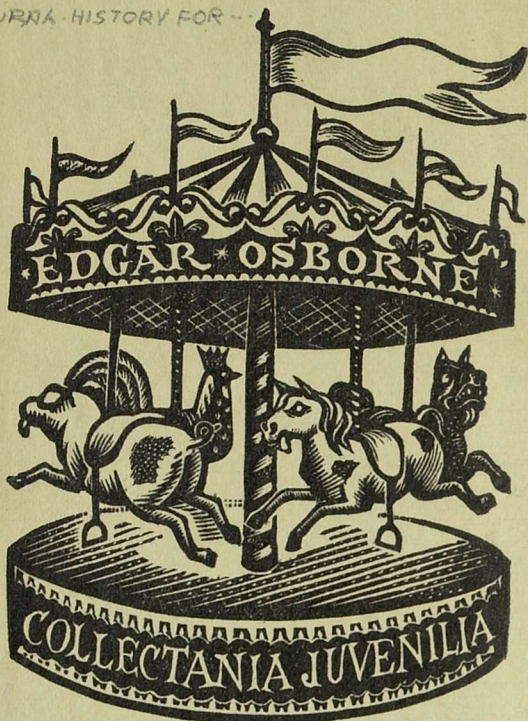


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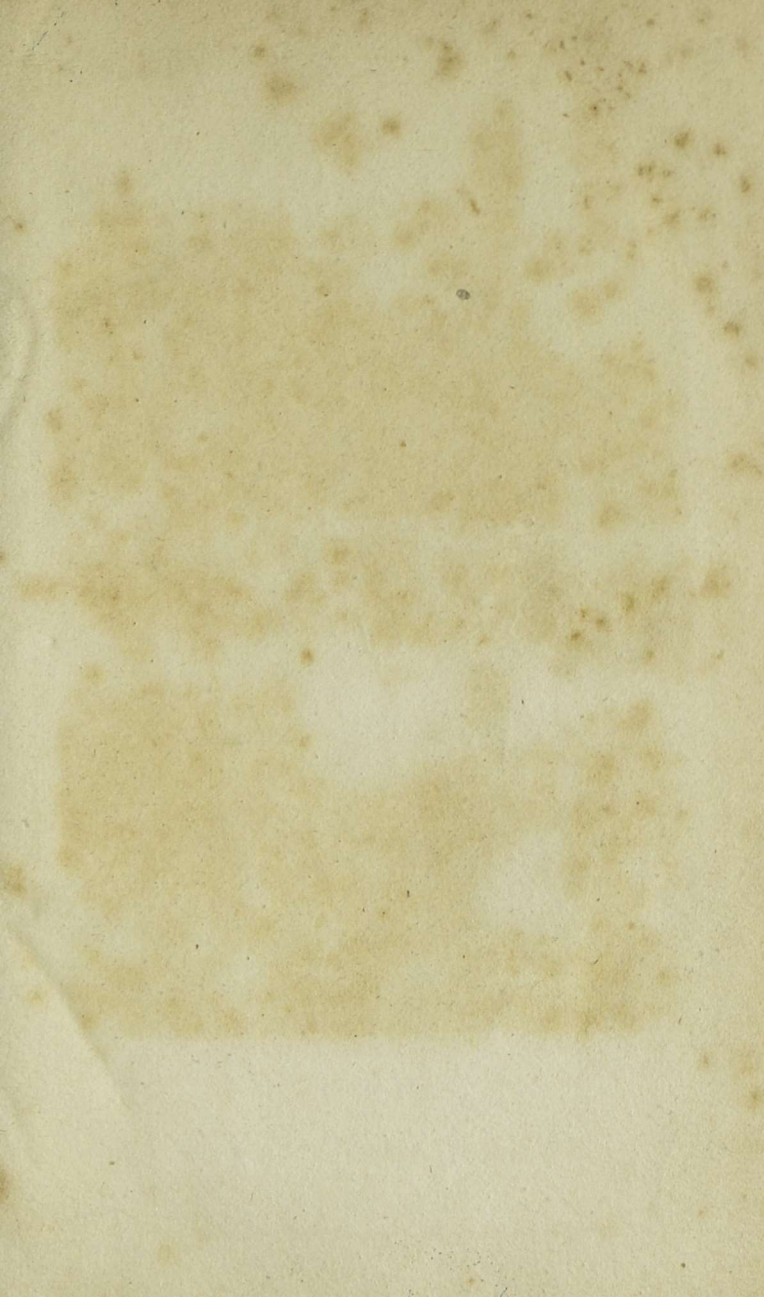


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NATURAL HISTORY
OF
TREES AND PLANTS.







Frontispiece

J Shary Del^t et Sculp^t

TREES AND PLANTS.

Published by Baldwin Cradock and Joy, June 1819.

NATURAL HISTORY

FOR

CHILDREN :

BEING

A FAMILIAR ACCOUNT

OF THE MOST REMARKABLE

QUADRUPEDS, BIRDS, INSECTS,
FISHES AND REPTILES,
TREES AND PLANTS.

WITH PLATES AND NUMEROUS CUTS.

IN FIVE VOLS.

VOL. V.

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NATURAL HISTORY

OF

TREES, PLANTS, AND FLOWERS.



The Science of Botany briefly explained.

TO introduce our young readers to the knowledge of this pleasing and instructive science, we shall offer a compendium of botanical illustrations to their attention, before they proceed to the study of the plants and flowers, described in the following pages.

The Linnæan classification of plants is the most natural, and the least subject to variation: the differences described being the varieties in number of the stamina in the

TREES, &c.

B

male, and those of the pistils in the female parts of a plant.

Plants consist of six parts:—Radix, the root; truncus, the trunk; fulcra, the support; folia, the leaves; flores, the flowers; and fructus, the fruit.

1. *Radix—The Root,*

IS that part of the plant which adheres to the ground, from whence it draws its nourishment.

Roots are either fibrous, bulbous, or tuberous.

The *Fibrous Root* is either perpendicular, horizontal, fleshy, as the carrot; hairy, as the roots of grass; or branching.

Bulbous Roots (among which are the snow drop, hyacinth, and tulip) are either solid, as the turnip; coated, as the onion;

scaled, as the lily ; double, as the orchis ; or clustered, as the white saxifrage.

Tuberous Roots are composed of many fleshy tubes, as the garden ranunculus ; and either adhere closely to the stalk, or suspend from it by threads.

2. *Truncus*—the *Trunk*,

RISES immediately from the root, and sustains the branches. This part is called a trunk, in trees, and a stalk, in plants.

STALKS are either simple or compound.

A *Simple Stalk* grows singly, from the root to the top, as the sun-flower ; and is distinguished by its being either naked, leafy, or upright, as the larkspur ; oblique, twining, pliant, reclining, or lying on the ground, as the nasturtium ; creeping, as the pansy ; having roots as long as itself ; living several years, or only one year ; being woody, shrubby, or cylindrical in form, as the star-

flower ; having two, three, or more angles ; and being streaked, furrowed, channelled, smooth, or rough, as the aster ; hairy, or prickly, as the rose.

A *Branching Stalk* is one that shoots lateral branches as it ascends, as the wall-flower ; and is distinguished by the branches being either irregular, large, or numerous, as the peony ; supported, or prolific in leaves, fruit, or flowers, as the lily of the valley, and the jonquil.

A *Compound Stalk* is one soon dividing into branches, as the flower of Parnassus ; and is distinguished by being either forked, having two ranges of branches, or having these ranges subdivided ; tubular, like a straw ; being entire, branched, uniform, or jointed as a pink ; scaly, or with or without leaves.

3. *Fulcra—The Support,*

IS that part which sustains or defends certain parts of a plant, and is divided into the

following ten kinds: the leaf, supporting the flowers, the tendril or clasper, as the honeysuckle and sweet-pea; the spine, the thorn, the footstalk of the leaf, the footstalk of the flower or fruit, as the columbine; the general stalk, the gland, and the scale. Each of these has its subdivisions.

4. *Folia*—*Leaves*,

ARE divided into the three classes, of single, compound, and determinate.

Single Leaves, are those which have footstalks supporting only one, as in the cyclamen; and are described according to their circumference, border, surface, summit, and substance.

Their *circumference and border* are either round, nearly round, oval, reversed oval, oblong, shaped like a wedge, angular, spear-shaped, as the belvidere, narrow, shaped like an awl, triangular, deltoïde, or having four corners, quinquangular or five cornered,

shaped like a kidney, a heart, a moon, an arrow, or a pистe, divided into two or three parts, formed like a hand, pointed like a wing, jagged, indented, as the tuberose, divided or not into parts, singly or doubly sawed, notched, grisly, ciliated or hairy like an eyelid, lacerated, or seemingly torn or bitten, curled or entire.

Their *surface* is distinguished by being either downy, soft, as velvet; hairy, as the fox-glove; stinging, rough, smooth, as the daisy; bristly, prickly, warted, polished, plaited, waved, wrinkled, veined, as the gilliflower or carnation; nervose, plain, as the auricula flower; depressed, compressed, convex, concave, or channeled.

Their *summit or top*, is either truncated, blunt, as if bitten, hollow, obtuse, pointed, as the amaranthus; shaped, like an awl; or tapered, like a pillar.

Their *substance* is either hollow, fleshy, or membranaceous, as pinks.

Compound leaves are either simple or decompound.

A *compound leaf* is formed of several small leaves growing from one footstalk, and is considered as a whole, produced from a single composition, as in the ranunculus, rose, carnation, pink, &c. They are either fingered, composed of two, three, or many leaves, resembling wings, expanding from their common footstalk, having alternate leaves, or being doubly winged.

A *decompound leaf* has a footstalk, dividing twice or more times before it is garnished with leaves.

Determinate leaves are distinguished by their direction, place, insertion, or situation.

The *direction* is the manner in which the leaf expands from the bottom to the top, and is either arched, upright, spreading, horizontal, reclining, or revolving backwards

The *place* is determined by the part of the plant to which it is fastened; and the leaf is either called the seed-leaf, from rising immediately from the seed, or radical, from rising first from the root.

The *insertion* is the manner in which a leaf is fastened to a plant; as it is either fastened to the disk, has a foot-stalk to its base, grows from the branch without a foot-stalk, is fastened by a membrane, or surrounds the stalk without any part of the border adhering to it, like the hare's-ear.

The *situation* is determined from the position of each, in relation to the others. The situation is, therefore, either jointed, surrounding the stalks like stars, or opposed to each other, as in the jessamine; growing in alternate positions on each side the footstalk, or without any order; clustered, as in the flowers of the sweet-william; ranged, like tiles on a house, or like the scales of a fish.

5. *Flores—The Flowers.*

THE flowers of plants are divided into four parts: *calyx*, the cup; *corolla*, the petal, or flower-leaf; *stamina*, the stamen; and *pistillum*, the pistil.

The *cup of the flower* is that which incloses and sustains the flower; and is divided into seven sorts; the *perianthium*, *involucrum*, *spatha*, *gluma*, *amentum*, *calyptra*, and *volva*.

The *perianthium* is the most common kind of flower-cup; consists often of many parts, though sometimes of only one part; is separated into several divisions, as in the India pink; and always surrounds the bottom of the flower.

The *involucrum* embraces many flowers collected together, and which have each of them a perianthium.

The *spatha* is a sheath, which covers one or more flowers that are generally without a perianthium : it consists of a membrane, fastened to the stalk ; and differs in its figure and substance.

Gluma is a sort of chaff, which particularly covers grain and grass-seeds.

The *iulus*, or *amentum*, is a mass of flowers, covered with small scales, and fastened to an axis, in the form of a rope, as in the irregular flowers of the violet.

The *calyptra*, or *coif*, is a thin, conical, membraneous cover, to the parts which produce fruitage.

The *volva*, or *purse*, is a thick covering which incloses several species of the mushroom productions.

The **COROLLA**, petal, or flower-leaf, is one of those which form the flower, and surround

the re-productive parts of the plant itself. Of these, there are the petal, and the nectarium : they are either in one, as the convolvulus, or formed of many pieces. The petal is generally distinguished by the beauty of its colour, and the nectarium by containing those sweet juices which the bees change into honey. The corolla is sometimes without a foot-stalk, as in the martegon.

The STAMEN is the male part of flowers, and consists of the *filament* and the *summit* or *anthera*.

The *filament* sustains the anthera, apex, or summit, and is either formed like a thread, or shaped like an awl.

The *anthera*, *apex*, or *summit*, is the essential part of the stamina, and contains the male organ of re-production. It consists of a little bag, of one or more cavities, containing the male farina.

The PISTIL includes the female parts of

flowers, and consists of the *germ*, *style*, and *stigma*.

The *germ* incloses and defends the seeds.

The *style* rises from the germ, and supports the stigma.

The *stigma* is the female organ of reproduction, and is situated upon the top of the style, if any; if not, it is upon the germ.

6. *Fructus*—the *Fruit*.

THE different species of fruit, such as plums, berries, apples, seeds, &c. are too well known to require a description.

The Classes.

FLOWERS are either hermaphrodite, from having both the sexual distinctions of male and female, stamens and pistils; male, from having *stamina* only; or female, from having only *pistils*.

The *stamina* are either detached from each other, united together by one of their parts, or joined with pistils: they are of equal length, or have some shorter than the rest: and the number, proportion, and situation of the *stamina*, determine the *classes*, as the differences of the pistils determine the *orders* of flowers.

The classes, according to the number of *stamina* in the male parts of the flower, are called,

1. *Monandria*, one stamen.
2. *Diandria*, two *stamina*.
3. *Triandria*, three.
4. *Tetrandria*, four.
5. *Pentandria*, five.
6. *Hexandria*, six.
7. *Heptandria*, seven.
8. *Octandria*, eight.
9. *Enneandria*, nine.
10. *Decandria*, ten.
11. *Dodecandria*, eleven.
12. *Icosandria*, when more than twelve.
13. *Polyandria*, when more than thirteen.

Those flowers which have two stamina shorter than the rest, are called,

14. *Dynamia*, as having two long and two shorter stamina.

15. *Tetradynamia*, as having four long and two shorter stamina.

Those flowers which have their stamina united together, or with the pistil, are thus distinguished.

16. *Monadelphica*, stamina united into one body.

17. *Diadelphia*, stamina into two bodies.

18. *Polyadelphia*, stamina into three or more bodies.

19. *Syngenesia*, the stamina forming a cylindrical body.

20. *Gynandria*, the stamina being upon the pistils.

Other plants of different figures are thus distinguished.

21. *Monoecia* : the plants of this class have male and female flowers upon the same individual.

22. *Dioecia*, have male and female flowers on different individuals.

23. *Polygamia*, have hermaphrodite flowers upon the same individual.

