
THE AMERICAN
FLORA.
VOL. II.

THE

AMERICAN FLORA,

OR

HISTORY OF PLANTS AND WILD FLOWERS:

CONTAINING

THEIR SCIENTIFIC AND GENERAL DESCRIPTION,

NATURAL HISTORY,

CHEMICAL AND MEDICAL PROPERTIES, MODE OF CULTURE, PROPAGATION, &C.

DESIGNED

AS A BOOK OF REFERENCE FOR BOTANISTS, PHYSICIANS, FLORISTS, GARDENERS, STUDENTS, ETC.

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VOL. II.

IS ILLUSTRATED WITH

SIXTY-SIX BEAUTIFUL COLORED ENGRAVINGS,

TAKEN FROM NATURE.

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INTRODUCTION.

The public are now presented with the second volume of the "American Flora," which is intended as a standard work, founded upon the Linæn System; its correctness in name, classification, description, order, character, general and specific; medical properties and uses of the various plants and herbs of which it treats, has received the highest encomiums from some of our most eminent botanists and physicians; and thus from the favorable reception which it has hitherto met with, entitles the author to conclude that his labors have not been altogether unprofitable. And in consequence of a more than anticipated demand for the first volume, the publishers have been induced to make a large additional outlay, that the present volume may be marked with additional embellishments, correctly displaying the natural appearance of the plant or flower. The whole work, when complete, will be one of the richest gems in the cabinet of modern literature and art. It is poetically said "there is a language in flowers." With what delight do we listen to the rustling of the forest trees, when moved by the gentle breeze of the summer's gale! With what pleasure do we inhale the varied and sweet-scented odors of the flowers of the garden and the fields, and with what a pure feeling of admiration does the eye dwell upon their brilliant, soft, clear and variegated tints! In truth, there is a language in them, that conveys to the refined and cultivated mind, a joy as uncontaminated as the source is pure and inexhaustible. The names, history and habits of these delightful whisperers, is a study of the highest and most pleasing description; and

if we may be allowed the expression, the "AMERICAN FLORA" is a Biography of Nature, and that too of her most lovely works; and the faithfulness of its records may be relied upon. It describes minutely the peculiarities of the several classes, and their method of propagation; it unfolds their beauties in the spring and summer of their lives, their grandeur and magnificence in maturity, and their innumerable capabilities of rendering pleasure, gratification, and service to man. It is a work classic in its conception, pleasing and instructive in detail, and scientific in conclusion. The accuracy of the drawings, and their brilliant and perfect coloring, is one of its chief ornaments,—they place the reader at once in possession of the subject of his interesting enquiry. Its descriptive matter is plain and simple, disencumbered of all useless and unintelligible matter, but clear and explicit—intended, without the intense labor required on more elaborate works, to imprint on the memory an impression as perfect, but of much easier and more lasting retention. From the practical knowledge and experience of the Author, its pharmacological observations are both extensive and important, and its medicinal information will insure its claim as a valuable acquisition to the library of the practitioner. It is a work of much care and research, where the very spirit of botanical science is extracted from its countless integral, like the essential oils by distillation from the sweet-scented leaves of the Rose or the Jassamine. It is no ephemeral of a passing day, as we have seen some, shining with a borrowed lustre from a sun that never intended to gild and brighten their leaves, but which have faded when his influence was withdrawn, and withered in the absence of his light.

Virginian Strawberry

NAT. ORDER.

Senticosæ.

FRAGARIA VIRGINIANA. VIRGINIA STRAWBERRY.

Class XII. Icosandria. *Order V.* Polygynia.

Gen. Char. *Calyx* ten-cleft. *Petals* five. *Acines* naked, fixed on a large, pulpy, deciduous receptacle.

Spe. Char. *Leaflets* broad-oval, smoothish above. *Hairs* of the petiole spreading. *Peduncles* appressed, fructiferous. *Calyx* spreading.

The *strawberry* has been long in cultivation, and many excellent varieties have originated under the practical skill and care bestowed on their culture. The best and most convenient season for forming a new plantation of strawberries is the month of August, as then the young plants produced on what is called runners from the old stocks are fit to be separated from the parent, each having roots of its own. The best soil for most of the varieties is a mellow loam, but almost any kind of garden soil in good heart is suitable. The ground intended to receive them should be trenched or double-digged, and the surface well enriched. The improvements which have been made in this country, within the few years past, relative to the cultivation of this delicious fruit, has induced many to commence its culture, and it has now become one of the most valuable and acceptable luxuries of our markets. The most recent and improved method of planting is on beds of four-and-a-half feet wide, on which four rows of plants at twelve inches in distance between are dibbed; and at like distances between plant and plant; this will allow a margin of three inches on each side. The beds are sepa-

rated by alleys, usually about two feet wide, to allow of weeding, watering the plants and gathering the fruit.

The strongest plants are always chosen for transplanting, and in order to obtain them as strong as possible, a shallow trench is made between the rows of old plants, and filled with a rich compost; on this the first runners are laid and fastened down by little hooks. The runners quickly take root in this compost, and grow strongly. To encourage them still more they should be watered with the mother plants especially in dry weather. When the season arrives for transplanting, the young plants rise with fine roots, and generally strong enough to promise a good crop in the following year.

The beds are never dug between the plants, but only kept clear of runners and weeds by the hoe. The alleys are dug every winter, and a small portion of the fresh soil from them are thrown over the beds as a top dressing. It is usual to lay straw, or some kind of clean loose litter round the plants before the fruit begins to ripen, to save them from being dashed with earth by rain or when watered. When young plants are not wanted, the bearing ones should be kept free from runners, otherwise they will rob the swelling fruit.

This plan of keeping the mother plant distinct and separate is most suitable for the larger sorts; the *alpines*, and sometimes the *hautbois* are planted individually at first, but afterwards allowed to run all over and occupy the whole surface, in which state these kinds will, in somewhat shady situations, do well, and continue productive for several years. Some cultivators, instead of beds, plant the large sorts in open order, say two feet apart every way on well prepared ground, knowing that the more space each plant is allowed the stronger it will grow and flower, and bear fruit in greater numbers, and of greater size. Besides this, the side branches of the mother plant (not the runners) have room to extend and yield fruit in as great quantities as the principal crown. To understand this

result rightly, it is necessary to advert to the constitutional character of the strawberry plant. The plant is compound; that is, it is composed of a principal and central division, which yields flowers and fruit the next year after it is formed. This principal is surrounded by a secondary set of branches, which also in time yield flowers and fruit, superseding the first, which decays and disappears after it has ripened its fruit. The secondary set of branches, or divisions, of the system put forth, in their turn, a tertiary birth of branchlets, which also in time are fruitful; and these again a fourth set of offsets, which process is continued yearly until the plants are either destroyed by accident, or by each other. During this pro cess, the system from this annual subdivision continues to grow weaker, so that at last the flowers are so few and diminutive, that the crops are unprofitable, and not worthy of a place in the garden.

The process is so well known to cultivators, that they do not consider a strawberry plantation worth its place after the third year, and many take only two crops from the plants, trenching them down as soon as the crop of the second year is gathered. It may be asked by some, how is it that plants allowed to occupy the whole surface of the ground are suffered to be usurpers? The answer is,—to save trouble, and as some of the runners are always yielding fruit for the first time, these being passable as to size and flavor, guarantee the preservation of the whole.

The most esteemed sorts of strawberries are the following, viz.:—

The *Alpine* red and white are both of weakly growth, and yield fruit from well-established plants from the end of June till November. A light chalky soil suits them best; and as they succeed the earlier sorts, they are usually planted on north borders, in order to prolong their fruiting season.

The *Virginian*, or scarlet pine, is universally cultivated; it requires a strong and rather rich loam; an early sort, and forces well.

The *Roseberry* is a variety of the preceding; very fruitful, and

grows to a large size. This also requires a rich soil and an open situation.

The *Chili* bears a large and well-flavored fruit, but without much color. It grows strong, and is considerably cultivated.

The *Keen's seedling* bears a large showy fruit, and is much esteemed in the market as well as at table.

The *Pine* is a new variety, and much cultivated in the neighborhood of London. It requires to be planted singly in very open order. A loamy soil and open exposure is most suitable both to this and the *Imperial*, a kindred variety also much esteemed.

The *Hautbois* is an old sort, valued for its high and peculiar musky flavor, and when well grown is certainly one of the best. There is a peculiarity in the flowers of this sort unlike its congeners; some of the plants being destitute of female organs—of course barren. These barren plants, however, are not without their use, for it is found, if duly interspersed with the others which are defective in their stamens, good and plentiful crops will be obtained. In making a new plantation of the hautbois, both the male and female plants should be carefully mixed in the rows to insure success. Air and light are particularly necessary to this sort; and if the flowers and tresses of fruit be tied up to little stakes, so that they may be above the leaves, it matures them perfectly.

There are several other new varieties of strawberries lately brought into cultivation; such as Knyvett's *New Pine, Grove End Scarlet*, Downtons, &c., all requiring similar management.

Soon as strawberries begin to be scented, they are eagerly preyed on by snails and slugs, to the depradations of which their position near the ground and dense covert of foliage subject the fruit. To prevent these animals harboring about the plants, the beds or rows should be two or three times, during the months of March and April, well watered with lime water. This will, probably, either kill or banish them before the fruiting season.


Peruviana
Senna

NAT. ORDER.

Lomentaceæ.

CASSIA ELONGATA. PERUVIAN SENNA.

Class X. Decandria. *Order I.* Monogynia.

Gen. Char. *Calyx* four and five-cleft. *Petals* five. The three superior *Anthers* sterile; the three inferior beaked.

Spe. Char. *Leaflets* from four to six pairs, sub-ovate. *Petioles* without glands.

The *root* is annual; the *stalks* are strong woody, rough, veined, branched, erect, and rise from two to three feet in height; the *leaves* are split about one-fourth of their length from the point, and stand on long petioles, irregularly placed upon the stalk and branches; the *flowers* are of a delicate changeable red, and placed upon long peduncles; the *corolla* is composed of five petals, which are roundish, long, entire, and of unequal size; the *filaments* are ten; the *seeds* are brown, roundish, flat, and produced in a long roundish pod, divided by transverse partitions; the *flowers* appear in July and August.

This most beautiful plant is said to be a native of Peru, where it is cultivated chiefly for medicinal uses. Its properties are the same as those of the *Alexandria Senna*, although not as powerful, yet equally valuable as a medicine. The plants which yield senna, belong to the genus cassia, of which a large number of species contribute to furnish the drug as found in our shops. These were confounded together by Linnæus as one species, which he named *Cassia Senna*. Since his time the subject has been more thoroughly investigated by able botanists, who have discovered a variety of

species, many of which are imported into this country as the genuine Alexandria Senna, and are but little, if any inferior in value. Some species are natives of Egypt, some of Asia, Arabia, Africa, France, England, and three species natives of America.

The *Senna Italica*, or blunt-leaved senna, is a variety of the Alexandria species, which by its cultivation in the south of France has been found to assume this change; it is less purgative than the pointed-leaved senna, and requires to be given in larger doses. It is very much used by physicians on the Island of Jamaica, as a cathartic, where it grows on the sand banks near the sea.

Senna appears to have been cultivated in England in the time of Parkinson, (1640,) who speaks very highly of its medicinal virtues at that time; and there is no doubt, but that many portions of the United States are equally well adapted to its culture; and we would ask, why will not our societies of agriculturists, who with patriotic views for the encouragement, and advancement in the arts, offer a sufficient remuneration as a reward to those who may succeed in the attempt, which will be ultimately accomplished?

The leaves of senna, which are imported here for medicinal use, have rather a disagreeable smell, and a bitter nauseous taste; they yield their virtue both to water and rectified or proof spirits, communicating to water and proof spirit a brownish color, more or less deep, according to the proportions; to rectified spirit a fine green.

Medical Properties and Uses. Senna which is now in common use as a purgative, was first known to the Arabian physicians; and was soon afterwards introduced into practice by the Greeks, who made use of the fruit and not the leaves. For covering the taste of Senna, Dr. Cullen recommends coriander seeds; but for preventing its griping, he thinks the warmer aromatics, as cardamons or ginger, would be more effectual. The formulæ given by the different Colleges, are those of an infusion, a powder, a tincture and an electuary. For a cathartic, its dose in substance is from a scruple to a drachm. Senna is very much used in connection with Spigelia for worms. —

China Hydrangea.

NAT. ORDER.

Saxifrageæ.

HYDRANGEA HORTENSIS. CHINA HYDRANGEA.

Class X. Decandria. *Order II.* Digynia.

Gen. Char. *Stamens* ten. *Styles* two. *Petals* five. *Calyx* five-leaved. *Capsules* two-celled.

Spe. Char. *Leaves* large and fleshy. *Stamens* equal.

This *shrub* rises from two to three feet in height; the *stems* are branched, thick, cylindrical, straight, and furnished with opposite leaves; the *leaf-stalk* is short, thick, and of a light green color; the *leaves* are elliptical, large, from six to eight inches in length, smooth on both sides, glossy on the upper surface, tipped with a beautiful green, and sometimes with a purplish red, marked with large fibres which form an acute angle with the mid-rib, and deeply serrated on the edges; the *flowers* are of a delicate pink color, and are produced in terminating corymbs. It is a native of China, and Japan, and continues in blossom from June till September.

The *Genus* Hydrangea derived its name from *udor*, water, and *aggeion*, a vessel. The species which appears to be so extensively cultivated as an ornament, is a marsh plant, and thrives best in a moist loamy soil, that is sometimes covered with water, even some of our garden varieties, especially those which are potted, require from eight to ten gallons per day. The *Hydrangea Hortensis*, sometimes called the Changeable Hydrangea, is much admired on account of its profusion of delicate and beautiful blossoms, which are of a rosy hue, and destined to retain their gayest appearance during several of the summer months, which should certainly enti-

tle it to the attention of every practical florist. Though destitute of any peculiar flavor, or valuable as a medicine, it has been an object of particular attention among the Chinese; in proof of which we find its blossoms painted upon almost every article which was formerly imported from that country. It is said never to have been found in its wild state by any botanist; but it is cultivated as a garden ornament in almost every country.

A short description of the propagation and culture of this most beautiful shrub, may not be uninteresting to the reader. The *Hydrangea Hortensis* is very easily increased by cuttings, which method is pretty generally diffused and understood within the last few years. It thrives best in good rich loamy soil, well watered. Various experiments have been made to introduce its culture in the open field and by itself, the failure of which fully proves that it is to be considered rather as a green-house plant than a hardy one; as they will seldom if ever thrive even on the borders of the flower garden. The flowers like those of the snowball are monstrous, and produce no seed. It has been remarked by some florists, that if the plant be well watered with alum water, it will produce beautiful blue flowers the season after.

Medical Properties and Uses. This species of Hydrangea, has never been introduced into regular practice, yet it possesses some valuable properties. It is now considerably used in some parts of Asia as a remedy for rheumatism. The bark of the root is the part best adapted for medicinal purposes, and is said to contain tonic, astringent, and emmanagogue properties. It is more valuable as an ornamental flower than a medicine, as it is even suspected by many to be powerfully narcotic and drastic. It yields its properties both to water and rectified spirits.


Pionea of Mexico

NAT. ORDER

Papaveraceæ.

PÆONIA PEREGRINA. PEONY OF THE ALPS.

Class XIII. Polyandria. *Order II.* Digynia.

Gen. Char. Calyx five-leaved. *Petals* five. *Styles* none. *Capsules* many-seeded.

Spe. Char. Leaves double, pinnate, sub-lobed. *Leaflets* oblong, veined underneath.

The male *peony* is furnished with long thick *roots*, which are fleshy and of a bright yellow color; the *stalks* are upright, single, streaked with red, and rises from two to four feet in height; the *leaves* are of a dark green, veined, and stand in pairs upon short footstalks; the *flowers* are single and of a beautiful red color. The *female* frequently rises to the height of six feet; the *leaves* of which are pale and narrow; the *flowers* are double and of a deep red; the *roots* are very irregular, composed of several tuberous pieces, hanging by rough filaments from one head. It is a native of the Alps, where it is found growing in its wild state, in large quantities, producing flowers from June till October.

This species of *peony* was very anciently considered as a prominent article in the *Materia Medica.* Galen mentions many very remarkable cures made by the use of this plant, but from the accounts given by modern physicians of distinction, we are led to believe it possesses little, if any, medicinal properties, that would entitle it to a place in the *Materia Medica*, excepting its narcotic power. Galen is probably the author of the anodine necklace, which was composed of this plant, and so long famous for its remarkable

virtues among the vulgar of Europe, the roots were at first directed to be hung round the neck, and if relief did not follow, a drachm of the dried root was to be taken two or three times a day. The fresh roots and seeds have a faint narcotic smell, with a slight acrimonious and astringent taste; but when dried, loose wholly, or in a great degree, both. Water extracts are insipid, spirituous ones bitter and slightly astringent.

Medical Properties and Uses. Every physician knows that the poppy possesses powerful narcotic properties, and this character prevails generally in the whole order. Their seed is universally oily and destitute of the narcotic properties which reside in flowers and plants, the oil is obtained from the seed by expression, is perfectly wholesome, and very much used in France and some parts of England for the table. It is also extensively emyloyed in the adulteration of olive oil, and its use was at one time prohibited in France by decrees issued in compliance with popular clamor. It is but little used in the United States, although it was frequently introduced into practice for the cure of epilepsy but never proved sufficiently beneficial to warrant its continuance.

On cutting or breaking the stalk, a milky juice exudes, which if exposed to the sun will attain the consistency of a gum, resembling both in appearance, and medical properties, that of pure opium, which is made from the *Papaver Somniferum*; the description of which will soon be given, and the various methods of obtaining, and preparing the gum.

Indian Tobacco.

NAT. ORDER.

Lobeliaceæ.

LOBELIA INFLATA. INDIAN TOBACCO.

Class V. Pentandria. *Order I.* Monogynia.

Gen. Char. *Calyx* five-cleft. *Corolla* irregular, five-parted, cleft on the upper side nearly to the base. *Anthers* united into a tube. *Stigma* two-lobed. *Capsule* inferior, or semi-superior, two or three-celled, two valved at the apex.

Spe. Char. *Stem* hairy, branched. *Leaves* ovate-lanceolate. *Racemes* leafy, somewhat paniculate. *Capsules* somewhat inflated.

"The *Lobelia Inflata* is a biennial, indigenous plant, usually found growing from twelve to eighteen inches in height, with a fibrous *root;* the *stem* is hairy, solitary, erect, angular, much branched about two-thirds of the way, and rises considerably above the summit of the highest branches; the *leaves* are sessile, acute, serrate, oval, hairy, and much scattered; the *flowers* are disposed in numerous leafy terminal racemes, and supported on short foot-stalks; the *segments* of the calyx are linear and pointed; the *flower*, which is of a delicate bluish color, has a border labiate, the upper lip being divided into two, and the lower into three acute segments; the *pod* is an ovate, inflated capsule, crowned with the persistent calyx, and contains in two cells numerous small brown seeds."—*Thomson's Materia Medica.*

Lobelia is a native of the United States, and is found growing from Canada to Louisiana, by the road-sides and in stubble fields, especially the next season after the crop is taken off. When broken

a milky juice exudes, which is of a most penetrating diffusable nature, and if applied to the eyelid, produces a powerful effect upon the eye, from which circumstance it is sometimes called eyebright. This plant being biennial, throws out the first year only a few radical roundish leaves laying close to the ground, the next year it produces the stem, branches, and seeds. The leaves and roots of the first year are as powerful as the mature plant, excepting the seeds which are the strongest. The whole plant is acrid and nauseous, producing salivation; whence, we suppose originated the mistaken supposition that it causes the slavers in horses and cattle.

Medical Properties and Uses. The following is in part taken from Howard's Materia Medica, wherein the symptoms, and its effects are more accurately detailed than in any other medical work, and to which we can bear testimony from experience, having administered it in some hundreds of cases and attended on its operation, and have never experienced any bad effects from its use. That it is a valuable remedy for some diseases, must be admitted; but like many other powerful medicines, in the hands of those who are unskilled in its use, it is liable to be abused, when its effects are alarming, and dangerous, and even fatal consequences are sometimes the result. Howard says, "the *lobelia inflata* is the most valuable emetic known; its full merits being scarcely appreciated, even by those who are in the habit of making frequent use of it. It also acts as a sudorific, diuretic, expectorant, and diffusable stimulant; and is said by some physicians to possess powerful narcotic properties; as an antispasmodic, and for the relief and cure of asthma, its equal, in our opinion, has not yet come to the knowledge of the world. As a stimulant it extends its effects to every part of the system, removing obstructions, and restoring a healthy action, wherever the one exists and the other is needed. Its action or effects may often be sensibly felt or known by a pricking sensation over the system, particularly in the fingers and toes.

A diversity of symptoms attend the operation of lobelia

emetics, evincing the magnitude of its power, and the surprising energy upon the human system, which often terrify those who are acquainted with its operation. Its effects are different on different individuals, and upon the same individual at different times. Sometimes it produces severe pain in the stomach and bowels; strange, agitated, and indescribable, unpleasant sensations. Convulsive motions of the lower jaw, often attended with a convulsive and rapid respiration. General distress, or a universal sickening feeling pervades the whole system. Sometimes the patient is perfectly easy and quiet, without the power to move a hand or a foot, or rolling the eye balls in their sockets; and at other times great restlessness and anxiety, with symptoms of a most alarming character, prevail. In some instances the countenance becomes pale, and the skin cold, with the appearance of approaching death; whilst in others, the countenance assumes a florid appearance, bearing the marks of health.

These symptoms, together with a great variety of others, which it would be impossible for us to describe, are often attendant on the administration of a lobelia emetic, and frequently prove very alarming, even to those who are well acquainted with its effects. Dr. Thomson, who claims the honor of first introducing the lobelia into general notice, speaking of them, says, "they appear to be the last struggle of disease, and are certain evidences of a favorable turn of the disorder. The alarming effects of lobelia are probably caused by the restoration of a healthy action to diseased parts, which have long been accustomed to a morbid sensbility and a diseased action. A healthy operation being thus suddenly restored, and the organs not being properly prepared to receive the new impulse, an unusual and oftentimes alarming train of symptoms are produced."

"As an antidote to poisons of all kinds, whether animal or vegetable, the lobelia stands unrivalled; particularly in the cure of hydrophobia. Several well attested cases of cures of this terrible and fatal disease, have come to our knowledge. The lobelia is used

in powder, infusion, or tincture of the leaves and pods, or the seeds, either simply by itself or compounded with other articles."—*Howard.*

It should be gathered in the fall, at the time the leaves begin to turn yellow, as the seeds are then ripe, and the whole plant valuable for medicinal uses. This plant may be transferred and cultivated in gardens, where it will thrive much more luxuriantly than in the wild state. In fields where it is found growing, if some of the stalks are left standing, it will sow itself, similar to our garden mustard, and I see no good reason why it could not be made a source of profit which would well repay for its cultivation, as the seed is in considerable demand, always finding a ready market and commanding a price of about one dollar per pound. Thus, taking into consideration the increased consumption of this invaluable plant, and that too by a very limited number of physicians in this country, the price at which it is sold, and a prospect that our native plant, will not even meet the wants of our shops, we cannot but express our conviction that its cultivation might be made extremely profitable.

Tincture of Lobelia herb. Take of lobelia herb, either fresh or dry, any quantity, press it close in a tin or earthen vessel, so that it may be compact; then add proof spirit sufficient to cover the herb, stop the vessel close, and let it stand for two or three days, then strain and press out the liquor from the herb, flavor it with essence of sassafras, and bottle it for use. Dose as an emetic, from two to three tea-spoonsfull, to be repeated every ten minutes, until vomiting is induced. This tincture is valuable not only as an emetic, but also as an external application to wounds, bruises, inflamations, ulcers, eruptions of the skin, and poisons of every description.

Compound tincture of Lobelia. This is the most powerful of all other preparations, and is given only in such cases as require immediate relief, such as lockjaw, fits, spasms, &c. Dose, from eight to twenty drops, repeated according to circumstances.

Southern Scarlet

NAT. ORDER.

Holoraceæ.

RUMEX ACETOSA. SOUTHERN SORREL.

Class VI. Hexandria. *Order III.* Trigynia.

Gen. Char. *Calyx* three-leaved. *Petals*, three, converging. *Seed*, one, three-sided.

Spe. Char. *Flowers* dioecious. *Leaves* oblong, sagitate.

The *stem* is erect, striated, rises from six to twelve inches in height, and of a purplish red color; the *leaves* are oblong, ovate arrow-shaped, and of a bright green color; the radical ones are petiolate and obtuse; those of the *stem* without footstalks, placed alternately and pointed; the *flowers* are dioecious, and are disposed in terminal branched spikes, standing upon short slender peduncles; the *corolla* is divided into three petals, and the *calyx* into three oval segments; the *filaments* are short, bearing erect large anthers; the *styles* are short, supporting large bearded stigmas, and proceeding from a triangular germen. It flowers from July until October.

There are few parts of the world that do not acknowledge the presence of some species of this plant. In Europe, Africa, North America, and many parts of Asia, they fill the ditches, hedges and waste grounds, and form a considerable portion of the pasturage in poor and sandy soils. The leaves of the Southern Sorrell have an agreeable acid taste, very much like that of *Oxalis Acetosella*, or Wood Sorrel, which we have described in Vol. 1, page 176; the properties of both are so near alike, that they are medicinally employed for the same purposes, and what has already been said of that plant, will in a great measure apply to this; being easily procured, and in great abundance, may be substituted for it.

Medical Properties and Uses. It is but recently that the properties of this valuable plant have been discovered, in consequence of which we have never before been able to appreciate some of its most beneficial and best qualities. We are informed that the Indians of this country, have been in the habit of using this plant from its earliest history in the cure of cancer and all cancerous swellings, for which purpose we consider it one of the most valuable productions of our country. The leaves have a pleasant and extremely acid taste, and may be used in all cases where acids and antiscepties are required. The leaves simply bruised have been applied to scrofulous swellings with excellent effect, promoting supuration and granulation in the most satisfactory manner.

The insipissated or concrete juice of this plant has, of late, become somewhat celebrated as an external application for cancerous affections. Repeated cases are reported, of cures of cancers by the application of this simple article; and from a well attested experience in its use, we would with much confidence recommend it in the treatment of this painful and highly dangerous affection.

A salve made from the leaves is the best method of preparing it for cancerous affections, it is prepared in the following manner:— Take of top and leaves, any quantity, bruise them in a mortar, and then press out the juice, put it on plates or flat bottom dishes, and expose it to the sun for evaporation. When it has become of proper consistence to form a paste it ought to be put in earthen or glass vessels to preserve it for use. When applied to the cancer, spread a thin plaster on a soft piece of leather or cloth, of a size suitable to cover the sore. These plasters must be occasionally renewed, washing the cancer with soap suds at each renewal. Two plasters have been known to cure a bad cancer of the female breast; and in some instances one has been sufficient.

This remedy has been known by a few, whose names have been celebrated in the cure of cancers, but the knowledge of it sold at a high price.

NAT. ORDER.

Lilaceæ.

LIBIUM PHILADELPHICUM. ORANGE OR TIGER LILY.

Class VI. Hexandria. *Order I.* Monogynia.

Gen. Char. *Corolla* six-petaled, bell-shaped, with a long nectarious line. *Capsules* the valves connected by cancellated hair.

Spe. Char. *Leaves* verticulate, linear-lanceolate. *Nerves* hairy beneath. *Stem* one to two flowered. *Corolla* erect, companuble, spreading. *Petals* unquiculate.

The *root* is large, knotty, and covered with numerous small succulent fibres; the *stem* is firm, round, upright, simple, and usually rises from eighteen to thirty inches in height; the *leaves* are numerous, long, narrow, pointed, smooth, without footstalks, and irregularly scattered over the stem; the *flowers* are large, of an orange yellow, spotted with dark red, and terminate the stem in clusters upon short peduncles; it has no *calyx;* the *corolla* is bell-shaped, consisting of six petals, which within are of a beautiful shining white, but without ridged, and of a less luminous appearance; the *filaments* are six tapering, much shorter than the corolla, upon which are placed transversely large orange-colored *anthers;* the *style* is longer than the filaments, and furnished with a fleshy triangular stigma; the *germen* becomes an oblong capsule, marked with six furrows, and divided into three cells, each of which contain a number of flatish, semicircular formed seeds. It flowers in June and July.

The lily has now become one of the most common ornaments of the flower garden; the principal florists, both of this country and England, have introduced its culture as a border plant, and it is now

very much admired for its sweet smell and the variegated tints of its flowers. The *Lilium Philadelphicum* is a native of this country, but is found growing in various parts of Europe, where it has been cultivated ever since the time of Gerard.

Medical Properties and Uses. The flowers of this plant have a sweet pleasant smell, and were formerly used in some parts of Europe for medicinal purposes; a watery distillization of them was employed as a cosmetic, and the *oleum lilirum* was supposed to possess anodyne and nervine powers; but the odorous matter of these flowers is of a very volatile kind, being totally dissipated in drying, and entirely carried off in evaporation by rectified spirit as well as water; and though both menstrums become strongly impregnated with their agreeable odor by infusion or distilization, yet no essential oil can be obtained from any quantity of its flowers. It is therefore the roots only which are directed for use, the properties of which are similar to those of the *Nymphæaodaratas*, White Pond Lilly, and can in most cases be substituted for it. It is a valuable medicine, for either internal or external use. Internally it is an astringent tonic, and can be used in diarrhœa, dysentery and all cases of general debility. Externally it is useful in poultices, for biles, tumors, inflamations, ulcers, &c. The leaves are also useful for the same purpose. The fresh juice of the roots mixed with lemon juice, is said to be good for removing freckles, pimples and blotches from the skin.

Sirup of Lilies. This preparation is made after the following manner. Take a single hand-full of the flowers, steep them moderately in a quart of water over a slow fire, for one hour; then strain and sweeten well with loaf sugar, grate in a little nutmeg, and add half-a-pint of good French brandy. This is an excellent article for children, when teething, or in bowel complaints. Mothers will find this an excellent remedy for what is called the nursing, or sore mouth. In the form of a poultice, prepared with slippery elm, it is excellent for swelling and to reduce inflamations. In all cases it is an excellent sedative to ease pain.


Rose Bay

NAT. ORDER.

Lauraceæ.

RHODODENDRON ARBOREUM. ROSE BAY.

Class IX. Enneandria. *Order I.* Monogynia.

Gen. Char. *Calyx* none. *Corolla* calycine, six-parted. *Nectary* of three two-bristled glands, surrounding the germ. *Drupe* one-seeded.

Spe. Char. *Leaves* ovate lanceolate, perennial, shining. *Flowers* placed upon short peduncles.

This beautiful *shrub* never rises to any great height, but usually sends off many radical shoots, oftentimes growing close and bushy; the *bark* is smooth, and of a dark olive color; the *leaves* are elliptical, pointed, smooth, veined, often waved at the margin, and of a shining green color; the *flowers* appear in April and May, and like those of *Laurus Sassafras*, are male and female upon different plants; they appear single and stand upon short peduncles; the *corolla* divides into four oval leaves, which stand nearly erect, and are of a yellowish white color; the *stamens* vary in number, from seven to thirteen; there is no *calyx;* the *style* of the female flower is very short, and the *germen* becomes an oval berry, covered with a dark green rind, and separable into two lobes or cotyledons.

This tree is a native of Italy, and other southern parts of Europe, and the first account we have of its cultivation is given by Turner, which was in 1562, when it was introduced into England for medical purposes. It is a beautiful evergreen, and is now very common in the extensive parks and shrubberies of that country. The spicy warmth of the berries, formerly recommended them for culi-

nary purposes, and in this way they were very much used by the Romans. And the leaves both of this and the common laurel were frequently used in custards, &c., but the practice has by most been discontinued, since the recent and fatal proof of the poisonous qualities was made public. To such we would observe, that the common laurel, or *Prunus lauro cerasus* of Linnæus, differs in every respect, from the plant here described, both in its effects and in its botanical characters. It may be remarked, however, that the deleterious part of it is the essential oil, which requires to be separated by distillization, in order to become an active poison.

Medical Properties and Uses. The leaves and berries possess the same medicinal properties, both having a sweet fragrant smell, and an aromatic astringent taste. In distillization with water the leaves yield a small quantity of very fragrant essential oil; with rectified spirit they afford a moderately warm pungent extract; the berries yield a larger quantity of essential oil; they discover likewise a degree of unctuosity in the mouth, give out to the press an almost insipid fluid oil, and on being boiled in water, appears on the surface, a thick butyraceous oil, of a yellowish green color, impregnated with the flavor of the berry. The oil thus obtained may be used with safety and advantage in assisting digestion; and it has even been thought to obviate the poisonous effects of the laurel.

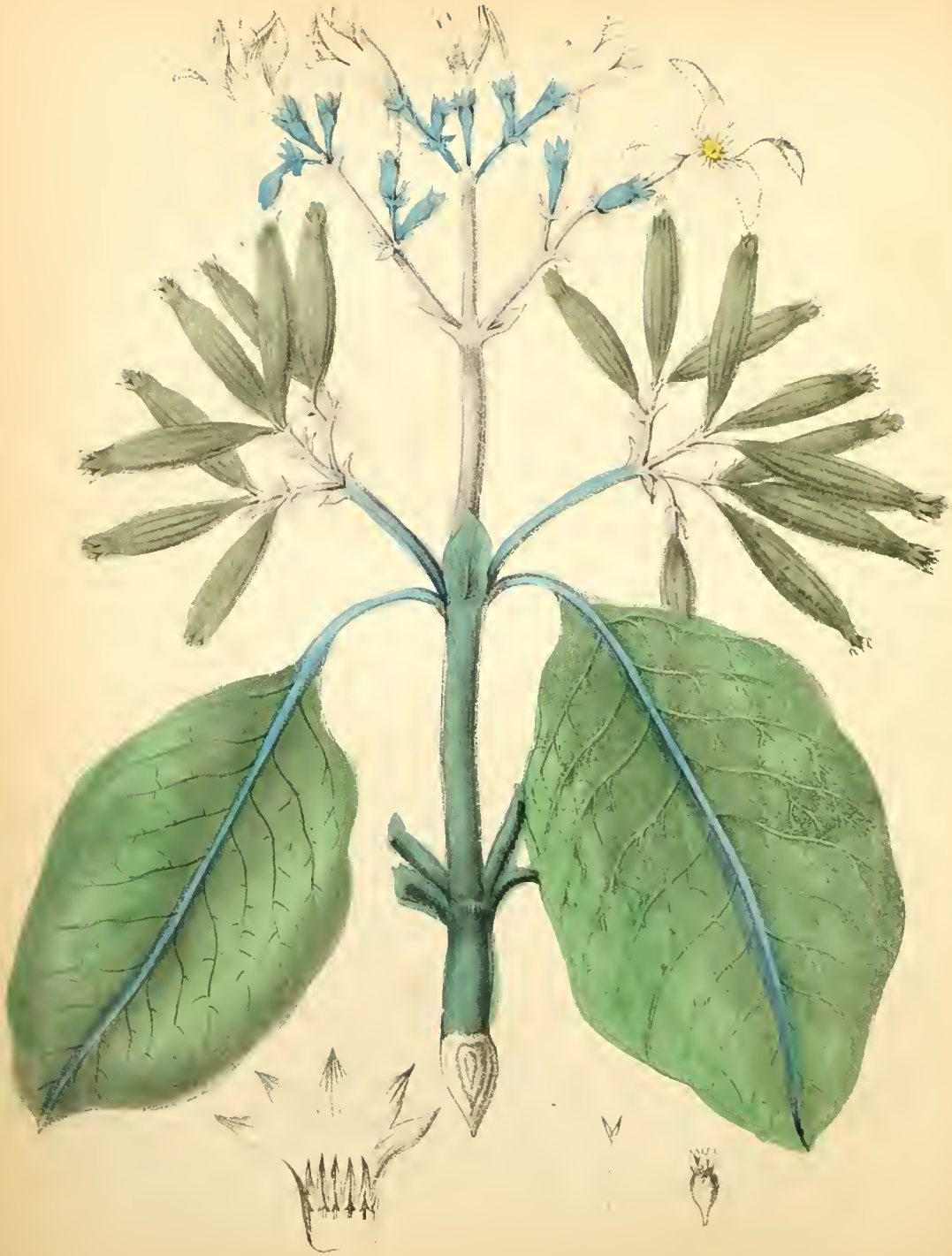
The Laurus of honorary memory, the distinguished favorite of Apollo, may be naturally supposed to possess extraordinary fame as a medicine, but its pharmacutical uses are so limited in the present practice, that this dignified plant is now rarely employed, except by the way of enema, or as an external application; thus in the London Pharmacopœia the leaves are directed in the decotum pro fomento, and the berries in the emplastrum cumini. The berries however appear to possess some share of medicinal efficacy, and if we do not allow them to be so extensively useful as represented by S. Bauhin, Tournefort, Goeffry, and some others, yet we have no doubt of their possessing highly valuable emmenagogue properties

and have often proved serviceable in the treatment of kidney affections. Bergius and some others made great use of a tea made from its leaves in the treatment of hysteria, but cautioned its too free use, as it was thought to act with peculiar power on the uterine system, proving considerably diuretic, and powerful as an emmenagogue. An infusion of the leaves is sometimes recommended by modern physicians; and the essential oil of the berries is given from one to five drops on sugar, or dissolved by means of mucilages, or in spirit of wine, this mode of administration has been urgently recommended in chronic rheumatisms, painful affections of the joints and bones, particularly those of a syphilis nature, for which it is extensively used in some parts of Europe even at the present day.

