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AN

ARRANGEMENT

OF

BRITISH PLANTS.

IN FOUR VOLUMES.
C. Baldwin, Painter,
New Bridge-street, London.
AN ARRANGEMENT OF BRITISH PLANTS, ACCORDING TO THE LATEST IMPROVEMENTS OF THE LINNEAN SYSTEM; WITH AN EASY INTRODUCTION TO THE STUDY OF BOTANY. ILLUSTRATED BY COPPER PLATES.

BY WILLIAM WITHERING, M.D. F.R.S.
MEMBER OF THE ROYAL ACADEMY OF SCIENCES AT LISBON; FELLOW OF THE LINNEAN SOCIETY; HONORARY MEMBER OF THE ROYAL MEDICAL SOCIETY AT EDINBURGH, &C.

THE SEVENTH EDITION. IN FOUR VOLUMES: INCLUDING THE MOST RECENT DISCOVERIES, AND NUMEROUS ENLARGED ANNOTATIONS ILLUSTRATIVE OF THE VEGETABLE ECONOMY.

BY WILLIAM WITHERING, Esq. LL.D. F.L.S.
EXTRAORDINARY MEMBER OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH; MEMBER OF THE ROYAL SOCIETY OF LITERATURE OF THE UNITED KINGDOM, &C. &C. &C.

"Nor are the Plants, which Britain calls her own, Few, or unlovely." Mason.

VOL. III.

LONDON: PRINTED FOR C. J. G. AND F. RIVINGTON; J. NUNN; LONGMAN, REES, ORME, BROWN, AND GREEN; T. CADELL; J. RICHARDSON; J. M. RICHARDSON; HATCHARD AND SON; R. SCHOLEY; P. W. AND G. WYNNE; S. RAGSTER; BALDWIN AND CRADDOCK; HURST, CHANCE, AND CO; HAMILTON, ADAMS, AND CO; WHITMORE AND FENN; WHITTAKER, TREACHER, AND CO; J. DUNCAN; J. COCHRAN; SIMPKIN AND MARSHALL; W. MASON; G. COWIE AND CO; T. BUMFUS; G. WILSON; T. AND W. BOORNE; J. DOWDING; W. J. AND J. MAYNARD; SMITH, ELDER, AND CO; J. RAIN; E. HODGSON; HOUSTON AND SON; AND STIRLING AND KENNY, EDINBURGH; AND G. AND J. ROBINSON, LIVERPOOL.

1830.
"Long work it were,
Here to account the endlesse progeny
Of all the Weeds that bud and blossom there;
But so much as doth need must needs be counted here."
Spenser.

"The contemplation of Nature can never be otherwise than beneficial, and to see her beauties with an instructed eye will add a zest, even to the loveliest province of Creation, utterly unfelt by the careless observer." Brit. Bot.
CLASS XII.

ICOSANDRIA.

MONOGYNIA.

PRU'NUS. *Cal.* beneath, five-cleft: *Bloss.* five petals: *Drupa* with an entire nut.

[Cratægus.]

DIGYNIA.

CRATÆ'GUS. *Cal.* superior, five-cleft: *Bloss.* five petals: *Berry* (only dimpled, E.) two-seeded.

[Prunus insititia.]

PENTAGYNIA.

MES'PILUS. *Cal.* superior, five-cleft: *Bloss.* five petals: *(Apple (Pomum) five-seeded, deeply concave at the top. E.)*

PY'RUS. *Cal.* superior, five-cleft: *Bloss.* five petals: *(Fruit a Pomum, with two to five (generally two-seeded) cells. E.)*

SPIRÆ'A. *Cal.* beneath, five-cleft: *Bloss.* five petals: *Pericarps* three to twelve, one-celled, two-valved: *Seeds* one to three in each cell. E.)

POLYGYNIA.

RO'SA. *Cal.* five-cleft: *Bloss.* five petals: *Calyx* contracting so as to form a fleshy, many-seeded berry.

VOL. III.
RU'BUS. Cal. five-cleft: Bloss. five petals: Berry superior, compound, (granules single-seeded. E.)

TORRMENTIL'LA. Cal. eight-cleft: Bloss. four petals: Seeds eight, awnless.

DRY'AS. Cal. five to ten-cleft: Bloss. five to eight petals: Seeds many, with feathery awns.

FRAGA'RIA. Cal. ten-cleft: Bloss. five petals: Seeds many, deciduous, smooth, placed on a berry-like receptacle.

POTENTIL'LA. Cal. ten-cleft: Bloss. five petals: (Seeds many, beardless, rugose. E.)

GE'UM. Cal. ten-cleft: Bloss. five petals: Seeds many, with a jointed awn.

CO'MARUM. Cal. ten-cleft: Bloss. five petals: Seeds many permanent, upon a fleshy, globular, villous receptacle.

[Spiræa. Sempervivum tectorum.]

MONOGYNIA.

PRU'NUS.* Calyx five-cleft, beneath: Petals five: Drupa one-celled, closed at top: Nut with prominent seams.

P. PADUS. Flowers in pendulous bunches: leaves deciduous, with two glands at the base on the under side.


(A small tree, with smooth bark. E.) Calyx finely serrated; within at the bottom beset with numerous woolly hairs. Petals serrated. Stamens twenty-five. (Leaves alternate, on leaf-stalks, inversely-egg-shaped, sharp-pointed, serrated, veined, smooth, slightly glaucous, smelling somewhat like Rue. Bunches solitary, simple, many-flowered, leafy at the base. Flowers white. Fruit black, nauseous. Fl. Brit. Stone of the drupa rugose, answering the characters of Amygdalus, not smooth as in Prunus, thus confirming the assertion of Gærtner, that no solid character exists between these two genera. E. Bot. E.)


* (Said to be a word of Asiatic origin; in Greek πρυν, supposed to signify the wild Plum. E.)
Anderson. In every wood near Keswick, and in Ennersdale. Mr. Winch. Arniston woods, near Edinburgh. Dr. Greville. But no where with more pleasing effect than in the romantic Dovedale, does—

"The light Bird Cherry hangs its flag,
In snowy splendour from the crag." E.)

P. cer'/asus. Umbels mostly on short fruit-stalks: leaves egg-spear-shaped, smooth, plicate: (slightly downy beneath. E.)

(E. Bot. 706. E.)—Sheldr. 54. 1 and 6—Hunt. Evol. 188. 1 p. 181. Ed. ii.

(A moderate sized tree with smooth, greyish, horizontally splitting bark. E.)

Leaf-scales toothed. Floral-leaves three-cleft, serrated; the intermediate one leafy. The terminal buds producing leaves, the lateral ones flowers, which are from the last year’s shoots. Blossoms white. Fruit red. Linn. (Leaves on leaf-stalks, sharp-pointed, unequally serrated, veined; the younger ones more or less pubescent. Calyx reflexed. Nut hard, smooth. Fl. Brit. E.)


* The Bird Cherry grows well in woods, groves, or fields, but not in a moist soil. It bears lopping and suffers the grass to grow under it. The fruit is nauseous: but bruised, and infused in wine or brandy, it imparts an agreeable flavour. (Dr. Clarke says, the Swedes flavour their distilled spirits with the blossoms. E.) A strong decoction of the bark is used by the Finlanders to cure syphilitic complaints; which practice is corroborated by the testimony of M. Broerland in the Stockh. Tr. He directs six ounces of the dry, or eight of the fresh bark, to be boiled in eight to four pints of water. The dose is four ounces, four times a day. —It alone cures the slighter infections, and combined with Mercury facilitates the cure of the severer states of the disease. Venel. A decoction of the berries is sometimes given with success in dysentery. The wood being smooth and tough is made into handles for knives, and whips, (and is used in cabinet work. The twigs are tough and pliant, and serviceable for withs. E.) Sheep, goats, and swine eat it. Cows are not fond of it. Horses refuse it. (Erineum Padi, Grev. Scot. Crypt. 157. 1; "in distinct roundish patches, whitish when young, changing to orange and deep brown," may be observed on the leaves. E.)

† (In France the Wild Cherry-tree is admitted as an ornament to avenues and parks; but, though it attain to considerable height, and is attractive when in full blossom, it can be deemed little more than the beauty of a day. The double-blossomed, (of which dwarfs may be procured), and the red-flowering varieties, have strong claims to admittance into the shrubbery; especially the former, whose multiplicate and snow-white petals, displayed on long, slender footstalks, obtain universal admiration. E.) The Cherry-tree loves a sandy soil, and an elevated situation. The gum that exudes from this tree is equal to gum arabic, (obtained from certain species of Acacia) though differing in chemical qualities. E.) Hasselquist relates, that more than one hundred men, during a siege, were kept alive for nearly two months, without any other sustenance than a little of this gum taken into the mouth sometimes, and suffered gradually to dissolve. (To produce an effect so surprising, we must suppose it to operate in a two-fold manner,—both by lubricating the coats of the stomach and obtunding the inordinate action of the gastric fluid, as also, though perhaps in a secondary degree, by its nutritive quality; in which it would appear even to approach animal gluten, which yields so extraordinary a degree of support in the form of portable soup, or cavalry balls, and experienced in the late campaigns. (It is remarkable that the barks of all the trees which furnish this bland mucilaginous substance are highly astringent; that of the Acacia itself is used in India for tanning; and in our country the Cherry and Plum trees, which also yield gum, have astringent barks." Edin. Dispens. The fruit,
(Var. 2. Fructu nigro. Fruit black. The hairiness on the under surface of the leaf proves too variable to constitute a specific distinction. E.)


**Wild Plum-tree.** (Welsh: Eirinen; Eirin-bren. P. communis domestica. Huds. P. gallica; (the fruit.) Pharm. Lond. Hedges, and similar situations, though perhaps rarely found in a perfectly native state. E.)

T. April.*
P. insititia. Fruit-stalks in pairs: leaves egg-shaped, slightly pubescent beneath, convolute: branches ending in a spine.

E. Bot. 841.

Stipulae cloven to the base. Calyx, its outer skin may be pulled off, adhering to the fruit-stalk, and appearing like an outer cap. Flowers white; larger than those of P. domestica. Style straight. (Fruit black, with a bluish bloom; sometimes the colour of bee-wax, or red. In our climate this tree does not attain the size of P. domestica. Berry roundish, austere. E.)


Styles sometimes two. St. (A bushy, rigid, spinous shrub, with dark-coloured bark; considerably smaller than the last; flowers white, more decidedly preceding the leaves, which are scarcely an inch long. Fruit a black, roundish, austere berry. E.)


* The fruit is acid, but so tempered by a sweetness and roughness as not to be unpleasant, particularly after having been mellowed by frosts. A conserve is prepared by mixing the pulp with thrice its weight of sugar. The bark of the roots and branches is considerably styptic. An infusion of the flowers, sweetened with sugar, is an aperient, not improper for children.

† This species is not well adapted to grow in hedges, because it spreads its roots wide, and encroaches upon the pasturage; but it makes a good dead fence. The wood is hard and tough, and is formed into teeth for rakes, and walking sticks. From some effects which I have repeatedly observed to follow the prick of the thorns, I have reason to believe there is something poisonous in them, particularly in autumn. The tender leaves dried afford the best substitute for tea that has yet been tried. The fruit, bruised and put into wine gives it a beautiful red colour, and a pleasant subacid roughness. (It is believed to be a common ingredient in (British) Port-wine. E.) An infusion of a handful of the flowers is a safe cathartic. The bark powdered, in doses of two drams, will cure some agues. Letters written upon linen or woollen with the juice of the fruit will not wash out. Sheep, goats, and horses eat the leaves. The different species of Prunus furnish nourishment to the Papilio Crataegi, Polychloris, and Betula; Phalena quercifolia, quercus, lavestris, ceruleocphalo, pavonia, neustria, Oxycanthne, Citagra, primaria, and brunata; Aphis padi; Carculio Cerasi, and Pruni; and Scarabaevus hunting. Pucinea Pruni will frequently be found scattered in minute yellow spots, on the under side of the leaves, especially during autumn: Xyloma rubrum, "roundish, red, changing to dark brown," Gre. Scot. Crypt. 120: Part. t. 33. pervades the substance to both sides; and Spharia Prunastri, "ventricose, mouths spinulose, bursting through the bark, four-sided," may be observed on the decaying branches about the month of April. Unless to the observant eye of the naturalist, ever alive to each indication of returning Spring, complen-
DIGYNIA.

CRATEÆ'GUS. Cal. five-cleft: Petals five: Berry beneath, (only dimpled, E.) one-celled, two-seeded.

C. OXYACANTHA. (Thorny: leaves smooth, mostly three-cleft: segments blunt, serrated: flowers corymbose. E.)


(A small bushy tree, with smooth bark and hard wood. E.) All the varieties are found in our hedge rows; that with one pistil is the most common; that with three the most rare. (Branches smooth, stiff, spinous. E.) Flowers white, but in clayey soils pinky red, (highly fragrant. E.) Berries mostly a coral red, but sometimes yellow, or white. Leaves glossy, the segments more or less blunt or acute, serrated upwards, but entire at the base; the middle segment three-cleft. Capsules mostly single-seeded, but sometimes there is a second cell, and the rudiment of a second seed.

Var. 2. Monogyna. Flowers with one pistil; leaves, segments more acute and expanding.


Var. 3. Trigyna. Flowers with three pistils.

Hunt.—Evel. 398. ii. p. 92. Ed. 2d.

Var. 4. (Glastonburiensis. E.) Glastonbury Thorn. Appendages at the base of the leaves kidney-shaped, toothed, very large.

In a lane beyond the church-yard on the opposite side of the street near a pit grows a very old tree. A woman ninety years of age never remembers it otherwise than as it now appears. Another tree of the same kind may be seen two or three miles from Glastonbury. It has been reported to have no thorns, but that I found to be a mistake; it has thorns, like other Hawthorns, but which likewise on aged trees are but few. There is also a full sized tree of this kind in the garden at Piper’s Inn. This variety blossoms twice a year; the winter blossoms, which are about the size of a sixpence, appear about Christmas, (it may

as may be this primaveral ensign amidst leafless and dark associates, it attracts but little notice. Mr. Howitt has however described its peculiarities in verse:—

"The April air is shrewd and keen,  
No leaf has dared unfold,  
Yet thy white blossom’s radiant sheen,  
Spring’s banner, I behold.  
Though all beside be dead and drear,  
Undauntedly thy flowers appear."

Nor does even this ordinary and neglected little tree fail to yield its moral to the reflecting mind; the caduceous character of the petals, which fall in showers with the slightest agitation, offering a fit emblem of that premature decay, so often observable in

"Youth—the vision of a morn,  
That flies the coming day:  
It is the blossom of the Thorn  
Which rude winds sweep away." Cunningham. E.)
occasionally happen on the precise day, as recorded in the legend, E.) but sometimes sooner. These produce no fruit. The berries contain only one seed, and there seemed only to have been one pistil, but it was late in the season when I examined it, (Oct. 1792). I was informed that the berries when sown produce plants nowise differing from the common Hawthorn. Probably the tree which gave birth to the tradition (of its having sprung originally from the staff of Joseph of Arimathea, who, with his missionary companions, resolving there to found the first Christian church in this land, stuck it into the ground, when it quickly put forth branches and blossoms. E.) grew within the walls of the abbey, and may have died from age, or been destroyed at the time of the Reformation.*

* (However that may have been, the existence of this *lausus nature*, (to which some few other instances approximate, vid. *Quercus*), is unquestionable, and proved to be something more than what Dr. Hunter apprehended, "a sanctified deceit, sunk into discredit even with the meanest of the vulgar," *Sylv. i. 178*. We therefore, in addition to the particulars given by our author of this extraordinary, though not miraculous thorn, nearly forty years ago, insert a few selected from the "History of the Abbey of Glaston," 4to. 1826, by the Rev. R. Warner, F. A. S. who has ably illustrated the interesting remains of that superb monastic establishment,

"Where pendent ivy ill supplies
With perishable gloom
Those rays that, rich in varying dyes,
Gleam'd o'er a martyr's tomb."

"Since Dr. Withering's time," observes Mr. Warner, "the Holy Thorn has been introduced into many parts; and is now found in various gardens of Glastonbury and its vicinity. Pilgrimages continued to be made to this wonderful tree, even in Mr. Eyton's time;" (ob. 1721). "and its scions were sought for with the greatest avidity, both by the pious of the Romish Church, and the superstitious of other systems of faith, till within these eighty years."—London Evening Post, Jan. 1753: "A vast concourse of people attended the noted thorn on Christmas-day, new style; but, to their great disappointment, there was no appearance of its blowing, which made them watch it narrowly till the fifth of January, the Christmas-day, old style, when it blew as usual." Strype records one of Hen. VIII.'s "Visitors" having at the spoliation of the Abbey, sent up with various relics, (in 1536), "First, two flowers, wrapped in white and black sarcenet, that on Christenmass even hora ipsa quæ Christus natus fuerat, will spring, and burge, and bare blossoms." A later authority states, "in a word, the blossoms of this tree were such curiosities beyond seas, that the Bristol merchants carried them into foreign parts."—According to some writers the spot on which St. Joseph originally planted his staff, and where the wonderful thorn stood, and successors of the same peculiar kind were for centuries, by grafts or buds, preserved, until the political commotions in the reign of Charles I, when the tree, being considered a relic of Papistry, was nearly destroyed by a puritan soldier (who lost his own life by a splinter in the impious attempt), was on the south ridge of Weary-all-Hill, at present called Werrall Park. About, the year 1740, the stump or root was to be seen, but nothing now (Avalonian Guide, 1818), remains, except grafts from it growing in different places: the oldest of them stands near St. John's Church-yard at Glastonbury, and is a large tree which continues to blossom twice a year." E.)

† On account of the stiffness of its branches, the sharpness of its thorns, its roots not spreading wide, and its capability of bearing the severest winters without injury, Hawthorn is universally preferred for making hedges, whether to clip or to grow at large. (The bark, with copperas, is used by the Highlanders to dye black; and without, yellow. In
Kamschatka the haws are fermented into wine. It often happens that during the spring months, Hawthorn hedges suffer so severely from the ravages of insects, (combined with other less understood causes of blight), that the leaves are entirely consumed; the hedges presenting, for a long extent, the appearance of winter sprays, covered only with a cottony web. Of the caterpillars engaged in this denuding process, the principal performers have been found to be the larvse of the little Ermine Moths *Phalcena Evonymella*, and *P. Padella*. E.) The wood is hard and tough, and is formed into axle-trees and handles for tools: (is good for the turner's use; combs were formerly made from the root. The seed of the Hawthorn seldom vegetates till the second year; but if turkeys be fed with these haws, and their egesta be planted in drills, the young plants appear above ground the first year: a fact from which it might not unreasonably be inferred that by the timely application of stimulating manure a crop may be raised the first season. Evelyn has the following curious remarks on this subject. "The haw, and many other seeds, being invested with a very hard integument, will now and then suffer imprisonment two whole years under the earth; and our impatience at this does often frustrate the resurrection of divers seeds of this nature; and thus will the seed of hollies, (concerning which there goes a tradition, that they will not sprout till they be passed through the maw of a thrush), sleep two entire years in their graves: also sometimes yew and sloe." But the same accurate authority further observes that the vegetation of such seeds may be ensured and expedited by being "washed, then buried and dried in sand a little moist, any time in December, and so kept in some vessel in the house all winter, and in some cool shady place abroad all summer; sow them the spring after:" thus ensuring the best of all fences, the

"Tutela naturalis et viva." Varro.

The different species of *Crataegus* afford nourishment to *Papilio Cratcpgi*: (*Arctia chryorrhoa, A. phaorhea, Noctua Orxyacantha, Careicelio nilens, Pyrochroa rubens, Eodles pelfifa, Biiurus tomentosus and fumatus, Lagria hirta, Mordella aculeata, Chilo Cacti, and quadri-verrucatus, Anaspis bi-fasciatus, Rhynchites equatus, R. nanus, Guleruea Cratcgi, Helice erata, Pontia Cratcgi, Lasiocampa Cratcgi, Callinerpka cerulescophalus, and Calosoma Inquisitor.* The fortunate Entomologist may chance to discover nestled within the lovely blossom of the thorn, on a hot summer's day, the rare *Buprestis nitidula*, brilliant as an emerald. Vid. Curt. Brit. Entom. v. 1. pl. 31.

A very destructive parasitic fungus, well known to gardeners as a kind of mildew or blight, and commonly taken for an insect, frequently attacks and distorts the younger leaves of the Hawthorn, Apple, and Peach trees, and seems to result from a peculiar state of the atmosphere. It is *Sporotrichum macrosporum*, of Link: forming a "pulverulent hoariness, interspersed with very minute tufts; filaments few, branched, struggling; sporeules large, obtusely oval." Grev. Fl. Edin. The leaves are also subject to *Erinus clandestinius*; "peridia lax, clavate, whitish; often concealed by the involute, diseased margin of the leaf." Grev. Scot. Crypt. 141.2; and *Ecidium laceratum*; Grev. Scot. Crypt. 203; "peridia densely aggregated, elongated, submersed, pale brown, irregularly torn; sporidia brown, copious," a parasite of singularly curious structure, as displayed by Dr. Greville; investing the leaves, small branches, and fruit of Hawthorn abundantly. Near the rustic bridge in the Belan grounds, at Wynnstay, North Wales, the Editor measured a Hawthorn six feet in girth, five feet from the ground, which may be considered an extraordinary size. As an isolated individual, few of its kind will be viewed with deeper interest than the identical Thorn planted by the hand of the ill-starred, but fascinating Queen Mary, in the garden court of the Regent Murray's house, and still extant. Its present dimensions are about five feet in girt near the base, dividing upwards into two branches, one nearly four

*(From μέσος, middle, and πέταλον, to bind together; referring to its astringent qualities, E.)*
M. german'ica. Leaves spear-shaped, downy underneath: flowers solitary, sessile, terminal.

feet in circumference, the other three. A flattering representation of this remarkable tree appears in Jones’s very elegant work, "Edinburgh Illustrated." Phillips justly remarks that the garland of Flora does not possess a more charming blossom than this British hedge beauty; nor do the most luxuriant spices of Asia yield a more grateful perfume than this flowering shrub." Before the Christian era, according to Diodorus, the Troglodites adorned the funeral obsequies of their parents with branches of Hawthorn, as a joyful emblem of their lively faith that death was indeed the janua vita, having passed through which they should never again be separated. It was appropriated to the nuptial chaplets of Athenian maidens, and composed the fasces nuptiarum of the Romans: nor did our ancestors omit with it to decorate the May-pole on their Floral festival. In fact, whether the Hawthorn be permitted to live its century in wild luxuriance, attaining to the height of twenty or thirty feet, or be destined to submit to disfigurement and degradation in the more immediate service of man, it equally merits our regard. The standard tree, whether we view its flowers in the spring, its foliage in the summer, or its fruit in the autumn and winter, is one of the most ornamental plants placed singly, that can be scattered over a park or lawn.

"In pearls and rubies rich the Hawthorns shew,
While through the ice the crimson berries glow." Phillips.

Nothing can exceed its loveliness in such situations during the months of May and June: especially as displayed in the natural glades of our extensive forests, or combined with park scenery as at Woburn, Bedfordshire; Eastwell, Kent, &c., where each bush at early morn, or eventide, bathed in nectarous dew, fills the circumambient air with most refreshing odours, and, in general effect, almost rivals the Hesperian groves. Nor should the Thorn or Quick be slighted in its more abject condition, where

"Fringing the forests devious edge,
Half rob'd appears the Hawthorn hedge;
Or to the distant eye displays
Weakly green its budding sprays."

But nowhere is this too generally despised tree observed to more advantage, or at least connected with more interesting associations, than when situated on the village green; where it may, for successive generations, have distinguished the arena of rural sports, and conferred a zest on many a passing event.

"The Hawthorn bush, with seats beneath the shade,
For talking age and whispering lovers made."

Adjacent to which should ever be seen the aspiring May-pole, decked with garlands of the choicest flowers; and which, even though originating in pagan rites, is worthy of being perpetuated through more enlightened generations, as the focus of joyous attraction, healthful exercise, and innocent amusement; preserving a happy medium between morbid refinement and gross sensuality: or further afield,

"Where every shepherd tells his tale,
Under the Hawthorn in the dale;"

Or as the oft-frequented "trysting tree" so emphatically described by the impassioned poet,

"If heaven a draught of heavenly pleasure spare,
One cordial in this melancholy vale,
'Tis when a youthful, loving, modest pair
In other's arms breathe out the tender tale
Beneath the milk-white Thorn that scents the evening gale."

A very correct naturalist has observed, that few plants deviate from their stated season of blossoming so little as the Hawthorn; being, in a long course of years, neither allured by the blandishment of the most seductive April, nor materially retarded even by "Chill Winter lingering in the lap of May."

The common Hawthorn sports in the following varieties: the large scarlet Hawthorn;

...

A tree of very unequal, often humble and deformed, growth, spreading. Leaves four or five inches long, on short stalks, single-ribbed, assuming a handsome stellate form of growth. E.) Floral-leaf strap-shaped. Calyx fleshy, woolly within; teeth longer than the blossom. Stamens unequal, thirty or more. Summits cloven. Blossoms white, large. Fruit reddish brown, (depressed, concave at the top, austere till mellowed by keeping. In its wild state this tree is furnished with shining thorns, though when cultivated it is entirely without them. Roth and Hal. E.)


(M. cotoneaster. Leaves elliptic-ovate, entire, downy beneath: germen smooth: styles three or four.


A small bush, with alternate, spreading or partly recumbent, round, leafy, brown, smooth branches; downy and somewhat angular when young. Leaves alternate, deciduous, an inch long, more or less; green, smooth, from the additional splendour it acquires by its oblong, smooth, and large, bright scarlet berries, it is propagated to enliven plantations. Yellow Haw is deemed an "exquisite plant," the buds at their first coming out in the spring are of a fine yellow, and the fruit is the colour of gold, and so continues all the winter. Maple-leaved Hawthorn has few thorns, larger leaves than common, succeeded by bunches of beautiful shining red berries. Nature seems to have peculiarly designed the double-blossomed kinds for the pleasure garden; they will blossom freely either as trees or dwarf shrubs, and nothing can be more attractive than the roseate hue of the pink kind. If such be the charms resulting from the general view of this plant in its plenitude of florescence to the common observer; neither will the more strict scrutiny of its particular parts in their original simplicity yield less gratification to the scientific student; for, as is remarked in the Sylva Florifera, "the Botanist looks into the flowers of the Hawthorn, not merely to notice the stigma and to count the stamens which surround it, but he observes the shape of the five petals, whose concave forms protect the pollen, and mature it by acting as reflectors. He then sees them bend over their stamens, and rest their heads of pollen on the stigma. He is delighted with the regularity with which they discharge their prolific powder, and retire to give place to other stamens, until the whole have performed their office without confusion. He knows then that the petals have accomplished their part towards the formation of the future plant, and he sees them given to the wind without regret, because he understands it is necessary for the young fruit to enjoy the juices of the plant, without their being spent any longer on the petals." E.)

* (This species and varieties are cultivated in gardens for the fruit.

"The Medlar, fruit delicious in decay." Philips.

"The Nottingham kind is considered, though smaller, preferable for richness and poignancy of flavour. When firm and sound, Medlars are of a singularly austere disagreeable taste; yet having lain some time after being gathered, till they assume a state of decay and become soft, they acquire a flavour extremely agreeable to many, though to others altogether unpalatable. These fruits should be gathered towards the end of October or beginning of November, when some should be laid in moist bran, (in several layers), to forward their decay; others on straw in the fruitery; those in the bran will begin to be ready for use in about a fortnight, and those laid on straw will come gradually forward in succession." Eneye. Brit. In the North of England it rarely ripens its fruit, though it there blossoms freely. Winch. Geog. E.)
and even above; white, cottony and veiny beneath. Foot-stalks short, downy. Stipulas in pairs, tapering, chestnut-coloured, smooth; fringed at the edges. Flower-stalks downy, from the same buds as the leaves, and always shorter than them. Bracteas minute, red, lanceolate, acute. Flowers drooping, pale red. Fruit finally turning black, mealy, tasteless.

Dwarf Quince-leaved Medlar. Cotoneaster vulgaris. Lindl. in Linn. Tr. vol. xiii. Discovered on the limestone cliffs of the Great Ormshead, Carnarvonshire, in various places, by Mr. W. Wilson in 1825; particularly near Llandudno, growing on the shelves of the rocks which incline to the north, in the vicinity of the New Mine. Sm. Hook. E.)

PYRUS.† Cal. superior, five-cleft: Petals five: (Pomum with two to five membranous, bivalved capsules: Seeds two. E.)

P. communis. Leaves entire, serrated, smooth: flowers forming a corymb.


Blossom white. (A tall tree; main branches upright, the smaller ones curving downwards: the younger leaves clothed with an evanescent woolliness. Leaf-scales strap-shaped. Corymb hairy. Fruit tapering towards the base, hard, acerb. Fl. Brit. E.)


T. April—May.‡

* (The roots of this shrub running very deep in the earth, it has been recommended by Linnaeus for making low hedges, in dry broken ground: but Hooker states that it is liable to be browsed by sheep. E.)

† (According to De Thieis, derived from the Celtic Peren; whence the Anglo-Saxon Pere, the English Pear, and French Poiré. E.)

‡ The Pear-tree loves a fertile soil and sloping ground; but will not thrive well in moist bottoms. It stands the severest winters and does not destroy the grass. The wood is light, smooth, and compact; it is used by turners, and to make joiners’ tools; and for picture-frames to be stained black, it is particularly valuable. The leaves afford a yellow dye, and may be used to give a green to blued cloths. The fruit is so austere (as to be relished only, like other crudities, by hedge-hogs and swine; E) but, when cultivated, highly grateful, (as is proved by the more than hundred varieties of excellent pears which all originate from this: and distinguished as summer, autumn, and winter fruit, afford a grateful supply throughout the year. E.) The juice of the fruit fermented is called Perry, large quantities of which are raised in Worcestershire and Herefordshire for that purpose. The Squash, the Oldfield, and the Barland Perrys are reckoned the best, and are little inferior to wine. (The superior excellence of French pears is supposed to arise, not altogether from advantages of climate, but partly from a practice which ought to be adopted by British pomonists, viz. the grafting on a quince stock: which has the property of stunting the growth of pears, of forcing them to produce bearing branches instead of sterile ones, and of accelerating the maturity of the fruit. According to a report in ‘Annales de Chimie,’ tom. 68, by M. Dubuc, sugar has been prepared in France both from pears and apples, which are found to yield about one ounce of sugar from each pound weight of the fruit, and which might be afforded where pears and apples cost not more than one shilling the hundred weight, for about twopence per pound. Near the parsonage house an Horn Lacy, a seat of the Duke of Norfolk, in Herefordshire, the Rev. R. Warner observed a most remarkable Pear Tree, covering nearly
P. ma'lu's. (Leaves ovate, acute, serrated: flowers in a simple sessile umbel. E.)

(Fl. Dan. 1101. E.)—E. Bot. 178—Blackw. 178—Ger. 1276. 1. 2. 3—Ger. 1272. 4—Ger. Em. 1461—Park. 1503. 2.

(A small tree with spreading knotty branches. Leaves when young downy underneath; stipulas strap-shaped: umbels terminal, sessile, hairy. Fruit roundish, an inch in diameter, umbilicated at the top and bottom, acid. Branches spreading, more horizontal than in the former species, tortuous. Fl. Brit. E.) Leaves more circular than those of the preceding species. Petals delicately tinged with red on the outside; blossom very beautiful, and slightly fragrant.


a quarter of an acre, and forming an orchard of itself, having yielded for many years from twelve to sixteen hogsheads of Perry. This tree has spread from a succession of layers which have rooted and bear fruit. E.) Horses, cows, sheep, and goats eat the leaves, which afford nourishment to Papilio polycolores, Phalaena Populi, lathicipeda, quercifolia, paulbonda, ceraiocephala, brunnata, Pomonella, Aphis Pyri, Cerces Pyri, Monaca Pyristri. Linn. (A. Tineae, with a caterpillar having a yellowish body and black head, in early spring, establishes itself on the under surface of the leaves, in a downy, russet-coloured projection over a round excavation in the cuticle and parenchyma. The case in which the caterpillar resides is composed of silk, spun from its mouth, almost as soon as it is excluded from the egg. This little tent is preserved in a perpendicular position by silken threads, and is moved from one part of the leaf to another, the inner eating away the space immediately beneath it. When these little creatures abound to the great injury of Pear-trees, every leaf will be found bristled with them, and covered with little specks, the vestiges of their former repasts.—Other curious details may be found in "Entomology" by Kirby and Spence, vol. 1. 461. The leaves are also, in their decaying state, subject to the parasitic fungus, Ecdciam cancellatum, with "capsules conical, red brown; at length splitting, forming a tuft of whitish, permanent threads, cohering at their apex." This fungus first appears in small, black, rough spots, on the upper side of the leaves, on an orange-coloured ground. Sowerby. 409. 410; and similarly situated may likewise be observed, though not so commonly, Erinacea Pyritinnium, in broad oblong patches, changing from white to rust colour. E.)

*—(From the Celsic Api, whence Teutonic Apfel, and English Apple. E.)

† The Crab-tree flourishes better on declivities and in shady places, than in open exposures or boggy lands. Grass and even corn will grow beneath it. The bark affords a yellow dye. The wood is tolerably hard; it turns very clean, and when made into cogs for wheels, obtains a polish, and wears a long time. The acid juice of the fruit is called Verjuice, and is applicable to recent sprains, and other cases as an astringent or repellent. With a proper addition of sugar it is probable that a very grateful liquor might be made with the juice, little inferior to Old Hock. Horses, cows, sheep, and goats eat it; swine are very fond of the fruit. Linn. Phalaena dispar, Populi, Fascelia, Chrysorhoea, Psi, Oporana brunnata, Ponomella, Menachea; Aphis Mali; and Scarabaeus Horticola feed upon it. (Of Cyder large quantities are made in Herefordshire, Devonshire, part of Worcestershire, Somersethire, and Gloucestershire, in a soil of deep clay. The stronger sorts, as the Styre Cyder, will bear exportation to the East and West Indies. The Cyder Apple-trees were originally brought from Normandy, and it is supposed that the liquor would now be improved by a fresh importation. A simple method of forcing barren trees to bear fruit has, according to Dr. Noelden, been practised with success in Germany, and though perhaps more generally adapted to wall trees, may occasionally be applied to standards. At the budding season, make two circular incisions a quarter of an inch apart, quite through the outer and inner bark of the branches you intend to force. Remove the intervening ring of bark, leaving the wood bare. By this process the fruit will be increased both in size and quantity. Thomas Andrew Knight, Esq. F. R. S.
P. torminalis. E.) Leaves heart-shaped, with seven angles: lowermost lobes divaricating: (flower-stalks corymbose, branched. E.)

so justly celebrated for his researches into vegetable physiology, has published, among various other papers, a volume of very ingenious experiments on Apple and Pear Trees, and subsequently a work entitled the "Pomona of Herefordshire," in which will be found descriptions of both the old and improved fruits, together with highly finished representations of each kind. Mr. Knight is of opinion that all the varieties, (as in this instance from the parent stock of the Common Crab), are limited in their existence; hence, he infers, so many once valuable kinds are now apparently worn out: and that the only permanent reproduction is that of species by seed. The Rev. Mr. Williamson has proved experimentally, in Kent, that trees raised from the kernels of the fruit are still liable to disease and premature decay, and is inclined to believe that the want of summer heat must be deemed a principal cause of this failure. He observes that a hot summer will produce a temporary revival; orchards apparently worn out, starting into fresh vigour, and bearing large quantities of fruit: and that though in Russia and America the winters are more severe, the summers are hotter than with us, and therefore both moss and cankers are comparatively unknown on their Apple-trees. In confirmation of the above remark, and also in refutation of the fanciful theory, that the Golden Pippin, and some others of our very best apples, were degenerating, and rapidly disappearing, from mere sympathy with the parent stock, it should be recorded, that in consequence of the late genial summers, (1821, &c.) both in Covent Garden market, and the nurseries round London, there was as fine and as plentiful a crop of Golden Pippins as was ever known. The planters of orchards, therefore, need not despair of this favourite apple, whose cider surpasses in richness "the gay champagne." The Golden Pippin is almost peculiar to England, and should be invariably grafted on a Crab stock to insure sound and piquant fruit; those trees raised on free stocks producing, though perhaps a larger, yet a mealy and degenerate fruit. It may be well to know that moss and insects, so seriously detrimental to neglected orchards, and equally infesting both Apple and Pear trees, may be most effectually removed by a wooden scraper, and afterwards so completely destroyed by a dressing of fresh made lime from the kiln, slacked in water and applied with a brush, that renewed vigour, and even a renewed outward bark, will sometimes supervene. Among numerous mischievous intruders, the American or White Blight, (Aphis lanata), which commits extensive ravages on Apple trees, from its curious habits merits the particular notice of the young Entomologist. (Vid. Journ. Nat. PI. vi. 3.) It will be found covered and quite concealed by a peculiar secretion, which transpires through numerous pores in the skin, (forming a cradle for the viviparous creatures), so that the crevices in the bark which it inhabits look as if they were filled, not with animals, but with cotton. Nor is the fruit itself exempt from a peculiar pilferer, which fattens on its heart's core. The cross-bill, (Loxia curvirostra), attracted even from the pine forests of Germany, (for it rarely breeds in England), migrates to our orchards to feed upon the seeds of the Apple, and extensive is the mischief it does by cutting the fruit asunder with its well constructed mandibles, in order to obtain the kernels. The juice of apples is a menstruum for iron. A solution of iron in the juice of Golden Rennets evaporated to a thick consistence, proves an elegant chalybeate, which keeps well. Greatly as we venerate ancient usages, and regret the departure of good old times, among the vestiges of superstition, "more honoured in the breach than the observance," "The custom of saluting the Apple trees at Christmas, with a view to another year, is still preserved both in Cornwall and Devonshire. In some parishes the parishioners walk in procession visiting the principal orchards in the parish. In each orchard one tree is selected as the representative of the rest; this is saluted by a certain form of words, which have in them an air of incantation. They then either sprinkle the tree with cider, or dash a bowl of cider against it, to ensure its bearing plentifully the ensuing year." Forster's Per. Cal. The delicately blended pink and white of the Crab blossom; renders it still more exquisitely beautiful, either collectively or individually, than that of the Apple: but every one not wholly lost to the vivifying influence of Spring, or insensible to the most lively parterre in the garden of nature, will acknowledge that the combined beauties and refreshing fragrance of the Apple or Pear orchard on the incense-breathing mom of rosy May, when the trees have assumed their most luxuriant verdure, and the very hedges teem with sweets, are unrivalled; and be ready to exclaim,
ICOSANDRIA. PENTAGYNIA. PYRUS.


"Oh! who that has an eye to see,  
A heart to feel,—a tongue to bless,  
Can ever undelighted be  
By Nature's magic loveliness!"

No where may the admirers of such scenery be more completely gratified, than on contemplating at such a season, the boundless and richly diversified prospect from the summit of Malvern Hill, (an elevation of one thousand feet above the vale), whence all the nearer landscape, within distinct observation, comprehending on one side the Pear-trees of Worcestershire, on the other, the Apple-trees of Herefordshire, will be found to display

"One boundless blush, one white-empurpled shower  
Of mingled blossoms.

Such a prospect must excite sentiments not merely of admiration, but of gratitude:

"Soft roll your incense herbs and fruits and flowers,  
In mingled clouds, to Him whose sun exalts,  
Whose breath perfumes you, and whose pencil paints."

This gorgeous show is succeeded from the end of July to October, by the gradual ripening of the different kinds, for the dessert, the kitchen use, or the cyder making; most of which improve in perfection after being gathered, and several of the winter kinds, in particular, keep good for many months, even till the arrival of apples on the following summer. Mr. Salisbury asserts that no less than 50,000l. was paid for apples, from the northern provinces of France, to supply the London market, in the season of 1816 only.—An ingenious Frenchman has prepared an agreeable kind of bread with one third of boiled apples to two thirds of flour. Apples carefully gathered, laid awhile to mellow, then crushed in a mill, pressed till all their juice is extracted, and afterwards fermented, become cyder. The same process with pears, perry. The richest and strongest sorts are distributed for sale over the whole country; the inferior serve as common drink in the districts where they are produced, to the exclusion of malt liquor.

"Autumn paints
Ansonian hills with grapes, whilst English plains
Blush with pomaceous harvests, breathing sweets.
O let me now, when the kind early daw
Unlocks the unhosom'd odours, walk among
The well-rang'd files of trees, whose full-aged stores
Diffuse ambrosial steams.
Now, now's the time, ere hasty suns forbid
To work, disburthen thou the sapless wood
Of its rich progeny; the turgid fruit
Abounds with mellow liquor."—Philips.

Thus are the charms of the one season succeeded by the more solid gratifications of another; delicious fruits have replaced the faded flowers. The mellow apple whose golden brilliancy is heightened by rich streaks of carmine, weighs down the branch which bears it; the luscious pears, and plums, whose juice is sweeter than honey, display their tempting beauties, and invite us to pluck them. How inexcusable at the sight of such blessings, never to sanctify the pleasure these rich gifts afford, by reflecting on the bountiful kindness of Providence! E.)

(T. May.*)

(P. domes'tica. Leaves winged: leafits uniform, downy beneath, serrated towards the point: flowers panicled: fruit obovate. Sm. E.)

Jacc. Austr. 447—(E. Bot. 330. E.)—Crantz. ii. 2. 3—Nash. i. at p. 10. f. 1. 3—Matth. 261—Clus. i. 10. 3—Dod. 803. 1—Lob. Obs. 544. 1—Ger. Em. 1471. 1—Park. 1420. 1—Blackw. 174—Fuchs. 576—Trag. 1012—J. B. i. a. 59—Lonic. i. 50. 1—(Gertr. 2. 87. E.)

(A middle sized tree of slow growth and hard wood. Leaves unequally winged. Leafits seven to nine pair, with an odd one, sessile, oblong, equal, serrated from the middle to the point, about an inch long. Panicles terminal, downy, repeatedly forked. Flowers half an inch over, cream-coloured. Calyx woolly. Styles always five. Fruit obovate, an inch long, reddish. Seeds two in each cell, according to Gærtner, though one only attains perfection. Sm. E.)


T. April—May.†

(P. aucupa’ria. Leaves winged: smooth: leafits uniform, serrated: flowers corymbose: styles about three: fruit globular. E.)


(A highly ornamental tree, though of rather formal contour, of slow growth, and rarely attaining great size. Bark smoothly. E.) Leafits seven or eight pair, sessile, spear-shaped, serrated, the intermediate ones the longest. Corymb terminal. Berry round, of a pleasant red or scarlet.

* (The fruit, when a little frosted, becomes agreeably acid and wholesome, and sometimes appears in the London market: nevertheless, (with all due respect for so high an authority as Evelyn), we cannot altogether concur in his interpretation of the specific name, “so called for its effects against gripings in the bowels.” E.)

† The fruit is mealy and austere, not much unlike the Medlar. Chermes Sorbi and Coccinella bipustulata live upon this and P. aucuparia. Linn. The wood is valuable for making mathematical rulers and excisemen’s gauging sticks. Nash. (If not a primary argument, the inference is legitimate, and favourable to the study of nature, that amidst the general corruption of morals attendant on wealth and luxury among the Romans, none but their prince of naturalists, (except perhaps the unamiable satyrist), possessed a mind sufficiently unsophisticated to expose the various artifices then practised. Of the prevalence of fraud and cheating, Pliny unreservedly admits innumerable instances, and among them states, (lib. xxiii. c. 7), that for the adulteration of Cinnabar, (an article of considerable importance to the limaer), was employed “Sorbi tritis,” the triturated fruit of the Service-tree.
Seeds three, four, five, reddish. Relh. Flowers whitish, (numerous, of an agreeable scent. Berries in beautiful bunches, highly ornamental through the latter part of the summer and autumn. Leaves when young slightly pubescent beneath. E.)


("How clung the Rowan to the rock, And through the foliage shewed his head, With narrow leaves and berries red," Marmion. E.)

T. April.

This tree grows either in woods or open fields, but best on the sides of hills and in fertile soil. It will not bear lopping. Plants grow well in its shade. The wood is soft, tough, and solid, (excellent for hoops, and for bows next to Yew; also considered lasting for posts. E.) It is converted into tables, spokes for wheels, shafts, chairs, &c. (The tall straight rods are well adapted and used for making hurdles. Bree, in Purt. The roots are formed into handles for knives and wooden spoons. The berries dried and reduced to powder, make wholesome bread; and an ardent spirit may be distilled from them, which has a fine flavour, but it is small in quantity. The berries too, infused in water, make an acid liquor, (called Diod Grifol, E.), somewhat like perry, which is drank by the poorer people in Wales. (In Jura the juice is used as an acid for punch. E.) In Germany the fowlers use the berries to entice Redwings and Fieldfares into nooses of hair suspended in the woods; whence its trivial name; (to which attraction alludes the Mantuan's lay:

"Sanguineisque inculta rubent aviaria baccis."

Twelve pounds of berries yield two quarts of spirit; the pulp, after distillation, affords excellent nourishment for cattle. The bark when collected in autumn, (according to experiments made in Germany), is better adapted to the tanning of leather than even that of Oak. This tree appears to have been highly esteemed by the Druids, and is still found more frequently than any other in the neighbourhood of Druidical circles in the Scotch Highlands. Even in these more enlightened times, natives of the North may be found, who profess to believe in the efficacy of a small branch carried about them as a charm against witchcraft and enchantment. In one part of Scotland, at Strathspey, the sheep and lambs are on May Day made to pass through a hoop of Roan wood; (and the Scotch dairy-maid will drive her cattle to the sheadings, or summer pastures, with no other rod than that of the Roan-tree. Evelyn assures us that "ale and beer brewed with these berries, being ripe, is an incomparable drink, familiar in Wales, where this tree is reputed so sacred, that there is not a church-yard without one of them planted in it, (as among us the Yew), so, on a certain day in the year, every body religiously wears a cross made of the wood: and the tree is by some authors called Fraxinus Cambro-Britannica, reputed to be a preservative against fascinations and evil spirits; whence perhaps we call it Witchen, the boughs being stuck about the house, or the wood used for walking-staves."

These vestiges of ancient superstitions, here either altogether exploded, or reduced to unmeaning customs, remind us of the amulets we have observed still so frequently suspended round the necks of cattle, or worn, with implicit faith, by the ignorant peasantry, in the South of Europe. Allusion is made to such property, as Dr. Hunter remarks, in a very ancient song, called the Laidley Worm of Spindleston Heughs:

"Their spells were vain: The hags returned To the queen in sorrowful mood, Crying, that witches have no power, Where there is Rowan-tree wood."

And this leads, as some commentators imagine, to the true reading of a passage in Shakspeare's Macbeth, substituting (Act 1. s. 3.) "A rown-tree, witch!" for the usual reading "A rosin thee, witch!"—but this we deny; the latter being a genuine adverb of expulsion or avoidance, used by the bard with a like meaning in other passages, (as Edgar in Lear, &c.) though since become obsolete. "In September and October few trees add
(P. hy'brida. Leaves deeply pinnatifid, or half pinnate, downy beneath: flowers corymbose: styles about three. E.)


(A moderate sized tree, with smooth grey branches, hoary when young. Leaves alternate, crowded about the extremities, stalked, oblong, acute, serrated, lobed towards the base, often deeply pinnatifid; smooth above, white (or rather greyish, E.) and finely cottony beneath. Stipulas smooth, awl-shaped, attached to the foot-stalks, but deciduous. Flowers cymose, cream-coloured. Styles three or four; cells of the fruit soft and pliant like those of P. aucuparia, agreeing with them in number. It is regularly propagated by seed. Sm. E.)

Linnaeus considered it as a mule plant, produced between P. Aria and P. aucuparia, having the flowers and pistils of the latter, with the foliage of the former, the leaves being rather winged at the base, but confluent upwards.

(It would appear that P. hyhrida seems to vary from P. Aria, and to obtain the wing-cleft or pinnatifid character by growth in gardens and shrubberies; vid. Note, p. 171. Bot. Guide. E.)


(P. A'ria. Leaves simple, elliptical, cut, serrated, scored; white and downy beneath: flowers corymbose: styles about two. E.)


(A small tree, conspicuous for the white mealiness or close tomentose appearance of the under surface of the leaves, likewise investing the flower-stalks and calyx. Parallel ribs prominent on both sides of the leaves. Flowers white, in large bunches. Styles often three or four. Fruit with as many cells, globular, scarlet, dotted, mealy, acid, astringent. Seeds two in each cell. E.)

(Var. 2. P. aria β. Eng. Fl. P. intermedia. Ehrh. Wild. Crataegus Aria β. Linn. Sorbus hyhrida. Huds. With, to Ed. 7. Leaves with five to seven marginal lobes on each side, slightly pinnatifid, but not so more to the gaiety of picturesque scenery, when the glowing vermillion fruit decorates the boughs so superbly by its pendent pomes; for botanical language will scarcely allow us to say berries, because the seeds are disposed like those of the apple in a fleshy pulp, and divided into cells." Phillips. A variety with yellow-striped leaves is sometimes admitted into shrubberies. Aecidium cornutum, Grev. Scot. Crypt. 180: "Peridia very long, curved, pale-brown, bursting from an orange-coloured thickened spot; sporidia sub-globose;" on the inferior surface of the leaves in summer and autumn very frequent: and on both sides of the leaves may be occasionally observed Erineum Sorbi, Grev. Scot. Crypt. 23. "Distinct, or somewhat effused, superficial, lax, at first reddish, at length brown ferruginous; peridia cylindrical, obtuse, and somewhat incurved at the summits." The new vegetable acid, named Sorbic Acid, is found most abundantly to pervade the Mountain Ash. It differs materially from the Malic acid, but its peculiar properties are not yet thoroughly ascertained. New Month. Mag. 1819. The rare insect Apioa (Attelabus) Sorbi is said to haunt this tree. E.)

* (It is not considered unworthy of introduction into modern pleasure grounds. E.)
towards the base. Smith observes, "there can scarcely be found a tree of the Aria on which some leaves do not answer to this variety."

Such undoubtedly is the plant of Castell dinas y Brân, near Llangollen, so long observed by Mr. Griffith, and mistaken by Hudson for the Limean Sorbus hybrida, whence the confusion which has till recently prevailed.

Pennaeau Mawr produces a plant nearly similar, described by Mr. Griffith as "an upright stiff tree, with cuneate leaves, entire at the base, and only serrated at the apex." This is the Afaelur Pren, or Lemon-tree, well known in Carnarvonshire, and noticed by modern tourists, but why so preposterously designated is not obvious. E.)


SPIRÆ'A.† Cal. five-cleft: Petals five: (Pericarps three to twelve, one-celled, two-valved: Seeds one to three in each cell. Hook. E.)


Fl. Ross. 21—(E. Bot. 1468. E.)—Gmel. Sib. iii. 39—Kniph. 3—Clus. i. 84.
(Grows in straight rods, branches inclining to yellow. Leaves alternate, nearly sessile, broad-spear-shaped. Fl. Brit. E.) A shrub about four feet high. Serratures of the leaves not very regular. Flowers rose red, paler when expanded, (forming a dense sort of spike. E.)

(It increases rapidly by suckers, but seldom or ever perfects its seeds in this island, whence it has been inferred not to be properly a native; but, when we consider that it flourishes in the frigid clime of Siberia, and

* It loves dry hills and open exposures, and flourishing either in gravel or clay. It bears lopping, and permits grass to grow under it. The wood, being hard, tough, and smooth, is used for axle-trees, wheels, walking-sticks, carpenters' and other tools. The fruit is eatable when mellowed by autumnal frosts, and an ardent spirit may be distilled from it. It seldom bears a good crop of fruit two years together. Sheep and goats eat it. On Breidden Hill it is very difficult of access. Mr. Aikin observes that the goats devour every plant within their reach.—The wood affords an excellent charcoal for the makers of gunpowder. Mr. Gough. (The White-beam is by some considered ornamental, and is said to be "engaging at all times of the year, and catches the attention even in winter; for then we see it stand, though naked of leaves, with a fine straight stem with smooth branches, spotted with white, at the end of which are buds swelled for the next year's shoot, giving the tree a bold and fine appearance." Encyc. Brit. E.)

† (From sīpōs, that admits of being twisted, from its flexibility, or woven into garlands, to which use Pliny alludes. E.)
the lone spots in which it is observed in Britain, we can scarcely doubt its title to admission in our Flora. E.)


S. filipendula. Leaves interruptedly winged: leaflets strap-spear-shaped, irregularly serrated, smooth; flowers in tufts: (styles many. E.)


(Roots consisting of numerous black, oval, farinaceous knobs or glandules, connected by slender fibres. Stems herbaceous, from one foot to a yard high or more. Leaflets mostly alternate, smooth on both sides and shining. A pair of little leaflets sessile on the leaf-stalk between each pair of larger leaflets. Fruit-stalk bent before the flowers expand. Petals cream-coloured, purplish underneath, deflexed. Styles eight to twelve. Leaves high, slender, mostly radical. Plant varying greatly in size. E.)


S. ulmaria. Leaves interruptedly winged: leaflets egg-shaped, doubly serrated, hoary underneath, (the terminal one largest and lobed: styles numerous: E.) flowers in tufts.


* (Long cultivated in gardens and shrubberies by the name of Spiraea frutex, and generally propagated from suckers. The young shoots, being tough and pliable, are often used for the tops of fishing rods. E.)
† The tuberous pea-like roots, (whence the trivial name, E.) dried and reduced to powder, make a kind of bread, which in times of scarcity, is not to be despised. Hogs are very fond of them. Linn. When expanded and enlarged by cultivations, sometimes with double flowers, this plant is a beautiful addition to the flower garden.
POLYGYNIA.

RO'SA.† Petals five: Cal. urn-shaped, five-cleft, fleshy, contracted at the neck so as to form at length a coloured berry of one cell, opening at the top: Seeds many, hispid, dispersed in the pulp.

(The Editor has admitted a large accession to the species of this beautiful and interesting genus of plants; not, indeed, so much upon his own entire conviction of their permanency, as in conformity with the opinions of several eminent Botanists, whose opportunities for observation, and attention to the subject, merit every consideration. So far as the identity of the respective plants could be ascertained, the reformed specific characters of Smith have been adopted, while the descriptive details have been carefully compared with those of the most accurate recent authorities. The tribe of Roses is become intricate, and in no small degree perplexing, from the difficulty of pointing out characteristics at once discriminative

* (The leaves and tops of this plant are used in medicine as an astringent, and will tan leather. In the few countries where primitive manners are yet to be observed, the custom of scattering fragrant herbs on floors remains; and for such purpose Meadow-sweet has ever been highly extolled, as thus by Gerard: "The leaves and flowers far excelt all other strowing herbes, for to decke up houses, to strowe in chambers, halls, and banknetting houses in the sommer time; for the smell thereof maketh the hart merrie, delighteth the senses; neither doth it cause leacned, or loathsomness to meate, as some other sweete smelling herbes do." In language less uncouti has it also been celebrated:

"Mid scents as varied as the scene,
Distinct is thine, fair Meadow's Queen,
With buds of pearly dye;
Graceful thy foliage and thy hue,
In softest shades of green and blue,
Attracting still a closer view,
They fix the admiring eye." S. H.

Some compare the scent to that of Hawthorn, but to our senses it is more sickly;

"While in the moistened plain
The Meadow-sweet its luscious fragrance yields."

Varieties with double blossoms and striped leaves are produced in gardens. E.) The flowers infused in boiling water give it a fine flavour, which rises in distillation. Sheep and swine eat it. Goats are extremely fond of it. Cows and horses refuse it. Sphinx ocellata and Filipendula feed on both species. Linn.

† (Derived from the Celtic ros, or rhos, the primary root of which may be rhod, or rhodd, red. E.)
and invariable. The leaves, (from which a true specific difference ought to be deduced,) in many instances too nearly resemble each other; whilst the hips, or fruit, which have by some been deemed of primary consequence, unfortunately preserve no absolute character either as to form, colour, smoothness, or roughness; and even were that not the case, could indicate their respective species only during a short period of the year. Sir J. E. Smith and Mr. Woods attach considerable importance to the presence or absence of setae, (glandular bristles,) on the stems or branches of Roses; and, in a secondary degree, to the form of the aculei, (prickles,) whether straight and slender, suddenly originating from a broad depressed base; or hooked, dilated gradually downward, and more or less compressed. Much stress has likewise been laid on the circumstance of pubescence, its absence, presence, and quantity; yet a careful observer may perceive, in this respect, every gradation. Linnæus himself even doubted whether any certain limits between the species and varieties of this genus had been prescribed by nature. However valuable may be the observations of Smith, Lindley, Woods, Hooker, Winch, and Swartz, cultivation alone seems likely to determine these obscure points, and to remove this opprobrium from the science. E.)

(1) Fruit globular.

R. ARVENsis. (Fruit globose or elliptical, smooth: flower-stalks glandular: calyx pinnate, deciduous: prickles hooked, scattered: leaflets simply serrated: floral receptacle slightly convex: styles combined, smooth. Sm. E.)

(Hook. Fl. Lond. 123. E.)—E. Bot. 188—Walc.—J. B. ii. 44. 1.

(Fruit scarlet, round or oblong. Flowers more cup-shaped than any other British Rose, white with a yellow base, sometimes pink. The styles, united in a long smooth column, distinguish this from all British species except R. systyla, from which it differs in having long trailing shoots, not stout assurgent ones, which are of a dull glaucous green, generally tinged with purple, and not of the bright green colour of R. systyla. Hook. E.) Nearly allied to, if not the same as, the garden Ayrshire Rose.


R. spinosisima. (Flower-stalks without bracteas, mostly smooth, as well as the simple calyx: fruit globose, abrupt, somewhat depressed: prickles of the stem straight, unequal, numerous, intermixed with glandular bristles: leaflets roundish, smooth, with simple serratures. Sm. E.)


(A dwarf, compact, dark, (sometimes reddish,) green bush, with creeping roots. Branches short, stiff, much divided, beset by very dense, unequal prickles or setae, some of the former being usually falcate. Leaves
close together, quite free from pubescence. Stipulae either narrow or dilated, of nearly equal breadth. Pedicels setigerous and prickly. Leaflets about seven, bright green, flat, simply serrated, orbicular, or nearly so. Flowers solitary, without bracteas, cyathiform, blush-coloured, (white, or cream-coloured, E.) Peduncles naked, or rough with glands or setae, as are the calycine segments, which are short and entire. Tube ovate, or nearly round, naked. Petals emarginate, concave. Disk not thickened. Styles villous, distinct. Fruit ovate, or nearly round, black or dark purple, crowned by the connivent or somewhat spreading segments of the calyx. Lindl. Fruit sometimes slightly spinous. The plant occasionally very diminutive, and rarely exceeding two feet in height. E.)


Var. 2. (R. Ciphiana. E.) Blossoms red, striped with white. Sibb. Scot. t. 2. Lightf. (Fruit red. Winch. E.)


Var. 3. Fruit-stalks prickly; flowers cream-colour, changing to white. (The stems appear to be still more strongly armed with spines than the common kind. E.)

Specimen from Lanscale Haws, Lancashire; sent by Mr. Atkinson, who informs me that it covers several acres of sand, to the exclusion of every other vegetable. (The Editor has recently received the same from the hills near the sea at Aberystwith. E.)

(R. Rubella. Fruit globose, somewhat bristly; flower-stalks bristly: stem spreading, clothed with straight, slender spines: leaflets elliptical, smooth: segments of the calyx entire.

E. Bot. 2521.

* The ripe fruit is eaten by children, and has a grateful sub-acid taste. The juice, diluted with water, dyes silk and muslin of a peach colour; with the addition of alum a deep violet; but it has little effect on woollen or linen. Its dwarfish growth, and the singular elegance of its little leaves, which resemble those of the upland Burnet, entitle it to a place in the flower garden. Indeed it would appear to be a favourite with the French florists, for M. Desportes informs us they have no less than 123 distinct varieties.

(The charms of the Ciphian var. having elicited an Ode Laudatory from Sir R. Sibbald; we extract a descriptive portion:

"Multiplex qualis Rosa splendidissima
Lineis albis decorat Ruborem
Caryophyllis, nitet in Tulipis
Porphura qualis.
Ne terat saltu petulante Vaga
Ales, audax arripiat manusve,
Spiculis densis Rosa tuta Saurum
Vulnerat hostem." &c. E.)
Differs from the common *R. spinosissima* in being a small spreading bush, whereas the flowering stems of that species are strong and erect, more in the manner of *R. canina*. E. Bot.

**Fruit** invariably pear-shaped and *scarlet*; the shrub appears a link between *R. spinosissima* and *R. alpina*, the latter of which it resembles in habit. Winch.

**Red-fruited Dwarf Rose.** Banks of the Dee about Abergardy. Mr. Anderson. Linn. Tr. vol. xi. p. 244. Gathered by Mr. Winch on the sea-beach near Shields Law, in the county of Durham; and supposed by him to be the same as Mr. Atkinson's plant from Lanscale Haws, with which, in foliage, it precisely accords, but in the specimens communicated to us, is much less spinous, both the fruit-stalks and stems of our plant being in a most remarkable manner thickly beset with strong prickles, in length exceeding the diameter of the parts to which they are attached. E.)

(R. *involuta.* Fruit globose, as also the flower-stalks, very prickly: stems armed with numerous straight prickles: petals closed inwards. Fl. Brit.

E. Bot. 2068.

Resembles *R. spinosissima* in its manner of growth, and in the shade rises to a tall shrub. Winch. Petals whitish, tinged with red, not expanded. Fl. Brit. In specimens communicated by favour of Mr. Winch, who observes, "the petals are only sometimes involute, generally expanding like those of other Roses," the *leaflets* are four times the size of those of either *R. spinosissima* or *rubella*, and the *spines* less densely set than in those species. *R. Sabini* appears scarcely to differ from this, except in being taller, which may probably be accounted for by difference of situation; and under the same species may rank *R. Doniana*, (Woods, in Linn. Tr. vol. xii.) less extensively creeping at the root, and less prickly in the upper part.

**Prickly Unexpanded Rose.** *R. spinosissima*, var. With. Ed. 5. Discovered in the Western Islands of Scotland by Messrs. Walker and J. Mackay: also found by Mr. Winch in Heaton Dean, below Benton Bridge, Northumberland. S. July. E.)

**R. villosa.** (Fruit globose, half as long as the segments of the calyx, bristly as well as the flower-stalks: prickles of the stem straight: leaflets elliptic, ovate, downy on both sides: calyx permanent.

When *R. villosa* grows on sterile soil, or in a bleak situation, it assumes the stunted habit and full red flower as represented in E. Bot. 2459. This I consider as nothing but a variety of *R. villosa*; (not of Swartz, which is supposed to be an exotic, the Apple Rose of our gardens,) and its *fruit* varies from perfect smoothness to a considerable degree of roughness, and the bush altering in mode of growth according to soil and exposure. Winch.

(Nearly resembling the above is R. subglobosa, Sm. Eng. Fl. R. tomentosa, var. 1 and 2. Woods. The whole plant, except the prickles "conical, hooked, compressed," and the calyx "copiously pinnate," bears more resemblance to R. villosa than tomentosa, and is particularly remarkable for its "large, globular, half-ripe fruit." Sm. E.)

R. gracilis. Flower-stalks bristly, generally bracteated: branches globular: fruit and calyx bristly: larger prickles hooked: leaflets doubly serrated, hairy on both sides.

E. Bot. 583.

Flowers generally solitary, but occasionally two or three together: fruit scarlet.

Var. 2. Fl. alb. with the segments of the calyx usually divided. It is by far the most elegant of the British Roses, and, were it not for its hooked prickles, comes very near to R. involuta, var. β. Sabini.


(Var. 2. Fruit globose, bristly. J. E. Bot. 1896.)

(Var. 2. Fruit globose, bristly.

E. Bot. 1896.)

(R. tomentosa. Fruit broadly elliptical, bristly: calyx copiously pinnate: prickles slightly curved: leaflets ovate, acute, more or less downy. Sm.


A smaller plant in all its parts than R. villosa, resembling in general habit R. canina, but that the leaves are pubescent on both sides, with a greyish cast. Fruit scarlet. Petals whish at the base, above of a beautiful rose-colour. Fl. Brit. Fruit very different from that of R. villosa. Winch. Smith adds, "I have seen this plant, on removal to a rich garden soil, assume so rank and prickly a habit as scarcely to be recognized, and even in wild situations the pubescence varies greatly; still I find no considerable alteration in the division of the calyx, nor in the elliptical shape of its tube." Woods enumerates no less than fifteen varieties.


S. June—July. E.)
Much resembling *R. tomentosa*, but having prickles more straight and slender, leaves harsher, and petals white, only blotched with red. *E. Bot.*

A very distinct species from *R. tomentosa*, and readily distinguishable by its fruit, from either that or *R. villosa*. The buds are peculiarly handsome when sufficiently expanded to show the bright red tints, with which the outer edge of the white petals are marked. *Winch.* Notwithstanding the above respectable testimony, and specimens kindly communicated by Mr. *Winch*, which certainly in the individuals demonstrate an obvious difference at least, as regarding the fruit, that of *R. scabriuscula* appearing far more globose and bristly than that of *R. tomentosa*, (vera,) there is reason to question the permanency, both of those characteristics, and also of the one derived from the more or less pubescence or harshness of the leaves. That very accurate observer, Mr. *Winch*, himself admits such a probability; and, in confirmation of the more recent arrangement of *Smith* and others, *Purt* remarks, “I have a specimen of *R. scabriuscula* which accords perfectly with the figure and description in *E. Bot.* On the same bush I have frequently found the unripe fruit smooth, without the calyx; others ripe, with the flower-stalk and fruit bristly; and the latter still crowned by the calyx. The leaves of the branches supporting the smooth fruit were smooth underneath, whilst those bearing bristly fruit were more or less pubescent.”


**R. HIBER'NICA.** Fruit nearly globose, smooth: flower-stalks smooth: prickles of the stem slightly hooked: leaflets elliptical, smooth, with hairy ribs.

*E. Bot.* 2196.

*Fruit* slightly elongated upwards, but always round and broad at the base. 
*Stem* six feet high, upright, much branched, and very prickly. *Prickles* scattered. *Flower-stalks* often solitary, often two or three together. *Petals* pale blush-coloured. *Styles* distinct at the base. It is remarkable for continuing in blossom from the early part of *June* to the middle of November. The *scarlet fruit* distinguishes this species from every variety of *R. spinosissima*. *E. Bot.*

**IRISH ROSE.** Discovered in the county of Down, growing abundantly about Belfast harbour, by John Templeton, Esq. who consequently became entitled to the reward of £50, offered by the patrons of Botany at Dublin, for the discovery of a new Irish plant. *P. June—Nov. E.)*

(2) *Fruit* ovate.

**R. RUGIGINO'SA.** (Fruit ovate, bristly towards the base: calyx pinnate: prickles hooked, compressed, with smaller, straighter ones interspersed: leaflets elliptical, doubly serrated, hairy, clothed beneath with rusty-coloured glands. Sm. *E.)*


*Branches* smooth, but with scattered rather large prickles. *Leaflets* generally seven, egg-shaped, pointed, scattered underneath with rubiginous
resinous globules. Leaf-stalks rough with hairs, and minute prickles, and, as are the floral-leaves, beset with minute glands on pedicles. Fruit nearly globular, beset, especially at the base, with a few small prickles. Fruit-stalks with very minute prickles. Blossoms red. *R. eglanteria* differs in growing taller, having straight prickles, and blossoms large, yellow, and scentless. Linn. (This latter remark is proved by the great expounder of the learned Swede, to refer to the Yellow Briar, of which the Austrian Rose, *R. bicolor* of Jacquin, is a transient variety.) Much branched, four or five feet high. Fruit orange red. E.)


S. June—July.*

* (The refreshing fragrance, especially after vernal showers, both of the leaves and flowers of this species, causes it to be much esteemed. Double flowering and evergreen varieties have been introduced in our gardens. The Parisian floriculturists have produced no fewer than fifty-seven sorts. It bears clipping well, and knits together so as to form an agreeable secondary hedge. But Sir Walter, with perhaps better taste, deprecates this practice:—

"Cherish the tulip, prune the vine,
But freely let the woodbine twine,
And leave untrimmed the Eglantine." Marm. Cant. 3.

In its more luxuriant native grace, it has for ages attracted the favourite notice of poets:—

—— The wild harp, which silent hangs
By silver Avon’s holy shore,”

was frequently attuned to its praise. The bower,

"Oer-canopied with luscious woodbine,
With sweet musk-roses, and with *Eglantine* :"

or, more affectingly,

* * * * "Fidele,
I’ll sweeten thy sad grave; thou shalt not lack
* * * * * *
* * * * * * * * no, nor
The leaf of *Eglantine*, whom not to slander,
Out-sweeten’d not thy breath.”

And thus Shenstone:—

"Come, gentle air! and while the thickets bloom,
* * * * * *
Convey the woodbine’s rich perfume,
Nor spare the sweet-leaf’d *Eglantine*.”

But no child of feeling or of song has more delicately assimilated its charms than Burns:—
ICOSANDRIA. POLYGYNIA. ROSA. 617


Fruit ovate, somewhat bristly, as are the flower-stalks. Stem straggling, with scattered, hooked prickles. Leaflets ovate, acute, clothed beneath with rusty-coloured glands.

Inferior to the true Sweet Briar in scent and compactness, as in the beauty of its blossoms, they being less than those of any other British rose. Common in hedges and thickets: more so than the better sort. E. Bot. E.)

R. CAn'NA. (Fruit ovate, smooth or somewhat bristly, like the aggregate flower-stalks: calyx pinnate, deciduous: prickles strongly hooked: leaflets simply serrated, pointed, quite smooth. Sm. E.)

Curt. 299—(E. Bot. 992. E.)—Kniph. 7—Fl. Dan. 555—Blackw. 8—Ludw. 70—Walc. 5—Parlc. 1017. 1—J. B. ii. 43. 2—Trag. 986. 2—Ger. 1087. 2.

(Six to twelve feet high, with long trailing or over-arching branches. E.) Leaflets two or three pair, with an odd one, pointed; serratures terminated by minute purple glands. Leaf-stalks sheathing; edges beset with purple glands. Prickles broad, flat, bowed downwards. Calyx segments two, furnished with long teeth on both edges, two without, and the fifth with teeth on one edge. Petals red, sometimes nearly white; one lobe larger than the other. (Flowers pale pink, clustered; soon out-topped by the leading shoots of the shrub. Fruit scarlet, oval. Calyx deciduous. Leaves dark shining green. The young shoots very strong, armed with large hooked prickles. Winch. The Rev. Mr. Sutton observes, in E. Bot. that as the fruit of R. rubiginosa is occasionally smooth, so that of R. canina is very rarely a little hispid. Professor Hooker states as a remarkable peculiarity in R. canina, that the further to the north any var. of it is found, the more villous are the styles; and the less so as it proceeds southward; these organs being quite destitute of hair in Madeira. E.)

