the clay, let it be well ploughed, and broke thoroughly: then dreſs it with a mixture of burnt turf from a heath, mixed with lime and hog's dung.

When the loamy ſoil is too ſandy, clay may be uſed as a manure; and at other times river mud mixed with dung and rotted turfs.

When the loamy ſoil is in its own nature well mixed, and no ingredient overbears the reſt, dung in the common way of uſing ſerves to refreſh it after it has been exhauſted by crops: and as the effect of this is but ſhort, the experienced farmers plough in horn-ſhavings bought in London, together with hoofs and ſkins of any animals. Theſe not only give great ſtrength and heart to the land, but their effect is very laſting.

When there is too much earth in the loamy ſoil, the beſt of all manures is ſoot; this laid on in a moderate quantity, gives that ſoil the only thing that it wants, which is warmth. This ſort of land receives the manure kindly, and requires moderate ploughing.

When the loamy ſoil has ſtones in abundance, whether they be of the lime ſtone or pebble kinds, and whether it be called a gravelly or a ſtony loam, good mellow dunging is of great aſſiſtance. In this caſe let the farmer bring out all the dung from his yard, horſe dung, cow, hog, and poultry dung, and mixing it with mud from the bottoms of rivers or cleanſings of ditches, make it into a heap in the field. When he has a good hill of this mixture, let him cover it with freſh cut turf, and leave it to mellow together.

When he is to ſpread this on the ground, let him take a fit ſeaſon: not lay it on in the midſt of ſummer, for the ſun and air to waſte its ſtrength, but towards autumn, when the ſucceeding rains will waſh it into the ground. Thus will he make a ſoil, that is but unfruitful in itſelf, very rich; for theſe poor ſtony loams, though barren in their own nature, receive the dreſſings kindly, and are thus made very fruitful.

In ſome parts of Surry, they have a very ſtiff clayey loam, which they treat as follows: After a fallow they ſow two crops, and lay down their lands with clover for three years. At the end of this time they dung it richly, and then it is fertile for ſeveral years again.

In Hertfordſhire they plough in clover alone, or with dung, and ſome ſow and plough in buck wheat; both which methods have their advantage, but are not comparable to ſeveral of thoſe before mentioned.

LOCKER GOWLANS, [*Trollius.*] This plant is found in Lancaſhire and Wales; it has a perennial fibrous black root, from which ſpring up many leaves, cut into five ſegments almoſt to the bottom; its ſtalk riſes near two feet, and branches towards the top, bearing a large yellow flower about May or June, and the ſeeds ripen in Auguſt. It is eaſily propagated by parting the roots.

Another ſort has been brought from Siberia into the Engliſh gardens, which blows with an elegant ſaffron coloured flower. This is propagated like the former, but likes a moiſt ſituation.

LOCUST, St. John's Bread. *See* BEAN TREE.

Baſtard LOCUST, [*Hymenea.*] See BASTARD LOCUST.

Honey LOCUST. *See* WATER ACACIA.

LOE. A little hill or hillock; a heap.

LOG. A ſhapeleſs piece of wood.

LOGWOOD, [*Lignum Campechenſe, Hæmatoxylum.*] The tree that produces the logwood is as tall and buſhy as our oak; the leaves are ſmall, roundiſh, and of a fine bright green; the trunk

is commmonly torturous, rugged and knotty, like the white-thorn. The bloſſoms, which reſemble lilies of the valley, are of a fine red, and exhale a fragrant ſmell. The bark is ſo thick, that there is very little left when the wood is ſtripped. This wood is very fit for turnery work, and takes a fine poliſh; but its chief uſe is for the red dye. The trees grow in dry and barren places, and among the rocks; it is found in moſt provinces in the Brazils, but chiefly in that of Fernambucca; and the beſt of all grows ten leagues from Olinda, the capital of that captainſhip.

This plant is preſerved in ſome curious gardens in England for the ſake of variety. The ſeeds are frequently brought from America, which, if freſh, readily grow when ſown upon a good hot-bed; and if the plants are kept in a moderate hot-bed, they will grow to be upward of a foot high the ſame year; and while the plants are young, they are generally well furniſhed with leaves, but afterward they make but little progreſs, and are frequently but thinly covered with leaves. The plants are very tender, ſo ſhould be conſtantly kept in the bark-ſtove, where, if they are duly watered, and the ſtove kept in a good degree of heat, the plants may be preſerved very well.

A decoction and extract of this wood is employed in medicine for the cure of diarrhœas.

LONDON PRIDE. A ſpecies of ſaxifrage, eaſily propagated by offsets.