Dr. Koelpir, of Alten-stetin, an eminent botanist, claims to have made some valuable discoveries in relation to this plant. He made an infusion of it in water, kept twenty-four hours in nearly a boiling heat, in the proportion of two drachms of the leaves and tops of the plant to ten ounces of water. It was sometimes made double this strength, and the dose was two ounces, to be repeated after a few hours, and continued as required. Dr. Home found it an astringent and powerfully sedative; he directs it in infusion, from half-a-drachm to two drachms for a dose. When taken internally, it produces—according to Koelpir—a feverish heat, intoxication, sometimes a stupor, with a pricking sensation in the limbs, or other parts of the body; but the intoxication leaves neither headache or nausea. During the heat, the patient complains of intense thirst; and drinking cold water is followed by a violent but salutary vomiting, especially in complaints of the bowels; and a copious sweat on the parts affected with rheumatism or gout. In some instances the pains grow worse at first; but this increase of disease is soon followed by a remarkable relief: the pulse is rendered much weaker and slower, and in chronic rheumatism its effects are sometimes greatly increased. The infusion at first often produces heat and constriction in the fauces; which is a proof of some little acrimony,

but this effect speedily disappears. In robust habits it usually operates quickly, and with a considerable degree of violence; in the infirm and feeble, more slowly, so that the dose should not in any case be hastily increased. It sometimes proves fatal, and Morgagni has recorded the appearances on dissection of a woman who was killed by it; though we are inclined to think that this plant was the *nerium oleander* of Linnæus, sometimes called rhododendron, or the *rhododendron ferrugineum* which has similar powers.

Sirup of Rose Bay. The illustrious and celebrated Parkinson in his treatise upon the vegetable creation, has ascribed many virtues to this plant. He relates many cases, where cures were performed by the adminstration of this simple decoction alone, many of which would appear almost incredible were it not from a reliable source. He gave it in the form of a sirup, prepared in the following manner, viz. Take of the dried leaves of *rhododendron arboreum, rose bay,* two ounces; berries, after being dried, one ounce; *pepatica americana,* liverwort, one ounce; *pulmonaria officinalis* common lungwort, one ounce; steep all these together over a slow fire in one gallon of water down to three quarts, strain off, and add when cold, two pounds of bee's honey, one quart of best French brandy, one and a half pounds loaf sugar, and flavor it with the essence of wintergreen. This has been found highly servicable in the treatment of coughs, colds, consumption, and all pulmonary diseases. The dose is from a table-spoon full to half a wine-glass full, to be taken three or four times a day.



Cinchona of the Andes.

NAT. ORDER.

Cinchonaceæ.

CINCHONA OBLONGIFOLIA. CINCHONA OF THE ANDES.

Class V. Pentandria. *Order I.* Monogynia.

Gen. Char. *Corolla* funnel-form. *Capsules* inferior, two-celled, divided, the valves parallel to the partitions, opening inwardly.

Spe. Char. *Leaves* ovate, lanceolate, smooth. *Capsules* oblong.

This elegant *tree* rises from thirty to sixty feet in height; the *trunk* is single, round, smooth, erect, and covered with a brown or ash-colored *bark;* the older *branches* are smooth, round, and have a rusty appearance; the younger *branches* are obtusely quadrangular, leafy, and of a reddish color; the *leaves* when full-grown, are from one to two feet long, of an oblong-oval shape, and stand opposite, supported on semi-round petioles of a purple color; the *stipules* are supra-axillary, interfoliaceous, opposite, contiguous, united at the base, and of an obovate figure; the *flowers* are produced in large, erect compound, terminal, *panicles*, and placed upon long, brachiated, many-flowered *peduncles;* the *calyx* is small, fine-toothed, and of a purple color; the *corolla* is white and odorous; the *filaments* are very short and inserted into the tube of the corolla; the anthers are oblong, bifid at the base, and situated below the middle of the tube of the corolla; the *capsules* are large, oblong, obscurely striated, somewhat curved, and crowned by the calyx. This tree is found on the Andes, growing in woods, on the banks of mountain streams, and particularly abundant at Chinchao, Riobamba, and Chuchero, flowering in June and July.

The entire genus of this valuable tribe of plants is indigenous to

South America; growing for the most part among mountainous regions, difficult of access, and in other respects affording but little encouragement to the scientific traveller. To this cause we may ascribe our comparative want of information respecting one of the most valuable remedies which the vegetable world has yet offered to mankind. Recent events added to the valuable labors of pharmaceutical chemistry, and the present enterprise and improvement in that science, will, it is hoped, soon bring us better acquainted with the botanical characters of those of *cinchona*, to which medicine is so much indebted. We believe the fact to be well established, that there are many species of this tree, which yield a bark partaking more or less of the properties that distinguish the *peruvian bark* of commerce, although the destinctive characters of these species are still a desideratum in our botanical works. Riz and Pavon have described fifteen species native of Peru and Chili, and seven have been found by Mutis, a very celebrated botanist of Cadiz, who went to Santa Fe in 1760, as physician to the Viceroy, Don Pedro Misa de la Cerda, which he found in the forest near Gruduas. It is now known that very many more remain undescribed. The Edinburgh College formerly enumerated three varieties of the Peruvian, viz.: the *common* or *pale bark*, the *red* and the *yellow;* but it has long since been ascertained by both Spanish and American botanists, that these barks not only belong to distinct species, but that, probably, each of them is taken indiscriminately from several distinct species. In the history of sciences, it often happens that the person who knows how to diffuse, with a certain degree of boldness, the discovery of another, passes for the discoverer himself, instead of him who made the discovery.

Sensible Properties. The recent discoveries of the French chemists, M. M. Caventou and Polletrer supersede all the previous researches, so far as medicine is concerned, into the nature of *cinchonas.* Vanquelin ascertained that there were three, if not four, classes of *cinchona-bark,* differing essentially in their chemical con-

stitution. The first class precipitates astringents, but not gelatine; the second precipitates gelatine, but not astringents; the third precipitates both gelatine and astringents; there are also some barks which precipitate neither gelatine nor astringents; but they are not considered by botanists as properly belonging to the genus *cinchona*. Each of the three first classes are said to be capable of curing intermittants.

It had been long a desideratum among pharmaceutical chemists to discover in the barks the particular substance to which the febrifying property might be ascribed; and in pursuit of this object, Laubert of Paris, Strenss of Moscow, and Gomez of Lisbon, published, about the same time, the result of their observation; but the French chemists were most successful; they obtained a substance, which they recognised as that to which M. Gomez had given the name of *cinchonine*, and they evidently proved more successful in arriving at the correct properties of this most valuable plant. The *cinchonine* was obtained by operating on the *cinchona condamina*, or *grey bark* of the French botanists. The *cinchona cordifolia* (the *cinchona officinalis* of our Colleges, the *yellow-bark* of the French) was next subject to analysis, and from this was obtained an alkali, in many points resembling the *cinchonine*, but still differing in many important ones, sufficiently to prevent their being confounded: this alkali was called *Quinine*, The examination of the *red-bark (cinchona oblongifolia)* followed; and "it was an interesting question," says M. Magendie, "to determine whether this species, considered by many medical men as eminently febrifuge, contained *quinine cinchonine*, or a third variety of alkali. The result was, that they obtained, not only a treble quantity of *cinchonine*, (in all respects like that obtained from the *grey-bark*) but also nearly twice as much *quinine* as the same quantity of yellow bark had yielded. From ulterior experiments, made on large masses, it appears that *quinine* and *cinchonine* exist in all three species of bark, but the cinchonine is in greater quantity than the quinine in the grey-bark, while in the yellow-bark, the quinine greatly predominates."

The mode of obtaining the *quinine* and *cinchonine* (as given by Magendie,) is to "boil the bark in alcohol until it loses all its bitterness; evaporate the decoction to dryness in a water bath; dissolve the extract thus obtained in boiling water, strongly acidulated with hydrochloric acid; add an excess of calcined magnesia; which after boiling a few minutes, fixes the red coloring matter, and leaves the liquid clear; when cold, filtrate, and wash the magnesian precipitate with cold water, dry it on a stone, separate all the bitterness by repeated digestions in boiling alcohol, mix the alcoholic liquors, and the *cinchonine* will crystalize as the fluid cools."

The *cinchonine* and *quinine* may be obtained by one operation, as follows. Having obtained the *sulphate* of *quinine*, by the above process, (operating on the *cinchona cordifolia)* decompose the mother waters, and the washings of that operation, (which hold in solution the sulphate of cinchonine) by magnesia or lime; dissolve the quinine and cinchonine contained in these liquors, by digesting the magnesian precipitate when washed and well dried in alcohol: if the spirit be sufficiently charged, the cinchonine which predominates will chrystalize; if it do not, further concentration is necessary. The cinchonine thus obtained, must undergo a re-chrystalization to purify it; this is done by dissolving it in a sufficient quantity of boiling alcohol.

Chemical Properties of *Cinchonine* and *Quinine*. *Cinchonine* is white, translucent, chrystalizable in needles, and soluble only in seven hundred parts of cold water. If dissolved in alcohol or an acid, its taste is powerfully bitter, and resembles that of grey-bark. It is dissolved in very small quantities of the fixed oils, and sulphuric ether. With acids it forms salts which are more or less soluble. According to the analysis of Mr. Brande, *cinchonine* consists of about—Carbon 80, 20—Nitrogen 12, 65—Hydrogen 6, 85—aggregate, 99 70. *Quinine* is white, incrystallizable; it is as little soluble in water as cinchonine, much more bitter to the taste, as are also most of its salts, which are distinguished by a pearly appearance.

It is very soluble in ether, while cinchonine is very little so; this difference serves as well to distinguish their bases, as to separate them when united. *Quinine* likewise differs from cinchonine in containing oxygen, and that in nearly as large a proportion as hydrogen. According to M. Brande, its ultimate parts are nearly as follows:—Carbon 73,80—Nitrogen 13,00—Hydrogen 7,65—Oxygen 5,55—99,90. Quinine when melted becomes ido-electric, and acquires the resinous electricity with much intensity when rubbed with a piece of cloth.

M. Robiquet, in the Journal of Science, has given an analysis of the two sulphates of quinine, but he found that the sub-sulphate lost a portion of its acid during each chrystalization; he has given the composition of this salt, both after the first and third crystalization, as follows:—100 parts of Acid Sulphate of Quinine contain—Acid 19,1—Quinine 63,5—82,6—100 parts of Sub-Sulphate, first crystalization, contain—Acid 11,3—Quinine 79,0—90,3.

The *Sulphate of Quinine*, when exposed to the temperature of 100° (212° Farenheit) becomes luminous, especially when subjected to slight friction. This remarkable property was first discovered by M. Callaud d' Annecey, a French chemist. "M. M. Dumas and Pelletier exposed about three ounces of the sulphate, enclosed in a glass flask, which they kept in a sand-bath for half-an-hour, to the temperature of boiling water, when it exhibited, on friction, a briliant white light. On passing through the cork of the flask a metalic rod, ending in a point at the internal extremity, and by a ball at the opposite one, and applying it to the ball of the rod by a voltaic electroscope, shaking the flask before each contact, these gentlemen obtained the greatest separation of which the rods of the electroscope are susceptible; the electricity was always vitreous. The *Sulphate of Cinchonine* possesses the same phosphorescent property, but in a less degree, and the electric faculty in the same ratio."

Medical Properties and Uses of Peruvian Bark will be found under the head of *Cinchona Officinalis*; we shall therefore intro-

duce into notice in this place only the medical properties and formularies for the exhibition of the *cinchonine* and *quinine*. M. Magendie says—"a sufficient number of cases induce me to believe that these two alkalies (cinchonine and quinine) possess the medical properties of the *cinchonas*, and may be substituted for them on all occasions. In the twelfth volume of the Medico-Chiurgical Transactions, Dr. Elliotson of London has sufficiently established the febrifuge efficacy of both simple quinine, and of the sulphate, which is further confirmed by Dr. Dickson of Clifton, in the Edinburgh Medical and Surgical Journal." For us to insist on the value of these preparations is needless; since their introduction into some of the ague districts of our Western States, their use has become general, and seldom fails to effect a cure. As a general tonic, both the *cinchonine* and *quinine* may be successfully exhibited, in all cases wherein the *cinchona* would be indicated. The sulphates are the preparations most generally employed, and are recommended from one to eight grains to be given in twenty-four hours. Some physicians have thought it necessary to carry the dose much higher, but in general the result has not answered their expectation, and some patients have experienced severe symptoms, such as great agitation, with strong cerebral excitement.

"The United States Dispensatory recommends the introduction of this bark, occasionally, into the system by other sources than that of the stomach, where it has been found to exercise its peculiar influence whenever applied. Injected into the rectum, with opium to prevent purging; also in intermittants. Bark jackets, and baths, have been found servicable. But the best preparation of bark for external application is decidedly sulphate of quinia, which, sprinkled upon a blistered surface, denuded of the cuticle, is speedily absorbed, and produces on the system effects not less decided than those which result from its internal administration"

Dr. James Osgood, of Boston, Mass, informed me that while he was engaged in the practice of medicine in some of our Western States, in the years 1846 and 1847, he made extensive use of the Cinchona, in the treatment of fevers so prevalent in that portion of the country; and in all cases where the directions had been faithfully attended to, the chills and fever were invariably broken up, either on the second or third day. He advises its use in connection with other articles, and compounded after the following manner, viz.: Take equal parts of *cinchona ruba* peruvian bark, *diospyros virginiana* persimmon bark, (of the root.) and *corallorhiza odontorhiza* crawley root. Let them all be finely pulverised and well mixed together, and exhibit half an even tea-spoon full in a gill of cold water, once an hour, for six hours. This treatment," says Dr. Osgood, "I have usually preceded with an emetic, and have invariably found it efficacious in removing the febrile symptoms within the time above specified. In very severe cases I have added to each dose one or two grains of Quinine. This mode of treatment is applicable to all the fevers of the Western country, and is decidedly the best that I have ever pursued. It produces speedy and profuse perspiration, to which the fever shortly yields.

How far the same treatment would be applicable to the fevers of this region, I am unable to determine, having had but a single opportunity to test it. That was a case of *Pleurities*, pleuricy, in which it equalled my most sanguine expectations. It may be well to remark that it would be injudicious to continue the use of the medicine longer than about six hours, as the perspiration would cause too much debility. In connection with the treatment it is my uniform practice to keep the bowels open."

TINCTURE OF QUININE.

Take of sulphate of Quinine - - 6 grs. (gr. 4. 92 troy.)
Alcohol of 34° (847) - - 1 oz. (7 dr. 52. 5 gr. troy.)

We are told that the sulphate is to be preferred to the pure quinine, in this case; because when the tincture is made by using

alkali not saturated by an acid, a precipitate is formed on adding it to aqueous liquors.

WINE OF QUININE.

Take of good Madeira Wine* - 1 livre (oz. 22. 104 troy.)
Sulphate of Quinine - 12 grs. (grains 9. 84 troy.)

SIRUP OF QUININE.

Take of simple sirup - - 2 pounds (31 oz. 4 dr. 2 gr. troy.)
Sulphate of Quinine 64 grains (gr. 52. 48 troy.)

M. Magendie has proposed the following formulæ for the exhibition of Cinchonine:—

SIRUP OF CINCHONINE.

Take of simple sirup - - - - 1 pound (15 oz. 6 dr. 1 gr. troy.)
Sulphate of Cinchonine - 48 grains (gr. 39. 36 troy.)

TINCTURE OF CINCHONINE.

Take of sulphate of Cinchonine - 9 grains (gr. 7. 383 troy.)
Alcohol at 34° (847) - - 1 ounce (7 dr. 52. 5 gr. troy.

WINE OF CINCHONINE.

Take of Madeira Wine - - - - 1 litre (oz. 31. 104 troy.)
Sulphate of Cinchonine - 18 grains (gr. 14. 76. troy.)

The above preparations of *cinchonine* may be given in equal doses, and under the same circumstances with the preparations of *quinine.*

* Any other white wine may be substituted.

'Wild Turnip'

NAT. ORDER.

Araceæ.

ARUM TRIPHILLUM. WILD TURNIP—WAKE ROBIN.

Class XXI. Monœcia. *Order VII.* Polyandria.

Gen. Char. *Spathe* one-leafed, cowled. *Spadix* naked above, female below, stamineous in the middle. *Berry* one-celled, many-seeded.

Spe. Char. Stemless. *Leaves* ternate. *Leaflets* ovate, acuminate, entire. *Spadix* clavate. *Spathe* ovate, acuminate, convolute below, flat and bent above.

The *root* is perennial, round, flattened, tuberous, with many white fibres around the base; *skin* dark, loose, and wrinkled; the *leaves* are usually three or four, growing from each root; these are arrow-shaped, of a deep green or purplish color, beset with many veins and dark spots, and stand upon long grooved, and somewhat triangularly shaped footstalks; the *flower-stalk* is very short and channelled; the *calyx* is a sheath of one leaf, large, oval, nerved, and enclosing the spadix, which is round, club-shaped, fleshy, above of a purple color, below whitish, standing in the centre of the sheath, and supporting the parts necessary to fructification: on tracing it towards the base we first discover the nectaries, or several oval corpuscles, which are terminated by long, tapering points; next to these are placed the *anthers*, which are quadrangular, united, and of a purple color; under these we find again more nectaries; and lastly the *germens*, which are very numerous, round, without styles, and crowned with small bearded *stigmas*. This curious species of inflorescence displays itself early in spring, but the berries do not ripen till late in the summer,

when they appear in naked clusters, of a bright scarlet color, making a very conspicuous appearance in the swamps and damp woods where they are most commonly found growing.

This plant is a native of North and South America, and is quite common in almost every part of the United States, growing in swamps, in damp woods, by the side of small streams, along ditches, and in other moist shady places. The *root* is the medicinal part of the plant, which in a recent and lactescent state is extremely acrimonious, and upon being chewed, excites an intolerable sensation of burning and pricking in the tongue, worse than that of *Capsicum bacatum*, the strongest kind of Cayenne pepper, which continues for several hours. This active principle is a peculiar substance, *Aroine*, highly volatile, having no affinity with water, alcohol, oil or acids, and becoming an inflammable gas by heat or distillation. When cut in slices and applied to the skin, it has been known to produce blisters. This acrimony, however, is gradually lost by drying, and may be so far dissipated by the application of heat, as to leave the root a bland farinaceous aliment; its medical efficacy, therefore, resides wholly in the active volatile matter, and consequently the powdered root must lose much of its power on being long kept. Lewis says, "the fresh and moderately dried roots were digested in water, in wine, in proof spirit, and in rectified spirit, with and without heat: the liquors received no color, and but very little if any taste. In distillation, neither spirit nor water, brought over any sensible impregnation from the *arum*. The root nevertheless loses in those operations almost the whole of its pungency." Dr Cullen considers it a general stimulant, not only exciting the activity of the digestive powers, where they happen to be languid, but stimulating the whole system; in proof of this he observes, that it has been useful in intermittent fevers. The ancient writers condemned its use in any form, they fancied that it possessed poisonous properties, and was wholly incapable of being valuable as a medicine in any complaint whatever.

Medical Properties and Uses. *Arum* is certainly a very powerful stimulant, and by promoting the secretions may be advantageously employed in cachectic and chlorotic cases, in rheumatic affections, and in various other complaints of phlegmatic and torpid constitutions; but more especially in a weakened or relaxed state of the stomach, occasioned by the prevalence of viscid mucus. If this root is given in powder, great care should be taken that it be young and newly dried, when it may be used in the dose of a scruple or more twice a day; but in rheumatisms and other disorders requiring the full effect of this medicine, the root should be given in a recent state, and to cover the insupportable pungency it discovers on the tongue, it may be used in substance mixed with milk or molasses, as it does not impart its virtues to any liquor; or the fresh roots may be grated, or reduced to a pulp, with three times their weight of sugar, thus forming a conserve, the dose of which is a teaspoon-full twice a day. Dr. Lewis advises it to be administered in the form of emulsion, with gum arabic and spermaceti, increasing the dose from ten grains to upwards of a scruple three or four times a day; in this way, says he, "it generally occasioned a sensation of slight warmth about the stomach, and afterwards in the remoter parts manifestly promoted perspiration, and frequently produced a copious sweat." It is also used for flatulence, cramp in the stomach, asthmatic and consumptive affections, and has been strongly recommended for the removal of the most obstinate rheumatic pains. It quickens circulation, and promises to be a useful topical stimulant when the acrid principle may be rendered available. It has been found beneficial in lingering atrophy, debilitated habits, great prostration in typhoid fevers, chronic catarrh, &c.

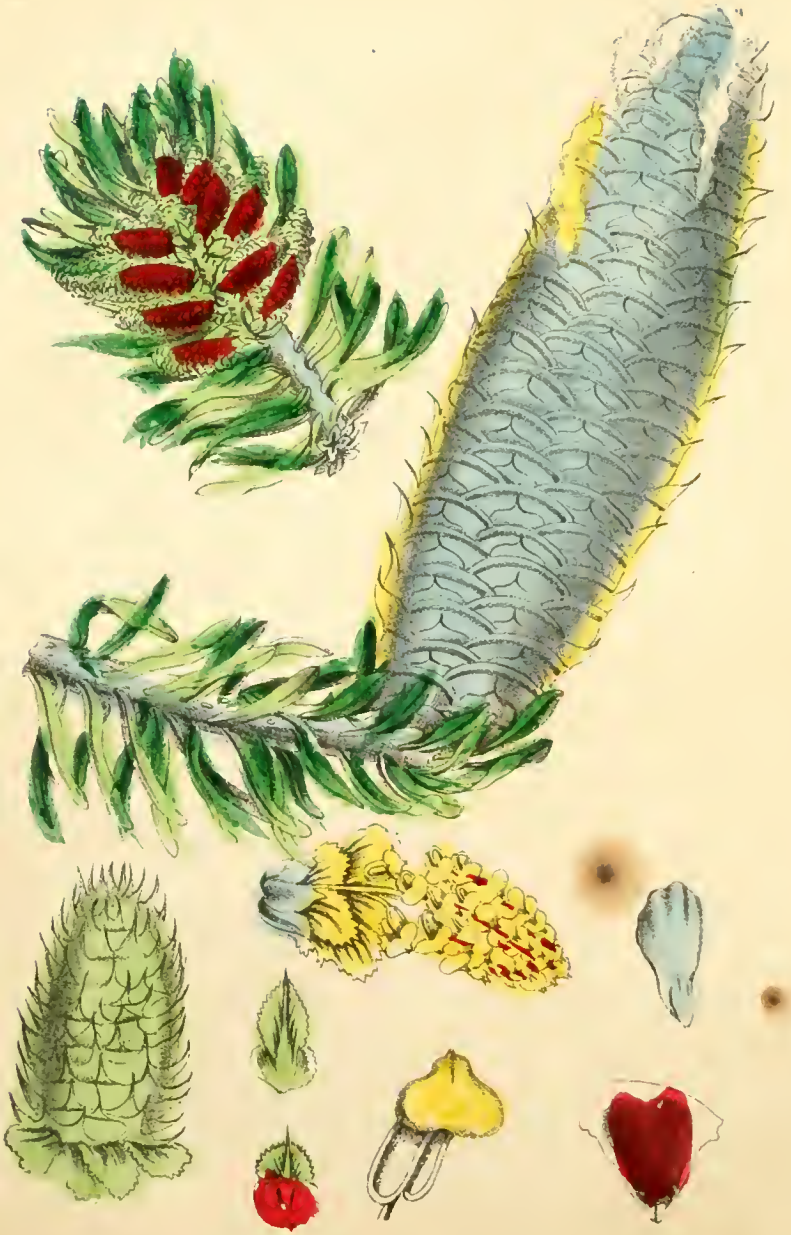
Bergius speaks highly of the efficacy of Arum in headachs, which were of the most violent kind, and resisted all the means he employed, till he used the powder of this root, which never failed to relieve them.

The medical properties of this plant have of late attracted the attention of physicians, in regard to its pectoral properties. Dr. Samuel Thompson, of Boston, says: "it has proved highly beneficial in coughs, consumption of the lungs and asthma, for which we have successfully used it for more than forty years. The root should be dried, pulverized, and given in doses of three to six grains, four times a day; or it may be given in honey, in the sirup of preserves, or in any other saccharine matter, or it may be made into a paste, with honey or sirup, and used in the form of candy, by letting the substance dissolve gradually on the tongue, so as to diffuse its warmth through the mouth, and thus used it is good for apthous sore mouth and throat." The following is Dr. Thompson's method of making cough drops.

WAKE ROBIN COUGH DROPS.

Take six ounces of dried wake robin, well pulverized, stir it into one pint of cold water, infuse it till the knobs, or small accumulations of the powders, are well mingled with the water, then pour on half a gallon of boiling water, and a heaped teaspoon-full of *capsicum annum*, cayenne pepper, half a gallon of molasses, half a gallon of Jamaica rum, one pint of the tincture *Lobelia inflata*, (common tincture of the herb,) and the juice of half a dozen best Sicily lemons."

This is one of Dr. Thompson's most valuable remedies for coughs, colds, raising of blood, croup, asthma, or any other difficulty of the lungs and throat. He strongly recommends that a small vial of these drops should be carried by those who are affected with a cough, and about half a teaspoon-full taken at a time, whenever there is an irritation in the throat, or an inclination to cough. This will keep the throat and lungs under a continual stimulation or excitement, by which means expectoration will become easy. It will also relieve pain in the side and breast, cholic pains, &c.; and is a valuable remedy for many other complaints.



Balm of Gilead Fire.

NAT. ORDER.

Coniferæ.

PINUS BALSAMEA. BALM OF GILEAD FIR.

Class XXI. Monœcia. *Order VIII.* Monadelphia.

Gen. Char. Male flower in a *catkin*. *Calyx*, none. *Corolla*, none. *Stamens* numerous, on a small stalk.

Female flower in a *catkin*, or cone of close, rigid, two-lipped, two-flowered *scales*. *Seeds*, two to each scale, ringed.

Spe. Char. *Leaves* solitary, flat, imperfectly two-ranked. *Cones* cylindrical, erect, with sharp-pointed scales. *Crest* of the anthers pointless.

This species of pine forms a very beautiful *tree*, varying in height from thirty to fifty feet; the *trunk*, which measures from twelve to fifteen inches in diameter, is straight, and covered with a smooth, whitish gray bark; the *leaves* are very fragrant, disposed on either side of the branches, like the teeth of a comb; they are solitary, flat, linear, short, not exceeding eight lines in length, and pointed; of a bright green on their upper surface, paler beneath, and marked with whitish lines; the *male catkins* are ovate; the crest of the *anthers* kidney-shaped, pointless, or furnished with short spines, but never bifid; the *females* with numerous ovate, notched, pointed bracteas; the *cones*, which stand erect upon the branches, are large, nearly cylindrical, and when full grown, of a beautiful, deep, glossy, purple color, inclining to black, and exuding a great quantity of transparent resin, which gives them a very beautiful appearance. Figure *a* represents a female catkin; *b* a male catkin; *c* scales of a catkin; *d* its bracteolæ; *e* the anthers; *f* scale of a cone.

The *Pinus balsamea* is a native of the coldest regions of this continent, growing abundantly in Canada, Nova Scotia, northern parts of New England, and other northern provinces. It has been introduced and cultivated in some parts of England, since the year 1698, but the climate does not appear to be congenial to it, for although it attains a considerable height, it seldom survives above twenty years.

The fine *turpentine* of the shops, or what is commonly called *Canada* balsam, is yielded by this tree. It exists in great quantity, in the vesicles between the wood and bark; being collected by making incisions in the trunk of the tree, through which it exudes. It is then put in casks of from one to two hundred pounds, and shipped to most parts of the civilized globe.

Sensible and Chemical Properties, &c. *Canada* balsam, or turpentine, has a strong, but rather agreeable odor; its taste is somewhat bitter, and resembles the other turpentines; its color is pale yellow, with a greenish tinge, transparent, and has the consistence of honey fresh from the comb.

Distilled with water, it yields a limpid, colorless, essential oil, and leaves a solid resin, resembling the common yellow resin. Distilled by itself, it yields, first, a clear oil, in appearance like that obtained by distillation with water, but which gradually changes to yellow, and then to red, and leaves a black resin. During the operation of distillation, succinic acid also rises. It is insoluble in water, but soluble in alcohol and ether, also in the volatile and drying oils; it is soluble in alkaline ley, and the strong acids; the sulphuric and nitric acids convert it into artificial tannin. The essential oil, or spirit of turpentine, as it is commonly called, has a strong penetrating odor, and a hot, pungent, bitterish taste. It is perfectly limpid and colorless, light, volatile, inflammable, and burns with a very vivid, crackling flame. It is soluble in six parts of sulphuric ether, very sparingly soluble in cold alcohol, one hundred parts unite with twenty of alcohol; if the alcohol be

heated, the oil readily combines with it, but will be separated again as soon as the spirit cools. A stream of oxymuriatic gas passed through it, converts it into a yellow resin. Distilled with four times its volume of water, it becomes lighter and brighter.

Medical Properties and Uses. *Canada balsam* possesses similar medicinal properties to the other turpentines, which are more fully described under the head of *Pinus sylvestris*, *Pinus abies*, *Pinus picea*, and *Pinus larix*, in the present and other vols. of this work; consequently, we shall only make a few observations regarding the use of turpentine as a remedial agent, and more especially for the expulsion of tænia. It was first recommended by Dr. Fenwick as an anthelmintic of extraordinary powers. The Dr. prescribed it in doses of two ounces, and repeated it in ounce doses until it had the desired effect; purging is in general produced, and the worm is usually evacuated lifeless. Turpentine, when given in large doses, by acting as a cathartic, seems to prevent its absorption, hence its action on the urinary organs becomes obviated, and stranguary, which so frequently accompanies the internal use of small doses of turpentine, is not to be apprehended; not only for the expulsion of tænia, but for other worms, (especially the *lumbrici*) it has been administered with equal success. Dr. Copeland strongly recommends the oil in the hœmorrhagiæ, particularly in atonic epistaxis, also in epilepsy, in the last stages puerperal fever, and in the convulsions of infants, when arising from a disordered state of the alimentary canal. It is also a powerful emmenagogue, thence useless in chlorosis. We are told by Dr. Copeland, that in some cases of ovarian dropsy, its effects were such as to recommend its employment in the incipient stages of that disease, and also in other dropsies. Externally, the oil is used with much advantage as a primary application to scalds and burns. Dr. Kentish was the first who introduced its use, and subsequently his practice has been confirmed and adopted by many surgeons of skill and eminence. It is also topically applied as a discutient to indolent tumors, &c.

The United States Dispensatory enumerates several varieties of the *Abies* from which Canada balsam is obtained and considered officinal. The *Abies excelsa* of Europe, and *Abies canadensis* of the United States, have been considered as the sources respectively of Burgundy and Canada pitch. The *Abies picea* of Linnæus, *Abies pectinata* of De Candolle, *Abies taxifolia* of the French Codex, *Pinus picea* or *European silver fir* tree, growing in the mountainous regions of Switzerland, Germany and Siberia, yields the *Strasburg* turpentine, which is much used in some parts of Europe. The *Abies nigra, (Pinus nigra,)* or *black spruce* of this country, yields a product, which though not recognised by the Pharmacopœia, is considerably employed. The substance alluded to is the *essence* prepared from the young branches by boiling them in water and evaporating the decoction. This is a thick liquid, having the color and consistence of molasses, with a bitterish, acidulous, astringent taste. It is much used in many parts of Germany and Europe, in the preparation for the manufacturing of beer, which is a pleasant and wholesome drink in summer.

As a remedy for pulmonary affections and coughs of long standing, the *balm of Gilead buds*, in our opinion, stand second to no other article in the Materia Medica. A syrup made after the following prescription, has been successfully employed in the cure of many very obstinate cases of coughs, where other remedies seemed to have failed.

Cough Syrup. Take of *Abies balsamea buds*, (balm of Gilead buds,) two ounces; *Inula heleniam*, (elecampane,) two ounces; *Symphytum officinale*, (comfrey root,) three ounces; *Lobelia inflata* herb (common Indian tobacco,) one ounce; *Marrubium vulgare*, (hoarhound,) one ounce. Put this in one gallon of water, boil down to three quarts, strain off, and when cold add one quart best honey, or Stewart's syrup molasses, one pint best French brandy, and one ounce essence of wintergreen: shake and mix, when it is ready for use. Dose, one teaspoon-full three times a day.

China Poinciana

NAT. ORDER.

Leguminosæ.

POINCIANA PULCHERRIMA. CHINA POINCINANA.

Class X. Decandria. *Order I.* Monogynia.

Gen. Char. *Calyx, sepals* five, unequal. *Petals*, five, stipitate and deformed. *Stamens*, ten, longer than the petals.

Spe. Char. *Leaflets* prickly, ovate or obovate, notched at the end, smooth. *Petals* fimbricate, longly, stipitate.

Sepals are five in number, unequal, joined at the base into a somewhat persistent cup, the lower one arched; the *petals* are five, stipitate, having the upper one of a different form; the *stamens* are ten, very long, all bearing anthers, filaments hairy at the base; *style* very long; *legume* flatly compressed, two-valved, somewhat many-celled, with spongy isthmuses; the *seeds* are obovate, compressed, having the internal integument in a gelatinous water; *cotyledons*, flat and oval; the *leaves* are abruptly bipinnate; the *flowers* are disposed in a corymbose panicle; *pedicels* long, without bracteas at the base.

This most magnificent shrub grows to the height of ten feet and upwards; and as the plate shows, bears panicles of the most brilliant flowers. It is a native of the East Indies. Sigou states that it was imported into Barbadoes from the Cape de Verd Island. Its beauty has attracted the attention of the Chinese for some time, and wherever they settle, they cultivate it as the crown of all garden ornaments, and call it by the name of the peacock's crest. It was introduced into Holland from Amboyna about the year 1670, where it was extensively cultivated in the Chelsea Garden by Sir Hans Sloane, in the year 1691. The flowers are most beautiful to

the eye, and rather sweet-scented, but the whole plant when bruised has a disagreeable odor, very much resembling that of Savine, and is used in the West Indies by many supposing it to possess similar properties. This plant is considered valuable in the West Indies (independent of its beauty) for making fences, mixed with the *Parkinsonia aculata;* which, says Jaquin, forms one of the most beautiful fences imaginable.

This delightful plant cannot be cultivated in this country, (especially in the Northern States,) without great care and nursing. It is a stove shrub requiring a strong heat, with plenty of pot room to grow it well. The soil should be three-fourths loam and one-fourth well rotted dung and peat, using plenty of drainers. It is propagated by seeds, which are occasionally received from the East and West Indies, and tropical America. There are frequently brought into this country different varieties, distinguished merely by the color of the flowers.

The present drawing was made from a splendid specimen sent to the artist by John Willmore, Esq., about two years ago, when the plant flowered for the first time in that gentleman's collection. The stamens, which are always assurgent in this species, have been represented by our artist as declinate, owing, no doubt, to their having begun to flag before the drawing was commenced. Its generic name is in compliment to M. de Poinci, governor of the Antilles: *pulcherrima* refers to the beauty of its inflorescence.

Medical Properties and Uses. Various medical writers have attempted to describe the specific properties of this plant, and most of whom have fallen into a great error in supposing it to possess considerable narcotic powers. An acquaintance of mine, a physician, who has lately come from Holland, kindly furnished me with a small package of the leaves of this plant, which he had brought for medical purposes; these leaves I subjected to a chemical process, and found them to be destitute of any narcotic properties, but acting violently and powerfully as an emenagogue.

METHOD OF PREPARING EXTRACTS AND SIRUPS

From Plants and Roots, in a concentrated form, and by which they retain all their virtues.