Orders.

THE orders, or subdivisions of the classes, are distinguished by the pistils, or female parts of the plant or flower, as the classes are by the stamina, or male parts. The number of pistils or stigmas are counted.

The chief distinctions are the number of pistils and nature of seeds, the nature of the pods, and the number and gender of the florets. According to the number of the pistils, the orders are termed monogynia, digynia, &c. according to the nature of the seeds, gymnospermia, angiospermia; according to the pods, siliculosa, siliquosa; and, according to the number and gender of the florets, they are termed polygamia æqualis, polygamia superflua, &c.



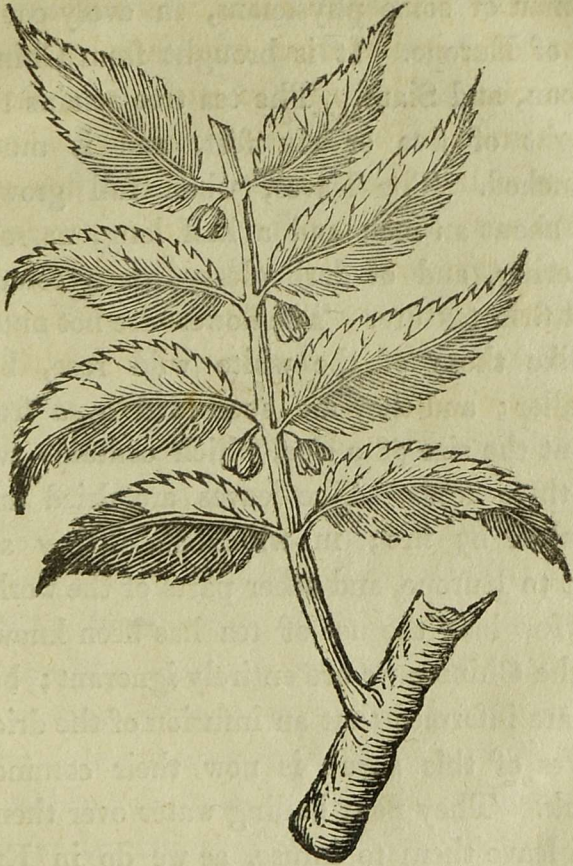
THE COFFEE TREE.

THIS shrub is from fifteen to twenty feet in height. The leaves are four or five inches long, and two broad, smooth, green, and

glossy on the upper surface; and the flowers, which grow in bunches at the base of the leaves are white and sweet-scented. The berries or fruit are of a somewhat oval shape, about the size of a cherry, and of a dark red colour, when ripe. Each of these contains two cells, and each cell a single seed, which is the coffee as we see it before it undergoes the process of roasting.

Coffee is an article of only late introduction into England. The earliest information we have of it in this country is, that in 1652, Daniel Edwards, a Turkey merchant, brought home with him a Greek servant, whose name was Pasqua, and who understood the methods of roasting coffee, and making it into a beverage. This man was the first who publicly sold coffee in England, and kept a house for that purpose in George Yard, Lombard Street. At Paris coffee was nearly unknown until the arrival of the Turkish ambassador, Solomon Aga, in 1669; about three years after which the first coffee-house is said to have been established in that city. The coffee shrub was

originally planted in Jamaica in 1732. The best coffee is imported from Mocha in the Red Sea. That next in esteem is grown in Java and the East Indies ; and that of lowest price in the West Indies. When stowed in ships with rum, pepper, or other articles, it is said that coffee contracts a rank and unpleasant flavour, and this has been assigned as a reason of the inferiority of that which is imported from our own plantations.



THE TEA TREE.

THE tea tree grows plentifully in several parts of the East-Indies, and affords a leaf which is too well known, according to the

opinion of some physicians, in every country of Europe. It is brought from China, Japan, and Siam. The tea tree attains the height of five or six feet, and is much branched. The leaves, when full grown, are about an inch and a half long, narrow, tapering, and of dark glossy green colour, and firm texture. The flowers are not much unlike those of the white wild rose, but smaller; and they are succeeded by a fruit about the size of a sloe, which contains two or three seeds. The leaves are dried and parched by fire; in which state they are sent to Europe, and other parts of the world.

How long the use of tea has been known to the Chinese we are entirely ignorant; but we are informed that an infusion of the dried leaves of this shrub is now their common drink. They pour boiling water over them, and leave them to infuse, as we do in Europe; but they drink the tea thus made without either milk or sugar. The inhabitants of Japan reduce the leaves to a fine powder, which they dilute with water, until they acquire nearly the consistence of soup.

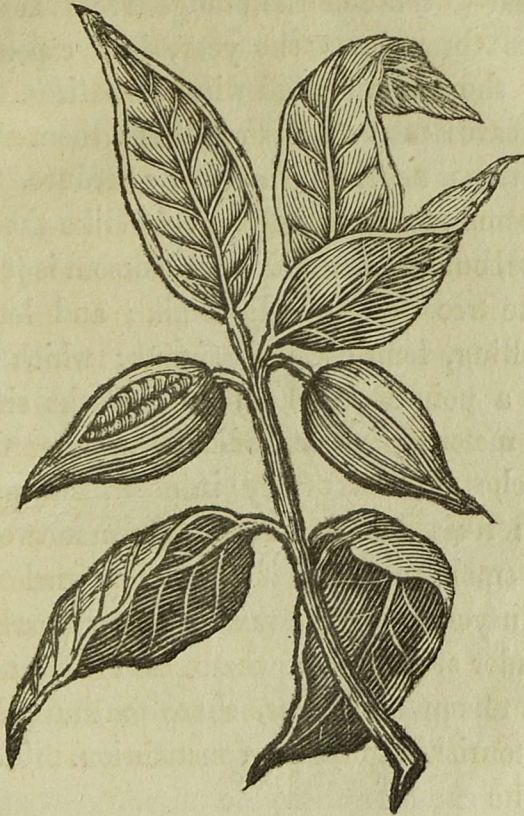
It was formerly imagined that black and green tea were the production of different species of shrubs ; but the Chinese all assert that both are produced from the same species, and that the sole difference which exists between them arises from the seasons when the leaves are gathered, and the modes of curing them. The teas principally consumed in Europe are four kinds of black, and three of green.

It is incorrect to suppose, although it has been frequently asserted, that green teas are indebted for their qualities and colour to a process of drying them upon plates of copper.

The dried leaves of the tea plant are a commodity which, a century and half ago were scarcely known as an article of trade. The earliest importation of tea into Europe is said to have been by a Dutch merchant in 1610 ; but the time of its first introduction into England has not been correctly ascertained. So scarce an article was it for many years after the above period, that, in 1666, twenty-two pounds and three quarters of tea, estimated at fifty shillings a pound were pre-

sented as a valuable gift to king Charles II. The first importation of tea by the East India Company was in 1669, and this consisted only of two canisters, weighing 143 lb. 8 oz. So rapidly, however, has the consumption of this article since increased, that, notwithstanding the immense distance from which it is brought, it now amounts to more than twenty millions of pounds weight per annum. Such is at present the extent of the tea trade, that it affords constant employment for at least 50,000 tons of shipping, and 6,000 seamen; and its importance to us is the greater, since it has been the means of opening an increased market for the sale of woollen goods, one of the most essential articles of our manufacture, to the amount of more than one million of pounds sterling per annum.

If good tea be taken in moderate quantity it is considered by medical men to be beneficial, by exhilarating the spirits, and invigorating the system; but, when taken too copiously, it is apt to occasion weakness, tremor, and other bad symptoms.



CACAO TREE.

THIS tree, bearing the cacao or chocolate nut, resembles our heart cherry-tree ; except that, when full grown, it is much higher and broader. It has abundance of leaves,

similar to those of the orange-tree. It flourishes throughout the year, but especially near the summer and winter solstices. As the leaves perpetually replenish themselves, this tree is never disrobed of its verdure. The blossoms are small, regular, and like those of a rose, but scentless. Every blossom is joined to the tree by a slender stalk; and leaves, in falling, long green filaments; which produce a pointed, yellow fruit, of the size of our melons: these adhere to the thick branches, without any intermediate stem. Each fruit contains from fifteen to twenty-five small nuts, or almonds, covered with a thin yellow skin; which, being separated, a tender substance appears, divided into several unequal particles, sharp to the palate, yet nourishing to the constitution. These are the cacao or chocolate nuts.

These trees grow in South America, Jamaica, &c. where great care is taken to secure them from the intense heat of the sun. Being ranged in rows, with plantains, both are mutually sheltered from the parching sun, and boisterous winds. It is a tree of

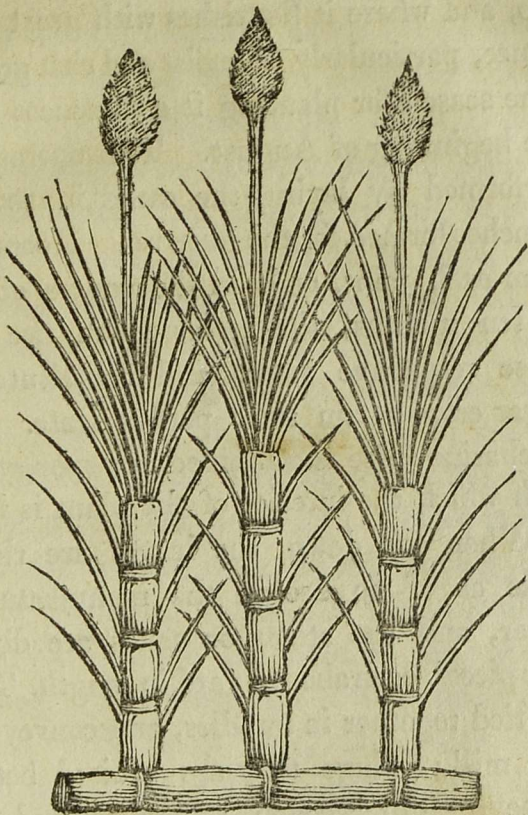
singular beauty, profit, and utility. Its large, broad, and green leaves, hang like so many shields, as if to defend the tender and valuable fruit from injury. As the fruit adheres to the large branches, the tree appears quite studded with it from the root upwards.

The flowers are saffron-coloured, and very beautiful.

Chocolate was first introduced into Europe by the Spaniards ; but that now used in this country must be manufactured in England, since, by an act of the legislature, the importation of chocolate paste is prohibited, under heavy penalties. The mode in which this substance is immediately prepared for use is well known.

By the natives of South America the chocolate nuts are used for food. A white oily matter, about the consistence of suet, is also obtained by bruising them and boiling the pulp. The oil is by this means liquefied, and rises to the surface, where it is left to cool and congeal, that it may the more easily be separated. This, which is called butter of cacao, is without smell, and, when

fresh, has a very mild taste. Its principal use is as an ingredient in pomatums. From the nuts, when slightly roasted, an oil is sometimes obtained by pressure, which is occasionally used in medicine. Some are of opinion that the cakes of chocolate used in England, are made of about one half genuine cacao, and the remainder of flour, or castile soap.



THE SUGAR-CANE.

THE sugar-cane is cultivated to a great extent in the islands of the West Indies, where it was first introduced from China, or some other parts of the East, about three centuries

ago, and where it flourishes with great luxuriance, particularly in moist and rich ground. The season for planting it commences about the beginning of August. This operation is performed by laying the canes in rows, in trenches formed for the purpose. Roots issue from each joint, and, in the course of nine or ten months, the stems which rise from these respective roots, and constitute the sugar crop, attain their perfect state. The saccharine juice is contained in a spongy pith with which the interior of the plant is filled.

When cut down, the leaves are thrown aside as of no use in the manufacture of sugar, and the stems or canes are divided into pieces, each about a yard in length. These are tied together in bundles, and conveyed to the mill; where they are bruised betwixt three upright wooden rollers covered with iron. The juice which flows from them is conducted, by canals, into a large vessel formed for receiving it; and after the several processes of clarifying, boiling, and the separation of the scum, or molasses, becomes what is termed *muscovado*, or *raw sugar*.

The farther refining of sugar, or forming

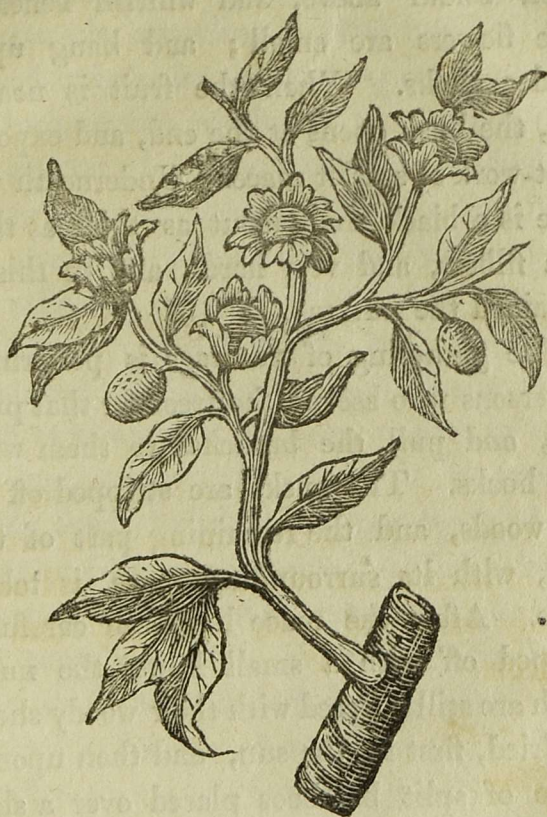
it into the white conical loaves which are so much used in this country, is the business of the European sugar-bakers. This is done by dissolving it in water, boiling the solution in lime water, and then clarifying it with bullock's blood, or the white of eggs, and straining it through woollen bags. After due evaporation it is suffered to cool to a certain degree, and, as in the above-mentioned process, is then poured into conical moulds of unglazed earthen ware, the summits of which are perforated. Here it concretes into a hard white mass, leaving that part of the syrup which will not crystallize to run off through the hole in the apex of the cone. The broad end of the cone is then covered with moist clay, the water from which penetrates into the sugar, and displaces and carries off the impurities which otherwise would be retained in, and discolour it. It is then carefully dried, and receives the name of *loaf*, or *lump-sugar*.

Solutions of brown or white sugar, boiled down till they begin to grow thick, and then removed into a very hot room, crystallize upon

sticks or strings, placed, for that purpose, across the vessels, into what is called *brown* or *white sugar candy*.

Rum is a spirituous liquor distilled from molasses, scummings of the hot cane juice from the boiling house, or raw cane liquor from canes expressed for that purpose, lees, or, as it is called in Jamaica, *dunder*, and water. The latter answers the purpose of yeast for the fermentation.