(R. Forsteri. Sm. R. collina β, and γ. Woods, differs chiefly from this species in having the mid-rib hairy; a trivial, and probably variable distinction. R. bractescens, Woods, has also been referred to R. canina. E.)

DOG ROSE. HEP TREE. WILD BRIAR. (CANKER ROSE, in Devonshire.

"O bonie was yon rosy brier,
That blooms sae far frae haunt o'man,
And bonie she, and ah, how dear!
It shaded frae the e'enin sun.

Yon rose-buds in the morning dew
How pure, amang the leaves sae green,
But purer was the lover's vow
They witness'd in their shade yestreen.

All in its rude and prickly bower,
That crimson rose, how sweet and fair!
But love is far a sweeter flower
Amid life's thorny path o'care."

The bedeguar frequently observed on this species is called Sweet-briar Sponge; and, as in other instances, the original depredator having been destroyed by the remorseless Ichneumon, it becomes the cradle of that fly. E.)


*E. Bot.* 1890.

This plant has the general habit and appearance of *R. canina*, but with flowers more numerous in each cluster; and (what perhaps affords a more essential distinction) *styles* united into a long smooth column.


*A perfumed water may be distilled from the blossoms: (said to be infinitely more fragrant than common rose-water, and thus eulogized by Haller, “Fragrantia ejus olei omnia alia odoramenta superat, ut inter regiadona sit.”

“As sweate as is the Bramble floure
That bereth the red hepe.” Chaucer.

An esteemed drink made from the leaves and twigs is used in Tartary and Siberia, where likewise the plant is known by a name signifying *Dog-fruit*. The flowers yield a spirit, and are preserved with honey and sugar by the inhabitants of the Volga. E.) The pulp of the berries, beat up with sugar, makes the conserve of heps of the London Dispeusatory. Mixed with wine it is an acceptable treat in the north of Europe. (In preparing the pulp from the heps much care should be taken to separate the rough prickly matter inclosing the seed, a neglect of which precaution has sometimes occasioned vomiting and other alarming symptoms. As the conserve is merely used to give form to other articles, the Edinburgh College have omitted it.) Though fieldfares and thrushes, when and where available, prefer feeding on insects and worms, (vid. Zoolog. Mag. vol. i.) yet they do, as every sportsman knows, freely devour the fruit both of the White Thorn and the Wild Rose. The value of the fruit of the Wild Briar as winter food for the songsters of the grove is thus prettily described by the poet:—

"The woods are stripped with the wintry winds,
And faded the flowers that bloomed on the lea;
But one lingering gem the wanderer finds,
’Tis the ruby fruit of the *Wild-briar* tree.

The strong have bowed down, the beauteous are dead;
The blast through the forest sighs mournfully;
And bared is full many a lofty head;
But there’s fruit on the lowly *Wild-briar* tree.

It has cheered yon bird that, with gentle swell,
Sings, “What are the gaudy flowers to me?
For here will I build my nest, and dwell
By the simple, faithful, *Wild-briar* tree.” E.)

The leaves of every species of Rose, but especially of this, are recommended in the Eph. Nat. Curios, as a substitute for tea, giving out a fine colour, a sub-astringent taste, and a grateful smell, when dried and infused in boiling water. (On the strong shoots of this species garden Roses are now grafted, and thus are trained tall stems throwing out heads of considerable size, which, when clustered with varied blossoms, are highly ornamental, especially on grass lawns. By the Greeks Wild Roses were called *xwopodos*, because the root was thought to cure the bite of a mad dog; and hence the Latin *canina*, our *Dog Rose*; whose arching branches and lively odorous flowers, where

——— **“Blushing, the uncltur’d Rose**

Hangs high her beauteous blossoms."

(Intermediate in floral succession between the Hawthorn of Spring and the Honeysuckle of Autumn,) decorate our hedge rows through the prime of Summer. E.)

(R. dumetorum. Fruit elliptical, smooth, as tall as the bracteas: flower-stalks aggregate, slightly hairy: calyx copiously pinnate, somewhat cut: prickles numerously scattered, hooked: leaflets simply serrated, hairy on both sides.

Four to six feet high, with many weak spreading branches. Petals reddish. Styles prominent, a little hairy. Fruit red, ovate. Sm. Calyx long, permanent on the fruit: no doubt can exist of its being distinct from every other British species. Like R. canina, it frequently throws out strong leading shoots, which soon overtop the bunches of flowers. Winch.

Thicket Rose. R. dumetorum. Woods. Sm. Winch. So nearly resembling R. Borreri, of Woods, which is R. dumetorum, E. Bot. 2379, that Hooker and others unite them under R. rubiginosa; the var. inodora of which (Lindl. p. 88.) is represented in Fl. Lond. 117. In hedges in the southern counties. In Heaton Wood, near Newcastle on Tyne; and hedges near Sandyford, Northumberland. Mr. Winch. J. June. E.)


This is a much slenderer, though less trailing brier than R. canina; its flowers are pale pink, growing in pairs or single, and its fruit large. It also further differs in habit, by not having young shoots sprouting beyond the blossoms, so as to give them the appearance of being axillary: and from R. sentriosa of Acharius, (Stockh. Tr.) in the fruit being ovate; not globular. It also resembles R. cæsiæ, E. Bot. 2367, in many points, but differs in having smooth, not downy leaves; glaucous especially in spring. It may probably have been often overlooked as a variety of R. canina. Winch.


(R. cæsiæ. Fruit roundish-ovate, smooth: prickles of the stem hooked: leaflets egg-shaped, pointed, doubly serrated, downy: very glaucous, as well as the germen and young branches.

E. Bot. 2367. Flowers most frequently solitary, sometimes in pairs. Fruit varies from oblong to nearly globose. It differs from R. canina in its downy leaves, and their very glaucous hue. E. Bot. Hooker has included it under that species; as also R. dumetorum of Woods, (not of E. Bot.)


S. July. E.)

* (Vide a very discriminating essay on this genus, by Nat. John Winch, Esq. in the Monthly Mag. May, 1816. E.)

† (Though in general the Botanist may be expected to devote his chief attention to the unsophisticated productions of nature, it were unreasonably fastidious not to concede a single note of admiration to the triumph of floriculture. The most splendid and compre-
ICOSANDRIA. POLYGYNIA. ROSA.

(R. cinnamomea, E. Bot. 2388, supposed to have been once discovered near Aketon pasture, Pontefract, is no longer found there, or elsewhere in

hensive work on Roses in general, is probably that of M. Redouté, published at Paris in three volumes folio, and containing eight hundred kinds. About half that number are cultivated in our English nursery grounds: those of France, according to M. Desportes, boast no less than 2,533 named varieties. By proper management, a regular succession of flowering Roses, exhibiting an endless diversity of colours; red, yellow, white, and even what is termed, though not very correctly, blue, may be continued from May till October, or, in favourable seasons, till near Christmas. Then indeed, with regret, do we behold their fragrant petals scattered beneath our feet; but even then we may deduce the moral inference,

"The Rose of the summer is gone,
The fairest and loveliest one,
Of mortals an emblem how true!"

As does garden culture convert a desert or a wilderness into a blooming Eden, so will education improve the human mind: but it is wise ever to recollect that man in his most perfect state cannot escape the inevitable doom; for "all flesh is grass, and all the glory of man as the flower of the field; the grass withereth, and the flower fadeth away;" but wisdom, virtue, and the blessings of Christianity never fade, and are never exhausted; they are the eternal fountains of joy, whose waters shall refresh when every other source is dried up.—When gathered, the flowers may be agreeably displayed, and long preserved, in shallow, ornamented pans, composed of tin or china, the lids being pierced to admit the flower-stalks. Both white and red Roses are used in medicine. The former distilled with water yields a small portion of butyraceous oil, whose flavour exactly resembles that of the roses themselves. The oil and the distilled water are very useful and agreeable cordials. These roses also, besides the cordial and aromatic virtues which reside in their volatile parts, have an aperient effect, which remains in the decoction after distillation. The red Rose on the contrary, has an astringent and gratefully corroborant virtue. The leaves of Roses of all kinds, (especially those of R. canina,) dried and infused in water, are recommended in Ephem. Nat. Cur. as a substitute for tea, "giving a most pleasant greenness, and in the subastringent taste and grateful smell being equal or superior to tea, and more wholesome." That such an infusion may be less deleterious we can readily imagine; for, though the effect of our foreign tea may be for a while palatable and exhilarating, debilitating and enervating consequences (from which few constitutions are entirely exempt,) will ultimately prevail. Since its general adoption as our daily beverage, nervous disorders have been obviously on the increase; superseding, indeed, in a degree, (as experienced physicians will not deny,) the more natural phlogistic diathesis of the British temperament, but followed by yet more distressing, and too often irremediable, symptoms. Various native herbs have been suggested, at different periods, and by the most enlightened of the medical faculty, as desirable substitutes for the Chinese leaf; but so imperious is fashion, and so prone are her votaries to patronize exotic productions alone, that the fatal abuse seems likely to decline only with the ruined health, and abridged existence, it occasions. For some conclusive experiments on this subject, vid. Percival's Essays. Rose leaves constitute a principal ingredient in the Pot-pourri. But the most delicious perfume to be obtained from Roses is in the form of an essential oil, commonly denominated Otter, but according to more correct orthography Attar, or Atar. It is said to be obtained by the following simple process. Fill any large vessel with the picked petals of Roses; cover them with spring water; expose them to the sun daily for a week; oily particles will rise to the surface, and gradually form a pellicle, which is the Attar, and should be removed by a piece of cotton, and closely corked in small phials. A perfumer in Paris, who made this costly preparation for Louis XVI., declares that four thousand pounds weight of the leaves yielded only seventeen ounces of the oil. Probably in an Asiatic climate the product might be somewhat less scanty. Rose-water was formerly in more general use among the rich and great than in our age, and on state occasions was usually presented in silver-gilt ewers:

"Attend him with a silver bason
Full of Rose-water." Shaks.

Among the charges in the account of a dinner of Lord Leycester, Chancellor of the University of Oxford, Sept. 5, 1570, is the item, "Rose-water to wash afore dinner," and
after dinner." In Damascus hogsheads of this refreshing luxury are sold daily for purposes of cookery. The custom of adorning the memorials of the dead with flowers, the symbols of fleeting mortality; especially with the Rose, as equally the token of affection, (vestiges of which may still be traced in Wales, and some parts of England), prevailed both with the Greeks and Romans: in allusion to which thus Anacreon,—

"Preserves the cold, inurned clay,
And marks the vestige of decay:"

and Propertius:—

"Et tenera poneret ossa Rosa."

We learn from Camden that this practice was in his day observed, and has been time out of mind, at Oakley, in Surry, where "the Rose tree is planted on the graves, especially of young men and maidens who have lost their lovers, so that this churchyard is full of them." In the less frequented parts of the principality, the more general recurrence of these pious offerings is calculated to produce an affecting impression even on the passing stranger; but still more strongly to cherish a tender regret for the departed among near and dear relatives, by whom these sacred depositories are annually, if not oftener, visited. Indeed the Rose derives its chief interest from its connection with history and sentiment, and that again originating in its own peculiar charms. In all countries where it is known, and in every age, a redundancy of poetry and song justly attest its pre-eminence; nor is it less distinguished in fable. It has been pronounced by universal acclamation the Queen of Flowers:—

"Rose! thou art the sweetest flower
That ever drank the amber shower;

E'en the gods, who walk the sky,
Are amorous of thy scented sigh."

The Persian Hafez maintains this supremacy among the Oriental gifts of Flora:—

"When the young Rose in crimson gay
Expands her beauties to the day,
And foliage fresh her leafless boughs o'erspread;
In homage to her sov'reign pow'r,
Bright regent of each subject flow'r!
Low at her feet the violet bends its head."

The ceremonial of Blessing the Rose is still preserved at Rome, and the day is named "Dominica in Rosa." Nor were formerly less distinguished honours bestowed upon it in France, at the festival called "Baillee de Rose," when great quantities of Roses were scattered abroad. Englishmen exalt the Rose as their national flower, for ever happily blended with the Thistle and the Shamrock:—

"Emblem of England hail! thou fairest flower,
That paints the garden and perfumes the gale."

Never again may it be debased as the badge of intestine feuds; that contest alone of which it was the emblem, having cost more of English blood than did the twice conquering France: till

"The fourth Edward
Rent the crown from vanquish'd Henry's head,
Rais'd the White Rose, and trampled on the Red." Waller.

The Union Rose, a very elegant variety, with mixed red and white petals, has been generally referred to the marriage of Henry VII. with Elizabeth, daughter of Edward IV; by which the animosity of the contending houses was happily and finally extinguished. In connection with this branch of the subject, we find in an old author the following effusion of gallantry on presenting a White Rose to a Lancastrian lady:—
RU’BUS.*  *Cal. five-cleft: Petals five: Styles from the top of the germen: Drupa clustered, one-celled, fixed to a conical receptacle so as to resemble a berry.

“The fair Rose offends thy sight,
It in thy bosom wear;
’Twill blush to find itself less white,
And turn Lancastrian there.”

Mythologists tell us that the Rose was originally white, and that the warmer colour was first given to it by the blood of Venus; from an accident thus described by Catullus:

“While the enamour’d queen of joy
Flies to protect her lovely boy,
On whom the jealous war god rushes;
She treads upon a thorned Rose,
And while the wound with crimson flows,
The snowy flower’d feels her blood, and blushes.”

As a token flower, the Rose has ever been deemed sacred to secrecy: hence to speak “under the Rose,” refers, (according to the definition of Brown in his Vulg. Err.) in society and comperation, to the ancient custom in symposiack meetings, of wearing chaplets of Roses about the head. Mythological writers afford us the following additional solution:

“That the god of love made Harpocrates, the god of silence, a present of the first Rose, to bribe him not to divulge the secrets of his mother Venus.” Hence the Rose became a symbol of silence, and was usually placed above the heads of the guests in banqueting rooms, in order to banish restraint, and intimate that nothing would be divulged that was said “sub Rosa:”

“‘Under the Rose’ in days of old,
Fond vows were seal’d, fond secrets told;
And while, when Love in eve’s calm hour
Would wander to its favourite bower,
And whisper in its amorous mood
The thoughts that loving hearts disclose,
Are sacred underneath the Rose.
And while the constant soul shall be
Enamour’d of love’s secrecy,
Though varying time’s unceasing range
The language of the lip may change,
Empires be won, and thrones decay’d,
Yet never shall this emblem fade,
For sacred still shall love repose
Under that faithful flower—the Rose.”

In Europe the Rose chiefly discloses its odoriferous treasures beneath the unclouded sky; to which the classic strains of Casimir happily allude:

“Siderum sacros imitata vultus,
Quid lates dudum, Rosa?
Delicatum e terris caput, O tepentis
Filia coeli.
Jam tibi nubes fugiunt aquose,
Quas fugant albis Zephyri quadrigis;
Jam tibi mucet Boream jocantis
Aura Favoni.”

“Child of the Summer, charming Rose,
No longer in confinement lie;
Arise to light; thy form disclose;
Rival the spangles of the sky.”

* (Rubus or ruber, Latin, rub, Celtic, red, from the colour of the fruit, and other parts.)
ICOSANDRIA. POLYGYNIA. RUBUS. 623

(1) Shrub-like.

R. Irides. (Leaves winged, with five or three leaflets, hairy beneath; stem nearly erect, prickly; leaf-stalk channelled. E.)

The rains are gone, the storms are o'er;
Winter retires to make thee way;
Come then, thou sweetly blushing flower,
Come, lovely stranger, come away.
The Sun is dress'd in beaming smiles,
To give thy beauties to the day;
Young Zephyrs wait, with gentlest gales,
To fan thy bosom, as they play." Hervey.

Anacreon tuned his sweetest lays in praise of this most distinguished flower, but with these our readers are already familiar; we therefore present a few unpublished lines by the Rev. S——y, which will scarcely lose by a comparison even with the gifted song of the Telian:

"I did not mean to mock the Rose,
Nor do her injur'd blossom wrong;
There's not a flower the garden shows
More sacred to the priests of song:
Its fragrance could the Greek inspire,
And breathes in many a Roman line,
Its buds adorn the Persian lyre,
And must not be disgrac'd by mine.

In Spring I watch its first green hue,
Fair promise of a leaf to be;
And, long before it bursts to view,
Its swelling folds have charms for me.
I count each bud with silent hope,
Which Summer ripens into flower;
And when the glowing petals ope,
I treasure them within my bower.
Scarce can the enamour'd Nightingale
More closely woo it for its bride;
The bird which in the Eastern tale,
Sits warbling music at its side.
I love it in its earliest blade;
I love it in its richest bloom;
And when its living blushes fade
I court its memory in perfume."

In Asia prevails the fable of the Rose and Dulbul, so celebrated by Eastern poets.—

"For there—the Rose o'er crag or vale,
Sultana to the Nightingale,
Blooms blushing to her lover's tale;
His queen, his garden queen, his Rose;

* * * * * * *
* * * * * * *

Returns the sweets by nature given,
In softest incense back to heaven;
And grateful yields that smiling sky,
Her fairest hue and fragrant sigh." Byron.

Moore likewise alludes to the same tender sympathy with his wonted fervour:—

"Oh! sooner shall the Rose of May
Mistake her own sweet nightingale,
And to some meaner minstrel's lay

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Open her bosom's glowing veil,
Than love shall ever doubt a tone,
A breath of the beloved one."

But to no poet, ancient or modern, of either hemisphere, has occurred, in contemplating these subjects, a more exquisitely beautiful thought than the following by Witherspoon, though devoid of Oriental embellishment:—

"O gin my love were yon red Rose,
That grows upon the castle wa'
And I mysel' a drap o' dew
Into her bonie breast to fa'!

Oh, there, beyond expression blest,
I'd feast on beauty a' the night;
Seal'd on her silk-saft faulds to rest,
'Till fley'd awa by Phoebus light."

Not less emblematic of beauty and loveliness than the Myrtle itself, the Rose most aptly designates the tender passion, by its gradual advance from the bud to the full blown flower; and in its different stages was wont to be mutually presented, and if favourably accepted, was deemed the pledge of future felicity. Nor does the simile end with a wild career of passion: it is equally typical of a more permanent, and ever-enduring attachment:

> "Because its breath
Is rich beyond the rest; and, when it dies,
It doth bequeath a charm to sweeten death." B. Cornwall.

The Entomologist will find the Rose far from unattractive. The different species nurture the following insects: Phalena Sahellea, Pavonia, Libatrix, Retularia; Tenthredo Rosea, Cynosbati; Ichneumus Bedegauris; Cicada Rosea; Aphis Rosea; Scarabeus auratus; Musca pellucens; and those moss-like fibrous excrescences, which are frequently found upon the branches of Roses, especially upon the last species, are the habitations of the Cynips Rosea, (a small fly which piercing the tender plant with its sting, sheds a drop of liquid, together with its eggs. But even this apparently secure depository does not escape the penetrating Ichneumon, which bores into the secret chamber, and commits his own destroying egg to the offspring.) The splendid beetle (Cetonia aurata), that beds and bathes in sweetness, nestles into the Rose, and sips its nectar. Coccinella punctata, (Lady-bird), relieves the Rose, (as it does other plants,) by feeding on the innumerable Aphiides which often cluster its stem and foliage. These little creatures illustrate the observation of naturalists that the torpidity of insects, as of other hibernating animals, is caused by cold; the same temperature also, in many instances, destroys their usual supply of sustenance. Thus the Aphis, which becomes torpid in winter in the open air, retains its activity, and gives birth to a numerous progeny upon Rose trees preserved in conservatories. The beauty of the Rose is often impaired by the froth of Cicada spumaria, Cuckoo-spit, (than which no insect may be more readily observed, or is more worthy of notice, whilst undergoing its truly surprising transformation:) and also its own peculiar saw-fly, Tenthredo Rosea; (vid. Kirby and Spence's Entom. i. 194.) The miniature instrument with which this insect is furnished is far more complete than any similar invention of human ingenuity, being toothed on each side, (the serratures often serrated, and the exterior flat sides scored and toothed,) so that while the vertical effect is that of a saw, it acts laterally as a rasp. When by the alternate motion, (the instrument being in fact composed of two distinct saws) the incision or cell is made, the two saws, receding from each other, conduct the egg between them into it. The economy of the Megachile (Aphis) centuncularis is likewise well worthy of attention. This, and some other species, hang the walls of their little cells with portions of leaves, generally selecting those of the Rose-tree, (though not exclusively;) and from the dexterity with which they effect this purpose, they have not
Stems upright, or slightly bent, pale, or purplish brown, three or four feet high, biennial, producing fruit the second year, after which they die down, beset with small prickles. (Leaves serrated, their ribs slightly prickly. Fruit-stalks rough. Blossoms white, pendent, panicled. Calyx permanent, woolly, sharp-pointed. E.) Fruit red, fragrant, composed of numerous succulent, single-seeded, grains. E.)


S. May—June.*

inaptly been designated Leaf-cutter Bees. Of the process, Reaumur gives a very interesting account. Nothing can be more expeditious; she is not longer about it than we would be with a pair of scissors. After hovering for some moments over a Rosebush, as if reconnoitring, the bee alights upon the leaf she has chosen, usually taking her station upon its edge so that the margin passes between her legs. With her strong mandibles she cuts without intermission in a curve line so as to detach a triangular portion. When this hangs by the last fibre, lest its weight should carry her to the ground, she balances her little wings for flight, and the very moment it parts from the leaf, flies off with it in triumph; the detached portion remaining bent between her legs in a direction perpendicular to her body. Thus without rule or compass do these diminutive creatures mete out the materials of their work into portions of an ellipse, into ovals or circles, accurately accommodating the dimensions of the several pieces of each figure to each other! Easy is it to perceive by whom this humble insect has been taught. The excrescences above mentioned were formerly in repute as a medicine, and kept in the shops under the name of Bedeguar. None of these variations are accidental or common to several of the tribe, but each peculiar to the galls formed by a distinct species of Cynips. Superstitious persons may still be found to attest their efficacy in restraining the intemperate passions of the wearer, but as these are chiefly old women, the improved temper may be accounted for more satisfactorily. At least, equally obsolete and ill-founded is the very ancient idea, that "years of store of haws and heps, do commonly portend cold winters;" for, whatever our almanacs may do, few persons of credit will venture now to predict, from what are called natural causes, either a hot summer, or a severe winter. Towards autumn, scattered on the under side of the leaf, "single and in groups, on a yellow ground; with stems long, and heads elongated, bluntish, black;" will be found the minute fungus, Puccinia Rosce. Grev. Scot. Crypt. 15. Purt. t. 28; nor is it altogether peculiar to this species. Different parts of living Rose-bushes are often infested with whitish tufts of Erotium Rosarum, "silky, creeping at the margin; peridia greenish, sessile, globose, very minute; filaments enveloping the peridia, simple, elongated, jointed. Of rapid growth." Grev. Scot. Crypt. 164. 2. E.)

* The fruit is extremely grateful as nature presents it; but made into a sweetmeat, with sugar or fermented with wine, the flavour is improved. It is fragrant, sub-acid, and cooling. It dissolves the tartarous concretions of the teeth, but for this purpose is inferior to the strawberry. The amber-coloured berries of the garden are sweeter than the crimson; but frequently contaminated by insects. The fresh leaves are the favourite food of kids. (The foliage suffers from the attacks of a little beetle, Melolontha horticola;
R. caesius. (Leaves ternate, hairy beneath; lateral ones two-lobed: stem prickly, prostrate, glaucous: calyx embracing the fruit. E.)

_E. Bot._ 826—_Fl. Dan._ 1213—_Dod._ 742. 2.

_Sem_ three feet long, purplish, branched, with pendent shoots at the top. _Prickles_ very fine, scattered, small, bowed back, interspersed between the rough points. _Leaves_ green, not cottony, though often downy underneath, serrated; the middle leaf is egg-shaped, the lateral ones with generally two lobes. _Linn._ _Fruit-stalks_ round, downy, long, with from one to three flowers, sometimes prickly. _Fruit_ composed of fewer and larger granulations, from one to five. _Woodw._ _Blossoms_ white. _Fruit_ bluish black, ascescent. (Stem prostrate, rod-like, glaucous, radiating. Fl. Brit. E.)

_Dewberry._ (Welsh: _Mwyarnllwyn glás._ E.) Woods and hedges, and balks of corn-fields. Mr. Woodward. S. _June—July._ *(Var. 2. _Flore pleno._ Double-flowered. In fields near the vicarage at Keswick; also in Borrowdale. Mr. Winch. E.)

(R. corylifolius. Leaflets generally five, hairy beneath; the lateral ones sessile; prickles straightish; calyx reflexed. _E. Bot._

_E. Bot._ 827—_Schmid. Ic._ 2. E.)

Dillenius in _R. Syn._ 467, seems to have been clear that there were two sorts of _Great Bramble_; but he has not well ascertained their differences. (These have been more recently discriminated by Mr. Crowe, in _E. Bot._, where the plant is described as having a "stem roundish, biennial, not truly shrubby or perennial, much more brittle, so that it is rejected by thatchers who use the other for binding thatch; all the prickles nearly straight, not hooked. _Leaflets_ large, always green on both sides, never white beneath, sometimes very exactly resembling the leaves of a hazel; the lateral ones sessile. _Fruit_ earlier, of a browner black, more gratefully acid than in _R. fruticosus_, and composed of rather fewer grains." Notwithstanding this attempt to establish a species, we cannot but greatly doubt these characteristics proving invariable. Mr. Anderson, in _Linn. Tr._ vol. xi. says the only steady scientific mark of distinction is that of the shoots of _R. fruticosus_ being constantly placed on the ridge of the angle or furrow of the stem; whereas those of _R. corylifolius_, besides being more slender, more numerous, and of irregular size, are indiscriminately scattered all over the shoot, which is generally round, rarely angled, and more spongy and brittle than in _fruticosus_. Smith adds, the _glands_ on the _calyx_ and _flower-stalks_ also distinguish this plant. _E._)

*(Var. 3. _R. suberectus._ Anderson. _Fruit_ dark red, not purple. _Linn. Tr._ xi. t. 16—_E. Bot._ 2572.

The habit approaches nearest to that of _R. corylifolius_, with which it is frequently intermixed. It differs in being more upright in its branches; in the leaves having often seven leaflets, (never the case with _corylifolius_ or _fruticosus_), which are generally more acuminate, and smoother on the upper surface, the undermost and uppermost pair sessile; in the _aculei_ being more rare and shorter, and in the _fruit_ being dark red, not dark when in flower the _foot-stalks_ are sometimes eaten through by the minute _Dermestes tomentosus_; and bees frequently anticipate us by sucking the fruit with their proboscis. _E._)

*(Gathered by poor people as an agreeable sub-acid fruit. E.)
purple. The whole plant has a darker hue than that of *R. corylifolius*. Anderson, in Linn. Tr. xi. *R. Nessensis*. Hall. Tr. R. Soc. Edin. iii. Not of rare occurrence, growing chiefly among loose stones, by way sides, or at the foot of rocks in upland exposed situations. Anderson. E.)


*R. fruticosus*. (Leaves of three to five petiolated leaflets, hoary beneath; angles of the stem armed with hooked prickles; segments of the calyx reflexed. E.)


*Stem* angular, purplish, very long, with runners often several times the height of a man in length, spreading and climbing far and wide, and sometimes striking root. *Prickles* alternate, strong, bowed back. *Leaves*, the lower five-fingered, the upper three-fingered, and sometimes simple or with two or three lobes. *Petals* flaccid, white, or purplish. *Stems* always angular. *Prickles* always strong and hooked. *Leaflets* usually elliptical, sometimes oval-spear-shaped, serrated, dark green above, white with a close down underneath, sometimes, though rarely, only hairy, and then pale green; the middlemost on a leaf-stalk, the next pair on short leaf-stalks, the lower on shorter leaf-stalks, and sometimes sessile. *Woodw. Prickles* broad at the base and flattened. *Fruit* black. (Leaves durable. E.)

Var. 2. (*Fructu albo*. E.) *Fruit* white. Bark and leaves of a pleasant green.


**Common Bramble. Blackberry.** (Irish: *Driseog*. Welsh: *Mwyaren ddw*. E.) *Hedges and woods*. (In sequestered denes of the north of England, even at a height of 2,000 feet, this and one or two other hardy species may be observed, where they become all but evergreens. Winch. Geog. Distr. E.) S. June—Sept.*

*The berries, when ripe, are black, and do not eat amiss with wine; (they are rendered more palatable by being mixed with the juice of sloes. An excellent rob may be prepared from them, particularly grateful as a sub-acid in catarrhs and sore throats. In dysentery the berries exsiccated in a moderate oven, and afterwards reduced to powder, which may be kept in well-closed bottles, are esteemed an efficacious remedy; as are the roots of another species, according to the practice of the Oneida Indians; it might, therefore, be worth while to attend to the qualities of the roots of our English Bramble. E.)* The green twigs are of great use in dyeing woollens, silk, and mohair, black. Cows and horses eat it. Sheep are not fond of it. Linn. Three horses refused it. Silk-worms will sometimes feed upon the leaves in defect of those of the mulberry. Stokes. (Blackberries are extremely attractive to children, and the gathering of them affords a favourite recreation, when,

——— "Duly eager of the tempting store,
Adventurous hands the thorny maze explore."

The long and strong briers make the best standards for boys’ kites; and, in times of better feeling, when the disgusting traffic of the body-snatcher was an unheard-of enormity, were considered a sufficient security for binding the sod over rustic graves; from which even to have gathered a flower, planted by the hand of affection, would have been deemed a profana-
(R. glandulosus. Stems angular: branches and foot-stalks hairy, with glandular bristles interspersed: prickles deflexed, partly hooked: leaflets five to three, downy beneath: panicle and calyx very prickly and hairy, with copious glandular bristles. 

Stems nearly as stout at the base as those of R. fruticosus, but not so tall. 

Calyx hairy, copiously glandular, and more or less armed with straight prickles. The last character, and the prominent glandular bristles of the branches, panicle, and calyx, mark this species well. Petals white, narrow. Fruit black, of numerous, rather small, grains. Calyx reflexed.


(Also nearly allied to R. fruticosus, though as yet but imperfectly understood, are several plants, which some foreign authors have attempted to discriminate as species, but which can here be only noticed cursorily to attract further attention: viz.

R. plicatus. Prickles smaller than in R. fruticosus; leaflets larger, their under surface hoary and finely downy, but not white or cottony: panicle shorter and more corymbose, hairy, not white and downy, nor does it bear scarcely any glandular bristles, according to Smith. E.)

(R. rhamnifolius. Prickles more slender, narrower at the base, and less hooked than in R. fruticosus or plicatus: leaflets downy and hairy, with shining white hairs interspersed, beneath, but not pure white and cottony as in R. fruticosus: calyx spreading, not closely reflexed even when in fruit: segments without bristles or prickles. Sm. E.)

R. leucostaechys. In size and mode of growth resembling R. fruticosus and rhamnifolius; but, according to Mr. Borrer, is distinguishable by its abundant shaggy and shining pubescence, and narrow cluster or panicle. Leaves more jagged, and even the old stems are rarely without hairs. Smith adduces, as a further peculiarity, little glands, scattered over the branches and stalks of the panicle and outside of the calyx. E.)

(R. nitidus. A slender plant, with no hoariness, except about the edges and inside of the calyx. Leaves minutely hairy, but not hoary, with
strong prickly mid-ribs. The authors of "Rubi Germanici" indicate two varieties, one with rose-coloured flowers and acid fruit; the other with white flowers and sweet fruit. Sm. E.)

(R. affinis. Nearly related to the last, as Dr. Weihe observes, but distinguished from it by its hairy, or hoary, sometimes densely downy, panicle: by a much more hoary calyx; and leaflets larger, more pliant, scarcely ever hoary. Sm. E.)

(2) Herbaceous.

R. saxatilis. (Leaves ternate: stems ascending, slightly prickly, herbaceous, with prostrate runners: panicle with few flowers: calyx of the fruit converging; without prickles or glands. E.)

Hook. Fl. Lond. 154—E. Bot. 2233. E.)—Clus. i. 118. 1—Ger. Em. 1213. 4—Ger. 1090. 3—Park. 1014. 4—J. B. ii. 61.

(Mode of growth resembling that of the Strawberry. Sm. Leaves only two or three. E.) Leaflets generally one on a leaf-stalk, and the rest sessile, sometimes all on leaf-stalks, sometimes all sessile; cut-serrate, pale green, slightly hairy underneath. Fruit composed of a few, (one, two, or three, E.) large granulations, when ripe, of a beautiful clear pink, and a pleasant sub-acid flavour. Blossom purple, or white. Woodw. (Whole herb of a slender, delicate habit. Stems solitary, erect, unbranched, a span high. Panicle terminal, of a few small, greenish-white flowers, with a pointed calyx and narrow upright petals. E. Bot. E.)


P. June.*

R. arcticus. Leaves ternate, bluntly serrated: stem without prickles, bearing one or two solitary flowers: (petals nearly circular. E.)

(E. Bot. 1585. E.)—Fl. Lapp. 5. 2—Fl. Dan. 488.


* (The badge of the Highland clan M'Nab. The berries are acid, though with sugar might afford an agreeable dessert. In Russia they are fermented with honey, and yield a potent spirit. Hooker. E.)


Apparently dioecious; but Dr. Solander discovered the roots of the two plants to be united together under ground. Linn. (Root creeping. Stem hardly a foot high, simple, slender. Blossom large, white. Fruit of several large, dull orange-coloured granulations. Leaves heart-shaped, plicate, unequally serrated, on leaf-stalks. Glands or abortive stamens are constantly present around the germens of the fertile flowers. Hook. Fl. Lond. E.)


F. ves'ca. Runners creeping, (hairs of the foot-stalks widely spreading; those of the partial flower-stalks adpressed, silky. Sm. E.)

* (From the fruit may be prepared a highly flavoured sweetmeat, and a rich wine, much esteemed in Sweden. Dr. Clarke represents the flavour of the berries as finer than that of the hautboy strawberry; and their fragrance, when fresh gathered, delicious. A most elegant species, worthy of cultivation both for ornament and use; but it will not flourish without bog earth. E.)

† The berries are not unpleasant, and held to be an excellent anti-scorbutic. The Norwegians pack them up in wooden vessels and send them to Stockholm, where they are served in desserts, or made into tarts. The Laplanders bury them under the snow, and thus preserve them fresh from one year to another. They bruise and eat them with the milk of the rein deer, (and sometimes make a jelly of them boiled with fish. E.) In the Highlands of Scotland also they are occasionally brought to table. Dr. Clarke considered his life to have been saved by the febrifuge quality of this fruit. In Lapland, that celebrated traveller observes, "Whenever we walked near the river, we found whole acres covered with these blushing berries, (at first crimson, afterwards becoming yellow,) hanging so thick that we could not avoid treading upon them—Although they flourish most in marshy places, their roots do not strike into the swamp, but are found covering the hard and dry mounds of earth which rise above it." vol. iii. p. 376. A sprig of the Cloudberry bush is the distinguishing badge of the clan McFarlane. The Caledonian Horticultural Society recommended the cultivation of this plant by seed. Hooker. According to Mr. Bicheno it indicates the presence of slate. E.) Papilio Rubi, Phalena, Pavonia, Fascesiata, and Sambucaria, are nourished by the different species.

‡ (Generally supposed from *fragro*; referring to the fragrance of the fruit; but perhaps with as much propriety from *frango*, as a lithonthriptic. E.)
ICOSANDRIA. POLYGYNIA. FRAGARIA.


(Root blackish. E.) When growing in woods the segments of the calyx cloven at the point. Reich. Wires long, slender, smooth, often tinged with purple; radicating at intervals, and producing new plants. Leaf-stalks hairy. Leaves ternate, pubescent beneath; leaflets egg-shaped, serrated. Fruit-stalks with two or more flowers. (Blossoms white, erect. Fruit red, nutant, fleshy, fragrant, well-flavoured. Seeds granular, external. E.)


Var. 2. Huds. Fruit harsh, rough, and prickly, greenish, with some show of redness. Blossoms greenish. Ger. Em.


Var. 3. Fruit white.


Common in woods, hollow-ways, and hedge, banks, particularly in marl or clayey soil.

F. Eiatior. E. Bot. 2197, is larger and more hairy than the preceding, and seems to defy specific distinction. Ehrhart and Smith supposed it might be essentially discriminated by the hairs on the peduncles being "patent and even deflexed"; but Hooker and Borrer find them sometimes "quite erect and appressed." Neither are the flowers invariably dioecious, though often so. The fruit is larger, darker, of a musky flavour, like the true Hauybo of the gardens, which it is not improbable may have originated from this plant. E.)

F. stek/ilis. Stem prostrate, without creeping runners: (leaflets oblong, deeply serrated, silky on both sides, especially beneath. E.)


Shoots thick, depressed, covered with spear-shaped stipule of the colour of rusty iron. Leaves ternate, inversely egg-shaped, serrated, flexible, hairy, white underneath. Leaf-stalks very hairy. Flowering-stems thread-shaped, with a few small leaves. Flowers solitary, white, on fruit-stalks. Linn. (Curtis considers this plant as forming the connecting link between the Fragaria and Potentilla, having the leaves of the former, but in fructification more resembling the latter. Seeds, according to Mr. *

* Strawberries, either eaten alone, or with sugar, or milk, are universally esteemed as a delicious fruit. They are grateful, cooling, sub-acid, juicy, and have a delightful smell. Taken in large quantities they seldom disagree. They promote perspiration, and dissolve the tartarous incrustations upon the teeth. Persons afflicted with the gout or stone have found great relief by using them largely; and Hoffman says, he has known consumptive patients cured by them. The bark of the root is astringent. Sheep and goats eat it. Cows are not fond of it. Horses and swine refuse it. (Cicada spumorina, (Cuckoo-spit, or Frothworm,) enveloped in a spume exuded by itself, and wherein the little animal may be seen in time to acquire four tubercles on its back, in which wings are inclosed; these bursting, from a reptile it becomes a winged creature; and thus rendered perfect, flies to meet its mate, and fulfil its destiny in perpetuating its kind,—a familiar example of wonder-working power, well worthy of attention, E.) may be frequently observed upon the leaves. Coccus polonicus infests the roots. (See experiments on Esculent Strawberries by T. A. Knight, Esq. in Linn. Tr, vol. xii. E.)
Borrer, not decidedly "smooth and even," as in *Fragaria*; but rather "transversely wrinkled or rugose," as in *Potentilla*. Gmelin esteems it a *Comarum*, and calls it *C. Fragarioides*. Roth also thinks it should be referred to the genus *Comarum*, as having no berry-like, deciduous receptacle, but one that is dry, spongy, and permanent. We must, however, agree with the writer of the Botanical Report, *Month. Mag.* v. 24, that the succulent or dry state of the receptacle, even combined with a slight variation in the surface of the seed, does not seem sufficient to divide the genus. In a case of difficulty the habit should always have great weight, and in this respect it is altogether a *Fragaria*. E.)


**POTENTILLA.**† Calyx ten-cleft: Petals five: Seeds roundish, naked, wrinkled, attached to a small, juiceless, spongy, tubercled receptacle.

(1) Leaves pinnate.

**P. FRUTICO'SA.** Leaves winged, entire, hairy: stem shrubby.

*Dicks. H. S.—E. Bot. 88—Kniph. 5—Walc.—H. Os. ii. 23. row 3. f. 3d.—R. Cat. Ed. ii. at p. 225—Pct. 41. 8—Amman. 17 and 18. 1.*

(Stem upright, tinged with red, much branched, three feet high. E.) Whole plant set with fine silvery hairs. Leaflets about an inch long, strap-spear-shaped, turned back at the edges, dark green above, pale underneath. Leaves hardly to be called winged, consisting of two pairs set crosswise, rising from the same point, with a terminal one divided down to the base into three open segments. Blossom yellow.

**Shrubby Cinquefoil.** On the south bank of the Tees below Thorpe, and Egleston Abbey; and also near Greta Bridge, and Mickie-Force, Tees.

† (Diminutive of *potentia*, power or efficacy; from its supposed medicinal virtues. E.)
dale, Yorkshire. Ray. Mr. Robson assures me that it still grows in great abundance upon these spots. (At Wince Bridge, Durham. Mr. Winch. E.)

**P. anserina.** Leaves interruptedly winged, serrated, silky: stem creeping: fruit-stalks single-flowered.


(Stems procumbent, occasionally reddish, radicating and producing leaves and flowers from the joints. E.) With long creeping runners. Leaves silvery and white underneath, (three to six inches long. E.) Leaflets curiously plicate, lanceolate. Receptacle hairy. Blossom large, yellow. (Sometimes the leaves are nearly destitute of that silky down which gives them their chief beauty.

**Silver-weed. Wild Tansy.** (The old name *Argentine*, from the silvery hue of the foliage, is almost equally applicable to *P. argentea*. E.) (Moor Grass, in Scotland. Irish: *Bhrislan. Welsh: Tynllwyd; Gwyn y merchod. Gaelic: Bar-a-bhrisgein. E.*) Sides of paths and roads, and in low pastures, especially where water has remained stagnant during winter. P. June—July.

**P. rupestris.** (Stem erect, without runners: leaves lyro-pinnate, in sevens, fives, and threes: leaflets ovate, serrated, hairy. E.)


Whole plant hairy. Stem forked upwards, a foot high, striated, reddish, many-flowered. Leaves, serratures, and segments of the cup, tipped with scarlet or purple. (Petals inversely heart-shaped, white. Styles reddish. Seeds smooth, not furrowed; in this and other appearances, somewhat resembling a *Fragaria*. E.)

**Strawberry-flowered Cinquefoil.** On the sides of Craig Wreiden, (or Breddin,) Montgomeryshire. Ray. (Gathered there in 1817, by Mr. J. E. Bowman. Eng. Fl. E.) P. July.

(P. tridentata. Leaves ternate, wedge-shaped, smooth on the upper surface, hairy beneath; trifid at the end.

*E. Bot. 2389—Ait. H. Kew. v. 2. t. 9.*

At least equalling any of its genus in beauty. (Root reddish brown. Stems panicled, erect, three or four inches high, reddish, hairy. Seeds smooth, with a tuft of hairs about the top. Each leaflet an inch long. Cal. purplish. Radical-leaves on channelled foot-stalks, exceeding their own length. Sm. E.) Flowers white, three or four on each stem.

* (The beautiful appearance of its numerous flowers has gained it admittance into gardens. Besoms are made of it. Cows, horses, goats, and sheep eat it. Swine refuse it.

† The leaves are mildly astringent. Dried and powdered they have been given with success in agues. The usual dose is a table spoonful of the powder every three hours between the fits. The roots in the winter time eat like parsnips. Swine are fond of them. (Lightfoot states that in the islands of Tiras and Col, the inhabitants have been occasionally relieved from famine by the use of these roots, which abound in their poor pasture grounds. Cows, horses, goats, and swine eat the plant. Sheep refuse it. E.)
Three-toothed Cinquefoil. Discovered by Mr. G. Don, on a mountain called Werron, and on the eastern rocks of Clova, in Angus-shire.

(2) Leaves digitate.

P. ARGENTEA. Leaflets quinate, wedge-shaped, jagged, cottony beneath: stem ascending.


Stems numerous, woody, reclining, a foot or more in length, cylindrical, downy, forked upwards. Branches axillary. Leaf-stalks of the lower leaves long, gradually shortening upwards. Leaves green above, white and cottony underneath; lower ones alternate, with five divisions; segments wedge-shaped, entire towards the base, but wing-cleft towards the ends. Floral-leaves with one or three strap-shaped, entire, segments. Calyx downy, as long as the blossom. Petals small, yellow, soon shedding. Robs.

Silvery or Hoary Cinquefoil. Meadows and pastures in a gravelly soil. Side of the turnpike road in the parish of Holt Castle, Worcestershire. Mr. Ballard. On Blackheath. Mr. Jones. About Harrowgate plentiful. Mr. Robson. (Hill of Kinnoul, Perth; between Dorking and Bletchworth, Surry; between Hexham and Beafront, Northumberland; near South Shields, Durham. Mr. Winch. E.) P. June—Sept.

P. REP'TANS. Leaves quinate, leaflets obovate, serrated: stem creeping: stalks axillary, single-flowered.


(Peduncles solitary, longer than the leaves. Calyx hairy. Petals yellow, large. E.) Stem sometimes extending several feet. Fruit-stalks cylindrical. Leaves opposite, in pairs, segments ending in purplish points. Leaflets sometimes three. Flower-scales spear-egg-shaped, in pairs. Tormentilla reptans has been thought a var. of this; but, not to mention other differences, P. reptans has a creeping stem striking out roots at the joints, T. reptans a trailing stem not striking root. Æzel. Mr. Dawson Turner, however, states, that a plant of T. reptans transplanted into his garden three years ago, has by culture gradually approached nearer and nearer to Potentilla, till it is now hardly to be distinguished from it, and of its flowers at this time almost equal proportions bear four or five petals. E.)


P. VER'NA. (Root-leaves of five or seven sharply serrated, furrowed leaflets, hairy at the margins and ribs beneath: stems procum-
ICOSANDRIA. POLYGYNIA. POTENTILLA. 635

bent: petals obcordate, longer than the calyx: E.) stem-leaves ternate.

E. Bot. 37—Knip. 8—Allion. 24. 2—Clus. ii. 106. 2—Ger. Em. 988. 8—J. B. ii. 398. a. 1—Crantz. ii. 1. 1.

Root below clothed with broad rusty-coloured scales, but throwing out several stems from its head. Stems not creeping, ascending, purplish, much branched, slightly sprinkled with hairs, many flowered. Petals yellow, notched, with or without a tawny spot at the base. Stamens and pistils yellow. Plant when grown to maturity nearly smooth. Linn. Whole plant beset with soft, shining, silky hairs. Root-leaves roundish, on long leaf-stalks. Leaflets wedge-shaped, sessile, serrated, and truly dented at the end, entire downwards, the upper one the largest. Stems numerous, (several inches long, spreading in patches. E.) Stem-leaves three-cleft. Leaf-scales in pairs, spear-shaped, embracing the stem. Fruit-stalks terminal and axillary, long, slender, each with one flower. Floral-leaves spear-shaped. Calyx segments not very unequal, each as long as the stem. Petals inversely heart-shaped. Woodw.


(P. opaca. Radical-leaves of seven hairy, linear-wedge-shaped leaflets, deeply serrated throughout: stem-leaves ternate, mostly opposite: stems recumbent.


Leaflets constantly seven, dark green, with numerous deep marginal serratures. Flowers numerous, on long, simple, solitary, axillary, or panicked and bracteated, downy, hairy stalks. Cal. hairy, its outer segments narrow, as long as the rest. Petals the same length, bright yellow, orange coloured towards the base. Seeds corrugated.

Not so nearly resembling P. verna as authors have imagined.


(P. alpestris. Radical-leaves of five wedge-shaped, somewhat hairy leaflets: deeply cut in their upper half: upper stipule ovate: petals heart-shaped: stems ascending. E.)


This has been suspected to be a var. P. verna, but its habit is very different.

Stems decumbent at the base, then ascending, from four to eight or ten inches high, branched, leafy, somewhat compressed, loosely hairy. Calyx externally hairy; segments acute, somewhat unequal. Petals tawny yellow, or orange, inversely heart-shaped, as long, or longer than the calyx.
P. alpestris, (as ascertained by Haller, jun. and sanctioned by Smith, hitherto denominated P. aurea by most authors,) is an extremely variable species; but the entire bases of the wedge-shaped leaflets, and the deep wide segments of their upper part, destitute of the silvery margin of P. aurea, are characteristic. Sm. E.)


(P. alba admitted on rather slight authority, and without any precise station, in the time of Hudson, has never been found since in Britain. E.)

TORMENTILIA.* Calyx eight-cleft: Petals four: Seeds naked, beardless, fixed to a small juiceless receptacle.

T. officinalis. Stem somewhat ascending, branched: leaves sessile.


Stems generally declining, (six to eight inches long, slender. E.) Flowering branches ascending. Leaf-scales in pairs, wedge-shaped, deeply divided into three or more lobes. Woodw. Leaves of a beautiful green, ternate. Root-leaves on leaf-stalks. Leaf-stalks shorter than the breadth of the leaflets. Leaflets serrated. Calyx, the four smaller segments on the outside of the other four. Petals sometimes five, of a fine yellow, orange-coloured at the base; claws very short. Stamens fourteen to eighteen. Pistils six to sixteen. Receptacle woolly. (Root large and woody. Flowers sometimes, though rarely, double; drooping before expansion. E.)

Unwilling as we are to change a Linnsean name, his trivial erecta, (upright), given to the present species, is so very inapplicable that we have chosen, with Curtis, to call it T. officinalis.


P. June—Sept.†

* Diminutive of tormen, the cholic, certain plants of this genus having acquired credit as a remedy for such complaints. E.)

† The roots may rank with the strongest vegetable astringents, and as such have a place in the modern practice of physic. They are used in several countries to tan leather. Farmers find them very efficacious in the dysenteries of cattle. They dye red. Cows, goats, sheep, and swine eat it. Horses refuse it. Linn. A horse eat it. (M. Hermestadt, of Berlin, asserts, that a pound and a half of Tormentil will tan as much dry hide as seven pounds of oak bark. Monthly Mag. v. 19. Bulley, in his “Book of Simples,” asserts, on the authority of the Norfolk shepherds, that Tormentil in pastures prevents that very destructive disease the rot in sheep.—Abundant in the Orkney and Western Isles, where the roots are in much request by the inhabitants. E.)
T. rep'tans. Stem prostrate, scarcely branched: leaves stalked.

(E. Bot. 864. E.)—Walc.—Plot Ox. 9. 5. at p.146—Pet. 41. 10.

(Stems two feet long, not radicating. All the leaves on leaf-stalks. Leaflets ternate, wedge-shaped, generally on short leaf-stalks, serrated upwards, entire at the base; the upper frequently three-cleft. Stipules spear-shaped, entire, with two or three clefts. (Stem undivided. Segments of the calyx egg-spear-shaped, unequal, hairy. Petals roundish, heart-shaped, yellow. Flowers much larger than those of the preceding. E.)

In a garden sometimes producing five petals, and ten clefts in the calyx, which confirms the opinion of those who maintain that Potentilla and Tormentilla are not distinct genera: (and hence Scopoli, on abolishing the latter genus, acutely queries, "Monoculum hominem ab humano genere quis separabit?" E.) But independent of the generic character, this species, as Dr. Afzelius remarked to me, differs from P. reptans, in having a trailing stem which does not strike root at the joints, whilst that has a creeping stem which takes root at every joint.


Stem somewhat angular, (about two feet high, hairy, upright, branched towards the top, leafy. E.) Leaves winged, hairy, with two pair of leaflets; the lower pair circular, jagged and toothed, unequal; the upper pair egg-spear-shaped, jagged and toothed; and a terminal one larger than the rest, frequently cloven into three segments. The first pair Linneas considers as stipulae. Petals yellow, small. Germens hairy. Styles smooth, purple, with a double flexure towards the end.


P. June—Aug.†

* (From ysuw, to give out a flavour; from the agreeable aromatic quality of the roots. E.)
† The roots, gathered in spring, before the stem grows up, and put into ale, give it a pleasant flavour, and prevent its turning sour. Infused in wine they are a good stomachic. Their taste is mildly auster and aromatic, especially when growing in warm dry situations; but, in shady and moist places, they have little virtue. Cows, goats, sheep, and swine eat it. Horses are not fond of it. (Dr. Swediaur strongly recommends the root of this plant gathered early in the spring from a dry soil, as an excellent substitute for the Peruvian Bark, in intermittent fevers. Mat. Med. p. 99. As a febrifuge it was known to Ray, and has been recently brought into notice by Buckhave. Half a drachm or a drachm of the powdered root may be given four times a day. As an indigenous astringent it deserves notice, says the author of Edin. Dispens. E.)

Ed. 6. *G. urbanum* Sm. Somewhat larger in the petals, and more tawny, than the common appearance. Suspected to be a hybrid between *G. urbanum* and the following species; though Messrs. Curtis and Rob¬
son report it to be unaltered by garden culture. *E.*

*Fuchs.* 385—*Trag.* 37.


E. *Bot.* 106—*Fl. Dan.* 722—*Knip.* 1—*Lob. Ic.* i. 694—*Clus.* ii. 203. 1—

*Ger. Em.* 995. 4—*Pet.* 40. 3—*H. Ox.* iv. 26. 7—*J. B.* ii. 398. n. 2.

Upper-leaves with three or four lobes. *Leaf-scales* undivided, or jagged. *Fruit-stalks* purplish, becoming less bent when the seeds ripen. *Calyx* oblong, flat at the base, greenish purple, cloven half way down. *Blos¬
soms* streaked, of a dilute tawny red. *(Root horizontal, rather woody. *Stem* a foot high, upright, branches at the top mutant. *Root-leaves* plaited, cut, serrated, hairy. *E.*)

Var. 2. *Flore pleno.* Flowers double; sometimes proliferous; *(so found near Castle Eden by Mr. Winch. This is certainly "no hybrid," says Sir J. E. Smith, who states that by transplanting the wild roots into a dry gravelly soil, the flowers become red, as well as double and proliferous, with many strange changes of leaves into petals, and the contrary. *E.*)

*Water Avens.* (Welsh: *Mabgoll glan y dwr.* *E.*) Mountainous pas¬
tures and woods not unfrequent in the north of England, in Scotland, and Wales.

P. June—July.*

**DRY'AS.**† *Cal.* five or ten-cleft: *Petals* five or eight: *Seeds* with tails, formed by the feathered style: *Receptacle* broad and flat.

D. octope'tala. Petals eight: leaves simple, *(serrated, downy be¬
neath. *E.*)


*(Root* woody. *Stems* short, scaly, with the shrivelled bases of old leaves, decumbent, intangled, woody; branches leafy, upright. *Leaves* on leaf¬
stalks, at the edges revolute, evergreen, about an inch long, serrated, egg-shaped, smooth and shining above, cottony, with a reddish rib be¬
neath. *Fruit-stalks* solitary, upright, very long, woolly, towards the end rough with glands. *Calyx* glandulous, hairy, with eight segments, nearly equal. *Flowers* large, white, solitary. *E.*)

* The powdered root will cure tertian agues, and is daily used for that purpose by the Canadians. Sheep and goats eat it. Cows, horses, and swine are not fond of it. Linn. It is made use of to cure roty malt liquor. St.

† *(So called by Linnæus from the Dryades, to whom the Oak, *Δρυς,* is sacred; the eaves bearing some resemblance to those of that tree. *E.*)

P. June—Aug.


C. PALUS'TRE.


(Stems) about a foot in height, often tinged with red, decumbent at the base, cylindrical, smooth, leafy. Leaves on long leaf-stalks, of three, five, and seven leaflets, oblong, serrated, hoary underneath, sometimes, though rarely, thicker and villose. The calyx, petals, stamens, styles, and receptacles of a dark red purple, approaching to blackness. Flowers few, panicled, an inch over. Petals considerably smaller than the spreading calyx. E.)


P. June—July.

Var. 2. Differs only in the leaves being hairy, which hairiness also it loses in the following year. Linn.

Pluk. 212. 2—Pet. 41. 2.

* (From κόμας, an ancient name given by Theophrastus to an evergreen tree, and not now rightly understood. E.)

† The root dyes a dirty red. The Irish rub their milking pails with it, to make the milk appear richer and thicker. Goats eat it. Cows and sheep are not fond of it. Horses and swine refuse it.
CLASS XIII.

POLYANDRIA.

MONOGYNYIA.

(1) Petals four.

PAPAVER. Calyx two-leaved: Capsule one-celled: (opening by pores under the crown of the stigma. E.)

CHELIDO'NIUM. Calyx two-leaved: S. vess. a long single-celled Pod: Seeds crested, free.

(GLAU'CUM. Calyx two-leaved: Pod two-celled;* Seeds pitted, imbedded in a spongy substance, which fills the pod. E.)

ACTÆ'A. Calyx four-leaved: Berry one-celled: Seeds in a double row.

(2) Petals five.

CISTUS. Caps, nearly globular, opening at the apex: Cal. five-leaved: two leaflets smaller.

TIL'IA. Caps, five-celled, coriaceous: Cal. deciduous: (cells two-seeded, rarely one-celled, and one-seeded. E.)

[Delphinium Consolida.]

(3) Petals numerous.

NYMPHÆ'A. (Berry coated, of many cells: Cal. larger than the petals: Pet. seated on the germen: Nect. in the centre of the stigma. Sm. E.)

(NUP'PHAR. Berry coated, of many cells: Pet. from the receptacle, furrowed and honey-bearing at the back. Sm. E.)

* (Gaertner, Smith, &c. describe the cells as at least two: Hooker denies this pod having more than one, as was suspected by Jussieu. E.)
DIGYNIA.

(P©O'NIA. Cal. of five leaves: Petals five: Styles none: Capsule many-seeded. E.)

POTERIUM. Flowers B. and F. on the same plant: Cal. four-leaved: Bloss. with four divisions. F. Berry formed of the indurated tube of the blossom, two-celled.

TRIGYNIA.

DELPHINUM. Cal. none: Bloss. five petals; upper petal spurred: Nectary cloven, sessile.

[Chelidonium hybridum. Reseda Luteola.]

TETRAGYNIA.

[Myriophyllum verticillatum.]

PENTAGYNIA.

(ACONITUM. Cal. none: Pet. five, the upper one hooded: Nect. two, recurved, stalked, under the hood. E.)

AQUILE'GIA. Cal. none: Bloss. five petals: Nectaries five: spurred below.

[Papaver Cambricum.]

HEXAGYNIA.

STRATIO'TES. Cal. with three divisions: Bloss. three petals: Berry six-celled, sheathed.

[Papaver Cambricum.]
POLYANDRIA. MONOGYNIA. ACTAEA.

POLYONYnia.


CLEMATIS. Cal. none: Bloss. four petals: Seeds many, with feathery tails.

THALICTRUM. Cal. none: Bloss. four or five petals: Seeds many, awnless, naked.

ARUM. (Sheath one leaf, convolute at the base: Sheath-fruit-stalk, naked above; bearing pistils below, and sessile stamens in the middle: Bloss. none: Berry one-celled, one-seeded. E.)

HELLEBORUS. Cal. none: Bloss. five petals, permanent: Nectaries numerous, tubular: (Follicles three or four, beaked. E.)

CALTHA. Cal. none: Bloss. five or more petals: Caps. (Follicles five to ten: E.) Nectaries none.

ANEMONE. Cal. none: Bloss. five to fifteen petals: Seeds many.


SAGITTARIA. Flowers B. and F. on the same plant: Cal. three leaves: Bloss. three petals.

B. Filaments about twenty-four.

F. Seeds many, naked.

RANUNCULUS. Cal. five (or three) leaves: Bloss. five (or eight) petals: Seeds many: Petals with a nectary in the claw.

ADOonis. Cal. five leaves: Bloss. five or ten petals: Seeds numerous, angular, naked.

[Nymphaea alba. Papaver somniferum.]

MONOGYNIA.

ACTAEA. Bloss. four petals: Cal. four leaves: Berry one-celled: Seeds flattened, in two vertical rows. E.)

A. SPICATA. Bunch egg-shaped: fruit berry-like.
POLYANDRIA. MONOGYNIA. Chelidonium. 643

(E. Bot. 918. E.)—Blackw. 565—Fl. Dan. 498—Clus. ii. 86. 2—Dod. 402. 1—Lob. Obs. 389. 1, and Jc. i. 682. 1—Ger. Em. 979—Park. 379. 1—Ger. 829—H. Ox. i. 2. 8—J. B. iii. 660. 1.

(The four concave leaves of the calyx fall off very soon after they expand. E. Bot. Plant a foot and a half high, smooth; stem triangular; leaves growing triply ternate, sharp-pointed, deeply serrated. Leaves one to two inches long. Stamens thread-shaped, as long as the petals. Summit a knob, sessile. Blossoms several, whitish, forming a spike-like cluster. Berries black, juicy. E.)


Chelidoniun.† Bloss, four petals: Cal. two leaves: Pod strap-shaped, (one-celled: Seeds crested, free. E.)

C. majus.

Ludw. 132—Kniph. 8—Fl. Dan. 542—(E. Bot. 1581. E.)—Woodv. 263—Blackw. 91—Mill. 92. 1—Walc.—Fuchs. 865—J. B. iii. 482—Trag. 107—Ger. 911—Clus. ii. 203. 1—Dod. 48—Lob. Obs. 440. 1, and Jc. i. 760. 2—Ger. Em. 1069. 1—Park. 617. 1—Lonic. i. 165. 3—Matth. 628—II. Ox. iii. 2. row 1. 9.

(Stem two feet high, branched, brittle, swollen at the joints, yielding an orange juice. Calyx somewhat hairy, deciduous. Seeds black, shining, with a white crest. E.) Leaves deeply wing-cleft, segments nearly circular, scolloped. Flowers yellow. Fruit-stalks forming umbels. Stamens sometimes not more than twenty. Seed-vessel cylindrical, but compressed.

Celandine. (Swallow-wort. Welsh: Dilwydd felen; Llym y llygaid. E.) Hedges, rough shady places, on rubbish and uncultivated ground.

P. May—July.

Var. 2. Laciniatum. Jagged-leaved.

* This plant is a powerful repellent. The root is useful in some nervous cases, but it must be administered with caution. The berries are poisonous in a very high degree. It is said that toads, allured by the fetid smell of this plant, resort to it; but it grows in such damp and shady situations as those reptiles otherwise prefer. Sheep and goats eat it; cows, horses, and swine refuse it.

† From *swallow*, a swallow; because, according to Pliny and Dioscorides, it appears and disappears with that bird: but not so, Gerard observes, "for it may be founde all the yeere, but bicause some holde opinion, that with this herbe the dams (swallows) restore sight to their young ones when their eies be out, the which things are vaine and false. Vid. also Cornelius Celsus and Aristotle. Hence, however, it obtained the name of Swallow-wort. E.)

‡ The juice of every part of this plant is yellow and very acrimonious. (It is, in fact, very dissimilar to the sap, properly so called, of plants in general; but being like animal milk, composed of a watery fluid with oil or resin, must be considered an emulsion, which by evaporation, deposits its gum-resin. E.) It removes tetter and ringworms. Diluted with milk it consumes white opaque spots upon the eyes. It destroys warts and cures the psora. There is no doubt that a medicine of such activity may be converted to more
Leaves with five lobes. Lobes narrow, sharply jagged. Miller, who, during the cultivation of it for upwards of thirty years, could never perceive any alteration in it.

Among the ruins of the Duke of Leeds's seat at Wimbledon.

(GLAUCIUM. Calyx two-leaved: Pod two or three-celled: Seeds dotted, imbedded in a spongy substance which fills the pod. E.)


(G. PHENICICUM. Stem hairy: stem-leaves pinnatifid, cut: pod rough with upright bristles. Sm. E.)


important purposes. (Salisbury assures us that it is an excellent remedy in icteric, and other obstructions of the viscera; and, if taken with perseverance, will greatly relieve the scurvy. It should be used fresh, as it loses part of its virtue in drying.—In Cochin-China the roots are esteemed for various medicinal purposes. A double-flowered variety is sometimes admitted into gardens. E.)

* (So called from its glaucous or sea-green colour. E.)

† (This is a very showy flower, and Miller observes, if a few of the seeds are scattered about on rock-work, the plants will rise without trouble, and have a pretty effect; though too apt to spread in gardens. E.)
POLYANDRIA. MONOGYNIA. Papaver. 645

Plant sea-green (nearly the same size, but rather more upright than the preceding. E.) Root spindle-shaped. Root-leaves in a circle, on short leaf-stalks; wings alternate, indented at the ends, the upper ones largest, the terminal ones broad, blunt, with three or four indendures, hairy. Stem slightly hairy, furrowed, forked, branched. Stem-leaves half embracing the stem, alternate. Fruit-stalks terminal, and from the bosom of the upper leaves, slightly hairy, with sometimes one or two leaves similar to those of the stem, but smaller. Petals oval, deep orange, with an elliptical purplish spot at the base of each. Capsule very long, nearly straight, terminated by a blunt knob, very hairy. Woodw.


(G. violaceum. Leaves doubly pinnatifid, linear, smooth: stem smooth: pod of three valves and three cells, with membranous partitions. Sm. E.)

E. Bot. 201—Kniph. 10—Clus. ii. 92. 2—Dod. 449. 2—Lob. Obs. 141. 3, and Ec. 372. 1—Ger. Em. 367. 4—Park. 262. 3—J. B. iii. 399. 2—Pet. 52. 8—H. Ox. iii. 14. 2.f. 2.


(1) Capsules rough with hairs.

P. hybrìdum. Capsule nearly globular, furrowed, bristly: stem leafy, many-flowered: (leaves doubly pinnatifid. E.)

E. Bot. 43—Lob. Obs. 144. i. and Ec. i. 276. 1—Ger. Em. 373. 1—Park. 369. 1—J. B. iii. 396. 1—Pet. 52. 5—H. Ox. iii. 14. 9—Ger. 300. 1.

Leaves doubly wing-cleft: segments strap-shaped, nearly equal, the terminal one three-cleft; nearly smooth above, nerves underneath, bristly.

* (Learned etymologists derive this name from pap, papa, given to infants in order to procure sleep; or we might suggest, (ris. ten.?) pap. ver. q. d. the true parent, or chief nourisher,

"Tired nature’s sweet restorer, balmy sleep." E.)


P. argemone. Capsule club-shaped, ribbed, bristly: stem leafy, many-flowered: (leaves doubly pinnatifid. E.)


Root-leaves with a broad mid-rib, set with three or four pair of wings and an odd one, each of which is cloved into three. Petals inversely egg-shaped, dull scarlet, with a black spot towards the base, white before the calyx opens. Germen inversely conical. Summit, rays five to eight. Capsule cells as many as rays on the summit; bristles strong, white, pointing upwards. (In general habit resembling P. hyhridum, but the segments of the leaves broader. It sometimes appears with a double flower. Curtis remarks that it is often overlooked from the extreme fugacity of its petals, which rarely continue expanded six hours. E.)

Starved maritime specimens may occasionally be observed extremely diminutive, bearing only one flower, and usually more hirsute; as at Roosebeck. Mr. Atkinson. Between Abergele and Conway. Mr. Griffith. By the sea side at Weymouth. E.) From such originated P. maritimum. With. E.)


(A June—July.

(P. nudicaule. Capsule obovate, hispid: scape with one flower naked, hispid: leaves villose-hispid, pinnatifid, attenuated into a petiole longer than the leaf.


Stem none, or obsolete. Leaves all radical, numerous, petiolated, entirely villose-hispid, pinnatifid, with the lacinia entire or cut, petiole longer than the leaf. Scape four to six inches high, simple, rounded, hairy, the hairs horizontal, rusty brown, bearing a single flower at the extremity. Calyx of two leaves, the leafits oval, concave, externally clothed with brown, patent, hairs. Bloss. of four yellow, roundish, patent, petals. Stamens numerous, yellow, longer than the pistil. Anthers subtetragono- nous. Germen oval, hispid. Stigma sessile.

Naked-stalked Yellow Poppy. Gathered by Prof. Giesecke of Dublin among rocky glens in the hills at Achilhead, Ireland.

Hook. Fl. Lond. E.)

(2) Capsules smooth.

P. rhæas. Capsules smooth, nearly globular: stigma many-rayed:
stem many-flowered, rough, like the flower-stalks, with expanding bristles: leaves pinnatifid, cut.


Leaves hairy; leaflets strap-shaped, indented, serrated. Fruit-stalks long; hairs expanding. Lyons. Capsule not globular but ovate, and nearly as broad as it is long. Blossom bright scarlet, sometimes black at the base. (Distinguished from P. dubium by hairs and short capsules spreading horizontally; otherwise much resembling that species, though the segments of the leaves are generally broader. E.)

**Corn Poppy. Corn Rose. Cop Rose. (Scotch: Head-wark. Redmailkes. Irish: Blaah na bo dah. Welsh: Llygad y cythraul. E.)** Among corn, (frequent in most parts of this island, but in the southern counties the corn-lands are most brilliancy bordered with these Poppies, particularly in Kent and Sussex. The Rev. S. Dickenson observes that it is rarely, if ever, to be met with in Shropshire, nor have I been able to find a single plant of it in Staffordshire; the common Corn Poppy of those counties being P. dubium. E.)

A. June—Aug.*

*(Garden culture produces ornamental varieties; more or less double. One of the most beautiful is the Carnation Poppy, rich in varied tints, of delicate texture, and elegant form. This flower, observes Phillips, bursts forth from its confinement, when mature, with considerable force, throwing off the two-leaved caduceous calyx to some distance, and astonishing the beholder to see so large and beautiful a blossom expand from so small a dwelling. This Poppy bespeaks a light and shallow soil. It seems to have been from the most remote ages considered an attribute of Ceres, and an indispensable requisite in the decoration of that goddess, as it is found almost invariably to accompany the more valued grain, both in Britain and on the Continent. When in corn-fields so predominant as to appear as the principal crop, (the quantum of nutriment in a given surface being necessarily limited), this weed must considerably detract from what ought to supply the more valuable produce; it should therefore obtain the early attention of the farmer, and not be suffered to exert a prejudicial influence without interference, as is too often the case, even in some well-cultivated districts. And hence, (among weeds to be eradicated), Virgil condemns "Poppies, pregnant with Lethean juice." E.)*

The petals give out a fine colour when infused, and a syrup thus prepared is kept in the shops. It partakes in a small degree of the properties of opium. (From the petals of this plant the ingenious little Apis Papaveris, (Drapery-bee,) chooses the hanging of her apartment. This curious insect dextrously cuts out the petals of the half-expanded flowers, straightens the folds, and fits them for her purpose, overhanging the walls of her solitary cell with this splendid tapestry, in which, when completely finished, and rendered soft and warm, she deposits her honey and pollen. An interesting writer remarks,—"The Entomologist boasts that there is nothing analogous in the vegetable world to the metamorphosis of the butterfly; and, in poetic fervour, he resembles it to the immersing of the immortal spirit from its tabernacle of earthly clay. But behold the brilliant Poppy, just ready to expand. The corolla is carefully folded up, and enclosed in a rough unvaried covering of green. Certainly in this state it is not particularly attractive. Wait however one moment; the sun, even at this early hour, has absorbed the dews of night, and dried and warmed the mask of rough green which envelops the head. Suddenly it opens, and falls off. As the butterfly bursts from its dull dry case in all the pride of perfection, so does this brilliant flower instantly display its rich brown stamens, and unfold its splendid orange wings, as Linnaeus elegantly terms the petals. In both the insect and the flower, nature seems to have deviated from her usual slow gradations, as if impatient for, and
P. _dubium_. Capsules oblong, smooth, angular: stem many-flowered, hairy: fruit-stalks with bristles adpressed: leaves doubly pinna-tifid.