The question is frequently asked, "is there no way of obtaining the medicinal virtues of these valuable plants in a form that would not be objectionable to the taste, and at the same time, preserve all the active properties of the whole plant;" in answer to which, we give the substance of a letter kindly furnished us by Dr. James Osgood of Boston, and published in the Western Medical Reformer, a monthly journal of medical and chirugical science: the letter is written by J. King, M. D., of Owingsville, Ky.; with whom the process of extracting appears to be original. We think it a very valuable acquisition to the science of medicine, and one that is worthy of the attention of every physician. Dr. King remarks that "vegetable medicines are as capable of being prepared in diminished quantities as mineral substances, and when thus reduced, are much more effectual in their results. Thus, *Iris versicolor*, (blue flag root,) contains resin and mucilage: in the former resides the purgative and alterative properties; in the latter, diuretic. Then why administer the crude root in powder, in which these properties are combined with woody fibre and other inert substances, when a few grains of the proper constituent will answer? The same is the case with the *Cimicifuga racemosa;* (Cohosh root,) its alterative, anti-scrofulous, anti-rheumatic, emmenagogue, and other properties for which it is generally employed, reside in its resin. Then certainly it is useless to administer it in conjunction with tannin, galic acid, gum, &c., when a few grains of its active principle is sufficient. The medical constituent of a plant is all that we require. True, there are some plants whose virtues consist in the union of these constituents, but they are rare.

"For the last several years I have prepared my medicines, or rather those of which I make the most frequent use, in such a manner, that the doses in quantity, are much smaller than usual, and are fully as effectual in their results, if not more so, than the same articles as generally administered. The object most desirable in chronic diseases, is not to shock the system by repeated large quantities of active medicine, as is too often the case with practitioners, and from which cause very few real and permanent cures are effected in chronic cases, but to give medicines in the least possible doses that may be found necessary to keep the system constantly under their peculiar alterative, tonic, or other action, and always in union with the other requisites of proper exercise, diet, cleanliness, &c.

"My method of preparing these medicines depends upon the required active constituent or constituents of the medicine; thus, with the greater part of tinctures, I prepare them saturated, instead of the common strength, which of course lessens the dose in quantity. * * * From some I obtain only the resin, by extracting all that alcohol will take up, then filter the alcoholic tincture, to which add an equal quantity of water, and separate the alcohol by distillation; the resin sinks in the water. Thus, an excellent hepatic is obtained from the *Hydrastus canadensis* in the dose of from one fourth to three grains; a purgative, alterative or emmenagogue, from the *Iris versicolor*, *Podophyllum peltatum*, *Sanguinaria canadensis*, *Cimicifuga racemosa*, *Caulophyllum thalictroides*, &c.

"Sometimes I distil the alcoholic tincture to a certain quantity without the addition of the water, and then evaporate the remainder until the residue is of the required consistence for a pilling extract, or powder as with *Sang. canad.*, *Aletris farinosa*, *Peonia officinalis*, *Euphorbia ipecacuanha*, *Apocynum canabinum*, &c.

"With other articles I make the alcoholic extract, as above, then boil the roots or herbs in water till all the virtues are obtained,

reduce it to an xtract, and then combine the alcoholic and aqueous extracts together, as with *Rumux crispus, Solonum dulcamara, Leptandria virginica, Baptisia tinctoria, Inula helenium, Arctium lappa, Aristolochia serpentaria, Berberis vulgaris, Cornus sericea, Viburnum oxycoccus, Cyprepedium pubescens, Juniperus sabina, Xanthoxylon fraxineum, Phytollacca decandria,* &c.

"With some articles I make an alkaline extract, but with only those which contain resin and have a drastic effect, which is made by adding from time to time, during the evaporation of the alcoholic tincture, and at every time when the resin begins to separate from the liquid, small portions of pearlash, *(carbonate potash,)* and continue adding it in like manner until the extract is finished; this renders the article less drastic, and completely prevents it from producing any nauseous or irritating sensation, as with the *Iris versicolor, Podophyllum peltatum,* &c. There are other articles, again, where I obtain the ethereal oil or extract, and which is made by saturating sulphuric ether with the article, filtering, and then allowing it to evaporate spontaneously, as with *Capsicum annum, Secale cornutum, Cochlearia armorica, Crocus sativa, Ictodes fœtida, Lycopus virginicus, Lobelia inflata, Scutellaria lateriflora,* &c.

"By preparing medicines as above, there is no change of the virtues of the constituent principles requisite, chemically considered, as is the case with sulphate of quinine, and some other articles, in which there is often entire decomposition, or at least, new combinations; the doses are also small in quantity, and the effect much greater upon the human system, than when combined with inert, woody and other substances.

"In preparing medicinal sirups, the following will be found one of the best modes: have a vessel which will hold from 40 to 50 pounds of plants, to which add two gallons of water, and if the article contains resin, add in addition one and a half pounds of saleratus, which must be dissolved in water before it is added; by a gentle heat gradually distil off this water, returning it, as it

passes, into the vessel by means of a tube adapted for that purpose. Continue the distillation in this manner, until the herbs or roots are all as soft as mush; then remove them from the fire, and by means of a screw press, press out all the fluid, until the articles are left dry in the press, remembering to add to it the two gallons of water which had been used to soften. Place this expressed liquor in a barrel by itself, and well closed. In like manner, obtain the expressed liquid of each article separately. To prepare a sirup: pour into a barrel churn the necessary quantity of each ingredient, together with sufficient molasses or sirup to sweeten; churn the articles together, for half an hour, then bottle and cork tight. The dose of any purifying sirup thus made, is one teaspoon full, three or four times a day, and it will keep well in any climate.

"If, however, it is inconvenient for a physician thus to prepare his sirups, he can make a very pleasant cordial, as follows: take one pound of any mixture required, and in a coarse, bruised state; place it in a vessel, and add to it three pints and a half of alcohol, place it over a fire till it boils, then cover tightly and remove from the fire. When cold, pour off the alcohol into a separate vessel, and add more alcohol, merely sufficient to cover the articles; let this stand three days, and pour it into the same vessel with the other. To the mixture of roots, add six pints of boiling water, and when cold add the alcoholic tincture and six pounds of loaf sugar. Let it stand for one week, frequently shaking it, and it will be fit for use. Dose; from a tablespoon half full, to a wineglass half full, three times a day."

As this subject is of essential importance to the best interests of the physician, I have not deemed the above suggestions superfluous or uncalled for, and trust that every practitioner and well-wisher to the science of medicine will investigate this subject still further.

Common Grape Vine.

NAT. ORDER.

Vitaceæ.

VITIS VINIFERA. COMMON GRAPE VINE.

Class V. Pentandria. *Order I.* Monogynia.

Gen. Char. *Petals* cohering at the apex, withering. *Berry* five-seeded, superior.

Spe. Char. *Leaves* broad-cordate, angularly sub-three-lobed, cinereous-tomentose beneath. *Racemes* small. *Berries* large.

The *vine* sends off numerous long, slender, climbing branches, and is covered with rough, dark-brown bark; the *leaves* are roundish, deeply serrated, commonly divided into three lobes, and stand alternately upon long footstalks; the *flowers* are small, and produced in spikes; the *calyx* is divided into five small narrow segments; the *petals* are fine, small, oblong, whitish, withered, adherent at their apicies, and soon fall off; the five *filaments* are tapering, and furnished with simple anthers; the *germen* is egg-shaped, without any style, but supplied with a cylindrical stigma; the *fruit* is a large round berry, of one cell, and contains five hard seeds, of an irregular form. The flowers appear in June and July.

The *vine* is a native of most of the temperate parts of the four quarters of the globe, and is successfully cultivated between the thirtieth and fifty-first degree of latitude. Through the effects of culture, and a difference of soil and climate, numerous varieties of grapes are produced, differing widely in shape, color, and taste, and affording wines which are known to be extremely various. Vine leaves, called *pampini*, and the tendrils, or capreoli, have an astringent taste, and were formerly used in diarrhœas, hemorrhages, and other disorders, requiring refrigerant and styptic medicines. The

juice or sap of the vine, named *tachryma*, has been recommended in calculous disorders, and is said to be an excellent application to weak eyes, and specks of the cornea. The unripe fruit has a harsh, rough, sour taste: its expressed juice, called *verjuice*, was much esteemed by the ancients, but is now superseded by the juice of lemons; for external use, however, particulary in bruises and sprains, verjuice is still employed and considered to be a very useful application.

The dried fruit constitutes an article of the Materia Medica, under the name of *uva passa*, of which two kinds were formerly mentioned in our pharmacopæias; viz., *uvæ passæ*, majores and minores, or raisins and currants; the latter is a variety of the former, or the fruit of the *vitis corinthiaca seu apyrena*. The manner of preparing them is by immersing them in a solution of alkaline salt, and soap lye, made boiling hot, to which is added some olive oil and a small quantity of common salt, and afterwards drying them in the shade. These fruits are used as agreeable lubricating acescent sweets, in pectoral decoctions, and for obtunding the acrimony of other medicines, and rendering them grateful to the palate and stomach. They are directed in the *Decoctum hordei compositum*, *Tinctura sennæ*, and *Tinctura cardamomi composita*.

Wine, or the fermented juice of the grape, of which there is a great variety, has by medical writers been principally confined to four sorts, as sufficient for officinal use. These are the *Vinum album hispanicum*, mountain; *Vinum canarium*, canary or sack; *Vinum rhenanum*, rhenish; and *Vinum rubrum*, red port.

Medical properties and uses. New wines, when taken into the stomach, are liable to a strong degree of acescency, and thereby occasion much flatulency, and eructation of acid matter; heartburn and violent pains of the stomach from spasms are also often produced; and the acid matter, by passing into the intestines and mixing with the bile, is apt to occasion colics or excite diarrhœas. Sweet wines are most likely to become acesent in the stomach.

The quantity of alcohol which they contain, is much more than appears sensibly to the taste; their acescency is thereby in a great measure counteracted. Red port, and most of the red wines, have an astringent quality, by which they strengthen the stomach, and prove useful in restraining immoderate evacuations; on the contrary, those which are of an acid nature, as rhenish, pass freely off by the kidneys, and prove gently cathartic. But this, and perhaps all the thin or weak wines, though of an agreeable flavor, yet, as containing little alcohol, are readily disposed to become acetous in the stomach, and thereby to aggravate all anthritic and calculous complaints, as well as to produce the effects of new wine.

The general effects of wine, are, to stimulate the stomach, exhilarate the spirits, warm the habit, quicken the circulation, promote perspiration, and, in large quantities, to prove intoxicating, and powerfully sedative.

In a great variety of diseases, wine is universally admitted to be of important service, and especially in fevers of the typhus kind, or of a putrid tendency, in which it is found to raise the pulse, support the strength, promote a diaphoresis, and to resist putrefaction; and in many cases, it proves of more immediate advantage than the Peruvian bark. Delirium, which is the consequence of excessive irritability, and a defective state of nervous energy, is often entirely removed by the free use of wine. It is also a well founded observation, that those who indulge in the use of wine, are less subject to fevers, both of the malignant and intermittent kind. In the putrid sore throat, in the small pox, when attended with great debility, and symptoms of putrescency, in gangrenes, and in raging epidemics, wine is to be considered a principal remedy; and in almost all cases of languors, and of great prostration of strength, wine is experienced to be a more grateful and efficacious cordial, than can be found among the whole class of aromatics.

The tartar, which is thrown off from wines, to the sides and the bottom of the cask, is also an officinal article, and consists of the vegetable alkali, supersaturated with acid. When taken from the cask, it is found mixed with an earthy, oily and coloring matter: that obtained from red wine, is of a deep brown color, and commonly called red, and when it is of a paler color, white tartar. It is purified by dissolving it in boiling water, and separating the earthy part, by filtering the boiling solution. On cooling the solution, it deposites irregular crystals, containing the coloring matter, which is separated by boiling the mass with white clay. The tartar, thus purified, is called cream of tartar. If this be exposed to a red heat, its acid flies off, and what remains is the vegetable alkali, or salt of tartar.

Crystals of tartar are in common use as a laxative and mild cathartic; they are also esteemed for their cooling and diuretic qualities, and therefore have been much employed in dropsical and other cases, requiring an antiphlogistic treatment. Dr. Cullen says that "in large doses, they act like a purgative, in exciting the action of the absorbents in every part of the system, and that more powerfully, than happens from the operation of any entirely neutral salt;" and on this is founded their utility in the cure of dropsy. It must be remarked, however, that they do not readily pass off by the kidneys, unless taken with a large quantity of water; and therefore when intended as a diuretic, they ought to be given in a liquid form, as Dr. Home has directed. The dose is to be regulated according to circumstances, from a drachm to two ounces. These salts enter several officinal compositions.

Another article which is worthy of notice here, is vinegar, which has been esteemed of great use in almost all inflammatory and putrid disorders, whether internal or external. It is very efficacious in counteracting the effects of vegetable poisons, especially those of the narcotic kind. Vinegar is also much employed as a menstruum, or for extracting the virtues of other medicines.

NAT. ORDER.

Lobeliaceæ.

LOBELIA SURINAMENSIS. SHRUBBY LOBELIA

Class XIX. Syngenesia. *Order I.* Polygamia Æqualis.

Gen. Char. *Calyx*, five-parted. *Corolla*, one-petaled, irregular *Capsules*, inferior, two to five, three-lobed, two-valved at the apex.

Spe. Char. *Stem*, fruitful. *Leaves*, oblong, glabrous, serrated. *Flowers*, pedunculated.

The whole *plant* is smooth, and of a beautiful shining green color. The *stem* is slender, erect, and branched, and, in good soil, obtains the height of several feet; the *leaves* are linear, and remotely denticulate; radical ones, spathulate; *raceme*, few-flowered, and leafy; *peduncles*, longer than the fruit, with two minute bracts near the flower; the *capsule* is attenuate at the base; the *blossoms* are very large, of a pale red color; and its *anthers*, which are sometimes mistaken for the *stigma*, are usually hairy. It is a native of the West Indies.

The *Lobelia surinamensis* is a plant which was formerly described by the younger Linnæus, under the name Lævigata, apparently from the smoothness of its flowers. In the year 1786, Mr. Alexander Anderson, a botanist of some reputation in the West Indies, procured this plant, and sent it to the Royal Garden at Kew, where it was extensively cultivated for medical purposes; but is now found growing spontaneously, in the woods and dry marshes, not only here, but also at Surinam, and the country adjoining. Mr. Aiton has assigned to it a new specific description, and a new trivial name, for the correctness of which, we are at

present unable to determine, as the plant is but very little known, and probably has never been introduced for culture into this country. The drawing accompanying this description was taken from a plant which flowered in the hot house of Messrs. Grimwood & Co., Kensington, who spared no pains or expense in procuring all the rare and curious exotic plants for culture, and more particularly, to promote the cause of botany. It begins to flower in January and February, and continues to blossom during most of the summer months, and is easily increased by cuttings.

Medical Properties and Uses.—The medicinal properties of this plant, but more particularly the root, are considered invaluable by the Indians of this country. They administer it with astonishing success in the treatment of cancers, ulcers, tumors, and syphilitic affections, of the most virulent kind. Five or six of the plants, including the roots, are boiled in water, and the patient drinks as much as he can of this decoction, in the morning, and during the day. It soon purges, and the strength of the decoction is increased or lessened, as the patient can bear the evacuation. If any part is sore, it is to be washed with this decoction, by which process, in the course of two or three weeks, a perfect cure is effected. Every part of this plant abounds with a milky juice, and has a very disagreeable, rank smell. The root, which is the part preferred in medicine, in taste, resembles tobacco, and sometimes excites vomiting. A handful of it, dried, is boiled in twelve pints of water, till they are reduced to eight; the patient begins taking half a pint, morning and evening, then more frequently, if the purgative effect is not too violent. Should it prove so, the medicine must be omitted for three or four days, and then again taken, till the cure is completed. The ulcers are to be washed with a decoction of the roots, and if deep and foul, sprinkled with the powder of the inner bark of the *Ceanothus Americanus*, New Jersey Tea, or Red-root, and which is sometimes used as a substitute. The leaves of this plant were used during

the revolutionary war, as a substitute for tea. It is also highly recommended as a local application in apthous affections of the mouth and fauces, and in the sore throat of scarlatina, and as an internal remedy in dysentery, for which a strong decoction should be made of the dried leaves and seeds. We owe some portion of this description to Sir W. Johnson, who received it from the Indians of this country. The author would also beg leave to state a fact which has come under his own observation, and of which he has been a daily witness, fully sustaining its high reputation, not only for the cure of ulcers, tumors and scrofulous affections, but in the treatment of cancers of the most obstinate character.

In the month of March last, Miss Vanriper, from the central part of New Jersey, called upon me for advice in regard to a cancer which was located upon her left breast. After making the necessary examination, I found it to be of the scirrhus kind; the tumor had extended over the whole breast, and was then very painful. The puckering of the skin, the dull leaden color of the integuments, the knotted and uneven surface, the occasional darting pains in the part, its fixed attachment to the skin above, and muscles beneath, and in the breast, the retracted state of the nipple, accompanied with declining health, and a peculiar sallow complexion, formed so striking an assemblage of symptoms, that there could not be the smallest doubt, that the tumor was a true scirrhus.

The encouragement which I gave of effecting a cure without extirpation, was but little, nor should I have attempted it under any circumstances, especially, at this stage of the disease, had I not previously become acquainted with the valuable properties of this species of lobelia, in the treatment of scrofula, tumors, cancers, eruptions of the skin, &c. I have administered it in many cases, and never failed of making a cure, unless in the cancer, where it was very far advanced, and the vital powers of life exhausted. In

the present case, however, I ordered a tea, made from the plant and roots, and one single handfull, to two quarts of water, boiled down to three pints: of this, to drink a wine glass full, three or four times a day; externally, to bathe and wash the tumor with the same tea, two or three times a day, and apply a poultice made with one part of the powdered leaves of the same plant, and two parts *ulmus fulva*, mixed with the same tea. This poultice should be kept on both night and day, only removing it when the part is to be bathed; the poultice to be renewed once in twenty-four hours. It may be proper to remark, also, that at the time of bathing, I had the parts well rubbed with the bare hand, and the wash freely applied. Although still under simple treatment, I consider the cancer entirely cured, as not a vestige of it now remains. This course of treatment, with a slight variation according to circumstances, seldom fails of making cures of the most obstinate kinds. As a remedy for cancer, it has long been used by the Indians, and the secret sold for a high price.

For wounds, amputations, inflammations, ulcers, and other diseases which have a tendency to terminate in mortification, this plant proves one of the most valuable articles in the Materia Medica. The author would also remark, that one of the most obstinate cases of gangrene which ever appeared on record, has just been cured by the use of this valuable herb. The person referred to, is a Mr. Smilie, a highly respectable gentleman of this city, now living at 48 Delancy-street; this gentleman had for the last eight months been afflicted with dropsy, in the course of which time, he had employed several eminent physicians, who gave it as their opinion, that nothing farther could be administered to save the life of the patient; both legs were swelled to an enormous extent, and mortification had made its appearance. A strong decoction made from the leaves of this plant, drank freely, and a poultice prepared from the powder, mixed with elm, applied fresh every day, effected a perfect cure.

NAT. ORDER.

Araceæ.

ARUM TRILOBATUM. THREE LOBED ARUM.

Class XX. Gynandria. *Order III.* Hexandria.

Gen. Char. *Spathe*, one leafed, cowled. *Spadix*, naked above; female below. *Stamens*, in the middle.

Spe. Char. *Leaves*, hastate, quite entire. *Spadix*, club-shaped.

The *Arum trilobatum* which our figure represents, is an exotic plant, and by most writers said to be a native of Amboyna and Ceylon. The *root* in appearance very much resembles the *arum triphyllum*, and is extremely acrid: the plant is the smallest of the tribe, and particularly distinguished by the rich brown, velvety appearance of its flowers; the length of its tapering *spadix*, especially on its lower part, is full of small cavities, and resembles in appearance a piece of metal corroded by long exposure; and by the insupportable smell which the whole of the flower, but more especially the spadix, sends forth.

Mr. Miller, in his figure of this plant, to which Linnæus refers, has been more happy in his representation, than in that of many others. Rumphius' figure and description accord with our plant, although some of his leaves are more perfectly three-lobed than any we have seen here on the living plant, and to this variation he informs us they are subject. We learn from Miller and others, that this singular plant was first brought into notice in the year 1752, and was discovered growing wild in the neighborhood of Ceylon. It flowers in May and June, and is regarded by most botanists as a hot-house plant; we have seen it succeed very well

with tender treatment in the green-house, and a rapid increase by offsets from its roots.

Medical Properties and Uses. "The acrid property which resides in this, as well as all other species of arum," says Dr. Bigelow, "appears to depend upon a distinct vegetable principle, at present but little understood. It is extremely volatile, and disappears almost entirely by heat, drying, or simple exposure to the air." This principle appears to possess no affinity for water, alcohol, or oil, being volatile, and in a state of gas, inflammable. Sir John Hill, in his English herbal, speaks very highly of this plant as being useful in palsies; "a piece of the fresh gathered root, bruised and taken in milk, will sometimes restore the speech at once; and a continued use will perfect a cure." It is also good in scorbutic cases, and in all inward obstructions. It is by no means incapable, as is stated by some writers, of affecting the general circulation. On the contrary, we have had many satisfactory evidences. In the chronic, asthmatic affection of old people, it is a remedy of great value. Dr. Cullen says he "has administered the root, and witnessed its good effects in chronic catarrhs, and in phthisis pulmonalis." In these complaints it has now become one of the most common remedies in domestic practice. It has also been prescribed with advantage in rheumatism, and in apthous sore mouth. In this latter affection, Dr. Thacher says it is a remedy of extraordinary and approved efficacy. It has also been recommended in the form of an ointment made of the fresh root, in tinea capitis and tetter. Dr. Burson states that the berry of the arum is more retentive of its peculiar acrimony than any other part of the plant. The root, which is the part used for medicinal purposes, is directed by physicians best acquainted with its properties, to be given in the form of a decoction, in milk; Dr. Bigelow, however, remarks that the *arum triphyllum* imparts none of its acrimony to milk on boiling; and that the best mode of administering it, would be in the form of an emulsion with gum arabic and sugar.

1. Spotted Alstroemeria
2. Purple Hooded Garlic

NAT. ORDER.

Liliaceæ.

ALLIUM DESCENDENS. PURPLE-HEADED GARLIC.

Class VI. Hexandria. *Order I.* Monogynia.

Gen. Char. *Corolla*, six-parted, spreading. *Spathe*, many flowered. *Umbells*, heaped. *Capsule*, superior.

Spe. Char. *Umbells*, rounded. *Stamens*, lanceolate, larger than the *corolla*.

Baron Haller, in his most admirable *Monographia* on the plants of this genus, published in his *Opuscula Botanica*, describes and figures this species, as a hardy perennial, a native of Switzerland, and cultivated, according to Mr. Aiton, previous to the year 1766, for medicinal purposes.

The *root* is long, fleshy, hard, and sends off, near the base, small succulent fibres; the *stem* is simple, and usually rises about three feet in height; the *leaves* are long, pointed, serrated, and placed alternately upon the stem; the *flowers*, as in many other species, grow in a *capitulum*, or little head, not an umbell, strictly speaking; but as Linnæus describes it, "this head is at first covered with a whitish membrane, wearing some resemblance to a night cap; on the falling off of which, the whole of the capitulum is perceived to be of a green color." Soon after, the *crown* becomes of a fine reddish purple, this color extends itself gradually downwards, after which, we see the upper half of the head purple, the lower half green. In this state, it has a most beautiful and pleasing appearance; the purple still extending downwards, and its whole head finally becomes uniformly so. At this time, the flowers begin to open, and emit an odor which is very agreeable and pleasant. On

dissecting the flower, we find three of the stamens of each, longer than the others, and bearing two little points, which proceed not from the anthers, but from the top of the filaments; it is therefore one of those *alliums* which Linnæus describes, as having *Antheræ bicornes;* the *capsule* is short, broad, tri-lobed, three-celled, three-valved, and contains roundish seeds. It flowers in June and July.

This species of garlic, according to Linnæus, grows spontaneously in Switzerland, and some parts of Sicily, but it is not known to be cultivated in any part of the United States. The specific properties resemble those of the other garlics; therefore, in describing the medicinal virtues of this species, it is applicable to the whole family of garlics, most of which are now cultivated in gardens, throughout the civilized world.

This species is easily increased by offsets, which should be separated and planted in Autumn. We know not why Linnæus should give it the name of *descendens*, unless from its being one of those plants whose roots, in process of time, descend deeply into the earth.

Medical Properties and Uses. The whole family of garlics, especially the root, possess a pungent, acrimonious taste, and a peculiarly offensive strong smell. This odor is extremely penetrating and diffusive; for instance, the root being taken into the stomach, the alliaceous scent impregnates the whole system, and is discoverable in the various excretions. This volatile matter is, in part at least, an essential oil, which may be obtained in distillation in the ordinary manner, and, like the oils of many of the Liliquose plants, sinks in water. Applied to the skin, garlic produces inflammation, and frequently vesicates the part. On drying, this root loses almost nine parts in fifteen, without suffering any material loss, either of taste or smell; hence, six grains dried are supposed to be equivalent to fifteen grains of the fresh root.

Garlic is generally allied to the onion, from which it seems only to differ in being much more powerful in its effects, and in its

active matter, being in a more fixed state; by stimulating the stomach they both favor digestion, and the stimulus is readily diffused over the system; they may therefore be considered as useful condiments with the food of phlegmatic people, or those whose circulation is languid, and secretions interrupted; but with those subject to inflammatory complaints, or where great irritability prevails, these roots, in their acrid state, may prove very hurtful.

The medicinal uses of Garlic are various. It has long been held in high estimation as an expectorant in pituitous asthmas, and other pulmonary affections unattended with inflammation. Its utility as a diuretic in dropsies, is also attested by unquestionable authorities; and its febrifuge power has not only been experienced in preventing the paroxysms of intermittents, but even in subduing the most violent epidemics.

Another virtue ascribed to Garlic is that of an anthelmintic: it has likewise been found of great advantage in scorbutic cases, and in calculous disorders, acting in these, not only as a diuretic, but in several instances manifesting a lithontriptic power. That the juice of alliaceous plants in general has considerable effect upon human calculi, is to be inferred by the experiments of Lobb; and we are abundantly warranted in asserting, that by a decoction of the beards of leeks, taken freely, and its use continued for a length of time, has been found remarkably successful in calculous and gravelly complaints.

The Garlic was formerly used in obstinate coughs, for which purpose it was mixed with honey, and the dose of a table-spoonful taken three times a day; or that it may be boiled in milk, a pint of which is to be taken night and morning. A case is reported to us of a boy, six or seven years old, who had for a considerable time suffered by a calculous in the urinary bladder, which had been discovered on sounding; he had recourse to this decoction, which very soon relieved him of pain; after which his urine became extremely turpid, and constantly deposited a copious

clay-like sediment for several weeks, when it resumed its natural appearance, and the boy has ever since been free from the complaint. Another case similar to this has also been reported to us, of the truth of which we have not a doubt. Garlic has also been variously employed externally to tumors and cutaneous diseases; and in certain cases of deafness, a clove or small bulb of this root, wrapped in gause or muslin, introduced into the *meatus auditorius*, has been found an efficacious remedy.

For poultices, garlic stands second to no other vegetable in the Materia Medica. That almost fatal disease, *Cynanche trachealis*, or croup, has in almost every instance been cured where an early application of a poultice was made to the throat and chest, and prepared after the following manner: viz., take of *Allium descendens*, or any other species of garlic, one pound; *Lobelia inflata*, the common lobelia herb, made fine, four ounces; mix into a paste with *Oleum olivæ*, sweet or olive oil. Apply this in the form of a poultice, so as to entirely cover the throat and upper part of the chest. After this is done, prepare and administer an enema made after the following manner: viz., take one even tea-spoonful of the seed of *Lobelia inflata*, pounded fine; three grains *Capsicum bacatum*, bird pepper, and steep in warm but not boiling water for five or ten minutes, when it is ready for use. Repeat this by enema, (remembering to give the same quantity,) every ten minutes, until vomiting is induced. Strictly following this rule will invariably cure the most obstinate cases of croup. I have administered these compounds to a large number of children, within the last five years, in some of which, life appeared almost extinct, and have thus far been successful in performing a perfect cure in the short space of from one to three days.

The sirup of garlic is officinal. The dose in substance is from half a drachm to a drachm, or even two drachms of the fresh bulb; that of the juice is half a fluiddrachm.

NAT. ORDER.

Liliaceæ

ALSTRŒMERIA PELEGRINA. SPOTTED ALSTRŒMERIA.

Class VI. Hexandria. *Order I.* Monogynia.

Gen. Char. *Corolla*, six petalled, superior, irregular. *Stamens*, declinate.

Spe. Char. *Stem*, erect. *Corolla*, campanulate. *Leaves*, linear-lanceolate.

This most beautiful exotic plant was presented to us by a physician of this city, for the purpose of ascertaining its medical properties; and in compliance with his wishes, and a desire to investigate, promulgate, and extend the science of botany, we have thought best to give it a place in the "American Flora," that its beauty and elegance may be more generally known. This drawing was made from a fine specimen now in our collection; and the only one of the kind which is publicly known to have been brought to this country.

One of the most celebrated ancient botanists figures and describes three species of *Alstræmeria*, viz., Pelegrina, Ligtu and Salsilla, common names by which they are severally distinguished in Peru, its native country. The present species, which is highly valued by the natives on account of its beauty, he informs us is found growing wild on a mountain about one mile north of the city of Lima. From Peru, and as might be expected, this plant found its way into Spain, from whence, by the means of his most intimate friend Alstrœmer, Linnæus first received its seeds; the value he set upon this acquisition was great, as will evidently ap-

pear from the great care he took of the seedling plants, preserving them through the winter in his bed chamber. According to Mr. Aiton, this species was introduced to the Royal Garden of England by Messrs. Kennedy and Lee, as long ago as the year 1753.

This being a mountainous plant, it is found to be much more hardy than the *Ligtu*, and is generally treated as a green-house plant; it is found, however, to flower and ripen its seeds better under the glass of a hot-bed frame, where air is freely admitted. It flowers from June till October, and though a perennial, is generally raised from seeds, yet may sometimes be increased by parting its roots, which somewhat resemble those of the Asparagus. The seeds should be sown in spring, in a pot of light earth, on a gentle hot-bed of rich soil.

Medical Properties and Uses. The *root* of this plant, which is inodorous, and of a weak, sweetish taste, was formerly used in the southern part of France, as a diuretic, aperient, and purifier of the blood; and it is stated to be still employed, not only there but in many parts of England. It is most generally given in the form of a decoction, made in the proportion of one or two ounces of the dried root to a quart of water. From experiments of more modern practitioners, it appears that this medicine operates powerfully on the kidneys, and in almost all cases where it has been administered, to increase the quantity of urine, which in some instances was quintupled. The most convenient forms for exhibition are those of sirup and extract, prepared from the roots. The former may be given in the dose of one or two fluid ounces, the latter, of half a drachm or a drachm. The best method of preparing the sirup is by adding a sufficient quantity of sugar to the expressed juice of the roots, previously deprived of its albumen by exposure to heat and by filtration. The extract is made by evaporating the same juice to the consistence of a pibular mass. This medicine has also been highly recommended as a remedy for diseased heart.

Fringed Dendrobium.

NAT. ORDER.

Orchidaceæ.

DENDROBIUM FIMBRIATUM. FRINGED DENDROBIUM.

Class XX. Gynandria. *Order I.* Monandria.

Gen. Char. *Sepals*, membranaceous, erect, spreading. *Petals*, large, membranaceous. *Lip*, articulated, sessile, three lobed. *Anthers*, two celled. *Leaves*, plain and veined. *Flowers*, solitary.

Spe. Char. *Stems*, terete, pendulous. *Leaves*, ovate-lanceolate. *Racemes*, lateral, many flowered. *Sepals*, oblong, undulated and spreading. *Petals*, larger, undulated, ciliated. *Lip*, undivided, hooded and fringed.

The *stem* of this most beautiful plant rises from two to three feet in height; the *sepals* which stand erect are membranaceous and spreading, the lateral ones larger, oblique, and connate with the lengthened base of the column; the *petals* are frequently larger than the upper sepal, sometimes smaller, always membranaceous; the *lip* articulated or cornate with the foot of the column, always sessile, undivided or three lobed, most commonly membranaceous, sometimes appendiculate; the *column* is semiterete, with a lengthened base; the *anthers* are two celled; *pollen-masses*, four, collateral, in pairs; *epiphytic* plants, sometimes caulescent, sometimes with a creeping rhizoma, bearing pseudo buds; the *leaves* are plain and most commonly veined, ovate-lanceolate, striated and bifarious; the *flowers* are solitary, fasciculated or racemose, handsome; the *lip* is convolute, with a broad, spreading limb of an intense beautiful golden color.

This elegant species of *dendrobium* is a native of Nepal, in the East Indies, from whence it was imported some years ago into the city of London, and is now beginning to be cultivated in many parts of Europe. Though well known to the cultivators of orchidaceous plants, we think it probable that many of our readers have never had an opportunity of seeing this, especially as it is but very little known by the florists of this country, and on that account we have thought best to give it a place in the "Flora," hoping by this to induce some more able botanist to give a more lengthy description, both of its history and medical properties.

For cultivation it requires to be kept in a warm and humid state while growing, but more cool and dry during the period of rest. It should be potted in rough peat and broken pots; it is also increased by dividing, like many others of this tribe. The generic name, *dendrobium*, is derived from the Greek, *wood*, in allusion to the habit of the species growing upon trees, and thus ornamenting with their tortuous stems and beauteous flowers the extensive forests of India, where the greater portion of them are found. The specific name, *fimbriatum*, has reference to the fringed margin of the lip.

Medical Properties and Uses. We have searched in vain some very extensive botanical libraries, for the purpose of gathering some information in support of the medicinal virtues of this valuable plant; and not being able to obtain any satisfactory evidence on this point, will proceed to state briefly some of its most important medical properties, and its application to use. A gentleman who is a resident physician in Scotland, informed me that he found this plant serviceable in all nervous diseases, and that he considered it superior to any other article in the vegetable kingdom, as a nervine. It also possesses sudorific and diuretic properties. The leaves are the part which are recommended for use.

Scammony, or Bindweed.

NAT. ORDER.

Convolvulaceæ.

CONVOLVULUS SCAMMONIA. SCAMMONY, OR BINDWEED

Class V. Pentandria. *Order I.* Monogynia.

Gen. Char. Corolla, bell-shaped, plaited. *Stigmas*, two. *Capsules*, two-celled, each cell containing two seeds.

Spe. Char. Leaves, sagitate, truncated on the back part. *Peduncles*, columnar, with about three flowers.

The *root* is tapering, and somewhat branched towards its lower part, and, in good soil, oftentimes grows to the length of four or five feet, and from three to four inches in diameter; it is covered with a bark, of a light gray color, and contains a considerable quantity of milky juice; the *stalks* are numerous, slender, twining, and proceed from the root, fifteen to twenty-five feet in length; the *leaves* are arrow-shaped, smooth, of a bright green color, and placed upon long foot-stalks; the *flowers*, which stand in pairs on the pedicles, are funnel-shaped, plaited, and of a pale yellow color; the *calyx* is double, consisting of four emarginated leaflets in each row; the *capsules* are three or four-seeded, and contain pyramidal seeds.

This is a perennial plant, and is described as being a native of Syria; it is also found growing extensively on the chain of mountains extending from Antioch to Mount Lebanon. Recently, however, this valuable plant has been discovered growing wild in this country. In the western part of the State of New-York, and some parts of Ohio, we have seen the Scammony growing in some of the most impenetrable forests; and its luxuriant foliage

and rapid growth, reminded us that, if not a native of this country, our climate and soil was equally well adapted for its culture, as that of the older countries.

The root is the part directed for use, and was formerly kept by the druggists, both in England and France. In the beginning of June, the earth is removed from the upper part of the roots, and an oblique incision is made into each, at the distance of about two inches from where the stalk springs up; a milky juice then flows, which is collected in convenient vessels, placed at the most depending part. The quantity of juice thus obtained from each root, is but a few drachms, which trickles away in about twelve hours; the whole that is collected from the different roots, is then transferred to one common receptacle, where, by exposure to the air and sun, it hardens. It should be of a bright green color, light, friable, with a fracture having a shining, irregular appearance; it has an acid taste, and its smell is very peculiar, and rather unpleasant. We often meet with this in medicine stores, of various colors, varying from a light brown, to nearly a jet black. In its recent and soft state, before it is imported, it is often adulterated with starch, ashes, juices of other plants, &c., which of course renders the article less active. We can best ascertain its value by mixing it with water, when the pure scammony will be dissolved or suspended, and the impurities will subside, and may be examined. The very best kind of scammony comes from Aleppo, which is light and friable; an inferior sort is imported from Germany, which is heavy, compact, of a dark color, with scarcely any smell, and is found to contain more impurities than the former. It contains rather more than fifty per cent of resin, the rest being extractive matter and gum. Proof spirit would be its best menstruum; but it is only given in the form of powder.