When sugar was first introduced into this country, it was employed only medicinally; but it has now become an essential article both of luxury and of use. It is still occasionally employed both surgically and in medicine.



THE NUTMEG AND MACE TREE.

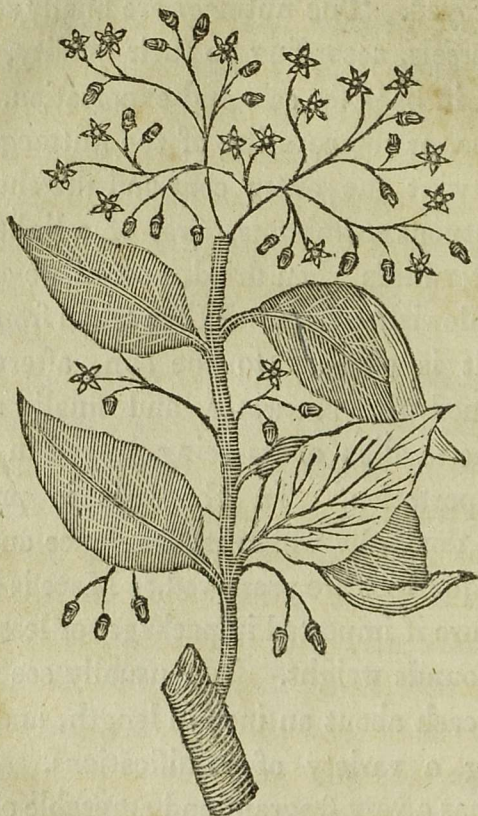
NUTMEGS are the fruit of a tree, not unlike our common cherry tree, which grows in several islands of the East Indies. Its leaves are nearly oval, but pointed; of bright

green colour above, and whitish beneath. The flowers are small ; and hang upon slender stalks. When the fruit is nearly ripe, the husk opens at the end, and exposes a net-work of scarlet mace. Underneath the mace is a black shell about as thick as that of a filbert, and very hard ; and in this is contained the nutmeg.

The gathering of nutmegs is performed by persons who ascend the trees for that purpose, and pull the branches to them with long hooks. The husks are stripped off in the woods, and the remaining part of the fruit, with its surrounding mace, is taken home. After the mace has been carefully stripped off with a small knife, the nuts, which are still covered with their woody shell, are dried, first in the sun, and then upon a frame of split bamboos placed over a slow fire, until, when shaken, the kernels are heard to rattle within the shells. These now easily fly to pieces, when beaten with small sticks ; and the nutmegs, being taken out, are soaked in sea-water and lime, and are then thrown in great numbers together to heat, by which their vegetating principle

is destroyed. The nutmegs are finally sorted into parcels, according to their quality, and packed in bags for sale and exportation.

Mace, or the covering of the nutmeg that lies betwixt the outer coat and the shell, is an unctuous membrane, first of a light red, and afterwards when dried, and as we see it, of a yellowish colour. When taken from the shell it is exposed to the sun, afterwards moistened with sea-water, and finally so far dried as to allow of its being packed in bales for exportation. In these it is pressed closely down, by which its fragrance and peculiar qualities are preserved. Mace is liable to seizure if imported in packages of less than 300 pounds weight. We usually see it in flakes each about an inch in length, and presenting a variety of ramifications. This spice has a very fragrant and agreeable odour, and, to most persons, a pleasant, though somewhat acrid taste. It possesses nearly all the virtues of the nutmeg, but with less astringency; and, like that, is employed in numerous ways, both in culinary preparations and medicine.



THE CINNAMON TREE.

THE cinnamon tree grows to the height of twenty or thirty feet; and is found chiefly in the island of Ceylon. The cinnamon is

the inner bark of the branches of this tree. Its leaves are oval, each from four to six inches long, and marked with three principal nerves. The flowers stand on slender footstalks, and are of a pale yellow colour; and the fruit is somewhat shaped like an acorn.

When the inhabitants of the island gather their crop of cinnamon, they free it from the outward bark, which is brown and rough, then lay it to dry and roll it up; by this means it acquires the figure we see it of, and becomes of a reddish colour.

Previous to exportation, cinnamon is examined and arranged according to its quality, by persons who, for this purpose, are obliged to taste and chew it. This is a very troublesome and disagreeable office; few persons being able to hold out more than two or three days successively, as the cinnamon deprives the tongue and lips of all the mucus with which they are covered. After this examination the bundles are made up to the length of about four feet, and weight of eighty-eight pounds each.

From the roots of the trees numerous off-

sets shoot up. These, when they have attained the height of about ten feet, are cut down and barked, being then about the thickness of a common walking-stick. The cinnamon which they yield is much finer than any other.

A French ship, bound in 1782, from the island of Bourbon, to Cape François in St. Domingo, and having on board various oriental productions, the cinnamon tree among the rest, was taken by admiral Rodney, who presented the trees to the assembly of Jamaica; and from this parent stock different parts of that island were afterwards supplied. In Ceylon, the cinnamon trees are said to be so common as to be used for fuel and other domestic purposes.

The smell of cinnamon, particularly of the thinnest pieces, is delightfully fragrant; and its taste pungent and aromatic, with considerable sweetness and astringency. If infused in boiling water in a covered vessel, it gives out much of its grateful flavour, and forms an agreeable liquid. An oil is extracted from cinnamon, which is heavier than

water. This is prepared in Ceylon, and almost wholly from the small and broken pieces. It is, however, in such small quantity that the oil of Cassia is generally substituted for it. Indeed the Cassia bark is often substituted for cinnamon, to which it has considerable resemblance; though Cassia differs essentially from it in being weaker, darker coloured, and, when chewed in the mouth, more glutinous, dry, and harsh.

The uses of the cinnamon-tree are not confined to the bark. The *leaves*, the *fruit*, and the *root*, all yield oil of considerable value. That from the fruit is highly fragrant, and, previously to the recent destruction of the native monarchy in Ceylon, was made into candles for the sole use of the king.



THE CLOVE-TREE.

THE clove is the unexpanded flower-bud of an East-Indian tree, made hard and black by the heat of the sun. These trees were

very common in the Molucca islands, until the Dutch, thinking it advisable to make themselves entire masters of the commodity, plucked up all the trees, and transported them to an island of their own, called Ternate, by which means other nations were long forced to purchase this valuable merchandise solely from them. But it appears that, in 1770, and 1772, both clove and nutmeg trees were transplanted from the Moluccas into the islands of France and Bourbon, and subsequently into some of the colonies of South America, where they have since been cultivated with great success.

When the clove begins to appear, it is of a whitish green, afterwards reddish, and as it ripens, grows brown. The leaves are in pairs, oblong, large, spear-shaped, and of a bright green colour. The flowers grow in clusters, which terminate the branches, and have the calyx divided into four small and pointed segments. The petals are small, rounded, and of a bluish colour; and the seed is an oval berry.

It is observable, that where clove-trees

grow, no other tree or plant will thrive, on account of their heat, which consumes or wastes all the radical moisture of the earth around them.

When the flowers have attained the length of about half an inch, they are in a fit state to be gathered. This operation is performed betwixt the months of October and February, partly by the hand, partly by hooks, and partly by beating the trees with bamboos. The cloves are either received on cloths spread beneath the trees, or are suffered to fall on the ground, the herbage having previously been cut and swept for that purpose. They are subsequently dried by exposure for a while to the smoke of wood fires, and afterwards to the rays of the sun. When first gathered they are of a reddish colour, but by drying, they assume a deep brown cast.

This spice yields a very fragrant odour, and a bitterish, pungent, and warm taste. It is sometimes employed as a hot and stimulating medicine, but is more frequently used in culinary preparations. When fresh gathered, cloves will yield on pressure a

fragrant, thick, and reddish oil; and by distillation a limpid essential oil. The latter is imported into Europe, but is frequently adulterated, and sometimes even to the amount of nearly half its weight. Oil of cloves is used by many persons, though very improperly, for curing the tooth-ache, since from its pungent quality it is apt to corrode the gums, and injure the adjacent teeth. When the tooth is carious, and will admit of it, a bruised clove is much to be preferred.



THE PEPPER-TREE.

PEPPER is the fruit of a climbing plant, whose leaves resemble those of our currants; and whose fruit, growing in long slender clusters of from twenty to fifty grains, is also

somewhat similar, but with this difference, that every grain adheres immediately to the common stalk, which occasions the cluster to be more compact. The berries are green when young, but turn to a bright red colour when ripe. As soon as they begin to redden, they are considered in a fit state to be gathered. When gathered they are spread upon mats in the sun, where they are suffered to remain till they become dry, black, and shrivelled, as we see them. In this state they have the denomination of *black pepper*.

As the pepper-plant cannot support itself, the inhabitants of the countries where it grows, plant it at the root of various trees, as the areca, which is a sort of palm-tree, very straight and tall; the cocoa, or other trees; and sometimes near a thorny kind of shrub, among the branches of which it creeps like ivy. It is cultivated in the East Indies, and in most of the islands of the Indian Sea.

White pepper is nothing more than the best and soundest of the berries, gathered

when they are fully ripe, and stripped of their external coat or skin. To effect this, they are steeped about a week in salt water, by the end of which time the skins burst. They are then dried in the sun, rubbed between the hands, and winnowed. Thus cleared from their skins, they are rendered smaller and more smooth than black pepper.

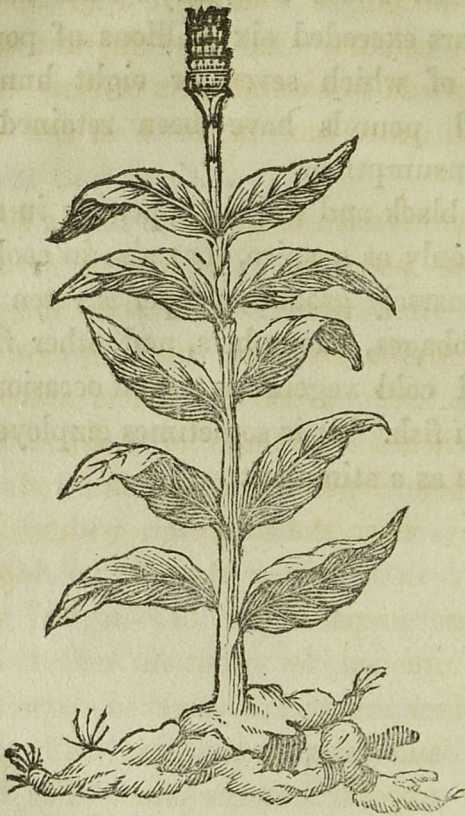
As the acidity of pepper lies principally in the skin, this kind becomes, of course, much less pungent than the other; but it has one recommendation, that it can be made only of the best and soundest grains, taken at their most perfect state of maturity.

Long pepper is a fruit or berry of a plant altogether like that which bears the black pepper, except that it grows commonly in the form of a shrub, and supports itself upon its own stem; having smaller, and much greener leaves, whose stalks, or tails, are not so long.

Pepper is an article of considerable traffic betwixt this country and the East Indies. That from Malabar is considered better than any other. The quantity of pepper vended

at the East India Company's sales has in some years exceeded six millions of pounds weight, of which seven or eight hundred thousand pounds have been retained for home consumption.

Both black and white pepper are in daily use not only as a spice, but also in cookery. When coarsely ground, pepper is eaten with peas, cabbages, cucumbers, and other flatulent and cold vegetables; and occasionally also with fish. It is sometimes employed in medicine as a stimulant



THE GINGER PLANT.

THIS plant, which is also called the club-reed, and whose root is the ginger, has its leaves long, large, and of a deep green; the

flowers forming a kind of ear or spike of beautiful colours, and very fragrant smell. It grows wild in several parts of Asia, and is much cultivated both in the East and West Indies.

The cultivation of ginger is nearly similar to that of potatoes. The land is first well cleansed from weeds: it is then dug into trenches similar to those which our gardeners make for celery; and the plants are set in these trenches in March or April. They flower about September; and, in January or February, when the stalks are withered, the roots are in a proper state to be dug up. These are prepared for use in two ways. When intended for what is called *white ginger*, they are picked, scraped, separately washed, and afterwards dried with great care, by exposure to the sun. For *black ginger* they are picked, cleansed, immersed in boiling water, and dried. This process is much less laborious and expensive than the other, consequently the price of the article is not so great. By boiling, the ginger loses a

portion of its essential oil ; and its black colour is owing to this.

The uses of ginger, both in medicine, and as a spice, are numerous and well known. In the West Indies it is frequently eaten fresh in sallads, and with other food ; and the roots, when dug up young, namely at the end of three or four months after they have been planted, are preserved in syrup, and exported as a sweet-meat to nearly all parts of the world. The ginger which is brought into this country from the East Indies is much stronger than any we have from Jamaica.



CURRANT VINES.

THE raisins of Corinth, or currants, are little raisins or grapes of different colours, being black, red, or white, and commonly of
TREES, &c. F

the size of the red gooseberry : the vine that bears them is low, furnished with thick leaves very much indented, and grows plentifully in a vast plain situated behind the fortress of Zante in Greece. This plain is surrounded with mountains and hills, and divided into two vineyards, which, together with the fortress and the mount Discoppo, form a prospect perfectly beautiful.

When these little raisins are ripe, which is in August, the people of Zante gather and spread them upon the ground to dry ; and when dried carry them into the town, where they are thrown through a hole into large magazines, and stowed so closely, that iron instruments are necessary to dig them out. They are then put into casks or bales of different sizes, by men who tread them with their feet, previously rubbed well with oil. These grapes have no stones, and when recently gathered, are an extremely delicious fruit.

Sometimes they are brought from Natolia, Lepanto, and Corinth ; and from the latter place they take their name, which is a corruption of the word "Corinths."



THE POMEGRANATE TREE.