LOOSETRIFE, [*Lyſimachia.*] This plant grows by the ſide of ditches and rivers in many parts of England, riſing with upright ſtalks from two to three feet high. There are ſeveral other ſpecies growing in England, and brought from the Levant and America, ſome of which are annual, one ſort biennial with purple flowers, and one or two perennial. They are all propagated by ſeeds.

Herb Two-pence is a ſpecies of this plant.

PODDED LOOSETRIFE. French Willow.

PURPLE LOOSETRIFE. This is a perennial plant growing by the ſides of rivers in moſt parts of England, the flowers of which, produced in a long ſpike at the end of the ſtalk, make a fine appearance. It is eaſily cultivated by parting the roots in autumn, and planting them in a moiſt ſoil.

LOOSENESS. *See* FLUX.

LOPPED MILK. Such milk as ſtands till it ſours and curdles of itſelf.

LOPPING. The cutting off the ſide branches of trees.

It is very obſervable that moſt old trees are hollow within; which does not proceed from the nature of the trees, but is the fault of thoſe who have the management of them, who ſuffer the tops to grow large before they lop them; as the aſh, elm, hornbeam, &c. and perſuade themſelves that they may have more great wood; but in the mean time, do not conſider that the cutting off great tops endangers the life of a tree, or at beſt wounds it ſo, that many trees yearly decay more in their bodies than the yearly tops come to; and at the ſame time that they furniſh themſelves with more great wood, they do it at the loſs of the owner. And indeed, though the hornbeam and elm will bear great tops, when the body is little more than a ſhell, yet the aſh, if it takes wet at the head, very rarely bears more top after the body of the tree decays; therefore if once theſe trees decay much in the middle, they will be worth little but for the fire.

The lopping of young trees, that is, at ten or twelve years old at moſt, will preſerve them much longer, and will occaſion the ſhoots to grow more into wood in one year, than they do in old tops at two or three. Great boughs ill taken off, ſpoil many a tree; for which reaſon they ſhould always be taken off cloſe and ſmooth, and not parallel to the horizon; and cover the wound with loam and horſe-dung mixed, to prevent the wet from entering into the body of the tree.

When trees are at their full growth, there are ſeveral ſigns of their decay, as the withering or dying of many of their top branches; or if the wet enters at any knot; or if they are any wiſe hollow or diſcoloured; or if wood-peckers make any hole in them.

This lopping of trees is only to be underſtood for pollard trees; becauſe nothing is more injurious to the growth of timber-trees, than that of lopping or cutting off great branches from them. Whoever will be at the trouble of trying the experiment upon two trees of equal age and ſize, growing near each other

ether, to lop or cut off the ſide branches from one of them, and ſuffer all the branches to grow upon the other, will in a few years, find the latter to exceed the other in growth every way; and this will not decay near ſo ſoon.

All ſorts of reſinous trees, or ſuch as abound with a milky juice, ſhould be lopped very ſparingly; for they are ſubject to decay when often cut. The beſt ſeaſon for lopping theſe trees is ſoon after Bartholomew-tide; at which time they ſeldom bleed much, and the wound is commonly healed over before the cold weather comes on.

The generality of the world are againſt pruning timber trees at all, and where they naturally grow ſtrait and regular it is much better let alone. But all common faults in ſhape may be regulated by thus lopping them when young, and it can be attended with no ill conſequence to the timber; for the cut not lying near the timber pith cannot affect it, when grown up, and ſquared in the working for beams and other uſes, or to be quartered; for all the defects occaſioned by ſuch wounds are in the ſuperficial parts, and all the four quarters are perfectly ſound within.

As to the large foreſt trees, they ſhould not be lopped at all, except in caſes of great neceſſity, and then the large boughs muſt not be cut, but only the ſide branches; and even theſe muſt be cut off cloſe, that the bark may ſoon cover the wound, and yet a little ſlanting, that the water may run off, and not lodge upon the cut part.

If there is a neceſſity of cutting off a large bough, as by its being broken or cankered, let it be cut off ſlanting at about four feet diſtance from the body of the tree, and that if poſſible near ſome place where there is a young ſhoot from it, which may receive the ſap, and grow up in its place. No ſtump muſt be left ſtanding out farther than this, becauſe they are wounded parts which never can heal, and which will always be letting in the water, and will ſerve as pipes to convey that water into the heart of the body of the tree, and by degrees will utterly ſpoil it. All that grow upright, whether they be large or ſmall branches, muſt in cutting be taken off ſlanting, never evenly, for the ſame reaſon; thoſe boughs that bear from the head are to be cut with the ſlope on the lower ſide, and on any occaſion that great wounds are given to a tree, they ſhould be covered with a mixture of clay and horſe dung, which will make them heal much ſooner than they otherwiſe would do.