Medical Properties and Uses. It is rather surprising that some authors should have doubted the purgative quality of this article, which must be obvious to every one who gives it but a few trials

it is indeed one of our most useful purgatives. The ancients employed it as an external application, in the form of poultices, in cases of Sciatica, and for the removal of indurated tumors, scabies, &c.; but this practice is now wisely laid aside, to make way for more effectual modes of treatment. It is now only employed as an internal remedy, and as it is an article possessing powerful purgative qualities, and one which can be relied on, it may be employed in any cases requiring such remedies. In people of indolent habits, who generally have constipated bowels; and in children to remove any fœculent accumulations, it will be found highly serviceable; or when combined with some other active vegetable cathartic, like the *Podophyllum peltatum*, (May Apple,) it relieves that inactivity in the function of the liver, which is often connected with worms, and which are sometimes very effectually removed. This compound proves equally serviceable in dropsical patients, being a powerful hydragogue. It is necessary to combine it with some article, to prevent its griping, as aromatics, or sugar, particularly when it is administered to children. Inflammatory disorders are sometimes very much increased, and irritable and excitable habits occasionally injured by it. It needs no corrector; though for this purpose it has been exposed to the fumes of burning sulphur; but we thus only lessen its activity. When scammony has undergone this operation, it is called *diagrydium*. Since the time of Boerhaave, it has been considered a safe, though stimulating cathartic, and is frequently given uncombined with other articles, without producing tormina, or an excessive discharge. It is certainly a brisk purge, and is usually given in cold, phlegmatic constitutions. The dose in powder, is from eight to twenty grains, which may be given two or three times a day.

NAT. ORDER.

Orchideæ.

GENIPA VANILLA. COMMON GENIPA

Class XX. Gynandria. *Order I.* Monandria.

Gen. Char. *Corolla*, ringent, upper lip vaulted. *Lip*, dilated, with a spur beneath. *Pollens*, two, terminal, adnate.

Spe. Char. *Lip*, obovate, undivided, crenate, retuse. *Petals*, straight, the lateral ones longer. *Horn*, clavate, shorter than the germen. *Bracts*, longer than the flower. *Stem*, leafless.

This most beautiful *shrub* rises from three to eight feet in height, sending off numerous branches; the fruit of which very much resembles that of the *Theobroma cacao*, (cocoa-nut,) and is oftentimes used for similar purposes. The *perianthium* is superior and ringent; the *sepals* are three, usually colored, of which the odd one is uppermost, in consequence of a twisting of the ovarium; the *petals* are three, usually colored, of which two are uppermost, and one, called the *lip*, undermost; this latter is frequently lobed, of a different form from the others, and sometimes spurred at the base; the *stamens* are three, united in a central column, the two lateral abortive, the central perfect, or the central abortive, and the two lateral perfect; the *anthers* are either persistent, or deciduous, two, or four, or eight-celled; the *pollen* is powdery, and cohering in definite or indefinite waxy masses, either constantly adhering to a gland, or becoming loose in their cells; the *ovarium* is one-celled, with three parietal placenta; the *style* forms part of the column of the stamens; the *stigma* presents a viscid space in front of the column, communicating directly with

Common Genipa

the ovarium by a distinct open canal; the *impregnation* takes effect by the absorption from the pollen-masses, through the gland into the stigmatic canal; *capsule* inferior, bursting, with three valves and three ribs, very rarely bacate; the *seeds* are parietal and numerous; the *testa* is loose, reticulated, and contracted at each end; there is no *albumen;* the *embryo* is a solid, undivided, fleshy mass; the *roots* are fleshy and hard; the *leaves* are simple, and quite entire, and often articulated with the stem; *flowers*, solitary.

We do not deem it necessary, in this place, to enter into an historical inquiry as to the gradual alteration which has from time to time taken place in the opinions of different botanists, with regard to the structure of the gynandrous apparatus of these most curious plants, or to explain what degree of error has heretofore existed in the descriptions of those who mistook masses of pollen for anthers, or a column of stamens for a style. Such errors could only have occurred at a period when the laws of organization were totally unknown: but they have now been corrected, and described in a more perfect manner, by different writers. But long before the publication of any rational explanation of the structure of this most beautiful family of plants, while botanists were in utter darkness upon the subject, it was most fully investigated by a gentleman, unrivalled for the perfection of his microscopical analysis, the beauty of his drawings, and the admirable skill with which he follows nature in her most secret workings; the sketches of which we have before us, were executed from the year 1794 to 1807, in which, not only that which has been published since that period is shown in the most distinct and satisfactory manner, but in which more is represented than botanists are even now aware of. By these means we hope to be able to give some of those extraordinary productions of the pencil to the world, in an illustration of this curious family of plants, and which is now in preparation. If the gynandrous apparatus of an Orchideous

plant is examined, it will be found to consist of a fleshy body, stationed opposite the labellum, bearing a solitary anther at its apex, and having in front a viscid cavity, upon the upper edge of which there is often a slight callosity. This cavity is the stigma, and the callosity is the point through which the fertilizating matter of the pollen passes into the tissue communicating with the ovules. Hence, such a plant would appear to be monandrous.

Plants of the order Orchideæ are remarkable for the bizarre figure of their multiform flower, which sometimes represents an insect, sometimes a helmet with the visor up, and sometimes a grinning monkey: so various are these forms, so numerous their colors, and so complicated their combinations, that there is scarcely a common reptile or insect to which some of them have not been likened. They all, however, will be found to consist of three outer pieces belonging to the calyx, and three inner belonging to the corolla; and all departures from this number, six, depends upon the cohesion of contiguous parts, with the solitary exception of Monomeria, in which the lateral petals are entirely abortive. In nearly the whole order, the odd petal, called the labellum, rises from the base of the column, and is opposite it. The pollen is not less curious: now we have it in separate grains, as in other plants, but cohering to a meshwork of cellular tissue, which is collected into a sort of central elastic strap; the granules cohere in small, angular, indefinite masses, and the central elastic strap becomes more apparent, and has a glandular extremity, which is often reclined in a peculiar pouch, especially destined for its protection; again, the pollen combines into larger masses, which are definite in number, and attached to another modification of the elastic strap; and finally, a complete union of the pollen takes place, in solid waxy masses, without any distinct trace of this central elastic tissue.

Such is a part of the singularities of Orchideous plants, and upon these the distinctions of their tribes and genera are naturally

founded. Whoever studies them must bear in mind that their fructification is always reducible to three sepals and three petals, a column consisting of stamens grown firmly to one another, and to a single style and stigma; and, with this in view, he will have no difficulty in understanding the organization of even the most anomalous Cape species. For a long time it was supposed that no deviation from the general structure existed, and that we had not in Orchideæ any very decided link between that family and others; but the discovery of a remarkable Indian plant by Blume and Wallick, called Apostasia by the former botanist, which with many of the peculiarities of this order, is triandrous, with a regular corolla, and three locular fruit, seems to show that even in this tribe there are gradations which tend to destroy the value of the technical differences of botanists. It does not, however, appear to me certain that this genus, although referred to by Blume as belonging to Orchideæ, is not really a different tribe.

Some species of this beautiful family of plants are to be found in all parts of the world, except upon the very verge of the frozen zone, and in climates remarkable for their dryness. In Europe, Asia and North America, they are found growing in marshes, and in meadows; in the drier parts of Africa they are either rare or unknown; at the Cape of Good Hope they abound in similar situations as in this country; but in the hot, damp parts of the East and West Indies, in Madagascar and the neighboring islands, in the damp and humid forests of Brazil, and on the lower mountains of Nipal, these Orchideous plants flourish in the greatest variety and profusion, some kinds no longer seeking their nutriment from the soil, but clinging to the trunks and limbs of trees, to stones and bare rocks, where they vegetate among ferns and other shade-loving plants, in countless thousands. Of the epiphytic class, one only is found so far north as South Carolina, and most commonly found growing with the Magnolia, if we except a single specimen of Japan, which appears to have a climate pe-

culiar to itself, among countries in the same parallel of latitude. The number of species of this tribe is at present unknown, but probably is not less than 1500.

Medical Properties and Uses. It often happens that those productions of nature which charm the eye with their beauty, and delight the senses with their perfume, have the least relation to the wants of mankind, while the most powerful virtues, or the most deadly poisons are hidden beneath a mean and insignificant exterior: thus, Orchideæ, beyond their beauty, can scarcely be said to be of known utility, with a very few exceptions. The nutritive substance called *Salep*, is prepared from the subterraneous succulent roots of *Orchis mascula* and others; it consists almost entirely of a chemical principle called *Bassorin*. The root of *Bletia verecunda* is said to be stomachic; and some of the South American species, such as the *Catasetums*, *Cyrtipodiums*, &c., contain a viscid juice, which, being inspissated by boiling, becomes a kind of vegetable glue, used for economical purposes in Brazil. The aromatic substance called *Vanilla*, is the succulent fruit of a West India plant, of which our drawing is a representation.

Throughout the whole of Holland, the fruit of this shrub is much admired for its astringent qualities. The inhabitants take the unripe fruit, or the bark of the roots, which they boil or steep until they become perfectly soft, then express and strain into a tight vessel, adding sufficient French brandy, and sugar, for safe keeping. The dose of this is from half to a wine-glassful two or three times a day. This is an excellent remedy for dysentery, and all diseases of the bowels.

Clover Trefoil

Rough Michauxia

NAT. ORDER.

Campanulaceæ.

MICHAUXIA CAMPANULOIDES. ROUGH MICHAUXIA.

Class VIII. Octandria. *Order I.* Monogynia.

Gen. Char. *Calyx*, sixteen-parted. *Corolla*, wheel-shaped, eight-parted. *Nectarium*, eight-valved, staminate. *Capsules*, eight, locular, polysperma.

Spe. Char. *Leaves*, alternate, simple, deeply divided. *Flowers*, single, in racemes or spikes.

This is a biennial green-house plant, and of course only to be raised from seeds. The *corolla* is monopetalous, inserted into the top of the calyx, usually eight-lobed, and withering on the fruit; the *stamens* are inserted into the calyx, alternately with the lobes of the corolla, to which they are equal in number: the *anthers* are two-celled and distinct; the *pollen* is spherical; the *orarium* is inferior, with two or more polyspermous cells opposite the stamens, or alternate with them; the *style* is simple, covered with collecting hairs; the *stigma* is naked, simple, or with as many lobes as there are cells; the *fruit* is dry, crowned by the withered calyx and corolla, dehiscing by lateral, irregular apertures, or by valves at the apex, always loculicidal; the *seeds* are numerous, attached to a placenta in the axis; the *embryo* is straight, in the axis of fleshy albumen; *radicle*, inferior; the *leaves* are almost always alternate, simple, or deeply divided, without stipulæ; the *flowers* are single, in racemes, spikes, or panicles, or in heads usually blue or white, but very rarely yellow.

The celebrated author of the *Hortus Kevensis* informs us that the plant here figured and described is a native of the Le-

vant, and was first introduced into England in the year 1787, by Mons. L. Heritier, who first gave it the name of *Michauxia*, and wrote a Monographia, or particular treatise upon it. We have frequently before observed, that when a plant has been named in honor of any particular person, that name should, under any circumstances, be retained in all countries, however uncouth its pronunciation may be. It is now generally understood by botanists, that several varieties of this most beautiful plant are natives of the north of Asia, Europe, and many parts of North America, and scarcely known in the hot regions of the world. In the meadows, fields and forests of the countries they inhabit, they constitute the most striking ornament. Some curious species are also found in the Canaries, St. Helena, and Juan Fernandez. M. Alphonse Decandolle remarks, that "it is within the 36° and 47° N. lat., that, in our hemisphere, the greatest number of species is found; the chain of the Alps, Italy, Greece, Caucasus, and the Altai range, are their true countries. In whatever direction we leave these limits, their number of species rapidly decreases. In the southern hemisphere, the Cape of Good Hope, (lat. 34° S.,) is another centre of habitation, containing not less than sixty-three species. This locality has a climate so different from that of our mountains, that it may be easily imagined that the species capable of living there differ materially from those of our own hemisphere; in fact, they belong to other genera." Of three hundred species, only nineteen are found within the tropics.

Medical Properties and Uses. The *roots* and young shoots of this plant are occasionally used as an article of food. The milky juice is rather acrid, and possesses considerable diaphoretic and expectorant properties. It is sometimes administered in coughs and bronchial affections, but is more valued for its beauty than as a medicine. The dose of the dried root is from twenty to forty grains. That of the tincture, half a fluid ounce, made by adding one ounce of the fine dried root to a pint of diluted alcohol. It may be taken from two to three times a day.

NAT. ORDER.

Trilliaceæ.

TRILLIUM LATRIFOLIUM. CLOVER TREEFOIL.

Class V. Pentandria. *Order I.* Monogynia.

Gen. Char. Corolla, hirsute. *Stigma*, bifid. *Capsule*, one-celled.

Spe. Char. Leaves, ternate.

This *plant* is quite common in the eastern parts of Europe. It grows in low and marshy meadows, producing its flower at the end of a long terminal spike, which is of a very peculiar shape, and appears in the latter part of June, and beginning of July; the *scape* or *stalk* rises from one to three feet in height; the *petals* are sometimes entirely white, but most generally rose-colored; the *root* is perennial, creeping and jointed, sending forth many long, slender filaments. The *latrifolium* is easily distinguished from the other species of *Trillium* by its ternate leaves, which have been thought to resemble those of the common garden bean; hence, the English formerly called it the Buck Bean.

The whole plant is so extremely bitter, that in some countries it is used as a substitute for hops, in the preparation of malt liquor; yet Linnæus observes that the largest portion of the poor people in Lapland make a bread of the powdered roots mixed with meal, but at the same time he acknowledges that it is a very unpalateable food.

Medical Properties and Uses. The blackness manifested by adding a solution of green vitriol to the juice, or to a strong infusion of the leaves of this plant, is a sufficient test of its astringency; while a drachm of the powdered root or leaves seldom

fails to open the bowels, or produce vomiting; so that in common with the tonic properties of a bitter, it seems farther to possess a considerable share of medicinal activity: we can, therefore, more easily credit the reports of its success in a great number of chronic diseases mentioned by various authors, such as scurvy, dropsy, jaundice, asthma, periodical headaches, intermittents, hypochondriasis, cachexia, obstructio mensium, rheumatism, scrofula, worms, gout, &c. Dr. Boerhaave was relieved in the last mentioned complaint by drinking the juice mixed with whey; and Dr. Alston tells us, that "this plant had remarkable effects in the gout, in keeping off the paroxysms;" but adds, "though not to the patient's advantage." In confirmation of the good effects of Treefoil in dropsies, we are told from undoubted sources, that sheep, when forced to eat it, are cured of the rot, *oves tabidæ;* yet, as we have but few and imperfect proofs of its diuretic powers, this fact will be considered of little weight.

Bergius confines the uses of this plant to scorbutic and rheumatic affections, and this specification is still farther contracted by later writers on the Materia Medica. In Lewis' Mat. Med., by *Mr. Aikin*, it is said that the leaves of Treefoil "have of late years come into common use as an alterative and aperient, in impurities of the humors, and some hydropic and rheumatic cases;" and as an active eccoprotic bitter, we should suppose them well adapted to supply the want of bile in *primæ viæ*, and thus infer their use in protracted jaundice, and other biliary obstructions. Dr. Cullen has "had several instances of their good effects in some cutaneous diseases, of herpatic, and seemingly of the cancerous kind."

The leaves may be given in powder, from five to ten grains for a dose, two or three times a day; but a strong infusion of them is, perhaps, preferable; and with delicate stomachs it may be necessary to conjoin a grateful aromatic. They impart their properties both to watery and spirituous menstrua.

Drooping Billbergia.

NAT. ORDER.

Bromeliaceæ.

BILLBERGIA IRIDIFOLIA. DROOPING BILLBERGIA.

Class VI. Hexandria. *Order I.* Monogynia.

Gen. Char. *Calyx*, three-parted, tubular, persistent, cohering with the ovarium. *Petals*, three, colored, unequal. *Stamens*, six, inserted into the base of the calyx.

Spe. Char. *Leaves*, long, sheathing and spiny. *Scape*, spicate. *Flowers*, distant, solitary, sessile, inflated. *Calyx*, superior *Petals*, linear, obtuse, revolute apex. *Anthers*, versatile.

The *Billbergia iridifolia* belongs to the Pine-apple family, and hence, is a native of the hot and dry countries of South America. The *calyx* is superior, three-parted, with a single bractea; the *petals* are three, longer than the sepals, rolled up into a tube, and having scaly appendages at the base; the *stamens* are six, free, and are inserted between the scales at the base of the sepals and petals; the *ovary* is three-celled, and many-seeded; the *ovules* are very minute; the *style* is thread-shaped; the *stigmas* are three, linear, and convolute: the *capsule* is berried; the *seeds*, (according to Martius,) are naked. *Epiphytic* plants, (of equinoctial America,) with dry leaves, covered with leprous scales; the *flowers* are sessile, sometimes spiked, sometimes panicled, and manifestly articulated with the rachis; the *leaves* are from a foot to a foot and a half long, sheathing and spiny towards the base, the upper surface of a dark rich green, and covered beneath with leprous scales; the *scape* is spicate, terminal, red, pendulous, flexuose, and clothed with deep red inflated bracteas; the *flowers* are

distant, solitary, sessile, and half invested by the rich, red, inflated bracteas; the divisions of the *calyx* are ovate-oblong, membranaceous, of a yellowish green tipped with blue, and scarcely half as long as the corolla; the *petals* are linear, of a yellowish green, with a blue, obtuse, revolute apex, having at the base two fimbricated, nectariferous scales; the *anthers* are versatile; the *ovary* is inferior, smooth, three-cornered, and three-celled.

This plant, which is no less singular than beautiful in its appearance, was introduced to this country several years ago, and is now raised in some of our principal hot-houses, as a rare ornament, but is by no means common in collections. It is a native of Rio Janeiro, where, like other epiphytic plants, it may be seen growing upon the trunks and branches of trees, which, in tropical climates, are thus frequently adorned with hues and odors not their own. The genus *Billbergia* was originally founded by Thunberg, and has been adopted by Dr. Lindley, as embracing some species formerly included in *Bromelia*, but which appears to differ from that genus in certain peculiarities of structure.

The natural order *Bromeliaceæ*, to which Billbergia belongs, contains altogether about twenty genera, one of which, *Ananassa*, (the Pine-apple,) is remarkable for its well-known rich, fleshy fruit. No other species can boast of the same interest. The plants of this order are all very peculiar in their habit; many of the species have the power of existing without water, and even without soil; hence, it is not unusual for the inhabitants of South America to suspend in their apartments such of the species as are remarkable, either for the brilliancy of their colors, or the delicacy of their fragrance; they are not only suspended in their dwellings and chambers, but attached to the balustrades of the balconies, in which situation they flower abundantly, filling the air with their sweet-scented odor. The genus *iridifolia* is a stove-plant perennial; it requires a strong heat to grow it fine, and should have a rather limited supply of water during the winter months. The

soil should be loam and sand, with plenty of drainers at the bottoms of the pots. It is readily increased by dividing; the spring is the best season for that purpose. Although this plant requires great heat and dry situations to ensure its fine growth, it will almost live in a warm green-house, especially if the heat is kept even, through the different seasons. All, without any exception, are natives of the islands of this country, whence they have migrated eastward in such numbers, as to have established themselves in great quantities all along the west coast of Africa, and some parts of the East Indies.

Medical Properties and Uses. The *Billbergia iridifolia* has been considered by most writers, as possessing considerable tonic, expectorant, and slightly cathartic properties. In many parts of South America, the inhabitants indulge in the free use of a drink prepared from this delicious plant: for which purpose they collect both the tops and roots, and subject them to the process of distillation, by which means the medicinal, saccharine, and stimulating properties are obtained. The liquid obtained by this process resembles in appearance that of *Acer saccharinum*, (Sugar-maple,) but cannot be conveniently made into sugar. It has a somewhat cordial taste, and proves highly stimulating by its free use. A tea made from the leaves has been considerably employed by some physicians in pulmonary and other lung difficulties, for which purpose it is recommended to take two ounces of the fresh dried leaves, and steep in two quarts water, over a gentle fire, until it is reduced to three pints; then add half a pint pure French brandy, and one pound clarified sugar. Dose, from one to two fluid ounces, (or half a wine-glassful,) three times a day. It is more valued for its fine flavor and beautiful appearance, than for medicinal purposes, and is at the present time but very little used in medicine.

NAT. ORDER.

Menispermaceæ

COCCULUS PALMATUS. CALUMBA ROOT.

Class XX. Diœcia. *Order VI.* Hexandria.

Gen. Char. *Sepals* and *petals*, arranged in a double series, very rarely in a triple series. *Stamens*, six, free, opposite to the petals. *Carpels*, from three to six. *Fruit*, drupaceous, reniform, rather compressed, one-seeded. *Cotyledons*, distant.

Spe. Char. *Leaves*, cordate, five to seven-lobed. *Lobes*, entire, acuminate, somewhat hairy on both sides. *Stem* and *germen*, clothed with glandular hairs.

This species of *Cocculus* is a native of the eastern part of Southern Africa; it has been ascertained to grow naturally, and in great abundance, from fifteen to twenty miles inland, in the thick forests about Oibo and Mozambique, on the Zanguebar coast. Formerly, it was erroneously supposed that the plant which produced the *calumba-root* of commerce, was a native of the island of Ceylon, and that its name was derived from Columbo, the principal town of that island. We are indebted to M. J. F. Fortin, a French gentleman, for the discovery of the true plant, which produces this valuable root; who, when at Mozambique, procured an entire offset, of a larger size than usual, from the main root. This he brought with him to Madras, in 1805, from which a male plant was raised in Dr. Anderson's garden; and from this individual, Dr. Berry's figure and description were made. The female plant had not been described at that period, but it was ascertained to belong to the natural order, *Menisperma-*

Calumba Root.

ceæ. The *root* is perennial, composed of a number of fasciculated, fusiform, somewhat branched, fleshy, curved, and descending *tubers*, from one to three inches in thickness, clothed with a thin, brown epidermis, marked towards the upper part especially, with transverse warts; internally they consist of a deep yellow, scentless, very bitter flesh, filled with numerous parallel, longitudinal fibres or vessels; the *stems* are annual, herbaceous, one or two proceeding from the same root, about the thickness of the little finger, twining, simple in the male plant, branched in the female, rounded, green; in the full-grown plant, below, thickly clothed with succulent, longitudinal hairs, which are tipped with a gland; the *leaves* are alternate, the younger ones thin, pellucid, bright green, generally three-lobed; older ones remote, a span in breadth, nearly orbicular in their circumscription, deeply cordate, five to seven-lobed, the lobes entire, often deflexed, wavy on the surface and margin, dark green above, paler underneath, hairy on both sides, with prominent nerves, and supported on round, hairy *footstalks*, about as long as the leaves.

In the *male* plant, the *racemes* are axillary, solitary, or two together, drooping, about as long as the petioles, compound, clothed with glandular hairs, and having at the base small deciduous bracteas; the *calyx* is smooth, consisting of six ovate, acute, nearly equal leaves, arranged in a double series; the *corolla* is pale green, consisting of six oblong, free *petals*, with involute margins, and recurved apices, arranged round a central, orbicular disk, or gland, in a single series; the *filaments* are six, thick, shorter than the petals, with terminal, truncated, four-celled *anthers*; the cells opening internally, and filled with linear, oblong grains of yellow *pollen*. In the *female* plant, the *racemes* are also axillary, solitary, simple, patent, shorter than those of the male; the *pedicels* are furnished with minute, caducous bracteas; the *sepals*, or leaves of the calyx, are six, in two series, three inferior, small, ovate, acute, subpatent, plain, glabrous; the *petals* are six, rarely eight, green,

glabrous, shorter than the germens, and recurved at the extremity; the *pistils* are three, free, of which two are generally abortive, ovate-acuminate, glanduloso-pilose, and containing one *ovule;* the *style* is very short, and the *stigma* has several spreading points; the *fruit* is drupaceous, or berried, about the size of a hazel-nut, densely clothed with long spreading hairs, which, at their extremity, are tipped with a gland; the *seed* is subreniform, clothed with a thin black shell, transversely striated. Figure *a*, the pistils; *b*, a female flower; *c*, a stamen and pistil; *d*, a male flower; *e*, a seed. (*Examine Plate.*)

Calumba-root is the staple export of the Portuguese, from Mosambique; and, from the quantity exported, it is not at all remarkable that its place of growth should have so long remained unknown, or doubtful to the rest part of the world. The roots are dug up in March; but the offsets only are taken. Soon after they are dug up, they are cut into slices, strung on cords, and hung up to dry in the shade. When they are sufficiently dry, they break short, and are then deemed good; but when they are soft, and of a dark color, their quality is considered bad, and not marketable. The dried root is brought to this country, packed in bags or cases. It is in transverse sections, generally about one-third of an inch in thickness, and from one to two inches in diameter.

"The late Sir Walter Farquhar was very anxious to introduce into England the *calumba-root* in a living state; and for that purpose he desired his son, Sir Robert Farquhar, Governor of Mauritius, Bourbon, and their dependencies, to procure the plant from its native soil in Africa, and forward it to London. Sir Robert lost no time, after assuming his government, at the conquest of the French Islands, in applying to the governor of Mosambique, for growing plants; and was repeatedly assured that these should be sent to him at the proper season. The promises, however, were never fulfilled, although renewed by the several succeeding

officials of the Portuguese possessions on the East coast of Africa, ever since the year 1811. Dr. Wallick, also, took much pains for effecting the same object, and sent to Governor Farquhar the drawing made at Calcutta, of a male plant of the *calumba-root*, which had been brought to the Botanic Garden there by Mr. Berry. Copies of this drawing were distributed to the different ships of war, and captains of merchant vessels, trading to the eastern coast of Africa, that they might be enabled to distinguish the plant, and bring it to the Mauritius, since there had evidently been an unwillingness on the part of the Portuguese authorities to permit this precious vegetable to be taken away in any other state than what it bears in commerce, when deprived of vegetative power, by passing through the oven.

"All the attempts resulting from these means proved fruitless, until Capt. William Fitzwilliam Owen, commanding the surveying squadron of the British Navy, on the East African coast, undertook the task. The extensive influence he had acquired by his intercourse with the native chieftains and tribes, enabled him to procure living plants, while his botanical knowledge secured him against the mistakes committed by others, who had been misled by the local settlers in their search, and imposed on by the substitution of other species, instead of the true *calumba-root*. Capt. Owen, in the year 1825, brought away, in the English ship-of-war Severn, from Oibo, a great number of cases filled with growing roots, of male and female plants, laid down in the sandy loam which appears to be their favorite soil. No time was lost by him in forwarding a great portion of these to M. Telfair, at Mauritius, planting some also at Mahe, an island in the Seychelles Archipelago, and sending to Bombay several cases, in order to multiply by dispersion, and the chances of success in naturalizing them in different climates."

The roots that were brought to Mauritius were partly transmitted to England, New Holland, and America; but the greater

number were distributed among the various districts of Mauritius and Bourbon. Many of these plants blossomed at Mauritius, in the course of a year, but the flowers all proved male. The roots, however, had during that time multiplied to twenty or thirty times the original quantity; and thus an opportunity was given for distributing them still more extensively. The female plants flowered at Seychelles, and Mr. G. Harrison, the government agent there, transmitted some of these roots to Mr. Telfair, in whose garden of Bois Cheri, in the Mauritius, they have flowered; and being fecundated by Prof. Boyer, who touched them with the pollen of the male blossom, they bore seeds. From these individuals, the drawings by Prof. Boyer have been taken, which give a delineation and dissection of every part.

Sensible and Chemical Properties. *Calumba root* is bitter, and slightly aromatic; it breaks with a starchy fracture, and is easily pulverized; externally of a brown, wrinkled appearance; internally yellow. The woody part of the root should be of a light yellow color, somewhat solid and heavy. Its smell is weak, with a slight aromatic odor. Boiling water takes up about one-third of its weight; the infusion has the sensible qualities of the root; it is not altered by sulphate of iron, nitrate of silver, corrosive sublimate, nor by emetic tartar; but it is copiously precipitated by acetate of lead, tincture of nutgalls, lime-water, and yellow cinchona bark. It gives out its properties also to alcohol, and proof spirit; but the latter is the best menstruum. It affords an essential oil by repeated distillation with water; the remaining decoction yields malate and sulphate of lime. M. Planche obtained from this root one-third its weight of starch; a yellow, bitter resin; a small quantity of volatile oil; salts of lime and potass; oxide of iron; silex; and a large proportion of a substance which resembled animal matter. We are told that a spurious *calumba root* is met with in some parts of France, which is imported from the states of Barbary. It is known by its not containing starch;

hence, it is easily detected by the agency of iodine, which does not alter its color; by its changing black with sulphate of iron; and by its infusion reddening turnsole paper.

Medical Properties and Uses. *Calumba root* is considered a powerful antiseptic and tonic, and also possessed of some astringent properties; on which account it is highly recommended in diarrhœa, cholera morbus, general debility, and in the last stages of phthisis pulmonalis, and in hectic fever; it has been found to check colliquative diarrhœa, to allay nervous irritability, and to impart some degree of vigor to the stomach. It has also been considered useful in allaying the distressing nausea and vomiting which accompany pregnancy; and in the low stage of puerperal fever. It is also an excellent remedy in dyspepsia. *Calumba root* may be given in powder, in doses of from fifteen to thirty grains, and repeated once in four or six hours. It is usually, however, taken in the form of infusion, either alone, or in combination with neutral or alkaline salts, aromatics, or opiates, according as circumstances may indicate. By the natives of Mosambique, and also by those at a remote distance, this root is considered almost a specific for every disorder of long standing; but more especially for dysenterial and venereal disorders.

The *calumba root* is considered a most valuable tonic, and is most commonly prescribed in the state of infusion. The dose of the powder is from ten to thirty grains, and can be repeated three or four times a day. It is frequently combined with powdered ginger, carbonate of iron, and rhubarb.

Infusion.—Take of *calumba root*, bruised, one ounce; water, half a pint. Macerate for six hours in a close vessel, and strain. The dose of the infusion thus prepared is one fluid ounce. It should be remembered that all infusions of roots prepared in water very soon spoil: therefore, there should be added sufficient alcohol to keep it.

NAT. ORDER

Theaceæ.

THEA. TEA TREE.

Class XIII. Polyandria. *Order I.* Monogynia.

Gen. Char. *Corolla*, six or nine-petalled. *Calyx*, five or six-leaved. *Capsules*, tricoccus.

Spe. Char. *Leaves*, elliptical, oblong, and rugose.

This is a small evergreen *shrub*, much branched, and covered with a rough dark grey bark; the *leaves* are elliptical, or lanceolate, entire, alternate, obtusely serrated, veined, and placed on short footstalks; the *calyx* is small, smooth, persistent, and divided into five obtuse segments; the *flowers* are white, often two or three together, on separate peduncles, and placed at the axillæ of the leaves; the *corolla* varies in the number and size of its petals, but most commonly six, which are of an irregular, roundish form; the *filaments* are numerous, short, and inserted at the base of the corolla; the *anthers* are large and yellow; the *germen* is roundish, or rather triangular; the *style* is trifid, spreading at the top, and furnished with simple stigmas; the *capsule* is three-celled, and opening; the *seeds* are three, oblong and brown.

This most valuable *shrub* is a native of China and Japan, and, as history informs us, was first introduced into England in 1768, by John Ellis, Esq., who raised it from seed, and presented it to the king's gardener at Kew. But we are informed by other writers, that the Tea-plant which first flowered in Europe, belonged to his grace, the duke of Northumberland, at Sion-house.

Tea Tree.

All the various kinds of Tea which are imported into this country, should come under the denomination of Bohea and Green, as it is now generally supposed by learned botanists that they are produced from the same species of the plant. Linnæus, however, has described them as specially different, founding the distinction in the number of their petals. Others have also observed, that the leaves of the Tea-plants differ considerably, both in form and color; and this difference we have ourselves frequently noticed in the plant, which is occasionally found in flower gardens of this country; but whether these which the gardeners cultivate, and sell by the name of Bohea and Green Tea-plants, are to be regarded as permanent varieties, or distinct species, we have not the means to decide. De Loureiro has described three species of Thea, viz.: *Thea cochinchinensis*, *Thea cantonensis*, and *Thea oleosa*. The first is a native of Cochin China, where it is cultivated, and used medicinally in hot weather, as a sudorific and refrigerant. The *Thea oleosa* grows wild in the neighborhood of Canton, where an oil obtained from its seeds is used for various domestic purposes. The *Thea cantonensis*, which Loureiro carefully examined in its native soil, was found to bear a close resemblance to another variety, called *Siao chong cha*, and by us Souchong. Both these are brown, but more fragrant and valuable than the common green Tea, which grows in the province of *Fo kien*. Notwithstanding that this author has described the three species of Thea above mentioned, he says, that on examining the dried flowers of the green Tea, brought from the province of Kiang si, he observed a great diversity in the number of the parts of the calyx and corolla: hence, he concludes that all the various Chinese Teas are taken from the same botanical species, and that the different flavor and appearance of Teas depend upon the nature of the soil, the culture, and method of preparing the leaves.

The opinion, which is founded on the sportive tendency of the flowers of the Tea-plant, clearly shows the fallacy of distin-

guishing the Bohea and Green Tea trees by the number of their petals, which, even in this country, have been found to vary from three to nine; yet this circumstance, though it proves the insufficiency of the Linnæan characters, by no means determines the botanical identity of the Green and Bohea Teas; and while the present narrow and jealous policy of the Chinese continues, many interesting particulars respecting the natural history of Tea must still remain unknown to us: hence, we feel unauthorized to add a specific name to the plate of the Tea-plant here annexed, which represents the variety in the *Hort. Kev.*, or the *Thea viridis* of the London gardeners.

The various Teas imported into Europe and the United States, are obtained both from the wild and cultivated plant. The manner of gathering and preparing the leaves, as practised in Japan, is very fully described by Kœmpfer, and is, as far as our information extends, conformable to the method used by the Chinese.

The first gathering of the Tea leaves, according to this author, commences about the last of February, when the leaves are young and expanded. The second collection is made about the beginning of April, and the third in June. The first collection, which consists only of the fine, tender leaves, is most esteemed, and is called Imperial Tea. The second is called Tootsyaa, or Chinese Tea, because it is infused and drank after the Chinese manner. The last, which is the coarsest and cheapest, is chiefly consumed by the lower class of people. Besides the three kinds of Tea here noticed, it may be observed, that by garbling, or sorting these, the varieties of Tea become still farther multiplied. As many Tea-plants grow on cliffs, and places of difficult access, the Chinese Tea-gatherers are said to have occasional recourse to the assistance of monkeys, which are chased up the Tea trees, and so much irritated, that in their fury they bite off the branches, and throw them down in resentment; the branches

are then taken up, and the leaves picked off. The leaves are not collected from the cultivated plant till it is three years old; and after growing seven or ten years it is cut down, in order that the numerous young shoots may afford a greater supply of leaves.

The leaves should be dried as soon as possible after they are collected; and for this purpose Kœmpfer relates, that public buildings are erected, containing from five to ten, and even twenty small furnaces, about three feet high, each having at the top a large iron pan. There is also a long table covered with mats, on which the leaves are laid, and rolled by workmen who sit round it. The iron pan being heated to a certain degree by a fire made in the furnace beneath, a few pounds of the leaves are put upon the pan, and continually turned and shifted by the hands, till they become too hot to be endured; they are then thrown upon the mats to be rolled, which is done between the palms of the hands, after which they are cooled as speedily as possible.

It is desirable that all the moisture of the leaves should be completely dissipated, and their twisted form preserved, for which purpose the above process is repeated several times with the same leaves, but less heat is employed than at first. The Tea thus manufactured is afterwards sorted, according to its kinds or goodness. Some young, tender leaves are never rolled, and are immersed in hot water before they are dried.

From this account of the Japanese method of curing their Teas, it appears that a prompt and complete exsiccation is the chief art employed. We suspect, however, that the Chinese are more indebted to art than to nature for the various kinds of Tea with which they supply this country. Many of their Teas are so widely different in taste, odor, color, and form, that instead of appearing to be the leaves of the same species of plant, they are so much disguised as scarcely to manifest any resemblance to each other. It is true that some species and varieties of the Tea, as appears by Loureiro, are naturally more odorous than others; yet

we cannot suppose that nature ever made them totally different. The same observation will be equally applicable to the various flavors and colors of this exotic. We may therefore infer that the Chinese method of curing their fine Teas is not quite so *simple* as that practiced by the Japanese.

Tea was first introduced into Europe by the Dutch East India Company, and into England about the year 1666, when it sold for sixty English shillings per pound, and for many years its great price limited its use only to the most opulent. Its use was introduced into this country at the time of its settlement by our forefathers, and has now become a common beverage of both the rich and poor; and its effects have been variously represented;—but as to enter fully upon this subject would far exceed the limits of this work, we shall refer the reader for a more full account to Dr. Lettsom's elaborate history of the Tea tree; and conclude this article with a transcript of its medicinal powers, as given by Dr. Cullen, whose opinion in this place cannot fail to be well received.

"With respect to its qualities as a medicine, that is, its power of changing the state of the human body, we might suppose it ascertained by the experience of its daily use; but from the universality of this use in very different conditions of the plant, and in every possible condition of the persons employing it, the conclusions drawn from its effects must be very precarious and ambiguous, and we must attempt by other means to ascertain its qualities with more certainty.