Stem (two feet high, E.) woolly below, more and more bristly upwards, the bristles on the fruit-stalks laid close. _Leaves_, segments entire, edges and mid-ribs hairy. _Capsules_ conical, much longer than broad; rays of the summit from six to ten. (As the capsules ripen the lower part curiously shrinks from the lid sufficiently to admit the genial influence of the warm air, and the escape of the mature seeds, without endangering them by exposure to wet. E.) _Petals_ dilute scarlet. A strict attention to the proportionate length and breadth of the capsule, and to the hairs on the fruit-stalk being laid close or expanding, will readily distinguish this species from _P. rheaus_. (Flowers always known from our other red Poppies by their paleness. Sm. E.)


(about Shanklin Chine, and other parts of the Isle of Wight, is found an extremely hirsute var. as represented in Fl. Dan. 902: the calyx studded with large transparent globules, with a bristle springing out of each. The capsule is nearly twice as long as it is broad, longer than in _P. rheaus_, shorter than in _P. dubium_.)

P. _somniferum_. Capsule smooth, nearly globular, as are the calyx and stem: leaves embracing the stem, jagged, glaucous.


_Petals_ white, tinged with purple, with large deep purple blotches at the base. _Ray_. (Flowers very large. The whole plant glaucous. _Stem_ three feet high, smooth in the lower part, rough upwards with expanding hairs. E.)


glorying in, their charms.” “And how much is there in this flower corresponding with the nature of man. The root, like the infancy of the human plant, contains the whole of the future being; but who can look at either, and form an estimate of their physical and moral beauty. The gradual unfolding of the leaves resembles the progressive stages of education; till at length the human plant stands forth in all the strength of his faculties, an intellectual and moral agent. But, unlike the brilliant Poppy, he is not the flower of a day. The seeds of piety to God, and benevolence to man, are ripened in his bosom, destined to germinate and blossom in a richer soil, the garden of immortality.” Wonders of the Veg. Kingdom, p. 72. E.)
Bot. (Moat of Tutbury Castle, Staffordshire, with flowers much smaller than the cultivated sort. Mr. W. Christy. E.) A. June—July.*

* Opium is the milky juice of this plant, inspissated by the heat of the sun. The Edinburgh College directs an extract to be prepared from the heads, i.e. the capsules. This extract is supposed to be milder in its effects than the foreign Opium, agreeing with many constitutions by which that cannot be borne, but it requires double the quantity for a dose: nevertheless, it is asserted that those who walk through fields of Poppies, or in any manner prepare those flowers for making Opium, are very sensibly affected with the drowsiness they occasion. A syrup, made with a decoction of the heads, is kept in the shops, under the name of Diaecodium. The seeds are sometimes used to make emulsions, but they have nothing of the narcotic virtues of the other parts of the plant. The Persians and Germans are said still to sprinkle these seeds over their rice and wheaten cakes, a practice of great antiquity. They are also sometimes sent to table mixed with honey. Gerard reports that "the seeds are often used in comfits, or served at the table with other juketing dishes: the oil which is pressed out is pleasant and delightfull to be eaten." M. Robiquet, has discovered that the narcotic quality of the Poppy is owing to a crystallizable substance called morphium, which possesses some properties in common with ammonia. It seems to be a solid and combustible alkalii: its action on the animal economy is violent, even in the smallest quantity. This plant is cultivated in Flanders, also in England, largely about Evesham, and Kettering, for the above named purposes; and for the sake of the seeds, from which an oil is extracted little inferior to olive oil, and often substituted for Florentine. The seeds consist of a simple farinaceous matter united with a bland oil used by painters. They have been given in the form of emulsion in cataracts. But a principal purpose for which Mau-seeds are raised in large quantities is as food for birds, and hence the vulgar name.

As observed in the "Wonders of the Vegetable Kingdom," when the petals of the Poppy fall off, the seed-vessel which rises in the centre, is completely closed. In process of time, as the seeds begin to ripen, the cover is gradually elevated, till as length it exhibits a beautiful little dome, supported by a circular range of pillars, which form so many openings for the escape of the imprisoned seeds, which not unfrequently amount to many thousands in a single capsule. Another singularity is thus noticed by Paley. "The head while growing hangs down, a rigid curvature in the upper part of the stem giving it that position, and in that position it is impenetrable to rain or moisture. When the head has acquired its size, and is ready to open, the stalk erects itself, for the purpose, as it should seem, of presenting the flower, and the instruments of fructification, to the genial influence of the sun's rays, a curious instance of the attention of nature to the safety and maturation of the parts upon which the seed depends." The silken tissue of the petals proves a talisman for Cupid, for, according to the practice of youthful lovers,—

"By a prophetic Poppy-leaf I found
Your chang'd affection: for it gave no sound,
Though in my hand struck hollow as it lay,
But quickly wither'd like your love away."

Many fine varieties of these flowers are produced by garden culture. The Society of Arts rewarded Mr. Ball, of Williton, Somerset, for preparing Opium from Poppies of British growth. The most productive flowers are large, rather dark, but varying in colour, and somewhat double. The seeds should be sown in February, and again in March, in soil well manured and worked fine, either in drills or broad-cast, to be thinned when a few inches high, and kept free from weeds. When the leaves fade, longitudinal incisions must be made in the green pods; the glutinous fluid will adhere to the plant, and in a day or two be inspissated by the sun, and ready for scraping off with a knife. It may shortly after be potted. This production has been declared by competent judges to be equally powerful with, and vastly more pure than, the best foreign Opium. The profit from an acre of suitable land, with a southern aspect, and where labour is cheap, must be very considerable. The above account is corroborated by the experiments of Dr. Fox, at Brislington, near Bristol, excepting as to the proportionate strength of the article. Messrs. Cowley and Staines, of Winslow, Bucks, in 1824, received a reward of thirty guineas for cultivating twelve acres of Poppies, and...

obtaining therefrom 196 lbs. of Opium, which sold for two shillings per pound more than any of foreign growth. The cultivation of the Poppy has been strongly recommended as an employment for the poor. A practical treatise, describing the whole process, with the instruments for cutting and collecting, may be had at Northampton, or of Mr. Dash, Kettering. The general supply has always been obtained by importation from Persia, Egypt, Smyrna, and the East Indies; but were this provided at home, light labour, suitable even to women and children, would be very considerable, and large sums of money kept in the country. Opium, properly so called, is the hardened juice of Poppy heads; Meconium is the juice of heads and leaves mixed, and not so powerful. The remarks here offered apply not only to foreign Opium, but, more or less, to our native produce. Though in ordinary cases a single grain of Opium may sometimes prove too large a dose, the quantity to which the human constitution may be gradually habituated, is astonishing. In countries where the prevailing religion prohibits the use of wine, as in Turkey, the Barbary States, Egypt, and throughout a large part of Hindostan, solid Opium, by progressive habit, is sometimes taken to the amount of half an ounce or more each day, without producing any other effect than a temporary inebriety. Garcias relates that he knew an individual who daily swallowed ten drams! Though this drug is wont to transport the enervated Asiatic to ecstasy bliss, the Eastern despots occasionally applies it to the prompt extinction of life in state criminals. The heat of such climates is supposed to concentrate its deadly particles: as an antidote to which modern chemists have ascertained acids to be most effectual. But the habitual practice of Opium taking, even under the most plausible pretexts, cannot be too strongly deprecated, as it is not less immoral and pernicious than any other species of debauchery; not merely enervating the system, but depriving the unhappy transgressor of a remedy more efficacious on proper occasions. However great the temptation to fly to so wretched a subterfuge, the man of courage and principle will shun

"Poppies which suborn the sleep of death."

Dr. Drummond, in his admirable "First Steps to Botany," very justly remarks, that Opium "allays pain, and lightens sorrow, diffuses a pleasing languor over the frame, and gives unusual serenity to the mind, dispelling from it every apprehension of sublunary evil, and steeping it in scenes of Elysium. It is indeed an agent which can, for a period at least,

"Raze out the written troubles of the brain, And, with a sweet oblivious antidote, Cleanse the full bosom of that perilous stuff, Which weighs upon the heart."

But this is only for a time, and the charm being dissolved, the soul awakes from its trance only to experience aggravated woe, in those at least, (and even in Britain the number is not small), who have fallen into the habitual use of this drug. If there be on earth a misery that approaches what we might be allowed to conceive as among the worst sufferings of a future place of punishment, it is the state of an Opium-eater, after the action of his dose has subsided. Unhappy and trembling, his head confused, and his stomach sick, remorse at his heart, but his resolution too feeble to attempt a reformation; feeling as an outcast from every thing that is good or great, he returns despairing to a repetition of his dose, and every repetition adds confirmation to the evil habit. His constitution becomes exhausted in a few years; he grows prematurely old, and dies of palsy, dropsy, or some disease as fatal: he dies, having by his own weakness and imprudence lived a life of wretchedness in this world, and looking forward at his exit to the darkest scenes of misery in the next. How often does man turn the greatest blessings into the greatest curse! Should this accurate description prove insufficient to deter the tempted from yielding to a fascination more fatal than that of the serpent, let him read, with trembling, "the Confessions of an English Opium Eater."

After the above warning, we may venture to listen to the concluding lines, even of a rapturous encomium of the Poppy:

(Plant) twelve to eighteen inches high; leaves glaucous beneath. E.)

Leaves winged, nearly smooth; root-leaves on very long hairy leaf-stalks; wings two or three pair, oval-spear-shaped, deeply cut, almost

** * * * * *

“Heedless I past thee in life’s morning hour,
Thou comforter of woe!
Till sorrow taught me to confess thy power.

* * * * *

Hail sacred blossom! thou canst ease
The wretched victims of disease;
Canst close those weary eyes in gentle sleep,
That never open but to weep;
For oh! thy potent charm
Can agonizing pain disarm,
Expel imperious memory from her seat,
And bid the throbbing heart forget to beat.

Soul-soothing plant! that can such blessings give,
By thee the mourner bears to live;
By thee the hopeless die!
Oh, ever friendly to despair!
Might sorrow’s pallid votary dare,
Without a crime, (a) that remedy implore
Which bids the spirit from its bondage fly,
I’d court thy palliative aid no more;
No more I’d sue that thou shouldst spread
Thy spell around my aching head,
But would conjure thee to impart
Thy balsam for a broken heart;
And by thy soft Lethean power,
(Inestimable flower!)
Burst these terrestrial bonds,
And other regions try.”

Despite, however, the most empassioned strains, breathing the deep tone of feeling too cruelly agitated, we cannot but reiterate, while, in sympathy for human frailty, we pity more than blame the infirmity of our common nature, lamentable indeed is it that man, the rational being, turning from the only true source of genuine consolation, should, as the beast that perisheth,

“From the low earth tear a polluting weed;” E.)

(a) (These fine lines were composed by the Hon. H. F— ——, at a period when that amiable and accomplished female was indeed but “too severely tried,” and it is hoped that ere the conclusion of her sufferings she derived some comfort from the friendship and professional skill of Dr. Withering. As connected with the subject immediately before us, it may perhaps be allowable here to introduce our Author’s own sentiments, as communicated to another lady, who, also, in her sad extremity confidentially sought the solace of his advice. “To encourage a desire to die is an unworthy tendency to desert the post allotted to us; and if such desires once become motives to make us neglect the means of restoring or preserving health; such motives and such conduct, directly or indirectly tending to cut short our existence, are, perhaps, altogether as indefensible and as wicked, as the still shorter modes of the pistol or the halter.” Memoirs and Tracts of Dr. Withering, p. 182. E.)
lobed, the terminal one with three lobes; stem-leaves on short fruit-stalks, the upper sessile. Fruit-stalk slightly hairy, with one flower. Petals egg-shaped, pale yellow, scored towards the base. Woodw. (Juice lemon-coloured. E.)


**NYMPHAEA.** (Cal. four or five-leaved, larger than the petals: Pet. numerous, inserted on the germen beneath the stamens: Berry many-celled, with a cortical coat: Nectary on the stigma. E.)

**N. alba.** Leaves heart-shaped, very entire, (even beneath: calyx four-leaved: stigma of sixteen ascending rays. E.)


(Leaves a span wide, oval, with a deep notch at the base. Leaf-stalks and flower-stalks cylindrical, cellular. Blossoms several inches over; pistils and stamens yellow.

This most beautiful aquatic, the largest of its kind, floats its splendid white, or pinkish flowers, by broad leaves. E.)


* (Papaver Cambricum, Scirata alpina, and Rhodiola rosea, were first identified as British plants by the celebrated apothecary and herbalist Thomas Johnson, in a botanical excursion to explore Snowdoin. Happily forsaking science for the sword, he shortly afterwards fell in the royal cause, an. 1644. E.)

† (The Nymphæa, of Theophrastus and Dioscorides, from being found in the haunts of the water Nymphs. E.)

‡ It extends itself by long runners terminating in a bulbous root, and sending up leaf-
POLYANDRIA. MONOGYNIA. NUPHAR. 653

(NUPHAR. Cal. five or six-leaved: Pet. numerous, inserted with the stamens on the receptacle, furrowed and bearing honey at their backs: Berry many-celled, coated. E.)

N. LUTEA. (Leaves heart-shaped, the lobes approximating: calyx five-leaved, much larger than the petals: border of the stigma entire: foot-stalks two-edged. E.)


Leaves egg-shaped, with a deep notch at the base, (floating on the surface of water, very large and smooth. E.) Calyx, leaves yellow, except at the base on the outside, where they are green. Petals fleshy, golden yellow. Stamens after shedding their pollen reflexed. Seed-vessel, cells often more than fifteen, (egg-shaped, in a degree beaked, smooth. Flowers on long fruit-stalks, two inches in diameter, concave cylindrical. Seed-vessel bursting irregularly when ripe. E.)

stems in deep water. It may be propagated by transplanting the bulbous roots in winter. Mr. Stackhouse. Botanists often affect to despise the labours of the Florist, who wishes, by multiplying the petals, to produce double flowers, stigmatizing them by the name of monsters. They may be monsters; but they are beautiful monsters. Who does not admire the flower of the double-blossomed cherry? And when, as in the White Water Lily, the petals are naturally multiplied to a great degree, he who turns away with disdain from this splendid object of creation, must be fastidious indeed. The petals gradually lessen as they approach the centre of the flower, where the outer filaments expanding in breadth, assume the form of petals, as is generally the case in the double flowers of gardens. (In Japan, either natural or artificial White Water Lilies, as the symbols of purity, are borne on poles before the corpse in funeral processions. The fervid imagination of the Eastern poet represents the eyes of his mistress as rivalling the sun itself in awakening the Water-lily; causing it, in error, to emerge from its watery couch. But, discarding metaphor, the economy of this plant is indeed particularly worthy of notice. Emulating the sacred Lotoes of the Nile, the flowers arise and expand as the sun gains its ascendancy, close towards evening, and in that state either repose through the night reclining on the bosom of the water, or actually sunk beneath its surface, till revived by the return of day; when

"The Water-lily to the light
Her chalice rears of silver bright." Scott.

"Those virgin Lilies, all the night
Bathing their beauties in the lake,
That they may rise more fresh and bright
When their beloved sun's awake." Moore.

The action of the stimulus of light in this instance is peculiarly obvious, expanding, and thereby raising the flower, as Sir J. E. Smith interprets, "that the pollen may reach the stigma uninjured:—afterwards, by contraction, losing its buoyancy and sinking from its own weight, as the more ponderous fruit ultimately does to the muddy bottom, therein gradually decomposing into a gelatinous mass, and depositing its seeds. E.) The tuberous roots are used in Ireland, and in the island of Jura, to dye a dark brown; (they have been esteemed narcotic. E.) Swine eat it. Goats are not fond of it. Cows and horses refuse it. (Both the species support Aphis aquatilis and Lepiura aquatica. This superb flower must constitute the chief decoration of ornamental ponds, or basins. Chinese carps, (Cyprinus auratus), are said to delight in the shade of its expansive foliage. Oxygen gas is copiously evolved in bubbles from the leaves. In Turkey and Greece an agreeable cordial beverage is prepared from the leaves and flowers. Sturm. The orientals consider the large roots of this tribe of plant as esculent: whether our species may be rendered innocuous by boiling might be worth of experiment. E.)

P. July—Aug.*

(Var. 2. Lesser Yellow Water Lily* N. pumila. Hoffm. Sm. Hook. Fl. Lond. t. 165. N. minima. E. Bot. 2292. Nymphaea lutea β minima. Wild. Differs from the commoner kind in being throughout only one half its size, the leaves scarcely attaining three inches in length and two in breadth; the blossom not an inch over when fully expanded; but especially in its deeply toothed, green bordered stigma, and compressed foot-stalks. This interesting plant has been communicated to us by the kindness of N. J. Winch, Esq. who remarks that it is precisely N. lutea in miniature, and that the specific marks of the stigma toothed, or entire, are fallacious, as depending on the age of the seed-vessel. Discovered in 1809 by Mr. W. Borrer in the lake near the farm of Corrie Chastel, at the foot of Ben-Cruachan; also in Loch Baladren. Loch of Montech, Sterlingshire, between the islands and the shore. Mr. Arnott. Loch Duble, near Inverary. Mr. Maughan. In a small lake at the back of the inn of Aviemore. Hooker. Charter's Lough, on the Wallington Moors, Northumberland; J. Trevelyan, Esq.; by whom transplanted to fish ponds, and there observed to flourish for fifteen years beside N. lutea, still retaining its diminutive size; though some writers have asserted a contrary tendency. E.)

TIL'TIA.† Bloss. five petals: Cal. with five divisions, deciduous: Capsule nearly globular, five-celled, five-valved, coriaceous, opening at the base.

T. EUROPE'A. Flowers without a nectary: (leaves cordato-acuminate, serrate: pericarp roundish, more or less angular and fagineous. E.)


* The roots rubbed with milk destroy crickets and cockroaches. Swine eat it. Goats are not fond of it. Cows, sheep, and horses refuse it. Linn. Ray observes that the flowers smell like brandy, (whence in some parts of England, in reference also to the remarkable form of the fruit, the plant is denominated Brandy-bottle. The Greeks prepare a cordial from its flowers. E.) An infusion of a pound of the fresh root to a gallon of water, taken in the dose of a pint, night and morning, cured a leprous eruption of the arm. (The leaves and flowers are employed in tanning; the root is still better for that purpose. Fl. Lond. This species, though less attractive than the preceding one, has an enlivening effect in combination with the other, and should be encouraged

"To spread its golden orbs upon the dimpling wave." E.)

† (Supposed to be derived from NAI, a feather; alluding to the appearance of the flowers and floral-leaves. E.)
Floral-leaf yellowish green, nearly as long as the fruit-stalks, and attached to it for about half its length. A large and stately tree. Bark smooth. Blossoms small, fragrant, yellowish white, cymose, pendulous. Branches smooth, when young often tinged with red. Leaves alternate, on leaf-stalks, ramifications of the veins underneath hairy. Calyx woolly at the edge. Petals blunt, concave. Stamens thread-shaped. Stigma five-cloven. E.)

Lime Tree. Linden Tree. (Welsh: Pisgwydden; Gwaglwyfen. E.)

Woods and hedges.

* (The Lime tree, the "Tilia lutes" of the Mantuan bard, has been lauded in every age; though the Venusian courtier affects to despise the wonted assistance of its tender shreds to secure the effeminate decoration of his own person,

"Displicent nexa Philyra corona." Od. xviii.

"Ribands from the Linden tree
Give a wreath no charms for me."

Sannazaro distinguished it by the epithet incorruptible, "la incorrutihile Tiglia;" "non sente mai corrotione di sorte alcuna;" probably alluding to the imperishable nature of its papyraceous bark. This bark also possesses the almost peculiar property of being exempt from the depredations of hares.

"The Line or Linden tree," saith Gerard, "waxeth very great and thicke, spreading forth his branches wide and far abroad, being a tree which yeeldeth a most pleasant shadow, under and within whose boughes may be made brave sommer houses and banketting arbors." p. 1298. The whole of Evelyn's description is peculiarly animated. He concludes, "Is there a more ravishing or delightful object, than to behold some entire streets and whole towns planted with these trees, in even lines before their doors, so as they even seem like cities in a wood? This is extremely fresh, of admirable effect against the epilepsy, for which the delicately scented blossoms are held prevalent, and screen the houses both from winds, sun, and dust, than which there can be nothing more desirable where streets are much frequented: for thus

"The stately Lime, smooth, gentle, straight, and fair,
(With which no other Dryad can compare),
With verdant locks, and fragrant blossoms deckt,
Does a large, even, odorate shade project." Cowley.

Dr. Hunter adds: "The Lime is a handsome picturesque tree, forming a beautiful cone by its branches, and maintaining its body taper and straight; and as it will grow to a large size, it is very proper to be planted for avenues; it also makes a beautiful detached object in parks and open places. Although the leaves fall off very early in the autumn,

"Those virgin leaves, of purest vivid green,
Which charm'd ere yet they trembled on the trees,

The Lime first-fading;"

Yet it immediately makes amends by exhibiting its beautiful, red twigs; for which reason the red-twiggged Lime should always be preferred for these purposes. If planted in a rich and loamy earth, wherein it chiefly delights, the growth of it will be almost incredible. In the pleasure-ground of the palace at Bishopthorpe, belonging to the Archbishop of York, there is a noble walk of stately Lime trees, which exceeds any thing of the kind in this island:

"a pillar'd shade
High overarch'd."

At Depeham, in Norfolk, a Lime tree, the "Tilia Colossea Depemensis" of Evelyn, measured at some distance above the ground thirty-six feet girt, and rose to a height of ninety feet. Strutt delineates one in Moor park, Hertfordshire, seventeen feet girt at three feet from the ground, and one hundred feet high; containing eight hundred and seventy-five feet of saleable timber, and which struck out nineteen horizontal branches from sixty to
POLYANDRIA. MONOGYNIA. Tilia.

Var. 2. Leaves unequally serrated: fruit cottony: cells five. Du Roi.

Small-leaved Lime or Linden Tree. Bast. T. cordata. Mill. Du Roi. Essex, Sussex, and Lincolnshire. Ray. (We incline to think seventy feet long:—also another in Cobham park, at the base measuring twenty-eight feet, and ninety feet in height. The recollection of our readers will readily refer to several spacious areas in English towns adorned with these trees, (and to St. James's Park, planted at the suggestion of Evelyn,) in the manner so much admired in Holland and Flanders. This species prevails more generally in Germany and the Netherlands, whence it is supposed to have been introduced into England, temp. Eliz. In regard to its claim to be strictly indigenous of Britain, we consider it may rank among the dubia, as the Chesnut and some others. A Lime tree in the immediate vicinity of Newstadt was for many ages so remarkable as to occasion that city to be called "Newstadt ander grossen Linden," and to attract the attention of many illustrious visitors, who have left tokens of their admiration. The celebrated Lime of Cleves was also of great magnificence. In the middle of the tree was cut a room of considerable dimensions, while the external parts were most curiously trimmed and tortured in the highest style of genuine Dutch taste. Peculiarly attractive is the Lime,

— "at eve
Diffusing odours."

Not, however, limited in this respect to any particular hour, but rather by the soft humidity which then pervades the atmosphere, and proves a favourable medium.

"Nor unedifying is the ceaseless hum
To him who muses:" 

Nor yet un instructive; for there do countless animated atoms, impelled by instinct alone, impart lessons of wisdom to the higher prerogative, and, with unceasing toil, mock the best efforts of human industry. The Lime tree supports Sphinx Tiliae; Phalena lanestris, dispar, antiqua, Psi, Bucephala; Aphis Tiliae; Acanthus telarius; (Geometra Alniaria, and G. erosaria). The galls on the leaves are often the nidus of Cerculocto contractus, though similar excrescences are more frequently occasioned by different species of Cynips. Few trees are more subject to honey-dew than the Lime. Especially in sultry seasons the leaves become enveloped in a viscous substance, (which, stopping up the pores, provokes extremely injurious), and loaded with black Aphides. The most accurate history of this phenomenon will be found in Linn. Tr. vol. vi. Mr. Curtis therein proves that the egesta of various species of Aphides will fully account for the glutinous and saccharine liquid so frequently observable on the leaves of Lime trees, certain kinds of Willow, Hops, and other plants; refuting the erroneous ideas of this kind of blight being occasioned by any peculiar state of the atmosphere, or by clouds of insects conveyed by a prevalent wind. A single female Aphis will produce nearly one hundred young ones, which quickly take possession of the under surface of leaves, and with a pointed instrument of proboscis construction pierce the plant and imbibe the vital juices for their own support. The sweet and viscous liquid voided on the superior surfaces of the leaves below affords a welcome repast to flies, ants, wasps, and other insects, but not to bees, who appear decidedly to prefer extracting for themselves more genuine honey from the fragrant flowers. The clammy matter appearing on the upper surface of the foliage may account for the vulgar supposition and name of Honey-dew, as descending from the atmosphere. Aphides abound in hot dry seasons. Mr. Curtis insists that there never exists any honey-dew but where there are Aphides; and that accumulated saccharine substance, and no other cause, occasions the sooty appearance, sometimes mistaken for a black mildew. Heavy rains may mechanically remove the Aphides, but that they are not readily destroyed, even by immersion in water for a length of time, has been experimentally proved. In stoves fumigation with tobacco-smoke will kill them, but in the open air artificial remedies are seldom applicable, and the scourge of the vegetable kingdom must be left to the natural destroyer the Coccinella, or Lady-bird, (who, though a favourite with many, has been too little valued for her important services,) and the Ichneumon Aphidum, who does not destroy as the former insect, primarily by devouring, but by puncturing the body of the Aphis, and therein depositing its own egg. This quickly hatches to a small larva, which feeds on the substance of the Aphis, till, having consumed the interior, it changes to a chrysalis, and ultimately escapes from the usurped
T. parvifolia of Ehrhart and E. Bot. 1705, T. microphylla of Ventenat, and T. Europaea of Fl. Brit. no other than this variety. Woods about Pont Nedd Vechn, Glamorganshire. Mr. E. Forster, jun. Near Lord

inflated skin, an Ichneumon fly. Museae Aphidivora feed entirely on Aphides, their larva deposited amidst the innumerable host contributing their full share to diminish these despoilers of Flora. Nor are some of the smaller birds unassisting in rescuing the vegetable tribes from enemies, who, though

—— "A feeble race, yet oft
The sacred sons of vengeance, on whose course
Corrosive famine waits, and kills the year."

Neither does the skilful farmer,

"While they pick them up with busy bill,
The little trooping birds unwisely scare." Thomson.

Unfavourable weather may produce blight by its own distinct operation, as the dry frosty wind principally affecting the blossoms, and causing them to fall off prematurely: or the south or south-west wind, unaccompanied by insects, the effects of which are visible in the burnt appearance of the leaves and shoots exposed to that quarter: but the prevalence of Aphides, often, indeed, appearing after a north-east wind, is by far the more general cause: though not

—— "Engender'd by the hazy north." E.)

The Lime flourishes best on the sides of hills, but it will live very well in meadow grounds. It is easily transplanted, (even of a large size, and the method recommended by Sir Henry Steuart, of Allanton, seems likely to ensure success, Vid. the " Planter's Guide." E.) Grass grows beneath it; it is useful to form shady walks and clipped hedges. (Exotic species are successfully engrafted on it. A sort of coarse stuff is prepared and worn by the shepherds of Carniolas, from the outer bark. E.) The wood is soft, light, and smooth; close grained, and not subject to the worm, (the chief material for the elegant Tunbridge ware. E.) It makes good charcoal for gunpowder and for designers. It is used for leather-cutters' boards and for carved work. (The fruits, flowers, &c. of the celebrated sculptor Gibbons, (patronised in the reign of Charles II. and designated the English Lysippus), were all executed in this delicate material, (of which an eminent example is the choir of St. Paul's cathedral),

—— "Smooth Linden best obeys
The carver's chisel; best his curious work
Displays in all its nicest touches." E.)

It is also employed by the turner. The leaves are dried in some countries as winter food for sheep and goats. Cows eat them in the autumn; but they give a bad taste to the milk. The bark, macerated in water, may be made into ropes and fishing nets. (The inner bark separates into tough layers, called Bast, and this is manufactured into Russian matting, serviceable to gardeners for protecting fruit trees; also for various purposes of packing. E.) The flowers are fragrant, and afford the best honey for bees, (notwithstanding the adverse sentiment of Columella), of which Virgil was aware, as appears from his beautiful description of the industrious Corycian, wherein he connects the Lime, as also the Pine, with his apiary.

—— "Et spumantia cogere pressis
Mella favis; illi Tiliae, atque uberrima Pinus."

The famous Kowno honey is made exclusively from the blossoms of this tree. The Lipes or genuine Linden honey, is, Pallas assures us, of a greenish colour, and delicious flavour. It is taken from the hive immediately after the Lime tree has been in blossom. The ancestors of our great naturalist are said to have derived their surnames of Lindelius, Tiliander, and Linnaeus, from a large Linden tree which grew on his native farm. The inhabitants of Switzerland make a favourite beverage from the flowers. Dr. Chandler tells us that in the South of France, an infusion of the blossoms is esteemed as a remedy for coughs and hoarseness. At Nismes, they are eagerly gathered, dried, and kept for these purposes. Tea of Lime blossoms is a soft, well-flavoured saccharine julep, in taste much


(It has been attempted to designate several species of British Tilia, as T. Europaea, grandifolia, and parvifolia, but the characteristics are supposed to vary into each other. In the second above named, Schkuhr represents the stamina as polyadelphous, and the lobes of the stigma converging: in the third species the stamens as unconnected, and the lobes of the stigma diverging. In both, the number of cells of the capsule is inconstant, according to Persoon. E.)

CISTUS.* Bloss. five petals: Cal. five leaves, two of them smaller: Caps. from one to ten-celled: from three to ten-valved, opening at the apex. E.)

(1) Shrub-like; without stipulae.


Stems numerous, (three to six inches high. E.) Flowering branches ascending, hairy. Leaves egg-shaped, blunt, sessile, green on both sides but covered with white hairs. Bunches terminal, of three or four flowers, with small spear-shaped floral leaves. Woodw. Petals four or five, inversely egg-shaped, very entire. Flowers yellow, small. Calyx hairy. Style knee-jointed. This plant is liable to vary in hairiness according to situation. Hook. E.)

HOARY DWARF CISTUS. C. marifolius. Linn. C. hirsutus. Huds. C. anglicus. Linn. Mant. With. Ed. 3. E.) Mountainous pastures and rocks. On the west side of Bentham Bank, one mile from Kendal; resembling the juice of liquorice. Pliny informs us that chaplets worn at the Roman feasts were interwoven with the flexible twigs of the Tilia, and Bellonius states that the Grecians employed the wood for making bottles, which were usually lined with resin. It was one of the papyraceous trees of the ancients, the Philira; and a work of Cicero written on the inner bark is preserved in the library at Vienna. The Lime tree contains a gummy juice, which being repeatedly boiled and clarified, produces a substance like sugar. Missa, the French physician, pounding the fruit of Lime trees obtained a butyraceous substance much resembling chocolate. This experiment was repeated by Margraff with equal success, and probably some of the American species may yield a produce more completely similar. Ventenat. Dr. Swediaur recommends an infusion of water prepared from the fragrant blossoms of the Lime as an antispasmodic. Hoffman reports its success in curing an inveterate epilepsy. E.) Indeed, so numerous are the valuable purposes to which this tree may be applied, that "Tilia ad mille usus petendae" became proverbial even in the days of Pliny. E.)

* (From cista, a cist, or little chest; the seeds being thus enclosed in the capsule. E.)

(2) Herbaceous; without stipulae.


Whole plant covered with expanding hairs, (dark green, rather fragrant. E.)

Stem upright. Leaves sessile, three or four pairs. Bunch slender, terminal. Flowers upright, but when just out of blossom pendent. Fruit upright. Fruit-stalks long, slender. Flowers pale yellow. Petals, with a dark reddish spot at the base, falling off in a few hours; sometimes observed without spots. Stem about a foot high. E.)

Spot--ed-flowered Cistus. (Welsh: Cor--rosyn rhudd-manog. E.) Sandy pastures on M. Llech ddue, near Holyhead, Anglesey; Mr. Brewer; and not in the Isle of Man. Rev. H. Davies.* E.) A. June.†

(3) Herbaceous; with stipulae.

C. (ledifo'lius. Pubescent: leaves spear-shaped: fruit-stalks upright, opposite to the leaves, shorter than the calyx: flowers solitary.

(E. Bot. 2414. E.)—Lob. Obs. 552. 1; and Ic. ii. 118. 1—Ger. Em. 1280. 17.

Petals yellow, smaller than the calyx, very soon shedding, sometimes wanting. Huds. (Stem nearly upright, undivided, sometimes branched at the bottom, cylindrical, hairy, leafy, few-flowered. Leaves opposite, blunt, very entire, narrowed at the base, downy on both sides, one and a half inch long. Stipulae one-third the length of the leaves, acute. Calyx-leaflets tapering to a point, marked with nerves, hairy. Capsule large, triangular, polished, hairy, at the upper part of the angles, single-celled, the receptacles being not at all prominent so as to form partitions. C. salicifolius, with which this plant has been confounded, differs in being only one half the size; in having a more branched stem, horizontal peduncles, and calyx half as long again. Sm.

* (For the correction of this and a few other topographical errors, originating in a like misconception, we are indebted to the late ingenious author of the Welsh Botanology, who, happening to possess a copy of Brewer's Diary, was enabled to ascertain that ' Brewer never visited the Isle of Man;' and that ' the Mona of Dillenius,—of Hudson, with regard to C. guttatus, and wherever he quotes Dillenius and Brewer, is not the Isle of Man, the Mona of Caesar; but the Mona of Tacitus, and the hallowed scene of Mason's Caracatus.' E.)

† (In the middle of summer, Curtis remarks, when the mornings are long and the solar rays powerful, the petals of this species will frequently fall off before nine o'clock; towards autumn we have known them continue till noon: immediately on their falling, the three larger leaves of the calyx close together over the stamens and pistil, and secure them from any injury they might be liable to sustain from the early loss of their more delicate covering. Another exemplification of the care and skill observable in the economy of nature, which amply recompenses attention even of the humblest productions. E.)
POLYANDRIA. MONOGYNIA. CISTUS.


A. June—July. E.)

(4) Somewhat shrub-like; with stipulae.

C. HELLAN^THEUM. Trailing: stipule spear-shaped, fringed: leaves oblong, edges revolute, somewhat hairy (above, hoary beneath. E.)

Curt.—(E. Bot. 1321. E.)—Kniph. 12—Fl. Dan. 101—Wallc. 5—Park. 656. 1—Clus. 1. 73. 1—Lob. Is. ii. 117. 1—Ger. Em. 1283. 4—J. B. ii. 15. 2—Lob. Is. ii. 117. 2—Ger. Em. 1282. 3—J. B. ii. 16. 1—Ger. 1100. 3 and 2—Matth. 744—Trag. 221.

Stems three to six inches long, thread-shaped, a little woolly. Leaves egg-spear-shaped, in pairs at each knot of the stem, above green and somewhat hairy, cottony underneath. Leaf-scales four at each knot of the stem. Calyx, the three larger leaves composed of strong green ribs, connected by a semi-transparent dotted membrane; the two outer spear-shaped, green, and which are more like floral-leaves. (Flowers in terminal racemes, showy, expanding only in sunshine, and scarcely lasting a day. E.) Petals yellow, a little toothed on the outer part, nearly circular. E.) (The stamens exhibit a curious instance of irritability. When touched with a pin or bristle they retire from the style, and lie down in a spreading form on the petals. This can be seen only in calm warm weather, and when the flowers have not been ruffled by insects. Dr. Hope, in E. Bot. E.)


P. June—Aug.


Var. 3. Fl. ros. Blossoms rose-coloured.


Whoever has paid attention to the habit of C. Helianthemum will find it liable to considerable variation, both in the size and shape of its leaves and petals; and as to the leaves "excavato-punctata," Fl. Brit. "dotted beneath," with "little hollows or depressions," Eng. Fl. first noted by Lightfoot in his Herbarium, (not in his publication), which has been recently revived to corroborate a supposititious species; we have reason to believe that this latter distinction so far from being generally apparent, will very rarely be found. Neither is it peculiar to this variety, for Mr. W. Christy, (the re-discoverer of Mr. Edward Du Bois' Croydon plant, recorded in Ray Syn.) by whose kindness we are favoured with specimens now before us, observes, "Nothing of this kind has ever come under my notice, but in the plants I have seen there is no perceptible
difference in the foliage from \textit{C. Helianthemum}. I once noticed the latter with dotted leaves similar to those ascribed to \textit{C. Surreianus}, but the plant was evidently diseased." What remains then to constitute \textit{C. Surreianus} a distinct species?

Mr. Christy further remarks, after attentive cultivation, that the lanceolate petals gradually assume the common appearance of those of \textit{C. Helianthemum}, becoming also more or less irregularly cleft; and considers the present variety, in its extreme form, as defective in the parts of fructification, the stamens and pistils being in some flowers almost imperceptible, the stamens producing no pollen; the plant being incapable of propagating itself by seed, and consequently very local and rare. It further appears that the flowers which had declined to the common appearance of \textit{C. Helianthemum} did perfect their seed, so that from some hundreds of flowers about six capsules of ripe seed were obtained. The above opinion is confirmed by the singular fact, (also communicated by Mr. Christy), that among some seedlings of \textit{C. Helianthemum}, on their flowering, one appeared different to the rest, and exactly \textit{C. Surreianus}, or with petals even narrower than in the Surry plant.


(A plant more nearly resembling \textit{C. Helianthemum} than any other species, but "larger, with broader leaves," is represented in E.Bot. 2208, and said to be the real \textit{C. tomentosus} of Scopoli. Smith observes that the leaves, flower-stalks, and calyx are much more hoary and downy than in \textit{C. Helianthemum}, but that cultivation impairs this; and admits that a decisive specific character is still wanting. This plant was communicated by Mr. G. Don from Scotland, where it was also gathered by Mr. Dickson. E.)

\textbf{C. polifo'lius.} Trailing: leaves oblong-egg-shaped, revolute at the edges, hoary beneath: calyx even: petals serrated.


(In size and habit like \textit{C. Helianthemum}, but essentially distinct, though not known in any other part of the world than the place here specified. Sm. E.) \textbf{Flowers white. Stems numerous. Flowering branches ascending, cottony, white. Leaves opposite, revolute at the edge, with a prominent mid-rib underneath, cottony, white. Bunches terminal. Fruct-stalks short. Leaf-scales spear-shaped. Calyx purplish, slightly hairy; the two outer leaves spear-shaped, minute. Woodw.} (The stellate form of the pubescence is not a peculiar characteristic, as the same prevails occasionally, according to Hooker, in \textit{C. Helianthemum}. E.)


P. July.*

* (The British species of \textit{Cistus}, or, as these plants are sometimes called, \textit{Rock-rose}, are all of them more or less to be admired for their colour and form; nor are they entirely destitute of that gummy exudation which emits an agreeable balsamic fragrance, and which in hotter climates, as Greece and the South of Europe, produces the valuable gum \textit{Ladanum}, formerly collected from the beards of goats which browsed upon \textit{C. Creticus}, and even now
DIGYNIA.

(PÆO'NIA.* Cal. five-leaves: Petals five: Styles none: Follicles with many seeds. E.)

(P. coral'linea. Leaves twice ternate: leaflets egg-shaped, undivided, smooth: seed-vessels downy, recurved.

E. Bot. 1513—Mill. Ill. t. 47.

Stems about two feet high, annual, simple, leafy, cylindrical, smooth, more or less red. Leaves smooth; the uppermost often ternate at the extremity only, with a pair of simple leaflets below. Leaflets sharp-pointed, entire, sometimes veined with red. Flower terminal, solitary. Calyx of five concave irregular leaves. Petals five, crimson, regular, roundish. Stamens red, with yellow anthers. Germens mostly three or four, egg-shaped, white, downy, with recurved, crimson stigmas. Seeds black, shining, intermixed with crimson, abortive ones.

Entire-leaved or Coral Peony. P. coral'linea. Retz. P. officinalis b. Linn. P. mas. Matth. Less frequent in gardens than P. officinalis or fæ-mina. This very showy addition to the British Flora was first introduced to the notice of Botanists by Mr. F. Bowcher Wright, in 1803, as growing undoubtedly wild, and in great profusion, in the rocky clefts of the island called Steep Holmes in the broad part of the river Severn. It is conjectured to have grown there for ages. Two fishermen testify having gathered its flowers sixty or seventy years ago. According to Gerard, once found on a rabbit warren near Gravesend, but no traces of it remain.

P. May—June. E.)

by the tedious uncertain process of the ergastiri. The foreign kinds are, it must be admitted, more showy than our own, but some of the latter are worthy of garden culture, and thrive in a dry soil. Though the flowers are extremely fugacious, by intermixing the several species, a succession may be obtained for two or three months. E.)

* (After the physician PÆO'N, immortalized for having cured the wounds received by the gods during the Trojan war, as some ingeniously infer, with the aid of this plant. E.)

† (Paeonies, double or single, white or crimson, are splendid acquisitions to the garden and shrubbery. Few aquatic excursions of a day can prove more interesting to the naturalist, especially the geologist, ornithologist, and botanist, than a sail from Bristol, through the romantic pass of St. Vincent’s rocks, to the Holmes Islands. The Steep Holmes represents the rugged truncated apex of a submarine mountain, whose abruptly precipitous sides are only accessible at one proper landing-place. Amidst the shelving rocks and loose shingly stones, a few hundred yards from, and at an elevation of nearly one hundred feet above, this spot, at the eastern end of the island,

“There may ye see the Peony spread wide;”—

together with the scarcely less rare Allium ampeloprasum, as the Editor had the gratification to behold in June, 1826. The latter plant has effected a lodgment below the light house on the Flat Holmes, but the Peony is altogether peculiar to the sister island, and how far it may be deemed an aboriginal, strictly indigenous, or derived fortuitously from some wrecked Levant, or possibly, though not probably, escaped from the little enclosure, whose ruinous walls and few remaining vestiges seem

“To mark where a garden had been,”

must remain problematical, so far as our investigations are concerned; no vessel having been stranded within the memory of man, nor any inhabitant dwelt thereon, save the solitary fisherman who makes the crazy hut his cheerless abode, and that only through the dreary season of winter. The Peony also extends over the crests of the northern preci-
POTERIUM.* Stamens and pistils in different flowers on the same plant: Calyx four leaves: Bloss. with four divisions:

B. Stam. thirty to forty.
F. Drupa juiceless, beneath, one or two-celled, formed of the indurated tube of the blossom.

P. SANGUISORBA. Thornless: stems somewhat angular.


(Stems one to two feet high, branched, leafy, angular, many-flowered, smooth. Leaves unequally winged, leaflets roundish, egg-shaped, serrated, smooth, slightly glaucous. Peduncles terminal, elongated, naked. Fl. Brit. Fertile flowers at the top of the spike. Barren flowers fewer, greenish, sometimes purplish from the protruded stamens: both together forming a globose head. Nut quadrangular. E.) The plant has the habit of Sanguisorba officinalis, and its fruit also bears a near resemblance, but the number and disposition of the stamens, &c. will readily distinguish them.


* (From πετρευμ, a cup; or cool tankard, in which this herb is sometimes an ingredient. E.)

† The leaves and seeds are mildly astringent, and have been recommended in dysenteries and hemorrhages. Lewis. The young leaves are sometimes used in salads, and in cool tankards. When bruised they smell like cucumber. It has of late years been cultivated, as affording food for cattle early in the spring; and growing so luxuriantly, as to allow of three mowings during the summer. With. Ed. 1. p. 78. On Salisbury Plain, between Salisbury and Evely, this plant forms almost the whole staple of the herbage over a great extent of that most excellent sheep-walk. It is kept very close by the large flocks which pasture on it every day, except here and there a flower stem which is left growing. I have no doubt but it is a most valuable plant in hard stocked sheep pastures. Cows prefer it to clover, but sheep and horses do not. Mr. Pitt. As it only appears in a calcareous soil, the failure in its cultivation may have arisen from want of attention to that circumstance, and cattle may dislike it when fully grown, though when close bitten it proves so
TRIGNYA.

DELPHIN'IUM.* Calyx none: Petals five or six: Nectary cloven, horn-shaped: Caps. leguminous, many-seeded.


(Stem one to two feet high. E.) Branches cylindrical. Leaves divided down to the base into three or five parts, which are deeply cut into slender strap-shaped segments often forked at the end. Floral-leaves two, strap-shaped, opposite. Petals irregularly scolloped at the edge; the lateral ones broadest; the uppermost spear-shaped, not blunter than the rest, rather shorter than the nectary, but projecting backwards into a conical tube. Nectary placed within the upper petal. Anthers double, yellow. Germen conical, wholly. Styles none. Summits two, white, small, fleshy, flatted, and lying close together. Flowers blue;

valuable to sheep. (Mr. Salisbury considers it highly estimable. He also states it to be a favourite food of deer. Mr. Holdich affirms Burnet to be valuable as a winter food, from its warm and stimulating nature, especially combined with turnips, and by no means objectionable in hay. Mr. Sinclair states that it will succeed in soils unsuitable to Lucern, sainfoin, or clover; that its hardy nature, keeping green all winter, and its early growth, render it desirable. Another authority in favour of Burnet may be found in Encyc. Brit, where it is stated to “prove an excellent winter pasture when hardly any thing else vegetates. Other advantages are: it makes good butter; it never blows or swells cattle; it is fine pasture for sheep; and will flourish well on poor, light, sandy, or stony soils, or even on dry chalk hills. The cultivation is neither hazardous nor expensive, the land being prepared as for turnips. The severest frost never injures this plant, and the oftener it is fed the thicker are its leaves, which spring constantly from its root, and their flat circular spread will prevent the growth of weeds.” A Coccus may be found about the roots of Burnet, which was formerly used for dyeing silk and wool a rose colour. In Britain it is superseded by the Mexican Cochineal, but the Moors are said still to make use of it. As may be remarked of the Snapdragon and some few other plants, so our present species possesses in an extraordinary degree the faculty of preserving its verdure, and flourishing amid surrounding aridity and exhaustion. It is probable that such plants, observes the author of the “Journal of a Naturalist,” have the power of imbibing that insensible moisture, which arises from the earth even in the driest weather, or from the air which passes over them. The immense evaporation proceeding from the earth, even in the hottest season, supplies the atmosphere constantly with humidity; and as every square foot of this element can sustain eleven grains of water, an abundant provision is made for every demand. In noting this phenomenon, we cannot but perceive, in the perpetual transmission of these refreshing dews of heaven from one portion of matter to another, for mutual sustentation, a beneficent ordination of Providence, and a beautiful illustration of that compensatory system which pervades the universe, and is not even limited to the material world. In the present instance, without this unceasing process of evaporation and restitution, this never-failing supply of circulating medium, as it were, all nature would stagnate: neither animal nor vegetable life could long subsist. And thus in the moral world, the irreversible decree of mutual dependance, by enforcing an endless interchange of reciprocal good offices, cements the social compact, and promotes the harmony of the whole. E.)

* (From δελφις; from a fancied resemblance of the unopened flower to the Dolphin of the ancients, as displayed in heraldry.)
POLYANDRIA. PENTAGYNIA. ACONITUM. 665

by cultivation white, purple, red, or bay, (in a terminal cluster of few.
Seeds angular, rough. E.)

FIELD LARKSPUR. (DOLPHIN-FLOWER. E.) Corn-fields. Swaffham
Field. Ray. Lower Road between Cambridge and Gogmagog Hills.
Relhan: with all the varieties of colour. Mr. Woodward. (Near Bury.
Rev. Dr. Goodenough. Corn-field near Ripton, rare. Mr. Brunton. In
a field by Pershore. Merret. Fields about Aldborough, at the Hall
Farm. Rev. G. Crabbe. About Feltwell, near Brandon. Mr. F. Smith;
and at Barton Bendish, and Oxburgh, Norfolk. Rev. R. Forby. Heb-
burn Ballast Hills, Durham. In fields near the Lough, on Holy Island,
Northumberland. Mr. Winch. In a limestone quarry near Bishopswear-
mouth. Mr. W. Backhouse, jun. Winch Guide. In several fields near
Blandford. Pulteney. Corn-fields at St. Leonard's Farm, near Bedford.
Rev. Dr. Abbot. E.)

A. June—Sept.

PENTAGYNIA.

(ACONITUM.* Cal. none: Pet. five, the upper one hooded:
Nect. two, recurved, stalked, under the hood. E.)

A. NAPELL'US. Upper petal arched at the back: lateral ones hairy at
the inner side: germens three, smooth: leaves deeply five-cleft,
cut, with linear segments, furrowed above.

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Stem erect, (three to four or five feet high, E.) simple, leafy, clothed with
minute close hairs, and terminating in a solitary, simple, upright cluster of
large dark-blue flowers. Leaves alternate, on short stalks; nearly smooth
on both sides, paler beneath.

WOLF'S-BANE, or MONK'S-HOOD. FRIAR'S-CAPS in Devon. By the
sides of streams. By the side of the river Teme, Herefordshire; and still
more abundantly on the banks of a brook running into that river, to all
appearance truly wild. Rev. E. Whitehead, C.C.C. Oxon, 1819. In watery
ground, on both sides of a brook, at Ford, near Wiveliscomb, Somerset-
shire, for the course of a mile or more, as well as in other similar situa-
tions in that neighbourhood, 1825. Mr. T. Clark, jun. P. June—July.
Sm. Eng. Fl. E.)

The propriety of the above interesting addition to the British Flora is further
confirmed by the observation of Frederick Russell, esq. by whom it was
found in an unquestionably wild station in Devonshire, 1827. In the

* The expressed juice of the petals, with the addition of a little alum, makes a good
blue ink. The seeds are acrid and poisonous. When cultivated the blossoms become
double, (and, in this case, the petals frequently increase to the exclusion of the spur.
Few parterres can exhibit a more brilliant display than those of the finer kinds of Larkspur,
as either derived from our native, or foreign species. E.) Sheep and goats eat it.
Horses are not fond of it. Cows and swine refuse it. Phalaen's Delphinium lives upon
it. Linn. (It is said likewise to constitute the favourite food of the rare and singularly
† (Theophrastus derives the name from Acon, a city of Bithynia, near which it is said to
abound: other etymologists deduce it from axon, and, a dart, savage nations poisoning
their missiles with a preparation from certain species. E.)
course of the same autumn the Editor, directed by the above-named gentleman, had the satisfaction to behold this stately plant growing (together with Hypericum Androscennum) in some profusion on the margin of a limpid stream between two and three hundred yards below Ogwell mill, in a small meadow, with a foot-path leading down the opposite side of the stream; a spot not less remarkable for its lovely sylvan scenery, in the midst of Bradley woods, near Newton, than attractive to the antiquarian from its proximity to the ancient seat of the Yarde family.

AQUILE'GIA. Calyx none; Petals five; Nectaries five, horn-shaped, alternating with the petals; Caps, five, distinct.

A. vulg'aris. Nectaries incurved, nearly as long as the petals; leaflets all on leaf-stalks, lobes distant, roundish, bluntish: (capsules hairy. E.)

* (Not unfrequently met with in rustic gardens, with white, rose-coloured, and variegated flowers; nor can our Island longer claim entire exemption from it as a native; notwithstanding Dryden recounts among our blessings, that "Our land is from the rage of tigers freed, Nor nourishes the lion's angry seed, Nor poisonous Aconite is here produced, Or grows unknown; or is, when known, refus'd."

And with equal reference to the malign influence of the Monk's-hood, thus are depicted the stepdames in the iron age of Ovid, "Lurida terribiles miscent Aconitx noverae."

That this herb is one of the most powerful of vegetable poisons cannot be doubted. "The force and facultie of Woolfe's-bane is deadly, both to man and all kinds of beasts;" says Gerard, who records several instances of its fatal effects; but it appears that various plants of somewhat similar names have been confounded by ancient writers, and are scarcely to be discriminated by the moderns. For a well-authenticated case of the deleterious virulence of this species, vid. Phil. Tr. vol. 33. an. 1732. Nevertheless, as frequently happens when rightly understood, qualities the most baneful may be converted into blessings, and in the present instance Dr. Storch, a German physician, advocates the medicinal virtues even of the Aconite. Dr. Lempriere (Lectures p. 234), declares it to possess a caustic suffocating quality, by which swallowing is immediately affected and the stomach corroded. The roots are particularly virulent. The juice was formerly used by savage nations for the purpose of poisoning arrows. Another writer states that the flowers sometimes communicate, in a degree, their noxious quality even by being smelled to; and that wearing them on the head may occasion "a violent megrim." Of the bad qualities of these plants we sometimes avail ourselves to get rid of vermin. The juice is also used to poison flesh with, for the destruction of wolves, foxes, and other ravenous beasts. It is remarkable that the blue-flowered kinds are much more virulent than those with yellow or white flowers. Physiologists suppose the pernicious effects to be produced by irritating the nervous coats of the stomach and intestines, so as to occasion violent convulsions through the whole body. To relieve the stomach of its noxious contents an infusion of tobacco, followed by oily and mucilaginous medicines have been recommended. Monkshood should not be planted where children have access, lest they should put the leaves or flowers in their mouths, or rub them about their eyes; for a great disorder may be thus occasioned; and the farina of the flowers blown into the eyes will cause dangerous inflammation. E.)

† (From aquila, an eagle; and lego to gather or collect; the nectaries resembling an eagle's claws; as probably the English name may be derived from a fancied resemblance of the same parts to a dove's claw, or head and neck, as some imagine. E.)
POLYANDRIA. HEXAGYNIA. STRATIOTES. 667

3. 1—Fuchs. 102—Trag. 137—J. B. iii. 484. 1—Park. 1367. 1—Matth. 629—Sweert. t. 8. 9—Lonic. i. 85. 1—Column. Phyt. 1—Ger. 935. 1.

Stem upright, three feet high, branched, somewhat angular, (bearing several flowers. E.) Leaves, the lower on leaf-stalks, doubly threefold; leaflets with three lobes, cut-scolloped; the uppermost leaves digitate, lobes oval, very entire. Leaf-stalks from the root very long. Blossoms blue, or purple. Seeds black. Flowers pendent. Lyons. Sometimes of a yellow green.

(Var. Fl. alb. Flowers white, just above the beach below Trefarthen, Anglesey. Rev. Hugh Davies. E.)

(Hudson's A. alpina, said to grow in the mountainous woods of Westmorland, is a lesser variety, with the nectary extended, and but little incurved; and, according to Smith, wholly distinct from the A. alpina of Linnaeus, which has blossoms double the size. E.)


HEXAGYNIA.

STRATIOTES.† Sheath two leaves: Calyx three-cleft, or of three leaves: Petals three: Berry six-celled, hexagonal, beneath.

* The beauty of its blossoms has long introduced the Columbine into our flower borders. Goats eat it. Sheep are not fond of it. Cows, horses, and swine refuse it. (Its medicinal qualities were once deemed considerable, but are not well defined, and in some instances it is said to have proved fatal to children. The elongated and incurved nectary of this flower seems to bid defiance to the entrance of the bee in search of the hidden treasure, but the admirable ingenuity of the sagacious insect is not to be thus defeated, for on ascertaining the impracticability of effecting his usual admission, with his proboscis, he actually penetrates both calyx and blossom near the depot of honey, and thus extracts the latent sweets without further difficulty. Cultivation produces various colours; and Mr. Phillips observes in “Flora Historica,” the singular circumstance, that it has three distinct modes of doubling its flowers; viz. by the multiplication of the petals, to the exclusion of the nectaries; by the increase of the nectaries, to the exclusion of the petals; and frequently by the multiplication of the nectaries while the proper petals remain. E.)

† (From σπατιόντας, a soldier; or, perhaps, σπάτος, in reference to its crowded sword-like leaves. E.)
POLYANDRIA. POLYGYNIA. ZOSTERA.

S. aloides. Leaves triangular-sword-shaped: edge serrate with prickles.

(E. Bot. 379. E.)—Fl. Dan. 337—Mill Ill.—Bergen de Aloide at p. 1—
Dodd. 589. 1—Lob. Obs. 234. 1, and Le. i. 375. 2—Ger. Em. 823—Ger. 677—Park. 1249. 1—J. B. iii. 787. 1—Pet. 71. 5.

(A stoloniferous aquatic, with numerous radical leaves, six to nine inches long, resembling those of an aloe. Flower-stalk solitary, shorter than the leaves, single-flowered. Flower white, large. Stamens and Pistils generally in the same flower, but they have been observed on different plants; and where they are found in the same flower, the anthers are barren. Linn. (Smith explains that such plants are not to be considered dioecious, but rather as exhibiting casual imperfections, the anthers in one flower, the stigmas in another, not unfrequent in plants that increase much by root. E.)

WATER ALOE. FRESH-WATER SOLDIER. Slow streams, and fen ditches.


POLYGYNIA.


Z. marina. Capsules sessile: (leaves strap-shaped, long, flaccid. E.)


Stems much branched, (two or three feet long, radicating. E.) Leaves floating, long, grass-like, blunt, from leaf-scales sheathing, pointed. Flowers in a spadix, three or four inches long, on one side of the leaf near

* In the autumn the plants sink to the bottom of the water, and in the spring from amongst the leaves of the old plants arise numerous thick suckers, each bearing a young plant, which floats on the surface, where it grows to maturity. Sometimes eight or ten form a circle on the surface, to which the strings are radii, and the old plant at the bottom the centre, and in this manner they frequently entirely fill up ditches, to the exclusion of all other herbage. I should suppose the parent plant decays, as the floating plants shoot out fibres, which, if they do not sooner, on sinking probably lay hold of the mud, and these, I apprehend, produce the fresh offspring. If such be its mode of growth, it is an example of a biennial of a very singular nature. Woodward. A great variety of insects are nourished by this plant; some of them pursue it down to the bottom of the water, and devour the leaves. Swine eat it. Goats refuse it. (As a curious, if not beautiful, vegetable, it is worthy of propagation. E.)
the base, which is at first covered with a transparent skin. Woodw. (Mr. Wilson communicates the following particulars respecting this obscure plant to Prof. Hooker. "I have found it, as you represent, occasionally monoecious, the anthers occupying the lower portion of the spadix. In one instance the spadix was entirely covered by sixteen pistils, placed two and two, and some in a reversed position; still the androgynous character is the most usual. I observed the impregnation to take place in contact with water, the anthers and stigmas being protruded beyond the folding edges of the sheath. The true or barren leaves appear to be essentially different from those bearing fructification; the former being sessile, with an entire sheathing base, closely surrounding the stem; while the fertile leaves are stalked. I therefore consider the latter as true spathe, surmounted by bractea, resembling the proper leaves. E.)

**Common Grass-wrack.** (Welsh: *Ysnoden las-werdd y mor, gwelld y gamlas.* E.) On the sea-shores, almost every where, and in adjacent salt water ditches. P. June—Aug.*

(The real *Z. oceanica*, admitted into our former Editions on the authority of Ray, as having been observed about the Isle of Mersey, and at Gatham Haven, Portsea, is never found growing on the British shores. E.)

**Arum.** (*Sheath* one leaf, convolute at the base: *Fruit-stalk* naked above, bearing germens below, and sessile stamens in the middle: *Perianth* none. E.)


*Thrown on the shore by the tide, in great plenty, and mounds or walls are built with it to oppose the encroachment of the sea. Exposure to the weather bleaches it white. Buildings are thatched with the green leaves, which will endure upwards of a century. It is used by the inhabitants of Gothland, in Sweden, as a manure, and also for stuffing beds, in preference to hay, as being softer. (Much has been imported for such purposes, but the Highland Society now encourage the collecting of it on our own shores. E.) Horses and swine eat it. Cows are not fond of it. (The minute *Conferva zostericola*, Fl. Dan. 1599. 1. is a parasitic of this plant: also *Ulva plantaginea*, Gray; and *Berkeleya fragilis*, Grev. Scot. Crypt. 294; "Of a reddish-brown colour, roundish form, consisting of a gelatinous mass or receptacle, less than half an inch in diameter, and a number of filaments which spring from its surface, and contain fusiform granules." And still more worthy of attention, *Exilaria filabellata*; most elegantly illustrated in Grev. Scot. Crypt. 289, and thus described:—" Branched, elongated, the branches hyaline, alternate, spreading." Invest the leaves of *Zostera* for several inches together, when dry shining with metallic instre. Stem erect, one-third of an inch in length, branched, pellicid, colourless. Branches terminated by fan-shaped expansions, composed of wedge-shaped, hyaline, yellow bodies, very deciduous." E.)
670 POLYANDRIA. POLYGYNIA. ANEMONE.

streaked with white. Sheath conical; large, pale green. Berries red, growing in a naked cluster.


ANEMONE.† Cal. generally none: Petals five to ten, imbric-
cated: Capsules many, with awns or tails formed by the permanent styles.

A. Pulsatilla. (Flower solitary, nearly upright: involucre in deep linear segments: petals six, erect: seeds with feathery tails: leaves doubly pinnate, cut, with linear lobes. Sm. E.)


Bloss. pendulous. Petals violet-coloured, (spear-shaped, downy outside. In all the leaves from the root hairy. Root rather woody. Stem six or eight inches high, downy. In reducing A. pratensis of Sibthorp to this species, we submit to the authority of Dr. Williams, Professor of Botany at Oxford, and follow the example of Smith, Relhan, &c. Indeed the difference in the size of the flower, and the petals being reflexed instead of straight, is scarcely sufficient to constitute even a permanent variety. E.)


A. Nemorosa. (Flower solitary: petals six, elliptical: seeds pointed, without tails: involucre of three ternate or quinate, stalked, lobed and cut, leaves. Sm. E.)


Petals three inner and three outer. Linn. Plant six to eight inches high, smooth, excepting the leaves. Stem-leaves doubly three-fold; leaflets egg-shaped, variously jagged or lobed; veins slightly hairy. Petals white, full half an inch long, the outer tinged with purple at the noticed in Ovid. Met.; and hence the poetical allusion of Sir W. Jones:

"Youth, like a thin Anemone, displays
His silken leaf, and in a morn decays."

Or for a more interesting origin we may cite the beautiful epitaph of Bion to Adonis:

"Ai ai τῶν Κυλείων Ἀπωλείτα πολ' Ἀδωνίας,
Δάρκων ἀ Παφί τότον ἐμπίπτη, ἔσσον Ἀδωνίας.
Ἀλκίς ἀιν' τὸ δι' ἑταὶ κυλεῖ γένηται ἄνω.
Ἀλπις ἱδέα τίκτη, τὸ δ' ἀκμα τῷ Ἀνεμώνει." E.)

* (Sometimes admitted into gardens. The leaves and flowers taken inwardly excite vomiting. Haller. Corrosive and rubifacient. The inspissated juice is recommended in amaurosis and paralysis; externally for ulcers, herpetic eruptions, &c. Swediaur. The juice of the petals stains paper green, and is used in some countries to colour the Paschal eggs, whence supposed the English name; or rather, according to Gerard, derived from the season of flowering, about Pasque time, or Easter. E.)—Goats and sheep eat it. Horses, cows, and swine refuse it.

VOL. III.

Anemone base. Wood. Stem and fruit-stalk purplish. Flowers rather drooping, blackish, sometimes double, or entirely of a purplish red colour, as Hutton certifies, about Keswick, and others have remarked in Devonshire. Root tuberous, horizontal. E.)


A. Ranunculoides. (Flowers mostly in pairs: petals five, (sometimes six), elliptical: seeds pointed, without tails: involucrum of three or five somewhat stalked, deeply cut, leaves. E.)

(E. Bot. 148 4 E.)—Fuchs. 162—Trag. 95. 2—Lonic. 1. 163. 5—Kniph. 1—Ger. 306. 1—Fl. Dan. 140—Lob. Íc. 1. 674. 1—Ger. Em. 383. 1—Park. 325. 5.

Much resembling A. nemorosa, but petals yellow, alternately two on the outside, and two within. Fruit-stalk with two leaflets, the latter of which is at the base. (Leaves few. Involucrum nearly sessile. E.)

The stem occasionally supports a single flower, and is flexuose towards the bottom, as represented in the fig. of Fuchsius and Fl. Dan.

Yellow Wood Anemone. Shady places and hedges, rare. Near King's

* The flowers fold up in a curious manner, and bend downwards, against rain. The whole plant is acid. Goats and sheep eat it, but it is apt to disorder the latter violently. Horses, cows, and swine refuse it. Linn.—(The recent flowers are poisonous, and the plant yields an acid, volatile principle, so corrosive as to be used externally instead of Cantharides. It is also serviceable in head-aches, tertian agues, and rheumatic gout. Swediaur. E.) This plant is sometimes found with yellow dots on the under surface of the leaves, in which state it is figured in Ray, 3. 1. at p. 128, and has been mistaken for a Polypodium. Some have supposed these dots the work of an insect, but without sufficient proof. Dr. Pulteney, in Linn. Tr. ii. p. 305, has rendered it probable that they are formed of a minute species of Lyceoperdon, though as they may be discovered in their younger state under the outer cuticle of the leaf, it is not obvious how the seeds could be introduced. These plants are evidently in a diseased state, of a yellow green, and do not bear flowers. The leaf of Betonica officinalis is liable to be affected in the same manner: (also that of Fragaria. The roots afford a nidus for Peziza tuberosa. By garden culture the stamens become transformed into supernumerary petals, and thus it attracts the admiration of the florist more than when in its native shades it merely affects the "simplex munditiis." The remarks of an elegant writer may be applied with peculiar propriety to this genuine primaveral production, fit emblem of virgin modesty." "The love of flowers seems a naturally implanted passion, without any alloy: but, perhaps, it is the early flowers of Spring that always bring with them the greatest degree of pleasure, and our affections seem immediately to expand at the sight of the first opening blossom, however humble its race may be. It is not intrinsic beauty, or splendour, that so charms us, for the fair maids of Spring cannot compete with the grander matrons of the advanced year; they would be unheeded, perhaps lost, in the rosy bowers of Summer and of Autumn: no, it is our first meeting with a long-lost friend, the reviving glow of a natural affection, that so warms us at this season: to maturity they give pleasure as a harbinger of the renewal of life, a signal of awakening nature, or of a higher promise: to youth, they are expanding being, opening years, hilarity, and joy. With Summer flowers we seem to live as with our neighbours, in harmony and good will; but Spring flowers are cherished as private friendships." Though the more splendid varieties of Anemones or Wind-flowers are derived from exotic species, which beautifully enamal the meads of Greece, our native ornament of the lonely thicket cannot fail to engage a due degree of admiration.

"Where thickly strewed in woodland bowers
Anemones their stars unfold." E.)

Blue Mountain Anemone. Woods and shady places, rare. Wimbledon Wood, Mr. Rand. Near Harrow on the Hill. Mr. DuBois. Luton Hoe, Bedfordshire. Mr. Knowlton. (These are, it must be acknowledged, somewhat suspicious stations. It is of very general occurrence in Italy, but not even found in Switzerland.) P. April.

Clematis. Cal. none: petals four, rarely five or six, valvular, or revolute at the edges: styles permanent: seeds numerous, caudate: Receptacle capitate.


Traveller's Joy. Virgin's Bower. Hedges and shady places, especially in calcareous soil, (thriving even amidst rocks and loose stones.) Common in the southern and western counties, but I have not observed it north of Worcestershire. (The elegant profusion with which it ascends lofty trees, and even rocks, on the southern shore of the Isle of Wight, must excite the admiration of every traveller. On the Ballast Hills at St. Anthony's and Willington Quay, Northumberland. Winch

* (This is at least as worthy of the florist's attention as some other species. Its elegant blue flowers will prove ornamental to the shrubbery or wilderness.)

† (From ἀλέγχω, ἀλέγχωτος, a vine twig, or tendril; from its climbing or clasping propensity.)

‡ (Thus named by Gerard in 1597. "Travelers Jour, as decking and adorning ways and hedges, where people travell: Virgin's Bower, by reason of the goodly shindowe which they make with their thick bushing and climbing: as also for the beautie of the flowers, and the pleasant scent or savoure of the same:" and, by country people, Old Man's Beard, from the hoary appearance of the silky, elongated styles. The trivial name from Vitis alba, white vine.)
THALICTRUM. Cal. none: Petals four or five: Capsules many, rather beaked, (but ecaudeate. E.)

T. ALPINE. Stem unbranched, almost naked: bunch simple, terminal.


A delicate little plant, scarcely a span high. Petals four, whitish, acute. Flowers on crooked fruit-stalks. Root-leaves compound, on long leaf-stalks. (Leafits roundish, crenate or lobed, dark-green, and shining above. E.) Stem in very luxuriant specimens with one nearly sessile leaf. Stamens about twelve, and Pistils eight, but variable.

ALPINE RUE-WEED. Moist rocks and on the sides of alpine rivulets in Scotland and Wales. On Ben Lomond. Dr. Hope. (On Malghyrdy, Ben Teskerney, and Craig Cailleach. Mr. Brown. Cronkley Fell, Durham. Mr. Robson. E.)


Root yellow. Petals four, cream-coloured. Stamens twenty-four. Pistils ten to sixteen. Leafits, the lower irregular, sometimes wedge-shaped,

* (Astringent, corrosive and diuretic. An infusion has been recommended in dropsy. Swedish. The branches are sufficiently tough to make withs for faggots, for which purpose it is always used in the woods where it can be procured. Besides the claspers with which it is furnished, the very leaves have a tendency to twine around plants. The hairy plumes growing in clusters exhibit in winter a singular and beautiful appearance over the tops of bushes, hedges, &c. It is particularly well adapted for covering arbours and bowers in pleasure grounds, being of rapid growth and hardy. "The tubes, lymph-ducts, and air-vessels of this plant, (represented in Pl. iv. f. 2.) appear in a common magnifier beautifully arranged, being large, and admitting the air freely to circulate through them. Our village boys avail themselves of this circumstance, cut off a long joint from a dry branch, light it, and use it as their seniors do the tobacco pipe; hence they call it Smoke-wood. The pores are well seen by drawing some bright-coloured liquor into 11/601/ Journ. Nat. p. 110. The long feathery down attached to the seed may often be found at the entrance of holes made by mice; probably dragged there as a valuable material for their nests; as may be the seeds themselves, (though small, abundant), no unimportant accession to the winter store; where

"Sepe exiguus mus
Sub terris posuitque domos atque horrea fecit." Virg. Georg. i. 181.

"Often the little mouse
Illudes our hopes; and safely lodged below
Hath formed his granaries."

In France common beggars, to excite compassion, produce ulcers by applying the juice to the skin; and the twigs are there used to make bee-hives, baskets, &c., possibly in a warmer climate growing even larger and stronger than with us. E.)

† (This plant is subject to a minute parasite, which, under the microscope, appears beautiful and interesting; Aecidium Thalictri of Grev. Scot. Crypt. 4; "growing on the under surface of the leaf in clusters of a roundish form; peridia oblong-cylindrical, bright orange; the mouth puler, and bursting irregularly." E.)
with three clefts; or oval, entire, with a lobe on one side; the upper spear-shaped, entire, or with three clefts. Woodw. (Stems three feet high, upright, angular, little branched, panicked at the head, with very numerous flowers. Stigmas heart-shaped, short. Seeds few, furrowed. E.)