LOTE TREE, [*Celtis.*] Of the lote or nettle tree there are three ſpecies; 1ſt, Lote tree with a black fruit. This ſort grows naturally in the ſouth of France, in Spain and Italy, in which countries it grows to a tree of conſiderable ſize; in England it is not ſo common as the ſecond kind. It riſes with an upright ſtem to the height of forty or fifty feet, ſending out many ſlender branches upward, which have a ſmooth dark coloured bark, with ſome ſpots of grey; theſe are garniſhed with leaves placed alternately, which are near four inches long, and about two broad in the middle, ending in long ſharp points and deeply ſawed on their edges, having ſeveral tranſverſe veins which are prominent on their under ſide. The flowers come out from the wings of the leaves all along the branches; they have a male and an hermaphrodite flower generally at the ſame place, the male flowers being ſituated above the others: theſe have no petals, but a green herbaceous empalement, ſo make no figure; they come out in the ſpring, at the ſame time when the leaves make their firſt appearance, and generally decay before the leaves have grown to half their magnitude. After the flowers are paſt, the germen of the hermaphrodite flowers becomes a round berry about the ſize of a large pea, which is black when ripe.

2d. Lote Tree with a dark purple fruit. This grows naturally in North America, and delights in a moiſt rich ſoil, in which it becomes a very large tree. It riſes with a ſtrait ſtem, which in young trees is ſmooth and of a dark colour, but as they advance it becomes rougher, and of a lighter green. The branches are much diffuſed on every ſide, and are garniſhed with oblique oval leaves, ending in points, and ſawed on their edges; they are placed alternately on the branches, with pretty long foot-ſtalks. The flowers come out oppoſite to the leaves upon pretty long foot-ſtalks, the male flowers ſtanding above the hermaphrodite, as in the other ſpecies; after theſe decay, the hermaphrodite flowers are ſucceeded by roundiſh berries, which are ſmaller

ſmaller than thoſe of the firſt ſort, and when ripe, are of a dark purple colour. This tree flowers in May, and the ſeeds ripen in October. Of this ſort there are ſeveral pretty large trees in the Engliſh gardens, ſome of which produce great quantities of fruit annually, which, in favourable ſeaſons, come to maturity, ſo that from theſe ſeeds there have been plants raiſed; and there are few years in which there is not fruit of this ſort ſent from America, whereby it is now become pretty common in the Engliſh nurſeries.

3d. Smaller Eaſtern Lote Tree, with ſmaller and thicker leaves, and a yellow fruit. This ſort was diſcovered by Dr. Tournefort in Armenia, from whence he ſent the ſeeds to the Royal garden at Paris, where they ſucceeded, and the trees which were there raiſed have produced fruit for ſeveral years; ſo that moſt of the curious gardens in Europe have been furniſhed with it from thence. It riſes with a ſtem about ten or twelve feet high, dividing into many branches, which ſpread horizontally on every ſide, having a ſmooth greeniſh bark, garniſhed with leaves about an inch and a half long, and near an inch broad, inclining to a heart-ſhape, but are oblique, one of the ears of the baſe being ſmaller and lower than the other; they are of a thicker texture than thoſe of the common ſort, and of a paler green, placed alternate on the branches, and have ſhort foot-ſtalks.

The flowers come out from the foot-ſtalks of the leaves, in the ſame manner as the former, and are ſucceeded by oval yellow berries, which, when fully ripe, turn of a darker colour. The wood of this tree is very white.

Theſe trees are all propagated by ſeeds, which ſhould be ſown ſoon after they are ripe, when they can be procured at that ſeaſon, for they frequently come up the following ſpring; whereas thoſe which are ſown in the ſpring, will not come up till a twelvemonth after; therefore it is the beſt way to ſow them in pots or tubs, that they may be eaſily removed, for thoſe which are ſown in the ſpring ſhould be placed in a ſhady ſituation in ſummer, and conſtantly kept clean from weeds; but in autumn they ſhould be placed in a warm ſituation, plunging the pots into the ground; and if they are covered over with a little tan from a decayed hot-bed, it will prevent the froſt from penetrating the earth to injure the ſeeds; and if theſe pots are placed on a gentle hot-bed in the ſpring, it will greatly forward the vegetation of the ſeeds, whereby the plants will have more time to get ſtrength before the winter: but when the plants appear above ground they muſt have a large ſhare of air admitted to them, otherwiſe they will be drawn up weak; and as ſoon as the weather is warm, they muſt be expoſed to the open air, and in ſummer they muſt be conſtantly kept clean from weeds; if the ſeaſon proves dry, they will require water two or three times a week. In autumn it will be proper to remove the pots, and place them under a hot-bed frame, to ſhelter them in winter from ſevere froſt; or where there is not that conveniency, the pots ſhould be plunged into the ground near a wall or hedge; and as the plants when young are full of ſap, and tender, the early froſts in autumn frequently kill the upper part of the ſhoots; therefore the plants ſhould be either covered with mats, or a little ſtraw or peaſe-haulm laid over them to protect them.