"To this purpose, it appears from Dr. Smith's experiments, that an infusion of green Tea has the effect of destroying the sensibility of the nerves, and the irritability of the muscles; and from the experiments of Dr. Lettsom, it appears that green Tea gives out, in distillation, an odorous water, which is powerfully narcotic. That the recent plant contains such an odorous narcotic power, is not to be doubted; for we find that the Chinese take great pains

in drying it, before they will suffer it to be brought into use; and that even after such preparation, they usually abstain from its use for a year or more, that is, until its volatile parts are all completely dissipated; and it is said that unless they use this precaution, the Tea, in a more recent state, manifestly shows strong narcotic powers. Even in this country, the more odorous Teas often show their sedative powers in weakening the nerves of the stomach, and sometimes the whole system."

From these considerations, we may safely conclude, that Tea is to be considered as a narcotic and sedative substance; and that it is powerfully such in its odorous state, and therefore less in the Bohea than in the Green Tea, and the most so in the more odorous, or what are called the finer and better sorts. Its effects, however, seem to be very different in its operation upon different constitutions; and hence so many different and contradictory accounts that are reported of these effects. But if we consider the difference of constitution, which occasions some difference of the operation of the same medicine in different persons, and of which we have a remarkable proof in the operation of opium and other narcotics, we should not be surprised at the different operations of Tea.

If to this we add the falicy arising from the condition of the Tea employed, which is often so inert as to have no effects at all; and if we still add to this the power of habit, which can destroy the powers of the most powerful substances, we shall not allow the various, and even contradictory reports of its effects to alter our judgment with respect to its qualities in affecting the human body. Thus, from the experiments above mentioned, and from observations with which every physician must necessarily become more or less familiar, in witnessing its effects upon all sorts of persons, we must be convinced that the qualities of Tea are narcotic and sedative.

It is often contended that the bad effects imputed to Tea, are

owing to the large quantity of warm or hot water which accompanies it; and it is possible that some bad effects may arise from this cause; but from attentive observation, we can assert that whenever there are any marked effects, they are, in nine of every ten persons, entirely from the qualities of the tea; and that any similar effects of warm water do not occur in one of a hundred who take in this very largely.

But while we thus endeavor to establish the poisonous nature of Tea, we do not at the same time deny that it may sometimes show useful qualities. It is possible, that in certain persons, taken in moderate quantity, it may, like other narcotics, in a moderate dose, prove exhilarating, or like these, have some effect in taking off irritability, or in quieting some irregularities of the nervous system. As its bad effects have been often imputed to the warm water that accompanies it, so we have no doubt that some of its good effects may also be ascribed to the same cause, and particularly its being so often grateful after a full meal.

The U. S. Dispensatory, describing the properties of Tea, says "that it is astringent, and gently excitant, and in its finer varieties exerts a decided influence over the nervous system, evinced by the nervous feelings of comfort, and even exhilaration which it produces; and the unnatural wakefulness to which it gives rise when taken in unusual quantities; or by those unaccustomed to its use. Its properties, however, are not of so decided a character as to render it capable of very extensive application as a medicine; and its almost exclusive use, as every one knows, is as a grateful beverage at the evening meals. Taken moderately, and by healthy individuals, it may be considered perfectly harmless.


Mezereum

NAT. ORDER.

Thymelaceæ.

DAPHNE MEZEREUM. MEZEREON.

Class VIII. Octandria. *Order I.* Monogynia.

Gen. Char. *Calyx*, none. *Corolla*, four-cleft, withering, enclosing the stamens. *Drupe*, one-seeded.

Spe. Char. *Flowers*, sessile, in threes on the stem. *Leaves*, lanceolate, deciduous.

The *Mezereon* is a hardy *shrub*, which usually grows to the height of five or six feet, and sends off several branches; the exterior *bark* is smooth, and of a gray color; the *root* is of a fibrous texture, of a pale color, and covered with smooth olive-colored bark; the *leaves* are few, tender, lance-shaped, sessile, deciduous, and appear at the terminations of the branches, after the flowers have expanded; the *flowers* surround the branches in thick clusters; they are sessile, monopetalous, tubular, having the limb divided into four oval, spreading segments, generally of a purple color; the *stamens* are eight, alternately shorter, and concealed within the tube of the corolla; the *style* is very short, the *stigma* flat, and the *germen*, which is oval, becomes a reddish berry, containing a round seed.

This shrub is a native of England, though not very common. We are informed that it grows wild in the woods near Andover in Hampshire, and also about Loxfield in Suffolk; but it is generally cultivated in gardens, on account of the beauty and earliness of its flowers, which appear in February and March.

This plant is extremely acrid, especially when fresh; and if

retained in the mouth, excites great and long continued heat and inflammation, particularly of the throat and fauces. The berries also have the same effects, and, when swallowed, prove a powerful corrosive poison, not only to man, but to dogs, wolves, foxes, &c. The bark and berries of Mezereon, in different forms, have been long externally used in obstinate ulcers and sores. In France and some parts of England, the former is strongly recommended as an application to the skin, which, under certain management, produces a continued serous discharge, without blistering, and is thus rendered useful in many chronic diseases of a local nature, answering the purpose of what has been called a perpetual blister, while it occasions less pain and inconvenience.

Medical Properties and Uses. In England and in the United States, at the present time, Mezereon is only employed in the cure of some syphilitic complaints, for which purpose, Dr. Donald Monro was the first who gave testimony to its efficacy in the cure of these loathsome diseases. A few months after this, several cases were published by Dr. Russel, then physician to St. Thomas' Hospital, fully establishing the utility of the cortax mezerei in venereal nodes. He says, "The disease for which I principally recommend the decoction of mezereon-root as a cure, is the node that proceeds from a thickening of the *membrane* of the bones, which appear to be the cause of the greatest part of those tumors, at least when recent. In a thickening of the periosteum from other causes, I have seen very good effects from it." But in the nocturnal pains accompanying syphilis, unless occasioned by the node itself, he found it necessary to join a solution of sublimate to the decoction. We would also remark that Dr. R. never found the decoction to increase any of the natural evacuations. Dr. Cullen observes, that "Dr Home has not only found this decoction to cure scirrhous tumors which remain after the lues venerea, and after the use of mercury, but that it healed, also, some scirrhous tumors from other causes; and that he has

employed it in several cutaneous affections, and very often with success."

The great burning and continued heat and irritation that is produced in the throat when mezereon is chewed, induced Dr. Withering to think of giving it in a case of difficulty of swallowing, seemingly occasioned by a paralytic affection. The patient was directed to chew a thin slice of the root as often as she could bear it, and in about a month recovered her power of swallowing. This woman had been a great sufferer from her complaint, for about three years, and was greatly reduced, being totally unable to swallow solids the whole time, and liquids but very imperfectly.

Mezereon, in its recent state, is an active poison, and should be given with great care, if given at all. A case is related to us from undoubted authority, of a woman who gave twelve grains of the berries to her daughter, who had the fever-ague. She vomited blood, and died immediately. As the acrimony of these berries is not immediately perceived upon being tasted, the ignorant and unwary are the more easily betrayed to swallow them.

As some may wish to try this plant in their practice, which is as yet unknown to most physicians in this country, and promises beneficial effects in several complaints, we shall briefly recite the usual mode in which it has been conducted.

A square piece of the fresh-gathered bark, about the size of a penny, macerated a little in vinegar, is applied to the skin, over which is bound a leaf of ivy or plantain. This application is at first renewed night and morning, till it cauterizes the part, and brings on a serous discharge, when a renewal of the bark once in twenty-four hours is found sufficient to continue the issue for any length of time. By means of suitable plasters, it is thought by some physicians, it might prove valuable if applied behind the ears to relieve the eyes; and on a larger scale prove useful in practice in sundry diseases. It must be observed, however, that it sometimes produces cutaneous eruptions, which is attributed to

the absorption of the particles of the bark. We would suggest the propriety of using it as a substitute for calomel, as it possesses most of its valuable qualities, without any of its bad effects. The berries of *Daphne laureola* are poisonous to all animals except birds. In Jamaica a species is found which is called the *Lace bark* tree, in consequence of the beautifully reticulated appearance of the inner bark. Cordage has been manufactured from several species. A very soft kind of paper is made from the inner bark of *Daphne cholua* in Nipal. *Daphne gnidium* and *Passerina tinctoria* are used in the south of Europe to dye wool with, which gives it a beautiful yellow color.

When the berries or bark are taken in over-doses, we should exhibit diluents, emollients, and laxatives, in order to expel the poison from the alimentary canal; and after this, if the nervous system has been much excited, give nervines in repeated doses to allay the irritation. If inflammation of the stomach or intestines should follow, we must have recourse to some of the most active vegetable emetics. The decoction has been given in some cases, with decided advantage in chronic rheumatism, some cutaneous affections, &c., but it is a remedy seldom employed at the present day, except in combination with others; for its exhibition requires great caution, otherwise vomiting and purging may be produced. In some instances it acts with such violence as to occasion spitting of blood, and fatal diarrhœa.

Common White Lily.

lower ones rufous liver-colored on the upper surface, bright purple on the lower, with elevated veins—the upper ones green, with red tips; the petioles channelled, bright purple, smooth, and edged at the top with the decreasing leaf; the lower ones nearly their length; the glomerules subsessile, dark purple, on a very short, undivided peduncle; the calyx five leaved; the leaflets oblong, purple, membraneous, ending in a dark red point. Professor Martyn observes that this species varies in the color of their leaves: as, when grown in the open air, they are of a dirty purple on their upper surface, and in the younger ones green; while, in the stone, the whole plant is of a beautiful fine purple color. It is, however, easily distinguished in all states by its color, its leaves, its lateness of flowering, &c. It is a native of Guiana and the East Indies. Mr. Miller remarks that it grows to the same height of the Tricolor, and in the manner of its growth greatly resembles it; but the leaves have only two colors, an obscure purple and a bright crimson, so blended as to set off each other, making a fine appearance when the plants are vigorous.

Amaranthus tricolor. Three-colored Amaranthus. In this species the stems rise from a foot and a half to two feet in height; they are obscurely angular, smooth, and upright; the leaves blue with a red point, smooth and waved; the younger ones yellow, with red, especially the tips; those in a more mature state coralled at the base, violet in the middle, and green at the end; the old ones green with a violet base; the petioles very long, smooth, green, channelled, and bordered; the glomerules germinate, green, and axillary; the calyx three-leaved; the leaflets oblong, acuminate, membranaceous, with a green nerve. It varies in the color of the leaves, which are less painted in the open air than in the stone. It has been long cultivated for the beauty of its variegated leaves, in which the colors are elegantly mixed. When the plant is in full vigor, these are large and closely set from the bottom to the top of the stalk. The branches also form a sort of pyramid; so that in form, as well as the beauty

of its flowers, there are but few plants that can vie with it in grandeur. It is a native of Guiana. Flowers all summer.

Amaranthus sanguineous. Spreading, or Bloody Amaranthus. In this species the stem is upright, about four feet in height; they are firm, round, red, and streaked; the leaves somewhat convex, or rather, so contracted as to possess the form of a boat, and pointed; the older ones rather blunt; the upper surface is a mixture of red and green, the lower more or less purple; the petioles are tinged with purple, channelled, and quite rough, and winged at the top with the leaf; the racemes are very red; the branches smooth,—the lower ones spreading; the calyx five-leaved; leaflets oblong, blunt, membraneous, and red; the bracteas subulate-setaceous, red, longer than the flowers, closely surrounding the glomernles.

Amaranthus caudatus. Pendulous Amaranthus, or Love-lies-bleeding. In this species the stem is from two to two and a half feet in height, green, obscurely angular, grooved and streaked, smooth, and covered at the top with thin, whitish, scattered hairs; the upper part somewhat nodding on account of the extreme length of the racemes; the leaves are smooth, bright green, blunt, emarginate, with an incurved transparent point; the petioles are much shorter than the leaf; the racemes terminating, elegantly purple, very long, cylindrical, and composed of flowers very closely glomerate; the calyx is five-leaved; the leaflets oblong, red, acuminate, membranaceous; the bracteas oblong, pointed, and scattered.

Amaranthus maximus. Tree Amaranthus. In this species the stems rise to the height of seven or eight feet, sending off numerous horizontal branches at every ten or twelve inches; the leaves are green, rough, and luxuriant; the spikes are seldom half the length of those of the other sorts, but are much thicker. It is said to degenerate gradually into the smaller kind. The seed, which at first are white, also become red. It flowers in August and September, and is a native of Persia.

White Lady's Slipper

Amaranthus cruentus. Various-leaved Amaranthus. In this species the stem is a foot and a half or two feet in height, grooved, green with red streaks, smooth, and slightly pubscent among the flowers; the leaves are green, spotted with brown above, red beneath, bluntish with a reddish short point; the petioles are red, channelled, and smooth; the racemes red and green, with branchlets spreading and nodding a little; the calyx five-leaved; the leaflets oblong, pointed, white-membraneous, with a red nerve, and a point of the same color. It varies of a shining red color—with a red stalk with pale leaves—with a green stalk with variegated leaves, &c. When first cultivated in this climate, the stem is wholly red and smooth; the petioles, ribs, and nerves of the leaves underneath purple; the spikes purple, much spreading, and a little nodding. They are highly beautiful, and make a gay appearance for the first two years; but after that time the seeds degenerate, and the plants possess but little beauty, which is the same with some others of this genus. It is a native of the East Indies.

Propagation and Culture. The propagation in most of these species is not effected without considerable trouble, as they require the aid of artificial heat in order to bring them forward in the greatest perfection. There are few, however, that may be raised in the open ground without the assistance of heat applied in the above manner.

The second and third species, being the most tender, demand much greater attention, and more artificial heat in producing them, than those of the fourth, fifth, and sixth kinds. And the first and last species are capable of being raised with still less heat than those of the above sorts, though not in the fullest perfection without a slight degree of it.

In all the different species the business is accomplished by sowing the seeds annually in the early part of the spring months, say about the last of March, or about the beginning of April, on beds of good earth, either over heat or in the natural ground, according to the

nature of the plants. The earlier the sowing can be performed, the better growth the plants will attain in the summer season.

In raising the second and third sorts in the greatest lustre and perfection, the aid of two or three different hot-beds is necessary, which should be covered with frames and glasses, so as to slide with ease and convenience. The first of these hot-beds should be small and made in the ordinary way, for the purpose of receiving the seed, and which may likewise serve for that of other annuals of the tender kind of similar growth. They should be earthed over the tops within the frames, to the depth of five or six inches, with good light dry mould. In this the seed should be sown in small shallow drills, and covered over very lightly with fine sifted mould; the glasses are then to be placed over them. In these situations the plants should be suffered to remain till they have attained the height of two or three inches, air being admitted in fine days, and the glasses covered with mats at night. When the plants are in this situation, a second hot-bed is to be prepared in the same manner, into which the young plants are to be pricked out to the distance of about four inches from each other, moderate waterings being occasionally given, and the plants well shaded from the sun until they have taken fresh root. Air should now be admitted more freely when the weather is fine, by raising one end of the glasses, and the night coverings be carefully applied. After the plants have remained in these beds a month or six weeks, and have become tolerably strong in their growth, so as to require more space, the final hot-beds should be made ready. These ought to be of much larger dimensions. When the frames are placed over them, earth to the depth of four or five inches should be laid over, and the plants, after being taken up with balls of earth about their roots, planted in pots of good sized dimensions, water being immediately applied in a sparing manner, and the pots plunged in the earth of the beds, the frames being raised occasionally as the plants advance in growth. The lights are to be constantly kept on, but air freely admitted by raising the ends daily, and water applied

every one or two days. Towards the end of June the plants will have attained nearly their full growth, when they may be placed out in the open air, where they are fully seen, when the weather is fine and settled, each of them being supported by a proper stick. In their after culture, they require to be kept constantly in the pots, and to have water freely applied almost every day when the season is hot.

All the other species are raised with much less trouble, but similar to those already described. They are of the most highly ornamental kind, although attended with some trouble in their culture, yet they well repay for the labor. They should have rather open exposures, and be distributed towards the fronts, especially those of the low growing kinds.

NAT. ORDER.

Ranunculaceæ.

ANEMONE HORTENSIS. BROAD-LEAVED GARDEN ANEMONE.

Class XIII. Polyandria. *Order VI.* Polygnia.

Gen Char. *Involucre*, three cut-leaves, distant from the flower. *Calyx* of five to fifteen petal-like, colored sepals. *Petals* wanting.

Spe. Char. *Leaves* ternate. *Segments* multifid. *Lobules*, linear, mucronated. *Leaves* of the involucrum sessile, multifid, *Sepals* six, oval.

The *stems* of this plant, when under a state of cultivation, rise from ten to fifteen inches in height. The *root-leaves* appear to be of two kinds: one very deeply gashed, so much that they have the appearance of being five-fingered, but are in reality three parted, the side-lobes being two-parted to the very base; all the lobes are narrow and sharp; the side ones deeply bifid, the middle ones trifid or quadrifid, the extreme ones sharply lanceolate—the other kind broad, deeply three-lobed, blunt, bluntly and shortly serrate at the tip, with an awn standing out; the *leaf* on the stem, or involucre, is ternate; the *leaflets* ovate, lanceolate; the *peduncle* is solitary and one-flowered; the *petals* three times three (in the natural flowers), long, elliptic, marked with lines, the outer ones subhirsute on the outside, white at the base with green lines; the *roots* consist of small white fibres, which are tuberous.

There are numerous varieties of this species, both with single and double flowers: the single and double Yellow; the Purple Star Anemone, darker and paler; Violet Purple; Purple-striped; Carnation; Gredeline, between a peach color and a violet; Cochenille, of a fine reddish violet or purple; Cardinal, of a rich crimson red; Blond-red, of a deeper, but not so lively a red; Crimson; Stamell, near unto a scarlet; Incarnadine, of a fine delayed red or flesh-color;

Wolfs-bane or Monks-hood.

Spanish Incarnate,of a lively flesh color, shadowed with yellow; Blush, of a fair whitish red; Nutmegge, of a dark whitish color, striped with veins of a blush color; Monk's-gray, pale whitish, tending to a gray; Great Orange Tawnie; Lesser Orange Tawnie. Of the great double varieties there are, the great double Anemone of Constantinople, or Spanish Marigold; great double Orange Twarnie; double Anemone of Cyprus; double Persian Anemone; the common great double Variable Anemone; common double and variegated Scarlet; Red and Purple; variegated of these sorts. The best Star Anemones are said to come from Brittainy, where they raise yearly a great variety of sorts.

Anemone coronaria. Narrow-leaved Garden Anemone. In this species the flower-stems rise between the leaves immediately from the roots, from the number of one and two to four and five from the same root, to the height of from eight to twelve inches, having a leafy appendage or involucrum a little above the middle; the radical leaves are a little divided into numerous segments, which are subdivided into many narrow divisions. At the top each stem is adorned with a flower, which in the double sorts is large and very ornamental. It is a native of the Levant, where it grows single, but has been rendered double by cultivation.

The varieties are very numerous; in the single sorts, the Watchet or pale blue; the common Purple; the Scarlet, and many intermediate varieties. In the double kinds, the common Double Red and Scarlet; the Parti-colored Crimson; the Crimson Velvet; the great double Blush; the White; the Lesser Blush; the Purple; the Blue; the Rose-colored; the Carnation; the Purple Velvet of three colors; the double Brimstone; the Green, &c.

Anemone nemorosa. Wood-leaved Garden Anemone. In this species the root is perennial and creeping; the height of the whole plant is only from five to ten inches; the stem single, round and pubscent; bearing one leaf, and one flower; the leaf is doubly ternate, each part being petioled; the petiole is flat and broad, particu-

larly at the base; each part or leaf (for some consider i as three leaves), is trifid; each leaflet being gash-serrate, and hairy underneath, especially on the nerves; the peduncle is from one to two inches long, and is only a continuation of the stem, and springs from the centre of the leaf; the flower consists of six or seven oblong-ovate petals, sometimes ending bluntly, sometimes emarginate, and sometimes even gashed or lacerate. The usual color is white, but they are often tinged with purple on the outside, particularly the three outer ones; and sometimes they are entirely purple on both sides. The joint of the stem and the backs of the leaves are also apt to be tinged with red. The varieties are: with single flowers, with double flowers white, with single purple flowers, with double purple flowers, and with reddish purple flowers.

Anemone apennina. Mountain-blue Wood Anemone. In this species the root is perennial and tuberous; the stem round, purplish, and about a span high; the root-leaves on long petioles, ternate, and leaflets usually three-parted; the segments variously cut and divided, somewhat pointed, hairy on both sides; one three-parted leaf, or three leaves together on the stem, like the others, but on short, sheathing petioles. From the centre of these arises the peduncle, about six inches high, round, and purplish except near the flower, where it is green. The stem-leaves and peduncle are slightly hairy; the flowers are upright, of a pale blue color, and sweet smell; the petals oblong, from twelve to fifteen, and disposed in three rows. It flowers in April. The varieties are: with single blue flowers, with double blue flowers, with single violet-colored flowers, and with double violet-colored flowers.

Anemone ranunculoides. Yellow-wood Anemone. This plan differs from the one previously described, in its having a yellow corolla, and two petals standing alternately outer, and two inner, and one having one side within and the other side without the next petal—whereas that has three outer and three inner petals; it differs also in the peduncles being accompanied with two leaflets, the latter

the cause of his disease; and, to convince the company that it was perfectly innocent, he eat freely of its leaves; but he suffered for his imprudence, as he shortly died in great agony.

Medical Properties and Uses. This plant has been generally prepared as an extract, or inspissated juice, after the manner directed in the Edinburgh, and many of the foreign pharmacopœias; and, like all virulent medicines, it should be first administered in small doses.

Storeck recommends two grains of the extract to be rubbed into a powder, with two drachms of sugar; and to begin with ten grains of this powder, two or three times a day. We find, however, that the extract is often given from one grain to ten for a dose; and some physicians even increase from this quantity. Instead of the extract, a tincture may be made from the dried leaves, macerated in six times their weight of spirits of wine, forty drops of which may be given for a dose.

Modern experiments prove this plant to be powerfully narcotic and diaphoretic; and it is now frequently applied to cancers and cancerous tumors, &c. But we cannot conceive that cancer can be cured either by its internal or external administration, although it has been strongly recommended in that disease. But from the uncertainty of its strength, and its operation, we rarely find it used at the present day, especially in the United States. Even its external application is not unattended with danger; therefore, if applied to cancerous sores, or other tumors, it must be with great caution. There are other species of *Aconite*, which were formerly in use, possessing similar properties to the one here described; but from their having fallen into disuse, it will be unnecessary to describe them in this place.

NAT. ORDER.

Liliaceæ.

ERYTHRONIUM AMERICANUM. DOG'S TOOTH VIOLET

Class VI. Hexandria. *Order I.* Monogynia.

Gen. Char. *Calyx,* none. *Corolla,* inferior, six-petalled; the three inner petals with a callous prominence on each edge, near the base.

Spe. Char. *Leaves,* lanceolate, punctate. *Petals,* oblong-lanceolate, obtuse at the point; interior ones bidentate near the base. *Style,* clavate. *Stigma,* entire.

This is an indigenous, perennial, bulbous plant, sometimes called after the European species, *Dog's Tooth Violet.* The *bulb,* or *cormus,* which is brown externally, white and solid within, sends up a single naked flower-stem, and two smooth, lanceolate, nearly equal leaves, sheathing at their base, with an obtuse, callous point, and of a brownish green color, diversified by numerous irregular spots; the *flower* is solitary, nodding, yellow, with oblong-lanceolate petals, obtuse at the point, a club-shaped, undivided style, and a three-lobed stigma. The *Erythronium* grows in woods and other shady places, throughout the Northern and Middle States. It flowers in the latter part of April, or early in May. All parts of it are active.

Of this genus Mr. Miller makes two species; but Linnæus, perhaps with more propriety, only one; for breadth of leaves, or color of flowers, can hardly be considered as sufficient to constitute a specific difference. It is found in some parts of Europe, cultivated in gardens, where it produces a variety of colors:—

1 Dogs-tooth Violet?
2 Virginia Turnip.

some are purple, of two different tints; others are white and yellow. They are said to grow naturally in Hungary and Italy. They are propagated by offsets from their roots, and thrive best in a shady situation, and a gentle loamy soil; but should not be too often removed. They may be transplanted any time after the beginning of June, when their leaves will be quite decayed, till the middle of September; but the roots should not be kept very long out of the ground, as, if they shrink, it will often cause them to rot. The roots of this plant should not be planted scattering in the borders of the flower-garden, but in patches near each other, where they will make a good appearance.—*U. S. Dispensatory.*

Medical Properties and Uses. This is a very ancient medicine, and was used in the time of Salmond to a considerable extent. The physicians of Europe employed it in those days for the cure of all venereal complaints, and as a remedy for worms. They obtained a strong decoction from the leaves and powdered root, after the following manner: take four ounces of the leaves, well dried; or two of the root, powdered; and add two quarts diluted alcohol; macerate for fourteen days; filter, when it is ready for use. The U. S. Dispensatory recommends giving it in doses of twenty or thirty grains, and says, "the recent bulb acts as an emetic; the leaves are said to be more powerful; and that the activity of the plant is diminished very much by drying." So far as we at present are acquainted with the virtues and uses of this plant, we are inclined to consider it a useless addition to the Materia Medica. It is however adopted in the present U. S. Dispensatory, but not very highly recommended in practice. A gentleman with whom I am well acquainted, informed me that he has frequently used the Erythronium in connection with other medicines, with decided advantage in rheumatism and gout; and advises that it be applied externally, and well rubbed in, so as to produce considerable friction.

NAT. ORDER.

Trilliaceæ.

TRILLIUM SESSILE. VIRGINIA TURNIP.

Class VI. Hexandria. *Order III.* Trigynia.

Gen. Char. *Calyx*, three-leaved. *Corolla*, three-petalled, *Stigma*, sessile. *Berry*, superior, three-celled. *Cells*, many-seeded.

Spe. Char. *Peduncle*, inclined. *Flower*, nodding. *Petals*, ovate, acuminate, flat, spreading; broader, and a little longer than the calyx. *Leaves*, broad-rhomboid, acuminate, sessile.

This species of *turnip* has a tuberous, perennial *root*, which sends up in the spring a large, colored spathe, flattened and bent at the top, like a hood, and supported by an erect, purplish scape; the *spathe* has within it a club-shaped spadix, variegated, round at the end; at the base it is surrounded by the *stamens*, the female organs being below the male; the *spathe*, *spadix* and *germs* are converted into a bunch of scarlet berries; the *leaves* stand on long, sheathing footstalks, and are composed of leaflets, paler beneath than on their upper surface, and in time becoming glaucous.

Of this genus there are several species, all of which are natives of North America. They have been described by Miller, in his *Gardener's Dictionary*, under the head of *American Herb Paris;* but the *Paris* and *Trillium*, though somewhat similar in the style of their foliage, are very different in their parts of fructification. This species takes its trivial name of *sessile*, from the flowers having no footstalks, but sitting, as it were, immediately on the end of the stalk.

The figure here exhibited was taken from a plant which flowered in my garden, last spring, from the roots sent me the preceding autumn, by a practical gardener of South Carolina, who is not only well acquainted with the medical plants of this country, but indefatigable in discovering and collecting the more rare species of that portion of our country, and with which the gardens of our Northern States are likely soon to be enriched.

It grows in shady situations, in a light soil, and requires the same treatment as the *Dodecatheon*, and round-leaved *Cyclamen*. We have not learned, neither have we had a fair opportunity of ascertaining whether this species will ripen its seeds with us; though a native of South Carolina, where it has been known and applied for medical purposes, ever since the first settlement of that country, it has never found its way north; and hence we may conclude that it is not very readily propagated, or more easily destroyed.

Medical Properties and Uses. This, as well as all the varieties of the *Wild Turnip*, in its fresh state, is a powerful stimulant and local irritant, possessing, in a great degree, the power of stimulating the secretions of the lungs and skin. It is also recommended as valuable for pain in the bowels, and colic. Dr. Samuel Thomson says, "Its pectoral properties have proved highly beneficial in coughs, consumption of the lungs, asthma, and sore throat, for which we have used it for more than forty years. The root should be dried, pulverized, and used as cough powders; or it may be given in honey, in the sirup of preserves, or in any other saccharine matter; or it may be made into a paste with honey or sirup, and used in the form of candy, by letting the substance dissolve gradually on the tongue, so as to diffuse its warmth through the mouth. It is also good for sore mouth and throat, canker, and swellings about the neck, and is considered good in coughs, colds, and catarrhal affections.

NAT. ORDER.

Magnoliaceæ.

MAGNOLIA YULANS. • UMBRELLA TREE.

Class XIII. Polyandria. *Order VI.* Polygynia.

Gen. Char. *Calyx*, three-leaved. *Petals*, six or more. *Capsules*, two-valved, one seeded, imbricated in a cone. *Seed*, berried, pendulous.

Spe. Char. *Sepals*, three to six, deciduous. *Stamens*, indefinite.

"This is a small *tree*, sometimes, though rarely reaching an elevation of thirty feet, and almost always having an inclined *trunk*; the *leaves* are scattered, petiolate, oval, obtuse, entire, glabrous, thick, opaque, yellowish-green on their upper surface, and of a beautiful pale glaucous color beneath; the *flowers* are large, terminal, solitary, cream-colored, strongly and gratefully odorous, often scenting the air to a considerable distance; the *calyx* is composed of three leaves; the *petals* are from eight to fourteen in number, obovate, obtuse, concave, and contracted at the base; the *stamens* are very numerous, and inserted on a conical receptacle; the *germs* are collected into a cone, each being surmounted by a linear, recurved style; the fruit is conical, about one inch in length, consisting of numerous imbricated cells, each containing a single scarlet *seed*. This escapes through a longitudinal opening in the cell, but remains for some time suspended from the cone by a slender thread, to which it is attached."

"The *Magnolia Yulans* extends along the sea-board of the United States, from Cape Ann in Massachusetts, to the shores of the gulf of Mexico. It is abundant in the Middle and Southern

Magnolia or Umbrella Tree?.

States, usually growing in swamps and morasses; and is seldom met with in the interior of the country, west of the mountains. It begins to flower in May, June or July, according to the latitude;" and if we credit the writings of some of the authors, in their descriptions of this most magnificent tree, we cannot but consider it as one of the most lovely shade trees that inhabit our country. Wood & Bache, in their description of this tree, say: "The medicinal properties which have rendered the bark of the Magnolia officinal, are common to most, if not all of the species composing this splendid genus. Among the numerous trees which adorn the American landscape, these are most conspicuous for the beautiful richness of their foliage, and the magnificence, as well as delicious odor of their flowers; and the *Magnolia grandiflora* of the Southern States rivals in magnitude the largest inhabitants of our forests." The focus of this order is undoubtedly North American, where the woods, the swamps, and the sides of the hills abound with them. Thence they straggle on the one hand into the West India Islands, and on the other into India, through China and Japan. Mr. Brown remarks, while at *Congo*, that no species have been found on the continent of Africa, or in any of the adjoining islands. Twenty-eight species are all that M. Decandolle enumerates. It derived its name in honor of Professor Magnol, of Montpelier, the author of several botanical works.

Medical Properties and Uses. The general character of all the plants pertaining to this order, is, to have a bitter, tonic taste, and fragrant flowers. The latter produce a decided action upon the nerves, which, according to Decandolle, induces sickness and headache from *Magnolia tripetala;* and, on the authority of Barton, is so stimulating on the part of *Magnolia glauca*, as to produce paroxysms of fever, and even an attack of inflammatory gout. The bark has been found to be destitute of tannin and gallic acid, notwithstanding its intense bitterness. The bark of the root of the *Magnolia glauca* is an important tonic; and the same proper-

ties are found in the *Liriodendron tulipifera*, which has been said to be equal to Peruvian bark. The *Michelia doltsopar* is one of the finest trees in the forests of Nipal, yielding an excellent fragrant wood, which is much used in that country for house building. *Magnolia excelsa* yields a valuable timber, called *Champ*, which is at first greenish, but soon changes into a pale yellow, the texture of which is very fine. The cones of *Magnolia acuminata*, of Virginia, yield a spirituous tincture, which is employed with some success in rheumatic affections; and, in fact, the seeds of all the species are remarkable for their bitterness; those of the *Magnolia yulans* are employed in various parts of China as febrifuges. None of the species are to be considered as aromatics. It possesses stimulant, tonic and diaphoretic properties, and has been used as a substitute for Peruvian bark, in intermittent fevers, and has also proved highly serviceable in chronic rheumatism, dyspepsia, and many other complaints, in which a gentle stimulant and tonic impression is desirable. The bark is often administered in connection with the bitter tonics, as a restorative bitter; and has been found highly serviceable for weak and debilitated constitutions. The dose of the bark in powder is from half a drachm to two drachms. The infusion and decoction are also used, but are less efficient. They may be prepared in the proportion of an ounce of the bark to a pint of water, and given in the quantity of one or two fluid ounces. The dose of the saturated tincture is a fluid drachm.

South Sea Tea or Holly.

NAT. ORDER.

Dumosæ

ILEX VOMITORIA. SOUTH SEA TEA, OR HOLLY.

Class IV. Tetrandria. *Order III.* Tetragynia.

Gen. Char. *Calyx*, perianthium, four-toothed, very small, permanent. *Corolla*, one-petalled, four-parted, wheel-shaped, divisions roundish, spreading, rather large, with cohering claws. *Stamens: Filaments*, four, awl-shaped, shorter than the corolla. *Anthers*, small. *Pistils* and *Germens*, roundish. *Style*, none. *Stigmas*, four, obtuse. *Pericarp: Berry*, roundish, four-celled. *Seed*, solitary, bony, oblong, obtuse, gibbose and cornered.

Spe. Char. *Calyx*, four-toothed. *Corolla*, wheel-shaped. *Style*, none. *Berry*, four-seeded.

The *leaves* of the *Ilex vomitoria* are alternate, distant, oblong, bluntish, crenate-ferrate, and about the size, shape, texture and color of the small-leaved *Alaternus*, but somewhat shorter, and a little broader at the base; the *flowers* are produced in close whorls at the joints of the branches, near the foot-stalks of the leaves; they are white, and are succeeded by red berries, which continue upon the plants most part of the winter, and, being of a bright red color, they make a very beautiful appearance, intermixed with the green leaves. This tree usually rises from ten to fifteen feet in height. It is a native of West Florida.

It has been supposed by the inhabitants of the South, that this *shrub* possesses poisonous properties; and if we may judge from their continuing so long untouched by birds, in a country

where these animals are so numerous, we may conclude that they have some venomous quality in them. It was sent to England, and there cultivated, in the year 1700, and preserved in several of the most extensive gardens near London, till the severe winter in 1739, when most of them were destroyed. But since that time many young plants have been raised from seeds, and have resisted the cold of that country without any covering, though they often suffer in very cold seasons, especially where they are not very well sheltered. The leaves of this species are not so bitter as those of the *Cassine*, or Cassioberry-bush, especially when green, and are therefore preserved for making an infusion in the manner of Tea, which is accounted by the Indians to be very wholesome, and is almost all the medicine they use as a cathartic, in many tribes. At a certain season of the year they come down in great numbers, from a distance of some hundred miles, to the coast, for the leaves of this tree, which is not known to grow at any considerable distance from the sea. They make a fire on the ground, and, putting a large kettle of water over it, they throw in a sufficient quantity of these leaves to make a strong decoction, and, setting themselves round the fire, from a bowl that holds about a pint, they begin drinking large draughts, which in a very short time produces vomiting that continues for the space of two or three days, until they have sufficiently cleansed themselves; and then, every one taking a quantity of the leaves to carry away with him, they all retire to their habitations. This plant is generally supposed to be the same as that which grows in Paraguay, where the Jesuits make a great revenue from the leaves, and of which an account is given by Professor Frezier.

Holly makes an impenetrable fence, and bears cropping well; nor is its verdure, or the beauty of its scarlet berries, ever observed to suffer from the severest of our winters. It would claim the preference for this purpose, even to the *Cratægus*, Hawthorn, were it not for the slowness of its growth whilst young, and the

difficulty of transplanting it when grown to a moderate size. But when it once takes well, the hedge may be rendered so close and thick, as to keep out all sorts of animals.

The common Holly, being a very beautiful tree in winter, deserves a place in all plantations of evergreen trees and shrubs, where its shining leaves and scarlet berries make a fine variety; and if a few of the best variegated sorts are properly intermixed, they will enliven the scene. The wood of this valuable tree is the whitest of all hard woods, and is used by the inlayer, especially under thin plates of ivory. The mill-wright, turner and engraver, prefer it to any other. It makes the very best of handles and stocks for tools, and surgical instruments. We are informed, also, that it is extensively used in the manufacturing of the finer kinds of cabinet furniture, as it takes a very beautiful polish. Sheep and deer are fed during the winter with the croppings; birds eat the berries; the bark, fermented, and afterwards washed from the woody fibres, makes a very good bird lime.