Var. 2. Lobes of the leaves narrower, and more wrinkled. Lightf.

H. Ox. ix. 20. 3.

Meadow Rue-weed. (Welsh: Arianllys gwyddined; Troed y barcud. E.) Moist meadows, pastures, and banks of rivers.

T. mi'nus. (Leaves triply winged: leaflets trifid, glaucous: panicle spreading, pendulous: stem flexuose or zigzag, divaricate. E.)


P. July—Aug.

T. ma'jus. Leaves with many divisions: leaflets ternate, glaucous beneath: flowers pendulous: flowering branches axillary, to or three together: (stipulae crescent-shaped, notched. Sm. E.)

Jacq. Austr. 420—(E. Bot. 611. E.)

(Smith observes that Dod. 58. f. 1. and Ger. Em. 1251. f. 1. rather represent this plant than T. flavum. E.)

Root perennial, throwing up one or two stems every year. Stems crooked, two or three feet high, cylindrical, scored, purplish green, leafy, panicked. Branches several from the same point, of different lengths. Leaflets small, egg-shaped or roundish, two or three-cleft towards the end; rather glaucous above, quite so underneath. Flowers sweet, pendent. Petals four, purplish green. Stamens fifteen to twenty. Anthers yellow. Pistils four to seven. Seeds spear-shaped, furrowed, acute. Distinguished from T. minus by its always sending out two or three branches from the same knot on the stem or larger branches, and by the leaflets being dark green above and glaucous underneath; whilst in T. minus the branches

* A cataplasm, made of the leaves, has been known to give relief in sciatica. The root dyes wool yellow. Cows, horses, goats and sheep eat the plant. Swine are not fond of it. Linn. (Acrid and vesicatory. E.)
rise singly, and the leaflets are of a lighter green above. This plant is also much more branched and one third taller. Jacq. Roots remarkably yellow. Anders.

In the specimen now before me, which was sent by Mr. Robson of Darlington, the leaves are trebly winged, the leaflets urn-shaped, three-cleft at the end; the petals four, purplish; the stamens fourteen to eighteen, the anthers yellow, the pistils from five to seven. (Twice or thrice as large as the former in all its parts: leaflets often an inch broad. Prof. Hooker suspects he has observed intermediate specimens with T. minus. E.)


P. June—July.

ADO/NIS.* Cal. five leaves: petals five or more: nect. none: seeds naked.

A. AUTUMNALIS. Petals about eight, emarginate: fruit egg-cylindrical.

Curt. 135—Knip. 5—Clus. i. 336.1—Dod. 260. 3—E. Bot. 398—Lob. Obs. 150, Iv. i. 283.2—Ger. Em. 357—Ger. 310. 1—Park.—Par. 291. 5.

Seeds covered with a thick permanent coat, not opening like a capsule, so that they may be considered as naked. The shape of the fruit applies to the whole mass of seeds upon the fruit-stalk. Several flowers on a plant. Petals seven or eight; dark scarlet, almost black at the base, concave. (Anthers deep violet. Leaves triply-wing-cleft, segments strap-shaped. Stem upright, branched, scored, six to twelve inches high. E.)


P. June—July.

* (From pleasing; as the youth beloved by Venus: or according to ancient mythology, named after that son of Cinyras, as the flower into which he was metamorphosed after the dire catastrophe so deeply lamented by the goddess:—

"Where the blood was shed,
A flower began to rear its purple head." Ovid.

Doubtless nurtured by the tears wept over the dead body. E.)

† Its beautiful scarlet blossoms have gained it admittance into gardens. (Both the French name "Goute de sang," and the more classical "Adonis," may equally be traced to the sanguineous colour, and globose form of the flowers, especially in an unexpanded state; in the latter designation fabled to have sprung from the blood of that favourite:—

"O fleur, si chère à Cythère,
Ta corolle fut, en naissant,
Du sang d’Adonis colorée."
(A. estivalis of With. Ed. 3. et seq.; not of Linn. (which is more properly a native of Italy,) proves to be only a starved variety of the above species. Curtis considered that the petals afforded no specific distinction, neither were the seasons discriminative; but rather considered these species to be one and the same, under different circumstances. E.)

RANUNCULUS.* Cal. deciduous five, (or three-leaved;)
Petals five, (rarely two, three, or eight), with a nectari-ferous scale or pore within the claw: Styles permanent:
Seeds numerous, incrusted.

(1) Leaves undivided.

R. FICÁRIA. Leaves heart-shaped, angular, smooth, on leaf-stalks:
stem single-flowered: flowers with nine petals: calyx with three leaves.

Root composed of oblong egg or club-shaped tubers. Leaves rather shining, sometimes spotted. Calyx leaves three or four. Petals eight or nine; bright yellow, (with an enamelled gloss. E.) Small egg-shaped germinating bulbs are sometimes found in the bosom of the leaf-stalks. (Nectariferous scale notched. Purts.
Stem scarcely half a foot high, nearly upright, leafy, smooth. Flowers pedunculated, upright, solitary, (with age and exposure becoming white, the superficial enamel thus perishing.

PILEWORT. LESSER CELANDINE. (Welsh: Llygad ebrill; Bronwys. E.)
P. April.†

Or, perhaps, typical of his fatal rencontre with the wild boar, so feelingly deplored by his mistress:

"Καταν καλός Ἀδωνις εἰς ὄψιν, μηρον ἐδώτι
Λυκῷ λεύκῳ ἐδώτι τυπέλι, καὶ κύπριν ἀνί
Ἀπετό ἀποφύχων."

"Ἀγυιον ἄγριον ἐλκὸς ἔχει κατὰ μηρὸν Ἀδωνις
Μεῖζον οὐδ' ἑλείρεια φέρει παπινδραίον ἐλκες;

"Ἀμηια ὦ ὦ ἄθροις ἱραπαίται οὐδ' ὑδήρρα
Πάντας ἀνά κχρῷ και ἀνά στόλον ἐκτρώ ἄει;

"Βάβλε ὦ ὦ ἐλεφάγας καὶ ἄνθους πάντους σωτῆ, ΟΔ τῆς ἀνόδης και ἄνθιες ποντ' ἵμαραῦν."

* (Diminutive of rana, a frog; though probably not thus appropriated from several species being found in marshy places, (the original of Dioscorides, R. Aslaliius, being an inhabitant of dry situations), but rather from the divisions of the leaves bearing an imaginary resemblance to the foot of that reptile. E.)

† The young leaves of Pilewort may be eaten in the spring along with other pot-herbs. Goats and sheep eat it. Cows and horses refuse it. Curculio dorsalis is found upon it.
R. FLAM' MULA. Leaves egg-spear-shaped, rather obtuse, on leaf-stalks: stem reclining, radicating.


(Root composed of long simple fibres. Stems six to eighteen inches long, spreading, branched, leafy, cylindrical, smooth. Flowers terminal, solitary, pedunculated, upright, of a rich shining yellow. Calyx reflexed, nearly smooth. Nectary very small. Seeds smooth at the sides. Sm. E.) Leaf-stalks long, or rather a doubling of the leaves. Leaves more or less toothed or serrated. The plants with leaves serrated are represented in

Dodd. 432. 2—Lob. Obs. 382. 3. and Ic. i. 670. 2—Ger. Em. 962. 3—Pet. 39. 6—H. Ox. iv. 29. 35—J. B. iii. 864. 3—Ger. 814. 3—Park. 1215. 3.

LESSER SPEAR-WORT. (Irish: Laisser Lena. Welsh: Poethflam; Blaen.

(Meloe proscarabaeus and M. violaceus likewise frequent the different species; and one or the other by some Entomologists have been represented as the formidable Hupnstra of the ancients, so injurious to cattle; but this opinion needs confirmation; (also on this species and R. acris, will be found the parasitic fungus Ecidium Ficaria, "crowded; capsule cylindrical, white, spreading; seeds bright orange." (Cultivated occasionally with a double blossom, but even in that state too prone to extend itself as a troublesome weed. In an age of ignorance and superstition, (certainly before Intellect had assumed the three-league boots), this plant obtained its more common English name from a supposititious virtue in curing hemorrhoids, merely deduced from the peculiar shape of its roots: of which, likewise, the Latin trivial (Ficaria, fig-like), is descriptive. Though unnoticed by the poets of old, the more observant moderns have condescended to sing the praises even of this unaspiring weed. As the welcome

"Herald ⋆ ⋆ ⋆
Of a joyous train ensuing."

Wordsworth has diffusely lauded the

"Little humble Celandine."

And Charlotte Smith thus introduces it as engaging the attention of her adventurous butterfly:

"'Trusting the first warm day of spring,
When transient sunshine warms the sky,
Light on his yellow spotted wing
Comes forth the early butterfly.

With wavering flight he settles now
Where Pilewort spreads its blossoms fair,
Or on the grass where daisies blow,
Pausing, he rests his pinions there."

As in the fable of Adonis, Proserpine is said to have restored the favourite to life, on condition that he should spend six months with her, and the rest of the year with Venus, which implies the alternate return of Summer and Winter; so it is impossible not to believe that even the heathen mythologists, though as yet "seeing but through a glass darkly," in the habitual contemplation of such phenomena as the seeming death and revival of nature, were confirmed in the innate principle of the soul's existence after death:

"Shall I be left abandon'd in the dust,
When Fate, relenting, lets the flower revive?" Beattie.

And equally applicable to the like moral inference is the wonderful transmutation of the winged insect emerging from its sepulchral chrysalis. Indeed the Christian will therein behold a glimmering of that brighter light which was afterwards to be manifested;—a typical emblem of the more peculiar and momentous doctrine revealed in the Gospel. E.)
POLYANDRIA. POLYGYNIA. RANUNCULUS. 679


(R. reptans of Linn. Lightf. With. and other authors, even in the time of Lightfoot, was suspected to be only a variety of this species, and in that opinion more recent Botanists generally concur. It has been frequently observed in a series of gradations between the two; it is thus described by Mr. Woodward. Leaves one to four at each joint, upright. Stem slender, creeping. Flowers solitary, terminal, or at the joints; small, yellow. (Leaves very narrow, approaching to strap-shaped; whole plant diminutive, three to five inches in length; radiating from the joints. E.)

Dicks. H. S.—Kniph. 9.—Lightf. 1, frontispiece.—Fl. Dan. 108.—Amman. 13. 1—Fl. Lapp. 3. 5.


R. LIN’GUA. Leaves elongate lanceolate, somewhat serrated, nearly sessile; stem upright, (many flowered. E.)


A much larger plant than R. flammula. Leaves in length equal to many times their breadth, ending in a long taper point, but in R. flammula they are in length only three or four times their breadth, and do not end in a long point. Blossom large, deep yellow. (Stem three or four feet high. Calyx hairy. Plant usually silky with appressed hairs; but the degree of hairiness seems to vary, and sometimes the leaves are entire. E.)

GREAT SPEARWORT, OR CROWFOOT. (Welsh: Blaen y gwaew mugaf. E.)


* It is very acrid. Applied externally it inflames and blisters the skin, (as regularly practised in the Highlands and Islands of Jura, where the bruised leaves are applied in a limpet shell. E.) Horses eat it. Cows, sheep, goats, and swine refuse it. Its acrimony rises in distillation. Some years ago a man travelled through several parts of England administering emetics, which, like white vitriol, operated the instant they were swallowed. The distilled water of this plant was his medicine: and, from the experience I have had of it, I feel myself authorised to assert, that in the case of poison being swallowed, or other circumstances occurring, in which it is desirable to produce instantaneous vomiting, it is preferable to any other medicine yet known, and does not excite those painful contractions in the upper part of the stomach which white vitriol sometimes does, thereby defeating the intention for which it was given.
POLYANDRIA. POLYGYNIA. RANUNCULUS.

(E. Bot. 2306. E.)—Bauh. Hist. iii. 866. 3.

About a foot high. Leaves quite smooth, long and narrow like those of grasses. Flowers pale yellow, smaller than those of R. lingua. (Calyx perfectly smooth, lying open, but not reflected.

GRASSY CROWFOOT. E.) Brought from North Wales, by Mr. Pritchard. P. May—June.

(2) Leaves dissected and divided, not uniform.


Nectary a small oblique hole at the bottom of the petals not covered by any scale. Curt. Blossoms yellow, large. Stem about a foot high, leafy, slightly hairy on the upper part, slender. Leaves very slightly pubescent, the root-leaves on long leaf-stalks; the stem-leaves sessile. Calyx hairy, not reflexed, yellow. Flowers sometimes imperfect in the petals. Not acrid as are some of its congeners. E.)


R. SCEREA'TUS. (Stem hollow, branched : lower leaves palmate, the upper digitate: fruit oblong.

(E. Bot. 681. E.)—Curt.—Fl. Dan. 571—Fuchs. 159—Trag. 93—J. B. iii. 858. 1—Lonic. i. 163. 2—Dod. 426. 2—Lob. Obs. 382. 1, and Ic. i. 669. 1—Ger. Em. 962. 4—Park. 1215. 6—Pet. 38. 11—H. Ox. iv. 29. 27 and 28—Matth. 610.

Plant acrid, succulent, much branched, light-coloured. Stem smooth, thick, one to two feet high. Leaves smooth, with three or four deep divisions; segments spear-shaped, more or less jagged. Flowers small, yellow. Flowers numerous, pedunculated. Fruit egg-oblong, with very many seeds. E.)


R. AC'RIS. Calyx expanding: fruit-stalks cylindrical, not furrowed: leaves with three divisions, and many clefts; the uppermost strap-shaped, entire.


Stem with hairs adpressed, (upright, two feet high, branching upwards. E.) Calyx hairy, coloured. Leaves hairy, segments black or deep purple at the points. Stem-leaves sessile, but sheathing the joints. Leaf-stalks hairy, Blossom yellow. (Nectary covered by a scale. Sm. Fruit-stalks occasionally flattened. Size and pubescence vary extremely; in sterile mountainous situations, single-flowered. E.)

* The whole plant is very corrosive; and beggars use it to ulcerate their feet, which they expose in that state, to excite compassion.—(It has been used as a substitute for Cantharides, but the wounds prove more troublesome and difficult to heal. E.) Goats eat it. Cows, horses, and sheep refuse it.
POLYANDRIA. POLYGYNIA. Ranunculus. 681

(Frequently cultivated in gardens with double blossoms, (Yellow Batchelors' Buttons,) and found so in a wild state at Mill Green, near Ravensworth, by Mr. Winch. E.)


(3) Leaves dissected and divided; uniform.

R. parviflorus. Seeds rough with tubercles ending in hooked points; leaves heart-shaped, hairy, lobed or toothed; upper ones three-lobed: stem prostrate.


Whole plant trailing close on the ground, (six or eight inches long. E.) Root-leaves on very long leaf-stalks, kidney, or heart-shaped, toothed. Stem-leaves kidney-shaped; upper ones sessile, simple or with three divisions; all the leaves extremely soft to the touch. Flowers small, yellow. (Petals narrow, sometimes partially wanting. E.) Seeds flattened; with minute hooked prickles on their sides.


R. hederaceus. Leaves roundish, three to five-lobed, very entire: stem creeping.


R. alpestris. Leaves very smooth: root-leaves nearly heart-shaped,

* Sheep and goats eat it. Cows, horses, and swine refuse it. Linn. Cows and horses leave this plant untouched, though their pasture be ever so bare. (Such seems to be the case in general; but necessity will not always admit of choice, and we are also inclined to believe that the young shoots may be less acrimonious. E.) It is very acrid, and easily blisters the skin. (Curtis relates that even gathering the plant and carrying it some distance in the naked hand will produce a tendency to inflammation. E.)
blunt, three-cloven, lobed; those of the stem spear-shaped, very entire; stem with one flower.

*Jacq. Austr. 110—E. Bot. 2390.*

(Plant four or five inches high, erect, smooth in every part. Leaves chiefly radical, veined. *Flower large. E.*) Petals inversely heart-shaped, of a brilliant white. Calyx smooth, bordered with white. Stem-leaf often ternate; the radical ones greatly resemble those of *R. aquatilis* that float on the surface, and in watery places may be mistaken for them. *Linn. Tr. vol. 10. p. 434.*

**Alpine White Crowfoot.** Discovered by the sides of little rills, and in other moist places about two or three rocks on the mountain of Clova, Angus-shire, very rare, and but seldom flowering, by Mr. Don, who suggests that its herbage, bearing a great resemblance to several of its kind, may easily have been overlooked, but when in blossom it is truly an attractive plant. *P. May. E.*

**R. aquatilis.** (Stem floating, submersed: leaves hair-like; those above somewhat peltate, lobed, notched, with nearly central leaf-stalks. E.)


*Flowers on fruit-stalks which arise from the same sheath with the leaves. Petals white, with a yellow spot at the base. Nectary a short open tube. (Stems cylindrical, leafy, lengthened branched out, according to the depth of water. Plant often covering the surface in extensive dense masses, with a profusion of flowers. E.)*

Var. 2. *Large-flowered.* None of the leaves hair-like; flowers very large. In a pool that had been a quarry, near Sodbury, Gloucestershire. Rev. G. Swayne.

Var. 3. *Circinatus.* All the leaves hair-like, forming a roundish line.

*Pluk. 55. 2—Pet. 39. 3—C. B. Pr. 73. 2—J. B. iii. 784. 1—Park. 1257. 8.*

Var. 4. *Diffusus.* All the leaves hair-like, segments spreading, outline irregular.

*H. Or. iv. 29. 32—Ger. 679—J. B. iii. 781. 2—Pet. 39. 2.*

Var. 5. *Fluviatilis.* All the leaves hair-like; segments very long, parallel, taking the direction of the rapid stream, (and thus exhausted, rarely producing flowers. E.

*Fl. Dan. 376—J. B. iii. 782. 1—Lob. Is. i. 791. 1—Ger. Em. 827. 3—Park. 1256. 5—Pet. 39. 4.*


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* This is a troublesome weed in ponds, but its flowers produce a beautiful effect when in such profusion as to cover the whole surface of the water. The varieties in the leaves seem entirely occasioned by the greater or less depth of the water, and by its being stagnant or not, and are therefore by no means constant. (Mr. Thomson remarks that in plants even not aquatics, but which happen to be planted in water, we may perceive the metamor-
R. hirsutus. (Root fibrous: stem hairy, many-flowered: calyx glandular, hairy, acuminate, at length reflexed: seeds tuberculated. E.)

Curt.—(E. Bot. 1504. E.)—J. B. iii. 417. 3.

Stem more branched and spreading; hairs stiffer and longer than in R. bulbosus. Leaf-stalks of the lower leaves hollow, and if cut asunder, the nerves appear projecting into the inside of the tube. Leaves, lobes three more distinct, the middle and outermost rounder and less deeply divided at the edges; frequently with irregular pale or whitish spots, and the upper surface beset with projecting points, from which the hairs arise. Flowers more numerous, smaller, and seeds smaller than in R. bulbosus. Curt. Root, fibres long, thick, white. Root-leaves either entire or three-lobed, the middle leaflet on a leaf-stalk. Flowers pale yellow. Woodw. (Whole plant covered with spreading hairs; varying greatly in luxuriance; rather pale. E.)


(R. parvulus of Linn. and Fl. Brit. has been fully ascertained by Mr. D. Turner and Mr. Forster to be only a starved procumbent plant of R. hirsutus. E.)

R. bulbosus. Root bulbous: calyx reflexed: fruit-stalks furrowed: stem upright, many-flowered: leaves compound: (seeds smooth. E.)


Root globular, fibrous at the base. Stems a foot high, upright, bare at the base, towards the top leafy, and branched. Lyons. Calyx at the bottom thin and semi-transparent. Stem never throwing out suckers like R. repens. Curt. Upper leaves, divisions strap-shaped. Bulb formed above the bulb of the preceding year. When it comes into flower, the old one, in a dry soil, may be found in a state of decay under the new one, and surrounded by the fibres, but without the least appearance of suckers proceeding from either of them. In a turf containing six plants, the roots were all distinct, excepting one, which appeared from its size, to phase from the flat to the capillary leaves taking place in the fresh shoots before they gain the surface of the water, after which they assume the form consonant to the natural habit of the plant, as in Horehound, &c. E.) So far is Water Crowfoot from possessing the deleterious qualities usually attributed to it, that Dr. Pulteney, in the fifth vol. of Linn. Tr. has given ample testimony to its capability of almost alone supporting horses, cows, and pigs, in good condition, and the animals eat it with avidity.
be a seedling, with the old bulbs at the bottom. (This state of the plant having occasioned some perplexity to a correspondent of the Mag. Nat. Hist. is represented by a figure in that work. vol. i. 380. E.) Petals golden yellow. Woodw. (Plant acrid. Leaves more or less hairy: lobes of the lower ones nearly egg-shaped; upper leaves in linear segments. E.) Nectary short, inversely heart-shaped; in R. hirsutus, it is oblong egg-shaped. This circumstance alone is sufficient to distinguish the two species.


Bulbous Crowfoot. Butter Cup. Gold Cup. (Welsh: Chwys Mair; Blodau yr ymenyn. E.) Meadows and pastures, (which are chiefly indebted to this plant for that brilliant golden hue which must attract the admiration of every beholder during Spring. E.)


The stem creeping and striking out roots from the joints, will always distinguish this from R. bulbosus. Fruit-stalks with five furrows, and one or two flowers. Calyx hairy, deciduous, not reflexed. Blossom of a deeper yellow than R. acris. (Petals notched. Flowering-stems erect, one to two feet high. E.)


* It has lately been said that cows, horses, and sheep, in Italy eat it greedily, though it is so acrid as to poison the latter. Three ounces of the juice killed a dog in four minutes. Its growing chiefly, if not solely, in corn-fields, where cattle are excluded, may possibly be the reason why we have not heard of mischief being done by it in this country. (Though several British species of Ranunculus are disposed to become double, and are sometimes observed so in a wild state; the more showy kinds, which display an endless variety of the richest colours in our gardens, are of Turkish and Persian origin. E.)
TROLLIUS.* Cal. none: Petals about fourteen: Capsules many, egg-shaped, many-seeded: (Nectary compressed. E.)

T. EUROPEUS. Petals converging: nectaries five to ten, as long as the stamens.

Kniph. 4—Fl. Dan. 133—E. Bot. 28—Clus. i. 237. 1—Dodd. 430. 1—Lob. Obs. 385. 1, and Jc. i. 675—Ger. Em. 955. 12—Ger. 809. 13—J. B. iii. 419—H. Ox. xii. 2. 2—Math. 613—Park. Par. 219. 11.

(Stem upright, about eighteen inches high, cylindrical, smooth, branching upwards. Seeds black and shining. E.) Blossoms globose, yellow. Nectaries yellow, not longer than the stamens. Leaves round in their circumscription, divided to the base into five, segments very entire at the base, jagged upwards. Capsules ribbed transversely, terminated by a crooked horn, pointing outwards, giving the head a star-like appearance. Woodw.


P. May—June.†

HELLEBORUS.† Bloss. none: Cal. five leaves, often coloured: Nectaries bilabiate, tubular: Caps. like a legumen; many-seeded, rather upright, beaked.


* (A name invented by Gesner, who thus latinized the German word trol, spherical; descriptive of the globular form of the blossom. E.)

† It is cultivated in flower gardens; and in its double state makes a handsome appearance. The term Lucken, (meaning closed as a cabbage) applied to this kind of Gowan, may tend to reconcile the prevalent opinion, and to identify the Globe-flower with the one introduced in the garland presented by the young Laird to Edinburgh Katy; or we should have supposed the Marsh Marigold, (which see), of more general occurrence, to have answered the description sufficiently well:—

"We'll gae to some burn-side to play
And gather flowers to busk ye'r brow;
We'll pou the daisies on the green,
The Lucken-Gowan frae the bog." A. Ramsay. E.)

‡ (From σχεδων, to destroy; and bερα, food for cattle; q. d. poisonous food. E.)
POLYANDRIA. POLYGYNIA. Helleborus.

Helleboerus. Jacq. Austr. 106—Curt. 106—Blackw. 509—E. Bot. 200—Kniph. 1—Fuchs. 274—J. B. iii. 636—Clus. i. 275. 1—Dod. 385. 2—Lob. Obs. 387. 2. and Ic. i. 680. 2—Ger. Em. 976. 2—Park. 212. 2 and 3—H. Or. xii. 4. 5—Ger. 825. 2—Trag. 405—Lonic. i. 171. 2—Matth. 1291.

Flowers mostly two; drooping, yellowish green, (as are the large calyx leaves. E.) Root fleshy, black, with many long fibres. Stem upright, a foot high, forked at the top, leafy, smooth. Leaves large, smooth, shining; root-leaves petiolate, stem-leaves sessile. Fl. Brit. E.)


H. foetidus. Stem many-flowered, leafy: leaves pedate: petals converging.

(Book. 192—Kniph. 12—Blackw. 57—Fuchs. 275—J. B. iii. 880—Trag. 251—Dod. 386—Lob. Obs. 387. 4, and Ic. i. 680. 1—Ger. Em. 976. 4—Lob. Obs. 387. 3. and Ic. i. 679. 2—Ger. Em. 976. 3—Park. 212. 3—H. Or. xii. 4. 6—Ger. 826.

(Plant bushy, fetid, evergreen. E.) Leaves deep, lurid, green. Branches, leaf-stalks, floral-leaves, and flowers pale greenish yellow. Stipulae at the divisions of the branches oval-spear-shaped, embracing the stem, solitary, with three deep clefts at the end tinged with purple. Floral-leaf oval-spear-shaped, entire, solitary, at the base of each fruit-stalk, tinged with purple. Wood. Flowers numerous, panicked, drooping, globose, green, or tinged with purple at the edges. Stem about a yard high, pale, leafy. E.)


* A violent cathartic not to be administered without caution; being nearly similar in effect to its congener, and on the Continent often adopted for that. The powdered leaves, used as snuff, are said to have cured several cases of nyctalopia, and to be worthy of trial in other diseases of the eyes. (These species will flourish under trees, and are ornamental in shady walks and shrubberies. E.)

P. Jan.—April.*

**CALTHA.**

<table>
<thead>
<tr>
<th>Calyx none:</th>
<th>Petals five:</th>
<th>Nectaries none:</th>
<th>Capsules several, many-seeded.</th>
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| C. palustris. | (Stem erect: leaves cordate, suborbicular, obtusely crenate. E.)

Leaves kidney-shaped, entire, sometimes veined and regularly toothed. Petals bright yellow, five to seven. Stamens in two rows, inner row with broad anthers, outer row twice as long, club-shaped, with the anthers compressed. (Flowers several, large, showy, pedunculate. E.) (Stem half a foot or more in height, but little branched, more or less upright, furrowed, smooth, stout, succulent.) Blossoms occasionally double, as represented in

Park. 1213. 2—Clus. ii. 114. 2—Ger. Em. 818. 3—Ger. 681. 3.


P. April—May.‡

* The dried leaves are frequently given to children to destroy worms, (and have been recommended in different species ofmania. E.) but they must be used sparingly, being violent in their operation ; and instances of their fatal effects are recorded. (The powdered roots mixed with meal destroy mice. E.) Country people put the root into setons made through the dewlaps of oxen, (with the expectation of drawing off or relieving by the discharge, murrain or any other disease of cattle, a very ancient practice, recorded by Absyrtus and Hierocles. E.) A decoction of one or two drachms operates as a drastic purgative. (Mr. Purton never could increase the dose of powdered leaves beyond ten grains without considerable disturbance in the intestinal canal; nor can the same quantity of the fresh-dried plant be exceeded with any degree of safety. Mid. Fl. H. niger of the ancients, (described by Sibthorp in Fl. Grasc. as H. officinalis, t. 523) according to Dioscorides, Pliny, and other authorities, appears to have possessed yet more powerful qualities, and was celebrated as an antimanic remedy. Experience may be too dearly purchased by trials of herbs so alarming in their effects as are even the British species of Hellebore, or it might be regretted that medical practitioners have acquired so little accurate knowledge of their virtues. The different species of Hellebore flourish under the shade of trees, and exhibit their singular blossoms during the most sterile season. They are therefore acceptable in shrubberies, especially the Christmas Rose, supposed by some to be the real Black Hellebore of the ancients. E.)

‡ (From calathus, a little basket; which the expanded flower somewhat resembles. E.)

§ The flowers gathered before they expand, and preserved in salted vinegar, are a good substitute for capers. The juice of the petals, boiled with a little alum, stains paper
POLYANDRIA. POLYGYNIA. Sagittaria.

(Var. 2. Radicans. Stem creeping; leaves triangular, heart-shaped, sharply crenate. C. radicans. Forst. Linn. Tr. vol. 8. t. 17. Sm. E. Bot. 2175. De Cand. C. palustris B. Hook. Grev. Found by Mr. G. Don, and Mr. Dickson, in Scotland; also by Mr. Winch on Helvellin by the foot-path leading Stainwards, and on the shores of every lake in Cumberland: by Mr. J. Backhouse, on Egleston Fell, and in Raby Park, Durham. On examining numerous specimens we find some resembling Mr. Forster’s, mixed with almost every gradation between them and the more common appearance of C. palustris. We observe leaves with entire or crenate edges even on the same plant, and also exhibiting the gradation from the heart or kidney, to the triangular shape. The stalk may be found creeping or upright, as the situation is moist or dry. So greatly do these plants vary in size, that the luxuriant picture by Curtis may be deemed equally correct, with the stunted and diminutive representations of Kniphoius or the Flora Danica. E.)

 Sagittaria.* Stamens and pistils in different flowers on the same plant: Cal. three leaves: Bloss. three petals.

B. Filam. about twenty-four.

F. (Seeds numerous, bordered. E.)

Sagittaria. Leaves arrow-shaped, acute.


(Root) tuberous, with fibres. Herb milky, smooth. Leaves varying according to situation; when deeply immersed in water or exposed to a rapid current, diminish almost to nothing; hence several evanescent varieties, Sm. E. Stalks with six edges. Leaves all from the root; the first which are always under water, long, strap-shaped, by some authors considered as a variety, and well figured in Fl. Dan. 172, and ill done in Pet. 43. 9; the succeeding, which rise above the water, arrow-shaped, very entire, smooth, with parallel ribs and reticulated veins. Leaf-

yellow, (but the colour so produced is reported not to be permanent. E.) The remarkable yellowness of butter in the spring has been supposed to be caused by this plant, (and with equal improbability by the Crowfoot, E.); but cows will not eat it, unless compelled by extreme hunger, and then, Boerhaave says, it occasions such an inflammation that they generally die. Upon May-day, country people strew the flowers before their doors, (and wreath them into garlands.—The Scots name Gowlan or Go wan, though indiscriminately applied to several spring flowers, is generally understood more particularly to designate the daisy, dandelion, crowfoot, and meadow-bout; thus “gowany glens,” has been interpreted “daisied dales;” and with like reference Burns:

"We twa hae run about the braes, And put the Gowans fine."

Goats and sheep eat this plant; horses, cows, and swine refuse it. Encyc. Brit. That the atmosphere, especially of a confined apartment, may be contaminated by the gaseous exhalations of plants and flowers, during the night often fatally mephitic, is unquestionable; and it would appear that even medicinal properties may be thus evolved; for on a large quantity of the flowers of Meadow-bouts being put into the bed-rooms of a girl who had been subject to fits, the fits ceased. An infusion of the flowers were afterwards successfully used in various fits both of children and adults.—Few plants will be found more ornamental on the margin of the pleasure ground lake, wherein the rich golden blossoms are often reflected with admirable effect. The double-blossomed variety is admitted into gardens, E.)

* (From sagitta, an arrow, the leaves resembling the head of that missile. E.)
stems tapering, convex underneath, concave above, covered by the water. Flowers three in a whorl. Flower-scales small, oval, spear-shaped, one at the base of each fruit-stalk, embracing the stem. Fruit-stalks of the barren flowers an inch long, of the fertile flowers about half an inch, and stronger. Calyx one leaf with three divisions. St. Flowers white with a purplish tinge at the claws of the petals, but so readily falling off that it is difficult to carry them home for examination.


On the Thames' shore, opposite Lambeth palace; and before the Earl of Peterborough's house, above the horse ferry, on Westminster side. R. Syn. The d of Linnaeus and β of Haller, are surely imaginary, for the strap-shaped leaves will always be found both before and after flowering. Woodw.


* There is always a bulb at the lower part of the root, growing in the solid earth, beneath the mud. This bulb constitutes a considerable part of the food of the Chinese, and upon that account they cultivate it. (The North American Indians also roast the roots for food. Barton. E.) Horses, goats, and swine eat the plant; cows are not fond of it.
CLASS XIV.

DIDYNAMIA.

GYMNOSPERMIA.

(1) Calyx mostly five-cleft, nearly regular.

LEONURUS. Anthers sprinkled with hard granulations: (upper lip of the blossom shaggy. E.)

GLECHOMA. Anthers in pairs, each pair forming a cross.

MENTHA. Filaments expanding, straight: Bloss. nearly regular.

VERBENA. Bloss. nearly regular: upper segment of the calyx shorter.

TEUCRIUM. Bloss. without any upper lip: upper segment of the petal divided.

A'JUGA. Bloss. upper lip shorter than the stamens, notched.

GALEOB'DOLON. Bloss. upper lip entire, vaulted: lower lip trifid: segments broad, acute: Anthers fleshy on the back.

BETONICA. Bloss. upper lip flat, ascending: Tube cylindrical: Stam. as long as the mouth of the tube.

LAMMUM. Bloss. with a bristle-shaped tooth on each side the lower lip, (on each side the mouth.)

GALEOP'SIS. Bloss. with two teeth upon the lower lip.

STA'CHYS. Bloss. lateral segments of the lower lip reflexed: Stamens after flowering expanding to the sides.

NEP'ETA. Bloss. lower lip scolloped: Mouth with the edge reflexed.

BALLOTA. Calyx with ten scores: Bloss. upper lip vaulted.

MARRUBIUM. Calyx with ten scores: Bloss. upper lip linear, straight.

[Origanum. Thymus Nepeta.]
DIDYNAMIA.

(2) Calyx bilabiate.

SCUTELLA'RIA. Calyx after flowering closed with a cover, and resembling a helmet.

THY'MUS. Calyx (mouth small;) closed with soft hairs.

PRUNEL'LA. Filaments forked, one of the points bearing the anther.

ORIG'ANUM. Calyces without ribs, forming an imbricated cone.

CLINOPO'DIUM. Involucrum many-bristled, inclosing the calyces.

MELITTIS. Cup wider than the tube of the blossom: Upper lip of the blossom flat, entire: Anthers crossing each other.

[Teucrium.]

ANGIOSPERMIA.

(1) Calyx cloven, or two-leaved.

O ROBAN'CHE. Caps. one-celled: Bloss. nearly equal, quadrifid: a gland under the base of the germen.

(2) Calyx four-cleft.

LATHRAE'A. Caps. one-celled: Bloss. gaping: a gland beneath the germen.

BART'SIA. Caps. two-celled: (Seeds angular: E.) Bloss. gaping.

EUPHRA'SIA. Caps. two-celled: Bloss. gaping: lower anthers spinous.

RHINAN'THUS. Caps. two-celled: Calyx compressed: Bloss. gaping.

MELAMPY'RUM. Caps. two-celled: Bloss. gaping: Seeds two, gibbous.

(3) Calyx five-cleft.

LIMOSEL'LA. Caps. (semi-orbicular, E.) one (or two) celled, many-seeded: Bloss. bell-shaped, regular.

SCROPHULA'RIA. Caps. two-celled: Bloss. reversed; the lip with an intermediate segment within.
GYMNOSPERMIA.

A'JUGA. Bloss. upper lip very small, notched, shorter than the stamens.

A. PYRAMIDA'LIS. Plant hairy, with its numerous flowers forming a tetragonal pyramid: leaves oblong, crenate: root-leaves very large.

Fl. Dan. 185—(E. Bot. 1270. E.)—Blackw. 64. 2.

(Plant four or five inches high. E.) Stem and leaves very hairy; root-leaves oblong wedge-shaped, sessile, entire, very large; stem-leaves oval, slightly toothed or scolloped, not three-lobed, diminishing upwards, so as to give the whole plant somewhat of a pyramidal form; in opposite alternate pairs; the upper tinged with purple. Floral-leaves longer than the flowers. Flowers from the bosom of the leaves, not more than three together, (in whorls, E.) Calyx very hairy, divided half-way down: segments awl-shaped, nearly equal. Woodw.

(PYRAMIDAL Bugle. E.) Dr. Hope informs me that it has been found on Ben Nevis in Lochaber, and on the Burn of Killigower, and on the Ord of Caithness. On Torn Aichaltie, a hill near Brahan Castle, Ross-shire, by Mr. Gibb. P. May—June. E.)

(A. ALPI'NA. Stem simple: leaves nearly smooth, unequally toothed, nearly all of a size: whorls rather distant, many-flowered. E.)

E. Bot. 477—Ludw. 8—Kniph. 3—J. B. iii. 432. 1—Pet. 34. 4—Riv. Mon. 76; Bugula montana.

The pairs of the leaves and the whorls are rather distant, by no means crowded into a pyramidal form as in A. pyramidalis, nor are the radical leaves (as in that species) three or four times as large as those on the stem, and very hairy; but, on the contrary, the lower leaves are but little larger than the others, and all very nearly smooth, veiny, unequally toothed. The bractee sometimes quite entire, sometimes toothed; the uppermost only tinged with purple; whereas in A. pyramidalis, they are
all reddish. *Flowers* from ten to twenty in each whorl. *Calyx* chiefly hairy at the teeth. *Flowers* pale, streaked with deeper blue. E. Bot.

**Alpine Bugle.** (*A. pyramidalis* Huds. *A. Genevensis* With. Ed. 3. E.)

Mountains. (Mountains of Aberdeenshire. Mr. David Don. E.) Carnedd Llewelyn, Carnarvonshire. Ray. (On the flat near the summit of that mountain. Mr. Griffith. On the mountain that leads from Matlock into the town of Castleton, on the left hand side, immediately adjoining the road. Mr. Dawson Turner. It is erroneously stated in English Botany that this plant has been found in Durham by Mr. Robson; the specimen he sent to Mr. Sowerby was from his own garden. Mr. Winch. P. June—July. E.)


In high and dry situations it becomes somewhat hairy, the stem less distinctly four-sided, the spike tapering upwards; the creepers short; approaching to *A. Genevensis*, but has only one stem from a root whilst the latter has many. Gough. Leaves egg-shaped. Root-leaves scolloped, on leafstalks. Stem-leaves nearly entire, sessile, in opposite cross pairs; the upper purplish. Blossom blue, red, or white, in a long leafy spike, (lower lip four-cleft. Sm.)

**Common Bugle.** (Irish: *Glassan heile*. Welsh: *Golchenid cyffredin*; *Glesyn y coed*. E.) Moist meadows, pastures, and woods. The variety with white blossoms has been observed by the Editor in a field at Smallheath, near Birmingham. In Anglesey, by the Rev. Hugh Davies. Abounds in the Isle of Wight. Sir J. E. Smith. E.)


(Plant viscid. Stems hairy, purplish. E.) Leaves hairy, the lower entire, the rest cloven deeper and deeper till the upper ones are almost divided to the base; segments strap-shaped. *Flowers* nearly unilateral, single, or in pairs. *Calyx* very hairy. Blossom (yellow; *upper lip* short, notched; E.) lower lip, middle segment somewhat heart-shaped, smooth, spotted with red, the rest very hairy. Woodw.

**Yellow Bugle.** E.) **Ground Pine.** *Teucrium Chamæpitys*. Linn. Huds. Rehn. Dick. Oed. Ehrh. But the structure of the upper lip of the blossom is not like that of *Teucrium*, deeply divided with the stamens standing in the division, but short and slightly notched as in *Ajuga*. On this account it has been removed from the former genus by Haller, Schreber, and Smith.

TEU’CRIUM. Upper lip erect, deeply divided, even below the base : stamens in the division.

T. chamædrys. Leaves wedge-egg-shaped, cut, scalloped, on leaf¬stalks: flowers axillary, three together: stems nearly cylindrical, somewhat hairy.

Leaves entire at the base, hairy; the upper oval-spear-shaped, often purple. Flowers on fruit-stalks. Woodw. Calyx, the upper segment broadest, the two lower ones narrowest, beset with white globules. Blossom reddish purple, externally with white globules; middle segment of the lower lip lopped, with a double row of hairs at the base. (Stems nearly upright, branched, six to twelve inches high. E.)


Stem acutely quadrangular, hairy, (leafy, a foot high, or more. E.) Branches opposite. Leaves heart-spear-shaped, opposite, wrinkled, (slightly viscid, aromatic, bitter. E.) Flowers in pairs. Calyx a little woolly, upper lip broad, reflexed; the lower with four very shallow clefts terminating in pointed incurved teeth. Blossom straw-coloured, woolly; tube longer than the calyx; upper lip none, but the top of the tube slightly cloven: (Stamens violet-colour, exserted. E.)

* This plant has a degree of bitterness and acrimony, but its real use is far from being accurately ascertained. It stands recommended in the gout, jaundice, and intermitting fevers.
† The herb is bitter, with a degree of aroma, and may be used with advantage in weak and relaxed constitutions. It is an ingredient in the celebrated gout powders.


Stem hairy, (somewhat branched, nearly prostrate. E.) Leaves an inch long, sessile, tapering and entire at the base, serrated upwards, those at the top of the branches oval-spear-shaped, nearly entire. Calyx hairy, purplish. Lower flowers often solitary. Woodw. (Flowers purplish, the middle lobe spotted. E.)


**NEP'ETA.** Bloss. middle segment of the lower lip scolloped: Mouth, the edges reflexed: Stamens approaching.


(Two or three feet high. E.) Whorls mostly turned to one side of the stem. Calyx downy, with green ribs. Blossom white, with a tinge of red, and spotted with purple; tube nearly straight; lower lip, middle segment with six or seven equal teeth turned upwards, with a tuft of white bristles at the base. Stamens rather longer than the upper lip. (Stem and leaves hoary. The whole plant exhales an aromatic odour. E.)


* The people of Jersey are said to make use of it in brewing, (calling it Ambroise. E.) It possesses the bitterness and a good deal the flavour of hops. (In Young's Annals of Agriculture is a dissertation by the Rev. P. Laurents, highly extolling this plant as a substitute for hops. Dr. Rutty confirms the idea of its possessing qualities worthy attention; as does the name, Ambrosia, bestowed on it by some authors. E.)

† The fresh leaves are bitter and somewhat pungent. Powdered, they destroy worms. A decoction of this plant is a good fomentation in gangrenous cases. If cows eat it when compelled by hunger, their milk acquires a garlic flavour. Sheep and goats eat it. Horses, cows, and swine refuse it.

‡ (From *nepa,* a scorpion; it being reputed efficacious against the bite of that reptile. E.)
Whitchurch, near Denbigh, and in many places by the road side between Denbigh and Ruthin. E.) Dudley Castle: Needwood Forest, Staffordshire. P. July.*

VERBE'NA.† Bloss. funnel-shaped, curved; segments nearly equal: Calyx, one of its teeth shorter: Seeds two or four, naked.

V. officinalis. Spikes slender, panicled: leaves deeply laciniate: stem solitary.


Lower-leaves deeply lobed, and jagged, the upper three-cleft, or simple. Woodward. Stem nearly quadrangular, panicled. Flowering branches in opposite pairs. Floral-leaves spear-shaped. Calyx one of the teeth much smaller and shorter than the rest, but not lopped; angles hairy. Blossom small; tube fringed at the top with hairs; mouth with two lips, the upper cloven into two, the lower into three nearly equal segments; purplish. Stamens four, two of them longer. Seeds four, (the pellicle evanescent, leaving them naked. E.) The structure of the flower and fruit must inevitably lead the English Botanist to look for it in this Class, though Linnaeus has placed it in Dianandria, because the greater number of species have only two stamens. (Root woody, branched. Stem one foot and a half high, upright, rough with scattered prickles,

* An infusion of it is deemed a specific in chlorotic cases. Two ounces of the expressed juice may be given for a dose. Cats are so delighted with this plant, especially when withered, that they can hardly be kept out of the garden wherein it grows, (rolling themselves on it, tearing it up, and chewing it with evident pleasure. These animals are also affected with a like whimsical predilection for Teucrium Marum. E.) However inexplicable, Miller confirms the old saying, "If you set it, the cats will eat it; if you sow it, the cats will not know it." It cannot well be planted without being more or less bruised. Stokes. Sheep eat it. Cows, horses, goats, and swine refuse it.

† (From the Celtic name Ferfaen, and probably referring to its use in the rites of heathen worship, and the idolatrous sacrifices of the pagans. "Vainly conceiting," as a sensible old writer observes, "that it could drive away the devil, whose great design has ever been to entice ignorant men, by such subtle craft, to sorcery and witchcraft; by trusting to creatures, more than the Creator, which is one accursed way of taking God's name in vain." "Thus have I seen," says the same author, "a man wearing an iron ring made of the clasps of a dead man's coffin, to cure the rheumatism! But those who prescribe such charms are no better than wizards; and those who use them, may say the devil is their helper; which homologates the renouncing of the Covenant of God." Equally efficacious is the notable "Muscus innatus cranio humano," the moss growing on a dead man's skull, an Irish specific, according to Threlkeld, "where the poor people, who are naturally hospitable, being misled by restless companions, run into war, foolishly thinking to throw off the blessing of the English government." Well would it be if all such pretended amulets were put to the test practised by Albert, Duke of Saxony, on a juggler who offered thus to impart infallibility to him. "Well," quoth the Duke, "that I may be sure of it, I will make the trial first upon thee;" so drew his sword, and hacked the fellow insomuch that neither by the Shemham-phorasch, nor by the hanging of the Kamea, (a parchment wherein the sacred names were written), could he be cured."—We should blush to record errors so gross, and long since consigned to oblivion, did not the peculiar "signs of the times," indicate a revival even of such absurdities, E.)
DIDYNAMIA. GYMNOSPERMIA. NEPETA. 697

curved at the bottom. *Stamens* very short, inclosed within the tube of the blossom. Fl. Brit. E.)


* (Vervain has so little pretension to sensible qualities, or even to external attraction, that it is surprising it should have acquired such general notoriety, either for its medicinal virtues as a deobstruent, especially efficacious in the cure of scrophula; or for the more mystic powers in times past universally attributed to it; for it was believed to be capable of curing the bites of all rabid animals, arresting the progress of the venom of serpents, reconciling antipathies, conciliating friendships, &c. And yet there is no well-grounded reason to doubt our plant being the genuine "Herba Sacra" of the ancients; in honour of which *Verbenalia* were annually held; and one of several which were more immediately appropriated to the use of the altar and the decoration of the priesthood: though it must be admitted that the dry harsh nature of our herb but ill accords with the "pinguis Verbena" of Virgil, any more than with the prevalent idea of an evergreen. Vervain was usually offered as a pledge of mutual good faith between the Romans and their enemies; as in the solemn league between Tullus Hostilius and the Albans; and may, in powerful protection, be deemed equivalent to the more modern flag of truce: for, on like occasions, as Drayton observes,

"A wreath of Vervain herals wear."

Ambassadors and heralds at arms likewise wore chaplets of Vervain on denouncing war or conveying messages of defiance. But surely these usages would seem to imply some more ostensible production.

Where "Dark superstition's whisper dreads
Debarr'd the spot to vulgar tread,"

the sanctimonious Druid instilled veneration for the Vervain nearly equal to that claimed for the Misseltoe: and thus Mason describes its connexion with these solemn incantations,

"Lift your boughs of Vervain blue
Dipt in cold September dew;
And dash the moisture, chaste and clear,
O'er the ground, and through the air.
Now the place is purg'd and pure."

Vestiges of these superstitions, though extinct in Britain, may still be traced in Germany and some parts of France, where the rustics are wont to gather the plant under certain phases of the moon, accompanied by unintelligible cabalistic ejaculations, believing that the herb thus procured will operate as a charm against every calamity, natural or supernatural, and even possess the power

"That hind'beth witches of their will."

Vain were it to revive the recollection of what has long, to common understandings, been deservedly forgotten, (even though the neglected weed seems to hanker after its lost fame, and to linger around the dwellings of man,) did not the British public of the nineteenth century appear to be impelled (by a somewhat erratic "march of intellect,") towards the opposite extremes of superstition and infidelity. It may, therefore, possibly be profitable at least to one portion of the community, in such anticipation, to record the abundant efficacy of this amulet, when suspended round the neck, (as conscientiously accredited through successive ages, till recently denominated the darker;) nor might it be imprudent in the simpler to anticipate a more extended demand for a commodity
MEN'THA.* Blos{s} nearly equal, four-cleft: Filaments spreading wide.

(The numerous species of Mints are arranged according to the reformed plan of Smith, condensed from the ‘Menthae Britannicae’ of Mr. Sole, whose accurate and finely executed figures have greatly facilitated the elucidation of this intricate genus, and not less so the valuable observations of the President of the Linnaean Society. (Linn. Tr. vol. v.) Whence it appears that for specific distinction we must chiefly rely on the situation and direction of the hairs or bristles, especially those of the calyx and flower-stalk. E.)

(1) Flowers in spikes.


respecting which Ray, (doubtless in ignorance), presumed to exclaim, “Mirum tot viribus pollere plantam nulla insigni qualitate sensibili dotatam!” and which father Gerard himself, in honest simplicity, still more unceremoniously denounces, despite the authority of Dioscorides, Pliny, and a host of veracious commentators; “Many odde olde wives fables are written of Vervaine tending to witchcraft and sorcerie, which you may reade elsewhere, for I am not willing to trouble your cares with reporting such trifles as honest cares abhorre to heare. Most of the later Phisicians do give the juice or decoction herceto to them that have the plague; but these men are deceived, not onely in that they looke for some truth from the father of falshood and leasings, but also bicause insteade of a good and sure remedie they minister no remedie at all; for it is reported, that the divell did reveale it as a secret and divine medicine.” p. 582. Nevertheless, as a charm to conciliate friendship, we would not willingly relinquish even this simple talisman.

“There are fairer flowers that bloom on the lea,
And give out their fragrant scent to the gale;
But the Vervain, with charmed leaf, shall be
The plant of our choosing, though scentless and pale.

For, wrap’d in the veil of thy lowly flower,
They say that a powerful influence dwells,
And that, duly call’d in the star-bright hour,
Thou bindest the heart by thy powerful spells.

We will plant thee beneath our sheltering tree,
In our bowre we will bid thy blossoms unfold;
So faithful and firm may our friendships be,
So never may glowing hearts grow cold.” Wild Garland. E.)

* (From the Greek the nymph Menthe, daughter of Cocytus, and a favourite of Pluto, whom Proserpine, instigated by an evil passion, metamorphosed into this plant: though Ovid would appear somewhat incredulous of the fact.

“Could Pluto’s queen with jealous fury storm,
And Menthe to a fragrant herb transform?” E.)

† (The general utility of Mints is well known, and universally admitted, though we are not to expect the wonderful results described by some ancient writers. For culinary purposes Spear-Mint is preferred, as in sauce, salads, &c. but for medicine, Peppermint and Pennyroyal are more efficacious. A conserve of the leaves is very grateful, and the distilled waters, both simple and spirituous, are agreeable. The virtues of Mint are those of a warm stomachic and carminative. In hysteria, nausea, and cholicky pains, as a cordial, few simples prove more beneficial. In such cases the best preparation is a strong infusion of the dried herb in water, (which is much superior to the green,) or a tincture or extract with the rectified spirit. Pennyroyal has not undeservedly been held in esteem as a deobstruent. These herbs should be cut in a very dry season, and just when they are in flower; if cut in the wet they will change black, and be little worth. E.)
Stem nearly three feet high, upright, leafy, quadrangular, rough with hairs pointing downwards. Leaves sessile, opposite, varying in figure and breadth. Spikes terminal, panicled, sharpish, composed of numerous dense whorls, with but little space between even the lowermost: each whorl accompanied by a pair of tapering, projecting, awl-shaped floral-leaves, the lowermost of which are dilated at the base. Calyx small, hairy all over with tapering teeth, longer than the tube. Blossom twice as long as the calyx, hairy, of a pale lilac colour. Stamens inclosed within the blossom. The whole herb has a strong aromatic smell, is of a hoary or greyish green, and clothed with soft hairs.

Var. 1. Leaves spear-shaped, acute.


Var. 2: Leaves egg-shaped, acute.


By the water side at Bottisham Load mill, Cambridgeshire; in the house-close of an Inn at Hillington, Middlesex. Frequent in Hertfordshire. Sole.

Var. 3. Leaves shorter; spikes blunter. Plentiful in Kent.

Var. 4. Leaves elliptical, broad, and blunt.


In Kent and Essex, but rare. Eleven miles from Norwich in the road to Hingham. Mr. Crowe. At Thorpe, near Norwich. E.)


Leaves rather serrated than scolloped. Whole plant woolly, grass green. *Flowers* pale red, much resembling those of the preceding species. Stems two to three feet high, upright, square, hairy or shaggy, the hairs pointing more or less downwards. *Leaves* underside shaggy, not hairy; all the veins fringed with close hairs. *Spikes* several, terminal, upright, sharpish, not very densely whorled. *Calyx* small, bell-shaped, covered with rough hairs. *Stamens* much longer than the blossom. The whole herb strong smelling, and tending to viscidity. *Leaves* occasionally variegated with white. E.)


M. viridis. Spikes interrupted: leaves spear-shaped, naked, serrated, pointed, sessile: (floral-leaves bristle-shaped, somewhat hairy, as well as the teeth of the calyx: flower-stalks very smooth. E.)

(Sole Menth. 11. t. 5—E. Bot. 2424. E.)—Woddy. 170—Cam. Epit. 477—Ger. 552. 2—Dodd. 95. 4—Lob. Obs. 271. 4, and Is. i. 508. 1—Ger. Em. 680. 4—Park. 31—Dodd. 95. 3—Lob. Obs. 271. 3, and Is. i. 507. 2—Ger. Em. 680. 3—Pet. 31. 7—Fuchs. 290—J. B. iii. 220—Trag. 20. 2—Lonice. i. 113. 2—Matth. 712.

Leaves strap-spear-shaped. Spikes of flowers much longer than broad. (Stem two or three feet high, upright, smooth, sharply angular, branched, often tinged with purple. Flower-stalks and tube of the calyx perfectly smooth, though the teeth of the latter are not always free from hairiness. Floral-leaves generally ciliated. Flowers of a bright red colour, dotted within. Stamens tipped with red knobs. E.)

Var. 2. Stem red, taller, thicker, and stronger, and divided at the top into more flowering branches. Leaves blacker, shorter, and not so taper-pointed, appearing blunter, more wrinkled, teeth not so fine. Flowers smaller and paler. Scent stronger, and not so agreeable. Ray.—(Teeth of the calyx fringed with hairs. E.)

Pluk. Mant. 129.


Var. 3. Narrow-leaved, smooth, with a broader spike; teeth of the calyx fringed with longer and more numerous hairs.

Bauh. Pin. 227.

In a meadow at Bocking. Dale.

Var. 4. Spike smooth; leaves broader; teeth of the calyx fringed with hairs.

(M. sativa of Pharm. Lond. E.)

Spear Mint. (M. spicata, a viridis. Linn. Watery places and banks of rivers. Near Exmouth, and on the banks of the Thames. Hudson. (By the sides of rills in the vale of Cegir, near Chirk Castle, Denbighshire. Mr. Griffith. By the side of the Avon between Bath and Kelston, and on a common between Glastonbury and Wells. Mr. Sole. E.)

P. July—Aug.t

* (Mr. Sole states this to be the true Menthastrum of the shops, and deduces that the Monks, the physicians of their times, were well acquainted with its virtues, from its still being frequently found about the ruins of abbeys and monasteries. He finds it speedily cure chlorosis, and wonderfully refresh the brain, removing the dull stupid langour subsequent to epileptic fits. E.)

† The flavour of this species being more agreeable than that of the others, it is generally preferred for medical and culinary purposes. A conserve of the leaves is very grateful, and the distilled waters, both simple and spirituous, are universally thought pleasant. The leaves are used in spring salads; and the juice of them, boiled up with sugar, is formed into tablets. The distilled waters, and the essential oil, are often given to stop vomiting, and frequently with success. From the circumstances noticed under M. arvensis, it has been
M. PIPERITA. (Spikes blunt, interrupted below; leaves egg-shaped, stalked, smoothish; calyx very smooth at the base. E.)

Stem upright, branched, a little hairy, with recurved hairs, often purplish. Leaves dark green, sharpish, serrated, rather smooth above, more or less hairy, but never downy or shaggy beneath. Spike terminal, the lowest whorl remote, stalked, sometimes spiked. Floral-leaves spear-shaped, fringed. Calyx slender, furrowed, dotted, the teeth dark purple and fringed. Blossom purplish.

Var. 1. Leaves egg-spear-shaped; spikes elongated to a point.


The true Peppermint of the London Pharmacopoeia: first discovered by Dr. Eales in Hertfordshire. Ray. In a swampy place on Lansdown, near Bath, called the Wells; also by the side of the Avon in Newton Mead. Mr. Sole. In a rivulet in Bonsall Dale, near Matlock. Sir J. E. Smith. Near the river at Tamworth.

Var. 2. Leaves egg-shaped; spikes with their points abridged, almost capitate.

Sole Menth. 19. t. 8—R. Syn. t. 10. f. 2.

Herb Sherard. By Wandsworth river. About Bath in various watery places; between Wells and Glastonbury; also in Chiltern bottom, Wilts. Mr. Sole.

Var. 3. Larger in every respect than the other varieties; leaves broad, almost heart-shaped; spikes long and thick.

Sole Menth. 53. t. 24.


(M. CITRATA. Spikes capititate, very blunt; leaves on short leaf-stalks, heart-shaped, naked on both sides; calyx and flower-stalks smooth."

Imagined, that cataplasms and fomentations of Mint, would dissolve coagulations of milk in the breasts; but Dr. Lewis says, that the curd of milk, digested in a strong infusion of Mint, could not be perceived to be any otherwise affected than by common water; however, milk in which Mint leaves were set to macerate, did not coagulate nearly so soon as an equal quantity of the same milk kept by itself. Dr. Lewis observes that dry Mint, digested in rectified spirits of wine, gives out a tincture, which appears, by day-light, of a fine dark green, but, by candle light, of a bright red colour. The fact is, that a small quantity of this tincture is green, either by day-light or by candle-light, but a large quantity of it seems impervious to common day-light; and, when held between the eye and a candle, or between the eye and the sun, it appears red; so that if put into a flat bottle it may show either green, or red, as it is viewed through the flat side or through the edge of a bottle. (It is credibly reported that mice are so averse to the smell of mint, either recent or dried, that they will desist from their depredations on grain, cheese, and other stores, over which it is scattered. Probably the essential oils might prove equally preserving. E.)

* The stem and leaves are beset with numbers of very minute glands, containing the essential oil, which rises plentifully in distillation. Peppermint water is well known as a carminative and antispasmodic. The essence of Peppermint is an elegant medicine, and possesses the most active properties of the plant.
Whole plant invariably smooth, emitting an orange-like scent. Stem about two feet high, four-sided, of a reddish or mahogany colour, terminating in a large round head of flowers of a light red colour. Leaves broad-heart-shaped, inclining to ovate, serrated; the nerves and under sides sometimes red. Calyx slender, furrowed, covered with glandular dots, dark purple. Stamens shorter than the blossom.

Orange or Bergamot Mint. *M. citrata.* Ehrh. Willd. *M. odorata.* Sole. Sm. Hull. With. Ed. 6. Not a variety of *M. hirsuta*; and perfectly distinct from *M. aquatica* of Linn. In watery places, not common. Frequent by the sides of rivers and brooks in Cheshire, especially about Aston House. Mrs. Walmsley. On the Milton side of the river, a little below Ditton, Cambridgeshire. Relhan. In a brook or ditch near Capel Cerieg, between Llanrwst and Llanberris, North Wales. Mr. Sole. In a ditch near Bedford. Dr. Abbot. Mr. Turner, in Bot. Guide, observes that this plant gathered at Reedham, in Norfolk, on the east side of the town near the river, so greatly resembled *M. hirsuta*, as to be pronounced a variety of that species by Smith; yet in one year after it was brought into Mr. Wigg’s garden it became quite smooth, and assumed the habit, as well as the smell, of *M. odorata.* P. July—Aug. E.)

(2) Flowers in whorls. (M. *hirsuta.* Flowers in heads or whorls: leaves stalked, egg-shaped: calyx covered with erect hairs: flower-stalks rough with recurved ones.

(= *E. Bot.* 1025—Sole *Menth.* 31. t. 9—Moris. v. 3. t. 6. f. 3.)

This species occasionally affords an instance of the remarkable change of a capitate Mint to a whorled one, which may often be traced in the same ditch. Whole plant more or less hairy, often tinged with purple, of a variable scent, generally acrid and aromatic, sometimes like camphor, at others sweet. Stem upright, much branched. Leaves serrated, of various size. Floral-leaves often spear-shaped, hairy. Calyx tubular, furrowed, purplish, beset with glandular dots, covered all over with reflexed hairs of various lengths. Blossom pale purple, hairy on the outside. Stamens varying in length. The lower whorls often pedunculate.

Var. 1. of Smith’s arrangement, represented by the above-cited figures, comprehends every thing that has been taken for *M. aquatica* and *M. hirsuta* of Linnaeus:—it is likewise the *Origanum vulgare* of Fl. Dan.; *M. hirsuta* of Huds. *E. Bot.* With. Ed. 4. It varies greatly in colour and hairiness as growing in moist or dry situations. Stamens longer than the blossoms. Flowers capitate.*

Var. 2. Nearly resembling the former variety, but of a peculiarly fragrant smell, according to Dill.

R. Syn. 233. t. 10. f. 1.

In the parish of East Bourne, Sussex, in the road to Pevensey. Dillwyn.

* (Uredo *Mentha*, “in light reddish-brown spots, thinly scattered on the under side of the leaf,” is found on this plant; as we have remarked on specimens which we collected at Ogwell mill, near Newton, Devon; where this species of Mint is gathered for distillation. E.)
DIDYNAMIA. GYMNOSPERMIA. MENTHA. 703

Cornwall. Mr. Watt. Near the mill at Lilleshall, Shropshire.

Var. 3. Rather more slender, of a paler hue, and the leaves somewhat less hairy. Flowers in heads. Stamens shorter than the blossom. Remarkable for its Peppermint flavor. This is \textit{M. piperita} of Linnaeus and Bergius, cultivated in the North of Europe for Peppermint, but distinct from what is generally used in this country.


Var. 4. Strikingly distinguished by its inflorescence, the head being lengthened out into a leafless spike of several whorls, more or less crowded together. Lowermost whorl generally axillary and pedunculate, sometimes elongated into a little spike. Leaves underneath paler, and considerably hairy. Blossom, as in other Mints, occasionally assuming the shape of a concave or galeated upper-lip. Spiked or capitate.


Var. 5. Flowers in whorls, but the whorls so close together as to resemble a spike. Flowers large, of a pale purple colour; stamens just equal with the blossom. Smells like Sweet Marjoram.

\textit{M. paludosa}, Sole Menth. 49. t. 22.

In Holt fen at Streatham, near Ely; in a river by the side of Awdry Causeway, near Haddenham in the Isle of Ely. Sole.

Var. 6. Flowers in axillary clusters from many of the uppermost leaves forming whorls, each cluster is more or less pedunculate. Length of the stamens variable.

\textit{E. Bot.} t. 448.


Var. 7. Verticillate, less hairy, and with rounder leaves. Dill. in Herb. Sherard.

In a ditch on the left hand of Chalk’s Green, going from Braintree to Lee House. Dillwyn.


(M. acutifolia. Flowers in whorls: leaves egg-spear-shaped, tapering at each end: calyx covered with hairs; those of the fruit-stalks horizontal.

E. Bot. 2415.

Much resembles the preceding species, but is rarely found. Leaves narrower, more pointed at each end, and more unequally serrated. Whorls altogether sessile.


P. Sept. E.)

(M. ru'bra. Flowers in whorls: leaves egg-shaped: stem upright, zigzag: fruit-stalks and lower part of the calyx perfectly smooth, hairy.


Unknown to Linnaeus. Distinguishable by its stem being smooth, reddish, zigzag, with a very few short branches curved in various directions; rising to the height of five or six feet when supported by bushes; leaves deep-green, shining, nearly smooth; blossoms large, purple. Less liable to variation than many other Mints, of which it is decidedly the tallest and handsomest.


P. Sep. E.)


Sole Menth. t. 18—E. Bot. 2118.

Herb about a foot and a half high, slightly hairy; when growing in dry ground gratefully aromatic. Stem upright, of a deep red colour, herbaceous, nearly smooth; leaves on short foot-stalks, ovate, serrated, roundish, pointed, light green, having short scattered hairs on both sides; veins reddish or whitish. Foot-stalks cylindrical, purple, often perfectly smooth. Blossoms pale purple; stamens shorter than the blossom. Merely a var. of the preceding? Hooker.

Var. 1. Leaves longer, nearly elliptical; stems three feet high, rough.

M. rivalis. a.—Sole Menth. t. 20.

In Lock's Brook between Weston and Tiverton, Somersetshire. Mr. Sole.)
Var. 2. Leaves variegated with yellow or white; whorls sometimes elevated on footstalks half an inch long; and these, though very rarely, slightly hairy.

Sole Menth. t. 19—Moris. sect. 11 t. 7. f. 5.

Variegated Mint. M. variegata. Sole. Common in gardens and about cottages, but rarely to be found truly wild.


Sole Menth. t. 16—E. Bot. 449.

Plant but slightly hairy; eighteen inches high; has no smell of Basil. Leaves sharp-pointed, serrated, narrowed at the base, sprinkled on both sides with short hairs, pale green. E.) Stems with more or less of a reddish tinge towards the top. Leaf-stalks flat, short. Whorls composed of two lateral umbels on very short fruit-stalks. Floral-leaves four or five under each whorl, two spear-shaped, the rest smaller and strap-shaped. Calyx with white hairs on the outside, and within the tube. Stamens all of the same length, shorter than the blossom. Style half as long again as the blossom. Deciduous. Germens four, on a yellowish green fleshy receptacle. Blossom pale red, (bearded at the point. E.)

(Var. 2. Stem branched only towards the top; leaves harsh, wrinkled, hairy, deeply serrated, hanging down close to the stem.

M. pratensis—Sole. t. 17.

Wet places in the New Forest, Alderbury Common, near the Roebuck, between Salisbury and Romney. Mr. Sole. E.)

Var. 3. Stem upright, almost smooth, two feet high, dark brown. Leaves smooth, long, narrow, deep green; lower ones on short foot-stalks, upper ones sessile; smelling strongly of Basil.

Sole Menth. t. 15—Moris. sect. 11 t. 7. f. 1—Ger. Em. 680.


P. Aug.—Sept. E.)


Sole Menth. 29 t. 12—E. Bot. 2119—Kniph. 11—Fl. Dan. 512—Fuchs. 435—Trag. 16. 2—Moris. sect. 11 t. 7. f. 5.

Plant pale, hoary, green, more or less downy. Stem diffusely branched.
Odour strong, occasionally resembling that of blue mouldy cheese. Calyx short, and campanulate, clothed with long projecting hairs. These marks sufficiently distinguishing this species. E.)

Corn Mint. (Welsh: Minys ar-dir. E.) M. arvensis of Linm. and other authors. In the borders or between the furrows of corn-fields, especially in moist places. P. June—Sept.*

Var. 2. Flowers earlier, has a more shining surface, though slightly hairy. Leaves more recurved, and elliptical; stem upright. M. praecox, Sole 31. t. 13.

In moist meadows. By the side of the Avon, near Bath, flowering about the middle of June. Mr. Sole. (By Derwentwater Lake, near Lowdore. Mr. Winch. E.)


Var. 4. Leaves very broad, almost heart-shaped, marked with long parallel veins which render them rugose. Stem upright. M. agrestis, Sole Menth.33. t. 14—E. Bot. 2129.


(M. Pulegium. Flowers in whorls; leaves egg-shaped; stem prostrate; flower-stalks and calyx downy all over; teeth fringed. E.)


(Far less than the preceding species; the smallest of the genus; with a peculiar, acrid smell. E.) Stems with four blunt angles, hairy, branched. Leaves small, thick, slightly toothed, underneathe set with deep semi-transparent dots. Blossom twice as long as the calyx, very hairy, without; pale purple; (sometimes white. E.) Stamens equal. Pistils as long as the stamens.


P. Aug.—Sep.*

*(In some situations it is a troublesome weed to the agriculturist, the roots binding the soil, and thus obstructing pulverisation. It is readily extirpated by draining, and the drill and horse-hoe husbandry. Holdich. E.)

† (Employed to remove obstructions, being stimulant and tonic. E.) The expressed juice, with a little sugar, is not an inefficacious medicine in the hooping cough. A simple and spirituous water, distilled from the dried leaves, is kept in the shops. It is prescribed in hysterical affections, and is not without considerable anti-spasmodic properties. An infusion of the plant may be used with the same intention. Musca pipiens; Cassido viridis and aequustris, and Phalena chrysitis live upon the different species.
GLECHO’MA.* Cal. five-cleft : Anthers converging, each pair forming a cross ; (upper lip cloven. E.)

G. HEDERA'CEA. Leaves kidney-shaped, crenate.

(E. Bot. 853. E.)—Ludw. 62—Vaill. 6. 5 and 6—Curt. 143—Woodv. 28—
Fl. Dan. 789—Riv. Mon. 61. 2, H. minor—Lonic. i. 205. 2—Matt. 626—
Dod. 394—Lob. Obs. 336. 2, and Ic. i. 613. 2—Ger. Em. 856. 1—Park. 677. h.—Walc.—J. B. ii. 855. 2—Ger. 705—Fuchs. 876—Blackw. 225—
Trag. 799.

Stamens occasionally imperfect, consisting of filaments only half the usual length, terminated by a reddish blunt point ; sometimes they are furnished with anthers, pale brown, containing no pollen, and scarcely broader than the filaments. St. Roots sending out trailing sucklers.

Leaves heart-kidney or heart-shaped, beset underneath with hollow dots, in which are glands secreting an essential oil ; and above with little eminences, but which do not secrete any odoriferous oil, for this surface being rubbed gives out no peculiar scent, whereas the under surface affords a pleasant reviving fragrance. Blossom blue; sometimes, though rarely flesh-colour.

(Plant varying much in luxuriance. E.) Unusually upright and more hairy, in

Riv. Mon. 67. 1, Hedera terrestris—Vaill. 6. 5—Clus. ii. 38. 2—Ger. Em. 704. 6—Park. 677. a.