THIS tree grows both in a wild and cultivated state. The branches of the first are small, angular, and armed with thorns. The

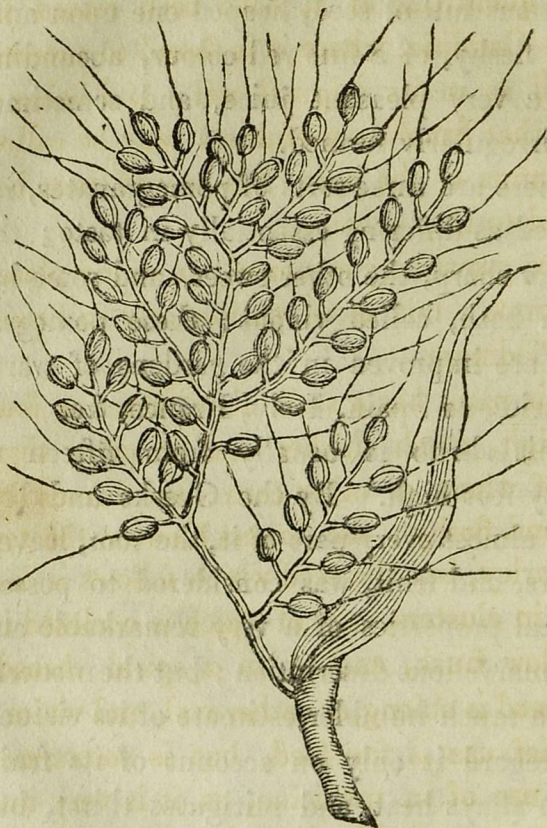
bark is red, the leaves small, like those of the myrtle; and the flower large, of a beautiful garnet colour, and composed of several leaves resembling a little basket of flowers. The cup is oblong, purplish, and in form like a bell. From this blossom is produced a fruit, which grows into a large round apple, with a thick, smooth, brittle rind, adorned with a purple cup. This apple called the pomegranate, is too well known to require a particular description. The wild pomegranate is only produced in hot countries. Of this tree the English reckon five sorts, which are here cultivated more for ornament than utility. They consist of the common, sweet, wild, double-flowered, and American dwarf pomegranate. The first of these is the most common in this country, and with care, has been known to afford fruit that has ripened tolerably well in warm seasons. The double-flowered, continuing its beautiful bloom for near three months, is esteemed by our nobility and gentry as the most valuable flowering tree yet discovered.

The fruit is divided internally into several

partitions full of seed, heaped one upon another, fleshy, of a fine red colour, abounding with a very pleasant juice, and sometimes very irregularly formed.

There are three sorts of pomegranates, remarked as differing essentially in taste; the one are sharp, the other sweet, and some between both, called vinous: these pomegranates are improved in the gardens of warm countries, as Spain, Italy, France, &c.

This shrub is usually from fifteen to twenty feet high. By the Greeks and Romans almost every part of it, the root, leaves, flowers, and fruit, was considered to possess medical properties of a very remarkable and even marvellous description; but the moderns form a much humbler estimate of its virtues, and regard it only on account of its fruit, which allays heat, and mitigates thirst, but has a slightly astringent flavour.



THE RICE PLANT.

THIS plant is much cultivated in the East, and produces the grain so much consumed, called rice. Although a native of the East,

great quantities of it have been reared in South Carolina, where it is found to succeed as well as in its original soil ; and being a grain that from its usefulness may be called the manna of the poor, has proved most beneficial to that province.

Rice grows very commonly in many places of Europe ; but more particularly in Spain and Piedmont.

This plant has a stalk about three or four feet high, much thicker and stronger than that of wheat or other corn : the leaves are long and fleshy ; the flowers blow on the top like barley, but the seed which follows is disposed in clusters, each of which is enclosed in a yellow husk, ending in a spiral thread. This seed is oblong, or rather oval, and white ; its chief use is for food, but is sometimes made use of in medicine, as it is very nutritive, increases blood, and is restorative in consumptions.

A wet and morassy soil and hot climate appear in general necessary to the cultivation of rice. The parts of the farms or plantations in which it is grown are usually so

situated as to admit of being flooded ; and in many places reservoirs of water are formed for this purpose. These reservoirs have sluices by which the rice fields may be inundated at pleasure. In reaping the crop, the labourers generally work knee deep in water and mud ; and as the rice is cut, the sheaves are put on drays which follow the reapers, and are thus carried out to be spread on dry ground. The rice thus produced has the name of *marsh rice*, and is that which is chiefly imported into Europe.

No kind of grain is so generally adopted for food in hot climates as rice. The inhabitants of many parts of the East subsist almost wholly upon it ; and large quantities are annually imported into Europe, where it is highly esteemed for puddings and numerous other culinary preparations. In a scarcity of other grain, rice may be used with considerable advantage as an ingredient in bread. Indeed, on account of its excellence and its cheapness, it claims attention as a general article of sustenance for the poorer classes of society ; since it is well known that

a quarter of a pound of rice, slowly boiled, will yield more than a pound of solid and nutritive food.

There is only one species of rice; but the varieties of it, according to the soil, climate, and culture, are very numerous. It is too tender to be raised in England without the aid of artificial heat; and consequently can only be cultivated with us in hot beds or hot houses.

THE CORK TREE.

OF this tree there are several species. The chief are the broad-leaved, the evergreen, and the narrow-leaved with smooth edges. The first only is requisite to be described, which is of a moderate height, resembling the oak, and having a thick, light, spongy bark, of an ash colour, which is first taken from the tree, and afterwards separated from an inner bark. The leaves, cups, or acorns, also resemble those of the oak. It grows in Italy and Spain, especially towards the Py-

renees, in Gascony, &c. The inhabitants of these countries strip the bark from the top to the bottom of the cork trees, and pile the pieces to a reasonable height in a pit or ditch filled with water. Having loaded these heaps with weights, they leave them until they are thoroughly soaked and straitened; then remove them to another pit, and from thence to a third and a fourth. They are next taken out of the water, dried, and packed in bales for exportation. Sometimes perpendicular and transverse incisions are made in the bark, and the cork left upon the trees, until, by the growth of the new bark beneath, it becomes sufficiently loose to be removed by the hand.

The uses of cork were well known to the ancients, and were nearly the same to which it is applied by us. Its elasticity renders it peculiarly serviceable for the stopping of vessels of different kinds; and thus preventing either the liquids therein contained from running out, or the external air from passing in. The use of cork for stopping glass bottles is generally considered to have been in-

troduced about the fifteenth century. The practice of employing this substance for jackets to assist in swimming, is very ancient; and it has lately been applied in various ways towards the preservation of life, when endangered by shipwreck. The floats of nets used for fishing are frequently made of cork: pieces, fastened together, make buoys, which, by floating on the surface of the water, afford direction for vessels in harbours, rivers, and other places. In some parts of Spain it is customary to line the walls of houses with cork, which not only renders them warm, but prevents the admission of moisture. The ancient Egyptians frequently made coffins of it. On account of its lightness, cork is used for false legs; and from its being impervious by water is sometimes placed betwixt the soles of shoes to keep out moisture. When burnt, it constitutes that light black substance known by the name of *Spanish black*.



THE TOBACCO PLANT.

OF this production there are five species ; the first is the Oronoko, of which there are two kinds ; the one having very broad,

rough, roundish leaves ; while the leaves of the other are narrow, smooth, and pointed : but neither are valued by the planter, in consequence of their not being much consumed in England. The second species is called the sweet-scented tobacco, from its affording, when smoked, a most agreeable scent : this sort is much cultivated in Cuba, Brazil, Virginia, and several other parts of America ; from whence it is brought to most parts of Europe, but especially to England, where its general culture is prohibited, lest the revenue should be diminished. The third is the greater narrow-leaved perennial tobacco, formerly imported from the French settlements in the West-Indies into the Royal Gardens at Paris, where it was cultivated in small quantities for the making of snuff. The fourth and fifth species are preserved in botanic gardens, less for use than for the sake of variety.

Tobacco is raised from seeds sown in a rich ground, where the rising plants are covered, to defend them from the sun ; in the rainy season they are transplanted into

large pieces of ground, cleared and prepared for the purpose. The distance of the rows in these plantations is from two to three feet. The tobacco being thus transplanted, only requires to be weeded, until the flower-stems appear, when the planter cuts off the tops in order to afford more nourishment to the leaves: the leaves hanging on the ground are likewise pulled so as to let about ten or twelve only remain upon each stalk. The leaves, when ripened, are cut and spread upon the ground: they are next strung upon cords in little knots, at such distances as not to touch each other: and then hung to dry in the air in a situation guarded from wet, during fifteen or twenty days. When sufficiently prepared, they are closely stowed in casks for exportation.

Tobacco is so called, because it was originally brought from Tobago, or Tabaco, an island in the bay of Panama, near the coast of America.

To the American Indians the use of tobacco has been known for many centuries; and the practice of smoking it is common to

almost all the tribes. Tobacco forms a part of every entertainment; and, in the intervals of hunting, sleeping, and eating, it occupies no small portion of their time. In many of their religious ceremonies, tobacco is used; and instances have occurred in which they have taken it in such quantity that death has ensued.

The custom of smoking is understood to have been first introduced into England by Sir Walter Raleigh, during the reign of queen Elizabeth, and a ludicrous story has often been told respecting it: that sir Walter having directed a servant to bring him a jug of water, the man, at his return into the room, found him smoking, and, alarmed at seeing his master apparently on fire, threw the whole contents of the jug into his face to quench it.

Tobacco is also used under another form, which is *snuff*. The basis of snuff is tobacco powdered; but many other matters are added to give it a peculiar smell, or to impart pungency to it. When first applied to the nose, snuff excites sneezing; but by repeti-

tion, this entirely ceases. The practice of taking snuff, when carried to great extent, has been found injurious to the smell and the voice; it has been attended with loss of memory, and by symptoms of a weakened or debilitated state of the nervous system. But there is a mode of using tobacco extremely disagreeable to persons unaccustomed to it, which is *chewing*. By the labouring classes, and particularly by mariners, this practice is chiefly followed, from a notion, though apparently a very erroneous one, that it will prevent the return of hunger, and in some degree supply a lack of food.

Though all these are disgusting as practices, there is no doubt but medicinally they may be attended with good effects. By smoking and chewing tooth-ache has often been relieved; and some persons consider the former a means of guarding against contagion. The occasional and moderate use of snuff is in several cases beneficial, particularly in head aches, and in diseases of the eyes and ears. Infusions of tobacco are sometimes administered in medicine, but this drug is

principally given in the form of a vinous or watery infusion. Tobacco is a powerful medicine, and requires to be used with great caution. The smoke of this herb when blown against noxious insects destroys them, and is the means which gardeners adopt for ridding hot houses and green houses of such as infest their plants.

The tobacco plant is sufficiently hardy to sustain the rigour of an European climate, and is cultivated in several parts of Spain and Portugal.



THE COTTON PLANT.

THE fruit of this plant is the cotton, which is so much used as a material of our manufactures at Manchester. It has a stalk about eight feet high, covered with a reddish hairy

bark, and is divided into several short branches. The leaves are rather less than those of the sycamore; but shaped like those of the vine, and are suspended by small stalks adorned with a nap, or hairy substance. The flowers are fine, large, and numerous; of a yellow colour, mixed with red or purple, and shaped like a bell; they are succeeded by a fruit of the size of a filbert, which, when ripe, opens into three or four partitions, where the cotton is found, as white as snow. Heat swells each flake to the size of an apple. There is another sort of cotton tree, differing from the former in size, as it grows only to the height of four or five feet; the flowers and fruit are like the former. Both these grow in Egypt, Syria, Cyprus, Candia, America, and the East and West Indies, but though this plant flourishes best in tropical climates, still it is capable of cultivation in such as are more temperate; and is now an object of attention in several of the southern parts of Europe.

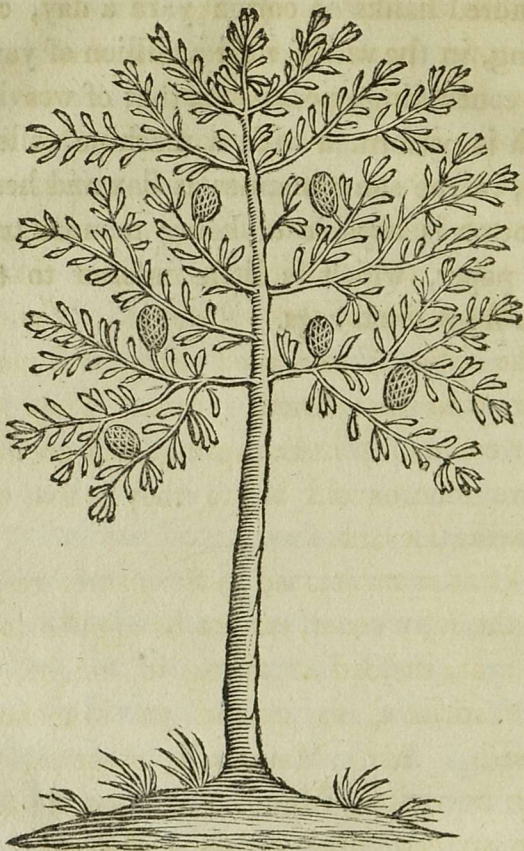
We receive great quantities of cotton from

America, and the East and West Indies. Many valuable articles, such as calicoes, muslins, fustians, corderoys, and innumerable others, are made of cotton. Nankeens, which are manufactured in India, are made of a kind of cotton which is naturally of that colour.

After the cotton is imported, the first essential process which it goes through is that of carding. Some years ago this was performed by the hand, upon the knee, with a single pair of cards; but it is now performed with cylindrical cards, worked by machinery. The next and most important improvements in the manufacture of cotton were made at Cromford, in the county of Derby, by the present sir Richard Arkwright, who, in 1768, first introduced the method of spinning cotton by machinery. By this contrivance, cotton was carded, roved, and spun, with the utmost expedition, correctness, and equality. Other machines have, at different subsequent periods, been invented by various mechanics and manufacturers, particularly that called a jenny, by which one person is able to spin

a hundred hanks of cotton yarn a day, containing, in the whole, near a million of yards. The concluding operation is that of weaving, which is performed with a machine called a loom, in the same manner as flax and hemp.

Cotton is capable of being manufactured into paper, which is little inferior to that made from linen rags.



CEDAR OF LIBANUS.

THIS tree is very large, thick, and straight: the leaves are slender, and much narrower than those of the pine tree: they are dis-

posed in clusters along the branches, upon the upper parts of which, the fruit grows erect, like our pine apples. It is said that, from the trunk, in the warm months, issues a sort of white resin, which is very clear, of a grateful odour, and is called cedar gum : the large trees affording no less than six ounces per day of this substance. The cones of the cedar, if preserved entire, will contain their seed for several years. They ripen most commonly in the spring, and are nearly twelve months old before they arrive to us from the Levant.

What is mentioned in Scripture, respecting the lofty cedar, cannot be applied to this tree ; as, instead of rising in height, it is more inclined to extend its branches in breadth. Mr. Maundrell observes, that when he visited Mount Libanus, he found only sixteen large cedars remaining ; but that there were several young trees, of a smaller size. One of the largest he found to be twelve yards six inches in circumference, and thirty-seven yards in the spread of the boughs. At about five or six yards from the

ground, it was divided into five limbs, each being as large as a great tree.

Cedar is proof against the attacks of every species of insect. The wood is said, likewise, to yield an oil which preserves books and writings.