From forty to fifty varieties, depending on the variegations of the leaves or thorns, and the color of the berries, all derived from this one species, are raised by the nursery-gardeners, for sale, and formerly were in great esteem, but are now less regarded, since the old taste of filling gardens with short evergreens has been laid aside; a few, however, of the most lively varieties should be admitted, as they will have a good effect in the winter season, if they are properly disposed. Of those varieties, the *Ilex ferox*, or Hedge-hog Holly, is the most remarkable. Its leaves are not so long as the common Holly, the edges armed with stronger thorns, standing closer together; the upper surface set very close with short prickles. This is a native of Canada.

Ilex apaca, or Carolina Holly, is a native of Carolina, and flowers in May and June. The *Ilex perada*, or Thick-leaved, Smooth Holly, is a native of Madeira: it flowers in April and May *Ilex primoides*, or deciduous Holly, is a native of North

Carolina and Virginia: it flowers in July. *Ilex cassine*, or Dahoon Holly, rises with an upright, branching stem, to the height of eighteen or twenty feet. The bark of the old stems is of a brown color, but that of the younger stems or branches is green and smooth. The leaves of this tree are more than four inches long, and about one inch and a half broad. This is a native of South Carolina and Florida. There are two varieties of the Dahoon Holly; one with broad leaves, the other with narrow leaves, with scarcely any serratures. *Ilex Asiatica:* leaves, broad-lanceolate, blunt, quite entire. It is a native of the East Indies. *Ilex cuneifolia:* leaves wedge-form, three-cusped. It is a native of South America. *Ilex integra:* leaves oblong, obtuse, entire; peduncles one-flowered. *Ilex rotunda:* leaves rounded, acute, entire; peduncles umbelliferous. *Ilex crenate:* leaves ovate, crenate; peduncles on the branches, scattered, bearing two or three flowers. *Ilex emarginate:* leaves obovate, emarginate; flowers axillary, usually in pairs. *Ilex serrata:* leaves ovate, acute, ciliate, serrate: flowers axillary, solitary. It flowers in June. *Ilex Japonica:* leaves opposite, sessile; flowers in terminating racemes. It flowers in April. *Ilex latifilia:* leaves ovate, serrate; flowers axillary, aggregate. *Ilex crocea:* leaves oblong, serrate; serratures ciliate-spiny. Native of the Cape of Good Hope.

Propagation and Culture. Holly is propagated by seeds, which never come up the first year, but remain in the ground; therefore the berries should be buried in a large pot or tub one year, and then taken up and sown in the autumn upon a bed exposed to the morning sun. The following spring the plants will appear, which must be kept clean from weeds; and if the spring should prove dry, it will be of great service to the plants if they are watered once a week; but they must not have it oftener, nor in too great a quantity, as too much moisture is very injurious to these plants when young. In this seed-bed the plants may remain two years, and then should be transplanted in the autumn, into

beds, at about six inches distance each way, where they may stand two years longer, during which time they must be kept constantly clean from weeds; and if the plants have grown well, they will be strong enough to transplant where they are designed to remain; for when they are transplanted at that age, there will be less danger of their failing, and they will grow to a larger size than those which are removed when they are much larger. But if the ground is not ready to receive them at that time, they should be transplanted into a nursery, in rows, at about two feet distance each way. In case they are designed to be grafted or budded with any of the variegated kinds, that should be performed after the plants have grown one year in this nursery; but the plants so budded or grafted should continue two years after in the nursery, that they may make good shoots before they are removed.

Mr. Evelyn says, that the varieties with white berries and gold and silver leaves, may be raised from seed, sown and planted in a gravelly soil, mixed with a portion of chalk, and pressed down hard. Mr. Miller says, also, that he has raised the Hedge-hog Holly from the berries, and always found the plants to continue the same. They are, however, all usually propagated in the nurseries by budding or grafting upon the common Holly. The stocks will be fit to be grafted or budded on at four or five years' growth. The grafting must be done in March, and the budding in July.

Medical Properties and Uses. The *leaves* and *berries* are both used, and somewhat resemble each other in taste. They have a pleasant, corroborant effect upon the stomach; but, when very largely taken, will purge and vomit. The usual mode of administering it is in decoction, which is made by macerating one ounce of the dried leaves in one quart of diluted alcohol; the dose of which is from fifteen to forty drops, given three or four times a day. That of the powder is from five to ten grains. It can be tinctured, and the spirit evaporated, and thus brought into an extract, one small three grain pill of which is a dose.

NAT. ORDER.

Coroncriæ.

CONVALLARIA POLYGONATUM. SOLOMON'S SEAL.

Class VI. Hexandria. *Order I.* Monogynia.

Gen. Char. *Corolla*, six-cleft. *Berry*, spotted, three-celled.

Spe. Char. *Leaves*, alternate, stem-clasping *Stem*, ancipital. *Peduncles*, axillary, generally one-flowered.

The *root* is perennial, horizontal, white, fibrous, beset with knobs, and marked with circular depressions, resembling the impressions of a seal; hence the name Solomon's Seal; the *stalk* is inclined, angular, smooth, and rises about a foot in height; the *leaves* are oval, pointed, ribbed, smooth, above of a deep green color, underneath glaucous, and at the base embrace the stem; the *flowers* are long, bell-shaped, white, or tinged with red, divided at the extremity into six short segments, and hang from the same side of the stalk, upon slender peduncles; the *filaments* are six, tapering, short, and inserted in the corolla; the *anthers* are oblong and erect; the *style* is filiform, longer than the stamens, and crowned with a blunt, triangular stigma; the *germen* is round, and when ripe becomes a black berry, divided into three cells, each containing a single round seed. It grows in the rocky and woody parts of nearly all the States. It is also found growing in considerable abundance in some parts of England. It flowers in May and June.

In many parts of New Jersey, especially on the highlands and mountainous regions, the Solomon's Seal is found in great quantities. I have at various times visited the interior sections of

1, Solomons Seal. 2, Ever blooming Rose.

that State, for the purpose of gathering specimens of medical plants, and am fully convinced that many valuable hints may be gathered, that will be of inconceivable advantage to the botanist, and in the conducting of a medical work. Plants of which we have but a limited history, and many which have not been described at all, and which are of great importance in medicine, are found promiscuously scattered over every section.

Medical Properties and Uses. The *root*, which is the medicinal part of this plant, is generally, by writers on the Materia Medica, referred to the *Convallaria multiflora*, of Linnæus, or the *Polygonatum latifolium vulgare*, of C. Bauhin. It is of a mucilaginous quality, and has long been employed as a discutient poultice to various kinds of tumors, but more particularly to bruises, accompanied with extravasation of blood in the cellular membrane. It is also recommended as a cosmetic; and in Galen's time was used by women, to prevent and remove pimples and freckles of the skin. The berries, flowers and leaves are extremely acrid, and are said by some to be of a poisonous quality. Modern practitioners describe the roots as being a mild, and yet very healing restorative, and useful in all cases of female weakness. It is also recommended for consumption and general debility. It may be used in tea, sirup or cordial. The mucilage of the roots is recommended to be applied to inflammations and piles.

NAT. ORDER.

Rosaceæ.

ROSA SEMPERFLORENS. EVER BLOOMING ROSE

Class XII. Icosandria. *Order VI.* Polygynia.

Gen. Char. *Petals*, five. *Calyx*, pitcher-shaped, five-cleft, fleshy, contracted at the neck. *Seeds*, numerous, hispid, affixed to the inner side of the calyx.

Spe. Char. *Germen*, ovate. *Peduncles*, hispid, with prickles.

The *stalks* are erect, and covered with small prickles; the *foliage* resembles that of the Centifolia, but the segments are less acute; the *petals* are large, less numerous, spreading, and of a deep crimson color; the *filaments* are numerous, thread-like, supporting yellow anthers. The Ever Blooming Rose is a native of China, and blossoms in every month in the year.

We are induced to consider the Rose here represented as one of the most desirable plants in point of ornament, ever introduced into this country. Its flowers, large in proportion to the plant, are semi-double, and with great richness of color unite a most delightful fragrance. They blossom during the whole of the year, but rather more sparingly in the winter months. The shrub itself is more hardy than most green-house plants, and will grow in so small a compass of earth, that it may be reared almost in a coffee cup. It is kept with the least possible trouble, and propagated without difficulty, by cuttings or suckers.

This beautiful Rose is but little known on the Western Continent, although its cultivation begins to be more general, and will most likely increase and become conspicuous in the collections of

the principal nurserymen, and, in the course of a few years, will, no doubt, decorate the window of every amateur. The largest plants we have seen, have not exceeded three feet. It may, no doubt, be cultivated so as to attain a much greater height. A variety of it, much more robust, having usually several flowers on a foot-stalk, of a pale red color, and semi-double also, has quite lately been introduced, and, as far as we can learn, is a native of the eastern part of Europe.

Medical Properties and Uses. The properties of the petals are very different from those of the *Centifolia;* having but very little odor, and possessing an astringent, bitter taste. The astringency is the greatest before the flowers are fully blown; hence, they should always be gathered previous to the expansion of the flower. When deprived of their *calyces*, it is of importance that they be immediately and quickly dried, as exposure to the light will impair their color, and at the same time deprive them in some degree of their astringency. When perfectly dry, they should be packed, and kept in a dark, dry situation. They impart their virtues both to water and spirit; but the color of the infusion is much improved by the addition of a small quantity of acid; and the sulphuric, being the most astringent, is generally preferred.

The *conserve* of red Roses is a very useful palliative remedy in allaying phthisical coughs, especially when combined with Sir. *Papav;* and this will be greatly improved by the addition of a small quantity of *Ictodes fœtida*, which renders it more grateful and searching, and in this form can generally be continued for a longer time, as it tends greatly to check nightly perspirations. The *Inf. Rosæ* is a mild and grateful astringent and tonic, and may often be given with advantage in cases where more powerful tonics would be injurious, as towards the close of fevers, where there is but slight febrile irritation remaining. In hæmorrhages of different descriptions, it is a very useful beverage; and when drank freely in hæmoptysis and menorrhagia, will often put a stop

to the disease. It is also a very useful gargle for sore throats, both the simple and malignant.

Prof. Lindley, speaking of this class of plants, says: "No *Rosaceous* plants are unwholesome; they are chiefly remarkable for the presence of an astringent principle, which has caused some of them to be reckoned febrifuges. The root of *Tormentilla* is used for tanning in the Faroe Isles. *Potentilla anserina* has been used by tanners, and the *Potentilla reptans* as a febrifuge. *Geum urbanum* and *rivale* have been compared for efficacy to *Cinchona*. The petals of *Rosa Damascena* yield a highly fragrant essential oil, called Otter of Roses; those of the *Rosa gallica* are astringent when dried rapidly, and are sometimes found useful in cases of debility, such as leucorrhœa, diarrhœa, &c." The root of *Rubus villosus* is now becoming a very popular astringent medicine, through almost every part of North America. Two or three teaspoonsful of the decoction, administered three or four times a day, has been found useful in cholera infantum, and seldom fails of effecting cures of the most obstinate character. One of the most powerful anthelmintics in the world belongs to this family. It is an *Abyssinian* plant, known to botanists by the name of *Brayera anthelmintica*. Upon the authority of Dr. Brayer, after whom it is named, two or three doses of the infusion are sufficient to cure the most obstinate cases of *tænia*. The petals of many of the varieties of Red Rose enter into a compound called the *Bread of Life*. Take one ounce of the petals of red roses, finely pulverized, two ounces *Ulmus fulva*, and four ounces each of *Populu nigra* and white Havana sugar, all made fine, and mixed, by sifting them together. Mix this with warm water, sufficient to make it into the consistency of bread: roll it out into flat cakes, and cut it into small squares, for drying. This is an excellent medicine for coughs, colds, sore throat, and pains in the chest. It is also an excellent remedy for bronchitis.

NAT. ORDER.

Luridæ.

NICOTIANA TABACUM. VIRGINIAN TOBACCO

Class V. Pentandria. *Order I* Monogynia.

Gen. Char. *Corolla*, funnel-shaped, with a plaited border. *Stamens*, inclined. *Capsule*, two-valved, two-celled.

Spe. Char. *Leaves*, ovate-lanceolate, sessile, decurrent. *Flowers*, acute.

The *Tobacco* is an annual plant, and a native of South America, but is now cultivated in most parts of the temperate zones of the Western Continent. The *root* is large and fibrous, sending up an erect, branching stalk, four or five feet in height, round and hairy; the *leaves* are numerous, large, alternate, oblong, pointed, entire, sessile, slightly decurrent, of a pale green color, with a strong midrib; the *bracteæ* are strong, linear and pointed; the *flowers* are in large terminal panicles; the *calyx* is hairy, and divided into five acute segments; the *corolla* is monopetalous, funnel-shaped, of a purplish rose color, with a tube twice the length of the calyx, opening like a cup, and divided into five short, pointed segments; the *filaments* are the length of the tube of the corolla, and support oblong anthers; the *germen* is oval and supports a long, slender style, which terminates in a round, cleft stigma; the *capsule* is divided into two cells, which contain many small, roundish seeds. It was first brought from the Island of *Tobago*, about the year 1560, and from thence called *tabacum*; from *Nicot*, the name of the man who first took it to France. Sir Francis Drake first introduced its use into England, and Sir Walter Raleigh rendered it fashionable.

The history of Tobacco is a singular one. The production of a little island, or a small district in North America, has fascinated the whole world. The Arab cultivates it in the burning desert; the Laplanders and Esquimaux risk their lives to procure this delicious refreshment; the seaman endures every privation, while he can obtain this luxury; and the financier collects from it a copious revenue. Yet its fame has not been without occasional diminution. It has been opposed by physicians, proscribed by governments, and yet the fashion still prevails, nor until the time arrives when men shall become more humanized by female society, will the custom of smoking be less prevalent. We talk of the habits of the Chinese, in their dissipation, by the extravagant use of opium, and at the same time make use of a much more loathsome and deadly narcotic, prepared and taken in all shapes that the ingenuity of man can invent.

Medical Properties and Uses. The *leaves* have a strong, disagreeable smell, and a burning, acrid taste, yielding their active parts both to spirit and water, but more perfectly to the former. A very small proportion of its virtues, however, rise in distillation from either; but the watery extract is less pungent than the leaves. The American Tobacco is much stronger than that raised in England, or any other part of Europe, and affords a more pungent extract, though in less quantity. This plant is evidently a narcotic, as is evinced by its botanical analogy, and effects. Small quantities snuffed up the nose have produced giddiness, stupor and vomiting; and, in larger quantities, there are instances of its proving a poison. But, with these narcotic qualities, it is said to stimulate, especially in the stomach and intestines, and, in moderate doses, to prove emetic and purgative, occasioning extreme anxiety, vertigo, stupor, and disorders of the senses. In proper quantities, it is, however, an effectual purgative in clysters. By distillation it affords a very pungent essential oil, which is a very active preparation, and, if applied to the tongue

of a dog, in a very small quantity, will speedily destroy life. The *modus operandi* of it is very obscure, but it appears to act in some indirect way upon the nervous system. The chief activity of Tobacco most probably depends on this essential oil, for, by long boiling the decoction, it is rendered almost inert.

The medicinal properties of Tobacco are narcotic, emetic, purgative and errhine. When the leaves are swallowed, they occasion nausea, violent vomiting, vertigo, and relaxation of the bowels. Similar effects have followed the snuffing of a small quantity up the nose. From its sedative powers arise all the fascination of this plant. It gives that calm serenity always occasioned by the abstraction of stimuli, and, like tea, opium, and the beetle-nut, composes the mind, under the greatest distress. It is necessary, however, to examine its effects in all the varieties of its use. By chewing, it acts upon the stomach, producing all the inconveniences of a narcotic poisón—acidity, flatulence, indigestion, depraved appetite, &c. The same symptoms follow taking snuff, as a portion of the tobacco generally falls through the posterior fauces into the stomach. The advantages of each mode are nearly the same, as the discharge of phlegm which they produce relieves accumulations in the head, and all the diseases depending on them.

In *smoking*, the oil of the plant is separated, and rendered empyreumatic by heat, and of course applied to the fauces and lungs in its most active state. Musing over a pipe, assists, it is said, reflection—its smoke accompanied Newton's "patient thinking," and added to the wisdom of the politician; but it is now forbidden in the drawing-room and parlor, and confined principally to the ale-house, and other public drinking shops. Like other forms of taking Tobacco, smoking occasions a tranquility, a freedom from care, a slight and harmless intoxication, increasing, also, the discharge of saliva.

Smoking generally produces a considerable discharge of this fluid, and from it, as well as the warmth, has been occasionally useful in pains of the teeth, in rheumatic affections of the head and jaws, and in asthmas, both serous and spasmodic. It lessens the appetite, however, blackens the teeth, and renders the whole person most indescribably offensive to those who possess the slightest delicacy of smell, or to whom a clean appearance is acceptable.

Another mode of using Tobacco, is that of chewing it, when it shows its narcotic properties as strongly as in any other way of applying it; though its nauseous taste sometimes prevents its being carried far in this practice.

If considered as a medicine, it will be found a valuable one, though its emetic power often defeats the benefits we expect from it. In the form of infusion and of smoke, it is introduced into the rectum, and is often effectual as an enema, when every thing else has failed. Its smoke probably penetrates farther than any liquid, and is more useful on this account, as well as from the oil acting in its separate state. Its operation is, however, generally attended with faintness, and therefore peculiarly useful in ileus and hernia, less so as a means of reviving those in asphyxy, from drowning, or any other cause. *Ascarides*, also, in the same form, it certainly kills. It is seldom employed as an emetic, as its sickness is peculiarly distressing; yet, in nauseating doses, we presume from its other qualities, that it may be equally effectual, and less dangerous than the digitalis, which is classed in the same family, and stands very near to it in the natural systems of modern botanists. Its emetic power prevents it from acting as a laxative, except in clysters, and as a diuretic, except in the form of its alkali, after burning. The oil which remains adhering to the salts, adds to the diuretic power of the alkali, and it has been supposed useful in dropsies. Though boiling lessens this emetic property,

it is not destroyed; and, though it is nearly lost in the extract, there is much doubt whether its virtues are diminished in the same proportion.

The infusion of Tobacco is employed in the form of enema with advantage, in some cases of obstinate constipation; but, generally speaking, it is a dangerous remedy. As to the propriety and safety of employing it in strangulated hernia, there is considerable difference of opinion. By some it is considered as most unsafe, whilst others speak of it as highly beneficial; and it is no easy matter to decide as to the most advisable mode of practice. We may, however, safely say, neither of these opinions should be strictly adhered to, for, in the first instance, this disease is sometimes connected with such prostration of strength, that a Tobacco enema would in all probability destroy the patient in a very short time; but, on the contrary, when a person is in a vigorous state of health, pulse strong, and whose strength requires to be diminished, the Tobacco might be advantageously employed. We should use it with the greatest caution in every case, for there are many instances on record, where it has proved destructive in this and other diseases. An infusion of half a drachm is quite sufficient for one clyster. As an external application, it may be dispensed with, for when applied in that way, it is apt to occasion unpleasant symptoms. Thus, Murray mentions a case where it was applied to the cure of Itch, and it produced vomiting of blood, and convulsions; and there are other cases on record, of the injurious effects of it as an external application.

NAT. ORDER.

Oleaceæ.

OLEA EUROPŒA. EUROPEAN OLIVE TREE.

Class II. Diandria. *Order I.* Monogynia.

Gen. Char. Corolla, four-cleft, with sub-ovate segments. *Drupe,* one-seeded.

Spe. Char. Leaves, lanceolate, quite entire.

This *tree* usually rises about twenty feet in height, and sends off numerous long branches, covered with bark of a grayish color; the *leaves* are firm, narrow, lance-shaped, entire, on the upper side of a bright green, on the under whitish, and stand in pairs, upon short footstalks; the *flowers* are small, white, numerous, and proceed in clusters near the footstalks of the leaves; the *calyx* is tubular, and divided at the brim into four small, erect, deciduous segments; the *corolla* is a funnel-shaped petal, consisting of a short tube, about the length of the calyx, and divided at the border into four semi-ovate segments; the *filaments* are two, tapering, opposite, and crowned with erect anthers; the *germen* is round, and supports a simple, short style, furnished with a stigma, which is cleft in two, and each division notched at the apex; the *fruit* is of the drupous kind, of an oblong or oval shape, containing a nut of the same form. It is a native of the south of Europe, and also of the north of Africa; and flowers from June till August.

The *Olive,* in all ages, has been greatly celebrated, and held in peculiar estimation, as the bounteous gift of Heaven; and in gratitude to the Deity, it was formerly exhibited in the religious

European Olive Tree.

ceremonies of the Jews. It is still considered as emblematic of peace and plenty; and the great quantity of oil which in some countries it produces, effectually realizes one of these blessings. The *Olive* has been long cultivated in the south part of England; it is mentioned in the catalogues plantarum Horti Medici Oxoniensis, published in 1648; and when sufficiently sheltered, it bears the cold very well, though in that country it rarely produces flowers, and we believe never ripens its fruit.

The varieties of this tree are numerous, distinguished not only by the form of their leaves, as already noticed, but also by the shape, size and color of the fruit; as the large Spanish Olive, the small, oblong, Province Olive, the oblong, dark green Olive, the small, roundish, white Olive; *Aglandau*, the large, fleshy, or Royal Olive; the large, round Olive; *Ampoulan*, the small, round, reddish black Olive, and the small, fragrant, or *Luca* Olive. Of these, the first two sorts, when pickled, are well known to us by the names of Spanish and French Olives, which to many are extremely grateful, and have been supposed to excite appetite, and to promote digestion. Pickled Olives are prepared from the green, unripe fruit, which is repeatedly steeped in water, to which some add alkaline salt, or quick-lime, in order to shorten the operation; for when macerated in water only, the Olives require a long time before their bitterness is sufficiently extracted. After this they are washed, and preserved in a pickle of common salt and water, to which an aromatic is sometimes added.

The principal consumption of Olives is in the preparation of the common salad oil, or *Oleum Olivarum* of the pharmacopœias, which is obtained by grinding and pressing them when thoroughly ripe. The finer and purer oil issues first by gentle pressure, and inferior sorts on heating the residuum, and pressing it more strongly. The best Olive-oil is of a bright, pale amber color, bland to the taste, and without any smell. It becomes rancid by age, and the sooner, if kept in a warm situation. By cold, at the 38th degree

of Fahrenheit, it congeals, and does not become rancid if kept in a degree of cold equal to the freezing point of water. All the mild expressed oils of vegetables are nearly of the same nature; a preference, however, in the opinion of Dr. Cullen, should be given to the most fluid; and hence the oil of Olives, and that of Almonds, are most commonly directed for internal use. Oil, in some shape, forms a considerable part of our food, both animal and vegetable, and affords much nourishment: with some, however, oily substances do not unite with the contents of the stomach, and are frequently brought up by eructation. This happens more especially to those whose stomachs abound with acid to an uncommon degree.

Medical Properties and Uses. Oil, considered as a medicine, is supposed to correct acrimony, and to lubricate and relax the fibres, and has been recommended internally, therefore, to obviate the effects of various stimuli, which produce irritation, and consequent inflammation. On this ground it has generally been prescribed in coughs, catarrhal affections, and erosions. This oil has likewise been successfully used in worm cases, and in nephritic pains, spasms, colics, constipations of the bowels, &c. Externally, it has been found a useful application to bites and stings of various poisonous animals, burns, tumors, and other affections, both by itself, or as mixed in liniments or poultices. Oil rubbed over the body has been found by many of great service in dropsies, particularly in ascites. In regard to the general effects of oil, taken internally, we may remark, that though its effects as a medicine extend over the primæ viæ, yet it may be very rationally doubted if it produces any medicinal effect after passing into the sanguiferous system. This oil also enters several officinal compositions; and when united with water, by the intervention of alkali, is usually given in coughs and hoarseness, &c.

White Poppy.

NAT. ORDER.

Papaveraceæ.

PAPAVER SOMNIFERUM. WHITE POPPY.

Class XIII. Polyandria. *Order I.* Monogynia.

Gen. Char *Corolla*, four-petalled. *Calyx*, two-leaved. *Capsule*, one-celled, opening by pores, under the persistent stigma.

Spe. Char. *Calyces* and *Capsules*, smooth. *Leaves*, incised, and embracing the stem.

The *root* is annual, tapering and branched; the *stalk* is round, smooth, erect, often branched, of a glaucous green color, and rises two or three feet in height; the *leaves* are alternate, large, ovate, lobed, smooth, deeply cut into various segments, and closely embrace the stalk; the *flowers* are very large, terminal, and usually white or purplish; the *calyx* consists of two leaves, which are ovate, smooth, concave, bifid, and fall off on the opening of the flower; the *corolla* consists of four petals, which are large, roundish, entire, undulated; the *filaments* are numerous, slender, much shorter than the corolla, and furnished with oblong, erect, compressed anthers; the *germen* is large, globular, and upon it is placed the stigma, which is large, flat, radiated, and forms a kind of crown: the *capsule* is one-celled, smooth, divided half way into many cells, which open by several apertures beneath the crown, and contain a very large number of small white seeds. It is a native of Asia, and is found wild in the south of Europe, where the seed had probably been accidentally scattered. It is also cultivated in many parts of England.

This species is said to have been named White Poppy from the whiteness of its seeds; a variety of it, however, is well known to produce black seeds. The double-flowered White Poppy is also another variety; but for medicinal purposes, any of these may be employed indiscriminately, as it is not possible to discover the least difference in their sensible qualities or effects.

The *seeds*, according to some authors, possess a narcotic power, which we are inclined to think is very limited, and we can see no good foundation for this opinion. They consist of a simple farinaceous matter, united with a bland oil, and in many countries are eaten as food. As a medicine, they have usually been given in the form of emulsion, in catarrhs, stranguaries, &c.

The heads, or *capsules* of the Poppy, which are directed for use in the Pharmacopœias, like the stalks and leaves, have an unpleasant smell, somewhat like that of opium, and an acrid, bitter taste. Both the smell and the taste reside in a milky juice, which is more abundant in the cortical part of the capsules, and in its concrete state constitutes the officinal opium. These capsules are powerfully narcotic, or anodyne; boiled in water, they impart to the menstruum their narcotic juice, together with the other juices which they have in common with vegetable matter in general. The liquor, strongly pressed out, suffered to settle, clarified with whites of eggs, and evaporated to a due consistence, yields an extract which is about one-fifth or one-sixth of the weight of the heads. This possesses the virtues of opium, but requires to be given in double its dose, to answer the same intention, which it is said to perform without occasioning a nausea and giddiness, the usual effects of opium. This extract was first recommended by Mr. Arnot; and a similar one is now received in both the Edinburgh and United States Pharmacopœias. It is found very convenient to prepare the sirup from this extract, by dissolving one drachm in two pounds and a half of simple sirup. The *Sirupus papaveris albi*, as directed by both colleges, is a useful anodyne,

and often succeeds in producing sleep, where opium fails. It is more especially adapted to children. White Poppy heads are also used externally, in fomentations, either alone, or more frequently added to the *decoctum pro fomento*.

Opium, as we have already observed, is obtained from the heads or capsules of this species of Poppy, and is imported into Europe and the United States from Persia, Arabia, and other warm regions of Asia. The manner in which it is collected has been described long ago by Kœmpfer and others; but the most circumstantial detail of the culture of the Poppy, and the method of procuring the opium from it, is that given by Mr. Kerr, as practised in the province of Bahar. He says:—"The field being well prepared by the plough and harrow, and reduced to an exact level superfice, it is then divided into quadrangular areas of seven feet long, and five feet in breadth, leaving two feet of interval, which is raised five or six inches, and excavated into an aqueduct, for conveying water to every part, for which purpose they have a well in every cultivated field. The seeds are sown in October or November. The plants are allowed to grow six or eight inches distant from each other, and are plentifully supplied with water. When the young plants are six or eight inches high, they are watered more sparingly; but the cultivator strews all over the areas a nutrient compost of ashes, and nitrous earth, scraped from the highways, and old mud walls. When the plants are near flowering, they are watered profusely, to increase the juice. When the capsules are half grown, no more water is given, and they begin to collect the opium.

At sunset they make two longitudinal double incisions with a fine-pointed knife upon each half-ripe capsule, passing from below upwards, and taking care not to penetrate the internal cavity of the capsule. The incisions are repeated every evening, until each capsule has received six or eight wounds. They are then allowed to ripen their seeds. The ripe capsules afford little or no juice.

If the wound was made in the heat of the day, a cicatrix would be too soon formed. The night-dews, by their moisture, favor the exstillation of the juice.

Early in the morning, old women, boys, and girls, collect the juice, by scraping it off the wounds with a small iron scoop, and deposit the whole in an earthen pot, where it is worked by the hand, in the open sunshine, until it becomes of a considerable mass. It is then formed into cakes of a globular shape, and about four pounds in weight, and laid into little earthen basins, to be further exsiccated. These cakes are covered over with the Poppy or tobacco leaves, and dried, until they are fit for sale. Opium is frequently adulterated with cow-dung, the extract of the Poppy-plant, procured by boiling, and various other substances, which they keep in secrecy." Opium is here a considerable branch of commerce. There is from 600,000 to 800,000 pounds of it annually exported from the Ganges.

It appears to us highly probable, that the White Poppy might be cultivated for the purpose of obtaining opium to great advantage in this country. Alston says, " The milky juice, drawn by incision from the Poppy heads, and thickened either in the sun or shade, even in this country, has all the characters of good opium; its color, consistence, taste, smell, faculties, phenomena, are all the same; only, if carefully collected, it is more pure, and more free of feculencies."

Similar remarks have also been made by others, to which we may add those of our own; for during the last summer we at different times made incisions in the green capsules of the White Poppy (growing in our garden), from which we collected the juice, which soon acquired a due consistence, and was found, both by its sensible qualities and effects, to be of the first quality of opium.

Opium, called *Opium Thebaicum*, from being anciently prepared chiefly at Thebes, has been a celebrated medicine from the

remotest times. It differs from the *Meconium*, which by the ancients was made of the expressed juice or decoction of the Poppies.

Opium is imported into this country in flat cakes, covered with leaves, to prevent their sticking together; it has a reddish brown color, and a strong, peculiar smell; its taste at first is nauseous and bitter, but soon becomes acrid, and produces a slight warmth in the mouth. A watery tincture of it forms an ink, with a chalybeate solution. According to recent experiments, it appears to consist of about five parts in twelve of gummy matter, four of resinous matter, and three of earthy, or other indissoluble impurities. For further particulars regarding the properties and their proportions, we would refer to the United States Dispensatory.

The use of this celebrated medicine, though not known to Hippocrates, can be clearly traced back to Diagoras, who was nearly his cotemporary; and its importance has ever since been gradually advanced by succeeding physicians of different nations. Its extensive practical utility, however, has not been long well understood; and in this country perhaps may be dated from the time of Sydenham. Opium is the chief narcotic now employed: it acts directly upon the nervous power, diminishing the sensibility, irritability, and mobility of the system; and, according to a late ingenious author, in a certain manner suspending the motion of the nervous fluid, to and from the brain, and thereby inducing sleep, one of its principal effects. From this sedative power of Opium, by which it allays pain, inordinate action, and restlessness, it naturally follows, that it may be employed with advantage in a great variety of diseases. Indeed, there is scarcely any disease in which, under some circumstances, its use is not found proper; and though in many cases it fails of producing sleep, yet if taken in a full dose, it occasions a pleasant tranquillity of mind, and a drowsiness, which approaches to sleep, and which always refreshes

the patient. Besides the sedative power of Opium, it is known to act more or less as a stimulant, exciting the motion of the blood; but this increased action has been ingeniously, and, as we think, rationally ascribed to that general law of the animal economy, by which any noxious influence is resisted by a consequent re-action of the system. By a certain conjoined effort of this sedative and stimulant effect, Opium has been thought to produce intoxication, a quality for which it is very much used in some of the eastern countries.

We shall now proceed to consider the use of Opium in particular diseases, beginning with fevers.

In most continued fevers of this climate, though originating from contagion, or certain corruptions of human effluvia, &c., there is at the beginning more or less of inflammatory diathesis: and while this continues, Opium would generally aggravate the symptoms, and prove dangerous. Its use is likewise forbidden in the more advanced stage of this fever, whenever topical inflammation of the brain is ascertained, which sometimes exists, and produces delirium, though other symptoms of the nervous and putrid kind prevail. But when irritation upon the brain is not of the inflammatory kind, and debility has made much progress; or where delirium is accompanied with spasmodic affections, Opium is a sovereign remedy, and may be employed in large doses every eight hours, unless a remission of the symptoms, and sleep take place.

In intermittent fevers, Opium, in combination with other medicines, was much used by the ancients; but since the introduction of the Peruvian bark, Opium is seldom trusted to for the cure of these disorders. This medicine, however, has been strongly recommended as an effectual means of stopping the recurrence of the febrile paroxysms; and has been given before the fit, in the cold stage, in the hot stage, and during the interval, with the best effects, producing immediate relief, and in a short time curing the

patient, without leaving those abdominal obstructions which have been ascribed to the bark. But in these fevers we think the best practice is to unite Opium with the bark, which enables the stomach to bear the latter in larger doses, and adds considerably to its efficacy.

In inflammatory diseases, the use of Opium has been much condemned; and by some has been established as a general rule, that Opium is improper in all those diseases in which bleeding has been thought necessary: this, however, has been much disputed; and there are certainly numerous exceptions to it, which we will recite in the words of Dr. Cullen. "Such are those cases in which the inflammatory state arises from irritation in a particular part, producing spasm, and supervening inflammation. Thus, in cases of jaundice, I have found a biliary stone, in passing the biliary ducts, give such an irritation, as to produce a considerable inflammatory state in the system; and though I have found it necessary, for moderating this, to employ blood-letting, yet, as I considered the passage of the stone to be chiefly interrupted by a spasmodic constriction of the ducts, I have employed Opium for taking off this, with great advantage. Similar circumstances have frequently occurred in the case of urinary calculi passing the ureters, in which I have found it necessary to employ Opium, and suitable medicines for equalizing the blood, at the same time.

In like manner as Opium is useful in moderating excretions, so when the irritation occasions an increase of these excretions, which is attended with affections which irritate the whole system, Opium becomes especially useful. Hence it becomes so generally useful in catarrhal affections, and the cough attending them; and probably it is this analogy that has brought the use of Opium to be frequently employed in pneumonic inflammations. It is possible that there may be cases of such inflammations wherein the Opium may be more useful in taking off the cough, than hurtful by aggravating the inflammatory state of the system; but I have

nardly met with such cases; and even in the recent state of catarrhs from cold, I have found the early use of Opium hurtful; and in cases of pneumonic inflammation, I have always found it to be very much so, if exhibited before the violence of the disease had been moderated by repeated doses of a medicine of a nutralizing quality. When that indeed has been done, I have found the Opium very useful in quieting the cough, and I have hardly ever found it hurtful by stopping the expectoration. It may suspend this for some hours; but if the glands of the bronchia have been duly relaxed by suitable applications, the expectoration, after the use of opiates, always returns with more advantage than before. The mucus which had issued before, had been poured out from the follicles in an acrid state; but, by being made to stagnate, it becomes milder, and is discharged in what the ancients called a concocted state, with more relief to the lungs."

When Opium is so managed as to procure sweat, it will tend to remove an inflammatory state of the system, and may prove generally useful. A notable instance of this may be observed in the cure of acute rheumatism, by means of Dover's powder.

In the small-pox, Opium, since the time of Sydenham, has been generally and successfully prescribed, especially after the fifth day of the disease; but, during the first stage of the eruptive fever, we are told that it always does harm; an opinion which our experience in the treatment of small-pox in this city warrants us to contradict; for even at that period of the disorder, we often find the pulse languid, and the countenance pale, though pains in the loins and head are at the same time very severe. These symptoms, with restlessness, and other signs of irritability, which appear for some days after the attack of the disease, are considerably relieved by Opium; taking care always to keep the bowels sufficiently open, by a free use of the *Podophyllum peltatum.*

In hœmorrhagic disorders, the use of Opium is inferred from

its known effects in restraining all the excretions, except that of sweat; but unless the hæmorrhages be of the passive kind, or excited by irritation, unattended with inflammation, Opium may produce considerable mischief, and therefore its use in these complaints requires great caution and judgment.

In dysentery, Opium, though not to be considered as a remedy, may, however, be occasionally employed to moderate the violence of the symptoms.

In diarrhœa, especially when the acrimony has been carried off by a continuance of the disease, Opium is a certain and efficacious remedy. In cholera and pyrosis, Opium is the remedy chiefly trusted to.