GILL. GROUND IVY. ALE-HOOF, or TUN-HOOF: (the terminal being a Saxon word signifying (caput) a head; as a chief ingredient. Irish : Ahair Lussa. Welsh: Eidral; Beidiaug las. E.) Groves, hedge-banks, and shady places: (when in profusion making a beautiful appearance in spring. E.)

P. April—May.†

LA’MIUM.‡ Bloss. upper lip entire, vaulted: lower lip inversely heart-shaped; with a bristled-shaped tooth on each side.

* (From γλυκός, sweet wine; as affording a pleasant beverage. E.)
† The leaves thrown into the vat with are, clarify it and give it a flavour. (It was generally used for this purpose till the reign of Henry the Eighth, about which period hops were substituted. E.) Ale thus prepared is often drank as an anti-scorbutic. An infusion of the leaves is commonly taken as tea, and proves slightly tonic, expectorant, and aperient. The expressed juice, mixed with a little wine, and applied morning and evening, destroys the white specks upon horses' eyes. The plants that grow near it do not flourish—It is said to be hurtful to horses if they eat much of it. Sheep eat it; horses are not fond of it; cows, goats, and swine refuse it. Little protuberances, composed of many cells, are sometimes found upon the leaves, and are occasioned by insects, (especially gall-gnats, Cecidomyice. Latr. Tipidce. Linn. E.) Phalcena libatrix and Cynips Glech'ma live upon it. Linn. (Anthidium manicatum may occasionally be detected in the act of collecting the tomentum from this and other plants furnished with short woolly hair or down, for the purposes of nidification, Curt. pl. 61. E.)
‡ (Various are the conjectures respecting the derivation of this name. Ambrosinas indicates the most direct etymology from λαμίας, the throat, alluding to the shape of the flower: from which word also that of Lamia itself, as the appellation of a certain voracious beast or fish, or of a sorceress supposed to devour children, evidently originated. E.)
L. album. Leaves heart-shaped, acuminate, serrated, hairy, on leaf-stalks: flowers about twenty in a whorl.

(E. Bot. 768. E.)—Ludw. 162—Curt. 115—Knipl. 3—Riv. Mon. 62. 1—
Fl. Dan. 594—Blackw. 33—Walc. Trag. 3. 1—Ger. 566—Matth. 1129—
Dod. 153. 1—Lob. 280. 2, and Ic. i. 520. 2—Ger. Em. 702. 1—Park,
605. 3.

(Stems upright. Leaves slightly hairy. E.) Flowers white, sometimes, though rarely, with a pinky tinge; twelve to twenty in a whorl. Anthers hairy black.

Gaelic: Teanga-mhinn. E.) On rubbish, in corn-fields, and on ditch
banks. P. May—June.*

L. purpureum. Leaves heart-shaped, blunt, unequally crenate, on leaf-
stalks: (upper ones crowded: tube of the blossom bearded with
in near the base. E.)

(E. Bot. 769, and blos. 1933. E.)—Curt.—Sheldr. 69—Fl. Dan. 623—
Blackw. 182. 1—Knipl. 3—Riv. Mon. 62. 2, Galeopsis minor—Ger. 568. 4—Walc.—Dod. 153. 2—Lob. Obs. 280. 1, and Ic. i. 120. 1—Ger. Em. 703.
3—Park. 605. 1, and 587. 11—H. Ox. xi. 11. 9.

(Stems smooth, branched at the bottom, naked about the middle, thickly set
with leaves at the top. E.) Flowers six in the bosom of each leaf, in a
double row. Calyx awned, fringed. Lyons. Leaves serrated, downy,
but not rough; the ends often purplish, and pointing downwards. Blos-
som, lower border of the mouth whitish with purple streaks; the rest pale
red, sometimes nearly white.

(A variety is recorded with leaves entire at the margins. E.)

Red Dead-nettle or Archangel. Dee-nettle. (Welsh: Mardda-
nadlen gôch; Danadlen farw gôch. E.) Rubbish, corn-fields, and kitchen
gardens. A. April—Sept.†

L. incisum. E.) Leaves deeply and irregularly cut: stem-leaves ex-
tending down the leaf-stalks: (interior of the blossom naked at the
base. E.)

(E. Bot. 1933. E.)—Pet. 33. 3—Pluk. 41. 3.

(Resembling the last in habit. E.) Leaves deeply cut, almost lobed, taper-
ing down into leaf-stalks. Mr. Robson introduced it into his garden,
where it shed its seeds, and propagated itself three or four times, and
all the plants have been of the same kind. It flowers and ripens its
seeds, and these seeds produce others twice in the summer. Both this
and the preceding are common about Darlington, often growing together;
we may therefore conclude that the difference is not owing to soil and
situation.

* (The different species of Lamium, especially the White Archangel, are particularly
acceptable to bees, and ought to be encouraged in the precincts of the apiary. E.)
† (Even this humble weed is not without its antagonist in the animal creation; for the
chaffinch (Fringilla cälæs) defecates entire whorls of its early crimson blossoms while feed-
ing on the seeds, though in an unripe state. The family of Prinulæ, and probably other
spring flowers, suffer in like manner. E.)

L. amplexicau'le. (Floral-leaves sessile, embracing the stem, blunt, kidney-shaped, crenate, partly lobed: teeth of the calyx linear-awl-shaped, as long as its tube. Sm. E.)


Lower-leaves on leaf-stalks, heart-shaped, blunt, deeply and bluntly serrated, the upper in opposite pairs, heart-shaped broad, sessile, inclosing but not embracing the stem, with five lobes; lobes scolloped, the middle one as broad again, and with three clefts at the end, the lateral ones small. Woodw. (Calyx thickly set with hairs: Bloss. fine crimson, with a long slender tube: but the early flowers rarely expand or protrude beyond the calyx, yet perfect their seeds. E.)


(L. maculatum. Under this designation we have to consider the plant figured and described in E. Bot. 2550; "Leaves heart-shaped, pointed, deeply serrated; whorls ten-flowered:" and also another variety: both having recently been admitted into the British Flora. The former of these, originally discovered by Lady Vaughan, beside the lane leading directly from Redland Court to the garden, (close to the garden wall,) and shown by her ladyship in that station, (the only one known in these Islands,) to the Editor several years ago, has since been brought under constant observation. We have the best authority for believing this plant to be L. maculatum of Linnaeus, though it would appear from his general description that the species so named was intended to comprehend both our varieties. It is likewise undoubtedly the Lamium which prevails in the south of Europe, to the exclusion of L. album, with which it must be allowed to stand in intimate alliance. "The whole of the plant accords much with L. album:" and again, "habit like that of L. album:" says Smith: and, (with the exception of the purple flowers, and fewer of them in a whorl,) "in other respects very like L. album." Hooker. Ludwig Ect. t. 169, except in colour, well represents our plant. Rivinus describes it, but without distinguishing it, as a species, from L. album. It may likewise be recognized in the description of Schkuhr.

* The young leaves both of this and the preceding species may be eaten with other pot-herbs. Goats, sheep, and horses eat it; cows refuse it. (Phalcena chrysitis feeds on these plants. E.)
It should be kept in mind that the tendency of *L. album* to become tinged with red, is admitted by Smith: that also in Fl. Lond. that species is stated to occur with a purple flower in the south of France; that Curtis reports having found it tinged in England: and that Linnaeus himself confirms the same remark, "Variat flore carneo." On the other hand, Schkuhr informs us that the flowers of *L. maculatum*, usually purple, are "sometimes pale red, or nearly white;" and moreover, "on the plants that bear flowers, the spotted leaves are often wanting." The discrepancies between our numerous specimens and the proposed specific character, have rendered us in no small degree sceptical as to the possibility of establishing any such permanent distinction. The number of flowers in a whorl is far from being definite, though in general, it must be allowed, fewer than those of *L. album*. The lip of the blossom being spotted or speckled, is by no means peculiar to this kind of *Lamium*.

Neither is the trivial name unexceptionable, if understood to refer to the spots on the leaves; for the foliage of this plant, described as "*guttatim dispersa,*" in Column. Ecphr. 191, is never, so far as we have observed, such as to justify the expression in E. Bot. "distinguished by large white spots on the radical leaves:" inasmuch as these marks are variable both as to duration, strength, and position, indeed equally pervading all parts of the plant, and at other seasons than those mentioned in the context; nor with us can it correctly be said "*Macula foliorum alba est state dispar.*" Linn. In fact, on close inspection of these spots, they have always appeared to us to be occasioned, not by those less intelligible operations of nature on which depend the proper varieties of plants, but rather by some more immediate agency, and accompanied by the destruction, or abrasion, of the cuticular membrane and parenchymatous substance of the parts affected, as indicating a state of disease, or the depredations of minute *Aphides*, which may be found, though not so frequently, committing similar ravages on *L. album*, and others of this tribe. Curious specimens, as we apprehend also thus produced, have just been communicated to us, as *L. maculatum*, with leaves more or less freckled, or speckled, from Compton wood, near Bristol. But we are restrained from further digression, by a conviction that, however the Redland plant may be ultimately disposed of, it has little or no pretension to be deemed indigenous, limited as it is to the one very suspicious spot already described.

The other, and somewhat more legitimate, variety, to which we have alluded, is still more remarkable, almost every leaf being embellished throughout the year, not with "obscure scattered spots," but with a well-defined white central line, as though streaked with white paint: "*Foliis area longitudinali alba.*" Linn. "*L. alba linea notatum.*" Bauh. Pin. 231. This we believe to be *L. maculatum* of Flora Graeca, wherein it is mentioned in contradistinction to the Redland plant. We have received it from the Chelsea Botanic Garden. It is said to have been brought thither from Edinburgh by Mr. G. Don. We are informed that it prevails in the kingdom of Leon with a white var. It is cultivated in the Scotch gardens, whence likewise we have it; but whether Dr. Hooker in Fl. Scot. intended to apply the description from E. Bot. solely to a varietv similar to the one growing at Redland, (which elicited that description,) or to include our latter variety, it is to be regretted that the researches of the learned Professor should have failed to produce a single "local habitation," more satisfactory than that of "Woods in Scotland, rare." On the authority of Professor Henslow we are enabled to state that even this var. does not retain its distinctive character, and that the seedlings lose their stripes.
For a complete elucidation of these obscure points, we await the publication of M. Gingin of Bern, who has been long engaged in preparing a Monograph of this family of plants, and to whom we have submitted specimens. E.)

**GALEOPSIS**. *Bloss.* upper lip vaulted, somewhat scolloped; lower lip trifid, with a concave pointed tooth on each side.

**G. LADANUM.** (Stem not swollen below the joints: leaves spear-shaped, more or less serrate, hairy: upper lip of the blossom slightly crenate. E.)


*Stem* a foot high, upright, quadrangular, somewhat hairy, with spreading branches. *Leaves* opposite, on leaf-stalks, sometimes spear-shaped, serrated, at others very entire, taper-pointed, naked, or somewhat hairy, with three or four serratures on each edge. *Flowers* red, slightly woolly. *Blossom helmet* toothed; *lips* scolloped, the middlemost segment red and white. *Calyx* teeth taper-pointed, or thorny. Huds. (The Rev. R. Forby has found the terminal flower sometimes regularly quadrifid as in *G. Tetrahit*, and in Norfolk a variety with narrower and almost entire leaves most frequent. E. Bot. E.)

**RED HEMP-NETTLE.** E.) Corn-fields in calcareous soil, frequent.  
A. June—Aug.

Var. 2. *Calyx* remarkably woolly; stems thickening upwards.  
Blossoms reddish purple; upper lip oval, hairy without; lower lip reflexed, irregularly scolloped, with two oval yellow spots; teeth not observable. I suspect this will prove a different species, at least it differs from the preceding in three very striking circumstances, viz. the stem thickening upwards, the great woolliness of the calyx, and the blossoms being larger though shorter.

In a corn-field two miles west of Stratford-upon-Avon, near a limestone quarry. (On limestone hills at Fulwell, near Sunderland. Winch Guide. At the foot of Scoot Scar, near Kendal, and Giggleswick Scar, near Settle. Mr. Gough. E.)

(G. VILLO'SA. Stem not swollen below the joints: leaves egg-spear-shaped, serrated, soft and downy: upper lip of the blossom deeply notched. E.)


*Stem* upright, quadrangular, of equal thickness between each joint; branching, woolly. *Leaves* woolly, or silky, on leaf-stalks, opposite; those near the root egg-shaped, those of the stem spear-shaped, taper-pointed, with straight veins. *Calyx* teeth thorny. In habit it agrees with *G. Ladanum*, but differs in breadth, serratures, veins and soft hairs of the leaves, and in the colour of the blossoms. Huds. The hairs on the calyxes in this species are straight and glandular, but in the preceding white, and curled like wool or cotton. (Blossom four times as long as the calyx, of a pale sulphur colour, the palate deep yellow. E. Bot. E.)

* (From γαλαγ, a cat; and ραζα, a countenance; from an imaginary resemblance of the blossom to the feline physiognomy. E.)
Galeopsis.


G. tetrahit. (Stem bristly, swollen below each joint; blossom twice as long as the calyx: upper lip nearly straight. E.)

G. tetrahit. (Stem bristly, swollen below each joint; blossom twice as long as the calyx: upper lip nearly straight. E.)


Blossom generally purplish, (nearly three-fourths of an inch long; lower-lip three-lobed, mottled, with darker lines in the middle; tube white, E.) sometimes white, in numerous dense whorls. Calyx, teeth terminated by sharp awns as long again as those of G. Ladanum. Woodw. (Upper-lip always narrower and flatter, nearly erect; in the following species, broader, more convex, and bends down more over the tube of the corolla. Fl. Lond. Stem covered with strong bristles, quadrangular, one to two feet high. Leaves rather large, ovate, hispid on both sides.

Var. 2. Blossoms white, and much larger than those of the preceding. Cannabis spuria flos ab magno elegantia. R. Syn. 240.

Var. 3. Terminal flower regularly salver-shaped, with four equal stamens.

Observed by Dr. Smith at Matlock in 1788. See E. Bot. 207. Linn. Fl. Lapp. Ed. 2. 201.

In all these varieties the leaves are egg-spear-shaped, and only the upper parts of the stem and branches are hairy.

Common Hemp-nettle. (Nettle-hemp. Welsh: Penboeth guffredin. E.)

Hedge-banks, borders of corn-fields, and amongst rubbish.

A. July—Aug.

G. (versicolor. Stem hispid, swollen below each joint; blossom thrice as long as the calyx; upper lip tumid; middle lobe of the lower heart-shaped. E.)


In general habit resembling G. Tetrahit, but larger in all its parts. E.)

Stem and branches very hairy in every part. Leaves paler green and more hairy underneath than the last. Calyx purplish red. Blossom about one inch long, pale yellow; lower lip deep yellow, its middle segment purple, bordered with white. The seeds produced similar plants year after year, and the beauty of its blossoms might challenge a place in the flower garden.

It varies in having the leaves broad and egg-spear-shaped, or narrower and spear-shaped.


DIDYNAMIA. GYMNOSPERMIA. GALEOBDOLON. 713


GALEOBDOLON.† Bloss. upper lip entire, vaulted; lower lip without teeth, in three acute, undivided segments: Anthers fleshy on the back.

G. LUTEUM.
Curt. 223.—E. Bot. 178.—Walc.—(Fl. Dan. 1272. E.)—Dod. 153. 3.—Lob. 1. 521. 1.—Ger. Em. 702. 2.—Park. 606.—H. Ox. xi. 11. 5.—Pelt. 33. 6.—Riv. Mon. 20. 2.—Lam. fl. lut.—Kniph. 3.—Ger. 567. 2.—J. B. iii. 323. 1.

(Stem one foot to eighteen inches high, simple, leafy, hairy, quadrangular, striated. Blossom yellow; middle segment of the lower lip orange marked with three lines, and spotted. Floral-leaves bristle-shaped, one at the base of each flower. E.) Leaves spear-shaped, on leaf-stalks, unequally serrated, hairy, especially at the edges, lower ones nearly heart-shaped. Whorls, the uppermost with six flowers, the rest with from seven to ten. Involucrum leaves growing to the base of the calyxes. Anthers fleshy or glandular on the back part. Seeds oblong, convex on the outer side, triangular on the inner.


P. May.

Sir T. G. Cullum mentions, in Bot. Guide, a curious and elegant variety with the blossom, or at least the terminal flower, flat, and six-cloven, growing for many years in a lane near the Grove at Hardwick, one mile and a half from Bury. E.)

BETONICA. Calyx awned: Bloss. upper lip upright, flat: Tube cyindrical, incurved: Stamens not longer than the mouth of the tube.

B. OFFICINALIS. Spike interrupted; middle segment of the lower lip notched.

Ludw. 2.—Curt. 154.—Kniph. 5 and 11.—(E. Bot. 1142. E.)—Riv. Mon. 28.—Betonica.—Woodv. 244.—Walc. 5.—Ger. 577. 1.—Blackw. 46.—Sheldr. 5.—Fl. Dan. 726.—Lonic. 1. 138. 1.—Tourn. 96.—Clus. ii. 39. 1.—Dod. 40. 1.—Lob. Obs. 286. 4, and 1. 532. 2.—Ger. Em. 714.—Park. 614. 1.—H.

* (Several species of this genus yield a fibre worthy of being manufactured as hemp. E.)
† (From γαλαχ, a cat; and βροχας, a fetid scent; descriptive of its strong smell. E.)
Stems leafy, one to two feet high, square, hairy. Root-leaves oblong-heart-shaped, scollop ed, hairy, on long leaf-stalks. Stem-leaves distant, spear-shaped, serrated. Wood. Stem-leaves more strap than spear-shaped. Hairs on the stem laid flat and pointing downwards. Blossom purple, (or dull rose-colour, rarely white, downy. The leaves are often discoloured by dots occasioned by a minute Lycoperdon. E.)


STACHYS.† Bloss. upper lip vaulted; lower lip reflexed at the sides; middle segment notched: Stamens after shedding the pollen bent to the sides.

S. sylvatica. Six flowers in a whorl: leaves heart-shaped, stalked.

Var. 2. S. ambigua. E. Bot. 2089 seems chiefly distinguished by a hollow stem, according to Smith, leaves less decidedly heart-shaped, and paler herbage.


Var. 3. Smaller leaves angular.

HEDGE WOUNDWORT. (Welsh: Briwlys y goedwig. E.) Hedges and woods.

* (This plant was formerly much used in medicine, and considered an universal remedy, but it is discarded from modern practice; perhaps merely from the disappointment of unreasonable expectation. Antonius Musa, physician to the Emperor Augustus, introduced it into such general repute in Italy, that "Vende la tonica, et compra la Betonica," sell your coat and buy Betony, became a prevalent proverb. Fernelius and Pliny likewise extol its virtues; and in Spain, of the superlatively excellent it is said, "She has as many virtues as Betony." E.) It is not destitute of virtues, for when fresh it intoxicates, and the dried leaves excite sneezing. It is often smoked as tobacco. The root promotes vomiting, (and is violently purgative. E.) Sheep eat it. Goats refuse it. (It has been suspected that the sternutatory effect is merely mechanical, occasioned by the hairs of the leaves. It enters into the composition of Rowley's British herb tobacco and snuff. E.)

† (From σταχύς, a spike, or ear of corn; the flowers affecting that form. E.)

‡ It will dye yellow. The whole plant has a fetid scent, and toads are thought to be
S. palustris. Six to ten flowers in a whorl; leaves strap-spear-shaped, half embracing the stem, sessile.


(roots creeping, becoming tuberous in autumn, and hence difficult of extirpation. Sm. E.) Stems quadrangular, rough with hairs pointing downwards. Leaves in opposite pairs, very soft, unequally serrated, spreading half way round the stem. Floral-leaves, two small ones under each whorl. Calyx purple, beset with fine hairs terminating in small globules. Blossom reddish purple, mottled; tube white; mouth compressed; upper lip, and all the segments of the lower lip, slightly notched at the end. (spike long and dense, herbage strong-scented. E.)


S. arvensis. Six flowers in a whorl; leaves heart-shaped, crenate, blunt, almost naked: blossoms as long as the calyx: stem weak.


Stem twelve to eighteen inches high, quadrangular, blunt, with spreading branches, sometimes decumbent; rough with hair. Leaves much less hairy than the stem. Leaf-stalks hairy. Calyx sessile, hairy, with five equal, sharp-pointed, shallow clefts. Blossom whitish, or flesh colour, scarcely so long as the calyx; helmet very entire; lip trifid, the middle one the broadest, purplish, dotted, not notched.


* (A plant formerly in high repute as a vulnerary, as its English names intimate. For a curious account of its problematical virtues refer to Gerard. In a sceptical age, little credit is given to the accounts transmitted by our forefathers of the wonder-working efficacy of various native herbs; and the plants are therefore rather too unceremoniously cast aside. Doubtless many of them merit more strict attention, and that they and their reported virtues may not be wholly lost sight of; it is still important to discriminate them by their more ancient or vulgar names. Nor were these, to the confiding patients, devoid of comfort: for, as it is pleasantly observed in the Journal of a Naturalist, "modern science may wrap up the meaning of its epithets in Greek and Latin terms; but what pleasure it must have afforded the poor sufferer when the good neighbour came to bathe his wounds, or assuage his inward torments, with such things as "All-heal, Break-stone, Bruise-wort, Gout-weed, Feverfew" (fugio), and twenty other such comfortable mitigators of his afflictions; why, their very names would almost charm away the sense of pain! And then the herbalist of old professed to have plants which were "All-good," they could assuage anger by their "Loose-strife;" they had "Honesty, True-love, and Hearts-ease." The extra tropical condiments of these days were not required, when the next thicket would produce "Poor Man's Pepper, Sauce Alone, and Hedge Mustard;" and the woods and wilds around, when they yielded such delicate viands as "Fat-hen, Lamb's-quarters, Way-bread, Butter and Eggs, with Codlins and Cream," afforded no despicable bill of fare. The terms of modern science fluctuate daily; names undergo an annual change, fade with the leaf, and give place to others; but the ancient terms, which some may ridicule, have remained for centuries, and will yet remain till nature is swallowed up by art. E.)
S. German'ica. Many flowers in a whorl; serratures of the leaves lapping over each other, densely silky; stem cottony. Jacq. Austr. 319—Kniph. 10—(E. Bot. 829. E.)—Riv. Mon. 27. 1, Stachy's mont.—Fl. Dan. 634—Barr. Tc. 297—Fuchs. 766—J. B. iii. 330—Trag. 9. 1—Lonic. i. 110. 1—ii. 30. 4—Ger. 563. 2—Matth. 830—Dodd. 90. 3—Lob. Obs. 255. 3, and Ic. i. 530. 2—Ger. Em. 693. 2—Park. 49. 2—H. Ox. xi. 10. 1.


B Allo'Ta.† Calyx salver-shaped, with five teeth and ten furrows: Blossom upper lip concave, crenate.

B. Nig'ra. Leaves heart-shaped, undivided, serrated: calyx (somewhat truncated, with short spreading segments. E.) Kniph. 6—Blackw. 136—E. Bot. 46—Fuchs. 154—J. B. iii. 318. 1—Riv. Mon. 65. 1, Marrubiast.—Matth. 825—Chus. ii. 34. 1—Dodd. 90. 1—Lob. Obs. 279. 1, and Ic. i. 518. 2—Ger. Em. 701. 1—Park. 1230. 3—II. Ox. xi. 9. 14—Pet. 32. 4.

(Whole plant pubescent, with a pungent, acrid odour. Stem two or three feet high, upright, branched, with hairs reflexed. E.) Lower leaves heart-shaped, upper ones egg-shaped. Floral-leaves bristle-shaped, fringed. Whorls extending half way round the stem. Calyx hairy, rim five-cornered; teeth ending in sharp bristle-shaped points. Blossom tube containing honey, closed above by five hairy tufts; upper lip hairy, not very entire, purple, variegated with white lines. The calyx attaining its full size long before the blossoms expand, the latter appear as if already fallen off, though, on examination, they will be found at the bottom of the cup.


* (Certain species of Bees, with their mandibles, industriously scrape off the soft woolly material afforded by these plants, and rolling it into little balls with their fore legs, convey it to their nests, and closely envelop the cells with a coating impervious to every change of temperature.—Thus may instinct often afford instruction to reason: and the contemplation of the minute insect, infinitely disproportionate as the little creature is to our own powers and faculties, is calculated to elevate the reflecting mind to that source of all wisdom, which we cannot penetrate, and which surpasses human conception. Whatever God has created must be worthy the respect and consideration of man: and the more intimately we become acquainted with His works, the more ready shall we be to admit "The hand that made them is divine." E.)

† (From ἰαιλω, to cast off, thrust out, or purify, as a deobstruent. E.)

‡ It is recommended in hysterical cases. The Swedes reckon it almost an universal remedy in the diseases of their cattle. Horses, cows, sheep, and goats refuse it. (Aptio
DIDYNAMIA. GYMNOSPERMIA. LEONURUS, 717

Var. 2. Blossoms white, with a tinge of red. B. alba of Linn.

Near Hammersmith, on the road side. Mr. Woodward. Norwich. Mr. Crowe. Stafford. Dr. Stokes. (Near Hartlepool. Mr. Winch. In the lane leading from the Camp ground to Cheriton Street, near Sandgate: Mr. G. E. Smith. E.)

MARRUBIUM.* Calyx salver-shaped, rigid, with ten furrows: Bloss. upper lip cloven, strap-shaped, straight.

M. vulga're. Teeth of the calyx ten, bristle-shaped, hooked: (leaves roundish-ovate, serrated, rugose. E.)

(E. Bot. 410. E.)—Fl. Dan. 1036—Ludw. 145—Riv. Mon. 66. 1, Marrubi¬um alb.—Blackw. 479—Ger. 561. 1—Fuchs. 590—J. B. iii. 316—Matth. 828—Lonic. i. 110. 2—Trag. 8. 2—Clus. ii. 34. 1—Dodd. 87. 1—Lob. Obs. 278. 3, and E. i. 517. 2—Ger. Em. 693. 1—Park. 44—Pet. 32. 3—H. Ox. xi. 9. row. 3. 1.

Whole plant hoary with pubescence. Stem bluntly quadrangular, branching from the bottom, one to two feet high. Lower-leaves roundish, wrinkled, with thick veins and woolly beneath. Upper-leaves somewhat egg-shaped. Calyx woolly, fringed on the inside at the bottom of the teeth with soft hairs. Blossoms nearly white, small, compressed, in crowded whorls; upper lip spear-shaped; lower lip, middle segment slightly scolloped, lateral segments spear-shaped, short. Anters with a black substance in the middle.

WHITE HOREHOUND. (Irish: Orafunt. Welsh: Perchwerwyn; Llwyd y cwm. (Prasium,) of the old medical writers. E.) Road sides, and amongst rubbish. P. July—Sept.†

LEONURUS.; Anthers incumbent, sprinkled with shining particles: (upper lip of the blossom shaggy. E.)

L. CARDI'ACA. Stem-leaves spear-shaped, three-lobed: (upper ones entire or nearly so. E.)

Kniph. 4—Ludw. 5—Fl. Dan. 727—Riv. Mon. 20. 1, Cardiaca.—Blackw. 171—E. Bot. 286—Dodd. 94—Lob. Obs. 278. 1, and E. i. 316. 1—Ger. Em. 705—Park. 42. 7—Ger. 569—Fuchs. 395—Lonic. i. 110. 3—H. Ox. xi. 9. 18.

(Stem two or three feet high, quadrangular, coloured, downy. Leaves numerous, on leaf-stalks, woolly and veined underneath. Whorls many)

(Carcatilo) vernale feeds principally on this plant; though sometimes on Urtica dioica or Lamium album. Kirby. E.)

* (From a town of that name in Italy, where it abounds. E.)
† It is very bitter to the taste, and not altogether unpleasant to the smell. It was a favourite medicine with the ancients in obstructions of the viscera. It large doses it proves cathartic. It is a principal ingredient in the Negro Caesar’s remedy for vegetable poisons. A young man, who had occasion to take mercurial medicines, was thrown into a salivation which continued for more than a year. Every method that was tried to remove it, rather increased the complaint. At length Linnaeus prescribed an infusion of this plant, and the patient got well in a short time. Horses, cows, sheep, and goats refuse it. (A tea prepared from it, sweetened with honey, is an excellent domestic medicine in coughs and obstructions of the lungs. E.)
‡ (From λεον, a lion; and ης, a tail; from some fancied resemblance thereto. E.)
DIDYNAMIA. GYMNOSPERMIA. CLINOPODIUM.

flowered. *Cal.* with sharp spreading teeth. E.) Flowers purplish within, white and downy on the outside. *Anthers* brown, partly covered on the outer side with white opaque globules which look like enamel, but are not of a bony hardness.


*P. June—Aug.*

Clino*po'di*um.† *Stamens* crooked: *Anthers* approaching: *Involucrum* many-bristled, inclosing the ribbed calyces.


Or*ig’anum.* (Calyx without ribs: *Involucrum* of numerous dilated, flat leaves, with the flowers forming a spikate, quadrangular cone. E.)

O. *vulga're. Spikes roundish, panicled, clustered: floral-leaves egg-shaped, longer than the calyx.

(E. Bot. 1143. E.)—*Kniph* 4—*Ludw.* 90—*Curt.* 338—*Woodv.* 164—*Riv.* Mon. 60. 1, *Origanum*—*Ger.* 541. 4—*Matth.* 1701—*Dod.* 285. 2—*Lob.* Obs. 263. 1, and *Ic.* i. 492. 2—*Ger. Em.* 666. 4—*Park.* 12. 6—*H. Ox.* xi. 3—*Pet.* 34. 8—*Blackw.* 280—*Fuchs.* 552—*J. B.* iii. 236—*Trag.* 36. 1—*Lonic.* i. 118. 2—*Fl. Dan.* 638. (Stem a little woolly, about a foot high, often coloured. *Leaves* egg-heart-shaped, very slightly serrated, opposite, dotted, more or less hairy. *Floral-leaves* spear-shaped, coloured. *Calyx* nearly equal; mouth closed with bristly hairs, which at first lie parallel to the sides, but when the blossom falls off they stand out closing up to the mouth; without beset

* The leaves have a strong but not an agreeable smell, and a bitter taste. Goats, sheep, and horses eat it. Cows are not fond of it. Swine refuse it.

† (From *xlbrs*, a couch; and *btof*, a little foot; the flowers growing in whorls, resembling the ancient turned feet of bedsteads. E.)
with short fine hairs, and minute white shining globules. Blossoms pale red, hairy; the middle segment rather longer than the rest. Stamens as long, or longer than the blossom, but in some specimens they are shorter, and then the anthers appear to be destitute of pollen.

Var. 2. Leaves egg-spear-shaped.

Commonly cultivated in gardens, and erroneously supposed to be O. Onites of Linnaeus; can scarcely be esteemed a native of Britain. E.)


P. July—Aug.*

THY'MUS.† Calyx bilabiate, mouth closed with soft hairs.

T. serpyl/i lum Flowers in small heads: stems decumbent: leaves flat, blunt, ovate, entire, fringed at the base.

* The whole plant is a warm aromatic. The dried leaves, used instead of tea, are exceedingly grateful, and a good stomachic; the essential oil is so acrid, that it may be considered as a caustic, and is much used with that intention by farriers. (It is sometimes added to beer to render it more piquant, and to prevent its turning sour. E.) A little cotton wool moistened with it, and put into the hollow of an aching tooth, frequently relieves the pain. The tops dye purple. Goats and sheep eat it. Horses are not fond of it. Cows refuse it.

† (From to perfume; alluding to its fragrance, which induced its adoption in heathen rites. E.)

‡ The whole plant is fragrant, and yields an essential oil that is very heating. An infusion of the leaves removes the head-ach occasioned by excess. (It was among the wholesome herbs provided by Thesylis. Virg. Ec. 2. "Allia, Serpillumque, herbas contundit olentes."
It is subject to considerable variations, the principal of which are:

Var. 2. *Fl. alb.* Huds. Blossoms white.

Thyme delights in dry, upland spots, such as may generally be deemed most healthful—hence Dr. Armstrong considers its prevalence as an index to the most desirable situations for building:

> "Mark where the dry champaign
> Swells into cheerful hills; where Marjoram
> And Thyme, the love of bees, perfume the air:
> There bed thy roofs high on the basking steep
> Ascend: there light thy hospitable fires."  
> —— E.)

A general opinion prevails, that the flesh of sheep, or deer, that feed upon aromatic plants, particularly upon Thyme, is much superior in flavour to common mutton; but Mr. Bowles, the ingenious author of the account of the Sheep-walks in Spain, (Gent. Mag. 1764), considers this as a vulgar error. He says, sheep are not fond of aromatic plants; that they will carefully push aside the Thyme to get at the grass growing beneath it; and that they never touch it, unless when walking apace, and then they will catch at any thing. The attachment of bees to this and other aromatic herbs is well known. (It was even customary among the ancients to render the hives more agreeable by rubbing them with such as

> "L'umile Serpillo,
> Che con mille radici attorte e crespe
> Sen va carpon vestando il terren d'erba,
> E la Mélissa ch'odor sempre esala;
> La Mammola, l'Origano, et il Timo,
> Che natura cre6 per fare il mele."  
> —— Rucellai.

Before the substitution of the produce of the Sugar-cane, honey was a far more important requisite in domestic economy than latterly, and Thyme was then extensively cultivated for the encouragement of bees;

> "Here their delicious task the fervent bees,
> In swarming millions, tend: around, athwart,
> Thro' the soft air, the busy nations fly,
> Suck its pure essence, its ethereal soul:
> And soaring dare
> The purple heath, or where the *Wild Thyme* grows,
> And yellow load them with the luscious spoil."  
> —— Thomson.

And thus does a brother poet delicately compliment the amiable Shenstone, who, in his admired retreat, omitted no suitable accompaniment:

> "He cultur'd his *Thyme* for the bees,
> But never would ride their cell."  
> —— Cunningham.

A salutary caution may be here given, that honey often becomes powerfully impregnated with the quality of the plants from which it is extracted. It is important, therefore, cautiously to exclude deleterious herbs from the apiarian territory; serious, and even fatal, indispositions have been thus occasioned; and Dr. Barton records (in the American Phil. Tr. vol. v.) an extensive mortality which occurred near Philadelphia, in 1790, solely attributable to the use of honey obtained from *Kalmia latifolia.* Even mead thus incautiously prepared may produce calamitous results. It is on record that the Greeks, on their retreat after the death of the younger Cyrus, found a kind of honey at Trebisond, which proved so intoxicating that they lay on the ground as though completely discomfited. Pliny names this pernicious honey *Menomonon,* and supposes it to have been collected from a species of Rhododendron.—According to entomologists, when the stomach of a bee is filled with nectar, it next, by means of the feathered hairs with which the body is covered, pilfers from the flowers the fertilizing dust (pollen) of the anthers; which is equally necessary to the society with honey, and may be named the ambrosia of the hive, since from it the bee-bread is made.—On this curious subject Aristotle stated, and some moderns have remarked, that instinct teaches the bee that grains of pollen that enter into
Var. 3. *Fl. amplo.* Huds. Blossoms large.


Vaill.


Ger. 456. 3—Lob. i. 424. 1—Ger. Em. 573. 7—Park. 7. 7—Pet. 31. 3—Ger. Em. 570. 3.

Okey Hole, Somersetshire.

*Serpyllum vulgare majus.* R. Syn. 231.

Var. 5. *Citratum.* Lemon Thyme. Leaves with the scent of lemon peel.*

Clus. i. 339. 2—Dod. 277. 2—Ger. Em. 571. 7—Park. 8. 9—J. B. 270. 1—Ger. 458. 2—Pet. 31. 4.


Sheldr. 52—Woddv. 110.

Boxley Hill, by Kitt's Coffee-house.

Var. 7. *Incanus.* Leaves hoary. Ray.

Vaill. 32. 6—Riv. Mon. 42. 1, Serp. mont. hirsut.

Gogmagog Hills, and other barren places.


Pastures on the summit of y Wyddfa, on Snowdon, Carnarvonshire.


*Serpyllum hirsutum minus repens inodorum.* R. Syn. 231.

Ireland.

T. *Acinos.* Flowers in whorls, one upon each fruit-stalk: stems upright, somewhat branched: leaves acute, serrated.


(Plant fragrant, aromatic. E.) Stems ascending, about a span high. Leaves in distant pairs. Woodw. Plant hairy. Calyx scored, protubere-

the same mass should be homogeneous; and thus, it is supposed, “Providenc

the impregnation of those flowers that require such aid, by the bees passing from one to

other; and avoids the production of hybrid plants, from the application of the pollen of

one kind of plant to the stigma of another.” E.) Swine refuse it. (Cattle in general

avoid it. E.) *Phalænia papilionaria* lives upon it. (The cottony galls observable on this

plant are attributable to a species of *Tephritis*; and occasion the woolly appearance,

“capitulis tomentosis,” Linn. and to which, from the same cause, several other plants are

liable. Branches of Thyme strewed about articles liable to damage from mice are said to

prevent their depredations: and probably sprinkling the essential oil might prove effec-

tual. E.)

* (This favourite variety is often cultivated in gardens for its peculiarly agreeable odour,

and its use for culinary purposes. It continues to blossom late, and beds of it should be

planted in every bee garden. It must be, like other accidental varieties, propagated by

slips and cuttings; when raised from seeds the plants have not the fine scent. E.)

k 2
rent at the base. Blossoms about six in a whorl, bluish purple, middle segment slightly notched.


T. nep'eta. (Whorls many-flowered: E.) fruit-stalks axillary, forked, longer than the leaves: (leaves serrated: hairs in the mouth of the calyx prominent. E.)


(Strong-scented; smaller than T. Calamintha. E.) Leaves in opposite six, pairs, nearly sessile, egg-shaped. Fruit-stalks, subdivided in three to each supporting a flower. Calyx coloured, ribbed, the outside having short hairs and shining glands, smooth within, but closed at the mouth with long hairs; the three upper teeth equal, the two lower rather longer, equal, and more pointed; ribs fifteen. Blossom pale bluish purple; lower lip with white club-shaped bristles at the base; lateral segments egg-shaped, the middle one kidney-shaped, toothed.

In a garden the leaves become six times as large as in the natural soil, but the flowers not larger, and the fruit-stalks shorter than the leaves.


Kniiph. 4—Lndw. 33—Riv. Mon. 46. 2—(E. Bot. 1676. E.)—Dod. 98. 1—Lob. Obs. 274. 2, and Ic. i. 513. 1—Ger. Em. 687. 3—Park. 36—H. Ox. xi. 21, row 2. 3—Pet. 34. 1—Blackw. 166—Matth. 716—Ger. 552. 1.

(Whole herbage downy. Stem erect, bushy. Leaves an inch long, marked with pellucid dots, paler underneath; sometimes entire, or nearly so. E.) Leaves in opposite pairs on leaf-stalks. Fruit-stalks three-forked, the lateral arms forked. Calyx with thirteen ribs, short hair, and shining

* (Under an erroneous notion that this plant produces no seeds, the ancients applied to it the name ἄκως (Actinon), sine semine, sterilis. E.)

† (A warm, pungent, medicinal plant, recommended in infusion as a stomachic and deobstruent. E.) Cassida viridis feeds upon it.
DIDYNAMIA. GYMNOSPERMIA. MELIT'TIS. 723

globules; segments fringed, and the mouth closed with long hairs; teeth pointing upwards after the blossom falls off, the three upper equal, the two lower longer, and more pointed. Blossom tube with white club-shaped hairs; upper lip lilac-coloured within; lower lip pale, but marked with three round spots, and a few short streaks of a deeper hue. Summit one segment greatly longer than the other, and hooked. (Blossom twice the length of the calyx. E.)


MELIT'TIS.† Calyx wider than the tube of the blossom:

**Bloss. upper lip flat, entire; lower lip trifid: Anthers each pair forming a cross.**

M. MELISSOPHYLLUM.


Calyx upright, three-cleft; the upper segment often marked with a small tooth on each side. Blossom white; tube twice as long as the calyx; border with four divisions, expanding, consisting of an upper lip roundish, upright, entire; and a lower lip with three clefts, the middlemost larger, flat, entire, purple. Anthers yellow, shorter than the blossom. Linn. Stem somewhat square, scored, hairy. Calyx hairy below, nearly smooth above, large, veined and tipped with purple. Woodw. Whole plant hairy. Leaves opposite, egg-spear-shaped, wrinkled, serrated, the teeth terminating in purplish glands. Fruit-stalks from the bosom of the leaves, two or three together, not expanding altogether. Calyx, border on the upper side turned outwards like a spout, with a spear-shaped segment on each side, the lower lip cut off and finely serrated. Blossom white, stained with purple, except the middle segment of the lower lip, which is full purple edged with white.

(On further examination of specimens from Devonshire and other parts, we much doubt the permanency of any specific distinction in Smith's M. grandiflora; (E. Bot. 636—Curt.—Mill. Ill.—Ger. Em. 690. 3. f. 2—said to grow in most coppices of Devon and Cornwall; as the road-side between Liskeard and Callington, and a mile from Ashburton on the road to Plymouth.) The character attempted to be established, of "Calyx

* All the plants of this genus yield a fragrant, aromatic odour, and an essential oil. (they are said to make agreeable tea, of somewhat tonic effect: and to them not improperly may be applied the encomium upon their congener:

"And Balm that never ceases uttering sweets."

Or metaphorically,

"A tender smile, our sorrow’s only Balm." E.)

† (From melit'ta, a bee; it being productive of honey, and grateful to that insect. E.)
three-lobed,” in *M. Melissophyllum*; and “calyx four-lobed,” in *M. grandiflora*, appears to be far from invariable. Curtis declares the divisions of the lips of the calyx to be “altogether inconstant;” the Rev. J. Pike Jones, who enjoys peculiarly favourable opportunities of studying the habits of these plants, observes, “the calyx of *M. grandiflora* is frequently trilobed;” and Smith himself admits that “the calyx varies a little with respect to occasional notches;” and that this plant “generally resembles the preceding.” The white margin, surrounding the purple spot on the lower lip of the blossom, cannot be accounted very material in constituting a species. “Nimium ne crede colori,” says our great master; and in respect to size of blossom, it will not be found to exceed the general luxuriance of other parts of the individual (occasioned by favourable soil and situation. E.)


P. May—June.*

**SCUTELLA/RIA.**† Calyx, border nearly entire, after flowering covered by a dorsal rib.

**S. galericulata.** Leaves heart-spear-shaped, scolloped, wrinkled: flowers axillary.

*Curt. 155—(E. Bot. 523. E.)—Kniph. 8—Riv. Mon. 77. 1, Scutellaria—Blackw. 516—Walc.—Fl. Dan, 637—H. Ox. xi. 20, row 3. 6—Lob. Obs. 186. 3, and *Leh. i. 344. 2—Dod. 93. 2—Ger. Em. 477. 10—Park. 221—Pet. 34. 10.

(Stem acutely quadrangular, nearly smooth, twelve to eighteen inches high, much branched. Blossom funnel-shaped, blue, externally pubescent, solitary, three-fourths of an inch in length. Anthers purple. Summits simple. Leaves on very short leaf-stalks, wrinkled, veined, pubescent, paler underneath. E.)

**Common Scull-cap.** (Welsh: *Cyccyllog mwyaf.* E.) Banks of rivers and edges of ponds. P. July—Aug.†

**S. minor.** Leaves heart-egg-shaped, nearly entire: flowers axillary.


Small and slender. Leaves egg-shaped with only one or two scollops at the base. Woodw. Plant from four to eight inches high, generally unbranched. Leaves sometimes egg-spear-shaped, a little serrated towards

* (A truly elegant flower, not unfrequently admitted into gardens. Though of an unpleasant scent when fresh, when dried it is said to become delightfully fragrant. E.)

† (From the resemblance of the calyx to a sort of cup with a lid to it, called *scutella.* E.)

‡ When the blossom falls off, the cup closes upon the seeds, which, when ripe, being still smaller than the cup, could not possibly escape, or overcome its elastic force, (as is done by the down of the seeds in the compound flowers,) and must consequently remain in useless confinement. But nature, ever fruitful of resources, finds a method to discharge them. The cup becoming dry, divides into two distinct parts; when the seeds, already detached from the receptacle, fall to the ground. Cows, goats, and sheep eat it; horses and swine refuse it.
the base, slightly hairy. Calyx with two lips, but very slightly cloven; upper lip with a flat ridge running across it, which, when the blossom falls, enlarges, and pressing down the upper lip, closes the mouth of the calyx, giving it the appearance of a helmet; middle segment rather shorter, nearly flat; lower lip broad, rather reflexed, but neither notched at the end nor keeled beneath. Blossom pale reddish purple, the lower lip mottled within with deeper coloured spots. Anthers white. Summit slightly cloven. (Leaves broader and less wrinkled than those of the preceding species. Flowers scarcely half so large; very rarely blue, according to Curtis. E.)


**PRUNELLA.** Filaments forked, one of the divisions bearing the anther: Summit cloven.

**P. vulg’aris.** All the leaves egg-oblong, serrated, on leaf-stalks: upper lip of the calyx lopped, tridentate.


In open sunny situations it grows trailing, and not above a finger’s length, but in woods it is upright, and near a foot high. Linn. Whole plant thinly set with hairs. Leaves opposite. Floral-leaves heart-shaped, ribbed, edged with purple and fringed. Calyx, upper lip with seven ribs; lower lip with two spear-shaped segments, each marked with three lines, and serrated with short stiff hairs. Blossom blue, purplish, or white; upper lip slightly notched at the end: lower lip, middle segment jagged. Summit, segments revolute. (Stem often branched, set with whitish hairs. Flowers densely whorled, forming an obtuse, cylindrical, oblong, solitary spike. E.)

(Var. Fl. alb. Aspatria Moss, Cumberland. Rev. J. Dodd. E.)


* (From the German die breune, sore throat; the plant having formerly been esteemed as a vulnerary for the cure of apthæ and inflammation of the fauces. E.)
ANGIOSPERMIA.

BARTSIA.* Capsule two-celled: (Seeds angular. E.)

B. viscosa. Upper leaves alternate, serrated: flowers distant, lateral:
(stem cylindrical. E.)

Pluk. 27. 5—Pet. 36. 6—Barr. 665.

Stem cylindrical, simple, though sometimes branched nearly to the middle;
about a foot high. Leaves sessile spear-shaped, sharply serrated, slightly
hairy. Flowers solitary, axillary, on short fruit-stalks. Calyx very
large, as long as the blossom, with four or five deep divisions. Blossoms
yellow. Filaments rolled spirally. (Whole plant viscid. Bloss. having
a large, patent three-lobed lower lip, with two tubercles in the centre.
Seeds destitute of winged angles. Hook. E.)

(Yellow viscid Bartsia. E.) Marshes in Cornwall and Devon. Near
Ormskirk, Lancashire. Hudson. Cornfields near Plengwarry, and Cos-
garne, Cornwall. Mr. Watt. (Allerton, near Liverpool. Mr. R. Roscoe;
Crosby, and four miles north-west of Warrington, plentiful. Dr. Bos-
tock. Banks of Gair Loch, Scotland. Mr. Winch. In fields above Dart-
mouth Castle. Rev. J. P. Jones. Plentiful in a field opposite the county
gaal at Bodmin, and at the Land's End. Mr. W. Christy. In a pasture
opposite the hill of Dumbuck, at the western end of the range of Kilpa-
trick mountains. Mr. Maughan; and near Greenock battery. Mr. M. Y.
Starke. Fl. Lond. Meadows about Drymma, and other places near
Swansea. Mr. Dillwyn. Said to be common in the counties of Kerry

B. alpina. Leaves opposite, (obscurely heart-shaped; E.) bluntly
serrated: (stem quadrangular. E.)

163. 5—Pon. in Clus. ii. 343.

(The upper leaves or bracteas, smaller, and tinged with violet colour. E.)
Blossoms in leafy spikes, (deep purplish violet colour, three times the
length of the coloured viscid calyx, claviform, a little curved. Stem
about a span high, upright, simple, leafy. Turns singularly black in
drying; Hooker: as also does the former species. E.)

Alpine Bartsia or Painted-cup. Banks of rivers in rough sunny
places. By a rivulet near Orton, in crossing the road to Crosby, West-
moreland. Ray. (Among rocks to the east of Malghyrde in the High-
lands of Scotland. Dickson. Near Widdy Bank in Teesdale Forest,
Durham. Mr. Winch. P. July—Sept. E.)

B. odontites. (Leaves spear-shaped, serrated: upper ones alternate:
flowers in unilateral clusters: stem quadrangular. E.)

* (So named by Linneus in honor of his beloved friend, Dr. John Bartsch, of Konings-
berg, a most ingenious young man of great promise, devoted to the study of nature, who
perished untimely whilst pursuing his researches in Surinam, whither he was sent by the
illustrious Boerhaave. This event is feelingly lamented by Linneus in his "Flora
Suecica," p. 211. "Juvene pulcherrimo, candidissimo et certe doctissimo ne nationis sua
ornamento: * * * melior fato, si quis allus, dignissimus." E.)
DIDYNAMIA. ANGIOSPERMIA. RHINANTHUS. 727

Curt.—Kniph. 12—(E. Bot. 1415. E.)—Fl. Dan. 625—Riv. Mon. 90. 2,
Odontites—Dod. 55—Lob. Obs. 261. 2, and Ic. i. 496. 2—Ger. Em. 91. 2—
Park. 1929. 3—H. Ox. xi. 24. 10—Pet. 36. 4—Ger. 85.

Stem about a foot high, bluntly four-cornered, rough. Branches in oppos¬
site pairs. Leaves sessile, opposite, rough; spear, or strap-spear-shaped. Flowers pointing one way, forming long, terminal, leafy bunches. Calyx hairy without, coloured. Blossom pubescent; upper lip slightly notched at the end; lower lip, middle segment slightly indented. Filaments flatted. The lobes of all the anthers terminate at the base in a short taper point, and between the lobes are white club-shaped substances. Germen compressed, hairy, surrounded and sheathed at the base by a thin membrane. Summit a knob. Leaves sometimes reddish. Blossoms dusky red, or purple: (rarely white. Curt. Seeds angular, striated. Sm. E.)

Var. 2. Flowers white. Stem very pale green. Leaves without any tinge of red.

Gathered by Rev. —- Bourne on Northington Farm, Grimley, near Worces¬
ter. (Mr. Woodward also found this variety growing near Diss, in Norfolk. E.)

In corn-fields, meadows, and pastures. E.) A. July—Sept.

RHINANTHUS.* Calyx quadrifid, inflated: Capsule two-celled, compressed: (Seeds compressed, imbricated. E.)


Curt. 320—(E. Bot. 657. E.)—Kniph. 12—Fl. Dan. 981—Riv. Mon. 92. 2,
Christa Galli—Dod. 556. 1—Lob. Obs. 285. 2, and Ic. i. 529. 2—Ger. Em. 1071. 1—Park. 713. 2—H. Ox. xi. 23, row 2. 1—Pet. 36. 2—Walc.—J.
B. iii. 436. 3—Ger. 912.

Calyx equal, four-cleft, (enlarged after flowering. E.) Capsule bordered at the edge. Seeds inclosed by a loose membrane. Linn. Stems obscurely quadrangular, with dark purple stains. Leaves in pairs, opposite, ses¬sile, above dark green and rough, beneath grey, curiously reticulated with green veins. Blossom yellow; segments of the upper lip bluish. Germens surrounded at the base by a membranous nectary, and in the front a short, thick, crooked, horn-shaped gland. The seeds when ripe rattle in the capsule, (whence its English name, and announce mid hayharvest. E.)

Var. 2. Linn. (Willd. R. major. Ehrh. Sm. Blossoms smaller, upper lip purple. (Also distinguished, according to Dr. Richardson, by its greater size, being two feet high, and much branched, bushy appearance. E.)

Corn-fields between Wetherby and Catall, and near Boroughbridge, Yorkshire; and West Newton, Northumberland. Ray. (Frequent in the mountainous pastures near Llanberris, North Wales. Mr. Griffith. E.)

YELLOW RATTLE. (Cock’s-comb. Penny-weed. Irish: Bodan Chloi-

* (From πς, the nose; and αυς, a flower; in allusion to the form of the blossom, though not a palpable hit. E.)
DIDYNAMIA. ANGIOSPERMIA. MELAMPYRUM.


E. OFFICINALIS. Leaves egg-shaped, furrowed, sharply toothed.

Stems reddish, one to six inches high, pubescent. Branches in opposite pairs. Leaves sessile, mostly opposite, hairy. Calyx with five flat sides and five angles, but segments rarely five, unequal, spear-shaped, dark purple at the ends, with a few dark purple globular glands on the outside. Anthers brown, with a few white hairs on the lower part where they open. Summit fringed with minute glands round the edge. Seed-vessel slightly notched, pubescent towards the top, and marked with black dots. Seeds egg-shaped. Blossoms gaping, bluish white, with purple streaks, (axillary, numerous, and elegant; subject to considerable variation in size and colour. E.)


MELAMPYRUM.‡ Cal. four-cleft: Bloss. upper lip compressed, edges reflexed: Caps. two-celled, compressed, opening on one side: Seeds two, gibbous, smooth.

M. CRISTA'TUM. Spikes quadrangular: floral-leaves heart-shaped, finely toothed, closely imbricated.

*M (From ἐφ’αεδος, to give joy, as by its reputed power of restoring impaired vision. E.)

‡ It is a weak astringent, and was formerly in repute as a specific ophthalmic. It flourishes most when surrounded by plants taller than itself. Cows, horses, goats, and sheep eat it. Swine refuse it. (It is supposed to be an ingredient in Rowley’s British herb tobacco and snuff. Though the medicinal properties of Eyebright have long fallen into discredit, frequent mention is made of them in the older writers: and Milton, probably with no small personal feeling in his days of darkness, thus alludes to them:

...But to nobler sights
Michael from Adam’s eyes the film remov’d,
Which that false fruit that promis’d clearer sight
Had bred; then purg’d with Euphrasy and rue
The visual nerve, for he had much to see.” E.)

† (From μύκες, black; and πυρος, wheat; communicating a grey colour when mixed with wheat flour. E.)
DIDYNAMIA. ANGIOSPERMIA. Melampyrum. 729

opposite, sessile, strap-shaped but taper-pointed, those below the branches reflexed, on the branches horizontal. Spikes terminating the stem and branches. Floral-leaves purplish, large, the middle tooth lengthened out into a long awl-shaped point bent downward, very long at the bottom of the spike, shorter upwards, but all more or less so; sides doubled together, closely pressed together at the edges, forming a square head with hollow sides, having the horns at the angles. Woodw.

(Blossom purplish, bordered with cream-colour. Caps. crescent-shaped, with two large seeds in each cell. Sm. E.)


A. June—July.


(Hook. Fl. Lond. 63. E.)—Fl. Dan. 911—E. Bot. 53—Riv. Mon. 80, M. arvense—Kniph. 1—Clus. ii. 45. 1—Ger. Em. 90. 3—J. B. ii. 439. 2—H. Or. xi. 23, row 1. 1—Dodd. 541. 2—Lob. Obs. 23. 1, and Ic. i. 37, Trit. vacce—Ger. Em. 90. 1—Park. 1327. 4—Trag. 663.

Stem upright, (about two feet high, purplish, quadrangular, E.) slightly hairy, branched. Leaves opposite, spear-shaped, lengthened out into a very long point, nearly sessile, slightly downy. Flowers in an oval head, (gradually lengthening out. E.) Floral-leaves long, spear-shaped, wing-cleft, with teeth at the base, entire upwards. Woodw. Blossom large, yellow and dusky purple. (Segments of the calyx peculiarly long, linear coloured: seeds two in each cell, though often by abortion solitary. Sm. E.)


M. Pratense. Flowers axillary, unilateral: leaves in distant pairs: blossom closed: (lower-lip protruded. E.)

E. Bot. 113—Kniph. 11—Walc. M. sylvaticum—Ger. 84. 1 and 2—Clus. ii. 44. 2—Lob. Obs. 22. 2, Ic. i. 36. 2—Ger. Em. 91. 1—Park. 1326. 1—H. Or. xi. 23. 3.

Leaves spear-shaped, greatly tapering towards the point, all serrated, but the serratures extremely fine, and the edges of the leaves rather turned back; they are not very readily seen. Stem feeble, (12 to 18 inches high, sometimes nearly decumbent, E.) cylindrical towards the bottom, quadrangular upwards. Calyx purplish without; segments with minute stiff bristles along the edge; the two upper longer. Blossom of a full yellow, very much compressed; the notch in the upper lip barely perceptible; lower lip with two orange-coloured rising plaits; tube straw-coloured. Filaments four, supporting what appears a single anther, which is egg-shaped, compressed, hairy at the edges, and opening at the front edge.

* (By some considered sufficiently beautiful to merit cultivation in our gardens. E.)

The seeds, when ground with corn, give a bitterness and greyish cast to the bread, but do not make it unwholesome. (They somewhat resemble fine grains of wheat; whence the English name. E.) Cows and goats eat it. Sheep refuse it.
DIDYNAMIA. ANGIOSPERMIA. LATHRÉA.

divisible into four portions, but as readily breaking in any other direction; after flowering separating into two or four parts. Style corresponding to the bend of the upper lip of the blossom, rising over the anther, and presenting its summit to the opening, whence the pollen escapes. Seed-vessel a yellow glandular substance at the base on the fore part, doubled down, and so brittle as not to admit being straightened. The teeth at the base of the leaves, particularly of those next the flowers, sufficiently distinguish this from M. sylvaticum, in which all the leaves are entire. The lower lip of the blossom in M. sylvaticum is turned downwards and outwards, in M. pratense it turns upwards and inwards, mouth closed, not gaping, as in the first-named species.

Common Yellow Cow-wheat. (Welsh: Gliniogai melyn. E.) (Frequent in woods and thickets, especially in clayey soil. E.)

Sometimes mistaken for M. sylvaticum, probably because it grows in like situations; thus too much attention to a trivial name may be the occasion of error.

Var. 2. Blossom white, with two yellow spots on the lower lip. Ray.

Woods and thickets, in soil that retains moisture. Frequent in Norfolk and Suffolk. Woodward. In woods near the road from Birmingham to Hales Owen; and at Edgbaston. A. July—Aug.*

M. sylvaticum. Flowers unilateral: leaves in distant pairs: blossom widely gaping, lip deflexed. E.)


Stem above one foot high. Leaves very entire, all of them undivided, very long, spear-shaped. (In general habit resembling the preceding; but blossoms only half the size, and entirely yellow, the lower lip not extending beyond the upper. E.)


LATHRÉA:A.; Germs with a depressed gland at its base:
Caps. one-celled; receptacles lateral, sponge-like.

* Where this plant abounds, the butter is yellow, and uncommonly rich. Swine relish the seeds. Sheep and goats eat it. Cows are very fond of it. Horses and swine refuse it.
† Cows, sheep, and goats eat it; and with a plentiful allowance of it soon grow fat, (but the butter obtained from such pasturage has been observed by Linnaeus to be of a deep saffron or reddish hue. E.)
‡ (From λαθραῖα, secret; descriptive of the shady recesses in which only it is found. E.)
DIDYNAMIA. ANGIOSPERMIA. Pedicularis. 731


Blackw. 430—Dod. 553. 1—Park. 1363. 4—Clas. li. 120. 1—Ger. Em. 1385. 1—H. Ox. xii. 16. 11.

Root beaded (with white, fleshy, imbricating scales. E.) Root-leaves none. Stem-leaves membranous, coloured. Branches none. Blossom, lower lip white. Linn. (Smith considers the real root to be fibrous and parasitical, and what is usually described as such, a subterraneous portion of stem. *Flowering stem* rising at right angles from the lower horizontal portion. Plant, in singularity of habit, approaching *Orobanche*. E.) Stem naked, except sometimes one or two oval scales. Flowers in a spike, from one side of the stem, in a double (or treble, E.) row. *Floral-leaves* roundish-oval, large, reddish, one at the base of each fruit-stalk, forming a double line opposite to the flowers. *Calyx* gibbous, segments equal, bluntish. Blossom, upper lip rather short, lopped. Woodw. Blossom pale purple except the lower lip. (Stem six to twelve inches high, many (sometimes thirty to forty) flowered, brittle, upright, fleshy, purplish. *Summit* notched. *Anthers* protruding, hairy. E.)

**Greater Tooth-wort.*** (In woods and shady places, impervious to the sun, which may partly account for its pale, sickly aspect. E.) Maidstone, Kent. Ray. Harefield, (Middlesex, in a shady lane leading to the river. Blackstone. Thickets below Conzick-Scar, near Kendal. Studley, Mackershaw, and other woods, Yorkshire. Mr. Brunton. E.) Not invariably confined to shady woods, but its choice of situation is determined by other causes; sometimes it is found in very light dry soil, and so entangled with the roots of some neighbouring tree, especially of Hazel, that I have reason to believe it parasitical. Mr. Gough. At the roots of trees in a wood near Gainsford, Durham. Mr. Robson. Pleasly Park, Derbyshire. Mr. Hallows. At the roots of old trees in Smallcomb wood; and in the shady walks of Prior Park, near Bath. Mr. Sole. In Leigh wood, near Bristol. Mr. Dyer. Benthal Edge, Coalbrook Dale; and shrubbery at Bitterley Court, near Ludlow. Dr. Evans, in Bot. Guide. No longer to be found at Garreg wen near Garn, (as stated in Bot. Guide,) the spot on which it grew having been washed away by floods. Mr. Griffith. Beech wood beyond Custom Scrubs, Bisley, near Painswick. Mr. Oade Roberts. In Cocken woods, Durham. Sheepley wood on Tees, and Lumlay wood. Mr. Winch. In St. Catheria's wood, Dublin. Wade. Arniston woods, abundant. Mr. G. Don. Grev. Edin. In Church-litten-coppice, under some hazels, near the foot-bridge, in Trimming's garden hedge, and on the dry wall opposite Grange-yard, Selborne. White's Nat. Hist. E.)

PEDICULA'RIS.‡ *Blossom* ringent, upper lip compressed: 

*Caps. two-celled: Seeds* few, angular, pointed. E.)

P. *palus'tris*. Stem solitary, branched: calyx crested with callous dots: lip of the blossom oblique.

* (This trivial from the resemblance of the scaly roots to human teeth. E.)

‡ (A fact recorded by Mr. J. Murray, in Mag. Nat. Hist, that a plant of this kind, transplanted from its original site into a garden, there continued to flourish, has been supposed to miliate against the idea of its being parasitical; but is, perhaps, not absolutely conclusive. E.)

† (From pediculus, a louse; from its imaginary property of infesting sheep with such vermin. E.)
DIDYNAMIA. ANGIOSPERMIA. ANTIRRHNINUM.


Stem about a foot high, angular, purplish. Leaves winged. Leaflets wing-cleft. Flowers solitary, sessile, axillary. Calyx bilabiate, opening side-wise; segments cloven and jagged, two of them bordered with leafy appendages. Blossom purple, sometimes white; helmet with a little tooth on each side, not notched at the end; lower lip fringed with fine soft hairs.


P. sylvatica. (Stems several, simple, spreading; E.)—calyx oblong, angular, smooth: lip of the blossom heart-shaped.

(E. Bot. 400. E.)—Clus. ii. 111. 1—Dod. 556. 1—Lob. Obs. 431. 3, and Ic. i. 748. 2—Ger. Em. 1071. 2—Park. 713. 1—H. Ox. xi. 23. 13—Fl. Dan. 225—Pet. 36. 4—Trag. 250—Lonic. i. 148. 2.

Stem three to six inches high. Branches trailing. Floral-leaves deeply divided: segments toothed. Calyx angular, green within, purplish without, nearly half as long as the blossom, one of the clefts much deeper, segments toothed, that opposite to the deepest cleft the narrowest. Blossom purple, rather large and showy, much more slender than the calyx. Tube compressed. Upper lip with a little tooth on each side. Lower lip with three divisions, the middle segment a little smaller. Filaments, the two taller hairy towards the top. (Root-leaves simple, egg-shaped, scoloped. E.)

(Dwarf Lousewort. Irish: Moahlin Monah. Welsh: Melsugn y borfu; Mel y cum. E.)—Wet pastures and heaths. P. June—July.†

Var. 2. Fl. alb. Blossoms white.


(A remarkable variety has been gathered in Sutherland by the Marquis of Stafford, and also by Messrs. Hooker and Borrer, with a solitary flower, which instead of its proper ringent form, with two long and two short stamens, has a salver-shaped regular blossom, with six stamens, four of which are longer than the others. Goleopsis Tetrahii, and the various species of Antirrhinum have been observed also to exhibit similar appearances occasionally. Linn. Tr. vol. 10. p. 227. E.)

ANTIRRHINUM.‡ Calyx with five divisions: Bloss. closed by a palate, either projecting at the base, or spurred:

* This plant is an unwholesome guest in meadows, being very disagreeable to cattle, (and sometimes almost overpowering the grasses. The spread of its seeds should be prevented as far as possible. E.)—Goats eat it. Horses, sheep, and cows refuse it. Swine are not fond of it.

† The expressed juice, or a decoction of this plant, has been used with advantage as an injection for sinuous ulcers. It is said that if the healthiest flock of sheep be fed with it, they become scabby and scurfy in a short time; the wool will become loose, and they will be over-run with vermin. Cows and swine refuse it.

‡ (From κοίλος, instead of; and πρό, a snout; (Calves’-snout,) so called because the figure of the flower in certain species, (e. g. A. Orontium), resembles the snout of a calf. E.)
Caps. two-celled, many-seeded, opening unequally at the top, the divisions reflexed.

(1) *Leaves angular, (alternate. E.)*

**A. Cymbala'ria.** Leaves heart-shaped, five-lobed, alternate; stems trailing.

*Curit.*—(*E. Bot. 502—*Fl. Dan. 1220. E.*)—*Riv. Mon. 86. 2, Cymbalaria.—J. B. iii. 685—*Math. 1184—*Lob. Obs. 337. 2, and *Ic. i. 615. 1—*Ger., *Em. 529. 6—*Park. 682. 1—*H. Ox. v. 14. 30—*Lon. i. 61. 2.*


**Ivy-leaved Snap-dragon.** (Welsh: *Trwyn y llô eiddewddail.* E.)


*P. June—Oct.*

**A. spu’rium.** Leaves egg-shaped, alternate, pubescent: stems trailing, hairy.


*Stem* branched from the base, with long expanding hairs. *Leaves* hairy, sometimes slightly toothed. *Fruit-stalks* from the bosom of the leaves. *Calyx* very hairy, shorter than the body of the blossom. *Woodw.* *Fruit-stalks,* the lower generally shorter, the upper longer than the leaves. (Blossom with a recurved greenish spur; upper lip short, violet; lower yellow, palate orange. *Lower leaves* in pairs. The flowers are sometimes found regular. E.)

**Round-leaved Snap-dragon or (Fluellin. E.)*


*Its pendulous branches and elegant foliage, variably interwoven, often cover old moist walls with a thick tapestry, and when in blossom make a beautiful appearance. Mr. Woodward. (No plant is better adapted for ornamental rock-work. Some have supposed it to have been introduced from Italy, and to have spread from different gardens till completely naturalized: but we find a notice (in Mag. Nat. Hist.) of its having been found on the lower part of a rock near Barmouth, in a situation probably wild. E.)*

A. elat'ine. Leaves halberd-shaped, alternate: stems trailing, hairy.


Fruit-stalks whilst in flower expanding, afterwards declining. Nectary, a spur as long as the body of the blossom. Woodw. Leaves, the lower ones opposite, sometimes egg-shaped and toothed. Calyx hairy. Blossom upper lip yellow, lower lip and the anthers edged with deep purple. (In general habit resembling the preceding species, but rather more slender. Fl. Brit. E.)

Var. 2. Flowers regular, five-cleft, and with three, four, or five spurs, as in Peloria. Huds.


(2) Leaves opposite: nectary long, pointed.

A. repens. Leaves strap-shaped, (glaucous, whorled, or scattered: E.) stem panicled: calyx smooth, as long as the spur.

(E. Bot. 1253. E.)—Dill. Elth. 163. 197.

The lower leaves four or five in a whorl. Flowers in terminal spikes, pale blue. Flowering stem stiff and upright, not at all corresponding with the idea given by the trivial name, which applies only to the root. (Leaves very entire, and smooth, glaucous. Capsules globular, furrowed. Seeds angular, rugged, black. It occasionally emits a sweet fragrance. It is now proved that Linnaeus never saw the A. repens of Dillenius, but described it from that writer; and from the specimens of A. Monspessulanum in the Linnean Herbarium, Smith ascertains them to be precisely the same. We have received this species from different Botanists, and gathered on the same spot, with both appellations. E.)


* This is considerably more bitter than the other species, and is said to have been used successfully in ulcers and cutaneous eruptions.
Oxfordshire, abundant, and plentiful about Llandovery and Llangaddock, South Wales. E. Bot. In the little lane from Cowes Castle, up the hill on the right hand. Mr. T. F. Forster, jun. Bot. Guide, in which work Sir Joseph Banks is stated to have found, on stubble-fields near Southampton, a Pellorian variety of this plant. E.) P. July—Sept.

(A. arvensis, though inserted in the Flora Anglica by Hudson, from a misapprehension of Dillenius, and in former Editions of our work, is now understood to have no pretensions to a place here. E.)

(3) Leaves opposite; nectary short, blunt.

(A. linaria. Leaves mostly alternate, spear-shaped, blunt; stem much branched, spreading; (calyx longer than the spur. Fl. Brit. E.)


(Plant pubescent, slightly viscid, six to twelve inches high. Lower branches opposite, the upper alternate. Fruit-stalks from the bosom of, and equal to, or longer than the leaves. Calyx segments strap-shaped, nearly equalling the blossom. Blossom purplish, small, lower-lip yellow.


(4) Leaves alternate.

A. Lina's. Leaves spear-strap-shaped, crowded; stem upright; spikes terminal, sessile; flowers tiled; (calyx much shorter than the spur. E.)


(Root creeping, rather woody. Stem nearly cylindrical, smooth, two feet high, or more, crowded with leaves, and bearing a spike of flowers several inches long, yielding a faint, rather sickly smell. E.) Branches nearly upright, axillary. Calyx smooth. Blossom lower lip, segments circular, the middle one much smaller, the projecting part orange-coloured, pubescent, the rest pale yellow and smooth. Nectary long, and awl-shaped.

Var. 2. Flowers nearly white.

Var. 3. Nectaries two or more to each flower.

Var. 4. Pelloria.* Blossoms regular, with five equal stamens and five nectaries growing in a circle around the base of the tube.

* (From the Greek πιθω, monstrous; a deformity, out of the usual course of nature. E.)
DIDYNAMIA. ANGIOSPERMIA. ANTIRRHINUM.

Curt.—Awm. Acad. i. 3, at p. 298—E. Bot. 260—Kniph. 9.

(Sometimes found on the same plant with flowers of the ordinary structure. The fruit of this var. is generally considered abortive, but we learn from Annals of Botany, that Hoffman has found perfect seeds, which produced plants of the common structure. Vid. further particulars of this singular production in Curt. Fl. Lond.; also a notice in Mag. Nat. Hist. i. 379. E.)