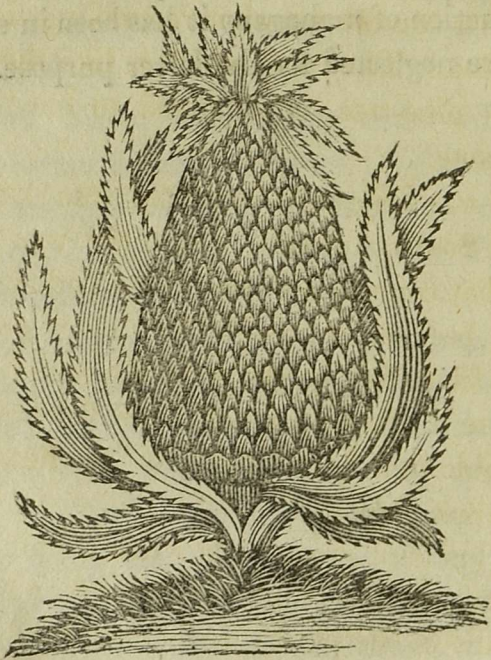
Lord Bacon asserts, that cedar will continue sound a thousand years. Of this wood it is needless to observe, that the timber work of that glorious structure, the Temple of Jerusalem, was formed.

The lesser cedar is a tree of various sizes, commonly crooked, bearing long sharp-pointed leaves, always green, especially in winter; after which come berries, green at first, but red when they are ripe. The trunk being cut, there issues a very clear transparent gum, which is the true sandarac.

By the assistance of the retort, a black oil is made from this wood, which being rectified, is called oil of cedar. The genuine oil of cedar is useful for curing sores in horses, cattle, sheep, and other beasts.

The red, or common cedar is a species of juniper, which grows in North America, and

the West Indies. The wood of this tree is in much request for the outsides of black-lead pencils; and some years ago, was in great esteem for cabinet work; but since the introduction of mahogany it has been in some measure neglected for the latter purpose.



ANANA PLANT.

FROM this plant is produced a species of pine-apple, reckoned, from its richness of flavour, the king of fruits. It has the deli-

cious tastes of the peach, quince, and muscadine grape, united. The top of it is adorned with a little crown, and a bunch of red leaves, resembling fire. The plant is herbaceous, and has leaves somewhat resembling those of the aloe. The fruit, which is like the cones of the pine-tree, is supposed to have given its name.

It was originally imported into England from South America, about the year 1690. In that country and the West Indies it has long been cultivated in the open ground; and from free access to a congenial atmosphere it attains a much finer flavor than is possible in a forced state, in the hot-houses of Great Britain.

This fruit grows upon a round stalk, about a foot and half high, which is found in the middle of the plant, as the artichoke in the midst of its leaves. From the juice of the pine a wine is made, which is almost equal to Malmsey.

There are several varieties of pine, of which the following are among the principal.

The *white pine*, which has a whitish and

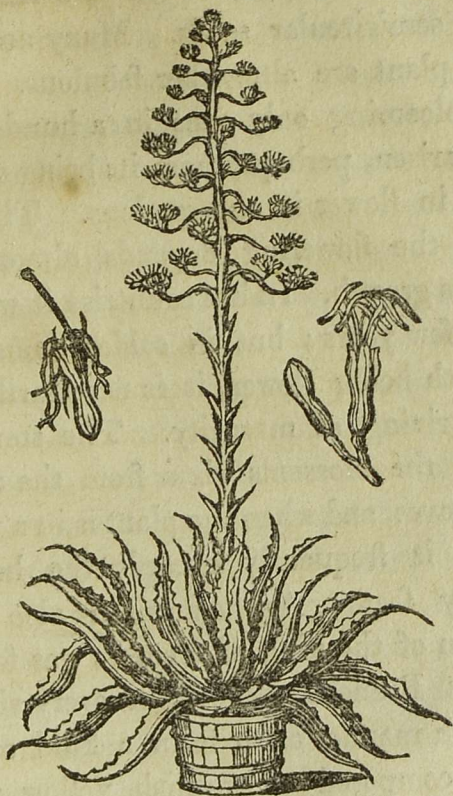
fibrous flesh, and the rind as yellow as that of an orange. Its smell is highly fragrant, and it excels most other kinds in size and beauty, though its flavour is inferior to that of many. Its juice edges the teeth, and sometimes makes the lips smart.

The *yellow pine* edges the teeth less ; but both this and the last variety are exceeded by

The *sugar-loaf pine*, which is distinguished by the purple stripes on the outside of the leaves, and by its straw-coloured fruit.

The *Montserrat pine* is now rare in Europe, though in America it is esteemed in preference to most others. It is principally known by the protuberances of the fruit being longer and flatter than those of the common sort.

An excellent sweetmeat or confection is made from pines ; and the fruit is sometimes also preserved whole, and when taken out of the syrup, is iced over with sugar. Pines, in the West Indies, are frequently put into rum to give it a flavour.



GREAT AMERICAN ALOE.

THE aloe has thick leaves, armed on the edges with spines. The flower consists of one leaf, which has six parts at the top, like the hyacinth ; the fruit is oblong, and divided

into three cells; in which are inclosed flat and semicircular seeds. Many accounts of this plant are altogether fabulous. That of its blooming only once in a hundred years has arisen, perhaps, from its being so seldom seen in flower in our gardens. The fact is, that the flowering depends almost wholly on its growth. In hot countries it will flower in a few years; but in colder climates, the growth being slower, it is necessarily longer in arriving at maturity. The stem which bears the blossoms rises from the centre of the leaves, and when the plant is in a vigorous state, it frequently exceeds the height of twenty feet. An American aloe in the garden of the king of Prussia was forty feet high. Branches issue from every side, and in such manner as to form a kind of pyramid, composed of greenish yellow flowers, which stand erect, and are seen in thick clusters at every joint. When in full flower its appearance is extremely splendid; and if the season be favourable, and the plant be sheltered from the cold in autumn, a succession of blossoms will sometimes be produced for near three months.

Some of the larger kinds of aloes are of great importance to the inhabitants of countries in which they grow. Beset as the leaves are with strong spines, they form an impenetrable fence. The negroes of the western coast of Africa make ropes and weave nets of the fibrous part of these leaves. The Hottentots hollow out the stems of one of the kinds into quivers for their arrows. In Jamaica there is a species of aloe which supplies the inhabitants with bow-strings, fishing-lines, and materials from which they are able to weave stockings and hammocks. An aloe which grows in the kingdom of Mexico is applied by the inhabitants to almost every purpose of life. It serves as hedges for inclosures: its trunk supplies the place of timber for the roofs of houses, and its leaves the place of tiles. From this plant they make their thread, needles, and various articles of clothing and cordage: whilst from its juices they manufacture wine, sugar, and vinegar. Some parts of it they eat, and others they apply in medicine.

In the warmer parts of Europe, American

aloes are cultivated as objects of considerable utility. They are frequently grown in rows, as fences for inclosures, particularly in Spain, Portugal, and Italy. In Algarvia the leaves are employed for scouring pewter, and other kitchen utensils, and floors; and, cut into slices, are used for the feeding of cattle.

THE SENSITIVE PLANT.

THIS plant has caused much investigation among naturalists, in order to account for the contraction of its leaves when any of them are touched. They close themselves by pairs, joining their upper superficies together. Aquafortis dropped on a sprig between the leaves causes them to close by pairs successively, and to continue in this state some time. A pair being suddenly cut off with scissars, the next pair above and below will immediately close, and after a little time all on the same sprig follow the example.

In the passage of the Isthmus, from Nombre de Dios to Panama, in America,

there is said to be a whole wood of sensitive plants, which, being touched, close their leaves with a rattling noise, and twist themselves into a winding figure.

There are some other species of this plant, which grow in the warmer parts of America ; but those here mentioned, are what are chiefly observed in English gardens.

The first kind is that commonly known by the name of the sensitive plant, to distinguish it from the others, which are generally called humble plants ; because, upon being touched, the pedicle of their leaves falls downward, whereas the leaves of the other are only contracted upon the touch.

These plants are all propagated from seeds, which must be sown upon a hot-bed early in the spring ; and when they come up, should be transplanted into small pots filled with light rich earth, and plunged into a fresh hot-bed, observing to water and shade them until they have taken root : after which, they should have air in proportion to the warmth of the season, and be covered every night with mats, which will greatly facilitate their growth.

The first mentioned of these plants, if duly watered, and preserved in a kindly warmth, will grow, in one season, to the height of eight or nine feet, and produce great quantities of flowers; but unless the autumn proves very favourable, its seeds will seldom ripen; and the plant, being much tenderer than the other sorts, is rarely preserved through the winter, though placed in the warmest stoves: so that the seeds are generally procured from abroad.



TAMARINDS.

TAMARINDS are sharp acrid fruit, which are brought from the East and West Indies, sometimes in bunches, but more commonly freed from their stalks : the tree which bears

them has very small leaves, succeeded by white flowers, almost like orange-flowers, from whence arise the pods, which are green at first, and grow brown as they ripen ; when the inhabitants of those countries gather them in clusters, which they dry, previously to their being sent hither.

This tree is from thirty to forty feet in height. The fruit consists of the pulp and seeds of the pods, which latter are roundish, but somewhat compressed, about four or five inches in length, and their external parts very brittle. Previously to exportation, the pulp with the seeds and fibres are freed from their shell ; and those which we receive from the West Indies are usually preserved in syrup. In Jamaica, the fruit is gathered about the month of July. When fully ripe, and after the pods are cleared away, the remainder is placed in layers, in small casks ; and boiling syrup, just before it begins to granulate, is poured upon them until the casks are filled, after which the heads are put in and fastened up for exportation.

The East Indian tamarinds are generally

packed without any admixture. They are more esteemed than the others; and, when in the pods, are easily distinguished from them by these being longer, and containing six or seven seeds: the pulp also is drier and of a darker colour.

It is said that we are indebted to the Arabians for a knowledge of the use of tamarinds. In hot climates, they are a most refreshing and delicious fruit; and, dissolved in water, are much used as a cooling and agreeable beverage, particularly by persons suffering under fever. They also give great relief in sore throats, and other complaints.

Tamarind trees are found likewise in America, and in several parts of Asia.



LIQUORICE.

THE liquorice plant has clammy leaves, green, shining, and nearly round; the flowers like those of the hyacinth, of a purple colour; from whence arise the pods resembling a round ball, wherein the seed is contained.

This plant bears several stalks, each four or five feet high. The roots are large and long, dividing themselves into several branches of a brown colour externally, and yellow within. These compose the article called liquorice. Liquorice grows wild in the south of Europe, and is cultivated near Pontefract in Yorkshire, Worksop in Nottinghamshire, and Godalming in Surrey, and by many gardeners in the vicinity of London.

Liquorice is chiefly used in medicine. It contains much saccharine matter, joined with some portion of mucilage; and is one of the few sweet substances which tend to allay thirst. Liquorice is an excellent medicine in coughs and hoarsenesses. When boiled in a little water, it gives out nearly all its sweetness; and this, when the moisture is evaporated, produces, by different processes, what are called Spanish liquorice, liquorice cakes, liquorice lozenges, and Pontefract cakes. The former of these is used to great extent in the brewing of porter. It is said that more than two hundred tons weight of it are annually manufactured in Spain, a

considerable portion of which is sold to the London brewers for this purpose. Liquorice powder, which is used in medicine, is often adulterated with flour, and probably also with less wholesome articles. The root itself may be employed as stopples for beer or wine bottles; which are considered by some persons more wholesome, as well as more durable, than those of cork.

The soil in which liquorice is cultivated should be deep, light, and sandy; and the roots, which strike deeply into the ground, should be planted in rows, at the distance of a foot and half or two feet from each other. Three years elapse after the roots are first planted, before the liquorice is in perfection.

THE ORANGE TREE.

THE orange tree has a thick, woody, branched root, which spreads very much, and is of a yellow colour on the inside. The trunk is hard, whitish within, has an agreeable smell, and is covered with a smooth

greenish white bark. The branches are numerous, flexible, of a beautiful green, and bearing a few thorns. The leaves are somewhat like those of the broad-leaved laurel, always green, thick, smooth, broad, and ending in a point; with a foliated pedicle in the shape of a heart. When held up to the light, there appear to be holes in them like St. John's wort. The flowers grow in bunches, and consist of five white petals placed in a ring, with many stamina, which have yellow apices, or heads: at the bottom and centre of the cup there is an orbicular placenta, which sustains a roundish pistil with a long tube, from whence proceeds the fruit, covered with a rind, which is so well known. Orange trees are cultivated in England, though more as curiosities than for the fruit they produce.

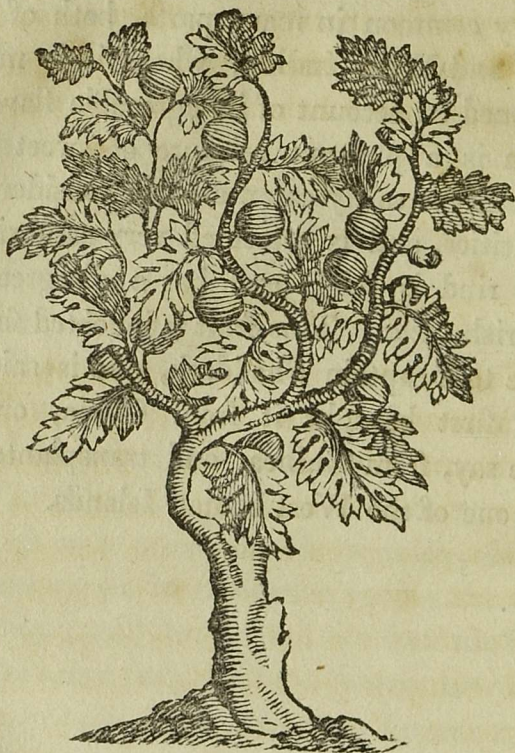
In cookery, and by confectioners, oranges are used in numerous ways; for marmalade, in biscuits, cheesecakes, jelly, puddings and tarts; and a very agreeable wine is made from oranges, with water, sugar, and some other ingredients.

Orange-peel is an excellent bitter, especially that of Seville oranges, which strengthens the stomach, helps digestion, and is an ingredient in most stomachic bitters. The essential oil distilled from the rind has also the same uses, as well as the peel when candied. The pulp of sweet oranges is cooling, quenches thirst, and excites the appetite; but the juice of sour oranges not only serves to make a cooling drink in hot weather, but is found to be serviceable in the scurvy.