In colic it is employed with laxatives; and no doubt often prevents ileus and inflammation, by relieving the spasm. Even in ileus and in incarcerated hernia, it is often found to allay the vomiting, the spasms, the pain, and sometimes to diminish the inflammation, and prevent the gangrene of the strangulated gut

Opium has been recommended for the cure of venereal; and instances are related where it proved successful, where mercury failed; yet few practitioners, we apprehend, will trust to either one alone in these complaints. Its use in preventing and stopping the progress of gangrene is well established.

Opium is successfully used in different species of tetanus, and affords relief to various spasmodic and convulsive symptoms occurring in several diseases, which it would exceed our limits to describe particularly. Of these we may mention asthma, epilepsy, dyspepsia, hypochondriasis, rabies canina, chorea sancti viti, mania, &c.

Respecting the external application of Opium, authors seem not sufficiently agreed. Some contend that when applied to the skin it allays pain and spasm, procures sleep, and produces all the salutary or dangerous effects which result from its internal use; while others assert that thus applied it has little or no effect

whatever. But there is no doubt, that, when mixed with caustic, it diminishes the pain which would otherwise ensue, probably by decreasing the sensibility of the part. Injected up the rectum, it has all the effects of Opium taken into the stomach; but to answer this purpose, double the quantity is to be employed. Applied to the naked nerves of animals, it produces immediate torpor, and loss of power in all the muscles with which the nerves communicate. Opium, taken into the stomach, in an immoderate dose, proves a narcotic poison, producing vertigo, tremors, convulsions, delirium, stupor, stertor, and finally, fatal apoplexy.

The officinal preparations of this drug are *Opium purificatum*, *pilulæ ex opio*, *pulvis opiatus*, *tinctura opii*, and *tinctura opii camphorata*: it also enters the *pulvis sudorificus*, *balsamum anodynum*, *electuarium japonicum*, *pulvis e creta composita*, &c.

The requisite dose of Opium varies in different persons, and in different states of the same person. A quarter of a grain will in one adult produce effects which ten times the quantity will not do in another; and a dose that might prove fatal in cholera or colic, would not be perceptible in many cases of tetanus or mania. The smallest fatal dose, to those unaccustomed to take it, seems to be about four grains; but a dangerous dose is so apt to produce vomiting, that it has seldom time to produce death. When given in too small a dose, it often produces disturbed sleep, and other disagreeable consequences; and in some cases it seems impossible to be made to agree in any dose or form. Often, on the other hand, from a small dose sound sleep and alleviation of pain will be produced, while a larger one occasions vertigo and delirium. Some prefer the repetition of small doses; others the giving a full dose at once, when its operation lasts about eight hours.

It is well known, that by the continued use of Opium, the dose requires to be increased, to produce the effect desired; and we are told of some instances in which it was increased to ten drachms a day

Bread-Fruit Tree?

NAT. ORDER.

Artocarpeæ.

ARTOCARPUS INCISA. BREAD-FRUIT TREE

Class XXI. Monœcia. *Order I.* Monandria.

Gen. Char. *Flowers*, monœcios, in heads or catkins. *Calyx*, with an uncertain number of divisions.

Spe. Char. *Male Calyx*, two-valved. *Corolla*, wanting. *Style*, one. *Drupe*, many-celled.

The Bread-fruit, *Artocarpus incisa*, grows on a tree about thirty feet in height; the *leaves* are large, being from eighteen to twenty inches wide, and from two to three feet long, pinnatified, and deeply gashed; the *fruit* is about the shape and size of a child's head, with a rough and net-like surface; the *skin* is thin, and it has a small core at the centre, which is nearly as white as snow, and somewhat of the consistence of new bread

Though this *tree* has been mentioned by many voyagers, and particularly by Dampier, Rumphius, and Lord Anson, yet very little notice seems to have been taken of it, until the return of Capt Wallis from the South Seas; and since that time by others who have touched at Otaheite, and some other countries in the East Indies. Capt. Dampier relates, that in Guam, one of the Ladrone Islands, "there is a certain fruit called the Bread-fruit, growing on a tree, which is about the size of our apple-trees, with large dark leaves. The fruit is round, and grows on the boughs like apples, and is of the size of a small loaf of bread; when ripe it turns yellow, soft, and sweet; but the natives take it

green, and bake it in an oven, until the rind is black; this they scrape off; and eat the inside, which is soft and white, like the inside of new baked bread, having neither seed nor stone; but if it is kept above twenty-four hours it is harsh. As this fruit is in season eight months in the year, the natives feed upon no other sort of bread during that time," of which we are informed the Ladrone Islands produce large quantities.

We have also been informed by captains of vessels, and seamen, who have spent years in the countries where the Bread-fruit is most plenty, that the fruit is shaped like a heart, and increases to the size of a child's head. Its surface, or rind, is thick, green, and covered everywhere with warts, of a quadragonal or hexagonal figure, like cut diamonds, but without points. The more flat and smooth these warts are, the less number of seeds are contained in the fruit, and the greater is the quantity of pith, and that of a more glutinous nature. The internal part of the rind, or peel, consists of a fleshy substance, full of twisted fibres, which have the appearance of fine wool. These adhere to, and in some measure form it. The fleshy part of the fruit becomes softer towards the middle, where there is a small cavity formed, without any nuts or seeds, except in one species, which has but a small number; and this sort is not considered good, unless it is baked, or prepared in some other way: but, if the outward rind be taken off, and the fibrous flesh dried, and afterwards boiled with meat, as we do cabbage, it has then the taste of *Cynara*, artichoke bottoms. The inhabitants of Amboyna dress it in the liquor of cocoa-nuts; but they prefer it roasted on coals, till the outward part, or peel, is burnt. They afterwards cut it into pieces, and eat it with the milk of the cocoa-nut. Some people make fritters of it, or fry it in oil; and others, as the Sumatrians, dry the internal soft part, and keep it to use as bread, with other food. It affords a great quantity of nourishment, and is very satisfying; and

has been considered very proper for hard working people. It is of a gentle astringent quality; and is good for persons of a laxative habit.

This fruit is more nourishing boiled after our manner, with fat meat, than roasted on coals. The milky juice which exudes from the trunk, boiled with the cocoa-nut oil, makes a very strong bird-lime. This tree is found on the eastern parts of Sumatra, and in the Malay language is called *Soccus*, and *Soccum capus*. It grows likewise on the Island of Java, in the towns of Bantum, Ballega, and Madura, and is there called *Soccum*.

Capt. Cook, in his voyage, observes, that this fruit not only serves as a substitute for bread among the inhabitants of Otaheite, and the neighboring islands, but, also, variously dressed, composes the principal part of their food. Of the Bread-fruit the natives make four dishes, by putting either water, or the milk of the cocoa-nut to it; then beating it to a paste with a stone pestel; and afterwards mixing it with ripe plantains, bananas, or the sour paste which they call *mahie*.

The *mahie*, which is made to serve as succedaneum for ripe Bread-fruit, before the season comes on, is made by gathering the fruit of the Bread-tree, just before it is perfectly ripe; and then laid in heaps, closely covered with leaves. In this state it undergoes a fermentation, and becomes disagreeably sweet. The core is then taken out entire, which is done by gently pulling out the stalk; and the rest of the fruit is thrown into a hole which is dug for that purpose, generally in the houses; and neatly lined on the bottom and sides with grass. The whole is then covered with leaves, and heavy stones laid upon them. In this state it undergoes a second fermentation, and becomes sour, after which it will suffer no change for many months. It is taken out of the hole as it is wanted for use; and, being made into balls, it is wrapped up into leaves, and baked. After it is dressed, it will keep five or six weeks. It is eaten both cold and hot; and the natives seldom

make a meal without it, though to us the taste is as disagreeable as that of a pickled olive, the first time it is eaten. The fruit continues good for eight months in the year, and the *mahie* supplies the inhabitants during the other four.

To procure this most bounteous gift of the Creator, which is the principal article of their food, these happy people have no other trouble or labor, except climbing up the tree which produces the Bread-fruit, and plucking it from the stems. It is said that this tree does not grow spontaneously; but, as an ancient author has remarked, "if a man plants ten of these trees in his life time, which he can do in about one hour, he will as completely fulfil his duty to his own and future generations, as the native of our less temperate climate can do, by ploughing in the cold of winter, and reaping in the summer's heat, as often as these seasons return.

There are two species of *Artocarpus*—the *incisus*, with gashed leaves; and the *integrifolia*, with entire leaves. There is also said to be another distinction, into that which bears fruit with stones, or seeds, and that in which the fruit has none. The parts of fructification of that tree which bears the fruit without stones, are defective. The amentum, or catkin, which contains the male parts, never expands. The style, or female part of the fruit, is likewise deficient; from which it follows, that there can be no stones or seeds; and, therefore, this tree can be propagated only by suckers or layers; although it is abundantly evident that it must originally have proceeded from the seed-bearing Bread-fruit tree. Instances of this kind we sometimes find in both European and American fruits, such as the barberry, and the Corinthian grape from Zante, sometimes called currants. Dr. Scholander was assured by the oldest inhabitants of Otaheite, and the adjoining islands, that they well remember that there was formerly plenty of the seed-bearing Bread-fruit, but they had been neglected on account of the preference given to the bread-fruit without seeds, which they propagate by suckers.

Marsh-Mallow of Surinam.

NAT. ORDER.

Malvaceæ.

ALTHÆA OFFICINALIS. MARSH-MALLOW OF SURINAM.

Class XVI. Monadelphia. *Order VIII.* Polyandria.

Gen. Char. *Calyx*, double; the exterior, six or nine-cleft. *Capsules*, numerous, one-seeded.

Spe. Char. *Leaves*, simple, downy.

The *root* is perennial, long, tough, white, and fibrous; the *stalk* is upright, firm, wooley, somewhat branched towards the top, and rises from three to six feet in height; the *leaves* are somewhat oval, or heart-shaped, commonly with a lobe on each side, pointed, irregularly serrated, covered with a soft down, and stand upon long, round footstalks; the *stipulæ* are two, narrow, and placed at the base of each leaf-stalk; the *flowers* are large, and consist of five petals, inversely heart-shaped, indented at the apex, and of a pale purple color; the *calyx* is double, the exterior consisting of nine, and the interior of five narrow, pointed segments; the *stamens* are numerous, united at the base, and terminated by kidney-shaped anthers; the *germen* is orbicular; the *style* is cylindrical, and furnished with many long, bristling stigmas; the *seeds* are kidney-shaped, numerous, placed in a circle, and covered with an arillus. It is a native of Surinam; but is found growing in many parts of England, and throughout the United States, near the sea shore, or about salt marshes. It flowers in August.

The Althæa seems to have been favorably known to the ancients, and has continued in general use by practitioners in every country where the science of medicine is regularly cultivated. At Surinam this plant is called *okkerum*, and is considered the most

elegant species of the Marsh-mallow. There are also several other species of the Althæa, which somewhat resemble each other, especially in the appearance of their flowers; and possess similar properties. The *Althæa vulgaris*, or common Marsh-mallow is a native of England, and has a perennial root, and an annual stalk, which perishes every autumn. The *Althæa hirsuta*, or hairy Marsh-mallow, is a native of Spain and Portugal. It is a low plant, usually found trailing on the ground, unless supported by stakes. The *Althæa cannabina*, or shrubby Marsh-mallow, is a native of Hungary and Austria. It has a woody stem, and rises to the height of four or five feet, with numerous branches.

Though this variety of the Althæa is found naturally growing in salt marshes, yet it will thrive when transplanted in any soil, or in any situation, but will always grow larger in a moist than a dry soil. It may be propagated by parting the roots in autumn, when the stalks decay, or by sowing the seeds in the spring.

Medical Properties and Uses. The dry roots of this plant, boiled in water, give out half their weight of a gummy matter, which, on evaporating the aqueous fluid, forms a flavorless, yellow mucilage. The leaves afford scarcely one-fourth of their weight; and the flowers and seeds still less. This glutinous or mucilaginous matter, with which the Althæa abounds, is the medicinal part of the plant, and is commonly employed for its emollient and demulcent qualities. Its use is recommended where the natural mucus of membranes becomes acrid or abraded; for obtunding and incrassating acrimonious, thin fluids; in tickling coughs, from an irritable state of the fauces and lungs; in hoarseness, erosions of the stomach and intestines; strangury; and for lubricating and relaxing the passages in nephritic and calculous complaints. The root is sometimes employed externally for softening and maturing hard tumors. The principle use of the root is that of a poultice; and its use in sirup. In France the powdered root is used in the preparation of pills and electuaries.

Water Flag.

NAT. ORDER.

Irideæ.

IRIS SAMBUCINA. YELLOW OR PURPLE WATER-FLAG.

Class III. Triandria. *Order I.* Monogynia.

Gen. Char. *Corolla*, six-petalled, unequal. *Petals*, alternate, jointed, and spreading. *Stigmas*, petal-form, cowled, two-lipped.

Spe. Char. *Corolla*, beardless. Interior *Petals*, less than the stigmas. *Leaves*, ensiform.

The *root* is perennial, about half an inch in thickness, of an irregular shape, horizontal, on the outside blackish, covered with ridged fibres, and puts forth many long, whitish, perpendicular, slender roots, which within are spongy, and of a yellowish red color; the *leaves* which grow from the root are upright, broad, sword-shaped, and at the bottom riding or closely embracing each other; those on the stalk are short, alternate, and sheathe the joints of the stem; the *stalk* is upright, round, smooth, alternately inclined from joint to joint; the *flowers* are large, showy, of a purple or yellow color, and stand upon short branches, which proceed from the joints of the stem; the *corolla* divides into six segments or petals; of these the three inner ones are small and erect; the three outside are large, of a roundish, oval shape, turning back, and painted near the base with reddish lines; the *calyx* is a sheath, or spathe, of two, three, or four valves, according to the number of the flowers; the *filaments* are flat and tapering; the *anthers* are oblong, yellowish at the edges, purplish, and bent down by the stigmas; the *germen* is triangular, and placed below the co-

rolla; the *style* is short and slender; the *stigma* divides into three petalous expansions, of a yellow color; these are oblong, bent down and outwards, and irregularly serrated at the extremity; the *capsule* is triangular, and divided into three cells, which contain numerous flat seeds of a yellow color.

This plant is common in marshes, and on the banks of rivers; and is rendered quite conspicuous by its large and beautiful flowers, which appear in the beginning of July. It is said to be a native of the eastern parts of Europe; but is found in most parts of the United States. It formerly had a place in the London Pharmacopæia, under the name of *Gladeolus luteus.*

Medical Properties and Uses. The root, which is the part usually employed in medicine, is without smell, but has an acrid, stiptic taste; and its juice, on being snuffed up the nostrils, produces a burning heat in the nose and mouth, accompanied with a copius discharge from those organs: hence, it is recommended both as an errhine and sialagogue. This root is such a powerful astringent, that it has been used instead of galls, in the making of ink, and also for the purpose of dying black; and from this quality it has been successfully employed as a medicine, for the cure of diarrhœas. When given with this intention, however, the root is to be well dried; for the fresh root and the juice are strongly cathartic; so much so, that eighty drops of the latter produced repeated evacuations, after jalap, gamboge, aloes, &c., had failed; and by continuing its use in an increased dose, it cured a most obstinate case of dropsy. Dr. Rutherford mentions a case where he had used the most powerful cathartics, such as jalap, gamboge, calomel, &c., all proving ineffectual; after which he ordered eighty drops of the *Succus radicis, Iridis palustris,* to be given every hour or two, in a little sirup of buckthorn, which had very immediate effects, making him pass several pints of water by stool, that very night. The expressed juice is likewise said to be a useful application to serpiginous eruptions, and scrofulous tumors.

Common Thorn-Apple.

NAT. ORDER.

Solanaceæ.

DATURA STRAMONIUM. COMMON THORN-APPLE

Class V. Pentandria. *Order I.* Monogynia.

Gen. Char. *Corolla*, funnel-form, plaited. *Calyx*, tubular, angular, deciduous. *Capsules*, four-valved.

Spe. Char. *Pericarp*, spinous, erect, ovate. *Leaves*, ovate, smooth.

The *root* is large, annual, white, divided, and fibrous; the *stalk* is thick, erect, round, smooth, shining, below simple, above dicholomous, and rises from two to four feet in height; the *leaves* are alternate, large, broad towards the base, pointed at the extremity, indented, and formed into several obtuse angles, smooth, dark green, and stand upon strong, round, short foot-stalks; the *flowers* are solitary, large, white, and placed on short, erect peduncles, at the junction of the branches; the *calyx* is composed of one leaf, tubular, pentangular, and divided at the brim into five teeth; the *corolla* is white, monopetalous, funnel-shaped, plicated, cut at the margin into five teeth, and furnished with a long, cylindrical tube; the five *filaments* are tapering, about the length of the calyx, adhering to the tube, and supplied with oblong, flat anthers; the *germen* is oblong, and placed above the insertion of the corolla; the *style* is filiform, equal in length to the filaments, and terminated by a thick, blunt stigma; the *capsule* is large, oval, fleshy, beset with spines, divided into three cells, and four valves, which contain numerous kidney-shaped seeds. It grows wild in most parts of the United States, in waste places, gardens, and by the road-side; and flowers in July.

This plant has been long known as a powerful narcotic poison. Its congener, *Datura metel*, is thought by Theophrastus and Dioscorides to be superior, and was therefore the species received by Linnæus into the Materia Medica. The Stramonium, in its recent state, has a bitterish taste, and a smell somewhat resembling that of poppies, or, as called by an ancient author, narcotic, especially if the leaves be rubbed between the fingers. By holding the plant to the nose for some time, or sleeping in a bed where the leaves are strewed, giddiness of the head, and stupor, are said to be produced.

Instances of the deleterious effects of this plant are numerous, especially of the seeds, some of which we shall relate, for the purpose of conveying to the reader some idea of the symptoms which they produce. A man, aged sixty-nine, laboring under a calculous complaint, by mistake boiled the capsules of the Stramonium in milk, and, in consequence of drinking of this decoction, was affected with vertigo, dryness of the fauces, anxiety, followed by loss of voice and sense: the pulse became small and quick, the extremities cold, the limbs paralytic, the features distorted, accompanied by violent delirium, continual watchfulness, and a total suppression of all the evacuations; but in a few hours he was restored to perfect health. Many circumstances of a similar character have come under our observation, showing in every instance that this plant is a most deadly narcotic, and should be used with great caution. We lately saw several children poisoned with the roots of the *Aconite*, or monk's-hood, thrown into the street, in the suburbs of the city; also with the seed of the *Stramonium*, or Thorn-apple; both at the same time. Those that partook of the former were seized with very violent complaints of vomiting, an alarming pain in the head, stomach and bowels; the latter with blindness, and a kind of madness—biting, scratching, shrieking, laughing and crying, in a frightful manner. Many of them were very dangerously affected, and escaped very narrowly with life.

These, and all other poisonous plants, taken out of gardens, should be carefully buried or burned.

Medical Properties and Uses. Every part of this plant appears to possess a narcotic power; but the seeds are the only parts of whose fatal effects we find instances recorded. Their soporiferous and intoxicating qualities are well known in some parts of Europe; and, if we can credit the accounts of some authors, have been converted into purposes the most licentious and dishonorable. The internal use of Stramonium, as well as that of several other deleterious plants which we have had occasion to notice, was first ventured upon and recommended by Baron Stoerck, who gave an extract prepared of the expressed juice of this plant, with advantage, in cases of mania, epilepsy, and some other convulsive affections. But as the success of this plant, even in the hands of the Baron, was not remarkable enough to claim any extraordinary praise, his account of the efficacy of the Stramonium probably would not have procured it a place in the Materia Medica, had its character rested solely upon its representation. Odhelius, a celebrated ancient physician, says "that of fourteen patients suffering under epileptic and convulsive affections, to whom he gave the Stramonium, in a hospital, eight were completely cured; five were relieved; and only one received no benefit." Wedenberg also relates his experience, where he cured four girls, affected with convulsive complaints, by the use of this medicine. Other instances of the kind might be added. Greding, however, who made many experiments, with a view to ascertain the efficacy of this plant, was not so successful; for out of the great number of cases in which he employed the Stramonium, it was only in one instance that it effected a cure; and he objected to the cases stated by Dr. Odhelius, on the ground that the patients were dismissed before sufficient time was allowed to know whether the disease would return again or not.

In this country we are not acquainted with any practitioners

whose experience would throw any light on the medical character of this plant. It appears to us, however, that its effects as a medicine are to be referred to no other power than that of a narcotic. Dr. Cullen, speaking on this subject, says, "I have no doubt that narcotics may be a remedy in certain cases of mania and epilepsy; but I have not, and I doubt if any other person has learned to distinguish the cases to which such remedies are properly adapted. It is, therefore, that we find the other narcotics, as well as the Stramonium, to fail in the same hands in which they had in other cases seemed to succeed. It is this consideration that has occasioned my neglecting the use of Stramonium, and therefore prevented me from speaking more precisely from my own experience on this subject."

The extract of this plant has been the preparation usually employed, and given in the quantity of from one to ten grains a day; but the powdered leaves may be given in the quantity of two to six grains, according to circumstances. In procuring the extract, which is usually found for sale at the botanical and Shaker shops in this city, we find it to vary exceedingly in strength; on which account but little reliance can be placed upon it.

Externally, the Stramonium is used with great advantage, especially in the treatment of old sores and ulcers. It is also quite extensively used for the piles, for which it has of late gained considerable celebrity.

Unguentum Stramonii; Stramonium Ointment. "Take of fresh Stramonium leaves, cut into pieces, and bruised with the pestle, a pound; lard, three pounds; yellow wax, half a pound. Boil the Stramonium leaves in the lard, until they become friable; then strain through linen: lastly, add the wax, previously melted, and stir them until they are cold."—*U. S. Dispensatory.*

Tinctura Stramonii; Tincture of Stramonium. "Take of Stramonium seed, bruised, four ounces; diluted alcohol, two pints. Macerate for fourteen days: express; and filter through paper."

Gatti's Perfection.

NAT. ORDER.

Geraniaceæ.

PELARGONIUM QUERCIFOLIUM. GATH'S PERFECTION.

Class XVI. Monadelphia. *Order* III. Heptandria.

Gen. Char. *Calyx*, five-parted. *Corolla*, five-petalled, iaregular, *Filaments*, ten, unequal.

Spe. Char. *Petals*, tricolor. *Styles*, five, filiform.

The *root* is long, slender, knotty and fibrous; the *leaves* are deeply serrated, and are placed upon long, slender footstalks, which stand in pairs; *sepals* five, persistent, more or less unequal; with an imbricated æstivation; *petals* five, seldom four, in consequence of one being abortive; the *stamens* usually monadelphous, hypogynous, two or three times as large as the petals, some occasionally abortive; *ovarium* composed of five pieces placed round an elevated axis, each one-celled, one-seeded; *ovula* pendulous; *styles* five, cohering round the elongated axis; *fruit* formed of five pieces, cohering round a lengthened, indurated axis; each piece consisting of one cell, containing one seed, having a membranous pericarpium, and terminated by an indurated style, which finally curls back from the base upwards, carrying the pericarpium along with it; the *seeds* are solitary, pendulous, and without albumen; the *embryo* is somewhat curved; the *radicle* is usually found pointing to the base of the cell; the *cotyledons* are foliaceous, convolute, and plaited; *stems* turned, and separate at the joints; *leaves* either opposite or alternate; in the latter case opposite the peduncles.

For this beautiful species of the Geranium tribe, we are indebted to Mr. Carter, an artist of great merit. His spe-

cimens of drawings, taken from nature, which we have seen are truly the richest productions that have graced the floral catalogue; and on which account the proprietor of this publication has at a great expense secured his services; hence, our readers may in future expect original likenesses of many rare native plants, which have never been introduced into any work whatever. The *Pelargonium quercifolium*, in point of beauty, is thought to eclipse all that have hitherto been introduced into this country. Its blossoms are certainly the most showy—in a collection of plants, they are the first to attract the eye: the peculiarity of color, joined to their form, has induced some to fancy a resemblance between its flowers and those of the Heart's-ease. To the blossoms of the *Lathyrus articulatus*, in point of color, they bear a distant resemblance.

In our eagerness to lay before the public this striking novelty, we may possibly omit some circumstance relative to its history and treatment, which future experience may develope. They will not, however, we trust, be very material. The plants which we have had an opportunity of seeing, have scarcely exceeded two feet in height, growing up with a shrubby stem, and expanding widely into numerous flowering branches. They are unusually disposed to produce flowers in a constant succession, so that during most of the summer months the plant is loaded with a profusion of bloom. These flowers, for the most part, go off without being followed by any seed; and when any seed is produced, of which we have seen a few instances, there is generally one perfect and four abortive; and frequently all of them fail. The blossoms vary in the number of their stamens. In many of the varieties, four are most generally apparent, three superior, and that very constantly, one inferior, and often two. We have never observed seven, the proper number of fertile stamens in a *Pelargonium*. In most of the sorts, the whole plant is covered with short, white hairs, which give to the foliage a somewhat silvery appearance.

In many of these plants, instances have occurred, in which one or more of the white petals have had a stripe of red in them; and we have observed that the dark color at the base of the uppermost petals, is, in a certain degree, soluble in water; for, on the plants being watered, the white petals have here and there become stained by the coloring matter proceeding from it, and which, in a diluted state, is of a purplish tint. As the flowers decay, this apparently black part, distinguished by the roughness of its surface, arising from prominent lucid points, and which essentially distinguish the species, is sometimes perforated with numerous small holes. It is a native of the Cape of Good Hope; and the various varieties comprise the great majority of the entire Natural Order of this class of plants.

Propagation and Culture. Numerous varieties of the Geranium have been introduced into this country; and such attention bestowed upon their culture, that they have now become a common ornament in almost every parlor; the accumulation of which, if placed in a tight room, is certainly very injurious to health. The following remarks upon the cultivation of this beautiful plant, are from the pen of Mr. Carter. He says: "This plant is increased by cuttings, and sometimes by seeds. To propagate them by cuttings, take, after the plant has done flowering, a strong shoot of new wood; and after cutting off the top, leaving not more than three buds, taking care to cut the bottom off at the eye or bud; and plant it, one bud in the ground, and two out. Let the soil be of a light, rich loam—if convenient, after the following:—a rich, light soil, as mixture of loam and peat, with one-third decayed leaves; drain well with charcoal, and be sure to keep them from the frost, as very little chill will destroy them."

The cultivation and raising of plants, is becoming an object worthy the attention of every admirer and lover of nature's best gifts. The figure of the plant here described, was taken from the garden of the celebrated florist, Mr. Gath, of Providence; hence, by Mr. Carter, to whom we are indebted for its likeness, it

is sometimes called Gath's Perfection. There is an innumerable number of plants comprising this order; most of which possess similar properties; and many are highly celebrated for their beautiful appearance, as may be found in the various greenhouses throughout the country. Some of the most prominent and inviting are such as the *Pelargonium echinatum*, Prickly-stalked Geranium; *Pelargonium bicolor*, Two-colored Crane's-bill; *Pelargonium acetosum*, Sorrel Crane's-bill; *Pelargonium tetragonum*, Square-stalked Geranium; *Pelargonium glutinosum*, Clammy Crane's-bill; *Pelargonium cordifolium*, Birch-leaved Crane's-bill; *Pelargonium betulinum*, Heart-leaved Geranium; *Pelargonium tricolor*, Three-colored Crane's-bill. These, with many other varieties, are very generally cultivated by ladies in this and other cities, not only as an ornament, but as rendering great assistance in the study of Botany.

Medical Properties and Uses. Most of the plants of this family are powerful astringents, and may be employed for all purposes for which astringents are applicable. The *Geranium maculatum*, Common Crane's-bill, is most generally preferred for medicinal purposes. Wood & Bache, in their U. S. Dispensatory, say: "The absence of unpleasant taste, and all other offensive qualities, renders it peculiarly serviceable in the cases of infants, or of persons with very delicate stomachs. Diarrhœa, chronic dysentery, cholera infantum in the latter stages, and the various hæmorrhages, are the forms of disease in which it is most commonly used, and with greatest advantage; but care should be taken before it is administered, that the condition of the system, and of the part affected, is such as not to contraindicate the use of astringents. As an application to indolent ulcers—an injection in gleet and leucorrhea; a gargle in relaxation of the ovula, and apthous ulcerations of the throat, it answers the same purpose with kino, catechu, and other foreign remedies of similar character." The dose of the powder is twenty or thirty grains—the decoction, one to two fluid ounces.


Chinese Rose.

NAT. ORDER.

Rosaceæ.

HIBISCUS ROSA SINENSIS. CHINA-ROSE.

Class XVI. Monadelphia. *Order V.* Polyandria.

Gen. Char. *Calyx* double, outer many-leaved. *Capsules*, five-celled, with many seeds.

Spe. Char. *Leaves*, sub-peltate, cordate, seven-angled, serrate. *Stem*, hisped.

This is an evergreen *shrub*, and usually attains the height of four to six feet. Its appearance very much resembles the hazel-nut. The *sepals* are five, more or less united at the base with a valvate æstivation, often bearing external bracteas, forming an involucrum; *petals* of the same number as the sepals, hypogynous, with a twisted æstivation, either distinct, or adhering to the tube of the stamens; *stamens* indefinite, of the same number as the petals; *filaments* monadelphous; *anthers* one-celled, reniform, bursting transversely; *ovarium* formed by the union of several carpella round a common axis, which is distinct; the *styles* are the same number as the carpella, either united or distinct; *stigmas* variable; *fruit* either capsular or baccate, its carpella being monospermous, and united in one; *seeds* hairy; *albumen* none, or in small quantity; *embryo* curved, with twisted and double *cotyledons*; *leaves* alternate, more or less divided; *peduncles* axillary.

Rumphius, in his *Herbarium Amboinense*, gives an excellent account of this beautiful native of the East Indies, accompanied by a representation of it, with double flowers, in which state it is more particularly cultivated in all the gardens in India, as well as China; and, according to his account, it grows to the full size of

our hazel, and that it varies with white flowers. It is well known that the inhabitants of India are extremely partial to whatever is red—they consider it as a color which tends to exhilarate; and hence they not only cultivate this plant universally, but use its flowers on all occasions of festivity; and even in their sepulchral rites. There are also many other purposes to which these flowers are applied, and which, however, is little consistent with their elegance and beauty—that of blacking shoes, whence their name of *Rosæ calceolariæ:* the shoes, after the color is imparted to them, are rubbed with the hand, to give them a gloss, and which thereby gives them a bluish tinge, to discharge which, they have recourse to lemon juice.

With us, in this country, it flourishes only as a greenhouse plant, and blossoms very freely, during most of the summer months. The single blossoms last but a short time, yet their superiority, arising from the curious and beautiful structure of the interior parts of the flowers, compensates well for the shortness of their duration.

Medical Properties and Uses. The seeds have been considered stimulant and anti-spasmodic; but are now used only in perfumery. The Arabs flavor their coffee with them. They have also been used to a considerable extent in the adulteration of musk. There is another species, the *Hibiscus esculentus*, or *Abelmoschus esculentus*, which is cultivated under the name of *okra*, *bendee*, or *gombo*, in various parts of Europe, principally for its fruit, which abounds in mucilage, and is much employed for thickening soup. The leaves are sometimes employed for preparing emollient poultices. This plant has also obtained considerable celebrity as a remedy for croup, taken internally in the form of decoction, and externally applied as a poultice. The decoction is prepared by adding one ounce of the dried leaves to one quart of diluted alcohol: let it stand for fourteen days: then filter. Dose, from two drachms, to half a fluid ounce: that of the powder, from five to ten grains.

NAT. ORDER.

Irideæ.

GLADEOLUS TRISTIS. SQUARE-LEAVED CORN-FLAG.

Class III. Triandria. *Order I.* Monogynia.

Gen. Char. *Corolla*, six-parted. *Stamens*, ascending. *Anthers*, turned outwards.

Spe. Char. *Calyx* and *Corolla*, superior. *Stamens*, three. *Stigmas*, five. *Style*, one.

Linnæus gave to this species of *Gladeolus* the name of *tristis*, from the color of its flowers. The *root* is long, knotty, white, and fibrous; the *stalk* is upright, square, bearded, and rises from three to six feet in height; the *calyx* and *corolla* are both superior, and their divisions partly cohering, but are sometimes entirely separate, and very irregular; the *petals* are very short; the *stamens* are three, and arise from the base of the sepals; the *filaments* are distinct or cornate; *anthers* bursting externally, lengthwise, fixed by their base, and two-celled; the *ovarium* is three-celled, and the cells many-seeded; *style*, one; the *stigmas* are five in number, which are often petaloid, and sometimes two-lipped; the *capsule* is three-celled, three-valved, with a loculicidal dehiscence; the *seeds* are attached to the inner angle of the cell, or to a central column, which becomes loose; the *albumen* is corneous, or densely fleshy; the *embryo* is enclosed within it. It flowers in April and May, and gives forth a most agreeable fragrance. This species is a native of the Cape of Good Hope, and other parts of Africa, but is cultivated in many parts of England.

The leaves, which so characteristically distinguish this species, are highly deserving of notice. Instances of such rarely occur, as the bulbs produce numerous offsets, and the plant is pro-

pagated by them without difficulty, requiring about the same treatment as other plants of a similar character. Some authors describe the flowers as being painted in the most gay and lively colors; but in all the specimens which we have seen, the blossoms have been of a pale, or faded, yellowish color, shaded in particular parts with very fine pencillings, especially on the under side. Most authors describe the flowering-stems as producing only two flowers. Linnæus has observed that they sometimes produce many; and we have seen them do so, where the plant has grown in perfection.

Medical Properties and Uses. Most of the plants comprising this order are more remarkable for their beautiful fugitive flowers than for utility. A few are stimulating; some diuretic; and quite a number purgative. The *Gladeolus tristis* is a powerful cathartic, and has been used as such for many years in all the eastern countries. In the United States, its use is but little known, and requires to be further investigated, and its properties more particularly defined, before it is brought into general practice. By some this plant has been considered as a powerful emmenagogue, and has been used for particular purposes, for which that class of plants are so notorious.

The establishment of this class has occasioned considerable hypercriticism; yet, as pointing out a change to be produced, it is equally proper with emetics or cathartics; nor is it an objection, that we must produce the change through some medium, and not by any direct action on the vessels themselves. All emmenagogues are generally or partially stimulants, tonics, or anti-spasmodics; and hence have a direct action upon those organs which are calculated to promote hæmorrhage. The dose of the extract is from two to five grains, which may safely be given three times a day That of the decoction is from half to a whole fluid ounce. Both the extract and decoction are prepared after the manner of other similar preparations.

Quince Tree.

NAT. ORDER.

Pomaceæ

PYRUS CYDONA. COMMON QUINCE TREE.

Class XII. Icosandria. *Order IV.* Pentagynia.

Gen. Char. *Calyx*, five-cleft. *Petals*, five. *Pome*, inferior, five-celled, many seeded.

Spe. Char. *Leaves*, purplish, entire. *Flowers*, solitary.

The *Quince tree* seldom rises very high, and is generally crooked and very much distorted; it sends off numerous branches, and is covered with a brown bark; the *leaves* are simple, roundish or oval, entire, on the upper side of a dusky green color, on the under whitish, and stand upon short footstalks; the *flowers* are large, solitary, of a pale red or white color, and placed close to the axillæ of the leaves; the *calyx* is composed of one leaf, and divided into five spreading oval notched segments; the *corolla* consists of five petals; these are large, convex, roundish, and notched at their extremities; the *filaments* are about twenty, tapering, shorter than the corolla, inserted into the calyx, and furnished with simple anthers; the *germen* is orbicular; the *styles* are five, slender, nearly of the length of the filaments, and supplied with simple stigmas; the *fruit* is of the apple kind, and divided at the centre into five membraneous cells, containing the seeds, which are oblong, angular, pointed at one end, obtuse at the other, on one side compressed, on the other flat, and covered with a brownish pellicle. It is a native of Austria, and flowers in May and June.

It appears from Pliny, that the *malus Cydonia* of the Greeks was, originally, brought from Cydon, in Crete; hence the name Cydona. At present, the Quince tree is known to grow wild on the banks of the Danube, though in a much less luxuriant state than when cultivated in our gardens, as may be found in almost every section of

the United States. The form of the fruit approaches to that of the pear or apple, according to the different varieties of the species of tree from which it is produced, and which we have already noticed.

Medical Properties and Uses. The Quince has a very pleasant odor, and quite an austere taste; its expressed juice, repeatedly taken in small quantities, is said to be cooling, astringent, and stomachic, and may be considered very useful in nausea, vomiting, nidorous eructations, and some kinds of alvine fluxes. Formerly, this juice was ordered in the Lond. Pharm. to be made into a sirup; but the only preparation of the Quince which is now directed, is a mucilage of the seeds, made by boiling a drachm of the seeds in eight ounces of water until it acquires a proper consistence. This has been recommended in apthous affections, and excoriations of the mouth and fauces. It may be a more pleasant mucilage, but is certainly a much less efficacious one, than that of simple gums.