YELLOW TOAD-FLAX, FLAX-WEED,* or SNAP-DAGON. BUTTER AND EGGS. (Welsh: Llin y llyffiant; Gingroen sechan. E.) Barren meadows, pastures, and road sides, common. P. July—Sept.†

(5) Blossom gaping; without a spur.

A. orontium. Blossom without a spur: flowers loosely spiked: calyx longer than the blossom.


Capsule when opening resembles the face or skull of a monkey. Linn. Stem about a foot high, upright, branched, hairy. Leaves spear-shaped, very entire. Flowers axillary, on very short fruit-stalks, sometimes, though rarely, sessile. Calyx hairy, segments strap-shaped, and lengthening after the falling off of the blossom. Capsule much shorter than the calyx. Woodw. (Blossoms purplish, with a yellow palate; rarely variegated with white and violet. E.)


A. majus. Blossom without a spur: flowers in a dense cluster: (calyx rounded, hairy: leaves spear-shaped. E.)

E. Bot. 129—Kniph. 1. 3—Ludw. 51—Riv. Mon. 82. 1, Antirrhinum—Mill. 42—Dod. 182. 1—Lob. Obs. 222. 1, and Ic. i. 404. 2—Ger. Em. 549. 1. 2—Ger. 438. 1—Matth. 1197.

Stem spreading, shrub-like, (but generally destroyed by frost, one to two feet high. Leaves somewhat stalked, acute, recurved, dark green, often purplish on the upper side. E.) Calyx leaves short, clammy, pubescent, (often partially coloured. E.) Nectary blunt, scarcely projecting. Capsule opening at the point obliquely, unequal at the base, (its peculiar form and three orifices causing it to resemble a skull. E.) Blossom large and handsome, rose red with a downy yellow palate; sometimes white.

GREAT SNAP-DAGON. (Irish: Srium na Laogh. Welsh: Safn y llew. E.)

* (As also the Latin trivial, from the resemblance of the leaves to those of flax. E.)
† An infusion of the leaves is diuretic and aperient. An ointment prepared from them gives relief in hemorrhoids. The expressed juice mixed with milk, is a poison to flies, as is likewise the smell of the flowers. Cows, horses, and swine refuse it. Sheep and goats are not fond of it.

SCROPHULARIA.† Cal. five-cleft: Bloss. reversed; tube globular; the lower segment reflexed: Caps. two-celled, partition double.


(E. Bot. 2209. E.)—H. Ox. v. 35, row. 2. f. 2—Pluk. 59. 5—Pet. 35. 11.

Stem very hairy, obtusely quadrangular, two or three feet high. E.)

* (In Russia this plant is said to be cultivated for its seeds, which yield an oil little inferior to that produced from Olives. E.) Though the seeds vegetate on the ground, it is only in dry soils and situations that the plant continues to live long enough to produce flowers. (Probably not originally indigenous, but certainly a valuable acquisition even to the flower-garden, into which several striking varieties have been introduced, with blossoms of finely contrasted red and white, or altogether of the richest crimson. "The flowers of these plants are perfect insect-traps. Multitudes of small creatures seek an entrance into the corolla through the closed lips, which upon a slight pressure yield a passage, attracted by the sweet liquor that is found at the base of the germen; but when so admitted, there is no return, the lips are closed, and all advance to them is impeded by a dense thicket of woolly matter, which invests the mouth of the lower jaw—"

"Smooth lies the road to Pluto's gloomy shade;
But 'tis a long, unconquerable pain,
To climb to the ethereal realms again."

But this Snapdragon is more merciful than most of our muscicapae. The creature receives no injury; but, having consumed the nectaraceous liquor, and finding no egress, breaks from its dungeon by gnawing a hole at the base of the tube, and thus returns to liberty and light. The extraordinary manner in which the corolla is formed, the elastic force with which the lower limb closes and fits upon the projection of the upper, manifest the obvious design of the great Architect, "whose hands bended the rainbow;" and the insects are probably the destined agents whereby the germen is impregnated; for as soon as this is effected, the limbs become flaccid, lose their elasticity, and are no longer a place of confinement. The ant is a common plunderer of this honey." Journal of a Naturalist. Vid. also Note to Drosera. The ingenuity of bees has been remarkably exemplified in this species of Antirrhinum, and also in A. Linaria, and some other plants whose flowers, from their long tubular formation, deny admission to the broad head and thorax of the insect. Well knowing the exact position of the prize he vainly seeks to obtain by usual means, he pierces the calyx as well as the tube with his horny proboscis, inserting it into the orifice, and thus readily abstracting the honey. E.) All the varieties of Snapdragon have the power of maintaining a state of vegetation in great droughts, and their usual stations are peculiarly exposed to the influence of the sun. Dr. Threlkeld assures us that during the prevalence of Popery, "many frivolous superstitious fables were reported of the power of this plant against spectres, charms, and witchcraft, rather savouring of rank heathenish magic, than comporting with sound reason; for the use of reliques, Agnus Deis, &c., are wicked trumpery, and defending against the devil's sword with the devil's buckler. Our being implanted into the covenant of grace is compleat security against satan's power, unless so far as God permits for the trial of our faith and patience in our Christian warfare." E.)
Leaves concave at the base, serratures accumulate. Bunch with leaves interspersed, which is not the case with the other species. Linn. Floral-leaves awl-shaped, a pair beneath each division of the fruit-stalks. Woodw. Blossom dusky purple, inverted. (Calyx pubescent. E.)

**Balm-leaved Figwort.** Watery places and hedges. Sea-shore about St. Ives, Cornwall: (where Messrs. Edward Lhwyd, Hudson, Dickson, and others are reported to have gathered this very rare plant: and we find by an insertion in Camden’s Britannia, that Mr. E. Forster, jun. supposed he had discovered a new habitat in Hertfordshire; this, however, proves a mistake, his plant being only a variety of S. nodosa; and we suspect S. Scorodonia should be altogether considered as a mere interloper; the Jersey station certainly having little more claim for insertion here than Gibraltar. E.) P. July—Aug.

**S. nodosa.** Leaves oblong-heart-shaped, three-ribbed at the base, angles of the stem acute: (root tuberous. E.)

(Fl. Dan. 1167—E. Bot. 1544. E.)—Kniph. 2—Ludw. 72—Gunn. ii. 4; 1—Blackw. 87—Fuchs. 194—J. B. iii. 421—Riv. Mon. 107. 1, Scrophularia—Matth. 1130—Dodd. 50. 1—Lob. Obs. 289. 1, and Ic. i. 533. 2—Ger. Em. 716. 1—Park. 610. 1—H. Ox. v. 8, row 3. 3—Pet. 35. 9—Ger. 579. 2—Trag. 184—Lonic. i. 133. 3.

Stem, (two or three feet high. E.) angles sometimes edged with a membranous line, but not to be called winged. Leaves imperfectly heart-shaped, the base being rather cut transversely. Crantz. Leaves and serratures pointed. Flowers on forked branches. Floral-leaves spear-shaped, taper-pointed, a pair to each flowering branch. Woodw. Upper-leaves nearly sessile, spear-shaped. Fruit-stalks cylindrical, with short pellucid hairs terminated by globules. Calyx toothed and membranous at the end. Blossom tube filled at the base with a honey-like liquor. Upper segments dusky purple; the rest pale green: the two lateral ones expanding; the lower rolled back. The little heart-shaped segment within the base of the two upper segments seems to deserve the name of nectary. Capsule sometimes with three or four cells. (Root large, consisting of roundish knobs, which are said to disappear as the plant attains maturity. E.)


**S. aquatica.** Leaves heart-shaped, blunt, on decurrent leaf-stalks: angles of the stem membranous: (root fibrous. E.)


* Figwort is hardly known in modern practice; but the rank smell, and bitter taste of the leaves seem to indicate active properties.—Swine that have the scab are cured by washing them with a decoction of the leaves. Wasps resort greatly to the flowers; (both species are supposed also to yield much honey to bees. E.) Goats eat it. Cows, horses, sheep, and swine refuse it. (Gerard, who was not remarkably addicted to incredulity, contents himself with giving the salutary warning, that “Divers do rashly teach, that if it be hanged about the necke, or else caried about one, it keepeth a man in health:” from which we may infer, that its more ostensible virtues were even then by no means unequivocal, or, at least, little understood. E.)
(Plant strong smelling. E.) Stem smooth, quadrangular, three or four feet high. Leaves heart-egg-shaped, scolloped, (veiny. E.) Panicle naked, branched; the lower branches opposite, the upper alternate, forked. Floral-leaves awl-shaped, a pair at the base of each branch. Woodw. Upper-leaves egg-shaped. Flowers dingy red, (tube greenish. E.)


**S. Vernalis.** Leaves heart-shaped, (pubescent: E.) those of the stem ternate; fruit-stalks axillary, solitary, forked, leafy: (blossom without an inner lobe. E.)


(Herb pubescent. Blossom egg-shaped, yellow, the fine clefts nearly equal, mouth contracted. E.) Leaves doubly serrated. Fruit-stalks, primary ones longer than the leaves, the secondary short. Floral-leaves spear-shaped, a pair at the base of the secondary fruit-stalks. Woodw. (Stem quadrangular, sometimes pentagonal, hollow, one to two feet high. E.)


**D. purpurea.** Segments of the calyx egg-shaped, acute: blossom obtuse, upper lip nearly entire.


(Stem upright, rod-like, three or four feet high, pubescent, leafy, nearly cylindrical. Capsules acuminate. Leaves large, rugose, reticulated with prominent veins underneath, scolloped; teeth small, deep. Leaf-stalks half embracing the stem. Floral-leaves spear-shaped, purplish towards the point. Flowers in long terminal spikes, unilateral, pendulous. Bloss-

* (This plant should probably rank among the vegetable poisons. It is said to be decidedly narcotic; but the qualities seem to vary, perhaps according to its growth in watery or drier situations. E.)

† The different species of Scrophularia afford nourishment to Phalaena Verbasci, Curculio and Tenthredo Scrophulariae.

‡ (From digitus, a finger; its flower resembling the finger of a glove, (and hence sometimes called Finger-flower); so named by Fuchsius, after its German designation, E.)
soms numerous, purple, elegantly mottled, and hairy within; inversely conical, but tumid on the under side, large, and handsome. E.)

Var. 2. Fl. alb. Flowers white.

Shenstone Lane, near Hartlebury, Worcestershire. Stokes. (On Ramps Holm in Derwentwater. Mr. Winch. By the road side near Pennynydd, Anglesey. Welsh Bot. E.) About Moxhull, Staffordshire. The pure milk-white colour of the blossoms renders this variety an ornament to our flower-gardens.

Purple Foxglove. (Irish: Mearecan. Welsh: Efion y fridd; Bysedo cochion. Gaelic: Meuran-sith. E.) Hedge-banks and sides of hills in dry gravelly or sandy soil, but it is not found in flat grounds, except in very dry land, for though the seeds vegetate there, the winter wet decays the roots, which are otherwise biennial.

Very common in the midland and western, but rare in the eastern, counties. (Oliver’s Mount, near Scarborough. Mr. Travis. Abundant in the county of Durham, but becomes scarce to the north of the Tyne, though it may be noticed in the neighbourhood of Rothbury and Roathley, in Northumberland. Mr. Winch. E.) B. June—July.*

* (Foxglove was not unknown to the ancients as a medicinal plant, and its celebrity as a vulnerary was marked in Italy during the middle ages by the proverb “Aralda tutte le piaghe salda;” but it was reserved for our author more scientifically to ascertain its real virtues, and thus not only to extend his own reputation, but to assuage the sufferings of humanity. The writer of the Monthly Review for Feb. 1824, says, “In 1785 Dr. Withering published his ‘Account of the Foxglove,’ (a treatise which has been reprinted with the Memoirs and Tracts of the author, in two vols. 8vo. 1822), which forms beyond doubt the most important point in his medical career. For ten years, he had been engaged in studying the properties of this powerful drug; and even after this long period, it is probable that he would still have delayed to give his opinions on the subject to the public, had he not found that measure necessary for the purpose of protecting his own fame, and his just right to the merit of the discovery. Those who are most intimately acquainted with the history of medicine can best tell what multitudes of drugs have been discovered, lauded, universally employed, and in no long time consigned to neglect and oblivion; but the Foxglove is at this day acknowledged to possess all the virtues which its discoverer claimed for it, viz. “a power to control the action of the heart, and to increase the secretion of the kidneys,” p. 165. As a remedy for various kinds of dropsy, particularly that hitherto almost incurable disease Hydrothorax, its importance has been amply decided. It has been more recently employed as a sedative, and has proved serviceable in retarding the undue quickness of pulse, in many cases of pulmonary consumption and other inflammatory action; and yet more permanently advantageous in abating maniacal excitement, according to the prediction of the author. (Vid. Report of the Committee of the House of Commons on the state of Lunatic Asylums, 1815: passim.) “From every part of Dr. Withering’s work,” adds an anonymous writer, “the reader may promise himself instruction;”—it is a book which, according to the public testimony of the celebrated Professor Cullen, “should be in the hands of every practitioner of physic.” (Mat. Med. 4to. Ed. p. 555.)

The valuable qualities of this very handsome plant have not been inappropriately commended by S. H.—

“The Foxglove’s leaves, with caution giv’n,  
Another proof of favouring Heav’n  
Will happily display;  
The rapid pulse it can abate;  
The hectic flush can moderate;  
And, blest by Him whose will is fate,  
May give a lengthen’d day.”

It stands recorded, and by a female too, that “women of the poorer class, in Derbyshire, drink large draughts of Foxglove tea, as a cheap means of obtaining the pleasures, or
LINNÆA.* Calyx double, that of the fruit four-leaved, that of the flower with five divisions, superior: Bloss. bell-shaped: Berry dry, three-celled.

L. borealis.


Stems thread-shaped, from three to six feet long, trailing. Leaves opposite, roundish-egg-shaped, with two or three serratures on each side, ending in leaf-stalks. Branches alternate, undivided, upright, an inch long, bearing six or eight leaves. Fruit-stalks terminating the older branches, solitary, a finger's length, upright. Blossom white on the outside, flesh-coloured within. (In the night emitting a fragrant odour like the Spiraea. Berry dry, three-celled. Seeds solitary, or in pairs. Linn. E.)

Two-flowered Linnaea. First found in an old fir-wood at Inglismaldie, Kincardineshire, by Prof. J. Beattie, jun. In fir-woods at Craibstone, six miles from Aberdeen. Mr. Anderson. (Other stations have since been observed in Scotland; and in England it has been discovered by Miss

the forgetfulness, of intoxication!" A scandalum magnatum on the sex, we would fain believe.—In particular districts it may be found in vast profusion. The heights of Haldon, above Teignmouth, to the left of the road leading towards Dawlish, present many acres so thickly covered with Foxglove as to be worthy the attention of the apothecaries' herbists, who might from that spot with little trouble obtain a genuine and ample supply, and thus avoid the serious disappointment too frequently arising from the substitution of Verbasum, (Mullein) or some other inefficacious herb. It should be particularly observed, that the leaves, by being kept to a second year, lose their strength, and the diuretic qualities become much diminished. It is therefore necessary to gather the plant fresh every season. The Foxglove in its most ample dimensions is really a superb plant. Mr. W. Christy assures us he gathered a specimen in the vicinity of Tintern Abbey, which measured in height seven feet, nine inches; length of the spike four feet, ten inches; number of flowers thereon three hundred and eleven! Nor are its beautiful blossoms unworthy the attention of the Entomologist, for therein may he occasionally find a variety of little beings, attracted by the convenience of repose, shelter, or sustenance:

"The Foxglove now in crimson tresses rich,
Depends, whose freckled bells to insect tribes
Aford a canopy of velvet bliss."

And, especially, as in a favourite haunt:

—— "Bees that soar for bloom,
High as the highest peak of Furness Fells,
Will murmur by the hour in Foxglove bells." Wordsworth. E.)

* (This humble Lapland plant was named by Gronovius, with the concurrence of Linnaeus himself, in allusion to the unobtrusive habits of the great philosopher, whose genius, immortal as it now appears, was long in obtaining due consideration. This celebrated and most enlightened reformer of Natural History, the son of a Swedish clergyman, was born at Rashult, in 1707, and by extraordinary merit and the publication of various elaborate performances, succeeded to the Professorship of Botany and Medicine at Upsal, received the honour of knighthood from his sovereign Adolphus, and was ultimately elevated to the rank of nobility. He died in 1778, but not till his fame, established on an imperishable foundation, had extended throughout the civilized world.

—— "Quel lieu desert n'est plein de sa memoire?
Il fit de chaque plante un monument de gloire,"—Delille. E.)

S. europ'e/a. Leaves between kidney and target-shaped, scollop'd.

(E. Bot. 649. E.)—Pluk. 7. 6—Pet. 6. 11.

Stems numerous, a foot long, thread-shaped, limber, not much branched, trailing, often radiating, near the leaf-stalks, hairy. Leaves (rather succulent, paler underneath, E.) alternate, remote, on leaf-stalks, heart- orbicular, one side opening near the centre, horizontal, with six or seven slight lobes, the lateral ones the smallest, blunt, about the breadth of a pea, sprinkled with small, simple, scattered, transparent bristles. Leafstalks short, ascending. Fruit-stalks thread-shaped, from the bosom of the leaves, upright, solitary, as long as the flower, often shorter than the leaf-stalks, pendulous after flowering. Floral-leaves awl-shaped, one towards the point of the fruit-stalks. Calyx hairy. Blossom minute, purplish at the base. Stamens (nearly, E.) equal. Lim. Herbage pale and delicate. Leaves half an inch over, with about five lobes. E.)


P. July—Sept.


L. aquat'ica. Leaves spear-shaped, (somewhat spatulate; foot-stalks twice as long as the flower-stalks. Sm. E.)


(A minute creeping plant, throwing up clusters of narrow, spathulate, glabrous leaves, one to two inches long. Flowers very small, axillary, peduncled, pale rose-colour. Stam. nearly equal. Hook. E.)

MUDWORT. Muddy and gravelly places liable to be flooded, and where waters have stagnated during winter.

A. July—Sept.

* (The leaves infused in milk are serviceable in sciatica and other rheumatic pains. In Sweden, also the disease affecting the feet of sheep is cured by a fomentation prepared from this plant. Fl. Suec. Dr. Swedlaun's experience confirms its efficacy in rheumatic gout. Its qualities appear to be astringent and diuretic, E.)

† (So called by Linnaeus in honour of Dr. Humphry Sibthorp, Professor of Botany at Oxford. E.)

‡ (Diminutive of limus, mud; in which it delights to grow. E.)
Orobanchae.* Cal. of two lobed leaves: Bloss. gaping: Gemen resting on a gland: Caps. one-celled, two-valved, many-seeded.†

(1) Floral-leaves solitary.

O. major. Stem unbranched, pubescent; (blossom inflated; upper lip nearly entire; lower in three equal segments: stamens smooth; style downy. E.)


Common Broom-rape. (Irish: Muchog. Welsh: Corn yr afn; Paladr hir. E.) Parasitic, in dry ground, on the roots chiefly of diadelphous plants, as Spartium scopolariun, Genista tinctoria, Trifolium, Ulex, Orobos ruberosus, Hieracium sabaudum and Centaurea Scabiosa. Also in cornfields in a sandy soil, which have probably had Broom growing on them. Broom Hills, very frequent. Mr. Woodward. Shrawley Wood, Worcestershire. Mr. Ballard. On a dry bank, near Clifton upon Teme, Worcestershire. Dr. Stokes. Raby Park, Durham. Mr. Robson. (Near Allerton Hall, in the road to Liverpool. Mr. Robert Roscoe. In Scots Wood Dean, Northumberland. Winch Guide. Near Burntisland. Hooker. El. Scot. Ken-wood, Hampstead, Middlesex; Little Baddow Common, Essex. Mr. W. Christy. Walls of Conway Castle, opposite the Suspension Bridge. B. Botfield, Esq. By the side of a foot-path at the edge of the cliffs west of Bitton, near Teignmouth, July, 1819. E.) P. May—June. (O. caryophyllacea. Sm. Linn. Tr. vol. iv. p. 169. greatly resembling the above in habit and size, and not very clearly ascertained to be specifically distinct, has been observed by Mr. G. E. Smith on the roots of Galium Mollugo, near Sandgate in Kent, and eastward to Dover, who further remarks that

* (So called, according to Theophrastus, from ὀρόβανχος, the Orobus, Tare, or Vetch, and ἀφετυχέω, to strangle, (q. d. Strangle Tare); from its supposed power of destroying the plant on which it grows. Such at least is the literal translation, though there is reason to believe the Greek compound was applied by Theophrastus to some species of climbing plant, and that our Orobanchae rather accords with the description by Dioscorides and Pliny. In the former instance the injury is effected by mechanical constriction; in the latter, by exhaustion of the juices of the plant from which it derives its principal nutrient. E.)

† In Linn. Tr., vol. 4, will be found a paper by the Rev. Charles Sutton, illustrative of this singular tribe of plants; by which it appears that they are not entirely parasitic, but acquire no small portion of sustenance from the soil by means of radical fibres. These plants have an acrid, astringent taste, and are rejected by all kinds of animals except the minuter Cimices and Thripises. They are acotyledonous: for when a seed has attached itself to the root of a living plant, it swells into a pellucid squamose gem or bulb; and after throwing out around the point of adhesion several tender fibres, it pushes up at once into a perfect plant, without any lateral lobes or cotyledons, the capitulum resembling a young head of asparagus. This process is well represented in Linn. Tr. vol. 4, t. 17. E.)
its peculiar characteristic, the scent of cloves, "garryophyllum olens;" (Bauh.) is remarkably developed if the plant be flowered in water, Vid. pl. iii. in Obs. on the Plants of S. Kent, by Gerard. Edwards. Smith. E.)


The Rev. C. Sutton, who first discriminated this species, states that it has usually been confounded with O. major. It is taller and yellower than that plant, also bearing a much more numerous assemblage of flowers; as many as a hundred having been counted on one spike. Smith observes that the leaves of the calyx are united at the base before; the blossom less inflated than in O. major; its border much curled and fringed; upper lip sometimes a little cloven. Stamens inserted into the tube above its base, smooth on the upper part. Stigma inversely heart-shaped, yellow.

Tall Broom-rape. Not uncommon in clover-fields, balks, and thickets; but not on the roots of Broom or Furze. About Gunton, Kelling, Sheringham, Catton, and Costessey, Norfolk. Rev. C. Sutton. At Houxtton, Comberton Hill, between Shelford and Stapleford, Cambridgeshire. Rev. R. Relhan. (In Cawsey Wood, Durham. Mr. Winch. Near Leiston Abbey, Suffolk. Mr. W. Christy. In July, 1825, Mr. Frederick Russell gathered a specimen on the sea shore, a quarter of a mile from Clevedon New Inn, Somersetshire, which measured in height two feet one inch and a half, and was as thick as a man's thumb. E.) P. July—Aug. E.)

(O. mi'nor. Stem simple: blossom tubular: upper lip undivided: lower with three curled segments, the middle one lobed: stamens fringed: style smooth.

E. Bot. 422—Fl. Dan. 1219.

Smaller in all its parts than O. major; and more generally of a purplish cast, though it has been sometimes found by the Rev. C. Sutton of a pale yellow colour. Floral-leaves solitary. Flowers scarcely at all tumid. Calyx-leaves more unequally divided though not invariably so. Stem inclined to zigzag in a slight degree. Stamens in their lower part thickly ciliated with projecting hairs, a distinction which never fails. Stigma purple. E. Bot. Mr. Sutton remarks that the stigmas are not well represented in the above-cited figure of E. Bot., and that the spike is frequently much longer, bearing more numerous and more thickly set flowers than are there represented.

Lesser Broom-rape. Plentiful in Kent, as found by Mr. Joseph Rayer, whence Sir J. E. Smith conjectures it to be the O. fluere minore of Dill. in Ray Syn. In various parts of Norfolk; especially in clover-fields, to the roots of which it seems attached. Near Sheringham. Rev. C. Sutton. (A destructive weed in Surry and Sussex, highly injurious to the clover crops: also among clover at Brockham and Betchworth, Surry. Mr. Winch. Covering a field near Matford, on the Starcross road about half a mile from Alphington church, Devon. Rev. H. T. Ellicombe. E.)

A ? July. E.)

DIDYNAMIA. ANGIOSPERMIA. OROBANCHIE. 745


Roots creeping. Stem about a foot high, bulbous and most scaly at the base, ending in a spike of nearly twenty flowers, and clothed, as well as the upper part of the blossom, with glandular viscid hairs. Floral-leaves spear-shaped, acute. Calyx-leaves undivided. Blossom very slightly tumid, fringed with glandular hairs. Style red. The whole plant above ground is of a purplish red. The flowers smell powerfully like a honeysuckle or pink. E. Bot.

RED FRAGRANT OR BASALTIC BROOM-RAPE. First discovered on a Basaltic rock at Cave hill, near Belfast, Aug. 1805, by John Templeton, Esq. (Dr. Hooker considers that this plant has a peculiar predilection for Basaltic rocks, and, therefore, suggests that it might with propriety be named O. basaltica. On the Island of Staffa, and the Giant's Causeway, (also basaltic), springing out of a very thin layer of soil, having no appearance of being parasitic. Fl. Lond. Near Seafield Tower between Kirkcaldy and Kinghorn. Maughan. Grev. Edin. Ards, Donegal. Mr. Murphy. E.)


Stem scaly, slightly downy; (about a foot high. E.) Scales oval-spear-shaped, Spike loose. Floral-leaves oval-spear-shaped, somewhat keeled, as long as the calyx. Calyx with four deep divisions; segments awl-shaped, the two outer the largest, the inner one next the stem very small. Blossom tube longer than the calyx; upper lip short, cloven, roundish: lower three-cleft. Stamens within the flower. Woodw. (In general less pubescent, and of a more decided blue colour than either O. major or minor. Blossom pale violet, with a downy, white, divided palate. Stem not always unbranched, according to the observation of Rev. C. Sutton.


P. July. E.)

O. ramosa. Stem branched, five-cleft: (segments obtuse, entire: floral-leaves three. E.)

E. Bot. 184; the root in a diseased state. Woodw.—Sabat. iii. 12—Cam. Epit. 311—J. B. ii. 781. 2—Clus. i. 271. 1—Ger. Em. 1312. 3—Pet. 69. 11.
Root a solid bulb, (sometimes tumid from injury or disease, E.), naked, or furnished with one or two spear-shaped sessile scales, and numerous short, thick, fibres, affixed laterally, adhering and intermixed with the fibres of the roots of hemp or other plants. Stem a continuation of the bulb, nearly cylindrical when fresh, angular when dry, slightly downy, brown or dirty yellow, naked, or furnished with very few scales. Branches either immediately from the root, or alternate, swelling at the base, nearly upright, with each a scale at the base, Spikes terminal. Floral-leaves oval-spear-
shaped, somewhat keeled, sessile. Calyx segments pointed, the two outer largest, the inner halved, the sides next the stem being wanting. Blossom tube ventricose, yellow at the base, the upper part and lips bluish purple, hairy on the outside; upper lip roundish, cloven, lower lip broad, three-cleft, the middle segment largest, and with two yellowish prominences at the mouth. Filaments within the tube, bluish. Anthers yellow. Style longer than the filaments and bending towards them, bluish. Summit blunt. Woodw. Stem about a span high; generally, but not always, branched.

**Branched Broom-rape.** Corn-fields and dry pastures. (Mr. Sutton has found it only in rich moist soil. E.) Isle of Sheppey, and near Feversham and Rochester; about Glastonbury; and in Devonshire and Hants. Hudson. (In a Hemp-field on the opposite side of the river at Mettingham, near Beccles; and Brome, near Bungay, Suffolk, on the roots of hemp and Galeopsis Tetrahita, both annual plants. Mr. Woodward. Hemp-fields near Wisbeach. Rev. R. Relhan. (Among hemp at Outwell, Norfolk. Rev. C. Sutton. E.) A. June—Sept.*

* (The different species of Broom-rape are probably much alike in quality, viz. astringent and vulnerary. Where these plants abound they must be treated by the agriculturist as the most destructive weeds, which will fatally impoverish any other crop. E.)
CLASS XV.

TETRADYYNAMIA.*

SILICULOSA.

(1) Pouch not notched at the end.

ALYS'SUM. Pouch egg-shaped, crowned with the style: valves concave: Filaments toothed: (Cotyledons accumbent. Br. E.)†

(CAMELI'NA. Pouch entire; valves tumid: Seeds numerous, not bordered: Filaments without teeth: Cotyledons incumbent. Br. E.)

DRA'BA. Pouch with nearly flat valves: Style none: (Cotyledons accumbent. Br. E.)

* (The importance of the plants of the natural order of Cruciferæ to mankind, and the highly antiscorbutic powers of which they are possessed, have been indicated in our first volume. This latter quality appears to depend upon a certain acid volatile oily principle, the chemical nature of which is imperfectly known; and it is observed that when any cruciferous plants are found to be eatable, either from culture or other circumstances, the improvement arises from a reduction of this peculiar principle. Plants of this order are also believed to possess diuretic and diaphoretic properties. Cruciferæ are always eatable when their texture is succulent, as in the roots of the Radish and Turnip, and in the leaves of the Cabbage tribe. A further diminution of the acid principle is produced by blanching. These vegetables are supposed to possess a greater share of azote than any others; which occasions their fetid smell when fermented. The embryos of all the order abound in oil, whence many species are employed with much advantage for expressing, either for the table, or for supplying lamps. Some are extremely beautiful and fragrant; and others among the most interesting of alpine plants. The more common kinds are of considerable utility to bees, as affording them a principal supply of spring food. They are also much frequented by different White Butterflies, as Pontia Brassicae, Chariclea, Rapa, setra, Nopi, &c. well described and figured in Mag. Nat. Hist. vol. ii. p. 227. It is asserted that the seeds of cruciferous plants, as also grain of all kinds, by steeping twelve hours in river water, (never in well-water,) and adding to each quart of water about fifteen drops of a strong solution of chlorine, the whole well mixed, and the maceration of the seed continued for six hours longer in the sun-light, and under a bell-glass, will be much increased in vegetative power, and, with the water of maceration poured over the ground when sown, will produce a crop three or four times as great as that obtained under ordinary circumstances; a fact worthy the attention of the agriculturist in seasons of scarcity, or when the seed may have suffered from depredation. Vid. Mag. Nat. Hist. E.)

† (The circumstance of the pouch being notched at the end, or otherwise, affords no certain characteristic of this genus. E.)
SUBULA’RIA. Pouch with half-egg-shaped valves: Style shorter than the pouch: (Cotyledons linear, incumbent. Br. E.)

(CAKI’LE. Pouch of two single-seeded articulations; upper articulation with an erect sessile seed, the lower one with a pendulous one, (sometimes abortive): Cotyledons accumbent. Br. E.)

CRAM’BE. Pouch deciduous; globular; like a dry berry: Filaments four, long ones cloven at the end: (Cotyledons accumbent. Br. E.)

I’SATIS. Pouch deciduous; spear-shaped; with one seed: (Cotyledons incumbent. Br. E.)

VEL’LA. Pouch with valves only half the length of the partition: (Cotyledons accumbent. Br. E.)

TORONOPUS Ruellii. Pouch notched at the end.

I’BERIS. Two outermost petals the largest: (Pouch obcordate; one seed in each cell. E.)

(TEESDA’LIA. Pouch emarginate; valves keel-shaped: Seeds two in each cell: Filaments each having a scale at its base: Cotyledons accumbent. Br. E.)

COCHLEA’RIA. Pouch heart-shaped: Valves blunt: Seeds numerous.

(CORONOPUS. Pouch nearly entire, compressed, rugged, without valves, two-seeded. E.)

LEPID’IUM. Pouch heart-shaped: Valves sharply keeled: (Cotyledons mostly incumbent: Seeds solitary. E.)

TALAS’PI. Pouch inversely heart-shaped, cloven: Valves (in some species) bordered; keeled: Seeds numerous.

SILIQUOSA.

(1) Calyx closed; the leaflets approaching lengthwise.

RAPH’ANUS. (Pod jointed, tumid, valveless: Seeds globular. E.)

* (In L. petraeum, two in each cell. E.)
TETRADYNAVIA. SILICULOSA. ALYSSUM. 749

ERYSTUM. Pod four-sided: (Seeds not bordered: Cotyledons incumbent: Stigma capitrate, sometimes notched, with the lobes lying open: Calyx closed. Br. E.)

CHEIRANTHUS. Germen with a gland on each side its base: (Calyx converging, the two opposite leaves gibbous. E.)

HESPERIS. Glands within the shorter stamens: Petals oblique: (Pod angular: Summit divided into approaching lobes: Seeds not bordered. E.)

ARABIS. Glands four; within the leaflets of the calyx: (Pod linear, flat: Seeds in a single row. Br. E.)

BRASSICA. (Glands two within the shorter stamens; two outside the longer: Calyx closed: Pod nearly cylindrical, beaked, with two valves. E.)

TURRITIS. Petals upright: (Pod linear, keeled: Seeds in a double row. Br. E.)

DENTARIA. (Pod lanceolate; opening elastically: Valve rolling back: Seeds on flat, dilated stalks. E.)

(2) Calyx open, the leaflets wide asunder upwards.

CARDAMINE. (Pod linear, opening elastically: Valves rolling back: Seeds on capillary stalks. E.)

SINAPIS. (Pod opening, cylindrical, with a prominent partition: Calyx expanding horizontally: Petals erect. E.)

(NASTURTIUM. Pod rounded, (sometimes short.) Valves concave, neither ribbed, nor keeled: Cotyledons accumbent: Calyx spreading. Br. E.)

SISYMBRIUM. Pod rounded or angular: Cotyledons incumbent, (sometimes obliquely) flat: Calyx spreading, (sometimes nearly erect. Br. E.)

(BARBARA. Pod four-edged: Cotyledons incumbent: Seeds in one row: Calyx erect; shorter filaments with intermediate glands. Br. E.)

[Brassica Napus.]

SILICULOSA.

ALYSSUM.* Pouch entire, crowned with the style: Valves

* (Possibly from α, privative, and λυσις, madness; it formerly being considered efficacious against hydrophobia. E.)
conce, parallel to the partition: (two of the filaments marked with little teeth. E.)


Leaves alternate. Blossoms numerous, white, fragrant. Stamens and claws of the petals, turning purple in decay. Pouches in long clusters, two-celled, two-seeded, a little convex. E. Bot.

Sweet Alyssum. A. maritimum. Willd. A. minimum. Linn. Half a mile from the sea near Aberdeen, added to the British Flora by Professor W. Duncan of Aberdeen. Since found on the maritime cliffs of Devon, at Budleigh-Salterton, by Dr. Hooker; but suspected not to be wild there. In the more genial climates of the South, perennial; in this country more frequently annual. E.)*

(CAMELI'NA. Pouch sub-ovate, many-seeded; valves tumid: Filaments without teeth. E.)

(C. sati'va. Stem herbaceous: leaves spear-arrow-shaped: pouch inversely egg-shaped, bordered, thrice as long as the style. E.)


Stem (two to three feet high, E.) cylindrical below, somewhat angular above, slightly hairy, clothed with leaves. Leaves alternate, spear-shaped, arrow-shaped at the base, half embracing the stem, slightly toothed, hairy. Blossom yellow. Pouches on long fruit-stalks, terminated by a long style; partition extending beyond and forming a strong ridge round the seed-vessel. Woodw. (Petals blunt, entire. Seeds slightly angular, inversely egg-shaped, never notched at the end. Fl. Brit. E.)


A. May—June.*

* (It is commonly cultivated in gardens for its agreeable honey-like scent; and we should suppose might prove a valuable acquisition to the apiarian border. E.)

† (Supposed a corruption of Chamellinum; but the appropriate meaning is not very intelligible. E.)

‡ It is cultivated in Germany for the sake of the expressed oil of the seeds, which the inhabitants use for medicinal, culinary, and economical purposes. The seeds are a favourite food with geese. Horses, cows, goats, and sheep eat it.
TETRADYAMIA. SILICULOSA. CRAMBE. 751

(CAKILE. Pouch angular, of two joints, each of one cell, without valves; the uppermost deciduous: Seeds solitary. E.)

(C. maritima. Pouch egg-shaped, smooth, two-edged and two jointed; (leaves fleshy, pinnatifid, blunt. E.)


Plant smooth, sea green, (succulent. E.) of a saline taste. Pouches deciduous, and leaving a cloven base behind. Linn. Root slender, woody, running deep into the sand, and terminated by a few rigid fibres. Stem (six to twelve inches high, E.) woody, much branched. Leaves oblong wedge-shaped, flexuose, sessile, deeply cut or wing-cleft. Flowers pale purple. Fruit-stalks short. Pouches large and fleshy. Woodw. Leaves wing-cleft, fleshy, smooth, the terminal segment largest. Glands, one within each shorter stamen, and one on the outside each pair of longer stamens. (After blossoming, the plant assumes a totally different appearance, for the corymbs of flowers, which were almost embosomed in the leaves, run out into long branches, whose conspicuous seed vessels thus become racemed. Fl. Lond. E.)


CRAMBE.* The four longer filaments cloven at the end, one of the clefts bearing the anther: Seed-vessel coriaceous, globular, deciduous.

C. maritima. Leaves, (roundish, glaucous, wavy; E.) they and the stem very smooth.

(E. Bot. 924. E.)—Fl. Dan. 316—Ger. 248. 16—Pet. 48. 12—Ger. Em. 315. 15—H. Ox. iii. 2. 16—Park. 270. 4. b.—Lob. Adv. 92, and Ic. i. 245—Park. 270. 4. a.—Ger. 248. 15—J. B. ii. 830. 2; (not Kniph. 10, C. maritima.)


* (From sephes, dry, arid; as growing in sandy soil. E.)

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mouth; Lulworth cove, and many other places on that coast. Abundant on the sand hills of the Lincolnshire coast. Sir J. Banks. Also at Mundesley, Norfolk. Sir J. E. Smith. (Near Bodowen mill, Anglesey. Welsh Bot. Near Fast Castle, Berwickshire. Lightfoot. On the cliffs of the Dover coast; and in similar situations of Devonshire very frequent, where it has long been used by the inhabitants as an agreeable esculent, the young shoots, nearly buried beneath the sand, being white, tender, and sweet. E.) P. May—June.*

**ISATIS.**

* Pouch entire, bordered, oval-spear-shaped, compressed, one-celled, one-seeded, crowned by the style.

I. **TINTOR'IA.** Root-leaves scolloped: stem-leaves arrow-shaped, entire: (pouch abrupt, smooth, thrice as long as broad. Sm. E.)

Cultivated.—Fuchs. 332—J. B. ii. 909. 2—Matth. 635—Dod. 79. 2—Lob. Obs. 190. 1. and Iv. 332. 1—Ger. Em. 491. 2—Pet. 48. 9.

Wild.—E. Bot. 97—Fuchs. 331—J. B. ii. 909. 1—Matth. 634—Dod. 79. 1—Lob. Obs. 189, and Iv. 351. 2—Ger. Em. 491. 1—Park. 600. 3—Trag. 256—Ger. 394—H. Ox. iii. 15. 10 and 11—Blackw. 246—Lonic. i. 149. 1.

Pouches on slender fruit-stalks, hanging down. Woodw. (chesnut-coloured, shining. E.)

Stem branched, woody, (two feet high, wand-like, leafy, smooth, panicked. E.) Leaves (glaucous, E) the uppermost strap-spear-shaped. Calyx yellow. Petals notched at the end, yellow. Pouches chesnut-coloured, (shining. E.)


Corn-fields, and borders of corn-fields, but rare. Hudson. New Barnes near Ely. Reihan. By the river Wear, near Durham. Mr. Robson. (In a field at Barton Bendish, Norfolk, where it is never known to have been cultivated. Rev. R. Forby. By the church at Long Reach, Kent. Martyn. Banks of the Wear, between Framwell Gate and New Bridges, Durham. Mr. Winch. E.) B. June—July.

* The young and tender leaves are boiled as cabbage, but when full grown and green they are tough, and occasion gladdness. (It is frequently cultivated in gardens, and blanched, and may be readily protected from the severest cold by a covering of sand, or an inverted garden pot, with litter. By forcing, it may be supplied for the table from November till May: and proves an excellent substitute for asparagus; also an useful ingredient in soups.—It was introduced into Covent-garden by the late Mr. Curtis, (who had observed it about Barnstaple), in 1792. We are informed by Sir J. Banks, that this plant has been seen in the Orkneys on sand incapable of bearing any other crop, and has been proved to furnish food for sheep. Horses, cows, goats, and swine also eat it. E.)

† From the ancient Greek name ισάτης; the meaning of which seems to be lost; but it has been invariably connected with the Glastum and Vitrum of the Romans, supposed to mean our Wood. E.)

‡ Woad is much used by the dyers for its blue colour, and as a mordant for many other colours. It is cultivated in Bedfordshire, some parts of Northamptonshire, and Somersetshire, especially in the country around Keynsham, (remarkable also for its beds of Cornu Ammonis, or snake-stones, those "headless coils" which have socked the invention of superstition itself wherever found), whence after being steeped in vats of water, the green fecula deposited at the bottom is washed, made into cakes, and sent to distant manufacturers. Woad requires to be raised on fresh land in good heart, and being an exhausting crop, a high rent is expected. The ground will not admit of being sown with Woad more than twice, a third crop rarely paying the necessary expenses. Hence the gangs of people called Woaders, who make the culture of this herb their peculiar employment, never stay
VELLA. (Pouch globular, entire, with a prominent, dilated, flat style, twice as long as the concave valves. E.)

long at the same place, but lead with their families a nomadial life, directed by their principal, wherever he may engage suitable land. The goodness of Woad depends on the luxuriance of the plant, especially on the size and thickness, (or fatness, as it is technically termed), of the leaves. E. “It is sown about the beginning of March, and cropt about the beginning of May following. It is best in quality in a fair and dry summer, but most in quantity in a moist one. Then they crop it four or five times; the first crop is best. As soon as cut it is carried to the Woad mill, and ground as small as it can be, until it become fit to ball. The balls are laid on hurdles to dry, and when perfectly dried, they are ground to fine powder in the mill. Thus ground it is thrown on a floor and watered, which operation is called couching. It remains to smock and heat, turned every day, until it be perfectly dry and mouldy, called silvering. It is then weighed by the hundred, and bagged, and thus sent for sale to the dyers. The best Woad is worth 30l. or more per ton,” (and that quantity is considered a moderate produce from an acre.—Three or four gatherings may be expected from each crop, but the first and second are by far the most valuable, and the imprudent admixture of the latter gatherings, too often deteriorates the finer quality of the former. The price of Woad has declined since the general importation of indigo, not merely in England, but in other European countries; though it is generally admitted that Woad, under more careful management, would equal the colour of that foreign production, (which takes large sums of money out of this country), as it does already exceed it in permenancy. The improved culture of this staple British commodity, might be worthy the encouragement of the Society of Arts.—If the general idea be correct, that the aboriginal Britons stained their bodies with the blue colour obtained from this plant, we cannot refuse our assent to its claim to be deemed indigenous, notwithstanding some authorities have pronounced it merely naturalized.

“In times of old, when British nympha were known
To love no foreign fashions like their own;
When dress was monstrous, and fic-leaves the mode,
And quality put on no paint but Woad.” Garth.

The relative importance of this article must have been nearly equal to what it now is; nor does any other plant so aptly claim this distinction, though we are fully aware of the difficulty of proving that the following, and other passages, refer solely to it. “Omnes vero sê Britanni ulio inificent, quod caruleum efficet colorem; atque hoc horribiliori sunt in pugna aspectu.” Cas. Bel. Gal. lib. v. 10. All the Britons depict themselves with (Woad?) which yields a blue colour; and thus is their appearance rendered more terrify in battle.—“Simile plantaginis glastum in Gallia vocatur, quo Britannorum conjuges nurusque tota corpora obliteratus, quibusdam in sacris et nudis incedunt, JEtihopum colorem imitantur.” Plin. Nat. Hist. lib. xxii. c. 1. In France, a plant, somewhat resembling Plantain, is called glastum, (Woad?) where with the Britons’ wives, and their sons’ wives, are coloured all over, and thus appear naked in some religious ceremonies, looking like Ethiopians.—The ancient British word glos, or glast, signifying blue or green, glass-coloured, (hence Glastonbury, from the verdant district around that noted spot, Glasshampton, &c.) the more modern English term glass; and possibly the Latin glacies; are all found expressive of something like the same meaning; and are not less applicable to the colour of the plant (Woad) itself, “Glasii nota sunt folia glasca, ad tingendum utilia,” Ray; than to its dying principle: and this has been, with considerable plausibility, attached to Isatis. Bishop Gibson says, in Caesar, Vitruvius, Pliny, and other Roman historians, we read of this same plant under the name of vitrum, (also yielding a blue colour, ut supra); and here again it is remarkable, we have a word of somewhat similar signification, and possibly a translation on the part of Caesar of the ancient British name. Thus may the synonymy of these obscure terms be reconciled, if not the application of them to our (Woad be incontrovertibly established. Vid. Reseda Luteolas—It is cultivated on rather an extensive scale at Kishmar in Hungary, and appears equal to the best Spanish Indigo, but the price is as high. Townson’s Travels. E.—Cows eat it; horses, sheep, and goats refuse it.

* (A name adopted by Galen, and latinized from the Celtic, signifying a sort of Cress. E.)
V. AN’NUA. Leaves wing-cleft: pouches pendent.


Stem (three or four inches high. E.) branches hairy. Leaves, segments strap-shaped, toothed, hairy. Petals white, (or yellowish, E.) with deep purple veins. Pouches bristly, egg-shaped, terminated by the extension of the petilion. Woodw.

CRESS ROCKET. ANNUAL CRESSET. On Salisbury Plain, not far from Stonehenge. Ray. (Not found there since. An elegant little plant, whose delicate structure might readily cause it to be overlooked. E.)

A. June.

SUBULA’RIA.* Pouch entire, transversely compressed: Valves tumid: Style shorter than the pouch: (Seeds numerous. E.)

S. AQUATICA.


Flourishes and blossoms under water. Linn. Leaves green, semi-cylindrical, full of pith. Blossom white. Ray. (Flowers small, on fruit-stalks. Petals incurved, by which the tender parts of the flower are protected from injury under water. Seeds small, egg-shaped, yellow, compressed. Leaves all radical. Plant about one inch high. According to Mr. R. Brown scarcely distinct from Draba. E.)


A. June—July.

DRA’BA.† Pouch entire, elliptic-oblong, compressed: Valves flat, parallel to the partition: Style none: (Seeds numerous. E.)

(D. AIzo’Des. Stalks solitary, naked: leaves lanceolate, rigid, keeled, fringed: petals notched, twice as long as the calyx.


Leaves all radical, forming dense round imbricated tufts, shining, strap-spear-shaped, rigid, fringed with white hairs. Stalks terminal, simple, stiff, about an inch high. Flowers corymbose, bright yellow. Calyx-leaves elliptical, concave. Petals twice as long as the calyx, inversely

* (From subula, an awl; as having awl-shaped leaves. E.)
† (From δαράς, acrid; the leaves of some species being pungently so. E.)
**TETRADYNA MIA. SILICULOSA. DRABA.** 755


**YELLOW ALPINE WHITLOW-grass.** Discovered in the year 1795 by John Lucas, Esq. of Stout Hill, near Wormshead, sixteen miles west of Swansea. Abundant on walls and rocks about Pennard Castle, near Swansea. Dr. W. Turton.  P. March—April.  E.)

**D. VERN'NA.** Stalks naked; leaves spear-shaped, hairy, sparingly serrated; petals divided.

*Fl. Dan. 983—Curt.—(E. Bot. 586. E.)—Thal 7. E.—Wale.—Dod. 112. 2—Lob. Obs. 249. 2, and Is. i. 469. 1—Ger. Em. 624. 1—Park. 556. 3—Ger. 499. 1—Pet. 48. 6 and 7—J. B. ii. 937. 2—Seguier, i. 4. 3. at p. 328—Kniph. 1.*

*Flowers* hanging down at night. *Linn.* Stalks (scarcely a span high, E.) smooth after flowering, hairy when young. *Leaves* (all radical, forming a star on the ground, E.) sometimes entire. *Flowers* white, when in blossom in broad-topped spikes, about fifteen in each. It is difficult to find the full compliment of stamens when the flower is fully expanded, as they drop when the germen begins to enlarge.

**COMMON WHITLOW-grass or CRESS. NAILWORT.** (Welsh: *Llys y bystwn gaffredin.* E.) Walls, dry places, and pastures.  A. March—April.*

**D. hirta.** Stem seldom entirely naked; pouch spear-shaped; leaves slightly toothed, fringed with (mostly, E.) simple hairs.

*E. Bot. 1338—Fl. Dan. 143.*

*Leaves* almost all radical, spear-shaped, bluntly toothed, or waved at the edge, fringed, sometimes hairy underneath. *Stem* from one to three or four inches high, upright, simple, cylindrical, slightly hairy, frequently bearing one leaf towards the bottom. *Flowers* small, white. *Calyx* expanding, hairy. *Petals* scarcely notch ed.

**D. stellata** of Jacquin, to which this plant was referred in the fourth edition of our work, differs in many respects. On re-examining our specimens, we find that Mr. Brown originally named those gathered and communicated by himself "*D. hirta of Linn.*"  E.)


**D. mur'alis.** Stem branched; leaves egg-heart-shaped, sessile.

*Whether this be the πασεντοια of the ancients, celebrated for curing the infirmity from which it derives its English name, must remain doubtful. It is about the earliest of our flowering plants, and though insignificant in itself, as an humble harbinger of the "formosissimus annus," it is not devoid of attraction by its enlivening little blossoms, "While yet the trembling year is unconfirm'd."  E.)

It is good as a salad. Goats, sheep, and horses eat it; cows are not fond of it; swine refuse it.
toothed, hairy: pouch elliptical, blunt, flat, shorter than the partial stalks.


**Root-leaves** entire at the base, toothed upwards. **Pouches** exactly elliptical, ending in a short blunt knob which is the summit. Woodw. (Stem and leaves hairy. Stem-leaves rather heart-shaped. Petals very slightly notched at the end. Flowers white, small, numerous, forming a long flowering bunch. Stem a span to a foot high, scabrous. The calyx has been represented hairy; but Hooker and Lamarck determine it to be smooth. E.)


D. **Inca'na.** Stem-leaves numerous, hoary, with starry pubescence: pouch oblong, oblique, nearly sessile.


**Radical-leaves** very numerous, disposed in a rose-like form, spear-shaped, cottony and somewhat hairy, entire, pointed; stem-leaves often upwards of thirty, sessile, with a few teeth, similar to the root-leaves, but shorter, the uppermost egg-shaped, on the lower part of the stem more crowded. Stem a hand’s breadth long, straight, hoary, clothed with leaves. Flowers in a small terminal corymbus, which, when the fruit is ripe, becomes a bunch. Petals white, slightly notched. Pouches upright, egg-oblong, inclining contrary to the sun, compressed, naked. Fruit-stalks hoary, three times shorter than the pouches, stiff, approaching to the stem. Limn. Stems six to nine inches, slightly cottony, simple, crooked. Leaves oval-spear-shaped, a little hairy, the lower slightly, the upper deeply toothed. Fruit-stalks nearly as long as the pouches. Pouches spear-shaped, smooth, twisted, terminated by the blunt summit. Woodw.


B. May—July.

LEPIDIUM.* Pouch notched at the end, compressed: Valves sharply keeled: one seed in each cell.

*(From *laevigata*, a scale; as an antiscorbutic formerly supposed to cleanse the skin even from leprosy. E.)*
TETRADYNAMIA. SILICULOSA. LEPIDIUM. 757

(1) Four stamens longer.

L. petræ'um. Leaves winged, entire: petals notched, smaller than the calyx.

Grants. i. 2. 4. 5.

One of our smallest and most delicate plants, (only two or three inches high, branched. E.) Leaves dark green; leaflets elliptical, tapering each way, on leaf-stalks, very entire, thickish, from six to twelve pairs, with an odd one. Flowers in a close corymb, which, as the fruit ripens, lengthens out into a bunch. Petals spatula-shaped, white, as long as, and narrower than the calyx; generally entire, but sometimes slightly notched. Pouches broad egg-shaped, blunt, convex underneath, flat above; valves keeled. Jacq. (Mr. Brown has suggested that the entire apex of the pouch, (not so when mature, Sm.) and each cell containing two seeds, (or rather, "more than one," the number not being limited precisely to two,) in this species, with accumbent cotyledons, are sufficient to constitute a new genus, designated Hutchinsia, after a lady whose memory will long be cherished by Botanists, and whose name has also been conferred still more appropriately, by Agardh, on a genus of marine plants; Converva; Polysiphonia of some authors. E.)


B. March—April.

L. latifo'lium. Leaves egg-spear-shaped, entire, serrated.

83—Matth. 609—Dod. 716. 1—Lob. Obs. 172. 4, and 1c. i. 318. 2—Ger.
Em. 241. 2—Park. 855. 1—H. Ox. iii. 21, row 2. 1—Blackw. 448—Lonic.
i. 161—Ger. 187. 2—Pet. 48. 10—J. B. ii. 940. 2.

Stem branched, flexuose, (leafy, three feet high, cylindrical, smooth. E.) Leaves smooth, entire, sometimes a little serrated about the middle part; lower ones five or six inches long, unequal at the base. Calyx leaves purplish, white at the edge. Pouch hairy. Flowers numerous, in pan-

icles, white, (small. Petals longer than the calyx, entire. E.)

BROAD-LEAVED PEPPER-wort or DITTANDER. POOR-MAN’S PEPPER.


Lewisham. (On the Sea walls at Bradwell, near the Sea, Essex. Mr. Woodward. Near Durham Abbey, by the Wear. Mr. Robson. Winch


P. June—July.*

* This is one of the acrid antiscorbutics. The roots were formerly used as Horseradish. An infusion of it vomits.


Stem usually crooked, woody, stiff, (upright, a foot high. E.) Leaves fleshy, smooth. Fruit-stalks slender. Pouches numerous, small, much compressed. Woody. Flowers minute, whitish, in dense roundish clusters gradually lengthening out. Stamens two or four; (Smith states that he never found this plant with petals, or with more than two stamens. E.) The plant smells like a fox.


*L. campestré*. (Pouch scaly, roundish, notched, bordered at the top: style very short: stem-leaves arrow-shaped, toothed. E.)

Curt.—(E. Bot. 1385. E.)—Ger. 204. 2—Pet. 50. 7—Fuchs. 306—J. B. ii. 921. 1—Trag. 87.

Stems many from the same root, thickly clothed with leaves. In some situations it is green and slightly hairy, in others very downy and white, and is then *T. hirtum* of Hudson. Woody. Stem undivided except at the top, where it separates into seven or eight branches, above the branches naked. Root-leaves spear-egg-shaped, on long flat leaf-stalks, sometimes wing-cleft at the base. Fruit-stalks horizontal. Pouches nearly heart-shaped, convex on the lower, and concave on the upper surface. Blossom white. Calyx spotted with brown. (Smith remarks that the pouch may be found either dotted, quite smooth, or slightly hairy, when it becomes *T. hirtum* of Hudson, but not of Linneaus. The seeds being solitary in each cell, and the cotyledons incumbent, Mr. Brown has removed this species from *Thlaspi*. E.)

Var. 2. Leaves smooth, broader, scarcely serrated; those at the root not indented.

Blackw. 407—Dod. 713. 3—Lob. Obs. 108. 2, and Ip. i. 213. 1—Ger. Em. 262. 2—Park. 836. 2—Pet. 50. 8—H. Ox. iii. 17. 14—Matth. 566.


*(L. hir'tum*. Pouch often hairy, not scaly, bordered at the summit: stem-leaves arrow-shaped, hoary: style elongated.

*E. Bot. 1803—Pet. 50. 10.*
Differs from *L. campestre* in having a woody root, more oblong and less tumid pouches, whose sides are often very hairy, and when destitute of hairs are but obscurely dotted, never so scaly as in that species. Petals much larger, and more conspicuous; but the most decisive mark, observes Mr. Leathes, is the elongated style, projecting far beyond the lobes of the pouch, whereas the short style of *L. campestre* is but just equal to those lobes. E. Bot. This species, for the reasons which determine the preceding, must be referred to the same genus.

**THLASPI.* Pouch inversely heart-shaped, notched at the end; valves keeled or bordered; cells many-seeded.**


Leaves arrow-shaped at the base, embracing the stem. Pouches deeply notched. Woodw. half an inch over, broadly winged, (forming long clusters. E.) Stem upright, about one foot high, with seven or eight membranous edges. Seeds spear-shaped, but compressed, hanging or pointing downwards. Blossom white, very small.


T. *perfoliatum.* Pouch inversely heart-shaped; stem-leaves heart-shaped, smooth, somewhat toothed, (embracing the branched stem: style very short. E.)


Blossom white, hardly larger than the calyx. Stamens longer than the flower; white. Anthers yellowish. Pouch like that of the common Shepherd's-purse. Linn. Stem about a foot high, upright, simple, but in gardens and rich soil branched. Leaves glaucous green, clasping the stem: lowermost egg-shaped, on leaf-stalks.

* (From ἱλασμός, to strike or squeeze flat, as the seed-vessels of these plants appear. E.)
+ The whole plant has something of a garlic flavour. The seeds have the acrimony of mustard. When cows eat it their milk acquires a disagreeable taste. Cows, goats, and swine eat it.
**Perfoliate Shepherd's-purse.** *T. alpestre.* Huds. In limestone pastures, rare. Abundant in the stone-pits between Witney and Burford, and on Burford downs, Oxfordshire. Bobart. Sir J. E. Smith suspects other British stations to be erroneous, the northern ones especially belonging to *T. alpestre.* E.)

A. April—May.

**T. alpestre.** (Pouch obovate: stem-leaves arrow-shaped: stems simple: style extended: root long, fibrous, but not creeping. E.)


Root-leaves forming a tuft. Stem single, central, flowering early; but should the plant have been eaten down by cattle, other lateral stems sometimes afterwards shoot up, flowering later. Petals white, about the length of the calyx. Anthers purplish. Seeds three or four in each cell. E. Bot.

Smith observes, that Hudson’s *T. montanum,* (inserted in the earlier Editions of this work, on the authority of Ray and Curtis, as growing near Settle, and in many mountainous pastures between that place and Malham, E.) is certainly the *T. alpestre* of Linn. and that his *T. alpestre* is *T. perfoliatum* of Linn.; but it should be remarked, that Ray, in his Synopsis, p. 365, No. 4 and 6, also records two species, referring to the same figures which Linnaeus in the Sp. Pl. has quoted to *T. montanum* and *T. alpestre.* He likewise particularly notices the creeping root of *T. montanum,* a circumstance inapplicable to *T. alpestre."


B. July.

**T. Bursa-pastoris.** (Plant hairy: E.) pouches compressed, somewhat triangular, inversely heart-shaped, without a border: radical leaves pinnatifid.

**Ludw.** 186—Curt.—(E. Bot. 1485. E.)—Blackw. 5—Walc. 5—Dodd. 103. 1—Lob. Obs. 110. 1, and Ic. i. 221. 1—Ger. Em. 276. 1—H. Ox. iii. 20. row 1. 2—Pet. 49. 4, 5, 6 and 7—Ger. 214. 1—Fuchs. 611—Trag. 215—J. B. ii. 936—Lonic. i. 139. 1—Park. 866. 1—Matth. 569.

Leaves fringed with fine hairs. Stem-leaves, the upper entire, strap-spear-shaped, embracing the stem. Bunches long, flatted at the top, terminal. Calyx hairy. Petals entire, white. Summit circular, fringed, concave. Anthers a little woolly. Germen egg-shaped, compressed, with a chanel down the middle.

This plant affords a strong instance of the influence of soil and situation, for it grows almost everywhere, and sometimes is not more than two inches high when it flowers and perfects its seeds; whilst in other situations it attains the height of two or three feet. Linn. The plants of this
genus begin to flower long before they have attained their full size, the flowers at first forming a corymbus, but this after a while shoots out and assumes the form of a long spike-like bunch. The stem also, in its earlier stages simple, in time becomes branched, the first branches issuing from its upper part. (It varies in a barren chalky soil, with all the leaves, entire, and the stem simple, as represented in the last figure of Petiver above cited. E.)


A. March—Sept.*

**COCHLEA'RIA.** Pouch notched, but slightly turgid, rugged, bivalve, many-seeded: valves tumid.

**C. officinalis.** Root-leaves heart-circular: stem-leaves oblong, a little indented: pouch globular.


**Stem** angular, (from two or three inches to a foot high. E.) **Root-leaves** on long leaf-stalks, heart-kidney-shaped, fleshy, (commonly half an inch to an inch over, but we have a specimen from Cornwall measuring full two inches. E.) **Stem-leaves** sessile, sometimes halberd-shaped, the lower occasionally on short broad leaf-stalks. **Petals** fleshy, clear white. **Claws** greenish. **Pouch** either not notched at the end, or scarcely sensibly so, sometimes pointed by the style, smooth. **Partition** double. **Seeds** rough. (Smith remarks that this species may be distinguished from either *C. anglica* or *C. danica,* by its pouch, which is globular, very slightly rugose, and but indistinctly veined.

Var. 2. Scarcely differs from the preceding, except in its diminutive size, and little elongated style. Dr. Withering, after much observation, concluded it to be only a mountainous variety of *C. officinalis.* It is *C. Groenlandica* of With Ed. 4. but not of Linnaeus, as clearly ascertained by Smith.

Common on the mountains about Llanberris, Carnarvonshire. Hudson. On wet ground near Whey Sike House, Teesdale; and near Coal Cleugh, Northumberland. Winch Guide. E.)

**Common Scurvy-grass.** (Irish: *Bíllar traite.* Welsh: *Môrlyw yn meddygawl.* Gaelic: *Biolaire.* E.) Sea shores, common, also on inland mountains in Derbyshire, Yorkshire, Scotland, and Wales. (Among the cliffs of Cheddar, Somersetshire. E.)

A. April—May.*

* (The young radical leaves are brought to market, in Philadelphia, and sold for greens in the spring of the year. Barton. Small birds feed on the seeds. This plant sometimes exhibits a very diseased appearance, when infested with oval white blotches of the small parasitic fungus *Uredo Thlaspi;* With. vol. 4. p. 373: also represented as *U. candida,* in Grèv. Scot. Crypt. 251, and said to affect others of the Cruciferae, itself forming a nidus for a yet more minute parasite, *Botrytis parasitica,* Pers. and thus, by microscopic art, may the wonders of creation be brought to light, in a ratio almost ad infinitum. E.)

† (From *cochleare,* a spoon; its root leaves assuming the form of a spoon or shell. E.)

‡ Notwithstanding this is a native of the sea coast, it is cultivated in gardens without any sensible alteration of its properties. It possesses a considerable degree of acrimony,
The following metamorphosis of this Proteus-like plant is more extraordinary than any other which has occurred to my observation.

**Root** woody, sending out fibres. **Stem** none. **Leaf-stalks** lying close on the ground, springing from the crown of the root, very slender, about one or one and a half inch long. **Leaves** smooth, entire, varying from circular to heart-shaped, sometimes with a single indentation on each side, about the eighth of an inch in diameter. **Fruit-stalks** from the crown of the root, very slender, leafless, one to one and a half inch long, supporting a single flower. **Blossom** petals reflexed, very much larger than the calyx, of a bright rich lilac-colour, streaked with deeper purple lines. **Pouch** circular heart-shaped, two-celled, with four rough seeds in each, placed alternately, on short pedicles.

This elegant little plant grows in a rich soil in various places about Lisbon, but more particularly on the shores of the Tagus; flowering in January and February, and I never saw it there assume any other appearance, so that concluding it to be a *Cochlearia*, I fully concurred in opinion with my good friend the Abbé Corrêa da Serra that it was a species unknown to the Linnaean School. Some seeds sown in my garden at Edgbaston in the autumn of 1793, produced plants which flowered in March 1794. These agreed in every respect with the Portugal plants. In April the colour of the petals was more dilute, the whole plant larger, and much resembling *C. Danica*, as represented in the Fl. Dan. t. 100. In the month of May the petals became entirely white, and much smaller than those which had flowered in March; the flowers formed a corymbus, the stems grew to a foot or more in height, bearing angular leaves, and in every respect corresponding with the ordinary *C. officinalis*.

(The real *C. Groenlandica* of Linnaeus, remarkable for larger and more beautiful flowers, is said to have been found by Mr. G. Don on the mountains of Clova in Augussshire, and Loch-ne-gare; but it appears doubtful whether even this may not prove a variety of *C. officinalis*. Sir J. E. Smith does "not venture to assert that it is a distinct species." Prof. Hooker states, "I can see no difference whatever in *C. Groenlandica*; for the sinuated and toothed, or entire leaves, are extremely variable marks:" and Mr. Robson, (in Hull,) observes, "*C. Groenlandica* by cultivation in a rich soil becomes *C. officinalis*; but if kept confined in a pot, retains its diminutive size." Vid. Linn. Tr. vol. x. p. 344. E. Bot. 2403. and Fl. Lond. 147. E.)

**C. Dan'ica.** All the leaves deltoid, stalked: (pouch reticulated with veins. E.)

(E. Bot. 696. E.)—Fl. Dan. 100—Lob. Obs. 338. 1, and Is. i. 615. 2—Ger. Ent. 271—Park. 848. 1—J. B. ii. 939. 2—H. Ox. iii. 20. 3—Pet. 49. 3.

**Stems** (three or four inches long, E.) not branched as in *C. officinalis*. **Suckers** trailing. All the leaves halberd-shaped, or egg-shaped, with an angle on each side of the base. **Leaf-stalks** not toothed at the base, or embracing the stem. **Capsules** egg-shaped. Linn. **Blossom** small, white.

which seems to reside in a very subtile essential oil. Its effects as an antiscorbutic are universally known; (in corroboration of the testimony of physicians, may be adduced that of the circumnavigators Maartens, Egede, Anson, and others of our own country, E.) It is a powerful remedy in the pituitous asthma, and in what Sydenham calls the scorbutic rheumatism. A distilled water, and a conserve, are prepared from the leaves, and its juice is prescribed along with that of oranges by the name of anti-scorbutic juices. It may be eaten as a salad. Cows eat it. Horses, goats, and sheep refuse it.
TETRADYNAMIA. SILICULOSA. Cochlearia. 763


A. May—June.

C. Anglica. (Root-leaves heart-egg-shaped, entire: those on the stem spear-shaped, toothed: fruit elliptical, strongly reticulated with veins. E.)


Root-leaves generally entire; stem-leaves indented, but sometimes all entire, or all indented. Pouches roundish, fleshy, much larger than those of C. officinalis, and terminated by a longer style about two-thirds of a line in length. Woodw. (This species likewise varies in the size and shape of its parts, but is always smooth and rather fleshy, scarcely half the size of C. officinalis. Pouches all over strongly marked with a net work of prominent veins, scarcely at all to be perceived in those of the more common kind. E. Bot. E.)


A. May.*

C. Armoracia. (Root-leaves on long stalks, spear-shaped, scalloped: stem-leaves sessile, cut or entire: root long and fleshy. E.)


(Root very long, cylindrical, acrid. Stem two feet high, upright, leafy. Root-leaves very large, oblong, crenate, sometimes winged, veined; stem-leaves spear-shaped, either cut or very entire. Blossom white, numerous. Pouch elliptical, with a very short style, and large stigma. Seldom perfects seeds. Fl. Brit. Radical leaves sometimes two feet long, coarse, irregularly pinnatifid and jagged, as Pet. 49. 12. or broad, nearly entire, except a finely indented edge. E.)

* (This species is supposed to possess, though perhaps in an inferior degree, the same medicinal virtues as C. officinalis. They are considered to promote the fluid secretions; and to open glandular obstructions. They are much employed in the scorbutic disorders prevalent in northern countries. Some authors have conjectured this, (or our other officinal species), to be the real Herba Britannica of Pliny, from the use of which the army of Caesar derived great benefit in their sufferings from scurvy whilst in Germany. Olaus Magnus also confirms its efficacy. E.)

(CORONOPUS.† Pouch nearly entire, kidney-shaped, compressed, wrinkled: cells without valves, single-seeded. E.)

C. ruellii. (Pouch entire, crested with little sharp points: style extended: corymb with few flowers. E.)


Stem and root-leaves prostrate, longer than the branches; leaflets cut along the fore edge, very entire along the back edge, the terminal one strap-shaped, very entire. Pouch kidney-heart-shaped, depressed on the sides, with furrows and sharp ridges running towards the edge, where they run out into sharpish points; one of the cells not unfrequently empty, in which case the fertile seed expands, filling up almost the whole of the seed-vessel. St. Bunches from the bosom of the leaves. Blossom white, small. (Whole plant nauseously acrid and fetid. Sm. E.)

De Candolle has been followed by some few British Botanists in constituting a new genus after M. Senebier, for this plant, but as changes merely nominal tend only to produce confusion, especially the adoption of proper names in no degree characteristic, we venture to retain the former designation. E.)

Swine's Cress. (Welsh: Olbrain defadenawg; Berwr y moch. E.)


* The root scraped (which has a quick pungent smell, and a penetrating, acrid taste, E.) is in common use at our tables as a condiment for fish, roast beef, &c. and it is used for many other culinary purposes. (It is thought to create appetite and assist digestion. An infusion, made into a syrup, is an approved remedy for horsemess. An Essence of Horse-radish is sold in the shops for the cure of tooth-ach, and is often successful. The roots when dried lose much of their acrimony, becoming almost insipid, but they may be preserved, retaining their qualities, in sand and in a cool place, a considerable time. E.) An infusion of it in cold milk, makes one of the safest and best cosmetics. In paralytic and dropsical cases it is an useful stimulant and diuretic. A strong infusion excites vomiting. A distilled water is prepared from it. Horses, cows, goats, sheep, and swine refuse it. Papilio Brassicae feeds upon the several species. (A spoonful of Horse-radish put into a pan of milk will preserve the milk sweet several days, either in the open air or a cellar, while other milk will turn sour.—Mr. Salisbury, (on the authority of Dr. Taylor, Secretary to the Society of Arts), gives the salutary caution, that "this very grateful and wholesome root is not at all times to be eaten with impunity." When taken alone, on an empty stomach, as immediately before dinner, its effects have proved highly deleterious, and in one instance speedily fatal. Instructions for the cultivation of Horse-radish, by Mr. D. Judd, may be found in Tr. Hort. Soc. E.)

† (Obviously derived from Κοβν, a crow; and πόδις, a foot; illustrative of the shape of its leaves; though the name of Crowfoot be more appropriately attached to Ranunculus. E.)
TETRADYNAMIA. SILICULOSA. TEESDALIA. 765


C. did'yma. (Pouch notched, didymous, wrinkled; style scarcely perceptible; corymb with many flowers. E.)

E. Bot. 248.

Stem a foot high. Leaves winged; leaflets sessile, alternate, spear-shaped, toothed on the fore edge. Bunches from the bosom of the leaves, as long as the leaves. Capsules roundish, double, somewhat wrinkled. An intermediate plant between the Cochlearieae and Lepidia. Linn. Stamens two, or four. Flowers white, minute.