In the following ſpring the plants ſhould be taken out of the ſeed-pots, and planted in the full ground: this ſhould be done about the middle or latter end of March, when the danger of the froſt is over; therefore a bed or two ſhould be prepared (according to the number of plants raiſed) in a ſheltered ſituation, and if poſſible, in a gentle loamy ſoil. The ground muſt be well trenched, and cleared from the roots of bad weeds, and when levelled, ſhould be marked out in lines at one foot diſtance; then the plants ſhould be carefully turned out of the pots and ſeparated, ſo as not to tear their roots, and planted in the lines at ſix inches aſunder, preſſing the earth cloſe down to the roots. If the ground be very dry when they are planted, and there is no appearance of rain ſoon, it will be proper to water the beds, to ſettle the ground to the roots of the plants; and after this, if the ſurface of the ground be covered with ſome old tan or rotten dung, it will keep it moiſt, and prevent the drying winds from penetrating to the roots of the plants.

The following ſummer the neceſſary care muſt be taken to keep them conſtantly

ſtantly clean from weeds: but after the plants are pretty well eſtabliſhed in the ground, they will not require any water, eſpecially toward the latter end of ſummer, for that will occaſion their late growth, whereby they will be in great danger of ſuffering by the autumn froſts; for the more any of theſe young trees are ſtopped in their growth by drought towards autumn, the firmer will be their texture, which will enable them to bear the ſeverity of winter.

The plants may remain in the nurſery two years, by which time they will have obtained ſufficient ſtrength to be tranſplanted where they are deſigned to remain for good, becauſe theſe plants extend their roots wide every way; ſo that if they ſtand long in the nurſery, their roots will be cut in removing, which will be a great prejudice to their future growth.

Theſe ſorts are hardy enough to thrive in the open air in England, after they are become ſtrong; but for the two firſt winters after they come up from ſeeds, they require a little protection, eſpecially the third ſort, which is tenderer than either of the former. The young plants of this ſort frequently have variegated leaves; but thoſe are more impatient of cold than the plain leaved.

Baſtard LOTE TREE. *See* DATE PLUMB TREE.

LOVAGE, [*Leviſticum.*] This is a large umbelliferous plant, cultivated with us in gardens. The root nearly agrees in quality with that of angelica; the principal difference is, that the lovage root has a ſtronger ſmell, and a ſomewhat leſs pungent taſte, accompanied with a more durable ſweetneſs: the ſeeds are rather warmer, and more agreeable than the root. Theſe ſimples, though certainly capable of being applied to uſeful purpoſes, are not at preſent regarded. The root, wounded early in the ſpring, bleeds an unctuous odorous juice, which ſlowly exſiccated, proves an aromatic gummy reſin.

It is eaſily propagated by ſeeds ſown in autumn, and taking care to keep the plants clean from weeds. There are ſeveral ſpecies kept in the gardens.

LOVE APPLE. *See* APPLE.

LOVE *in a Miſt.* See PASSION FLOWER.

LOVE *lies a Bleeding.* See AMARANTHUS.

LOUSEWORT, [*Delphinium.*] See STAVES ACRE.

LOW. *See* LAMENESS.

LOW-WORM. A diſeaſe in horſes hardly known from St. Anthony's fire, or the ſhingles, having the ſame ſymptoms. It is a worm that is bred in the back of a horſe, between the ſkin and the bone, or runs along the neck to the brain, and when it comes to the tunicle thereof, makes him run mad. The ſymptoms of this diſorder are, after a long journey he will be ſick, and fall from his meat, and ſtretch out himſelf at length with his feet, bending his back, and ſtraining to ſtale, but cannot; which in time will make him ſo mad, that he will gnaw the manger, rack-ſtaves, or any thing within his reach. Give him one of Bracken's cordial balls every night and morning, with a drench of warm ale and a toaſt.

LOWK. A weeding hook.

LUCERNE, [*Medica.*] This plant was diſcovered in Media by Darius during his Perſian expedition. By this means it paſſed afterwards into Greece, and thence to Italy, before the times of Cato and Virgil.

From being diſcovered in Media, it had its name Medica, Medicago, and Medick; it is called by the Spaniards Alfalſa, and Ervaye; and by the French La Lucerne, Grand Treffle, and Fœnum Burgandiacum, that is Burgundy hay.