Decoctum Cydoniæ. Lond. Decoction of Quince seeds. Take of Quince seeds, *two drachms*; distilled water *a pint*. Boil over a slow fire for ten minutes; then strain, or filter through paper. This decoction is viscid, nearly colorless, insipid, and inodorous, and consists chiefly of the mucilaginous principle of the Quince seeds dissolved in water. The decoction is only employed externally, as it speedily undergoes decomposition, and it should be used immediately after being prepared.

The cultivation of the Quince has been, within the last few centuries, extended to almost every part of the civilized Globe. Among the farmers, both in Europe and the United States, the Quince is universally planted in their gardens, and considered as the most delicious luxury of the fruit kind. The most important purposes for which they were employed was that of making Quince sauce. This was done by quartering and coreing the fruit, and gently stewing it in sugar and molasses. The Quince is found in all the markets, where they command a ready sale, averaging from 75 cents to $1 50 per hundred in number.

Caper-bush.

NAT. ORDER.

Capparideæ.

CAPPARIS SPINOSA. COMMON CAPER-BUSH.

Class XIII. Polyandria. *Order I.* Monogynia.

Gen. Char. *Calyx*, four-leaved, coriaceous. *Petals* four. *Stamens* long. *Berry* corticose, one-celled, pedicelled.

Spe. Char. *Pedunceles* one-flowered, solitary. *Stipules* spiny. *Leaves*, annual. *Capsules*, oval.

The *root* of this *shrub* is woody and crooked; the *stem* is trailing, round, and smooth; the *branches* are alternate, spreading, often downy, leafy, and many-flowered; the *leaves* are alternate, spreading, oval, or roundish, and stand on short footstalks, in the wild plant often terminated by a little sharp point, which disappears by culture, entire, veiny, succulent, bright green, deciduous; *Stipulæ* none; but in their place are two spines at the base of the footstalks which are acute, somewhat recurved, yellowish, and nearly obliterated in the cultivated plant; the *flowers* are numerous, axillary, solitary, placed on short footstalks, without bracteas, large, handsome and inodorous; the *flower-stalks* are round and longer than the leaves; the *calyx* consists of four unequal concave leaves, tipped with purple; the *petals* are much larger than the calyx, spreading, obovate, waved, white, and sometimes are found with a faint tincture of red; the *stamens* are very numerous, the length of the petals, spreading, slender in the upper part, and of a pale purple like the anthers; the *germen* is oval, small, green, and stands on a round purplish footstalk, which is longer than the stamens; the *stigma* is small and blunt; the *capsule* is oblong, oval, and coriaceous. It is a native of the south of France, Italy, and the Levant.

Dr. Smith, of whose figure and description of the caper-bush we have here availed ourselves, says, "it is surprising that this beautiful shrub, which is as common in the South of France as the bramble is with us, and which grows luxuriantly in the open air, when trained against a wall, even at Paris, should be almost unknown in the English and American gardens, where it can scarcely be made to flower, except in the greenhouse, and even then with all possible care."

Medical Properties and Uses. The buds or unexpanded flowers of this plant, have been used for a long time as a common pickle, and for this purpose the smaller or younger buds are preferred, they being the most tender, and better calculated for such purposes. This grateful pickle has the character of an antiscorbutic, and of removing hepatic and other visceral obstructions; but the part of the plant which has been chiefly recommended for medicinal purposes, is the bark of the root. This is of a considerable thickness, externally of an ash color, and transversely wrinkled; on drying, it rolls up into quills of about one-third of an inch in diameter; its taste is somewhat aromatic, bitterish, and acrid.

By Discorides, and other ancient writers, it was not thought of great efficacy as a deobstruent, and was generally employed in obstructions of the liver and spleen, menstrual suppressions, and sciatica; in this view it has been used by Forestus and Sennertus; and on the preservation of its deobstruent power, it was reckoned one of the five less aperient roots; at present, however, it is discarded from practice, and is but little known in medicine. We may further remark, that this is the only plant in the natural order which has ever been considered medicinal. The dose of the bark prescribed is from four to ten grains; that of the decoction, from two drachms to a fluid ounce. The decoction is made in proportions of one ounce of the bark of the root to one pint diluted alcohol, well macerated and filtered.

NAT. ORDER.

Scabridæ.

HUMULUS LUPULUS. THE COMMON HOP.

Class XXII. Diœcia. *Order V.* Pentandria.
Gen. Char. Male: *Calyx* five-leaved. *Corolla*, none. *Styles* two.
Seed, one, with a leafed calyx.
Spe. char. none.

The *Hop* is an indigenous, perennial plant, growing in hedges, flowering in June and July, and ripening its seeds in September. Sir J. E. Smith considers the *hop* as truly wild in England, notwithstanding the old distich—that

> "Turkeys, carp, hops, pickerel, and beer,
> Came into England all in one year."

This is supposed to have been in Henry VIII's reign, when perhaps, hops were first used for making beer, and, (as has been the case with many other plants), might be imported from abroad, though really wild at home. The female plants are very extensively cultivated at the present time both in England and the United States, principally for the use of brewers, who consume large quantities of the strobiles in the brewing of malt liquors.

There is but one species of the genus *Humulus*, the male and female flowers are on separate plants. The *roots* are branching, from which arise many long, twining, rough, angular, flexible *stems*, which support themselves by twining round bodies that may be placed near them; the *leaves* are opposite, in pairs, petiolate, cordate, or entire, serrated, of a dark green on the upper disc, paler beneath; both the *leaves* and *petioles* are scabrous, with minute prickles; and at the base of each leaf-stalk are two interfoliaceous, entire, reflected, smooth, *stipules*; the *flowers* are axillary or termi-

nal, and furnished with *bracteas*; the males are in drooping panicles of a pale, greenish-yellow color; the *calyx* consists of five, oblong concave, minutely serrated *leaflets*; the *filaments* are five, capillary, and supporting oblong anthers, which open at the apex by two pores; the *female flowers* are in solitary, pendulous, ovate *cones* or *strobiles*, composed of membranous scales of a pale greenish color; tubular, from being rolled in at the base, and containing the *germen* which is small, supporting two short, subulate *styles*, tipped with awl-shaped, downy stigmas; the *seed*, which is enclosed in the tubular part of the scale, is round, flattish, truncated, and of a bay brown color.

The *hop* is not confined to England and America, but has been introduced into many other parts of the world. The culture of this plant was introduced into England from Flanders, about the year 1524. From England into America at the time of its settlement. The strobiles were first used for preserving malt liquors in the latter part of the reign of Henry VIII.; but the prejudice against them continued for a long time, as the citizens of London, a century afterwards, petitioned Parliament to prevent their use.

At the season when the strobiles are sufficiently ripe, the plants are cut a foot or two from the ground, and the poles on which they are supported, pulled up. The strobiles are then carefully picked off, care being taken to separate those that are defective from those that are sound; both kinds are carried to the kiln, for the purpose of drying as soon as possible after they are gathered. The heat of the kiln requires to be regulated with great nicety, to prevent their being dried too rapidly—to obviate this occurrence many kilns have two floors, on the upper one the greener hops are laid, and gradually dried, before being brought to support the heat of the lower floor. Charcoal is usually employed, as the other kinds of fuel are said to injure the flavor of the hops. The strobiles are considered sufficiently dried when they become crisp; but they require some degree of tenacity and toughness, from lying in heaps on the floors of the store-houses, previous to their being bagged.

Sensible and Chemical Properties.—The dried strobiles have a peculiar fragrant odor, and a very bitter, somewhat aromatic, and a slightly astringent taste. New hops are of a pale, greenish-yellow hue, and appear like thin, transparent leaves; by long keeping their color changes to a yellowish-brown. The watery infusion has a pale straw color, is rendered muddy by the mineral acids; alkalies deepen its color; it strikes an olive with sulphate of iron; is precipitated by solutions of nitrate of silver, tartarized antimony, superacetate of lead, and alcohol: and when rubbed with magnesia, or lime, a rod dipped in muriatic acid discovers the presence of ammonia. By distillation in water, an essential oil is obtained. The virtues of hops are extracted by alcohol, ether, and boiling water; by long boiling the aromatic properties are dissipated.

From the experiments of Dr. Ives of New York, it appears, that the active properties of hops reside in a powder, which may be readily separated from the strobiles, by merely sifting in a fine sieve. This substance forms about one-sixth part of their weight, and to it Dr. Ives has given the name *lupulin*. According to Dr. Ives' analysis, 120 grains of lupulin contain about—of tannin 5 grains, extractive matter 10, bitter principle 11, wax 12, resin 36, lignum 46.—The extractive matter is soluble in water only; the bitter principle is soluble in water and alcohol; the wax is soluble only in alkalies and boiling ether; the resin is soluble in ether and alcohol; the aromatic and bitter properties of the lupulin are more readily and completely imbibed by alcohol than water, and much sooner by both when hot than when cold; about five-eighths of lupulin are soluble in water, alcohol and ether, three-eighths being vegetable fibrous matter. M. Payer and A. Chevalier have confirmed Dr. Ives' opinion, that the properties of the hop reside in the lupulin, or the yellow grains which are scattered over the membranous scales of the strobiles. They also discovered a volatile oil in lupulin, which is similar in odor to the hop, but much more penetrating. The following process has been practised by M. Planche, for purifying lupulin.

"To separate the sand from the lupulin—put it into water, shake it for a few minutes, decant that which is held in solution by the water, and a dark colored sand is deposited: repeat the process several times, and spread the lupulin which is insoluble in water, on bibulous paper; let it drain and then dry it in the air, neither exposed to the sun, nor to a temperature above 76° Fahrenheit. It should be prepared yearly, and this cleansing process must be quickly conducted, or it will undergo a change."

Medical Properties and Uses.—Hops are narcotic, tonic, and diuretic. We are told by Dr. Maton, that, besides allaying pain and producing sleep, the preparations of hops reduce the frequency of the pulse, and increase its firmness in a very decided manner. One drachm of the tincture, and four grains of the extract, given once in six hours, reduced the pulsation from ninety-six to sixty in twenty-four hours. He found the extract very efficacious in allaying the pain in articular rheumatism, in which disease we have frequently administered both the tincture and the extract with much benefit to the patient. As a narcotic it is very inferior to opium; but under certain circumstances, where opium disagrees, (which is not unfrequently the case,) it will generally procure undisturbed and refreshing sleep. Dr. Ives observes, "with regard to the medicinal efficacy of hops, every accurate observer must acknowledge, that they possess little merit if administered according to the directions given in our pharmacopœias. The quantity of proof spirit which enters into the tincture would produce stimulating effects, independent of any properties which it imbibes from the hops; and although its action may be modified by their combined agency, so as, in some measure, to increase the cordial and invigorating influence of the alcohol, it is difficult to conceive, that the tonic or narcotic virtues of the hop should be sufficiently concentrated to produce much remedial benefit. It is otherwise with the pharmaceutical preparations of the *lupulin* which we have been accustomed to prescribe.

From extensive observation and experience, I am confirmed in my opinion, that diseases which are the consequence of exhausted

excitability, or, more directly, of a deranged state of the stomach and bowels, are certainly much relieved by this medicine. It frequently induces sleep, and quiets nervous irritation, without causing costiveness, or imparing, like opium, the tone of the stomach, and merely increasing primary disease. The preparation most commonly used in this city, is the tincture prepared from the lupulin. Inquietude and watchfulness, connected with excessive irritability in all its gradations, from the restlessness consequent upon exhaustion and fatigue, to the most uncontrollable paroxysm of delirium tremens, are more frequently allayed by this remedy than any other in ordinary use. Another eligible mode of exhibiting the lupulin, is in pills. From two to four pills, each containing three grains of the powder, may be given at a dose. Dr. Desroches, who published a dissertation on the hop in 1803, supposed that its narcotic principle resided in the essential oil; but is it not more than probable that this was a conjecture, arising from the imaginary soporific virtues of the hop-pillow? It requires much experience, and accurate observation to speak confidently upon this subject; but, from having frequently used the lupulin collected from old hops, in which little aroma seemed to remain, and also the extracts prepared by decoctions, by which process the essential oil is chiefly dissipated. I am still of opinion, that its narcotic properties reside in the resinous extract: externally, an ointment compounded with the powder of the hop, and lard is recommended by Mr. Freake as an anodyne application to cancerous sores, and a decoction, used as a fomentation, affords much relief in painful tumefactions. A cataplasm, made of an infusion of the strobiles, has been applied with decided benefit to the bowels, for inflammation, ague in the face, swellings of all kinds, bilious colic, and ill-conditioned ulcers.

Mode of Employing Lupulin. Lupulin may be administered in form of extract, tincture, pills, powder, or sirup. The *extract* may be prepared either with the aqueous infusion, or with the decoction; when prepared with the latter, it is equally bitter, but less aromatic. Dose, from five to ten grains.

NAT. ORDER.

Rotaceæ.

CISTUS LADANIFERUS. GUM CISTUS.

Class XIII. Polyandria. *Order I.* Monogynia.

Gen. Char. *Corolla*, five-petaled. *Calyx*, five-leaved, with two, and sometimes three of the leaflets smaller.

Spe. Char. *Leaves*, ovate, nerveless, rugged. *Calyx*, lanceolate.

This rare and beautiful *plant*, has seldom been known to exceed five feet in height; its *trunk* and *branches* are covered with a dark, or brownish-colored bark; the *branches* are simple; the *leaves* are oblong, somewhat pointed, veined, viscous, valved, somewhat twisted, and stand in pairs upon short foot stalks, which embrace the stem; the *flowers* are produced in succession at the extremities of the branches; they are large, of a purple red color, and marked with dark spots near the base of the petals; the *calyx* is divided into five large, crab-pointed, persistent segments; the *corolla* is composed of five petals, which are large, roundish, spreading, and readily fall off on being touched; the *filaments* are very numerous, short, slender, and supplied with simple anthers of an orange color; the *germen* is oval, and supports a short style, which is furnished with a flat, circular stigma; the *capsule* is round, and contains a numerous quantity of small round seeds.

Prof. Miller, who was much admired as a distinguished botanist, speaking of this plant, says, "It is one of the most ornamental and hardy shrubs that we possess; at once pleasing to the eye, and grateful to the smell. The whole plant in warm weather exudes a sweet glutinous substance, which has a very strong balsamic scent, so as to perfume the air to a great distance from the plant." Its blossoms, which appear in June and July in great profusion, exhibit

Gum Cistus.

a remarkable instance of quickly-fading beauty, opening and expanding to the morning sun, and before night strewing the ground with their elegant remains; as each succeeding day produces new blossoms, this deciduous disposition of the petals, common to the genus, is the less to be regretted. It is a native of Spain and Portugal, and prefers a dry soil and warm situation, and in very severe seasons requires some kind of covering. It is readily increased by cuttings; but Miller remarks that the best plants are raised from the seeds.

One or two varieties have been found with varied leaves, and having petals without a dark spot at the base. This is not the plant from whence the officinal Ladanum of the shops is procured, though affording in warmer countries than this a similar gum, hence its name, *ladanifera*. This plant grows most plentifully on or near the sea shore, and consequently sand is occasionally mixed with the gum. The best sort is in dark colored black masses, of the consistence of a plaster, which grows still softer when handled: the other is in long rolls curled up, harder than the former, but of a paler color and of less value.

Medical Properties and Uses.—In general this gum agrees in virtue with the balsam of Peru; but it is rarely used except in external applications. It has an agreeable smell, and a light, pungent, bitterish taste. Rectified spirit of wine dissolves nearly the whole of the gum; and water takes up the most of its smell and taste. By distillation with water an essential oil arises, leaving behind a brittle resin.

Heat quickly destroys the specific flavor of this gum, which was formerly given as a pectoral and astringent in catarrhal affections and dysenteries; but it is now confined to external use, in the form of a plaster. The plaster is made by taking, *Pinus abies resina*, Burgundy pitch, one pound; *Cistus ladaniferus resina*, gum of the Cistus, one pound; beeswax half a pound; melt these together. This is an excellent compound for a plaster, and will be found valuable where plasters are necessary.

NAT. ORDER.

Compositæ.

TUSSILAGO FARFARA. COMMON COLTS-FOOT.

Class XIX. Syngenesia. *Order II.* Superflua.

Gen. Char. Receptacle, naked. *Papus*, simple. *Calyx*, scales equal, as long as the disk, somewhat membranaceous.

Spe. Char. Scape, one flowered, imbricate. *Leaves*, subcordate, angular and toothed.

The *root* is long, round, tapering, creeping, and sends off many small short fibres; the *stalks* are furrowed, downy, simple, six or eight inches high, beset with several scaly leaves, of a brownish pink color, and closely embracing the stem; the *leaves* are obtusely heart-shaped, angular, irregularly indented, above of a bright, green color, beneath white, downy, and stand upon long roundish radical footstalks; the *flowers* are compound, large and yellow; the *florets* in the *disc* are hermaphrodite, tubular, the limb is cut into five acute segments, which curl outwardly; the *anthers*, by uniting, form a tube, but their apices are separate and pointed; the *germen* is short; the *style* is filiform and longer than the anthers; the *stigma* is round; the *florets* at the circumference are female, tubular at their bases, and the limb is long and linear; the *germen* is oblong; the *stigma* bifid; the *seed* is oblong, and of a pale brown color, crowned with simple down; the *calyx* is cylindrical; the *leaflets* are oblong, pointed, and alternately narrower. It is found most common in moist, clayey places, and the flowers appear sometimes before the leaves, which usually takes place in March and April.

Medical Properties and Uses.—The sensible qualities of colts-foot at the present time, are not considered as being of much importance in the practice of medicine; it has a rough mucilaginous

Common Colts-foot

taste, but no remarkable smell. The leaves have always been of great fame, as possessing demulcent and pectoral virtues; of course it is esteemed useful in pulmonary consumption, coughs, asthmas, and in various catarrhal affections. Fuller recommends Colts-foot as a valuable medicine in scrofula; and Dr. Cullen, who does not allow it any powers as a demulcent and expectorant, found it serviceable in some strumous affections. It may be used as tea, or given in the way of infusion, to which liquorice root or honey may be added.

We might, without exception, cite every writer of the Materia Medica, as speaking in favor, except Dr. Cullen, who suspects that this plant has little virtue, as he has often employed it, but never found it either eminently demulcent or expectorant. Some ounces of the expressed juice of the fresh leaves were taken every day, and seemed to assist the healing of scrofulous sores; even a strong decoction of the dried leaves, employed as Fuller proposes, has seemed to answer the same purpose; but both have occasionally failed.

The leaves and flowers were smoked by the ancients for pulmonary complaints, and in some parts of Germany, this habit is still kept up, and by some used as a substitute for tobacco. The usual form of administration is that of decoction. An ounce or two of dried leaves may be boiled in two pints of water to a pint, of which a teacup-full may be given several times a day. The root of this plant is used for many other purposes; on account of its agreeable odor and spicy taste, many people have been in the habit of carrying small pieces of the roots in their pockets for the purpose of chewing; and it is reported by numbers who have used it in this way, that they have been relieved of dyspepsia, and weaknesses of the stomach. It has also been found useful, (after being reduced to powder,) as an addition to the catarrh snuff, rendering it more pleasant, active, and agreeable to take.

NAT. ORDER.

Cephælideæ.

CEPHÆLIS IPECACUANHA. IPECACUAN.

Class V. Pentandria. *Order I.* Monogynia.

Gen. Char. *Calyx*, superior, quinquefied. *Flowers* in an involucred head. *Corolla* tubular. *Stigma* two-parted. *Berry* two-seeded. *Receptacle* chaffy.

Spc. Char. *Stem* simple, ascending, somewhat shrubby, sarmentose *Leaves* ovate-lanceolate, somewhat pubescent. *Head of Flowers* terminal, pedunculated, solitary. *Corolla* five-cleft, chaffy. *Bracteas* large. *Involucre* tetraphyllous.

The *Cephælis Ipecacuanha* is a perenniel plant, a native of Brazil, and in moist situations in the provinces of Rio Janeiro, Mariannia, Pernambuqua, Bahia, etc., inhabiting the woods, and flowering from December to March. The *root* is simple, or somewhat branched, and furnished with a few short *radicles;* it is roundish, three or four inches in length and two or three lines in thickness, irregularly bent, externally of a brown color, and annulated with numerous prominent, unequal rings; the *stem* is procumbent at the base, rising from five to nine inches in height, round, the thickness of a hen's quill; smooth, leafless, of a brownish color, knotted at the lower part, and leafy towards the upper: after the first year it throws out a few knotty runners, from which, about six inches apart, new stems arise; the *inferior leaves* are caduous, so that not more than eight generally remain at the summit of each stem, where it flowers: they are nearly sessile, opposite, spreading, ovate, pointed at both ends, three or four inches long and less than two broad; of a bright green on the upper surface, beneath of a whitish green color, pubescent, varied; at the base of each pair of leaves, is a pair of

short, fimbricated, withering *stipules*, embracing the stem; the *flowers* are aggregated in a solitary head, on a round, downy *foot-stalk*, terminating the stem; somewhat drooping and encompassed by a four-leaved *involucre*; the *florets* are sessile, from fifteen to twenty-four in number, interspersed with little *bracteas;* the *calyx* is very small, five-toothed, superior, persistent; the *corolla* is monopetalous, the border shorter than the tube; woolly about the throat, swelling upwards, and divided into five, ovate, acute, spreading segments; the *filaments* are short, capillary, inserted into the upper part of the tube, surrounded at their base with a short nectariferous rim, and bearing oblong, linear, erect *anthers;* the *germen* is ornate, surmounted by a thread-shaped style, as long as the tube, and terminated by two obtuse *stigmas* which are the length of the anthers; the *fruit* is a one-celled berry, of a reddish-purple color, becoming wrinkled and black, and containing two smooth, oval seeds.

Brown ipecacuan was first introduced into Europe about the middle of the last century; but it is impossible to ascertain at what period this root was first made known for its emetic effects in this country. Piso published an account of it in 1618. Although the *root* of this plant has long been employed as an emetic, and as otherwise forming a valuable remedial agent in our list of materia medica; yet the botanical characters of the plant itself were unknown, till Professor Brotero of Coimbra determined the genus to which it ought to be referred. According to Decandole, the term *Ipecacuanha*, in South America, implies vomiting-root, and therefore it is implied to the roots of very different plants, such as the *Asclepias curassavica*, *Cynanchum Ipecacuanha*, *Viola Parviflora*, *Viola Ipecacuanha*, *Viola calceolaria*, and *Cynanchum tormentosum:* and sometimes to the *Dorstenia brasiliensis*, *Dorstenia arifolia*, and to the *Euphorbia ipecacuanha*. Two varieties of the root are brought to this country, packed in bales from Rio Janeiro, the *brown* and the *white*, but whether they be the roots of one and the same plant, or otherwise, does not appear to be exactly determined. According to Mutis, the former is the root of the *Cephælis*, and the latter, on the

authority of M. Gomez, we must suppose to be yielded by the *Richardsonia Brasiliensis*. There is also a third variety, called *black Ipecacuan*, which is a native of Peru, and is exported from Carthagenia to Cadiz. It is the root of the *Psychotria emetica*. It is fusiform, striated, articulated, but not annulated. *White Ipecacuan* is externally of a dirty white color, and turns brownish by drying, is simple, or little blanched, five or six lines thick, three inches long or upwards, attenuated at the extremities, variously contorted, with transverse annular rugosities, but larger than those of the *brown ipecacuan*, its back is thick, white, internally softer than the *brown*, the woody part white, hard and fine as a thread. The *brown ipecacuan* is characterized by being contorted, wrinkled, and unequal in thickness, having a thick, black, deeply fissured, transversely covering a very small, central, woody part, so as to give the idea of a number of rings strung upon a thread. Its color varies with different shades of brown and grey. In St. Domingo several species of *Ruellia* are denominated *false ipecacuan*.

Sensible and Chemical Properties.—The root of *Ipecacuan* is inodorous, unless when reduced to powder, in which state it has a faint and somewhat unpleasant smell. The taste is nauseous, bitter, and slightly acrid. Boiling water takes up eight parts in twenty, proof spirit about six and a half, and alcohol four parts. Various experiments have been instituted by chemists to detect the particular constituent to which Ipecacuanha owes its emetic quality. According to the analysis of M. M. Pelletier and Magendie, the components of Ipecacuanha, are: Oil, 2: Wax, 6: Gum, 10: Emetine, 16: Starch, 40: Wood, 20: Loss, 6 in 100. They also found that the *cephaelis Ipecacuanha*, *Viola emetica*, and *Psychotira emetica* contain a common principle which they named *emetine;* to obtain, they digested the powdered root in double its weight in ether, in order to separate any fatty matter; the remainder was heated with four times its weight of highly rectified alcohol, until it ceased to become colored, even when aided by heat. The solution was evaporated to dryness and re-dissolved in water, acetate of lead

Lastly, I would mention that the *Bucku* of our Pharmacopæias, which has lately obtained so much celebrity as a sudorific, diuretic, and tonic; such at least as I have examined and prescribed from our druggists, undoubtedly belongs to the present species. Hence, though others of the *Diosma* groupe may contain similar preperties, abounding, as they all do, in a strong aromatic odor, and glands filled with essential oil, yet by the Hottentots and those who gather *Bucku* for the European and American markets, preference is given to our *Barosma crenulata*. The scent seems to me to be as powerful as that of any other of the tribe, but at the same time much more agreeable, and more resembling that of some mints.

Barosma pulchella. Neat Barosma. This shrub grows from one to three feet in height; leaves crowded, ovate, quite smooth, with thickened, crenate-glandular margins; peduncles axillary, usually solitary, exceeding the leaves; flowers pale-red. The Hottentots use the leaves of this plant, dried and powdered, under the name of *Bucku*, to mix with the greese with which they anoint themselves. It gives them so rank an odor, that Thunberg says he could not bear the smell of the men who drove his waggon. It is a native of the Cape of Good Hope, and flowers from September till February.

Propagation and Culture. This is a genus of pretty little shrubs, which thrive best in a mixture of sand, peat, and a little turfy loam; and cuttings taken from ripened wood, and planted in a pot of sand, with a bell-glass placed over them, will strike root readily and thrive well.

NAT. ORDER.

Cacteæ.

OPUNTIA BRASILIENSIS. BRAZILIAN PRICKLY-PEAR.

Class XI. Icosandria. *Order I.* Monogynia.

Gen. Char. *Sepals*, numerous. *Stamens*, numerous, shorter than the petals. *Style*, cylindrical. *Stigmas*, many.

Spe. Char. *Berry*, ovate. *Petals*, conivant. *Flowers*, red. *Joints*, obovate.

The peculiar habit and mode of growth at once distinguish this species. It rises with a perfectly straight, erect, slender, but firm and stiff, round *stem*, to a height of from ten to twenty, or even thirty feet, very gradually tapering to a point from a diameter of two to six inches at the base, and furnished all the way up with short, mostly horizontal or declining branches, spreading round on all sides, and gradually becoming shorter upwards; the whole *plant* resembles a straight taper; pole, artificially dressed up with branches; main *stem* perfectly round, continuous and straight throughout; *branches* horizontal, or declining, short; the ultimate *joints* are obovate, and resemble leaves in appearance and thickness, more than in any other described species of *Opuntia*; being only about twice as thick as those of *Cereus phyllanthus*, or *phyllanthoides*, but stiffer; the whole *plant* is a bright green inclining to yellow, especially in young or sickly plants; the lower part of the *stem* only is brownish ash-colored; the *flowers* open in long succession, being abundantly produced all over the plant from the prominent parts of the edges of the terminal joints; they are bright lemon-yellow, middle-sized; when expanded, from an inch to an inch and-a-half in diameter; and without

Java. Piper

tube; *petals* imbricated, sub-patent; the outer ones short, thick, and fleshy, the inner from half an inch to an inch long; *style*, longer than the *stamens*, pale-yellow, thickish, swollen downwards, solid, or with only a thread-like, central hollow towards the top; *stigma* of generally five, sometimes four, pale-yellow, finally ferruginous bordered, erect, subconnivant, ovate lobes; *filaments* and *anthers* pale; *germen* half or three quarters of an inch long, cup-shaped at top, uneven, bearing a minute, fleshy, ovate-globose, yellowish, deciduous leaf at the summit of each irregular tubercle, inside of which is a fascicle of short, minute, chestnut bristles; a vertical section discovers the central, subtriangular, cell-like ovarium, containing from one to five ovules; *fruit* subglobose, approaching to oval more or less, with the cup-shaped hollow at the top obsolete, so as to be often truncate, from an inch to an inch and-a-half in diameter, the color of a Magnum-bonum Plum; perfectly even, but furnished with short, dense fascicles, tufts, or branches, of rich chestnut-colored bristles, contrasting beautifully with the delicate transparent yellow of the thin, smooth skin; a few of these are twice as long as the rest; all are extremely deciduous, brittle, and acute, so as to render the examination of the fruit more than ordinarily troublesome. It is hardly possible to touch the plant when in fructification without getting the skin or closes full of these bristles;. inside of the *fruit* pale yellowish-white, containing in the middle from one to four, much flattened, rather large round seeds, three or four lines in diameter, enveloped in a singular, dense, cottony mass of fibres; the fruit is rather agreeable, juicy, with a fine acid, somewhat resembling an indifferent, hard-fleshed, or unripe Plum, with a smell and slight flavor like the leaf-stalks of garden Rhubarb. Its principal flowering season is May and June.

NAT. ORDER.

Saxifrageæ.

SAXIFRAGA LIGULATA. FRINGED SAXIFRAGE.

Class X. Decandria. *Order II.* Digynia.

Gen. Char. *Calyx*, five, parted. *Petals*, five, on short claws. *Stamens*, ten. *Capsules*, adnate to the calyx. *Seeds*, numerous.

Spe. Char. *Leaves*, obovate, subcordate. *Flowers*, pale-red, almost white.

This *plant* has a thick woody *root*, bearing several large spreading, bright-green, broadly ovate *leaves*, beautifully ciliated at the margin, and frequently waved there also; the *petiole* is short, thick, bearing a long, erect, ciliated sheath or ligule (whence the specific name) just above where it is set on the stem; *scales* five or six inches long, with one or two *bracteas*, and terminated by a cymose *panicle* of large, handsome, white flowers, frequently tinged with rose-color; *calyx* obtuse and red at the base, and greener upwards, and five-cleft; *corolla* of five, obovate *petals*, with short claws; *stamens* ten; *filaments* erect, alternately shorter, rose-colored; *anthers* reddish purple; *germen* free; *styles* long, erect; *stigmas* obtuse.

Saxifraga petræa. Rock Saxifraga. This plant grows almost flat upon the ground, only rising from three to six inches in height; the leaves are radical and palmately five-lobed; cauline ones tripartite and cut; peduncles are very long, one-flowered; calycine segments linear, acute; petals obovate, truncate at the apex and emarginate, twice the length of the calyx; the plant is diffusely branched, and furnished with glanduliferious hairs; stems erect, branched at the base; branches elongated fastigiate; radical leaves on long peti-

oles, somewhat reniform at the base; lobes obtuse; cauline leaves all petiolate; upper cauline leaves undivided, acute at both ends; peduncles and calyxes clothed with viscid down; flowers white, much larger than those in many of the other species; petals tripple nerved; nerves simple. It is a native of Mount Baldo, among broken rocks, and of the Alps of Corinthia; also of North America, in alpine rivulets on the Rocky Mountains. It flowers in April and May.

Saxifraga hyponoides. Hypnum Saxifrage. This plant rises only from three to eight inches high, gemmiferous; surculi very long, procumbent; radical leaves five or three parted; surculine leaves simple, linear, stiff, ciliated, mucronately awned, furnished with ovate, acute, buds in the axils; calycine segments triangularly ovate, awned; petals roundish, obovate, white, tripple-nerved, rose-colored on the outside at the apex; nerves simple; the herb is densely tufted before flowering, quite glabrous, but afterwards becoming loose, surculose, and villous; from two to four flowered. This is a native of the Alps of Switzerland, Austria, and Pyrenees. In Britain, in the north of England, Scotland, and North Wales, in both the Upper and Lower Canadas, on high rocky mountains; as well as on limestone rocks, walls, and roofs in less elevated situations, abundantly. It flowers in April.

Medical properties and Uses. Linnæus describes the taste of this plant to be acrid and pungent, which we have not been able to discover; neither the tubercles of the root, nor the leaves manifest to the organs of taste any quality likely to be of medicinal use, and therefore, though these species of Saxifrage has been long employed as a popular remedy in nephritic and gravelly disorders, yet we do not find either from its sensible qualities, or from any published instances of its efficacy, that it deserves a place in the Materia Medica.

The superstitious doctrine of *Signatures* suggested the use of the root, which is a good example of what Linnæus has termed radix

granulata. The bulbs or tubercles of such roots answer an important purpose in vegetation, by supplying the plants with nourishment and moisture, and thereby enabling them to resist the effects of that drought to which the dry soils they inhabit peculiarly expose them.

Sedum Telephium, one of the species, is admitted in the Materia Medica in the foreign pharmacopœias; it has not the acrid characters of the various species here figured, but on the contrary is bland and mucilaginous. It is said to be diuretic, and, according to Dr. Withering, is used with success to cure the piles. *Sempervivum tectorum* (common house-leek) which is nearly allied to the *Telephium* in botanical affinity, likewise abounds with a mucilaginous juice, said to be an useful application to burns, creeping ulcers, and in apthous cases. *Cactus Opuntia* (common Indian fig) and *Portulaca oleracea* (garden purslane) both of this natural order, afford a simular juice, which also has been applied to medical purposes.

Propagation and Culture. *Saxifraga* is a most extensive genus of pretty alpine plants, the greater part of which are well adapted for rock-work, or to be grown on the sides of naked banks to hide the surface. Many of the more rare and tender kinds require to be grown in pots, in light sandy soil, and placed among other alpine plants, so that they may be protected by a frame in winter. The species belonging to sections *Micranthes* and *Hirculus* grow best in a peat soil, which should be kept rather moist. The species belonging to the section *Porphyrion* are so very pretty little plants as to be worth growing in pots for ornaments, being clothed with elegant little red flowers early in the spring. A mixture of peat and sand suits them well. The varieties are all well suited to ornament the borders of flower-gardens.

Wild Tulip.

NAT. ORDER.

Liliaceæ.

TULIPA SYLVESTRIS. TURK'S-CAP, OR WILD TULIP

Class VI. Hexandria. *Order I.* Monogynia.

Gen. Char. *Petals*, six. *Stamens*, six. *Stigma*, three-lobed.

Spe. Char. *Stem*, one-flowered. *Leaves*, tapering to a point.

This beautiful exotic plant rises about two feet in height; its *flowers* are large, yellow, roundish, and very beautiful to the eye; the *stalks*, or *stems*, are generally one, and one-flowered; the *petals* are six in number, of a whitish color, but tipped with yellow; the *stamens* are six,—three longer, and three shorter; the *stigma* is three-lobed; the *leaves* are inserted at the base, sword-like, fleshy, and firmly ribbed. It increases by throwing out a long fibre, at the extremity of which a bulb is produced, which shoots forth a new plant the next season. It is said to be a native of Holland, where it has been cultivated for four centuries.

The name *Tulip*, originated from the Turkish word, *Tulipan*, which is the name the Turks give their *Head-tyres*, or caps; and we in English, in conformity with this name, call it the Tulip, which somewhat resembles the Turk's cap. By modern writers upon the subject of Botany, but little can be gathered respecting the history and origin of this rare plant, although it is well known to have been cultivated for more than four hundred years; yet, from a want of knowledge, or from some other unknown cause, this family of plants has been most wonderfully neglected. Salmond, an ancient, but distinguished botanist, in his Herbal, describes three hundred and sixty-one different varieties of the Tulip Tribe, most of which were extensively

cultivated in various parts of Greece, both as ornaments, and for medicinal purposes.

Propagation and Culture. To raise these plants from seed, great caution is necessary, that we select the best flowers—such as have become fully grown, and well ripened, as sometimes the roots lose their fibres, and the stalks dry before the seed is half ripe. This seed is generally ready for gathering about the middle of July, or later, if the season proves backward, which can be known by the dryness of the stalks, or opening of the seed-vessels. The whole plant should be taken with the roots, letting the seed remain in the pods till the first of October. It may then be taken out, and cleansed from the chaff, and sown in beds of fine sifted earth, care being taken that the seed is covered about half an inch in depth. About the end of June, the second year after sowing, they should be taken up, and the small roots cleansed, and set again in rows, at a wider distance, and so continued every other year, until they bear flowers, but altering the ground with fresh earth.

Medical Properties and Uses. The *root* is the part directed for medicine; and if we are to give credit to the writings of the ancients, in regard to its effects, we shall describe it as possessing extraordinary properties for the removal of all pulmonary complaints. By the ancients, it was extensively used in coughs, catarrhs, consumptions, and more particularly as a generator of blood. The expressed juice of the plant was formerly used, in doses of from one to three fluidrachms, taken every morning, and on going to bed. In this form it was given by them, as a tonic, acting chiefly on the urinary organs, both stimulating and exciting; and was often administered for inflammation of the kidneys, bladder and spleen.

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