I'BERIS.* Bloss. the two outer petals larger: Pouch one seed in each cell.

I. ama'ra. Herbaceous; leaves spear-shaped, acute, somewhat toothed: flowers in spike-like bunches.

E. Bot. 52—Kniph. 9—Riv. Txtr. 109, Thlaspid. fol. Nasturtii—J. B. ii. 925. 1—Ger. 205. 6—Ger. Em. 263. 5, right hand.

Leaves strap-spear-shaped, generally with one or two teeth on each side. Flowers white. (Whole plant smooth, bitter. Stems spreading, branched, leafy. Leaves rather fleshy. Pouch sharply notched at the end. E.)


(TEESDAL'IA: Pouch inversely heart-shaped, notched: two seeds in each cell: each with a scale near its base. E.)

(T. nudi'calis. Stem naked, simple; petals unequal. E.)


Stems numerous, with usually one sessile leaf below the middle. Root-leaves spreading on the ground in a circle, smooth, wing-cleft, terminal,

* (Supposed from Iberia, the ancient name of Spain, where it abounds. E.)
† (By some thought worthy of a place in the flower garden. The seeds are said to be acid, bitter, and violently purgative. The general qualities of the plant antiscorbutic. E.)
‡ (In honour of Mr. Robert Teesdale, gardener at Castle Howard.—Ob. 1804. E.)
lobe large. *Pouches* somewhat convex on one side, flat on the other, bordered with a projecting margin, and marked with a perpendicular line, which is the edge of the partition. Woodw. From two to four inches high. *Leaf-stalks* as long as the leaves. *Flowers* small, white, in a terminal spike-like bunch.


SILIQUOSA.

DENTA’RIA.* (Pod lanceolate, opening elastically: valves rolling back: *Summit* notched: *Seeds* on flat, dilated stalks. E.)

D. bulbif’era. Lower-leaves winged, upper ones undivided.


(Root creeping, toothed, fleshy, white. Stem upright, a foot and a half high, undivided, leafy, naked at the bottom. Corymbus terminal, solitary. Blossoms large, pale purple. E.) Black scaly bulbs produced from the bosom of the leaves, (as in Lilium bulbiferum), by which falling on the ground and there vegetating, a succession is secured; the seeds rarely attaining perfection.


CARDAM’INE.† (Pod linear, two-edged, opening elastically: valves rolling back: *Summit* a knob, entire: *Seeds* on capillary stalks. E.)

* (From dens, dentis, a tooth; because its root is denticulated; and hence the ancients would probably have inferred its antiodontalgic efficacy, though vainly. E.)
† (A diminutive of χαθήρας, the Greek name for Water-cress; probably compounded of χαθής, the heart; and βημα, to afflict: from its pungent acrimony. E.)
TETRADYNAMIA. SILIQUOSA. CARDAMINE. 767

(1) Leaves undivided.

C. BELLI DIFO' LIA. Leaves egg-shaped, entire, (about one-third the length of the leaf-stalks. E.)


(STEM two or three inches high, upright, undivided, smooth, with few leaves, and those nearly sessile. Corymbus terminal, of few flowers. Petals erect, twice the length of the purplish calyx, white. Pod strap-shaped, blunt, smooth, scarcely an inch long. E.)

DAISY-LEAVED LADIES'-SMOCK. Mr. Griffith informs me that the Turritis hirsuta now grows in the places near Denbigh where the Cardamine was said to grow. (Such is the case with all the stations of this plant reported by the old authors. It would seem the attention of Botanists should rather be directed northward. E.) The specimens before me were gathered wild in Scotland, and sent me by Mr. Milne. (Of these being genuine there can be no doubt. E.)

P. Aug.

(2) Leaves winged.


E. Bot. 80—(FL Dan. 1339. E.)—J. B. ii. 886. 1—Barr. 155—Ger. Em. 260. 7—Park. 1921. 4—H. Ox. iii. 4. 1—Pct. 47. 7—Barr. 155.

Leaflets of the upper leaves nearly entire, of the middle ones toothed, of the lower ones considerably cut and jagged. Stipule crescent-shaped, half embracing the stem. Petals small, white, deciduous; sometimes wanting. (The stem is not unfrequently branched, usually a foot and a half high, rather crooked. Pods peculiarly sensitive to the stimulus of heat; on warm sunny days they may be observed audibly exploding, and with a contractile force, which, after expelling the seeds, causes the detached valve to form a compact volute. E.)


A. May—June.

C. HIRSU'TA. Leaves winged, leaflets opposite, without stipule.


(NEither the hairiness, the absence of the two shorter stamens, or other characteristics of this species, are invariable. In height from three inches to nearly a foot. E.) Stems generally numerous, (branched, the central one upright, the rest declining, hairy. Root-leaves very numerous, forming a circle on the ground; leaflets roundish, three or four pair, with an odd one much larger; stem-leaves, two or three on each stem, roundish or spear-shaped. Woodw. (Flowers white, small. Pods erect, not invariably hirsute; stigma almost sessile. E.)

A. March—June.*

C. flexuosa. Stem zigzag: leaflets toothed, mostly alternate, unequal at the base.


Stem eight to twelve inches high, stiff, angular, ribbed, zigzag, being bent at the setting off of every leaf or branch. Leaves, root-leaves lying in a circle on the ground, on leaf-stalks. Leaflets five or six pairs, with an odd one at the end: egg-shaped, irregularly toothed, unequal at the base. Stem-leaves alternate, irregular, sessile. Leaflets three to five pairs, with an odd one which is larger; some sessile, others on short leaf-stalks, irregularly toothed. Fruit-stalks cylindrical, but compressed; slanting. Calyx half the length of the blossom: generally purplish. Blossom petals white, rounded at the end. Stamens six, longer than the blossom. Anthers yellow. Pistils, summit pale green. Seed-vessels, pod straight, nearly upright, cylindrical, but compressed. Seeds six on each side of the partition. Plant somewhat hairy; hairs few, soft, white, mostly on the lower part of the stem and the edges of the leaves. Flowers in a terminal corymb, which in time shoots out in form of a spike-like bunch; and the full grown plants sometimes put forth axillary bunches.

This plant has been imagined by some to be only a var. of C. hirsuta, but it has been more generally taken for C. parviflora of Linneus, whilst others have supposed those two species only accidental varieties. It differs from the former in having uniformly six stamens, and from the latter in being hairy, in its stamens being longer than the blossom, and in its fruit-stalks being slanting upwards, not horizontal. It does not appear that C. parviflora has yet been found in this Island. (Though we do not feel confident of the permanency of the specific distinctions attributed to this plant, deference to the opinion of our Author and that of several respectable Botanists, induces us to await the result of further observation. Dr. Hull remarks, "I am informed that C. hirsuta does not become like C. flexuosa on cultivation, and think the latter a strongly marked variety, if not a distinct species." E.)


C. praten'sis. (Leaves without stipule; E.) Leaflets of the root-leaves roundish, toothed; those of the stem-leaves spear-shaped, very entire.


* The young leaves make a good salad; much resembling water cress in taste.
Leaflets of the lower stem-leaves egg-shaped, higher up spear-shaped, those of the upper strap-shaped. Woodw. Flowers large, paler or deeper purplish red. (Stem upright, stiff, about a foot high, bearing a handsome terminal corymb. Anthers yellow. E.)

(In shady situations the root-leaves occasionally put forth buds or bulbs, the embryos of new plants; hence, and from the root being somewhat toothed and tuberous, Mr. Brown avails himself of a supposed affinity between this plant and Dentaria bulbifera, which he includes in the present genus. E.)


*The virtue of the flowers in hysterical and epileptic cases was first mentioned by Ray, in his letters, published by himself; and since then, by Sir W. Baker in Med. Tr. i. 442. The dose is from 20 to 90 grains twice a day. Do they not act like Erysimum Cheiranthoides in the epilepsies of children, and cure the disease by destroying the worms in the stomach and intestines, which were the cause of the fits? I have accounts of their success in young epileptics, from good authority; but have never been fortunate enough to see them in such use in hysterical cases. Whilst in Cornwall in the year 1793, I had the pleasure of meeting with the Rev. Mr. Gregor, who told me that the flowering tops of the Ladies'-smock had been successfully used by his family for some generations in the cure of epilepsies, and some cases he mentioned to me were not likely to have been owing to worms. Our medical practitioners have only used the flowers, but Mr. Gregor's family use the flowering tops. Can this account for the different success? (The evidence of Mr. Gregor has been fully confirmed by the testimony of others entirely unconnected with his family, and resident in a different part of England. Lady Holt, late of Aston Hall, Warwickshire, and her sister, Mrs. Bracebridge, were long celebrated for curing many inveterate cases of epilepsy by the use of Ladies'-smock. They were accustomed to give three doses a day, twelve grains each, of the powder carefully prepared from the dried heads of the plant, and to continue its use many weeks. The failure of this remedy may often be attributable to improper management in the preparation; and the virtue may easily be dissipated by too much heat. The whole flowering head should be pinched off the stalk together, when in full bloom and before the seeds are formed, and when free from either dew or rain. Spread the heads upon pewter dishes before a brisk fire, stirring and moving them. Rub them to a powder when sufficiently dry; pass it through a sieve; and put it into clean dry bottles. Cover the bottles with leather, (no cork), having holes pricked through it. Two bushels of flowering heads will yield about eight quarts of this fine powder. Thus preserved it will keep to a second year.—The leaves may be eaten as other cress. The juice expressed from the whole plant is considered an excellent antiscorbutic in northern countries, where salt meat is much used. The double blossomed var. is an elegant ornament to the flower garden.—The popular appellation of this plant, Our Lady's Chemise, (vulg. Smock), probably originated in the devout reveries of monkery, which, as in divers analogous instances, appear to have emulated the more ancient heathen custom of thus commemorating the higher powers. But while yet emancipated from the thraldom of superstition, those who are inclined to discard such puerilities, may find a more rational interpretation of the vernacular cognomen, and one at least as consistent with the appearance of nature,

““When Ladies'-smocks of silver white,
Do paint the meadows with delight;
"Thus resembling linen exposed to whiten on the grass,

““When maidens bleach their summer smocks.”"
Var. 2. (Flore pleno.) Double-flowered, viviparous.

Meadows about Ross Hall, near Salop. Mr. Aikin. In a field south-west of the Tap-house at Hagley, Worcestershire. (Fields near the vicarage at Keswick. Mr. Winch. In a lane at Brookfield, Bitton, near Teignmouth. Mr. Frederick Russell. E.)

C. ama'ra. (Leaves winged, without stipulae; leaflets of the root-leaves roundish; those of the stem-leaves tooth-angular; stem radicating near its base. E.)


(NASTURTIUM. Pod nearly cylindrical, oblique; valves concave, without keels; Stigma obtuse, notched; Cal. spreading, equal at the base. E.)

N. officina'le. Leaves winged; leaflets roundish, heart-sharped; Cal. spreading, equal at the base. E.)

a practice more general in the golden age, when families spun and prepared their own linen, and enjoyed the advantages of other homemade essentials. It must be confessed, however, to speak with prosaic accuracy, that the purple tint with which these pretty flowers are imbued, somewhat sullies the emblematic representation of spotless purity, rendering it, indeed, but too faithful a picture of sublunary excellence, never absolutely perfect. The other familiar name, (Cuckoo-flower), is equally applied to several plants which salute with their welcome blossoms our favourite herald of Summer. E.) Goats and sheep eat it. Horses and swine refuse it. Cows are not fond of it. Sheep eat it. Cows are not fond of it. Linn. The young leaves are acrid and bitterish, but do not taste amiss in salads. Lightfoot. They are much used for that purpose in Lancashire. Mr. Caley. The leaves are pungent, bitter, and aromatic, in such a degree as to promise very considerable medical uses. The beautiful Papilio Cardamine, with lively orange-tipped wings, the Wood-lady of the London fly-fanciers, lives upon the different species.
TETRADYNAMIA. SILIUOSA. NASTURTUM. 771

smooth; the leaflets of the lower ones rounder, nearly heart-shaped, wavy. Fl. Brit. All the leaves rather succulent. Pods nearly an inch long. E.)


B. June—July.*

**N. SYLVESTRE.** Leaves winged; leaflets spear-shaped, deeply serrated. E.)


P. June—Sept.

**N. AMPHIBIUM.** Pods elliptical; leaves wing-cleft, serrated; petals longer than the calyx: (root fibrous. E.)


When growing in water of some depth the leaves below the surface are strap-shaped, winged, nearly like those of Hottonia; those above spear-shaped, serrated. Linn. Stem upright, (two or three feet high, E.) branched. Leaves spear-shaped, variously toothed, smooth, half embracing the stem. Fruit-stalks much longer than the pods, and much longer than in N. terrestre. Pod oblong, very short, smooth, at first expanding, afterwards hanging down. Woodw. Stem smooth, scored, crooked at the joints. Leaves egg-spear-shaped, scollopde and set with little teeth at the edge, with often from one to three winged clefts at the base. Leaf-stalks semi-cylindrical, channelled above. Fruit-stalks while in flower about half an inch long, and upright, but afterwards bending back and pointing downwards. Flowers yellow, numerous, in clusters.

* Universally used as an early and wholesome spring salad: (and may be easily increased by transplanting into mud, and not cutting till the second year. E.) It is an excellent antiscorbutic and stomachic, with less acrimony than Scurvy-grass. It is an ingredient in the anti-scorbutic juices. (The expressed juice, which contains the peculiar taste and pungency of the herb, may be taken in doses of an ounce or two, for the purposes recommended by Hoffman.—Of late Water Cress has has been cultivated on many acres of land in the vicinity of London, whence the markets are supplied daily throughout the year. The environs of Paris also provide the same article from gardens appropriated to its culture. In France it is not only used as salad, but dressed like spinach, and the picked leaves served with roasted fowl compose the favourite Poulet au cressons. E.)
Var. 2. **Fol. laciniat.** Leaves with clefts extending nearly to the mid-rib.

**Knipl.** 3—**Ger.** 183. 2—**J. B.** ii. 867. 2—**Pet.** 49. 10—**Lob.** i. 319—**Ger. Em.** 240. 2—**Park.** 1228. 1.


P. June—Aug.

**N. terræstræ.** Leaves wing-cleft, (unequally toothed: root simple: pods curved: petals not exceeding the calyx. E.)

**Curt.** 289—**Fl. Dan.** 931—(**E. Bot.** 1747. E.)—**J. B.** ii. 867. 1—**C. B. Pr.** 38. 2—**Park.** 1228. 1.f. 2—**H. Ox.** iii. 7, row 3. 3—**Pet.** 49. 9.

(Root spindle-shaped, small. Stem frequently upright, a foot high, leafy, furrowed, smooth. E.) Leaves segments confluent with the mid-rib, often pointing backwards, alternate or in pairs, elliptical, or egg-shaped serrated, or toothed here and there. Hall. Petals yellow, blunt, minute, very entire, somewhat shorter than the calyx.


(SISYM'BRiUM.* Pod nearly cylindrical: Stigma capitate, notched. E.)

(S. officinale. Pods pressed close to the stalk, awl-shaped: leaves notched, hairy: stem hispid. E.)

**Curt.** 326—(**E. Bot.** 735. E.)—**Ludw.** 187—**Fl. Dan.** 560—**Woodv.** 244—**Sheldr.**—**Blackw.** 28—**Ger.** 198. 1—**Pet.** 46. 3—**Fuchs.** 592—**J. B.** 863—**Dod.** 714—**Ger. Em.** 254. 1—**Trag.** 102. 1—**Lonic.** i. 165. 1—**Lob.** i. 206. 1.

(Stem about two feet high, often purplish, branches towards the top, expanding. E.) Leaves slightly downy, the lower winged, the upper halberd-shaped. Calyx about half as long as the petals. (Blossoms pale yellow, numerous. Germen cylindrical, tapering upwards. Summit flat, with a shallow notch. Pods conical, obscurely quadrangular, nearly an inch long; downy; on short stalks. E.)


* (An ancient Greek name σεπρεψυν, but not readily interpreted. E.)
TETRADYNAEMIA. SILIQUOSA. SISYMBRIUM. 773


S. So'phia. Petals smaller than the calyx: leaves doubly pinnatifid, (rather hairy. E.)


A. July.

S. I'rio. Leaves notched, toothed, without hairiness; as is the stem: pods upright.


Stem nearly smooth, two feet high. Leaves variously toothed and cut, sometimes with winged clefts at the base, generally terminated by a long spear-shaped lobe; the upper usually simple, spear-shaped, with one or two teeth towards the base. Pods about two inches long, strap-shaped, upright, but not pressed to the stem. Fruit-stalks short. Woodw. Blossoms small, yellow. (Root spindle-shaped: herb pungent to the taste. E.)


* It is warm and acrid to the taste; and when cultivated, is used as a spring pot-herb. Birds are fond of the seeds. Sheep and goats eat the plant. Cows, horses, and swine refuse it. By means of this herb Rondeletus cured a hoarseness, occasioned by loud speaking, in three days. Linn.—"Juice of Hedge Mustard is beyond any thing in ulcers of the throat. This was found by experience by the Hon. Harry Gray, when all advice of doctors and surgeons availed nothing. This from his own mouth."—M. S. note in a copy of Parkinson which formerly belonged to Mr. Saunders, surgeon at Stourbridge. (Dr. Cullen attests the like good effect, and advises the juice to be mixed with honey and sugar in equal quantities. E.)

† The pods retain the seeds all winter, and small birds feed upon them. The plant has been prescribed in hysterical and dysenteric cases (whence the old English name; E.) and the seeds are given to destroy worms (but it has long lost the high reputation which once obtained for it the designation of "Sophia Chirurgorum," and affords a striking instance, among many others, of plants, whose extravagant commendations by ancient writers, both domestic and foreign, in these more enlightened times

"Stand like the forfeits in a barber's shop, As much for mock as mark." E.)

Sheep and cows eat it. Horses and goats are not fond of it. Swine refuse it.
BARBAREA. Pod quadrangular, two-edged: Seeds in one row: Cal. erect: Glands within the shorter filaments. E.)

B. vulgarius. (Lower-leaves lyre-shaped, terminal segment nearly circular: upper leaves inversely egg-shaped, toothed. E.)


Stems two feet high, strong, with about eight deep furrows, and as many sharp ridges. Leaves half embracing the stem, winged, the terminal leaflet egg-shaped, notched. Calyx-leaves, in the flowers not yet expanded, green, and two of them larger, with a helmet-shaped hollow at the top. Pods an inch long, slender, somewhat cylindrical, slightly flattened, not very sensibly four-edged. (Blossoms yellow, numerous, in rounded clusters, which afterwards elongate. E.)


P. May—Oct.*

(B. praecox. Lower leaves lyre-shaped; upper deeply wing-cleft, with linear-oblong, entire segments.

E. Bot. 1129—Pet. 46. 2.

Stem about eighteen inches high, in moist situations two feet. Radial-leaves very numerous, exactly like those of Nasturtium officinale. Flowers smaller and paler yellow than those of B. vulgaris. Pods nearly twice as long as in that species, exactly square, smooth, crowned with a very short permanent style. Calyx-leaves cohering, much broader than those of B. vulgaris. Sm. Slenderer than the preceding in every part. Hook. E.)


* In Sweden the leaves are used in salads, early in spring, and late in autumn; also boiled as cale. It is sown in gardens as an early spring salad. Linn. and also in England, where it is called French Cress. St. Cows eat it. Horses and swine refuse it. Goats and sheep are not fond of it. (Smith considers the above notices as rather belonging to the following species.—With double blossoms, it frequently ornaments our gardens. A minute species of Tipula, or Gall-gnat, sometimes renders the flowers like a Hop-blossom; but this metamorphosis does not strictly partake of the nature of galls, as it originates not from the egg, but from the larva, which, in the operation of extracting the seed in some way imparts a morbid action to the juices, causing the flower to expand unnaturally. E.)

† This herb is grateful in salads, tasting exactly like Nasturtium officinale, whereas B. vulgaris is mucilaginous, and of a nauseous bitter.
TETRADYNAMIA. SILIQUOSA. Erysimum. 775

Erysimum.* (Pod four-sided: Cal. closed: Summit a knob, often two-lobed: Seeds not bordered. E.)

E. allia'ria. Leaves heart-shaped.


E. cheiranthoi'des. Stem much branched: leaves spear-shaped, oblique, wavy and obscurely toothed: (pods erect, on spreading stalks. E.)


Seeds oblong, yellowish brown, intensely bitter. Ray. Stem one to two feet high, or more, rough, stiff, quite straight, scored. Leaves narrow, roughish, the mid-rib running down the stem, the uppermost sometimes a little toothed. Blossom small, yellow. (Cal. whitish. The partial flower-stalks become horizontal as the fruit increases, but the pods themselves, an inch long, with valves internally downy, stand erect, and are square, tipped with a minute sessile stigma. Sm. E.)

(M. Courtois reports that a proliferous variety of this plant has been perpetuated for several years in the Botanic Garden of Liege. E.)


* (From ἔρυσις, to draw; because of the astringent virtues of these herbs. E.)
† The Prussians eat the leaves with salted meats in spring.—They are useful with lettuce and the colder salads. The seeds excite sneezing. Cows and goats eat it horses, sheep, and swine refuse it. Curculio Alliuria feeds upon it. Linn.—When growing in poultry yards fowls eat it, and it communicates an intolerably rank taste to their flesh. In England, it is sometimes eaten with bread and butter, and in Wales much used as a frying herb. (It is considered a powerful diaphoretic, diuretic, and antiscorbutic. E.)
‡ Country people give the seeds to destroy worms, and with good effect.—Horses, cows, goats, sheep, and swine eat it.
CHEIRANTHUS. * Germen with a glandular tooth on each side: Calyx closed, two of its leaflets tumid at the base: Seeds flat.


(Plant one foot high. Leaves stalked, crowded, mostly very entire; the lowermost with slight serratures. Petals notched. Calyx sometimes tinged with purple. Style short. Stigma notched at the end. Seeds not winged. It differs from C. Cheiri of the gardens in having leaves more acute, and white underneath; smaller flowers of a pure yellow colour, never exhibiting rust-coloured or blood-coloured blotches. Fl. Brit. May be distinguished also, as Mr. Crowe has remarked, by the petals being recurved, and rather stiff; not flaccid and loosely hanging down, as do those of C. Cheiri, (the Blood Wall-flower.) But Prof. Hooker doubts the constancy of these characteristics. E.) Flowers in terminal bunches, yellow, (very fragrant. E.)


* (From τηρις, the hand; and αὐδή, a flower; supposed to allude to its agreeable scent, always acceptable in hand: or more probably from the pods of some species expanding like fingers. E.)
† (Sometimes corrupted to July-flower; by the old authors Gillo-flower, and we conceive originally derived from the Italian Gialla, q. d. Yellow-flower. E.)
‡ (This well-known and acceptable flower has produced a considerable number of varieties in the garden, as the double, easily propagated by slips; and according to Thomson, "The yellow Wall-flower, stained with iron-brown, And lavish stock, that scents the garden round:"

(Whole herb smooth and glaucous, one to two feet high; leaves rather thick, not strictly perfoliate. E.) Stem-leaves egg-shaped, blunt at the end, heart-shaped at the base, very entire. Petals white, with a tinge of straw-colour. Fruit-stalks expanding. Pods three or four inches long, the lower standing wide. Woodw.

C. *sinuatus.* (Stem herbaceous, spreading: leaves downy, glandular, obtuse, somewhat indented, those of the branches entire: pods rough with prominent glands. E.)


Whole plant cottony, hoary. Stem upright, (two feet high, branched, spreading, leafy, E.) Root-leaves broad, spear-shaped, alternately toothed, blunt; stem-leaves spear-shaped, blunt, channelled, with two pair of blunt teeth about the middle; branch-leaves entire, not toothed. Petals flesh-coloured, blunt, whitish at the base. Pods several inches long, glandular. Flowers large, fragrant only in the evening.

But none which impart a more delightful fragrance than the wild one: to which a highly gifted northern bard beautifully alludes in describing the early days of the "grandame's child:"

"And well the lonely infant knew
Recesses where the Wall-flower grew."

I deem'd such nooks the sweetest shade
The sun in all his round survey'd." Marmion Introd. Canto iii.

And again with the same fond, yet judicious partiality,

"The rude stone fence with fragrant Wall-flowers gay,
To me more pleasure yield
Than all the pomp imperial domes display."

The Wall-flower has been considered the emblem of fidelity in misfortune, because it attaches itself to the desolate, and enlivens the ruins which time and neglect would otherwise render repulsive. It conceals the savage records of feudal times by decorating the castle walls; occupies the painful void of the mouldering abbey; and weaves a garland on the dilapidated monument, deserted even by grateful memory.

"For this obedient zephyrs bear
Her light seeds round yon turret's mould;
And, undispers'd by tempests there,
They rise in vegetable gold." Langhorne.

Or, as elegantly expressed by another poet of nature,

"But thou, neglected Wall-flower, to my breast
And muse art dearest, wildest, sweetest flower!
To whom alone the privilege is given
Proudly to root thyself above the rest,
As genius does, and, from thy rocky tower,
Lend fragrance to the purest breath of heaven."

Herrick, who (*more antiquorum*) would attribute every thing agreeable to the passion of love; with an ingenuity and pathos scarcely inferior to those of his classical prototypes, ascribes the origin and very name of this favourite flower, to the adventurous spirit of a fair damsel, (long detained in durance vile), who, braving all perils to steal an interview with her "sprightly springal,"

"Up she got upon a wall,
Tempting down to slide withal:
But the silken twist untied,
So she fell, and bruised, she died.
Love, in pity of the deed,
And her loving, luckless speed,
Turned her to this plant, we call
Now the Flower of the wall!" E.)
TETRADYNAonica. Siliquosa. Hesperis.


B. June—Aug.

(C. incanus.) Stem shrubby, upright, branched: leaves spear-shaped, blunt, entire, hoary: pods without glands.

E. Bot. 1835—Mill. Ill. 55.

Stem two feet high, branched, round, leafy, hoary with pubescence, as is all the herbage. Leaves tapering at the base. Flowers in terminal bunches, fragrant, naturally of a purplish crimson, often double. Petals rounded and nearly entire, their claws pale and greenish. Pods long, cylindrical, hoary; their points a little elongated, but simple, blunt, and crowned with the permanent dilated stigma. Seeds numerous. E. Bot.

Hoary Shrubby Stock. (Matthiola incana. Br. E.) Discovered by Mr. Dawson Turner, and Mr. W. Borrer in 1806, on the cliffs to the east of Hastings, growing on rocky ledges accessible only to a person let down from the summit by a rope. Such is likewise its natural situation in the south of Europe.

B. June—July. E.*

Hesperis.† Petals oblique: Glands within the shorter stamens: Calyx closed: Pod angular, stiff and straight: Summit forked, with converging lobes.

(H. matronalis.) Stem upright: leaves egg-spear-shaped, toothed: petals blunt: pods irregularly tumid. E.


Stem hairy, about two feet high, simple or branched. Leaves hairy, irregularly tooth-serrated, either sessile or on short leaf-stalks; not halberd-shaped, rather occasionally subcordate. Flowers large, purplish red, in a terminal spike-like bunch. Petals rounded at the end. Fruit-stalks expanding. Sp. pl. refers the fig. of Dod. 161 to H. matronalis, and that of Clus. i. 297. 1. to H. inodora; but these figures, being both impressions from the same block, a doubt arises whether these two species are really distinct. Specimens which I collected in Cornwall agree perfectly with the fig. of Jacquin and the Flora Danica. (It is now generally agreed that they are one and the same species, with due preference to the original trivial name: the secondary one, indeed, proving inapplicable, as the plant, by no means renouncing its classical generic title, exhales an agreeable fragrance in the evening,† and also, it must be admitted, in a moist atmosphere during the day. E.)

* (By cultivation this species becomes the Queen's Stock, rivalling in size and beauty the celebrated Brompton Stock. Phalacra meticulosa and Pronuba are nourished by the above species. E.)

† (From toπειρα, Hesper or Vesper: as though dedicated to the Evening Star, and greeting her ascension with a rich perfume. E.)

‡ (A peculiarity thus figuratively improved.

"Nay, let our shadowy beauty bloom
When the stars give quiet light;
And let us offer our faint perfume
On the silent shrine of night."
Arabis stricta.

A'RABIS. Glands four, within the leaflets of the calyx: Pod long, compressed, strap-shaped: (Seeds in a single row. E.)

A. thalina. (Leaves hairy, more or less toothed: radical ones stalked, oblong: stamens not much shorter than the petals: stem branched: pods pointing upwards. Sm. E.)


Root-leaves disposed in a circle on the ground, hairy; those of the stem nearly smooth. Flowers small, white. Hall. Stem one inch to more than a foot high. Leaves, hairs at the base simple, those on the edges and surface dividing into two or three forks. Nectary glands so very minute as scarcely to be discovered even with a magnifier. Curt. (Pods about an inch long, slightly curved. After scattering its seeds in May it soon withers and disappears. E. Bot. E.)

(Common Wall Cress. Turkey-pod. Welsh: Berfain cyffredin. E.)

Walls, roofs, dry pastures and corn-fields. (A. April. E.)

A. stricta. (Leaves toothed, obtuse, bristly: those of the root lyrate, those of the stem semiamplexicaul, oblong: pods two-edged, upright: stems hairy, calyx smooth. E.)


(Root branched. Stems several, three to five inches high, herbaceous, simple, (or the central one sometimes branched upwards, in the older plants ligneous, two or three inches long, slender, upright, cylindrical, hairy at the base, smooth above. Root-leaves many, inciso-dentate, one to two inches long; rough with long, white, rigid hairs; stem-leaves three or four, more entire, nearly strap-shaped, less rough. Flowers in bunches, large, white. Fruit-stalks short. Petals inversely egg-shaped, very entire; as long again as the calyx. Pods upright, stiff and straight, in a more advanced state longer, and slightly curved, one and a half inch long, two-edged, quadrangular at the base, striated. E.) Glands forming a kind of ring round the base of the stamens. Hall.

Call it not wasted—the breath we lend
To the breeze when no step is nigh;
Oh! thus for ever the earth should send
Her grateful breath on high.

And love us as emblems, night's dewy flowers,
Of hopes unto sorrow giv'n,
That spring through the gloom of the darkest hours,
Looking alone to Heav'n!" E.)
(Bristol or St. Vincent's Rock Cress. E.) Cardamine pumila Bellidis folio, alpina. R. Syn. 300. Arabis arenosa. Scop. n. 837. Rocks and stony mountainous situations. (St. Vincent's Rocks, near Bristol. On the south side of the river, about a mile below the Hot-wells. Mr. W. Clayfield. After several unproductive searches for this rare, and not very conspicuous plant, on May-day 1827, the Editor had the pleasure to observe it growing above the rocks within a few yards of the flag-staff on the sea-walls, Durdham Down. It is found imbedded on smooth patches of turf, and affects an eastern exposure. Of the station recorded by Hutchinson, Kirkland Fell pasture, Cumberland; Mr. Winch doubts the accuracy. E.)

(A. hispida. Root-leaves notched, lyre-shaped, hispid, tufted; stem-leaves spear-shaped, covered with forked hairs; stems smooth, branched from the root: petals spreading. E. Bot. t. 469.—(Fl. Dan. 1462. fid. Sm. E.)—Dill. Elth. 61. 71.—Pet. 50. 3—Lightf: 347. t. 15. f. 2.—Pluk. Phyt. t. 101. f. 3. (Roots rather woody, matted together. Stems several, about a span high, ascending, furrowed, bearing few leaves. Root-leaves about half an inch long, sometimes smooth, numerous, on leaf-stalks, winged. Blossoms small, purple, often white with a purplish border, in clusters much elongated after flowering. Calyx blunt, smooth, membranous at the edge. E.)

Alpine or Welsh Rock Cress. A. hispida. Linn. Sm. Willd. Br. Hook. Cardamine petroea. Huds. Lightf. With. Ed. 3 and 4. C. hastulata. E. Bot. at least Smith assures us, on comparing many specimens communicated by Mr. Bingley, that no difference exists but that of the leaves being almost entirely smooth, and less lobed, than they are commonly found in A. hispida. E.) Lofty rocks in Carnarvonshire, as Moelyn-rhud, near Festiniog; Clogwyn du'r Arddu, and Clogwyn y Garndd, near Llanberris; and on moist rocks above the Lake Lyn-dù, in great plenty. Mr. Griffith. By the first mile-stone from Shrewsbury to Welsh Pool. Mr. Aikin. (Middleton Dale, Derbyshire. Mr. Coke. Ravine of the Screes, near Wast-water, Cumberland, about 600 feet in perpendicular height. Mr. Wood. On several Highland mountains, as Craig Cailleach, in Breadalbane; Baieval, in the isle of Rum, abundantly. Hooker, in Fl. Scot. E.)


A. turrita. Leaves clasping the stem: pods recurved unilaterally, flat, strap-shaped: calyx somewhat wrinkled.
TETRADYNAMIA. SILIQUOSA. TURRITIS, 781


(Herb more or less downy. Root woody. Flowers straw-coloured, small, with spreading borders, in corymbose clusters. Fruit-stalks short. Glands within the shorter, and two without the longer stamens. Style very short, permanent. E.) Stem one to two feet high, cylindric, scored, downy, generally simple. Leaves hairy on both sides; root-leaves oblong, thick, greyish, waved at the edge; stem-leaves similar, toothed, regularly decreasing upwards in size; the upper more pointed, rather serrated than toothed, not so grey. Pods very long, smooth, strap-shaped, compressed, on short fruit-stalks, rising at the base and then bent downwards, forming an elegant curve. Woodw.


A. hirsuta. All the leaves hispid, toothed: stem leafy, hirsute: pods quite erect. E.)

Dicks. H. S.—(E. Bot. 587. E.)—Jacq. Ic. i.—Walc.—C. B. Pr. 42. 2—Park. 834. 6—Pet. 47. 12—H. Ox. iii. 3. 5—Fl. Dan. 1040.

(Stems several, a foot high, leafy, stiff and upright. Root-leaves egg-shaped, toothed; stem-leaves spear-shaped, blunt, toothed, semi-amplexicaul, occasionally arrow-shaped at the base. Pods slender, smooth, an inch long. Blossom white, small. Bunches terminal. E.) By cultivation, or in a rich natural soil, it loses most of its hairiness, and grows taller. With.


TURRITIS.* (Pod very long, angular; valves keeled: (Seeds in two rows. E.)

T. GLabra. Root-leaves toothed, hirsute; others very entire, embracing the stem, smooth.


(Whole plant erect and straight. E.) Stem two to three feet high, simple, cylindric, slightly scored, smooth. Root-leaves spear-shaped, tapering into leaf-stalks, indented towards the base, entire upwards; stem-leaves

* (From turris, a tower; but whether in allusion to its form of growth, or not unfrequent station upon such buildings, may be questionable. E.)
numerous, heart-spear-shaped, generally entire, but sometimes slightly toothed, pale sea-green. **Pods** smooth, numerous, lying close to the stem, and tiled. **Seeds** reddish brown. Woody. **Pods** when fully grown cylindrical, compressed. **Blossoms** greenish white, in very long and slender terminal bunches.

**Smooth Tower Mustard.** Meadows, pastures, pits, and waste places, in gravelly soil. (In sand-pits and other places near Charlton Church, E.) and Lewisham, Kent; near Colchester. Spixwort, Norfolk. Mr. Woodward. Lichfield. Mr. Whately. Castle Bromwich. Mr. Jones. In the quarries above Bath, which is one of the stations mentioned by Ray for his *Cardamine Bellidis folio*. Mr. Swayne. St. Vincent’s Rocks, near Bristol, which, being another station of Mr. Ray’s plant, renders it probable that his *Cardamine* was our *T. glabra*. (On walls near Ovingham, Northumberland; near Gainford, Durham. Mr. Winch. In a wood opposite the Inn at Bowling Bay. Hopkirk. Hook. Scot. E.)

A. May—June.

**BRASSICA.**

(Calyx closed: **Pod** nearly cylindrical, with a beak barren or single-seeded: **Seeds** globular. E.)

**B. campes'tris.** Root tapering: stem-leaves uniform, heart-shaped, (pointed, embracing the stem: lower-leaves lyre-shaped, toothed, rather hairy. E.)

(E. Bot. 2234. E.)

(*Stem* two feet high, upright, branched, leafy, cylindrical, smooth, rather glaucous. **Lower-leaves** rough with hairs on the veins underneath; all slightly glaucous, paler on the under surface. **Petals** yellow, rather large. **Pods** cylindrical, bluntly four-cornered, reticularly veined, a little swelling out, two inches long, with an awl-shaped beak, quadrangular at the base, striated. Fl. Brit. Cat. spreading upwards.


**B. na'pus.** Root fusiform, a regular continuation of the stem: leaves smooth; upper heart-spear-shaped, embracing the stem; lower lyrate, toothed. E.)


**Stem** somewhat branched, cylindrical, smooth, about two feet high. **Leaves** smooth, glaucous. **Calyx** yellowish green. **Summit** a flatted knob. **Pod**

* (Probably from *βραζω*, to boil; being commonly so prepared as an esculent vegetable. E.)
with frequently three or four gibbosities larger than merely from the enclosed seeds. There is a variety with the leaves hairy at the edge. Blossoms yellow, numerous, rather small.

**Rape. Cole-seed.** (Irish: Praisneagh bush. Welsh: Bresyck yr yd. E.) Salisbury, contrary to usual authority, has reversed the specific names of this and the following. On ditch banks and among corn.

B. May.*

B. **ra'pa.** Root a regular continuation of the stem, orbicular, depressed: (radical leaves lyrate, rough; those of the stem more entire, smooth. E.)


Radical leaves deep green, large, spreading. (Pods an inch long, cylindrical, veiny. (Root succulent, white or purplish, tapering or fibrous below. Stem two feet high, upright, branched, smooth. E.) Calyx yellow, expanding. Blossom yellow, in numerous elongating bunches.


B. April.†

* The roots of the cultivated variety may be eaten like the turnip but they have a stronger taste, and its seeds, which are called Cole-seed, afford a large quantity of expressed oil, called Rape Oil, (particularly serviceable to the wool combers, for which purpose it is extensively cultivated in the Isle of Thanet. E.) What remains after the expression of the oil is called Oil Cake, and is used for fattening oxen, (as is, with still more advantage, a similar residuum from the Lint-seed of Flax. E.) In Norfolk the cakes are broken to pieces, and strewn on the land as manure. It is thought to be a very efficacious one. About half a ton is laid on an acre. Mr. Woodward. Cows, goats, and swine eat it. (Partridges and pheasants are fond of lying in these crops. E.)

† Turnips are either eaten raw, boiled, or roasted. Pepper is commonly used with them. They relax the bowels, and are supposed to sweeten the blood. They are hurtful to pregnant or hysterical women, and to those who are subject to flatulencies. The juice, well fermented, affords by distillation an ardent spirit, (and may be made into an inferior sort of cyder. E.) The rind is acrimonious. If the roots be kept in sand, or in a cellar, during the winter, they send out white shoots and yellowish leaves, which being rather sweet and not unpleasant to the palate, are used as salad, when other esculent plants are not to be had. But the greatest use of Turnips is in feeding oxen and more especially sheep in winter. (If the seminal leaves be destroyed before the other leaves appear, the plant dies; and, therefore, as the saccharine qualities of the seminal or cotyledon leaves in the Turnip attracts a species of small beetle called by the farmers the Fly and Black Jack, (Hellica nemorum,) which does not attack the proper leaves of the plant, whole crops of this useful vegetable are often destroyed. Farmers do not consider the crop of Turnips safe until the second leaf appears; or, in the language of agriculture, until the plant comes into the rough leaf. Thomson's Lect. Mr. Salisbury assures us that the best preventive of the Fly, is to be putting manure on the ground in a moist state and sowing the seeds with it, in order to incite the young plant to grow so rapidly, as quickly to attain the rough leaf, which is the point of safety. These ravages prevail chiefly in dry seasons. Vid. Dickson's Husbandry. The destruction of the turnip-fly may also be greatly facilitated by a peculiar mode of ploughing suggested by Mr. W. Cowdry, whereby the papa of the insect being deeply buried under the furrow, perishes for want of sufficient sun and heat to bring it to a mature imago. The seed should likewise be steeped 24 hours in
$B.\ \text{oleracea.}$ Root a regular continuation of the stem, cylindrical, fleshy: (all the leaves smooth, glaucous, waved, and lobed. E.)

\[\text{(E. Bot. 637. E.)}\]

\[\text{(Root caulecent some height above ground. Plant one foot to eighteen inches high, or more. Stem-leaves rather thick, very much waved, and variously indented, sea-green, with frequently a mixture of purple, the lower somewhat egg-shaped, sessile; the upper mostly strap-shaped. Flowers in long clusters, large, yellow. Calyx leaves egg-shaped, broad, yellow. Pods short, tumid, without a beak. E.) Seeds dusky purple.}\]


$B.\ \text{moneisis.}$ (Leaves glaucous, wing-cleft, cut-serrated: stem nearly

water to accelerate its vegetation. Turnips are also obnoxious to concealed spoilers, which revel in the interior of the roots, as the formidable wire worm; and the small knobs or tubercles, in some places called *Anbury*, having the appearance of disease, are in fact the *nidus* of grubs, probably those of *Curculio contractus*, or *Rynchocenus assimilis*. E.)

The *Rota-Baga*, or Swedish Turnip, is generally considered to be a hybrid between the Turnip and Cabbage, hardy, ponderous, and nutritious, but by some suspected to be a distinct species. The Agricultural Society bestowed their premium for the cultivation of a field of Turnips grown near Cardiff, in which the roots averaged, one with another, from 20 to 30 pounds weight. (Dr. Blair, in his Essays, gives the following curious account of the wonderful powers of vegetation in Turnips. Seed sown July 2, 1702, appeared above ground in three days; on Aug. 12, one of them weighed two pounds fourteen ounces. An ounce of the seed contained a thousand grains: one of these seeds increased 671,600 times its own weight in six weeks, 111,835 in one week, 666 in every hour, and eleven times its own weight in a single minute! E.)

* Early in the spring the Sea Cabbage is preferred to the cultivated kinds; but, when gathered on the sea coast, it must be boiled in two waters, to take away the saltiness. (When blanched, (Sea Kale), it is an elegant and acceptable winter vegetable. E.) The roots may be eaten like those of the preceding species, but they are not so tender. The different varieties of cultivated garden Cabbage originate from this, all of which are much in use at our tables. The red Cabbage is chiefly used for pickling.—(Thus taken, it is supposed to discuss the tendency to scurvy.)—A horse eat the leaves, but did not seem fond of them. St. Cows grow fat upon them. (The Drum-head Cabbage is usually transplanted into the fields, and grows to an enormous size, and is very profitable.—In the Georgical Essays, Cabbage, particularly the Scotch kind, is strongly recommended as an excellent food for cattle, and substitute for hay. Autumn-sowed plants produce a much heavier crop than those sowed in Spring.—It would appear from Athenæus that even the homely Cabbage has not always been exempt from superstitious homage, especially in Ionia, whose inhabitants, were accustomed on solemn occasions to swear by the “prophetic” or “sacred Cabbage!” E.)
TETRADYNAMIA. SILIQUOSA. SINAPIS. 785

leafless, ascending: pods quadrangular, beak with one to three seeds. E.)


(Root tapering, long, woody. Stems six or eight inches high, when very luxuriant taller, and branched. Flowers corymbose. Petals pale yellow, veined, exceeding the calyx, which is hairy at the top. Herb when bruised fetid. Sm. E.)


SINA’PIS.† Cal. expanding horizontally: Petals upright: Glands between the shorter stamens and the pistil, and between the longer stamens and the calyx: Pod beaked, two-valved.

S. ARVEN’SIS. Pods with many angles, tumid, longer than the two-edged beak: (leaves toothed, ovate, or lyrate. E.)


(One to two feet high. Stem and leaves harsh with short scattered bristles; the former often purplish; the bristles of the leaves mostly on the ribs or fibres of the under side. Petals yellow, without veins. Calyx yellowish. Pod with a beak nearly half its length, and both, in our specimens, free from bristles. E.)


A. May‡.

* (In places where cattle graze, the plant is always eaten down to the root; and probably in poor sandy soil, especially near the sea, it might be cultivated to advantage. It bears seed abundantly. Hooker. E.) The different species of Brassica afford nourishment to Papilio Brassica, Rapa, and Napi; Phalaena fuliginosa; Aphis Brassicae; and Chrysomela Hyoscyami.

† (From ευς, painfully to affect; ὀπτω, the eyes; as by its pungency. E.)

‡ The Scandinavians boil and eat this herb as cabbage, and in Ireland the tender tops are collected for the same purpose.—Cows, goats, and swine eat it. Sheep are very fond of it. Horses generally refuse it. (The seeds are often found mixed with corn, but may be completely separated by sieving. Under the general name of Charlock, pronounced kedlock in the midland counties, farmers usually comprehend S. arvensis and nigra, Raphanus raphanistrum, and Brassica rapa, as one or other most abound; but the former is the more noxious weed, and should be carefully extirpated. Sold by the name of Durham Mustard, and said to be inferior to the produce of S. nigra. Though the greater part of the vegetable excrescences, termed galls, are caused by insects of the genus Cynips, they do not always originate from this tribe. Some are produced by beetles, as those on the roots of S. arvensis, which are inhabited by the larvae of Curculio contractus, and Rynchus assimilis, according to Kirby and Spence. E.)
S. al'ba. Pods hispid, tumid: beak very long, slanting, sword-shaped: (leaves wing-cleft. E.)

Curt. 322—Blackw. 29—(E. Bot. 1677. E.)—Ger. Em. 244. 4—Pet. 45. 10
—Fuchs. 538—J. B. ii. 836—Trag. 101. 1—Lonic. i. 164. 2—Matth. 563
—Dod. 707. 1—Lob. Obs. 100. 2, and Tc. i. 203. 1—Ger. Em. 244. 2—
H. Ox. iii. 3, row 1. 2.

Pods turgid with the whitish seeds; beak scored, dark green, with a few hairs, (longer than the pod, and discriminative of the plant. E.) Stem twelve to eighteen inches high, strong, hard, nearly cylindrical, branched, set with strong hairs pointing downwards. Leaves nearly lyrate, rough with strong hairs, deeply divided, segments three or five, the terminal one very broad, large, toothed, and indented. Fruit-stalks set with strong reflexed hairs. Petals, limb inversely egg-shaped, yellow. (Calyx-leaves linear, green, horizontal. Sm. E.)

A. June—Aug.*

S. ni'gra. (Pods quadrangular, smooth, laid flat to the stalk: upper leaves linear-lanceolate, entire, smooth. E.)


(Three or four feet high. Lower-leaves large, lyrate, rough. Pod with a very short beak, or rather only the persistent style and stigma at its summit, its surface scarcely rugged. Hook. E.) Calyx yellow. Blossom pale yellow.

The Rev. Dr. Goodenough in Fl. Brit. remarks that this species may at once be distinguished from its congeners by the leaves of the lesser branches being pendulous. E.)

A. June.*

* It is sown in winter, or early in spring, and gathered young to supply our tables with salading. (On a warm border or hot-bed, it will be ready for use in about ten days. Columella elegantly denominates this, or the following "Jletum factura Sinapi," the tear-creating Mustard; and Plantus, on account of its pungency, names it "acuta Veratum, the wicked Mustard. The seeds, (rather large and yellowish brown), have nearly the same properties as those of the next species, (by their acrimony and pungency stimulating the solids, and attenuating viscid juices; therefore deservedly recommended for exciting appetite, assisting digestion, promoting the fluid secretions, and for the other purposes of the acrid plants called antiscorbutic. But, recently, White Mustard seed has become so fashionable a remedy for restoring impaired constitutions, and strengthening the digestive organs, that its merits have been most unduly blazoned forth not only in every county of England, but on the Continent, where it appears to have succeeded to the medical honours of the Eau de Cologne. Let credulity beware of such idle and specious pretences, though accompanied by the common place sophism "if it produce no benefit, it will at least do no harm." The use even of White Mustard seed requires judgment and discretion, and it would be well for those who may be advised to try the experiment, previously to refer to Gent. Mag. vol. xcviii. p. 618. E.)

† The seeds, reduced to powder, make the common mustard so much in request as a condiment at our tables. They yield a considerable quantity of expressed oil, which partsake but little of the acrimony of the plant. The seeds, when unbruised, impart but little taste to boiling water. Taken inwardly, in the quantity of a meat spoonful or more, they gently relax the bowels, and are of service in asthma, chronic rheumatism, and palsy. The powdered seeds curdle milk, and give a strong impregnation to boiling water. The infusion taken in considerable quantity, vomits; (thus affording the most ready emetic,
TETRADYNAMIA. SILIQUOSA. Sinapis. 787

(S. tenuifolia. Leaves lanceolate, smooth; the lowermost once or twice pinnatifid; uppermost undivided: pods erect, strap-shaped, smooth, with short beaks: stem smooth. E.)

E. Bot. 525—Curt.—Pet. 468. E.)

Stem one foot and a half high, upright, cylindrical, woody at the base. Leaves with winged-clefts and jagged, smooth, expanding, of a disagreeable scent. Calyx, two of the leaves almost upright; two gibbous at the ends, bent back; before the blossom is expanded appearing as if tipped with two horns from the projecting points of two of the leaves, which are beset with one or two hairs. Petals of the larger size twice as large as the calyx, yellow, with claws. Style very short. Pods one and a half inch long, cylindrical, marked with a prominent line on each side. Seeds egg-shaped, slightly compressed. Curt. (Root spindle-shaped, whitish, rather woody. Stem very much branched; herb glaucous. Seeds in two rows, not always complete. E.)


July—Oct.†


B. Bot. 1090—Barr. Ic. 131—H. Ox. iii. 5. 9.

when prompt relief of that kind may be requisite: E.) In smaller doses, it is an useful aperient and diuretic. Cataplasms, formed with crumb of bread, vinegar, and powdered mustard seed, (hence called sinapisms), are very commonly applied to the soles of the feet, as stimulants, in fevers that require such treatment; they are used with advantage, topically applied, in fixed rheumatic and sciatic pains. Upon the whole, wherever we want a strong stimulus, that acts upon the nervous system, without exciting much heat, we know none preferable to mustard seed. (The plant is cultivated largely in Essex, and the seed sold to the manufacturers of flower of Mustard. It is prepared by drying the seeds on a kiln, and grinding them into powder. Mr. Salisbury states that in the Isle of Ely, wherever new ditches are thrown out, or the earth dug to any unusual depth, a crop of Black Mustard immediately appears; the seeds in some instances having remained under ground for ages. See Osmunda regalis. With. vol. iii. E.) Its acrimony consists in an essential oil. Phallema fuliginoso lies upon the different species: (and the caterpillar of Pontia Daplidice devours the seeds. Vid. Curt. Brit. Ent. vol. i. pl. 48.—Multum ardet in Latin, or Mout arde in old French, ("it burns much") might have been imagined the real theme of the word Mustard, had not a whimsical history attached to its etymology. In 1382 Philip the Bold, Duke of Burgundy, granted to the town of Dijon armorial ensigns with the motto "Moutte me tarde," ("I long, or wish ardently;") which, being sculptured over the principal gate, by some accident the middle word became effaced. The merchant dealers in Sensae, (Sinapi), intending to ensign their pots with labels of the city arms, copied the imperfect motto as it then remained, "Moutte-tarde," and hence the name which the Sinapi composition has preserved to this day. E.)

* (Wisence Prof. De Candolle deduces his genus Diplotaxis. E.)

† All the parts of this plant are considerably acrid, and have a rank disagreeable smell.
**TETRADYNAMIA. SILIQUOSA. RAPHAELUS.**

*Root* tapering. *Stems* branching, leafy, cylindrical, covered with reflexed hairs; sometimes very short. *Leaves* alternate, on leaf-stalks, broad-spear-shaped, unequally waved and serrated, smooth, and of a lightish green, not glaucous. *Fruit-stalks* terminal, very long, forming a bunch-like corymbus, greatly elongated with flowering. *Blossoms* yellow, only half the size of those of *S. tenuifolia*. *Calyx* a little hairy. *Pod* slender. *Fruit-stalks*, and *pedicles* often rather hairy. *Seeds* two-ranked, but still less accurately so than in the preceding. *Calyx* in both spreads less than the characters of *Sinapis* requires. Sm. E.


**RAPHAELUS.† Cal. close, upright: Nect. glands two between the shorter stamens and the pistil, and two between the shorter stamens and the calyx: Pod cylindrical, but protuberating, with cells, and imperfectly jointed.**

**R. RAPHAELUS TRUM.** (Pods jointed, striated, one-celled: leaves simply lyrate. E.)


*Stem* one to two feet high, rough with transparent reflexed hairs. *Leaves* sometimes rough with hairs; the *lower* lyre-shaped, wings alternate, heart-oblong, serrated, the lowermost very small, the odd one large, rounded at the end, scollopated; the *upper* oblong-spear-shaped, scollop-serrated. *Leaf-stalks* generally rough. *Calyx* beset with white hairs, except the base which is smooth. *Blossom* generally yellow, but occasionally white, or violet, with dark veins. *Pod*, joints falling off separately. Linn. *Plant* generally of a sea-green cast. *Petals* of whatever colour, veined with dark lines. Woodw. (Seeds large, solitary in each joint. *Pod*, with its beak, an inch and a half long. E.)

**Var. 2. Radical leaves interruptedly lyrate; all the leaves rough, and rather sharply toothed. Blossom more yellow, and less veiny than in the preceding. Root large and succulent, conjectured to be biennial, or sometimes triennial. Always grows near the sea. E. Bot.** (The chief difference seems to consist in its larger size, its leaves being less simply lyrate, and more serrated, and the pods perhaps more strongly furrowed;)

* (This weed, which has now over-run the whole arable land of the Isle of Thanet, was first remarked some twenty years ago near to the beach at Broad-stairs, and is believed to have been introduced on that spot by a corn-laden vessel wrecked on that part of the coast. —It will be observed that the other stations of this plant might induce a similar suspicion as to its origin in Britain. E.)

† (From *pepavo*, a root: as preeminent, probably alluding to *R. sativus*, the kind generally cultivated. E.)
but it will not be denied that the same characteristics exist, in a somewhat less degree, in the more ordinary appearance of the species. E.)


(A Synoptical View of Mr. Brown's Arrangement of the Species comprehended in the Class Tetradynamia.

**SILICULOSA.**

**Cakile maritima.** *(Bunias Cakile.)* Joints of the pouch two-edged; upper one arrow-shaped; leaves wing-cleft, slightly toothed, fleshy.

**Crambe maritima.** *(C. maritima.)* The four longer filaments forked; pouch pointless; leaves roundish, indented, waved, toothed, glaucous, and smooth, as is the stem.

**Coronopus Rueli.** *(Cochlearia coronopus.)* Pouch entire, crested with sharp points.

**Didyma.** *(Lepidium didymum.)* Pouch notched at the end, doubled, wrinkled; leaves wing-cleft; segments strap-spear-shaped, undivided or snipt.

**Psatis tinctoria.** *(T. tinctoria.)* Pouch inversely egg-oblong, smooth; stem-leaves arrow-shaped, smooth.

**Velala annua.** *(V. annua.)* Leaves with winged clefts; pouches hanging down.

**Thlaspi arvense.** *(T. arvense.)* Pouch round and flat, its wings dilated longitudinally; seeds concentrically scored; leaves oblong, arrow-shaped, toothed, smooth.

**Bursa-pastoris.** *(T. bursa-pastoris.)* Pouch inversely-heart-shaped, without wings; root-leaves wing-cleft.

**Perfoliata.** *(T. perfoliata.)* Pouch inversely-heart-shaped, winged; style enclosed, very short; stem-leaves heart-shaped, slightly toothed, smooth.

**Alpestrae.** *(T. alpestre.)* Pouch inversely-egg-shaped, bluntly notched at the end; cells four to six-seeded; style protruding; stamens as long as the petals; stem-leaves heart-arrow-shaped; stem undivided.

* In wet seasons it grows in great quantity among the barley in Sweden, and then those who eat barley bread are afflicted with violent convulsive complaints. *Amer. Acad.* vi, 430.—Horses eat it. Cows refuse it.
Hutchins'ia petræ'a. (Lepidium petraeum.) Leaves winged, very entire: petals scarcely longer than the calyx: pouch on both sides blunt: stigma sessile.

Teesdal'ia nudica'u'lis. (Iberis nudicaulis.)

I'beris am'ara. (I. amara.) Herbaceous: leaves spear-shaped, rather sharp-pointed, slightly toothed, smooth: flowers in bunches.

Lepidi'um latifo'lium. (L. latifolium.) Leaves spear-shaped, undivided, serrated, or entire: pouch oval, entire.

— rudera'le. (L. ruderale.) Flowers diandrous, without petals: root-leaves wing-cleft; those of the branches strap-shaped, entire: pouch notched at the end, expanding.

— campe'stre. (Thlaspi campestre.) Pouch egg-shaped, notched at the end, winged: stem-leaves arrow-shaped, toothed.


— Dan'ica. (C. Danica.) Pouch elliptical: all the leaves deltoid.

— Armorac'i'cia. (C. Armoracia.) Pouch oblong, summit dilated, nearly sessile: root-leaves oblong, scollopped; those of the stem long-spear-shaped, toothed or snipt.

Subula'ria aquat'ica. (S. aquatica.)

Dra'ba ver'na. (D. verna.) Flower-stalk naked: petals deeply divided into two parts: leaves spear-shaped, slightly snipt, hirsute.

—— rupe'stris. (D. hirta.) Flower-stalk naked, or with one leaf: petals undivided: pouch spear-shaped, pubescent: leaves flat, spear-shaped, hairy.

—— inc'a'na. (D. incana.) Stem-leaves numerous, hoary, slightly toothed: pouch oblong, smooth, twisted.

—— mura'lis. (D. muralis.) Stem branched: leaves egg-shaped, embracing the stem, toothed: pouch expanding, smooth.

—— aizoi'des. (D. aizoides.) Flower-stalk naked, smooth: leaves spear-strap-shaped, rigid, keeled, fringed: stamens as long as the petals: style half the length of the germen.

Camelina sati'va. (Myagrum sativum.) Pouch inversely egg-shaped, bordered: summit undivided: leaves spear-arrow-shaped.


SIL1QUOSA.

Cardam'ine bulbif'era. (Dentaria bulbifera.) Stem strictly undivided: lower-leaves winged: upper ones simple.
CARDAMINE AMARA. (C. amara.) Leaves winged: radical leaflets roundish: those of the stem tooth-angular: style oblique: summit tapering to a point: stem radicating at the base.

---- PRATENSIS. (C. pratensis.) Leaves winged: radical leaflets roundish: those of the stem spear-shaped: style straight: summit capitate.

---- IMPATIENS. (C. impatiens.) Leaves winged: leaflets spear-shaped, somewhat snipt: stipules fringed: petals strap-shaped, or none.

---- HIRSUTA. (C. hirsuta.) All the leaves winged, without stipules: leaflets having leaf-stalks: the radical ones roundish: stamens four to six, as long as the petals: summit nearly sessile.

ARABIS STRIC'TA. (A. stricta.) Leaves toothed, blunt, rough with bristly hairs: those of the root approaching to lyre-shaped: stems hirsute: petals erect.

---- HISPIDA. (A. hispida.) Root-leaves indented, lyre-shaped, lengthened into foot-stalks: those of the stem mostly undivided, smooth: fruit-bearing peduncles spreading half the length of the pods.

---- THALIA'NA. (A. thaliana.) Leaves toothed, hairy; those of the root oblong: stamens nearly as long as the petals: pods ascending.

---- CILLATA. (Turritis alpina.) Leaves slightly toothed, oval, smooth, fringed: those of the root nearly sessile, blunt: stem-leaves half embracing the stem, which is undivided.

---- HIRSUTA. (T. hirsuta.) All the leaves rough with bristly hairs, toothed: stem-leaves half embracing the stem: pods straight.

---- TURRI'TA. (A. turrita.) Leaves embracing the stem, acuminate: pods pendant, two-edged: bracteae leafy.

TURRITIS GLABRA. (T. glabra.) Root-leaves toothed, hairy: stem-leaves embracing the stem, entire, smooth.

BARBA'REA VULGA'RIS. (Erysimum barbarea.) Lower-leaves lyre-shaped, red; the terminating lobe rounded: upper-leaves inversely-egg-shaped, toothed.


NASTURTIIUM OFFICINAL'LE. (Sisymbrium Nasturtium.) Leaves winged: leaflets egg-shaped, somewhat heart-shaped, waved.

---- SYLVESTRE. (S. sylvestre.) Leaves winged: leaflets spear-shaped, serrated or snipt.


---- AMPHIBIUM. (S. amphibium.) Leaves oblong-spear-shaped, wing-cleft or serrated: petals longer than the calyx: root fibrous.
Sisymbrium officinale. (Erysimum officinale.) Pods awl-shaped, pubescent, pressed to the stalk: leaves notched, hairy: stem hispid.

Irio. (S. Irio.) Leaves notched, toothed, and, as is the stem, smooth: pod expanding upwards.

Sophia. (S. Sophia.) Leaves doubly winged: leaflets strap-shaped, the terminal one longest: petals shorter than the calyx.

Erysimum cheiranthes. (E. cheiranthes.) Leaves spear-shaped, entire, or slightly toothed: hairs triply stellate: pods nearly upright: fruit-stalks expanding: summit undivided, nearly sessile.

Allaria. (E. allaria.) Leaves heart-shaped, on leaf-stalks, sharply toothed.

Orientalis. (Brassica orientalis.) Leaves heart-shaped, embracing the stem, smooth: root-leaves scabrous, entire.


Mathiola incana. (Cheiranthus incanus.) Leaves spear-shaped, entire: pods cylindrical, without glands.

Sinuata. (C. sinuatus.) Leaves cottony: the lower ones indented: pods compressed, prickly.

Hesperis matronalis. (H. matronalis.) Borders of the petals inversely egg-shaped: pods upright, protuberating, with a simple margin.


Rapa. (B. rapa.) Root cauliflous, orbicular, flatted, fleshy: root-leaves lyre-shaped, scabrous: those of the stem entire, smooth.

Oleracea. (B. oleracea.) Root cauliflous, cylindrical, fleshy: all the leaves smooth, glaucous, waved, and lobed.


Campestris. (B. campestris.) Root and stem slender: leaves heart-shaped, embracing the stem; lower ones lyre-shaped, toothed, rather hispid.

Sinapis arvensis. (S. arvensis.) Pods with many angles, turgid, and protuberating, longer than the two-edged beak.

Alba. (S. alba.) Pods hispid: beak slanting, very long, sword-shaped.
Sina'pis ni'gra. (S. nigra.) Pods pressed to, smooth, quadrangular: style oval-shaped.

— Tenuifo'lia. (Sisymbrium tenuifolium.) Pods strap-shaped, smooth, upright: beak very short: fruit-stalks expanding: leaves spear-shaped, acuminate, pointed, winged or doubly winged: stem smooth.


Raph'anus raphanis'trum. (R. raphanistrum.) Leaves simply lyre-shaped: pods of one cell, jointed, scored.

—— (R. maritimus. E. Bot.) Leaves interruptedly lyre-shaped: pods of one cell, jointed, scored. E.)
CLASS XVI.

MONADELPHIA.

TRIANDRIA.

JUNIP'ERUS. B. and F. flowers on different plants.
   B. Cal. a catkin: Bloss. none.
   F. Cal. with three divisions: Bloss. three petals:
       Styles three: Berry beneath, three-seeded, the calyx remaining at the base.

PENTANDRIA.

(ERO'DIUM. Style one: Fruit beaked, of five aggregate capsules, each terminated by a spiral awn, bearded on the inside. E.)

DECANDRIA.

GERA'NIUM. (Style one: Fruit beaked, of five aggregate capsules, each terminated by a recurved, naked awn. E.)

POLYANDRIA.

(1) Pistil one.

TAX'US. B. and F. flowers on different plants: Cal. four-leafed: Bloss. none.
   B. Anthers eight-cleft.
   F. Summit one: Berry one-seeded: Seed, upper half naked.
(2) Pistils two.

PINUS. B. and F. flowers on the same plant: Bloss. none.  
B. Cal. four-leaved.  
F. A cone-like Catkin: Nuts two, with a membranous wing.

(3) Pistils many.

LAVATERA. Outer Calyx three-cleft: Seed-coats in whorls: one seed in each.

MALVA. Outer Calyx three-leaved: Seed-coats several, whorled, one seed in each.

ALTHAEA. Outer Calyx nine-cleft: Seed-coats several whorled, one seed in each.

TRIANDRIA.

JUNIPERUS. B. and F. flowers distinct.  
B. Cal. scales of the catkin: Bloss. none.  
F. (Cal. scales of the catkin, fewer, becoming fleshy, united into a berry with three seeds: E.) Petals three: Pistils three.

J. COMMUNIS. Leaves ternate, expanding, mucronate: longer than the berry.


—It is easily transplanted, and bears cropping. Grass will not grow beneath it, but *Avena pratensis* destroys it. The wood is hard and durable, (red, and employed for veneering. E.) The bark may be made into ropes. The berries are two years in ripening. When bruised, they afford a pleasant diuretic liquor, but it is not easy to prevent its becoming sour. It is esteemed a good antiscorbutic, and affords occasional relief in nephritic complaints. The Swedes prepare an extract from the berries which is everywhere known by the name of Gin, or Juniper water. (Gin, (contracted from Geneva, and that a corruption of genevre, French for a Juniper berry, primarily originating in the gallantry of Ariosto, who thus commemorated the name of his favourite fair, and in the same spirit was induced to prefer this humble shrub even before the laurel and the bay:

> Quell’ arboscel, che in le solinghe rive
> A l’aria spiega i rami orridi ed irti,
> Ed’ odor vince i pin*, gli abeti, ei mirti,
> E lieto e verde al caldo, e al ghiaccio vive.
> 
> Il nome ha di colei, che mi prescrive
> Termine e leggi a’travagliati spirti
> Da cui seguir non potran Scille o Sirti;
> Ritrarmi, o le brumali ore, o lo estive;)

is properly a malt liquor, distilled a second time, with the addition of Juniper berries. Formerly the berries were added to the malt in grinding; but latterly they are omitted entirely, and the spirits are distilled with oil of Turpentine to give them a flavour; which, though it nearly resembles that of Juniper berries, has none of their valuable virtues, so that this deleterious compound,

> "Brew’d in hell’s black pandemonia,"

too often proves a deadly potion to the drunkard; polluting both soul and body. In countries where Juniper abounds, (Brookes records the practice as still prevalent in Norway and Sweden), the sprays are preferred, on account of the agreeable odour they diffuse when trodden under foot, for strewing over the floors of apartments; and are also supposed to promote sleep. Boccacio alludes to such a custom as essential to paradisiacal enjoyment; and in former ages, though rushes were commonly thus used throughout England, the Juniper was reserved as a luxury for high festivals, or the more opulent. Nevertheless Virgil warns us against trusting to the seductive influence of the

> "Juniperi gravis umbra;"

***— "Juniper’s sweet shade, whose leaves around Fragrance diffuse, at eve are noxious found."***

Ecl. x. E.)

The berries sometimes appear in a monstrous or distorted form, the leaves of the calyx grow double the usual size; approaching, but not closing; and the three petals fit exactly close, so as to keep the air from the *Tipula Juniperia*, which inhabit them. (De Geer describes this singular excrescence as resembling a flower, and also attributes it to the operation of *Cecidomyiæ* or *Tipula*, E.) Gum Sandarach, more commonly called *Pounce*, for rubbing on paper to prevent the ink sinking through, is the product of this tree. Horses, sheep, and goats eat it. (Thrushes and grouse feed on the berries. E.) *Cimex*
**MONADELPHIA. PENTANDRIA. ERODIUM.**

Var. 2. Leaves broader and thicker. Berries longer, more oval than spherical. (Stems more depressed. E.)

_J. B._ i. b. 302. 1—_Chus._ i. 38. 2—_Ger._ Em. 1372. 3.


**PENTANDRIA.**

(ERO'DIU.M.* Monogynous: the five perfect stamens alternating with five imperfect filaments: _Fruit_ beaked, separating into five monospermous _capsules_, each with a spiral _awn_, bearded on the inside. E.)

_E._ _cicutar'ium._ Flowers in umbels: _leaflets_ sessile, wing-cleft, blunt: petals entire: (stems procumbent. E.)

_Curt._—_Fl._ Dan. 986—_Kaiiph._ 11—_E._ _Bot._ 1768—_Fuchs._ 204—_J._ _B._ iii. 479
—_Dod._ 64. 1—_Lob._ _c._ 659. 1—_Ger._ _Em._ 945. 3—_Pet._ 65. 3—_H._ _Or._ v. 15. 9—_Ger._ _800._ 3 and 4—_Cam._ _Epit._ 601—_Riv._ _Irr._ Pent. _G._ _Robertianum._

(Whole plant more or less hairy, slightly viscid, scented. Stems several, often reddish, spreading, six or eight inches long. E.) _Leaflets_ more deeply cut in the summer than in the spring. _Blossom_ varying much in size even on the same plant. _Petals_ the two shorter ones sometimes spotted, or only one, or neither.

The various appearances of this plant at different seasons and soils, and its resemblance in many respects to starved specimens of _E._ _moschatum_, have occasioned many errors. The spots on the petals are not to be trusted, neither are the incisions of the leaflets. The musk odour of _E._ _moschatum_ is the most obvious distinction. In _E._ _cicutarium_ the leaflets are in general more deeply and more finely cut, and shoulder up close to the midrib with hardly any appearance of a leaf-stalk, but in _E._ _moschatum_ the leaf-stalks to some of the leaflets are sufficiently obvious, and in the larger specimens the edges of the leaflets are little more than serrated. _Flowers_ rose red.

Var. 2. Fine-leaved. _Leaflets_ wing-cleft, segments strap-shaped.

_Juniperinus_, _Thrips Juniperina_, and _Coccinella novem-punctata_ feed upon it. (Sir John Pringle entitles it a resinous and antiseptic vegetable, and recommends the burning the wood or berries of it, for the purpose of purifying the air in hospitals and other sick apartments. A simple watery infusion is a very useful drink for hydropic patients. In Germany the berries are bruised in sauce used for wild boar or pork. The Laplanders drink infusions of Juniper berries as we do tea. Charcoal made from the wood continues alive very long. The wood when burnt exhibits a fragrant odour-like incense, (properly the gummy exudation of the _Acacia vera_, and called _This_ from an Egyptian harbour, whence exported, but is likewise commonly prepared from the resin of the Norway spruce fir, and probably as good a substitute might be obtained from the Juniper. E.)