There is no doubt but that its culture continued upon a flouriſhing footing in Italy till the irruption of the Goths and Vandals, when it was neglected and left to periſh by thoſe ſavage invaders. But as Spain ſuffered much leſs from theſe barbarians than Italy, and as the Moors were all lovers of plants, and to a certain degree herbaliſts, the culture of lucerne was there faintly kept alive like a veſtal fire. It is probable that the ſort we now have is a deſcendant of Columella's lucerne, who removed it from Italy, and naturalized it in Andaluſia, where it was preſerved for many ages. From Spain it returned to Naples, and thence to Volterra, and Scandiano, being held in much eſteem every where, but more particularly near cities, where land is ſcarce and dear.

About the year 1550, a Venetian nobleman who was fond of huſbandry raiſed it with ſucceſs, and not long afterwards

terwards the Archbiſhop of Montigili carried a parcel of the ſeed to Rome, ſo that the culture of lucerne ſoon ſpread with great rapidity over great part of the eccleſiaſtical ſtate, and all Lombardy. In ſome few years Count Fabio taught the French to raiſe lucerne round Paris, inſomuch that in Henry IVth's reign it was as common, at leaſt in the ſouthern parts of France, as broad clover is at preſent with us.

About 1578, lucerne found its way into Germany, and was cultivated in one of the loveliеſt parts of the whole empire, namely, the Lower Palatinate. At the ſame time its fame reached England, where all admired it, and ſome few had the courage to make eſſays towards cultivating it; but their attempts were languid, and generally unſucceſsful, notwithſtanding they had the practice of the ancients to guide them, in the books *de Rebus Ruſticis*. At length Hartlib excited the attention of the public afreſh in the year 1650; he did as much, circumſtances conſidered, as a man of his great genius could do. But as there was no method of raiſing it at that time generally known, but by the common practice uſed in cultivating clover, it of courſe miſcarried in our climate.

Lucerne has a perennial root, and an annual ſtalk which riſes three or four feet high in good land, and is garniſhed at each point with trifoliate leaves, whoſe lobes are ſpear-ſhaped, about an inch and a half long, and half an inch broad, and ſawed towards the top. The flowers grow in ſpikes, which are from two to near three inches in length, riſing from the wings of the ſtalks; they are of the pea bloom or butterfly kind, of a fine purple colour, and are ſucceeded by compreſſed moon-ſhaped pods, which contain ſeveral kidney-ſhaped ſeeds. It flowers in June, and the ſeed ripens in September.

There are ſeveral varieties of this ſpecies of lucerne, but the greater upright medick or lucerne with purple or violet flowers is the ſtrongeſt, and beſt for uſe, and conſequently the moſt profitable for the huſbandman.

The antients, and ſome of the moderns, are laviſh in its praiſe, eſteeming it ſuperior to every other ſort of vegetable food, either green or made into hay, that has hitherto been uſed for the ſupport of cattle. If rightly managed it is capable of ſupporting heat and drowth even near the equator; and may be ſucceſsfully raiſed in any climate not exceeding ſixty degrees of latitude either north or ſouth; ſo that there will be little to fear from our ſummer droughts, even when the neighbouring fields are ſtinted in growth and half parched up.

It is difficult to aſſign any reaſon why it is called lucerne; for the canton of that name in Switzerland neither was nor is famous for producing it; nor did the weſtern or northern parts of Europe receive it thence, as appears from the account already given of its progreſs.

Lucerne is one of the handſomeſt of the artificial graſſes, the flowers of the common kinds are ſometimes red, and ſometimes purple; a large field when in full bloſſom has a very bright beautiful glow at a diſtance. It is looked upon to be wholeſome for men as well as cattle; and the leaves are eaten in the ſouth of France with the ſpring ſallad herbs, the taſte is like that of creſſes. The leaves infuſed in boiling water have all the fragrance of fine new-made hay. Several writers preſcribe it in ſmall quantities for ſick ſheep, and indeed to all cattle that are ill, languiſhing, or out of plight. Meadow lucerne has been ſtiled *ſops in wine*, and probably on account of its flowers being thrown into wine and water, like borage and bugloſs, to give the liquor an agreeable flavour.

Beſides the ſuperior goodneſs of lucerne as food for cattle, its early appearance is another particular advantage; for it comes in uſe long before all common graſſes, and even ſix or ſeven weeks before clover or winter vetches.

Cattle are very fond of this green food, preferring it to the clovers and trefoils. It ſhould however be remembered, that they likewiſe prefer that which has been cut and remained a day or two in a ſhady place. Lucerne muſt be given with more caution to cows than horſes; with the latter it proves extremely diuretic for about eight or ten days, and then they begin to grow fat. Sheep will eat it either green or dried, when they refuſe every other ſort of food. All cattle prefer lucerne hay to any other, if you lay different heaps before them: a horſe willnever leave a

ſprig

ſprig in the rack or manger. As to young pigs, ſcarcely any food is ſo healthy, nouriſhing and agreeable, as the vegetable we are here ſpeaking of, if it be cut while it is green and carried to the ſtye; nor does any ſort of food enable the ſow to give larger quantities of milk.