The delightful perfume of an orange grove is such as to scent the air for miles, and the flowers appear in succession during the whole summer; and flowers and ripe fruit are found on the same tree. These flowers are valued as a perfume, and yield their flavour to rectified spirits; and, in distillation, both to spirit and water. A fragrant red-coloured oil is obtained from them in Portugal and Italy, which by some persons is considered of more delicate and agreeable fragrance than even otto of roses.

The SHADDOCK is a fruit of the orange kind, as large as the head of a child, which

is very common in many parts, both of the East and West Indies; where it is much esteemed on account of its agreeable flavour, which is a pleasant mixture of sweet and acid. It is safely eaten even in considerable quantities, and is esteemed very salubrious. The rind is thick, and has a disagreeable bitterish taste. This fruit is indebted for its name to a captain Shaddock, who is said to have first brought it from China, or, as some say, from Guinea, and transplanted it into one of the West Indian Islands.



ALEPPO GALLS

ARE excrescences formed on a species of oak, which grows plentifully near Aleppo and Tripoli, from whence they are called Aleppo and Tripoli galls. They are also brought from Smyrna. They are used for dyeing black, and for making ink; as well

as occasionally in physic. They serve the insects who form them, as a lodgement for their eggs, and a habitation for their future young.

THE CITRON TREE.

THE citron tree is of a moderate height, with a branched spreading root, yellowish without, and whitish within. The trunk is slender, the wood white and hard, and the bark of a pale green colour: the boughs are numerous, long, slender, and tough, the oldest of them of a light yellowish green, and armed with pale prickles; but those that are more recent, of a beautiful full green. The tops of the branches are tender, and of a brownish red cast, as well as the leaves, which are of the size of those of the walnut-tree, generally blunt, but now and then acuminate, and are three times as long as they are broad: the lower part is not so green as the upper, and the edges are a little serrated. The tree is always clothed with them, both

in winter and summer. The flowers grow on the tops of the branches, and are rosaceous, with fleshy petals, which are generally five, and stand almost upright: without, they have a reddish blush, but are white within, and placed in a ring. The calyx is small, and divided into five segments; and under the yellow apex there are a great many stamina. Among the stamina is a longish pistil, the rudiment of the fruit; those flowers that are without, never producing any. The shape of the fruit is oblong, but sometimes globular: some terminate in a point, while others are blunt; their surface is wrinkled and tuberosc, and is often nine inches and upwards in length. The size differs as well as the weight; some weighing six, nine, and some even thirty pounds. The outer rind is tough, thin, bitter, and hot; and the colour, which is at first green, turns to that of gold, when ripe: the inner, or white rind, is thick, firm, and sweetish, with a little acidity. Within, it is divided into several cells, full of an acid juice: the seeds are numerous, oblong, half

an inch in length, and sharp at both ends ; they are bitter, yellow without, covered with a streaked skin, and contain a double white kernel. In hot countries both flowers and fruit may be seen on the tree at the same time, as well in the spring as in the autumn ; but both are more plentiful in the latter.

Citrons are not used as food, but as a sauce. The acid is very agreeable, excites a weak appetite, and helps digestion, when used moderately. The outward rind, on account of its hardness, is not easy of digestion. It is an excellent remedy for scorbutic disorders. The flowers, as well as the leaves, have a fine refreshing smell ; and the outer yellow bark contains a prodigious number of vesicles full of essential oil.

It is generally supposed that the citron tree was first introduced from Assyria and Media into Greece, and thence into the southern parts of Europe, where it is now cultivated to considerable extent. It is also grown in the islands of the West Indies.

THE LEMON TREE.

THE lemon tree has a great affinity to the citron. The leaves are similar, but shorter; and the prickles more numerous, but less, and venomous. The flowers have nearly the same smell, and the shape of the fruit also is oval, but shorter, and not of so deep a yellow. The rind is thinner, and the fruit much fuller of juice, and more acid, than that of the citron.

The lemon tree is a native of Upper Asia, from whence, like the citron, it was brought into Greece, and afterwards transplanted into Italy. The juice, which is one of the sharpest and most agreeable of all acids, is used in cookery, confectionary, medicine, and various other ways. By calico-printers it is very extensively employed, as a discharger of colour, to produce, with more clearness and effect, the white figured parts of coloured patterns, dyed with colours formed from iron. Its juice is procured by simply squeezing the fruit, and straining it through

linen or any loose filter ; and in Sicily, and other parts of the Mediterranean, it forms an important article of commerce. Being one of the most valuable remedies for the scurvy with which we are acquainted, it generally constitutes part of the sea-store of ships that are destined for long voyages. Several different modes have been recommended for the preserving of lemon-juice. One of these is to put it into bottles, with a small quantity of oil, which, floating on the surface, prevents the immediate contact of the air, and retards the decomposition of the acid ; though the original fresh taste soon gives place to one which is less grateful. In the East Indies lemon juice is sometimes evaporated, by a gentle heat, to the consistence of a thick extract. Sometimes it is crystallized into a white and acid salt ; but what is sold in the shops, under the name of *essential salt of lemons*, for taking out ink stains, and iron-mould spots from linen, is only a preparation from the juice of sorrel.

THE INDIGO PLANT.

THE indigo plant grows about two feet high, with round leaves, of a green colour, inclining to brown on the outside of the leaf, and silver-coloured underneath: the flowers, which are almost like those of peas, are of a reddish colour; and from them proceed long, crooked pods, resembling a sickle or hook, which inclose a little seed, like the radish-seed, of an olive colour.

When the Americans sow this plant, they dress the ground, and make holes about a foot distance one from another; into each of which they throw ten or twelve grains of the seed, cover them lightly with earth, and in three or four days they appear, especially in a wet season: and in two months, or sometimes even in six weeks, the plant is ready to cut and make Indigo of. The cutting is performed with a kind of reaping hook, a few inches above the root. The plants are then laid in strata, in a vat or cistern constructed of strong mason-work, and so much water is

poured in as will cover them. In this state they are left to ferment, and the fluid or pulp, which is first green, afterwards becomes of a deep blue colour. It is now drawn off into another vat, where it is strongly and incessantly beaten and agitated, until the colouring matter is united into a body. The water is then let off by cocks in the sides of the vat; and the indigo, after undergoing some further preparations, is cast, in square boxes or moulds, into small pieces, each about an inch square, and packed up for sale. The vapour which issues from the fermented liquor is extremely injurious to the negroes who attend the process; and as peculiar attention is requisite both to this and the granulating of the pulp, many indigo-planters have failed in the manufacture of this article.

Indigo is employed by dyers, calico-printers, and paper-stainers, to an extent so great, that nearly 500,000 pounds are annually imported into this kingdom. The stone-blue used by laundresses, and the colours called Saxon-blue, and green, are made

from indigo. Painters use it as a water-colour. This article is frequently adulterated with earth, ashes, and pounded slate. The genuine drug ought to be of a rich dark blue colour, approaching to black; and, when broken, should display the lustre of copper. It should not sink in water, nor leave any sediment when dissolved.

FLORENTINE ORRIS.

FLORENTINE Orris is the root of a plant, whose leaves are long, erect, and of a beautiful green; after which grow white flowers, two on each stalk, the petals bearded, and the leaves sword-shaped.

This root is well known; and in its dried state, is much used in the manufacture of hair powder, and other articles for which an agreeable scent is required. It is sometimes employed in medicine as a pectoral or expectorant, and sometimes in dropsies. In a recent state the root is extremely acrid; and, when chewed, excites in the mouth a pun-

gent taste, which continues for several hours ; but this acrimony is almost wholly dissipated by drying.

Orris-root is chiefly imported into this country from Leghorn.

RHUBARB.

THIS root, when newly drawn from the earth, is thick, fibrous, blackish on the outside, and of a reddish colour, marbled within : it bears large and woolly leaves, from whence arise little carnation flowers, resembling stars ; after which follow the seed. The stem is erect, and sometimes six or seven feet high. The leaves, which rise immediately from the root, are of a roundish shape, and stand on footstalks somewhat grooved above, and rounded at the edges.

The properties of this root in medicine are known to almost every one. Rhubarb is usually imported from Turkey, but is occasionally also brought from Russia, China, and the East Indies. Dr. Woodville states

that the Turkey rhubarb is brought over in oblong pieces, flattish on one side, and rounded on the other; and that it is compact, hard, heavy, and internally of a dull colour, variegated with yellow and white. The Chinese rhubarb is in roundish pieces, each with a large hole through the centre. It is softer than the former, and exhibits, when broken, many streaks of a bright red colour.

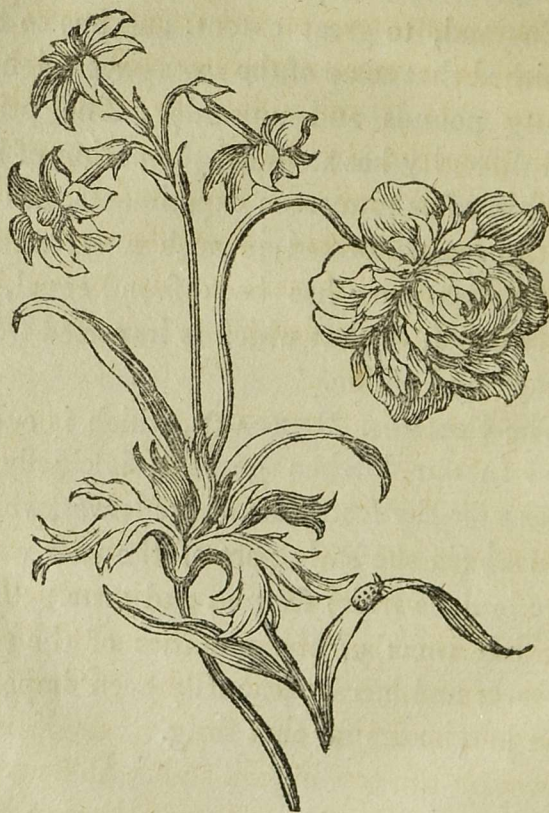
In some of the mountains of Tartary, rhubarb plants are found in great abundance. The roots, when first dug out of the ground, are thick, fleshy, externally of yellowish brown colour, and internally of bright yellow streaked with red veins. When they have attained sufficient size, they are dug up and cleansed; and the small fibres and the rind being cut off, they are divided into pieces of proper size. Each piece is then perforated in the middle, and they are strung on cords in such manner as not to touch each other, and suspended to dry, either upon adjacent trees, or in the tents.

The cultivation of rhubarb was attempted

about sixty years ago, by Dr. Hope, in the Botanic garden at Edinburgh, and since that period, it has been grown in different parts of England, to great extent, and has so far flourished that some of the roots have weighed seventy pounds and upwards. The principal difficulty has attended the curing of it; but this, after numerous experiments, has at length been performed in such manner that the English drug has been found equal, or nearly equal, to that which is imported from Turkey and China.

The COMMON RHUBARB, which is cultivated in our kitchen gardens, is chiefly in request for the footstalks of the leaves, which are used (in the early part of the year when there is little fruit) for pies and tarts. The root has some of the qualities of the true rhubarb, and has occasionally been imposed upon purchasers for that drug.

FLOWERS.



THE JONQUIL.

THIS charming flower comes, with all its graces, to deck the spring; it consists of

several species ; but the great jonquil has a stem, about a foot in height, which bears, from a third part upwards, several golden blossoms, consisting of five or six leaves, all curling in a most agreeable and beautiful manner. It is multiplied by seed ; but, more properly, by bulbs. It requires a good, but not very rich soil ; and is usually planted along borders ; thus affording a most agreeable embellishment to the walks and parterres of the garden.

THE NARCISSUS.

THE narcissus, or daffodil, of which there are a great variety of kinds, may properly be classed with the foregoing beautiful flower. It is common in many of the gardens near London, and produces only a single white flower on the top of the stalk ; it flowers at the latter end of April, and beginning of May ; and is very hardy.

There is a species of the narcissus, originally discovered at Vera Cruz, with leaves like those of the jonquil, and which pro

duces but one flower on each stalk. It is propagated by off-sets ; but, being very tender, must be preserved in the bark-stove, and treated in the same manner as the tender kinds of lilio narcissus, otherwise it will not thrive in this country.

THE FRITILLARY

IS a plant that has a stem about a foot high, round, smooth, and of a deep-green colour. It is garnished with about six or seven leaves, placed irregularly, which are long and narrow. At the top of the stem grow one or two flowers, hanging down in the shape of a bell : these are speckled with several colours, and are composed of six leaves. The colours, being placed in the manner of a chess-board, have caused this plant to be called the fritillary, from *fretillus*, which signifies a chess-board. It is multiplied by bulbs and seeds. The bulbs are planted in September, and should be placed three inches deep, and at the same distance from each other.



THE ANEMONE.

THIS beautiful flower, with proper culture, will blow twice a year ; and thus continue to grace our gardens, when abandoned by all the rest of the flowering tribe. The colours are chiefly red, blue, and purple. The roots of these plants should be taken out of the ground, and preserved, like those of the ranunculus.

When the seeds crack, or show their down, they should be gathered, to prevent their being dispersed by the wind. From these seeds, innumerable varieties may be raised : and if they are sown in February, and lightly covered with earth, they will blow the second year after sowing.

A great many varieties of these flowers

are preserved in the gardens of the curious, which are commonly divided into two classes; viz. the broad and the narrow-leaved: and under each of these divisions are great numbers, differing in the shape, colour, or size of the flower.

The best season for planting these roots is from the latter end of September till the end of October; observing, if possible, to perform the work at or near the time of gentle showers; for, should they be planted when the ground is perfectly dry, and no rain should fall for three weeks or a month after, the roots would be apt to grow mouldy; and if this occurs, they seldom thrive afterwards.



THE WALLFLOWER

OR Yellow Gilliflower, consists both of the single and double-flowering kinds. It shoots out leaves of a dark green colour, which are pointed at the end: between these leaves grow several branchy stalks; on the top of which appear the flowers, composed of four, and sometimes more leaves, of a yellow colour. The single wall-flower is multiplied by seed, and the double by layers or slips.

These flowers will grow even upon walls, or among rubbish: but, when cultivated, care should be taken of them, as they prove an

agreeable ornament to borders, or any other parts of a garden not destined for the reception of more choice flowers.

THE BLUE-BELL.

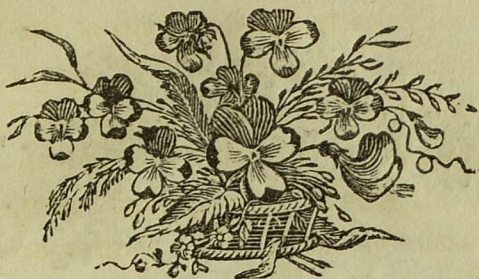
THE blue-bell plant shoots forth stalks two feet and a half high, which are hairy, and furnished with leaves: these are oblong, broad, and pointed at the end, notched at the edges, and downy. Along the stalks, and at the stems of the leaves, the flowers grow, in form of bells: they are blue, notched at the brims, and divided into four parts: each is supported by a calyx, or little cup, divided into five parts. This flower delights much in the soil of a kitchen garden. It is multiplied by sowing the seed, as thinly as possible, on the end of a plot, well dug, and smoothed on the surface. The time of sowing is September and October, and that of flowering, July.