Cold will not injure this plant; for in the ſevere winter of 1728-9, ſome roots which were dug up in October, and laid upon the ground in the open air till the beginning of March, were again planted, and they ſhot out very vigorouſly ſoon after; nay, even while they lay upon the ground, they ſent out ſhoots from the under ſide of the roots. Wet will altogether deſtroy it: a little of the ſeed was ſown upon a moiſt ſpot of ground for a trial, it flouriſhed during the ſummer, but during the winter rains the roots began to rot, and before the ſpring moſt of them periſhed. Having given this, we hope not unentertaining account, we ſhall briefly deſcribe the different methods of cultivating lucerne; viz. the broad-caſt, drilling, and tranſplantation.

The ſoil which is eſteemed moſt proper is a deep, rich, and well-conditioned one, and rather inclined to moiſture than dryneſs; but by no means wet from ſtagnating water, as this always proves fatal to lucerne. It ſhould be well ploughed, and harrowed till it is exceeding fine, and be cleaned from all ſorts of weeds, of which no plant is more impatient. If ſome freſh ſtable litter be ploughed in juſt before the ſeed is ſown, it will enable the young plant to puſh forth its leaves and ſtalks with luxuriance the firſt ſummer.

The ſeed ſhould be procured from France, Italy, Switzerland, or Spain, becauſe it ſeldom ariſes at a ſufficient degree of maturity in our climate; for we want that ſtrength of ſun-ſhine, and conſtant ſettled weather, which the cultivators of lucerne enjoy in the countries juſt mentioned.

It may be ſown (about forty pounds to an acre) from the beginning of March to the end of May; but about the middle of April is the beſt time, provided the weather be dry. The plant comes up like clover, but varies a little after it is a month old, and begins to put out three leaves. Great care muſt be taken to keep it clean from weeds, otherwiſe they will ſoon overpower and choak the infant crop. In Languedoc they mow the lucerne when it is ſeven inches high; by which means all the annual weeds are cut off and killed. This however is by ſome entirely condemned, on account of the lucerne bleeding when it is cut ſo young.

The moſt proper time to mow lucerne for hay is juſt when it begins to bloſſom. It ſhould be turned in the ſwarth like clover, and when ſufficiently made, it ſhould be carried to a barn, for it does not keep ſo well in a rick. It ſeems moſt eligible to mow it only once the firſt year, and when it ſhoots again, to feed it off with ſheep.

Early the next ſpring it ſhould be harrowed to tear up the weeds, which may be done without any material injury to the roots of the lucerne. An harrow has been contrived for this purpoſe that reſembles a large garden rake with handles fixed to the head, ſo that a labourer may preſs down the teeth into the land: this harrowing may be renewed every ſpring, ſome recommend it after every mowing.

With reſpect to the number of cuttings, though ſome writers pretend it may be mowed ſix times, yet it has rarely been mowed in this country more than three times in one year.

Mr. Miller recommends, from his own experience, a different method of cultivating this plant. He ſowed it in drills about eighteen inches aſunder, ſcattering the ſeeds very thin in the drills, about ſix pounds to an acre. His reaſon for this practice was, more eaſily deſtroying the weeds than in the broad-caſt. This hoeing he repeated ſeveral times, and always in dry weather, becauſe weeds do not then vegetate.

With this management the lucerne was fit to cut in Auguſt; after which, the ground between the rows was again hoed: in September it was four or five inches high, when he uſually fed it off with ſheep till November. In the beginning of February following, the intervals ſhould be again ſtirred with the hoe, by which means, in a warm ſoil, the ſhoots will be five or ſix inches high in March, when there is ſcarce a blade of graſs to be ſeen elſewhere. This may be fed down till a week in April, and then left till the beginning of June, when it will be fit

to

to cut. The ground ſhould again be hoed, and there will be another crop fit to cut by the latter end of July; after which, it ſhould be fed down again in autumn.

In this manner there will be conſtantly two crops to cut, and two feedings every year; and in good ſeaſons there may be three crops cut, and two feedings.

Mr. Miller is inclined to think, that the reaſon why it does not ſucceed ſo well in England is owing to its being ſowed with corn; for though the plant be hardy when grown to a large ſize, yet if it be incommoded by any other plant at its firſt coming up, it never flouriſhes; or it may have been ſowed at a wrong ſeaſon, or in wet weather. However, certain it is, that if the natural graſs or weeds are not kept down at firſt, they will ſoon overpower and deſtroy the lucerne.

The late ingenious author of the *Eſſays on Huſbandry*, recommends a new method of cultivating lucerne; which is, by raiſing the plants in a nurſery in the ſpring, and tranſplanting them into the field in Auguſt or September, having previouſly cut off their ſtalks and tap roots.

The plants in the nurſery being eighteen inches high, are carefully to be digged up, and the earth entirely looſened at top and bottom before they are drawn out. In the next place the long tap roots are to be cut off at eight, nine, or ten inches below the crown of the plant; and the ſtalks or ſhoots clipped about five inches above the crown of the plant, which is then to be thrown into a veſſel of water, (for this plant is very impatient of heat and ſun-ſhine after it is taken up) and the ſame day removed into the field prepared for its reception, and planted in rows three feet four inches aſunder. The crop is to be horſe-hoed, and may be cut five or ſix times in one year, which will (the author ſays) produce ten tons.

This method is attended with a great deal of care, trouble and expence; but if the lucerne be tranſplanted in moiſt or ſhowery weather, the additional trouble of ſteeping the plants in water may be ſpared; though it is a plant of ſuch ineſtimable value that it will anſwer almoſt any expence.

It is obſerved by all the cultivators, that lucerne may be cut long before meadow graſs, and that the drilled crops are earlier than the broad-caſt. They have likewiſe another advantage, which is, being more eaſily kept free from weeds; but where the ground is properly prepared by fallowing or turnips, ſo that the land is properly clean and fine, the broad-caſt will have greatly the advantage, and recommend itſelf to the practical huſbandman, as being more ſimple, and leſs expenſive.

We ſhall conclude with obſerving, that aſhes and ſoot are excellent dreſſings for lucerne, and ſuperior to dung.

LUG, *or* LUGG. A pole, or perch of land.

LUNGS. Sheep are very ſubject to be diſordered in the lungs, which is eaſily perceived in their breathing or by their coughing: nothing requires a more ſpeedy remedy, for they grow incurable when it is neglected but a little time, and die as men in a conſumption.

Change of air and paſture are eſſential to the cure of this diſeaſe; without this caution no remedy will take place.

The cauſe of this diſorder, in whatever form it appears, whether in coughing, wheezing, or panting, in difficulty or ſhortneſs of breath, is the ſame. It is owing to cold, and it generally comes upon ſheep that have been kept in low grounds in wet weather.

Let them be drove into an encloſed paſture where there is ſhort graſs and a gravelly ſoil, and if poſſible, where there is a ſpring or other running water.

Bruiſe a baſket full of the leaves of coltsfoot, and preſs out the juice; bruiſe in the ſame manner an equal quantity of plantain, leaves and roots together, and preſs out its juice. Mix theſe, and bruiſe as much garlick as will yield about a fourth part as much juice as one of the others. Mix all together, and add to them a pound of honey, an ounce of powdered anniſeeds, and an ounce and a half of powdered elecampane. Give a quarter of a pint of this, warm, to every ſheep that is affected, once a day, and it will by degrees make a perfect cure.

Out of a whole flock thus affected, when the farmer has taken thorough care

ware in this reſpect, we have known when not one ſheep has been loſt.

LUNGWORT, [*Pulmonaria.*] This is a perennial plant growing naturally in woods and ſhady places, in Italy, Germany, Switzerland, Auſtria, and Hungary; the leaves are rough, and the ſtalk riſes to the height of a foot, the flowers which are red, purple and blue, are produced in ſmall bunches at the top of the ſtalks. There are ſeveral ſpecies cultivated in the gardens, one of which is annual. Perennials may be propagated by parting the roots in autumn, and the annual ſort by ſeeds ſown in autumn.

Cow's LUNGWORT. Mullein.

LUPINE, [*Lupinus.*] The ſpecies are, 1. The leſſer blue lupine. 2. Narrow-leaved, taller blue lupine. 3. The common yellow lupine. 4. The great blue lupine. 5. Garden or manured lupine, with a white flower. 6. Small perennial, creeping blue lupine of Virginia.

The firſt ſort grows naturally among the corn in the ſouth of France and Italy, and in great abundance in Sicily. This is an annual plant, which riſes with a firm, ſtrait, channelled ſtalk, near three feet high, divided toward the top into ſeveral branches, garniſhed with hand-ſhaped leaves, compoſed of five, ſix, or ſeven oblong lobes, which join in one center at their baſe. The flowers are produced in ſpikes at the end of the branches, ſtanding half round the ſtalk in a ſort of whorl; they are of a light blue colour, and are ſucceeded by ſtrait taper pods with one cell, incloſing a row of roundiſh ſeeds.

It is propagated in the borders of the pleaſure garden for ornament, by ſowing the ſeeds in April in the places where they are to remain; and when the plants come up, they ſhould be thinned where they are too cloſe, and kept clean from weeds, which is all the culture they require.