THE FOXGLOVE

IS a large flower, resembling a thimble: from the root grows a stalk, two, and sometimes three feet high, which is hairy, and of a reddish colour: the leaves are oblong, and pointed at the end, covered with a little hair, and indented on the edges: the outsides of a brownish green, and the insides of a silvery white. On one side of the chief stem, sprout several footstalks, which support single flowers, wide at the top, and cut into two lines: their colour is generally purple, although they have sometimes a mixture of

hues. In the middle of the cup is a chive, which adheres to the hind part of the flower. A light soil agrees best with this plant. The seed, being very small, should be thinly sown in September. Foxgloves flower in June. Being tall plants, they are only adapted for the borders of beds, where the larger species of flowers are set or planted.



HEART'S-EASE.

THIS flower is, in Latin, called *viola tricolor*, from its being adorned with three colours. It bears stems, which have a tendency to creep along the ground, and are full of oblong leaves; they branch into boughs, at the top of which grow the flowers, composed of five leaves: each flower is white, blue, and yellow-coloured. It is multiplied by seed, sown in beds as thinly as possible. When sufficiently raised, it is removed into pots, where it makes a more agreeable appearance than in its native humble situation, where, like modest merit, it is lost and overlooked, amid its greater and more splendid neighbours.



THE LILY.

THIS flower is a great ornament to our gardens. The noble height of its stem, and the simple grandeur of the flower, cause it to be much admired. The lily is too well known to require any particular description of its form or colour. Its culture requires no particular rules, being easily reared in any soil; and, as if Nature meant this charming flower should be enjoyed by the poor, as well as the rich, we find it thrive with the least cultivation.

Some garden-walks are entirely bordered with them; but, wherever placed, they are always beautiful.

THE LARKSPUR.

THE larkspur is one of those flowers which seem to delight in displaying the variety of colours with which they are decorated. They grow on stalks of three feet high ; and, when choicely reared, afford one of the most beautiful spectacles that Flora has to present to our delighted contemplation. They are generally sown in February ; and may be expected to blossom in June and July. If properly attended, they will continue their bloom until August or September.



DAFFODIL, OR LONG-NECKED NARCISSUS.

THIS flower blossoms in the spring, and grows about a foot high. The daffodil thrives best in a rich soil, with which the bulb need only be covered; it should not be much exposed to the sun, as it derives beauty chiefly from the lateness of its appearance. The bulbs should be set about four fingers distant from each other, in order to afford sufficient room for their expansion, and should be removed every three years. They flower in March.

THE MEADOW SAFFRON.

OF the meadow saffron there is a variety of species. It shoots from the root five or six oblong leaves, about an inch broad, smooth, and of a brownish green. Amid these leaves rises the stalk, bearing at the top a yellow, single leaved flower, like a pipe, and cut into six parts. It will grow in any soil, and is multiplied by bulbs, which are produced every year in abundance. They should be planted in pots or borders, and transplanted in July; in which state they should lie until September. They flower in March.



THE POLYANTHUS

IS divided into the primrose and cowslip kind; and these are again subdivided into the single-flowering, and double-flowering. The single-flowering are chiefly white, yellow, red, purple, and violet-coloured. They are multiplied by seeds, sown in February, in a place prepared with earth taken out of decayed willows; often refreshing the new-sown spot with water; and keeping it shaded from the sun, during April and May, until the young plants appear. The primrose kinds blossom close to the ground; and the cowslip species, about six inches higher. Both may be planted near the edges of

borders, and near houses. Nothing can be more delightful than a number of these flowers, accompanied with violets, growing in avenues, and artificial wildernesses. They flower in April.



THE PINK.

THIS plant shoots out long, strait, thick, hard leaves, of a blueish green colour. In the middle rises the stem, long, round, and jointed at a certain distance: on the top of this the flower grows, consisting of several variegated leaves, supported by a hollow membranaceous cup. The beauty of this flower is justly celebrated; it has been the study of the most eminent gardeners, to raise it in the greatest perfection, and volumes have been written on its cultivation; but

pinks are set indifferently, either in open ground, upon beds, in earthen pots, or in tubs ; in autumn, or in the month of March. They are one of the chief ornaments of all gardens ; and are remarkable for the variety, beauty, and excellence of their flowers.

THE AUSTRIAN ROSE.

THIS plant, like most other roses, has a prickly stalk, which is garnished with winged leaves, of an oval form ; their lobes sawed. The flower consists of petals indented at the top, which have one side red, and the other yellow. Being a shrub, it may be propagated from the suckers that grow from the root, or from the offsets, either in spring or autumn. It blossoms during the months of July and August. Among the many species of roses, this is cultivated as one of the most valuable for the embellishment of a shrubbery.

FLOWERS.

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THE COMMON GARDEN ROSE.

IN a general description of many sorts of roses, it may be observed, that they grow on shrubs, which shoot forth hard, woody, thorny branches; having oblong leaves, indented, and armed with prickles. On these branches grow the flowers, consisting of leaves, in a round form; their cups are leafy, and turn to round, or oblong, pulpy berries. The pale rose is fair, large, of a carnation colour, and possesses an agreeable smell and appearance. The damask rose is small, white, single or double, with a musky scent. The common white rose is large and beautiful, and remarkable, as history informs

us, for being worn as the distinction of the house of York, as the red rose was that of Lancaster. The yellow rose has broad leaves, of a lemon colour, without smell. The monthly rose is like the damask, and has red flowers, growing in bunches. The striped rose has white and red streaked leaves: and the moss rose is so called, from the stem and outward leaves appearing to be covered with moss, in a singularly beautiful manner.

The wild Virginian rose, with a large pale flower, the American musk rose, with a smaller flower, and the sweet-scented American late-flowering rose, grow wild in the woods of North-America; from whence their seeds have been sent to England, and great numbers of the plants raised. They are very hardy, and may be planted in any situation, but delight in a moist soil. They may be propagated by layers or suckers, in the same manner as the common sorts of roses; and being intermixed with them, will add much to their variety. There are said to be upwards of five hundred different species of

roses ; of which the hundred leaved, or common garden rose, may be considered the queen, as, indeed, it is of all flowers ; and one of the most elegant and fragrant of vegetable productions. It should be remarked, however, that, although, from their fragrance, roses are much used for nosegays, their odour has sometimes produced very alarming symptoms in persons sitting or sleeping with such nosegays in confined apartments.



THE COMMON JESSAMINE

SHOOTS forth several small branches, which are adorned with leaves, oblong, pointed, placed in pairs along each branch, and terminating with a single leaf: at the end of the branches grow the blossoms, in form like an umbrella, consisting of five delicate white leaves, which possess a most agreeable smell. When the jessamine is in bloom, nothing can be more pleasing than the contrast of the green ground with the starry flowers with which it is so numerously studded.

The Italians prepare from the flowers of the jessamine a grateful perfume. This they do by soaking cotton-wool in some kind of scentless vegetable oil, and placing in glass

vessels alternate layers of this and of the flowers. After having been left some days to soak, the latter are found to have given the whole of their fragrance to the oil in the cotton : they are then separated, and the oil is pressed out and removed into small glass bottles for use.

THE CARNATION.

CARNATIONS were anciently called White Violets, as being of the same species with the latter flowers. The gilliflower, one of the tribes of carnation, is reckoned a principal ornament of our gardens. The variety and great number of its flowers seem to have acquired it this distinction. The leaves of the stem resemble those of sage ; from the middle of the root it rises about eighteen inches, and then runs into several branches, tufted with beautiful flowers, composed of four leaves, in the form of a cross ; which have a very fragrant smell. This plant is raised from seed, sown in March,

on hot-beds, in small drills, drawn across each other: the seed, when sown, is covered with the hands, as lightly as possible. When the plants appear, they should be secured from frost by glasses, matting, dry manure, &c. Among the gilliflowers are ranked what are commonly called the carnation, old blowers, &c.



THE PASSION FLOWER.

THIS curious flower grows in all kinds of ground, especially in a soil inclinable to moist rather than light; it is multiplied by roots set three inches deep. As the roots spread considerably, care should be taken to prevent their injuring the roots of neighbouring flowers. Its name is derived from a fancied resemblance in the flowers to the crown of thorns worn by our Saviour, and from an idea, that, in many other instances, it affords emblems of the instruments of his passion and death.

THE AMARANTHUS

IS a plant that has leaves rising from its root, large, pointed, of a brownish green, bordered with red. From the centre of these leaves grows a stem about eighteen inches high, of a red colour, bearing flowers either of a violet, purple, crimson, orange, red, or scarlet hue. From the beauty of these colours, the amaranthus is always esteemed a most valuable appendage to a garden. The seed, which is remarkably small, curious, and beautiful, is preserved in little boxes until the winter. These flowers look well in pots, which should be filled with kitchen-garden earth, and bed mould. If watered constantly and carefully, they will grow in this state, to a fine size, and continue long their beautiful appearance.

THE RANUNCULUS.

THIS plant blooms in April and May, upon stalks about six or eight inches high. The double-flowering sorts are crowded with petals, like the flower of the Provence rose. Their colours are deep scarlet, veined with green and golden hues, yellow tipped with red, white spotted with red, orange colours, plain white, yellow with black; and one has a peach bloom dye. The single ranunculus is somewhat taller than the double, and is most agreeably variegated. Both are produced by offsets, found about the roots, after taken from the ground. They may likewise be propagated from seed, saved from the single blossoms. But we are generally indebted to the French for these flowers; our climate being too cold for their culture.



THE DAISY.

THE daisy has small, oblong, smooth leaves, both indented, and otherwise; in the middle of these leaves rise little, long stalks, tufted with a radiated flower, which is white, red, or variegated.

The daisy, for its simple beauty, and its being the early grace of our banks and meadows, has been ever, and justly, a subject of pastoral poetry. To gather it is the first pleasure of lisping infancy; and to view it, the first delight of the humble cottager. Although this plant produces seed, yet those who cultivate it in their gardens, replant the split roots. It is a proper and beautiful border, either in the flower or kitchen garden.

THE TUBEROSE

IS a sort of hyacinth, called *Hyacinthus Indicus*. Although this plant was originally brought from Asia, yet it is now plentiful in most parts of Europe. The tuberose has, growing from its roots, several leaves, about six inches long, strait, and pointed at the end. In the middle grows a stem, to the height of three or four feet, and about half an inch in diameter. On the top of this stem grow the flowers, resembling lilies, single-leafed, shaped like a pipe, and indented. The flowers blow successively, which causes the tuberose to continue long in blossom. So sweet is their odour, that they entirely perfume the place in which they are set. This plant flowers in autumn. It should be placed where the sun is hottest; and will be found a greater ornament to windows than to parterres.

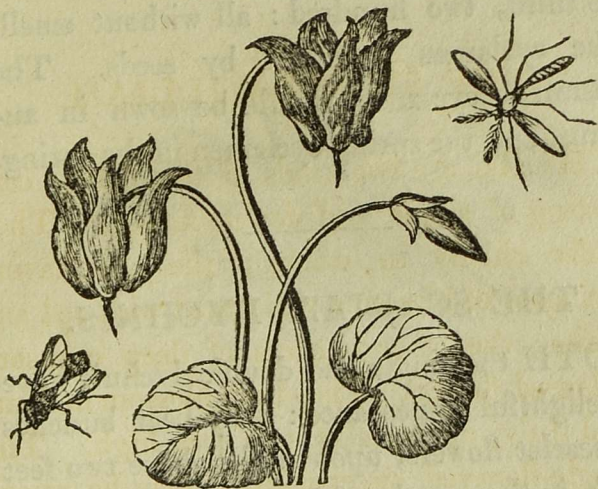


THE SNOWDROP.

ONE of the first offerings which Flora displays on the shrine of Nature, is the snowdrop. Its leaves are pallid; and, like the season in which it appears, its blossom hangs languidly on the verdant stem. The flower is composed of six leaves, which together form a blossom, similar in shape to a bell: the odour is as grateful, as the colour is delicate. The snowdrop, being a bulbous plant, is raised from the root, and is generally ranged with the narcissus. Although a common flower, yet such is its beauty, simplicity, and cheering appearance, that it generally accompanies the crocus in all parterres distinguished for their variety or their elegance.

THE SWEET-WILLIAM.

THERE are two kinds of this plant, consisting of single and double flowers. They differ chiefly in colour: the one having branches of blossoms variegated with red and white; the other clusters of deep crimson-coloured flowers. They both blossom in June and July, upon stalks two feet high. The single-flowered sweet-william may be raised from seeds sown in March or April: if planted in a loamy soil, it thrives best. The double may be propagated by the same means, or layed down in the earth like carnation layers.



THE CYCLAMEN.

THE cyclamen is so called in Latin, French, and English, from its root being almost round. It produces, from the root, leaves that are broad, almost round, of a dark green colour, speckled on the outside, and purple inside: in the middle grow long pedicles, at the top of which are the single-leaved flowers, dividing into five parts, folding inwards. Autumnal cyclamens bear a red flower, sweetly scented. In this season, blows one called the Constantinople cyclamen, which bears the first year, twenty flowers; the second, fifty; and

the third, two hundred : all without smell. The cyclamen is raised by seeds. The autumnal cyclamen should be sown in autumn, and the spring cyclamen in the spring.

THE SCARLET LYCHNIS.

BOTH the single and double lychnis have a delightful appearance : they bear bunches of scarlet flowers, upon stalks above two feet high, in the months of June and July. They are so greatly esteemed, that gardeners rear them in pots, to decorate the most beautiful parts of their gardens ; or to be placed, in the summer season, on chimney pieces, where they are a very pleasing ornament : the double kind is increased by slips taken from the root in March. The single flowering kind may be propagated by the same means, or raised in March, from seeds ; and will blossom the first year. An open situation, and a light soil, are most proper for their cultivation.



THE CROCUS.

THIS early flower, as if anxious to share with the snowdrop in cheering the departing glooms of winter, appears in January and February. In shape it resembles the lily, and it possesses an agreeable scent. Considering its cheerful aspect, when few other flowers appear, and its producing a valuable essence, which may be converted into a kind of saffron, it is singular it should not be more cultivated in our gardens. The true crocus is multiplied by the root, rather than by its seed. It requires a rich soil, and ought to be planted in a ground exposed to the fostering rays of the sun.