The ſecond ſort has much the appearance of the firſt, but the ſtalks riſe higher; the leaves have more lobes, and ſtand upon longer foot-ſtalks; the lobes are blunt pointed, and the ſeeds are variegated. This requires the ſame culture as the firſt, and flowers at the ſame time.

The third ſort is the common yellow Lupine, this grows naturally in Sicily. It riſes about a foot high, with a branching ſtalk, garniſhed with hand-ſhaped leaves, compoſed of nine hairy lobes, which join at their baſe to the foot-ſtalks. The flowers are yellow, and are produced in looſe ſpikes at the end of the branches, ſtanding in whorls round the ſtalks. Theſe are ſucceeded by flattiſh hairy pods about two inches long, incloſing four or five roundiſh ſeeds, a little compreſſed on their ſide. This ſort flowers at the ſame time as the former; but to have a ſucceſſion of the flowers, the ſeeds are ſown at different times, viz. in April, May, and June, but thoſe only which are firſt ſown will ripen their ſeeds. It may be cultivated in the ſame manner as the two former, and is equally hardy.

The fourth ſort is ſuppoſed to be a native of India. It is an annual plant, which riſes with a ſtrong, firm, channelled ſtalk, from three to four feet high, covered with a ſoft browniſh down, dividing upward into ſeveral ſtrong branches, garniſhed with hand-ſhaped leaves, compoſed of nine, ten, or eleven wedge-ſhaped hairy lobes, which are narrow at their baſe, where they join the foot-ſtalk. The flowers are placed in whorls round the ſtalks above each other, forming a looſe ſpike at the end of the branches; they are large, and of a beautiful blue colour, but have no ſcent. The pods of this ſort are large, almoſt an inch broad, and three inches long, incloſing three large roundiſh ſeeds compreſſed on their ſides, very rough, and of a purpliſh brown colour. There is a variety of this with fleſh-coloured flowers, which is commonly called the roſe lupine; it differs from the blue only in the colour of the flower, but this difference is permanent, for neither of the ſorts vary.

This is generally late in the ripening of the ſeeds, ſo that unleſs the autumn proves warm and dry, they do not ripen well in England; therefore the beſt way to have good ſeeds is to ſow them in September, cloſe to a warm wall on dry ground, where they will live through our ordinary winters; and theſe plants will flower early the following ſummer, ſo there will be time for the ſeeds to ripen before the rains fall in the autumn, which frequently cauſes the ſeeds to rot which are not ripe.

The fifth ſort grows naturally in the Levant, but is cultivated in ſome parts of

of Italy, as other pulſe for food. This hath a thick upright ſtalk about two feet high, which divides toward the top into ſmaller branches, garniſhed with hand-ſhaped leaves, compoſed of ſeven or eight narrow, oblong, hairy lobes, which join at their baſe, of a dark greyiſh colour, with a ſilvery down. The flowers are produced in looſe ſpikes at the end of the branches; they are white, and ſit cloſe to the ſtalk, and are ſucceeded by hairy ſtrait pods about three inches long, a little compreſſed on the ſides, which contain five or ſix flattiſh white ſeeds, having a little cavity like a navel, in that part which is fixed to the pod. This is an annual plant, which is cultivated for ornament in the pleaſure garden. The ſeeds muſt be ſown in the places where the plants are to remain, and may be treated in the ſame way as the firſt ſort.

The ſixth ſort grows naturally in Virginia, and other northern parts of America. It hath a perennial creeping root, from which ariſe ſeveral erect channelled ſtalks a foot and a half high, garniſhed with hand-ſhaped leaves, compoſed of ten or eleven ſpear-ſhaped lobes, which join at their baſe. The flowers grow in long looſe ſpikes, which terminate the ſtalks, and are placed without order on every ſide the ſtalk; they are of a pale blue colour, and are ſucceeded by pods having three or four ſeeds, which ripen in Auguſt, and are ſoon ſcattered if they are not gathered, for after a little moiſture the ſun cauſes the pods to open with an elaſticity, and caſt out the ſeeds to a diſtance. This ſort is propagated by ſeeds as the former, which ſhould be ſown where the plants are to remain; for although the root is perennial, yet it runs ſo deep into the ground, as that it cannot be taken up entire; and if the root is cut or broken, the plant never thrives well after. Some of the roots of this plant have been three feet deep in the ground in one year from ſeed; they alſo ſpread out far on every ſide, ſo that they muſt have room; therefore the young plants ſhould not bereſt nearer than three feet aſunder.

LUSTWORT, [*Droſera.*] Sundew, a plant which grows naturally on bogs in many parts of England.

LYE. A ſteep or liquor impregnated with ſalts, &c.

LYNCHETS. Graſs partitions in arable fields.

LYCHNIS. *See* CAMPION.

End of the Firſt Volume.