THE COLUMBINE.

THE columbine shoots out indented leaves of a blueish green, growing to long stalks. In the middle rises a stem of eighteen inches in height, which is slender and of a reddish colour: from this stem sprout several little sprigs, which support a flower composed of five flat and five hollow leaves, coloured with red, blue, white, chesnut, and carnation. Columbines require a rich soil; and are cultivated by sowing the seed very thinly in September, in beds well dug; where it remains until the plants are ready to be removed to the plots of a parterre. The columbine is one of those lasting plants which is kept alive by its roots; and will live a long time in the earth without requiring to be sown again.



THE DOUBLE MARYGOLD.

THIS plant has been admitted into our gardens, on account of the richness of its colour, and the beautiful form of its numerous leaves. Nothing can be more splendid than its golden hue. The leaves are not only beautiful in themselves, but are allowed, by physicians and botanists, to possess great medicinal virtues: they are said to cheer the spirits, as an infusion, as much as the sight by their appearance. Their flavour is likewise so agreeable, as to be mixed among the herbs usually boiled in our broths and soups. Thus, after delighting us in the parterre, they contribute to the delicacies of the table.

THE BELVIDERE.

FROM the resemblance of the leaves of this plant, to those of flax, it is called in Latin, *linaria*, from *linus*, flax. It rises into several stems, two, three, or four feet high; and shoots into many branches, garnished with strait, oblong leaves, of a light green colour. At the extremities of these boughs appear single flowers, with irregular leaves. These plants are set two feet distant from each other, in borders raised for the purpose; or in pots, placed in symmetrical order. The belvidere is multiplied by seed, sown in plain ground, in any part of a nursery; from whence it is removed, as soon as strong enough to be replanted. As the air injures the root, it should be replanted the moment it is taken from its native soil, and watered immediately.



THE PRIMROSE.

THIS flower graces very early the lap of Nature. Its golden leaves are frequently seen rising from the snow. So welcome is this simple wild flower to us, that it is frequently reared in pots, placed to adorn our windows, when scarcely any other verdure is to be seen. When planted, it should be placed in good garden mould, and in a warm situation, among the smallest flowers, or else edging the compartments of our parterres with its golden tissues. We find it in many of our choicest and most beautiful gardens.

THE FLOWER OF PARNASSUS.

IT bears leaves very like those of the violet ; from amidst these leaves rise several stems, about six inches high : on the top is a rosy flower, composed of several unequal leaves, fringed, and disposed in a circle. This plant is annual, and consequently multiplied by seed, which should not be thrown too thick. It thrives best in a rich, moist earth ; and is cultivated like other plants sown in hot-beds in March ; and which are consequently secured from the cold by glasses, straw, or matting. This flower is not only a great beauty in parterres, but in pots, or very large tubs, where it appears to equal advantage.



THE LILY OF THE VALLEY.

OF this plant there are two kinds, the white and the large-leaved lily. The first has a stem a foot high, bearing three long, large, and smooth leaves : the stem, from the middle upwards, adorned with flowers almost round, white, very fragrant, and fastened to a small sprig. The second only differs from the first in having red flowers inclining to white, and not possessing so agreeable a scent. The lily of the valley is multiplied only by slips taken from the plant and roots. This plant, first arising in a valley, thrives no where so well as in shady places ; for which reason, it is never set in the walks, but in some private part of a garden, where it is reared for the sake of its flowers.



THE SUNFLOWER.

THIS plant is called *torno-sole* by the Italians, which signifies turning towards the sun: and is also named *turnsole* by several of our botanists.

The sunflower produces a stem between five and six feet high, very strait and branchless, with leaves nearly as large as those of the vine, jagged, pointed, and rough: on the top of this stem appear the flowers, somewhat resembling the sun. Care should be taken as to the part of a garden in which it is planted, lest it should choke the flowers growing near it. The places most proper are broad avenues, planted with trees; between which sunflowers may be placed at the distance of three feet each.



THE INDIAN PINK.

ALTHOUGH this plant has a rather disagreeable smell, yet it is raised in our gardens, for its beautiful flower. The Indian pink shoots into a stem, about eighteen inches high, and then divides into several branches, full of leaves, indented and pointed. At the extremity of each bough, appear radiated flowers, round, composed of several well-formed leaves, which are of a yellow colour. The disk consists of several flourishes, divided into many parts. These flowers have likewise crowns, composed of half-flourishes, placed in a cup, of one leaf. The Indian pink requires much the same management as the female balsam apple.

FLOWERS.

O

Cold injures it materially. This plant is very proper in all the compartments of our parterres; but should not be placed among plants of the smaller size, nor in the middle of beds; for by such a situation, the great beauty of the flowers would be lost to the spectator.



THE ASTER.

OF this flower great varieties are to be seen in the gardens of botanists; but though very proper in large gardens, where they have room, yet in small parterres they are apt to over-run whatever is planted near them; and the seeds are also subject to scatter, and fill the garden with young plants, if the stalks are not cut down, and carried away immediately after flowering.

The aster is propagated by parting the roots early in the spring, and will grow in almost any soil or situation.

The seeds of this beautiful plant were originally sent from China by some of the French missionaries, to the royal garden at Paris; and have been since distributed over

Europe. The seed should be sown on a moderately hot-bed in the beginning of March; and when the plants are come up, transplanted on a new hot-bed, observing to shade them until they have taken root; after this they must be frequently watered, and should have air whenever the weather is favourable; for if too closely confined, they are in danger of rotting near their roots.

If the seeds of the aster are sown on a warm border in the autumn, soon after they are ripe, the plants will come up in the spring, and be stronger, and flower better than those which are sown in spring.

THE LUPINE.

LUPINES consist of three sorts ; the great blue, the small blue, and yellow flowering species. They all blossom in May and June. The first grows to about the height of two feet ; and the two latter, to about half the height. They are seen in most gardens ; and are remarkable for their neatness of blossom, and simplicity of colouring. The yellow species possesses an agreeable scent, that is denied to the other ; which, however, are in general recompensed with a greater brilliancy of colouring.



THE CONVOLVULUS.

THIS plant has three species, called the major, minor, and the scarlet-flowering kinds. The major has a flower of a rich purple colour; the minor has a more delicate hue, between a sky and mazarine blue, and is sometimes variegated with the colours of yellow and white. The scarlet-flowering kind is distinguished for bearing a flower, of the colour from which it derives its name. But that which most particularly characterises the flower of the convolvulus, in all its three species, is the single leaf; a re-

markable instance of the variety which Nature displays in every part of the creation, when contrasted with the ranunculus, and other flowers, composed of such a multitude of leaves. The convolvulus blows from June until August; and always creeps along the ground.

THE ASPHODEL.

THE stem of the asphodel is three feet high. From the middle up to the top, grow a great number of single flowers, each divided into five parts. It thrives in every sort of soil; is multiplied more by roots than seed; and, if well watered, will afford beautiful flowers. The asphodel is considered a great ornament to a border, or any other part of a garden, where either dwarfs or tall flowers are raised. It should be set three inches deep, and at the distance of a span from any other flower in the same compartment.



THE AURICULA.

THIS flower has long been the pride of the garden. One root of it alone has sold for twenty guineas. These flowers are indeed delightful, both as to scent and beauty. They blossom in April, and are in full bloom about the 20th of that month. The goodness of an auricula consists in a strong flower-stem, short footstalks, large regular flowers, with full, round, and white eyes: the flowers themselves flat, and not in the least inclining to the cup form.

THE VIOLET.

THE violet produces, from its roots, tufts of leaves almost round, indented on the edges, and of a beautiful green. In the middle of these leaves grow the flowers, consisting of several irregular lips, variously shaped. It is one of the earliest beauties with which Flora presents reviving nature. It grows in any sort of ground, and is particularly pleasing upon the borders of small gardens. The flower is as agreeable to the smell as to the sight, which has caused it to become an universal favourite. It should be replanted every three years, and kept from weeds; the chief trouble the culture of the violet requires. The double violet is only found in gardens.



THE HELLEBORE

GROWS wild in Italy and Austria. It thrives best in high situations. It has a plain stalk, ungarnished with leaves, until it produces the blossom on its summit: the flower is yellow, and composed of five or more petals. The root is fibrous. This plant should be propagated by offsets, and the roots taken out of the ground, and transplanted. When the leaves decay, the roots should be planted in small clusters, in order to improve the appearance of their blossoms. If planted alternately with snowdrops, their

effect will be the more agreeable, as they flower about the same time.

THE IRIS.

THE bulbous iris has a stem formed of long, broad leaves, soft, and of a pale green colour. In the middle grows a stalk which bears, on its top, a single-leaved flower, divided into six parts; and, in the centre of the flower, a chive of three leaves, arched. The flowers are either white, yellow, blue, red, or ash-coloured, and have a beautiful appearance. It is multiplied both by seed, and by bulbs. The seed should be gathered in July, and preserved until September, before committed to the soil; and whatever colour it is of, a flower may be expected from it of the same hue, a circumstance peculiar to the iris, and which may account for its name, derived from a Greek word, signifying to foretel or presage; as the seed thus fortels the colour of the flower.



THE NASTURTIIUM.

THE *Nasturtium Indicum*, or Indian cresses, are of two kinds ; one large, and the other small. The large is known by the name of monk's hood : it has flowers, variegated with yellow and scarlet : which run upon the ground, and blow from May to September. This plant is raised with little care. The seed, being large, is sown in separate grains, at four inches distant from each other. The flowers of monk's hood grow upon small reddish stalks, and are composed of several irregular leaves. The stem is covered with leaves, which are sometimes round, and sometimes angular. The small sort of nasturtium is frequently eaten as a pickle ; but the larger, is considered poisonous.

HOLY-OAKS

CONSIST of several kinds. They have a large stem, rising about six feet high ; which is decorated with flowers, in the same manner as other flower plants are decorated with leaves. This flower blends the delicacy of the poppy with the richness of the rose. The colours are various ; red, white, purple, yellow, and black. Although the stems of the holy-oak are so strong and large, yet they wither every winter to the ground. Their seeds are sown in March, but produce no flowers until the next year. They may be transplanted about March, or September. The time of flowering is July and August.



CROWN IMPERIAL.

THIS plant has a stem about two feet high, surrounded with long, pointed leaves, growing immediately from the root: it is likewise garnished with small leaves, in pairs, without any footstalk. Upon the top of the stem is the flower, composed of several green, upright leaves, that appear to grow from the germ of another flower, formed of yellow inverted leaves, in a figure somewhat resembling a turban: amid these leaves are seen stamina, with white anthera, which hang down in a graceful manner. The anthera resemble dew-drops, falling from the filaments of the stamina. The crown imperial is propagated from its bulbs, which should be taken

out of the mold in June, well cleaned, and carefully stored till September; when they should be replanted. It blossoms chiefly in March and April; during these months, its singular beauty, and graceful dignity, form the pride of our most elegant gardens.

THE HYACINTH.

THERE are so many sorts of hyacinths, each so varying in colour, that Nature seems to have taken pleasure in forming them for our endless admiration. The winter and spring hyacinth, which is best known, is blue, and odoriferous. It is small, round, and of a single colour. All are multiplied by seed, but the bulbs produced from the seeds, bear no flowers until the fourth year. Hyacinths in general delight in places exposed to the sun, and apart from other flowers. Like animals that herd together in flocks, hyacinths are, by Nature, best adapted to grow in clusters, by themselves.

THE MARTAGON.

OF the martagon, or mountain-lily, there are several kinds. The great martagon has a red flower, growing on a stem between two and three feet high, without any foot-stalk. It is smooth to the touch, and of a deep green colour: the flower is crooked, and bends down at the end of the stalk, which prevents its falling. The plant may be set in any soil, a span deep in the earth, and at the same distance from any other flowers. It is set among flowers of the larger size; or rather in the middle of borders, with such as are smaller than itself. The martagon blooms in May. The bulbs should not be removed before it is intended to transplant them. Being sooner affected with heat than cold, they should be sheltered from the sun with little layers of earth, or preserved by frequent waterings.

THE SWEET PEA.

THIS plant is frequently introduced into gardens, on account of the sweetness of its scent, and the delicate beauty of its flowers. The flower of the sweet pea is exactly similar to the common pea blossom, except in being purple or pink instead of white. The flower of the painted lady pea is pink and white. They are both raised from seed, which is sown about the time of the other peas. They blossom mostly in July, and are no little decoration to those parts of a garden allotted to the irregular and beautiful simplicities of Nature.



THE POPPY.

THE garden poppy has a stalk about two feet high, which supports a flower distinguished for its delicate texture, beauty, and variety of colour, and its somniferous odour; but although the flowers are so agreeable in appearance, they are of short continuance. They should be sown in spots, in order to afford that assemblage of colours, their variety is so well calculated to afford. The flower yields the substance called opium. The Dutch wild poppy does not blow so high as the former: the flowers are red and white striped, and bloom during the months of June, July, and August.

THE MEZEREON.

THIS plant is of two kinds; the red and white flowering. The red is very common in gardens; but the white mezereon is rather scarce. They are both dwarfs, and seldom rise higher than about three feet: their stalks are ornamented with flowers so early as January, when the air is perfumed with their agreeable odours. They remain a long time in blossom, and are afterwards much adorned by their fruitage. The only mode of propagating them, is by sowing the seeds in March. This plant may be profitably introduced in parterres, as a slow flower, or in wilderness works, for its delightful blossoms. But it is chiefly adapted to the winter garden.



THE HONEYSUCKLE

IS a shrub, which shoots forth several branches, expanding on every side, and supporting themselves by twining round whatever is within reach. At the knots of the branches, the leaves grow in pairs, opposite each other, at equal distances: they are soft, broad, pointed, green without, and white within. At the end of the branches the flowers appear, in form of pipes, bending in a manner somewhat similar to a crown. The peculiar form of the leaf, its agreeable diversity of colour, and the aromatic odour it dispenses around the gardens it decorates, render the honeysuckle one of the most desirable appendages to every spot where the bounties of Flora are collected for our enjoyment.

ST. JOHN'S WORT

GROWS on a thin, leafy stalk, about a foot high. From the chief stem shoot many branches, which are garnished with long, small, pointed, and plain-edged leaves. On the top of each of the smaller branches is a yellow flower, which greatly resembles the daisy, both in size and form. If reared in a green-house, this plant will blossom in March; but, if cultivated in a garden, the usual time of flowering is in June, when it may be gathered for medicinal purposes. St. John's Wort is reared in most physic gardens, from its possessing qualities useful for the cure of the jaundice: it is likewise a chief ingredient in that valuable balsam so well known by the name of Friar's Balsam, or Turlington's Drops.

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