* (From _σφωνος_, a heron or stork; the seed having a long beak. E.)

Both this and the preceding have five glands of a dark colour on the outside of the anther-bearing filaments.


E. moschatum. Flowers in umbels; leaflets mostly on short leafstalks, unequally cut, (elliptical; stems prostrate. E.)

* (Several species have been highly extolled for stopping profusia, and hemorrhages. It is undoubtedly a valuable remedy among poor people in the country, and worthy of being introduced in the shops. Encyc. Brit. E.) Among the numberless instances of obvious Providential design and contrivance in the structure of the seeds and seed-vessels of plants, few are, perhaps, more remarkable, or more strikingly display themselves as the workmanship of an intelligent artificer, than that which we meet with in the seeds of Erodium cicutarium, moschatum, and some species of Geranium. The seeds of this genus surround the pistil at its base; each seed it covered with a distinct seed-coat peculiar to itself, which, after having inclosed the seed, runs out in the form of a narrow appendage or tail to the extremity of the style, to which it is slightly connected along its whole length, and which has five grooves or flutes to receive the five seeds with their appendages. Each of these appendages has the property of contracting itself into a spiral or screw-like form, when dry; and of again extending itself into a right line, when moist. In short, it is a spiral spring, which lengthens or contracts itself alternately, as often and in such proportion, as it happens to become wet or dry. The power firsts exerts itself when the seed and its appendage becomes dry, in consequence of arriving at maturity; when it gradually separates the seed from its parent plant. The seed, thus disengaged, is continually contracting and dilating itself, as the weather changes from wet to dry, and from dry to wet; and by this means is kept in motion, till it is either destroyed by the vicissitudes of the seasons, or meets with some crevice in the earth, or some light porous spot, into which it can insinuate itself, and from thence, in due time, produce a new plant. The minutiae of the mechanical structure and operations of this curious seed will be better understood by inspection, than by the most laboured description; and all its manoeuvres may be seen in a short space of time, by alternately moistening and drying it; which may be readily done, by putting a little water on the edge of a white stone or chinn plate, and removing it by turns from the dry to the moist, and from the moist to the dry part of the plate; or the changes may still more quickly be produced, by removing it from the wet to a fresh place, and drying it before a fire. I mention a white plate, because on that, the fine hairs which display themselves from the sides of the tail, as that contracts, and which act as fulcra, or feet, to assist and direct the seed in its motions, are most easily distinguishable. Dr. Arnold. (And thus does the admirable adaptation exhibited by the various phenomena of the vegetable kingdom appear almost to approximate the principle denominated instinct in the animal creation, preserving a consistent gradation, and manifesting a superintending care from the highest to the lowest order of created being. In truth

"There lives and works
A soul in all things, and that soul is God." E.)
MONADELPHIA. PENTANDRIA. ERODIUM. 799

Very like *E. cicutarium*; of an ambrosial scent. Linn. Whole plant more hairy than *E. cicutarium*; hairs viscid, particularly those of the calyx. Flowers more numerous, forming a roundish head. Pedicles shorter. Leaves, wings fewer, egg-shaped, sometimes only serrated, or jagged, rarely wing-cleft. Woodw. Stems swollen and crooked at the joints. Leaflets opposite and alternate, the terminal one three-cleft. Fruit-stalks with from four to ten flowers, as the calyx, thickly set with fine white hairs, ending in pellucid globules. Leaves unequal, ribbed, ending in fine points. Petals with three fibres. Seed-coat with strong yellow hairs. Blossom red or purple. Glands five, on the outside of the anther-bearing filaments, green.


(E. maritimum. Stems trailing: leaves heart-egg-shaped, scolloped, cut, rough: fruit-stalks one to three-flowered.

Dicks. H. S.—(E. Bot. 646. E.)—Pluk. 31. 4—Pet. 65. 1—H. Ox. v. 35. row. 3. f. 2.

Stems branched, lying close to the ground, three to nine inches long. Root-leaves on long stalks, spreading in a circle on the ground, hairy, variously cut and jagged, sometimes nearly lobed; stem-leaves similar. Fruit-stalks shorter than the leaves, compressed. Beaks very small, not exceeding half an inch in length. Leaf-stalks much longer than the leaves. Filaments spear-shaped. Anthers purple. Summits greenish-yellow. Blossoms pale red, small, one or more petals often wanting.


P. June—Oct.
DECANDRIA.

GERANIIUM.* (Monogynous: Fruit beaked, separating into five monospermous capsules, each with a long, naked, simple awn, (neither spiral nor bearded. E.)

(1) Blossoms regular; fruit-stalks single-flowered.

G. sanguineum. (Stalks single-flowered: leaves roundish, in five or seven deeply serrated trifid lobes. E.)


Stem hairy, from a foot to a cubit high. Leaves above rough, hairy underneath and on the edge. Fruit-stalks three inches long, hairy, with a knot and two floral-leaves about the middle. Relh. Calyx leaves oval, with membranous reddish edges, and terminated by a short red awn. Petals inversely heart-shaped, very large, equal, pale red, with deep red veins. Woodw. Whole plant set with white expanding hairs. Leaves opposite. Petals hairy at the base. (Capsules even, bristly at the summit. Seeds minutely wrinkled. Sm. The circumstance of the stem being upright or trailing in these species, affords no certain characteristic. E.)


P. July—Sept.

Var. 2. Leaves larger, paler, and more deeply divided. Ray.

Pet. 64. 10.

Banks of the Devil's Ditch, Newmarket, Relhan; and the left side of Dal­lingham Gap going from Canvas Hall, Cambridgeshire. Ray.

(Var. 3. All the parts of the plant evidently smaller; leaves strikingly more compact and star-like; peduncles much less hairy. Stem either trailing or upright. This plant preserves its peculiar appearance in gardens, as proved by Mr. Sole at Bath, and also by Mr. Curtis, who therefore judged it distinct, as did Ray. E.)

Dill. Eith. 136—Pet. 64. 11.

Flowers white, with reddish veins. Ray. The figure of Dillenius too large. Woodw. Grows intermixed with G. sanguineum in the Isle of Walney,

* (From γέρανος, a crane; the elongated permanent style resembling the beak of that bird. E.)
but the flower and every part of the plant is a third smaller. Mr. Atkinson.


(2) Petals notched, or cloven; fruit-stalks two-flowered. Perennial.

G. PYRENAICUM. Petals two-lobed, twice as long as the calyx: leaves kidney-shaped, lower ones with five to seven, upper with three trifid lobes.


Stem two or three feet high, hairy. Leaves hairy, the lower with mostly seven lobes; lobes with three-clefts, segments rounded or blunt, the middle one frequently scollopèd, the upper with mostly three lobes. Fruit-stalks longer than the leaves. Floral-leaves pointed, four to each fruit-stalk. Calyx leaves broad and short. Petals as long again as the calyx, deeply cloven; lobes roundish, entire. Woodw. Petals nearly divided down to the base and much larger than in G. pusillum, of a bright bluish purple. (Capsules keeled, not wrinkled, when young pubescent. Seeds without dots. Linnæus confounded this with his molle originally, (Sm.) and we have received the same as such from Professor Thunberg. E.)

Var. 2. Fl. alb. Blossoms white.

In Chelsea garden, growing as a weed. Curtis.


P. June—July.


Stem spreading, more compressed than in G. striatum. Petals flesh-coloured, with three purple scores, running half way to the point. Linn. Flowers before blossoming hanging down, afterwards upright. Stems (about eighteen inches high, slender, red, E.) smooth, shining, swollen at the joints. Leaves, the lower with five lobes, the upper with three opposite. Lobes spear-shaped, wide apart, entire at the base, irregularly serrated upwards, with three strong nearly parallel ribs, and with a few short stiff hairs arising from glands. Stipules and flower-stalks alike small, pointed. Fruit-stalks short. Calyx leaves awned, smooth. Petals red, scollopèd; scollops, blunt, regular. Woodw. (Capsules even, downy all over. Sm. E.)
Knotty Crane's-bill. Mountainous thickets in Cumberland. Ray; confirmed by Mr. Woodward. (Gathered in rather a hilly situation between Hatfield and Welwyn, Herts, by the Rev. Dr. Abbot. E. Bot. E.)

P. July—Aug.

G. sylvaticum. (Leaves about seven-lobed, deeply notched and serrated: capsules hairy all over: stamens awl-shaped, fringed. E.)


(Stems two or three feet high, branched, leafy. E.) Flowers (an inch over, light purple, veined; petals entire, or slightly notched, E.) before blossoming hanging down, afterwards upright. Leaves slightly hairy, the lower with seven lobes, middle with five, upper with three. Fruit-stalks with sometimes more than two flowers. Floral-leaves awl-shaped, small. Calyx and fruit-stalks very hairy. Woodw. Hairs on the flowering stems, edges of the leaves, and on the calyx, ending in small globules. Leaves, segments terminating in small fleshy glands: the upper sessile. Calyx ribbed, membranous at the edge, ending in fine points.

A dwarf variety with unusually large flowers was remarked in Scotland by Lightfoot.


(3) Petals notched or cloven: fruit-stalks two-flowered. Annual.

G. dissectum. Fruit-stalks shorter than the leaves: leaves in five, three, or many-cleft, deeply divided lobes: petals notched: capsules hairy: (seeds reticulated. E.)

Curt.—(E. Bot. 753. E.—Fl. Dan. 936—Vaill. 15. 2—Plot Off. 9. 4, at p. 146—Pet. 64. 6 and 7—Fuchs. 207—J. B. iii. 474. 1—Blackw. 38. 2.

(Stems weak, spreading, or sub-erect, leafy, hairy, twelve to eighteen inches long. E.) Leaves divided down to the leaf-stalk into five, and these again into three, segments strap-shaped, usually entire, but the middle one sometimes sub-divided. Fruit-stalks very short. Flower-scales minute. Woodw. Calyx leaves three-ribbed. Seed-coats beset with glandular hairs. Hollefear. Stem hairs pointing downwards. Calyx hairs viscid. Curt. Calyx awned. Flowers red, (rather small, from their short stalks apparently sessile among the leaves. E.) Anthers blue.


G. columbri-num. (Fruit-stalks thrice as long as the leaves, which are in five, very deep, laciniated segments: calyx five-sided; capsules quite even and smooth; seeds reticulated. E.)
**MONADELPHIA. DECANDRIA. GERANIUM. 803**

_E. Bot. 259—Vaill. 15. 4—Pet. 64. 8._

*Calyx* large, ventricose. (_Stems_ slender, mostly decumbent, hairy. _Hairs_ laid flat. _Leaves_ a little hairy on both surfaces, divided to the base. _E._)

*Calyx* somewhat hairy, membranous at the edges, terminated by short awns reddish at the ends. _Petals_ marked with three lines; the little tooth between the lobes not very pointed, reddish blue. _Stamens_ with ten green glands at the base.


_A. June—Aug_

(G. _pusillum_.) _Fruit-stalks_ generally two-flowered: _leaves_ kidney-shaped, palmate, cut, downy: _capsules_ keeled, even, hairy: _seeds_ without dots.


_Root_ throwing out many cylindrical, much branched stems, varying in length according to situation and soil; procumbent when growing alone, but upright when among other plants, and frequently attaining the height of two feet. _Stem_ and _branches_ just sensibly downy and soft to the touch. _Leaves_ kidney-shaped, deeply lobed, hairy, especially on the margin, and veins on the under surface: _hairs_ expanding. _Root_ and lower _stem-leaves_ generally seven-lobed; upper _leaves_ five-lobed, more deeply divided, opposite, unequal; _lobes_ wedge-shaped, three-cleft, blunts. _Floral-leaves_ four, awl-shaped, hairy. _Fruit-stalks_ alternate, axillary, upright. _Calyx_ hairy, awnless. _Petals_ inversely heart-shaped, bluish purple, notched; _claws_ upright, about the length of the _calyx_. _Stamens_ distinct at the base, five with and five without _anthers_. _Seed-coats_ even, covered with short bristles pointing upwards. _Seeds_ smooth.

_Varies with leaves_ alternate towards the tops of the stem and branches, and with three or sometimes four _flowers_ on a _fruit-stalk_. Robson.

(In general habit scarcely to be distinguished from _G. molle_, but its _capsules_ being neither wrinkled nor free from hairiness, clearly discriminate the species; its _flowers_ also much smaller, with only five _stamens_ bearing _anthers_. _E._)

(A very diminutive variety is represented as _G. humile_, Cavan. Diss. 83. 2. R. Syn. 16. 2. a. b. _G. columbinum humile, flore caeruleo minimo_. High ditch banks. At Low Layton, early in spring. Dillenius. (By the side of the foot-way at the sixth mile stone from the standard on Cornhill on the Mitcham road, July, 1824. Mr. Griffith. _E._)

**SMALL-FLOWERED CRANE'S-BILL.** _Welsh_: Pig yr Aran mánfloodewog. _G. pusillum_. Linn. _G. malvcefolium_. Scop. _With_. _G. parviflorum_. Curt. _G. columbinum majus, flore minore caeruleo_. R. Syn. Hedges and waste places, as common about Darlington as _G. molle_. Mr. Robson. (Between Dorking and Betchworth Park; and on Hebburn Quay, Durham. Mr. Winch. Above the beach between Aberfraw bridge and the


Stem hairy, hairs expanding. Trailing when growing alone, upright when amongst other plants. Blossoms sometimes almost as large as in G. pyrenaicum. Curt. (usually much smaller. E.) Flowers purplish red; sometimes white. Ray. Seeds marked with transverse wrinkles; in G. rotundifolium they are dotted; the petals entire, but cloven in G. molle. Afzel. (Stems variable in length, from a few inches to a foot. E.)


(4) Petals entire; fruit-stalks two-flowered. Perennial.

G. pheum. Fruit-stalks solitary, two-flowered, opposite the leaves: calyx somewhat awned: (capsule keeled, hispid at the base, wrinkled above. E.)

(E. Bot. 322. E.)—Fl. Dan. 987—Kniph. 5—Walc.—Clus. ii. 99. 1—Ger. Em. 942. 3—Park. 704. 3.

Stems upright, nearly cylindrical, woolly towards the base, from eighteen inches to two feet high; joints large, tinged with red. Leaves, the lower with six or seven lobes, the middle ones with four or five, the uppermost three or four; lobes serrated. Fruit-stalks forked, with two flowers. Calyx thick set with short hairs, terminated by little globules, interspersed with a few long, soft, woolly, hairs; leaves with three longitudinal lines, and terminated by little blunt callous substances. Petals wavy, egg-shaped but angular, dark chocolate coloured, shining; claws greenish white, marked with five lines. Filaments purple, broad and hairy at the base, slightly united by means of five green glandular substances placed on the outside of them; after flowering turned outwards. Anthers whitish, the seams marked with a purple line. Pollen greenish yellow. Germen woolly. Style green, shorter than the stamens till the time of flowering.


P. May—June.

**Monadelphia. Decandria. Geranium.** 805

**Stem** two to three feet high. **Leaves** with seven to five divisions; segments lobed, deeply toothed, hairy, with strong ribs underneath; those of the upper leaves almost strap-shaped. **Leaf-stalks** long. **Floral-leaves** four, spear-shaped, pointed. **Fruit-stalks** very short, downy. **Petals** very large, blue, or white. Woodw. **Stems** forked, tinged more or less with red; hairs on the upper branches white, and terminated by minute dark red globules. **Leaf-stalks** nearly central. **Leaves** with five to seven divisions; segments wing-cleft, which are more or less jagged and toothed. **Calyx** ribbed, membranous at the edges, terminated by points, thick set with fine white hairs tipt by scarlet globules. **Petals** inversely egg-shaped, with seven to nine whitish lines, and a little hairy at the base. **Filaments** very broad and somewhat concave at the base. **Anthers** purple. **Pollen** yellow.

**Crowfoot-leaved Crane’s-bill.** (Welsh: *Pig yr Aran y wirgwalludd* E.) Moistish meadows and pastures. P. June—July.*

(5) **Petals entire:** **fruit-stalks** two-flowered. **Annual.**

**G. lucidum.** **Calyx** pyramidal, the angles raised, wrinkled: leaves roundish, five-lobed, (capsules wrinkled. E.)


**Stems,** (spreading, brittle, about a foot long, E.) shining, yet slightly hairy. **Leaves** the same, kidney-shaped, with mostly five triplicate lobes: the middle one with usually three scollops, the side ones entire; in rocky situations only half an inch broad, and not so much divided. **Pedicels** wide apart. **Flower-scales** very minute. Woodw. Whole plant often assuming a dark purplish red colour like *G. Robertianum.* **Stem** branched. **Calyx** not quite equal. **Petals** rose red, small.

**Shining Crane’s-bill.** (Welsh: *Pig yr Aran disclaer.* E.) **Walls,** roofs, rocks, dry banks, and shady places, in a sandy soil, and frequently among corn on a chalky soil, and in exposed situations, as near Stamford; Bury, Suffolk; common in the North. Mr. Woodward. (At Ormthwaite, Keswick, Matham, and Dunkeld. Mr. Winch. About Folkstone. Mr. G. E. Smith. On rocks at Great Malvern; and about Warwick. Donolly castle, Argyleshire. Dr. Bostock. Tyfry, Anglesey. Welsh Bot. Abundant about the entrance of Peak’s Hole, Derbyshire; road sides about Brislington and Stockwood, near Bristol; Cheddar cliffs, Somersetshire. E.) A. June—Aug.

**G. rotundifolium.** **Petals** entire, as long as the calyx: **stem** spreading: **leaves** kidney-shaped, cut: **capsules** even, hairy: **seeds** reticulated.


* (The large and elegant blossoms have recommended this plant to garden culture, which has produced flowers both purple and striped. Though our British species cannot boast the splendid display of rich colours exhibited by the innumerable tribe of exotic *Geraniums,* they partake of that elegance with which the name is justly associated, and are fit ornaments of the wilderness or rock-work. They attract a variety of flies, particularly those of the genus *Empis.* On this and some other kinds of Geranium, may be detected the minute parasitic fungus *Uredo Gerani,* figured and described in *Grev. Scot. Crypt.* 8. E.)
Stem widely dividing, cylindrical, downy, viscid. Leaves rounded, velvety, somewhat viscid, especially underneath, lobed, with a red point in the hollows. Leaf-stalks reddish brown. Calyx awned, wrinkled, expanding, with three longitudinal wrinkles. Petals wedge-shaped, very blunt, with three reddish brown scores at the base, the under surface not lying upon, but raised from the calyx. Anthers yellow. Linn. Stipule spear-shaped; floral-leaves always of a deep red. Woodv. Seeds dotted. Flowers purplish flesh colour, sometimes white. (All the leaves opposite. Sm. E.)


Obs. Should the characters attempted to be principally derived from the seeds and seed-coats or capsules prove unsatisfactory or unavailable, G. columbinum, pusillum, molle, and rotundifolium, whose distinctions have occasioned much trouble, may be clearly understood by attending to the following circumstances.

G. columbinum. Its awned calyx distinguishes it from molle and pusillum, and its notched petals from rotundifolium.

—pusillum. Its awnless calyx distinguishes it from columbinum, its hairy seed-coat from molle, and its notched petals from rotundifolium.

—molle. Its awnless calyx distinguishes it from columbinum, its hairless and wrinkled seed-coat from pusillum, and its notched petals from rotundifolium.

—rotundifolium. Its entire petals and dotted (or, according to Smith, peculiarly reticulated, E.) seeds, distinguish it from the other three.

(Consult also an ingenius paper in Gent. Mag. p. 487; 1797. E.)

G. Robertia'num. Leafits by fives or by threes, lobes wing-cleft: calyx decangular: (capsules rugose. E.)

Curt.—Walc.—Blackw. 480—(E. Bot. 1496. E.)—Lonic. i. 152. 1—Fl. Dan. 694—Dod. 62—Lob. Obs. 375. 1, and Ic. i. 657. 2—Ger. Em. 939, and 945. 5—Park. 710. 8—H. Ox. v. 15. 11—Pet. 65. 5—Fuchs. 206—Trag. 108—J. B. iii. 480—Matth. 858.

Plant strong scented, beset with pellucid hairs, but becoming smoother as it grows older. Upper leaves divided into three parts, the lowermost into five; leaflets united at the base, wing-cleft; segments terminated by little sharp thorns. Calyx awned, the angles more evident as the seeds ripen. Petals, claws long, border a little ragged, with three faint white lines. Filaments not very evidently united. Anthers red. Pollen yellow. Style hairy. Summits fine crimson. Stems branched, spreading, (about a foot long; towards autumn, as also other parts, tinged with red. Blossom red, sometimes white.

(Salisbury noticed the two curious bundles of silvery threads arising from the upper part of each side the cleft of the corcule, and attached at the opposite extremity to the stigma; so that when, as in G. lucidum, the beak by its elastic force flings the corcule from its receptacle, it still hangs suspended by these two appendages, which are not much unlike the coma attached to the seeds of Asclepiadeae. Hook. E.)

Var. 2. Fl. alb. White-flowered.
Road from Litchfield to Stafford, a little beyond the fourth mile stone, plentifully. Mr. Saville. Den of Portend, near the Loch of Monteith. Mr. Brown. Near Exeter. Mr. Martyn. (A large bed of it on the shingles near the mouth of the Ystwith, Cardiganshire. Mrs. Bowyer Adderley. E.)


Pet. 65. 6.


POLYANDRIA.

ALTHÆA.† Calyx double, outer nine-cleft: Capsules numerous, monosperous.

A. officinalis. Leaves undivided, slightly five-lobed, soft and downy.


Stem upright, a yard high or more, cottony, cylindrical, somewhat branched. Leaves egg-spear-shaped, woolly, very soft, velvety; the upper smaller, with generally three imperfect lobes, serrated, with mostly five ribs underneath; the lower larger, with seven ribs, serrated, or rather scolloped. Flowers rather large, from the bosom of the leaves, on fruit-stalks, in a kind of panicle. Flowers-scales many cleft, bristle-shaped. Petals nicked, flesh-coloured. Relh. Leaves on leaf-stalks, angular. Calyx, the outer with sometimes eleven or twelve segments. Petals fringed at the base. (Pubescence stellate. E.)


* (The proper name after that of a celebrated Curator of the Oxford Botanic garden. E.)
† (As a vulnerary and abstergent, beneficial in hemorrhages, this, and some other species, have been long in repute. In North Wales, particularly in the neighbourhood of Rhydar, this plant has acquired much celebrity as a remedy for nephritic or calculous complaints. A handful of the dried leaves may be infused as tea, and a teacup full taken occasionally. Mr. Watt. The leaves, while yet green, are subject to a pretty little parasite, Dothidea Robertiana; "in scattered clusters, very minute, dot-like, hemispherical, black, opening at length at the apex." Grev. Scot. Crypt. 146. E.)
‡ (From ἀλθεῖν, to heal; alluding to its sanative virtues. E.)
§ (From ἀλθεῖν, to heal; alluding to its sanative virtues. E.)

The whole plant, particularly the root, abounds with mild mucilage. The root boiled is much used as an emollient cataplasm, and an infusion of it is very generally
808 MONADELPHIA. POLYANDRIA. MALVA.


Stems spreading, rough with expanding hairs. Calyx, the outer with eight segments, inner the length of the blossom, sharp-pointed. Blossom pinky white, scoloped. Linn. Root-leaves kidney-shaped. Hal.

ROUGH ALTHEA. This species was first announced to the British Botanist by the Rev. Jelinger Symons in his Synopsis, as discovered in a field near Cobham, by Mr. Jacob Rayer, in 1792. By the kindness of Mr. W. Christy, we have been favoured with specimens gathered on the same spot in 1827 by Mr. W. Peete. P. E.)

MALVA.* Calyx double, outer three-leaved: Capsules eight or more, whorled, monospermous.

M. rotundifolia. Stems short, prostrate: leaves heart-shaped, circular, plaited, indistinctly five or seven-lobed: fruit-stalks when in fruit declining.

Curt.—(E. Bot. 1092. E.)—Fuchs. 508—J. B. ii. 549. 2—Trag. 369—Dod. 653. 2—Lob. Obs. 371. 2, and Jc. i. 651. 1—Ger. Em. 930. 2—Lonic. i. 136. 2.

Stem and branches lying close to the ground. Leaves serrated. Leaf-stalks very long. Leaf-scales in pairs, spear-shaped, fringed. Fruit-stalks much shorter than the leaves, with one flower. Blossom purplish, or white, with purple veins. Woodw. Petals twice as long as the calyx.

(Var. 2. M. pusilla. E. Bot. 241. M. rotundifolia Sm. By Hooker and Greville scarcely deemed a permanent variety. M. parviflora. Huds.; not of Linn. Petals so diminutive as scarcely to exceed the calyx. E.)


M. sylvestris. (Stem erect, herbaceous: leaves five or seven-lobed, toothed: outer calyx leaflets partly united at the base: leaf and flower-stalks hairy. E.)

Curt.—(E. Bot. 671. E.)—Blackw. 22—Woode. 54—Fuchs. 509—J. B. 949. 1—Ger. 785. 1—H. Ox. v. 17. 8—Dod. 653. 1—Lob. Obs. 371. 1, and Jc. i. 605. 2—Ger. Em. 930. 1.

prescribed in all cases wherein mild mucilaginous substances are useful. (It is further recommended in sharp defluxions upon the lungs, hoarseness, dysenteries; and likewise in nephritic and calculous disorders; not that it has any peculiar power of dissolving or expelling the calculus, but by lubricating and relaxing the vessels, it procures a more free and easy passage. Of several officinal preparations from this herb, the syrup alone is now retained. Mallowes have not only been long celebrated for assuaging wounds, but were used to decorate the graves of our ancestors: and so indispensable were they deemed to each domicile of the living, that, as a matter of decided ill omen, the poet exclaims,

"Alas! when Mallowes in the garden die." E.)

* (Possibly from malliaceae, to soften; in reference to its emollient and relaxing qualities; though Gerard deduces it from the Chaldee name Malluach, as growing among rubbish abounding in saltpetre. E.)
Stem, two or three feet high, more or less upright, rough, hairy, nearly of the same thickness throughout, rather woody. Leaves with five lobes, rarely six or seven, unequally serrated, hairy on both sides, with a dark purple stain near the insertion of the leaf stalk. Fruit-stalks triangular, hirsute. Calyx outer, leaves spear-shaped; both inner and outer hairy without, smooth within, toothed at the edges, and the teeth terminating in long hairs. Petals large, deeply notched, purple, with three or four darker streaks. Summits eleven or twelve. The colour of the flowers varies with more or less of a bluish cast, and the leaves are liable to be variegated with yellowish blotches.

**Common Mallow.** (Irish: Hocus Fehain. Welsh: Hoccus, &c. cyffredin. E.) Hedges, road-sides, and amongst rubbish. Its trivial name ill accords with its usual places of growth in this country, for I do not recollect ever having found it in a wood.

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* (Professor Davy observes that the fibres of all kinds of Mallows are particularly beautiful, especially of this species. They are finer than camel’s hair, and there is no difficulty in procuring them. Month. Mag. vol. 29. This species has been particularly recommended as a substitute for hemp, according to a prospectus of the Economic Institution. The thread procured by maceration is said to make more beautiful cloths and stuffs than even flax. From the *Malva*, likewise, a new sort of paper, particularly suitable for the hanging of rooms has been manufactured in France. Our native kinds merit more attention from our ingenious artists than they have hitherto engaged, though to the agriculturist they are little better than cumber grounds. To the admirer of Flora, even in her most homely attire, “The Mallow purpling o’er the pleasant sides Of pathways green,” will be more than tolerated. The leaves and flowers yield a glutinous and emollient juice, sometimes applied externally; but *Althaea officinalis* possesses the same qualities in a more eminent degree. These plants were formerly considered as a wholesome ingredient in other food, and some foreign species are still thus used in China, Egypt, and other countries. Horace likewise alludes to the same purpose,—

—— “Me pascunt Olivae, 
Me Cichorea, levesque Malve.”

And again,

“Malve salubres corpori.”

*Apion* (Curculio) *Malve*, is extremely common on the Mallow, and is found upon no other plant. Kirby. It also affords nutriment and shelter to *Apion Oxyrum*, and *A. aneurin*, Hallica rufipes, and Noctua clavaria.

Though this may not be a fit place for physiological description, especially if extending beyond the plant under immediate inspection, we cannot entirely omit allusion to discoveries, which, if proved to be correct, may lead to results the most important. Early microscopic observers have professed to be acquainted with the apparent metamorphosis of animalcules into vegetables. The accounts of certain seeds possessing spontaneous motion, and then sending forth roots and becoming fixed vegetables, were not unknown to Mr. Ellis, author of the work on Coralines, who has given a satisfactory solution of the phenomenon. He says, “The minute seeds which evolve under water from fungi and mosses, and appear to have spontaneous motion, derive that motion from more minute animalcules in the water, which, by pecking at the seeds, moved them about in various directions, while the little animals were scarcely visible, till the food they had eaten discovered them.” In 1745, Mr. T. Needham published a volume, in which he not only minutely and accurately describes the action of the pollen of plants, but has correctly delineated it in the act of ejecting the particles contained within it. It must be recollected that the farina, or pollen, is supposed to perform the function of fecundating the seed; and when seen through a microscope, every particle appears a little bag, containing a meal yet finer. The grains of the pollen of *Geranium* do not exceed the 400th.


(Two or three feet high. Bloss. large and handsome, rose-coloured, one or two together from the axils of the terminal leaves. E.) In M. alcea the calyx has a protuberating ring at the base, and the outer cup is formed of three egg-shaped leaflets, but M. moschata has no ring at the base of the calyx, and the leaflets are spear-shaped. Curt. M. moschata may also be distinguished by a musk-like smell proceeding from the herbage, but this is not always perceptible, and in this case it has been mistaken for M. alcea, not one of our natives.


(A variety with white blossoms has been observed by Mr. Dillwyn in fields near Eyethorn, in Kent, Bot. Guide; occasionally introduced into gardens. E.)

LAVATERA.* Cal. double, the outer three-cleft: Capsules many, equal in number to the summits, placed in a circle, single-seeded.

L. arborea. Stem arborescent: leaves with seven angles, downy, plaited: fruit-stalks crowded, axillary, single-flowered.

part of an inch in diameter; the granules within do not exceed the 10,000th part of an inch. The pollen of our present species (the Mallow) is surrounded by minute spines, and the action of this pollen in water is represented, (Fig. 1 and 2, copied from Needham, in Mag. Nat. Hist. vol. ii. p. 2.) as though the case or shell emitted through a small aperture a train of minute globules, contorting themselves from one side to the other. These observations stand confirmed by Mr. R. Bakewell: but that truly philosophical observer, Mr. R. Brown, has recently promulgated microscopical experiments to prove, not merely the general existence of active molecules in organic, but even in inorganic bodies; insisting upon no less a novelty than that the ultimate particle obtainable from all bodies, organic and inorganic, "has inherent motion, like unto vital action." His observations were extended from grains of pollen immersed in water to particles of metallic and mineral substances, until he was induced to believe that he had detected even still more minute molecules in rapid oscillating motion. The elementary molecules of organic bodies have been admitted by Buffon, Needham, Wrisburg, Müller, and Dr. Milne Edwards; and in 1814, Dr. Drummond, now Professor in the Belfast Academical Institution, detected active molecules in the eyes of fishes (vid. his Thesis "De Oculi Anatomia Comparativa," and Tr. R. Soc. Edin.) but Mr. Brown finding the molecules to exist in various animal and vegetable tissues, whether living or dead, at length became convinced that even common dust or soot is "entirely composed of these (perhaps ultimate) molecules, possessing visible rapid, spontaneous, and inherent motion." Certain sceptical philosophers have been inclined to attribute these extraordinary appearances to vibration, external agitation, optical deception, or pre-existing animalcules; but well knowing from personal experience the extreme fidelity and accuracy of our friend Mr. Brown, we shall only presume at present to conclude,—

"That things improbable may still be true." E.)

* (Conferr'd by Tournefort in honour of Lavater, a physician of Zurich; (not the physiognomist.) E.)
MONADELPHIA. POLYANDRIA. TAXUS. 811


Stem scarred, in the smaller plants like that of a cabbage, but taller; in the larger four to six or eight feet high, and as much as four inches in diameter. Leaves with seven, five, or three angles; soft as velvet. Flowers mostly in pairs. Calyx, outer much larger than the inner; segments broad, blunt, sometimes notched. Blossom purplish red, with dark blotches at the base of the petals. The cylinder of united filaments woolly at the base.

SEA TREE-MALLOW, or VELVET-LEAF. (Welsh: Mor Hoceysen. E.)


TAXUS.* B. and F. flowers on different plants: Bloss. none:

B. Anthers target-shaped, eight-cleft.
F. Style none: Seed one, surrounded at the base by a pulpy receptacle; upper half naked.

T. RACCATTA. Leaves solitary, strap-shaped, two-ranked, pointed, aggregate: receptacle of the stamensiferous flowers somewhat globular.


(Bark reddish, peeling off. Branches horizontal. Leaves very entire, dark green, smooth, shining, evergreen. Blossoms axillary, scattered, sessile, solitary; floral leaves tiled, membranous. Berries or Drupes very singular, proceeding from a receptacle which half covers and protects the seed, coming to perfection the second year; concave, pulpy, sweet, viscid, when ripe of a beautiful red and waxy appearance.


* (From τσοτο, a bow; it being long celebrated as the best material for making those formidable implements, E.)
Bot. Indigenous to some of the limestone eminences of Gloucestershire. One specimen in particular occurs in Stinchcombe wood, standing nearly on the verge of the lofty elevation overhanging the village. In the reign of Charles the First, this tree, still vigorous, afforded a three days' and nights' concealment to an ancestor of the writer, during the plunder and conflagration of Melksham's Court, his residence. Mr. Oade Roberts. Many primeval Yew trees are scattered over the Clee hills, Salop, and the cliffs of Cheddar, Somerset. E.) T. March—April.*

"This tree grows best in a moist loamy soil. On bogs or dry mountains it languishes. It bears transplanting even when old. It is often planted to make hedges; and as these hedges admit of clipping, they form excellent screens to keep off the cold winds from tender plants. (Its tonsile properties, for geometrical gardening, have been too generally rendered available for uncouth shapes. A most favorable specimen of this obsolete art is still preserved in the pleasure-grounds of Gormanston Castle, Meath. The outer walls, and open arches, towards the centre being of clipped Yew, and the space, so surrounded, answering to the quadrangle, laid out as a flower-garden. But all that is formal and unnatural being obnoxious to genuine taste, however such ingenious mutilations may excite the admiration of the vulgar, the more refined observer will rather exclaim,

--- "Doth a garden trimm'd and tortured by Hands that can dextrous wield the lopping knife Show lov'lier than nature's free wild grounds?"

Of the Yew there is a variety, with short leaves; also one with striped leaves, valued among the variegated tribes. The Irish Yew, of the nurseries, is still more peculiar, never branching out or spreading, but aspiring like a cypress, with leaves larger, somewhat recurved, the plant bearing berries when only eighteen inches high. E.) The wood is hard, smooth, and beautifully veined with red. It is converted into bows, axle-trees, spoons, cups, cogs for mill-wheels, and flood-gates for fish ponds, which hardly ever decay, (bedsteads said to deter bugs; and gate posts lasting as those of iron. E.) The berries are sweet and viscid. Children often eat them in large quantities without inconvenience. Swine and field-fares are fond of them. They die without agony, or any of the usual symptoms of the vegetable poisons. The same quantity of the dried leaves had been given the day before without any effect. Percival's Essays, iii. Sheep and goats eat it; horses and cows refuse it. Linn. But there are instances of both having been killed by eating it, branches having been found in their stomachs; Gent. Mag. lvi. 941; and sheep are said to have been killed by browsing upon the bark. I suspect that the loppings in a half dried state are most detrimental to cattle. (In August, 1822, E. Nicholls, Esq. of Ringmer, Sussex, turned a horse into a field in which were some sprigs of Yew tree, which had been clipped off in the course of the day. The horse eat of these, afterwards drank at a pond, and quickly died. In January, 1823, in a deep snow, Messrs. Woodward, of Chelmsford, in Kent, turned out three healthy horses into a small close, adjoining which was a Yew tree. In three hours they were found dead, with Yew in their stomachs. It is believed to be equally fatal to sheep. That the very shade of the Yew tree ("Taxique nocentes: Virg.) should prove mortiferous, may probably be deemed a mere fable, though currently related by the ancients, whence it is inferred that some of those writers at least described a different tree. Evelyn states, "Notwithstanding what Pliny reports concerning its shade, (vid. Martyn's Virgil, n. 166;) the stories of the air about Thasius; the fate of Cantiavulescu, mentioned by Caesar, and the ill character which the fruit has vulgarly obtained in France, Spain, and Arcadia, I shall venture to observe"

"Quam multa arboribus tribuantur crimina falso?"

Theophrastus was, however, so far correct, "Si jumenta folia comederint, emoriuntur." Four ounces of sweet oil, taken at two doses, in warm ale, and after that a pint of salt and water, have been found to relieve cattle thus poisoned. E.)—Several mountainous places are named in the Gent. Mag. 1793, p. 101, in which it doubtless grows wild. (It is supposed, also, in former ages, to have prevailed in Ireland as an aboriginal, by the
MONADELPHIA. POLYANDRIA. PINUS. 813

PINUS.* B. and F. flowers on the same plant: Bloss. none.  
B. Calyx scales forming a bud, expanding: Anthers naked, sessile, adhering to the scales.

numbers discovered in a fossil state; though at present there are said to be none but planted Yews in that country. E.) Those trees situated in the accessible parts of the mountains are generally cut down and brought to market for chairs and steps of ladders, for which use their durability renders them valuable, (while others, unassailable by man, for a succession of ages, bid defiance to

"The raging tempests and the mountains' roar,  
Which bind them to their native hills the more."

Strutt, in 'Sylva Britannica,' gives some admirable representations of these interesting trees: as the very ancient ones at Fountain's Abbey, Yorkshire, supposed to have existed anterior to the foundation of the monastery, or at least co-eval with that date (1128.) Of six remaining, one measures 26 feet in girt at 3 feet from the ground: and the Fortingal Yew, in the church yard, amid the Grampian mountains, though now disjoined by the lapse of many centuries, when entire, according to Pennant, was 56 feet in circumference. At Martley, Worcestershire, grows one twelve yards round; and an extraordinary tree of the same kind may yet be seen in the palace garden at Richmond, planted three days before the birth of Queen Elizabeth. But still more interesting is the justly celebrated Yew tree at Ankerwyke near Staines, (fifty feet high, and in girt three feet above the ground twenty seven feet), to which, and the current tradition connected therewith, as standing in the vicinity of Runnymede, Fitzgerald thus alludes:

"Here patriot barons might have musing stood,  
And plann'd the charter for their country's good:  
* * * * *  
Here, too, the tyrant Harry felt love's flame,  
And, sighing, breath'd his Anna Boleyn's name;  
Beneath the shelter of this Yew tree's shade,  
The royal lover woo'd the ill-stai'r'd maid."

But for an unrivalled poetical description of extraordinary Yew trees we are indebted to the muse of Wordsworth.

"There is a Yew tree, pride of Lorton Vale,  
Which to this day stands single in the midst  
Of its own darkness, as it stood of yore,  
Nor loth to furnish weapons in the hands  
Of Umphraville or Percy, ere they marched  
To Scotland's heaths, or those that crossed the sea,  
And drew their sounding bows at Azincour;  
Perhaps at earlier Cressy, or Poictiers.  
Of vast circumference, and gloom profound,  
This solitary tree! a living thing  
Produced too slowly ever to decay;  
Of form and aspect too magnificent  
To be destroyed.—But worthier still of note

* (Etymologists often fail to elucidate their subject, by limiting their researches to the more classical languages, and deriving their most plausible conjectures from such a source. In reference to the present name, is usually given the Greek synonym πιτρης, or Pitch-tree; but De Theis, taking a wider range, deduces Pinus far more satisfactorily from the Celtic, and shews it to exist variously modified in all the dialects of that ancient language, its basis being pinu or pen, a mountain or rock; whence, among numerous exemplifications, we have the Apennines, the Pennine Alps, and in Portugal the Penha convent situated on the rocky summit of a mountain. The Gaelic Pinnwidden, like the German Pynbaum, means precisely a mountain tree, than which nothing can be more appropriate. E.)
F. Calyx scales forming a cone, two flowers in each scale: Pistil one: Nut of one cell, without valves, bordered with a membrane.

Are those fraternal four of Borrowdale,
Joined in one solemn and capacious grove;
Huge trunks! and each particular trunk a growth
Of intertwined fibres serpentine,
Upcoiling, and inveterately convolved:
Nor uninformed with phantasy, and looks
That threaten the profane; a pillared shade,
Upon whose grassless floor of red-brown hue,
By sheddings from the pining umbrage tinged
Perennially—beneath whose sable roof
Of houghs, as if for festal purpose, decked
With unrejoicing berries, ghostly shapes
May meet at noontide: Fear, and trembling hope,
Silence, and foresight—death the skeleton,
And time the shadow, there to celebrate,
As in a natural temple, scatter'd o'er
Withaltars undisturb'd of mossy stone,
United worship; or in mute repose
To lie, and listen to the mountain-flood
Murmuring from Glenamara's inmost cave."

The cause of the general introduction of the Yew tree into cemeteries has been differently surmised. The following explanation seems sufficiently probable. The sacred, funeral Yew, well calculated to give solemnity to the village church-yard, and from its unchanging foliage and enduring nature, fit emblem of immortality, has ever been associated with religious observances. When anciently it was the custom, as it still is in Catholic countries, to carry palms on Palm-Sunday, the Yew was substituted on such occasions for the palm. Two or three trees, the usual number growing in church-yards, were enough for such purposes. Of these, one at least was more especially consecrated, and was then estimated at twenty times the value of less hallowed trees of its own kind, and double that of the finest oak, as appears from ancient record. An extract from Caxton's directions for keeping Feasts all the year, printed in 1483, may be considered decisive on this subject. In the lecture for Palm-Sunday, the writer, after giving the scripture account of our Saviour's triumphant entrance into Jerusalem, proceeds thus: "Wherefore holy church this day makest solemn procession, in mynd of the procession that Crist made this day. But for encheson that we have not olve that bringeth grene leef, algate therefore we take Ewe instede of palme and olvye, and beren about in procession, and so is this day called Palme Sunday." In confirmation, we may add, that the Yews in the church-yards of East Kent are at this day called palms. Small branches were likewise wont to be borne at funeral solemnities, and cast into the grave. It is remarkable that bodies interred beneath the shade of trees, return to their pristine dust in a very few years, perhaps one third less time than when deposited in the open ground. This rapid decay may be in some degree occasioned by the perpetual percolation of concentrated moisture, and the comparative absence of sun and air. That our mortal remains should be laid to rest beneath such natural canopy, seems almost an inherent propensity in human nature.

"This branch of Yew, this branch of Yew!
How many a fond and tearful eye
Hath hither turned its pensive view,
And through this dark leaf sought the sky.
How many a light and beauteous form,
Committed to its guardian trust,
Safe housed from life's tumultuous storm,
Hath gently melted into dust;
While mindful love, would long renew
Its grief, beneath this branch of Yew."
MONADELPHIA. POLYANDRIA. P. sylvestris. Leaves in pairs, rigid: cones egg-conical, mostly in pairs, as long as the leaves: scales oblong, blunt.

More meet to deck the lowly grave
These living plumes by nature spread,
Than sable tufts that proudly wave
Their pompous honours o'er the dead.
The oak hath doffed his leafy pride,
As frowning winter passed him by;
The grass hath shrunk, the flowers have died,
Beneath bright summer's burning sky;
But all to love and sorrow true
Unbleenching waved this funeral Yew.
I had not from the mounds below
Thus born their beauteous canopy,
But life has many a secret throe,
And sad remembrance many a sigh;
And oh! 'tis sweet in hours of toil,
Amid the throb of straggling grief,
To rest the aching eye awhile
Upon this dark and feathery leaf;
And think how softly falls the dew
On peaceful graves beneath the Yew.
This branch of Yew! its tints deride
The sparkling glow of early bloom;
It tells of youth and martial pride
Commingling with the dreary tomb.
It throws upon earth's pageantry
A shadow deep as closing night,
And sweetly lures the awe-struck eye
To rays of life and fields of light;
And stars of promise burst to view.
Through thy dark foliage, mournful Yew!"

A statute of Edward I. (1307), contains the following passage; "Ne Rector arbores in cemetrio prosternat: " which must have referred chiefly to Yew trees, thus protected, partly to prevent their injuring cattle, (as unfit for general exposure from their noxious qualities), but chiefly with the intentions above specified; and possibly, (though by no means a primary consideration as sometimes imagined), as ensuring an essential supply to the archer in time of need. The use of Yew for this latter purpose is of very ancient date:

"Ityraeos Taxi torquentur in arcus." Virg.
"The sacred Yew, so fear'd in war."

And Homer describes the inhabitants of Crete, as
"Cydoniaus, dreadful with the bended Yew."

But no nation was more terrible by the aid of this weapon, than our athletic ancestors,
"Who drew,
And almost join'd, the horns of the tough Yew;"

And again,
"The English obedient to the bender's will." Spenser.

Indeed so much strength was requisite in drawing these long-bows, that the stout yeomen of the olden time were wont to boast that none but an Englishman could bend them. At that early period, before the invention of gunpowder, it is obvious the church-yards did not supply our warriors with the necessary materials, but that the timber was of foreign growth. In the reign of Elizabeth, a bow of the best foreign Yew was sold for 6s. 8d., while the price of one made of English Yew was only two shillings. In 12 Edward IV. it was ordained that every foreign merchant who should convey any goods from any country from which bow-staves had formerly been brought to this country, should for every ton of goods bring four bow-staves. A similar law was framed in the time of Richard III. In those iron ages the bow triumphed over the spear, the shield, and the sword.

VOL. III.
Dexterity in the use of the "bended Yew," decided the battles of Cressy, Poictiers, and Azincourt. By this simple instrument was the flower of chivalry slaughtered or dispersed, and even the men at arms, encased in mail, vainly endeavoured to stand before it. In the latter momentous contest, it stands recorded, that, "the enemy’s cross-bow-men, after the first but too hasty discharge in which they hurt very few, retreated from the fear of our bows." "The warlike bands of archers, with their strong and numerous volleys, covered the air with clouds, shedding, as a cloud laden with a shower, an intolerable multitude of piercing arrows, and inflicting wounds on the horses, which either threw the French horsemen, who were arrayed to charge them, to the ground, or forced them to retreat; and so their dreadful and formidable purpose was defeated." And further, after an impetuous charge of the French nobility to seize the English standards; "Then the battle raged very fiercely, and our archers pierced the flanks with their arrows, and continually renewed the conflict." (Nicolas. Elmham.) Nor are we less indebted to the bow, for domestic service good and true; as over the Scots at Hamilton; and, (1162), temp. Hen. II. when Ireland was chiefly subdued by that instrument, with which the Irish were unacquainted. But of deadly feuds and border affrays, sustained by this weapon, none has been better sung than the encounter of Earls Percy and Douglas:

"The English earl, not fearing this,  
Did to the woods resort;  
With fifteen hundred bowmen bold,  
All chosen men of might,  
Who knew full well in time of need,  
To aim their shafts aright.  
Lo! yonder doth Earl Douglas come,  
His men in armour bright;  
Full twenty hundred Scottish spears  
All marching in our sight.  
Our English archers bent their bows,  
Their hearts were good and true;  
At the first flight of arrows sent,  
Full three score Scots they slew."

For individual deeds of prowess with the same weapon, we must refer to the fine old ballad of Chevy Chase.—Enough has been stated to prove that the Yew tree, whether viewed in connection with the arts of war or peace, or associated with more sacred sentiments, as an adjunct to the village church

"That points with taper spire to heaven,"
is deserving of every respectful consideration, and should be esteemed as one of the most interesting of our native productions. The Surry hills near Reigate, and in the neighbourhood of Dorking, were, temp. C. II. clothed with Yew and box. Lightfoot describes the remains of an ancient wood of Yew at Glemire, near Glenceneran, in Upper Lorn; whence the name of the spot, Glennuir, the valley of Yew trees. A decisive proof of this tree being justly considered aboriginal arises from its having been found buried in peat mosses; as in those of Matterdale and Patterdale; where, according to Hutchinson, large pieces still retain their beautiful red colour. Since Yew trees have been preserved in church-yards from time immemorial, one, at least, being ycleped "the consecrated Yew,"

"Which in the place of sculptur’d stone,  
Marks out the resting place of men unknown." Churchill.

there we may expect to find some of the finest specimens,

"Casting  
Drear shadows on the fairer trees and flowers,—  
Affection’s latest signs."

In Aberystwith church-yard, among other large ones, is one 24 feet in girt: at

(Barren and fertile flowers sometimes observable upon different trees. Oelhav. Young cones stalked, recurved; afterwards hard and woody, the numerous scales finally starting asunder. Crest of the anthers very small. Style one to each germen. Stigma prominent, obtuse, evanescent. Sm. An evergreen, sub-conical, straight tree, seventy to eighty feet high, sending forth horizontal branches, and maintaining constantly a dismal dark glaucous green foliage. Stem reddish brown, the bark scaling off in thickish plates. Leaves very straight, and slender, strap-shaped, rigid, smooth, channelled on the upper surface, convex underneath. E.)


Aldworth, Berkshire, one of prodigious bulk, at four feet from the ground measuring nine yards in circumference: in Selborne church-yard one 24 feet in girt: in Totteridge do. one 32 feet. It is particularly valuable to cabinet makers and inlayers: in Germany stoves are wainscotted with this material. Evelyn. A large sound Yew-tree has been sold for one hundred pounds. It is said to attain the age of four hundred years or more. E.)

* The Fir flourishes best in a poor and sandy soil. (In Ireland much of this tree is found in the bogs, and the wood beaten into strings, combed and spun, is thus manufactured into ropes capable of resisting the weather longer than those made from hemp. The fishermen of Loch-Broom, in Ross-shire, convert the bark to similar purposes. Forests of Fir have been discovered imbedded in various parts of England, especially in the mosses of the north, and as forming a substratum to Roman roads over bogs. Fir timber is frequently dug up in the peat-bogs of Anglesey. On sinking the outlet of a lake called Llyn Llwydiart, in the parish of Pentraeth, some venerable remains have lately been discovered, as stumps of uncommon size, &c., worthy the inspection of the intelligent tourist. Rev. Hugh Davies. Caesar asserts the Fir not to be a native of Britain: "Materia cujusque generis, ut in Gallia, prater Fagum et Abietem". Of the Beech we have already treated. To the Fir, the claim of this country may be still more clearly established. Probably the earlier campaigns of the Roman conqueror did not afford an opportunity of contemplating this tree in its primary stations: but, according to the ingenious arguments of Mr. Whitaker in his History of Manchester, the Fir is perpetually discovered in such of our mosses as were demonstrably extant prior to the settlement of the Romans among us; among the many Roman names for the Fir in the British language, there are three which are purely and absolutely British; and further, Firs actually appear as early as the third century in the unromanized regions of Caledonia and Ireland, as the acknowledged aborigines of the country: e. g. the tomb of a fallen warrior, upon the western shore of Caledonia, is thus described from the reality by the bard: "Dost thou not behold, Malvina, a rock with its head of heath? Three aged Firs bend from its face; green is the narrow plain at its feet." These facts must prove irresistible, even against ancient classical authority. Some antiquaries have imagined that Caesar referred to a species of Pine larger than our common Fir, and which Irish tradition represents as having been introduced into these islands by the Danes; on whose expulsion, the mal-treated "incoles," wreaked their vengeance even upon these harmless mementos of their subjugation. But such subterraneous strata of Bog Fir are not peculiar to the sister island, (where the bogs of Glancullen alone supply Dublin with fuel), for they exist also in both North and South Britain; and it is scarcely to be conceived that three nations, however barbarous, should simultaneously be impelled to so absurd a mode of displaying their resentment. Cenangium (Peziza) ferruginosum, Grev. Scot. Crypt. 197. "Gregarious, between membranaceous and leathery, sessile, rugose, somewhat pruinose, reddish-black, the orifice compressed, inflexed, when moist spreading, the disk yellow:" may often be found covering the greater part of a fallen Fir tree. Ips piniper dus assists...
in decorticating the Fir; feeding beneath the bark. The most sterile lands of Scotland have been rendered valuable by extensive Fir plantations, which have also tended to increase population. Though the Fir be, for general purposes, of less value than the Larch, (the "lignum immortale" of Pliny, which may be cultivated with as little trouble, we shall insert one experiment from Dr. Hunter for the encouragement of patriotic planters. Crooksbury Heath, Surry, consists of 3,700 sandy acres. In 1776 twelve acres were planted with Scotch Firs, four years old, at the distance of four feet, the ground in no way prepared. In 1788 the plants were thinned, being then about the height of fourteen feet, and produced eight pounds per acre. The thinnings were sold for hop-poles, and the branches were made into bavins for burning lime. Such hop-poles have been proved to be perfectly sound after nine years' use. The second thinnings took place in 1794, when the trees were converted into scatlings and rafters, being about 40 feet in height. The number of trees then left standing upon the twelve acres was 18,834, valued at £754. Frigates have been built of Fir-wood; but it possesses too little tenacity for such purpose, and splinters so dangerously in action that its use has been discontinued. The ancients were accustomed to appropriate it to the same purpose, and with better effect, before the use of artillery;

"Dant utile lignum
Navigis Pinos:"
Verg.

An intermixture of Firs with young Oaks has been found to protect and encourage the growth of the latter very advantageously,

"Et comitem Quercum Pinus amica trahit;" Claudian.

The friendly Pine the mighty Oak invites:

and may be thinned out when in danger of interfering with, or drawing up, the more valuable timber trees. E.) In a grove, the trunk becomes tall and naked; (suitable for masts of ships and scaffold poles; E.) in sunny open places, branched. On rocks or bogs, it seldom attains a large size. In black soil it becomes diseased, and in chalky land it dies. Sometimes it will thrive near running, but never near stagnant, waters. None but the terminal buds send forth branches, therefore it will not bear the least clipping. The roots spread very near to the surface of the earth, all but the central root, which grows directly downwards; and if this be broken off, or interrupted in its passage by rocks, the stem ceases to shoot upwards, and the tree remains a dwarf. Upon this account it is apt to suffer by transplanting. This tree furnishes us with the best red or yellow deal. It is smooth, light, and easily cloven. The inhabitants of the North of Europe make bread from this tree, (probably resembling that from Cassava, the Yucca root, a bad thing per se, but by no means obnoxious when flavoured with pine jam; verb, sap.) in the following manner: They choose a tree whose trunk is even, for these contain the least resin, and strip off the bark in the spring when it separates most readily. This they first dry gently in the shade; then in a greater heat; and reduce it to powder. With this powder they mix a small quantity of corn meal, and with water knead it into bread. This they eat, not only in years of scarcity, but at other times, from an apprehension that long disuse might render it disagreeable to them. Devoutly were it to be wished that human beings should never be driven to such sad necessity of thus robbing even the swine, which are said to grow fat upon this keep. Their children are very fond of the fresh bark in the spring time, either shaved with a knife or grated with a rasp, (truly a miserable substitute for wholesome farinaceous food; but

"De gustibus non est disputandum."

The tops of the branches are also mixed with oats as provender for horses. E-) The young shoots distilled afford a fragrant essential oil. (The bark is used with much success for tanning. An infusion of the buds has been recommended as an antiscorbutic; as are the fresh cones boiled, which also are a principal ingredient in spruce beer. The air impregnated with the balmy exhalation of Fir trees has been supposed wholesome for delicate lungs. Dr. Clarke describes the mode of obtaining tar from the roots as now practised by northern nations to be exactly similar to that of the ancient Greeks. "The Fir," observes that author, "appears to constitute the summum bonum of the Norwegian peasants; affording materials for building their houses, churches, and bridges; for every article of their household furniture; or constructing sledges, carts, and boats; besides fuel
for their hearths. With its leaves they strewn their floors, and afterwards burn them, and collect the ashes for manure." E.) Sheep and goats are not fond of it; horses refuse it. (The bark of the Fir apple is a principal food of Loxia curvirostra, or Cross-bill; and thus are many seeds disengaged from their scaly covering, and committed to the earth. E.) It affords nourishment to Philemon Pinus, quadra; Carenio Pinus, and Cmerex lithes. (Aphis Pin int converts the buds or young shoots of the Fir into a very beautiful gall, somewhat resembling a Fir-cone, or a pine-apple in miniature. And a species of Cerinus sometimes produces an enormous scaly protuberance at the summit of the branches, and formed by the extravasation of the juices occasioned by punctures made in order to deposit their eggs. The young larvae shelter themselves in cells contained in the tumour. Barbat. It has lately been ascertained that Fir-trees are liable to be absolutely destroyed by the perforations of Siren juvencus, as the woods at Henham-hall, Suffolk, testify, Vid. Linn. Tr. xiv. 584. Noctua Pinastris deposits larvae in the leading buds, often perforating the young shoots, and thus depriving the tree of its leader. And here must be introduced Acheta sprepta, Curt. vol. 3. pl. 117. (Noctua Piniipera, Koh), a moth whose larvae totally consumes the foliage, (which the green-striped caterpillar singularly resembles), occasionally ravaging even extensive forests. The magnificent and rare insect Ouloneis Pini (Curt. Brit. Entom. vol. 1. pl. 7.) also feeds upon the Scotch Fir:—and the Pine forests of Scotland are the most productive places for the uncommon Lophyrrus Pius, (also L. pallidus), Curt. vol. 2. pl. 54; whose larvae are gregarious, assembling in numerous troops on the branches, and not only devouring the leaves of the Pine, but also the bark of the young shoots. The leading branches are likewise destroyed by the beetle Hyplurgus piniperda, Curt.pl. 103. where the process is fully detailed and illustrated. Phillips, in Sylva Florifera, observes that the leaves and branches of the Scotch Fir afford wholesome nourishment to cattle and sheep, which is no small consideration in mountainous countries, where the snow lies for months together. The resinous roots are dug out of the ground in the highlands, and, being divided into small splinters, are used instead of candles, (a custom not peculiar to northern nations, being, according to Sir W. Ouseley, equally prevalent at Bedrowas in Turkey. E.) Fishermen make ropes of the inner bark. Tar and pitch are obtained from the trunk and branches; the juice being received in trenches made in the earth, is afterwards freed from impurities by colature through wicker baskets, They also yield turpentine and resin:

"The Firre that oftentimes doth resin drop."

Every part of these trees displays infinite wisdom in its formation, which is so peculiarly adapted to the native mountains. The resinous juices with which the trunks and branches abound, defy the rigour of the frost to congeal the sap, whilst the filiform nature of the leaves of these evergreens are not less happily adapted for resistance to the impetuosity of the winds, that beat with such violence on elevated situations. As these trees were designed by nature for perpetual winter, their foliage possesses the farther advantage of reverberating the heat, like the hair of animals.

Mr. Salisbury mentions that plantations of Firs, of twenty-five years' growth, on the South Downs, have been sold at a price which averaged a profit of twenty shillings per annum per acre, on land usually let for sheep pasture at not one fourth that value. Loudon considers the self-sown Highland Pine equal to any foreign timber of the kind: the Lowland, and planted, fit only for roofing, lining of carts, lathing, packing boxes, and inferior purposes. On the elevated moors between Blackland, at the head of the Derwent, and Walsingham, on the river Wear, and even on the mountains of Cross Fell at an elevation of nearly 3,000 feet, the roots and trunks of very large Pines are seen protruding from the black peat moss, being exposed to view by the water of these bogs having drained off and left the peat bare; but this tree is no longer indigenous there. The Scotch Fir, even though protected and planted on a lower level, does not at this day attain the size of these ancient Pines. In favourable situations, as by the Eden at Corby, in Cumberland, some large trees may be noticed; but on moorland soils, where it formerly flourished, it seldom thrives after thirty or forty years of age, and spreading its roots horizontally, it is very liable to be blown up by violent winds." Winch Geog. Few have ventured to advocate the appearance of the commonly despised Scotch Fir; but Gilpin pronounces it, when in perfection and standing singly, not unworthy of attention even as a picturesque object. "For myself," says that amiable writer, "I admire its foliage; both the colour of the leaf and its mode of growth. Its ramification too is irregular and beautiful; and not unlike
that of the Stone Pine; which it resembles also in the easy sweep of its stem; and likewise in the colour of its bark, which is commonly, as it attains age, of a rich reddish brown. In its stripling state indeed it is less an object of beauty, its pointed and spiry shoots being then too formal."—"Some of the most picturesque trees of this kind perhaps in England, adorn Mr. Lenthall’s deserted mansion at Basilsleigh, in Berkshire." p. 88. Stoddart states that Mr. Farquharson has planted on his estate of Invercauld no less than sixteen millions of Fir; and that in the natural woods are some very ancient ones, "above one hundred feet in straight height. They were much more numerous; but having been injudiciously thinned, the wind forced its way among them, and in one night laid most of the veterans low. The natural beauty of the individual tree has been greatly undervalued; but surely when planted on so broad a scale, their effect is peculiarly adapted to augment the grandeur and majesty of these vast hollows. At Invercauld, as at Glenmuir, the mountains seem to be divided by a dark sea of Firs, whose uniformity of hue and appearance affords inexpressible solemnity to the scene, and carries back the mind to those primeval ages, when the axe had not yet invaded the boundless regions of the forest." ii. 167. However the sylvan produce of Scotland may have been disparaged by a partial and prejudiced view, experience proves that the various kinds of timber raised in such exposed situations, are thereby rendered decidedly superior both in texture and enduring quality, to what may be obtained more rapidly, and of some sorts perhaps with greater certainty, in the lowlands of England. Pliny remarked that timber which grew in moist and sheltered situations was less compact and durable, than when reared under opposite circumstances; and Homer, for the same reason, assigns to Agamemnon a spear formed of a tree which had braved the fury of the tempest.

"Yon verdant Pines, that midst the winter smile, (grimly, it must be admitted),
Offspring of Scotia’s or Virginia’s soil." Delille.

Indeed it is in the Highlands of North Britain that we must look for "this magnificent tree," as Dr. Greville terms it, "where it is truly wild, and differing as much from the formal ornament of the plantation, as the hardy mountaineer from the sedentary mechanic of a crowded city." The sprig of a favourite plant often constitutes the badge of respective chieftains, and as such we find this mountain tree appropriated, in the Lady of the Lake, to the Clan-Alpine.

"Hail to the chief who in triumph advances!
Honoured and blessed be the evergreen Pine!
Long may the tree in his banner that glances
Flourish, the shelter and grace of our line!"

Interesting particulars respecting the Scotch Fir may be read in Evelyn’s Sylva, and Phil. Tr. No. 275—277. See also Library of Entertaining Knowledge, vol. ii. p. 34, with a fig. E.)
CLASS XVII.

DIADELMIA.

HEXANDRIA.

FUMARIA. Cal. two leaves: Bloss. gaping, gibbous at the base and containing honey: each filament bearing three anthers.

OCTANDRIA.

POLYG'ALA. Two segments of the calyx like wings: Bloss. standard cylindrical: Stamens all connected at the base: Caps.

invursively heart-shaped, two-celled.

DECANDRIA.

(1) Stamens all united.

SPARTIUM. Filaments adhering to the germen: Summit hairy, attached to the upper side of the style.

GENIST'A. Pistil depressing the keel: Summit terminal, somewhat capitate.

ANTHYL'LIS. Cup swollen and turgid, inclosing the legumen.

ULEX. Calyx two-leaved: Legumen scarcely longer than the calyx.

ONONIS. Legumen diamond-shaped, sessile: Standard scored.

(2) Summit downy; Filaments nine united, one distinct.

O'ROBUS. Style slender, nearly cylindrical: Stigma pubescent on the upper side.
PISUM. Style keeled, pubescent above.
LATH'YRUS. Style flat, downy above.
VIC'IA. Style bearded under the summit.

(3) Legumen two-celled.

ASTRAG'ALUS. Legumen two-celled, curved, tumid.

(4) Legumen with about one seed.

TRIFO'LIUM. Legumen scarcely longer than the calyx, with one or two seeds: flowers mostly capitate. [Medicago lupulina. Hedysarum Onobrychis.]

(5) Legumen almost jointed; sometimes spiral.

HEDYS'ARUM. Legumen with roundish, compressed joints: Keel very obtuse.

ORNITHOPUS. Legumen jointed, bent like a sickle.

HIPPOCRE'PIS. Legumen compressed, incurved, membranous; one of the seams with several deep notches.

MEDICA/GO. Legumen spiral, membranous, compressed: Pistil pressing down the keel.

(6) Legumen of one cell; with two or more seeds: (without the marks of the former subdivisions.)

ER'VUM. Cup with five divisions, nearly equal, and nearly as long as the blossom: (Stigma capitate, hairy on all sides. E. Bot. E.)

LOTUS. Legumen cylindrical, spongy within: Wings converging upwards.

Linnaeus also gives the following Natural Arrangement of the different genera.


Winged with an odd Leafit. Astragalus, Hedysarum.


Flowers in Umbels. Lotus, Ornithopus, Hippocrepis.
Fumaria (intermedia. Ed. 6) solida.
HEXANDRIA.

FUMARIA.* Calyx two-leaved: Bloss. ringent, gibbous at the base, nectariferous: Filaments two, membranous, each supporting three anthers.


PLATE XXIX.

Stem solitary, a span high, upright, a little zigzag, leafy, smooth, bearing a lanceolate sheath at the bottom. Leaves two or three, alternate, on stalks, smooth, twice ternate, cut. Spike solitary, terminal, simple. Spur cylindrical, bluntish. E. Bot. E.) Flowers purplish red and yellow, forming a loose spike. Floral-leaves divided into finger-like segments. Seed-vessel oblong-egg-shaped, opening at the bottom, four to six seeds in each.


(F. luttea. Legumens nearly cylindrical, shorter than the peduncles: stems angular, with very small bracteae: spur short. E.)

(E. Bot. 588. E.)—Kniph. 11.


* (Possibly from fumus, smoke; the plant having been designated Fumus terre; but for what reason remains doubtful, E.)
F. officinalis. Seed-vessels in bunches, one seed in each: stem spreading: (leaves with dilated segments. E.)

Ludw. 82—Curt. 112—(E. Bot. 589. E.)—Math. 1158—Ris. Tetr. 1—
Kniph. 1—Woodw. 88—Fl. Dan. 940—Fuchs. 338—J. B. iii. a. 201—
Blackw. 237—Wale.—Ger. 997. 1—Lonic. i. 166. 2—Dodd. 59—Lob. Obs.
437. 3, and Lc. i. 757. 1—Ger. 1088. 1—Park. 287. 1—Trag. 110—Mill.
136. 2—H. Ox. iii. 12. 9.

Stem smooth. Leaves smooth, somewhat fleshy, sea-green, trebly compound, the last divisions with three or five clefts, the extreme segments spear-shaped. Fruit-stalks very short. Floral-leaves spear-shaped, membranous, one at the base of each fruit-stalk. Seed-vessel roundish, smooth. Woodw. Calyx leaves coloured. Nectary distended, shorter than the fruit-stalk, inclosing a greenish tongue-shaped substance, purple at the edge. Wings each with three keel-shaped ridges near the extremity on the outer side. Style three or four times as long as the germen. Flowers pink and dark purple, in long terminal spike-like bunches; sometimes very pale, or nearly white.

A. May—Aug.*


E. Bot. 590—Vaill. Par. 10. f. 5.

Exhibits the general habit of F. officinalis, but differs in the very narrow segments of the leaves, which are linear, grooved, convex beneath, never widening, or becoming wedge-shaped; and the blossom being only half the size, and paler. Pod acuminate, but not notched at the end.

A. Aug.—Sept. E.)

F. capreolata. Seed-vessels in bunches, one seed in each: leaves climbing, sparingly furnished with tendrils.
Dick. H. S.—(Curt.—E. Bot. 943. E.)

PLATE XXX.

Stems longer and weaker than those of F. officinalis. Leaves more distant, not so finely divided, the extreme divisions broader and blunter. Flowers fewer on the spike. Fruit-stalks longer. Woodw. Stem sometimes trailing, and interweaving its branches among the grass, very much branched, three feet long. Blossom pale red; St. (rarely white. E.) Clearly distinct from F. officinalis, as I have proved by sowing the seed. Leaves

* Cows and sheep eat it. Goats are not fond of it. Horses and swine refuse it. Linn. The leaves are succulent, saline and bitter. The expressed juice in doses of two or three ounces, is useful in hypochondriacal, scurbutic, and cachectic habits. It corrects acidity, and strengthens the tone of the stomach. Hoffman prefers it to all other medicines as a sweetener of the blood. There is no doubt of its utility in obstructions of the viscera, and diseases arising therefrom.—An infusion of the leaves is used as a cosmetic to remove freckles and clear the skin. Mr. Woodward.
frequently running into tendrils. Robs. (Seed-vessels globular. We would willingly correct our representation of this plant, but, on again comparing it with specimens, are not aware of the small error noticed in E. Bot. 943. Whether the few tendrils be considered as distinct from the twisting footstalks or not, they are accurately delineated in the annexed plate. E.)


A. Aug.—Oct.

**F. claviculata.** Legumens strap-shaped, about three-seeded: leaves with tendrils.


A. June—Sept.
OCTANDRIA.

POLYG'ALA.* Calyx five-leaved, two larger leaflets wing-like, coloured: Caps. inversely heart-shaped, two-celled: Seeds solitary, (crested. E.)


(A pretty little plant, smooth, of a dark shining green. E.) Stem angular, undivided, two or three to six or eight inches high, sometimes nearly upright. Leaves alternate or in pairs, a little rolled back at the edges, the upper spear-shaped, the lower egg-shaped. Blossom-wings spear-shaped, more fully coloured than the calyx; standard composed of two petals, joined by a hairiness at the edges. Keel cylindrical below, towards the top expanding into two sets of club-shaped glandular appendages. Filaments in two sets, four fingers to each. Anthers yellow, or orange. Style thicker upwards. Summit with two lips, the one a fleshy knob, the other spear-shaped, concave. Seed-vessel bordered. Blossom blue, purple, flesh-coloured, or white.


DECANDRIA.

SPARTIUM.† (Filaments all forming a simple tube: Stigma lateral, linear, hairy: Legume flat. Sm. E.)

* (From πολύς, much, and γάλα, milk; having a tendency to increase the milk of cattle feeding on it: or, according to ancient fable, in the breasts of nurses. E.)

† Linnaeus found it to possess the properties of the Senega Rattle-snake root, (Polygala Senega) but in an inferior degree. Duhamel used it in pleuretic cases with success. Mem. de Paris, 1740. The powdered root may be given in doses of half a dram. Cows, goats, and sheep eat it; swine refuse it. An infusion of the herb, which is very bitter, taken in the morning fasting, about a quarter of a pint daily, promotes expectoration, and is good for catarrhal coughs. I tried it with success. Dr. Smith. (A decoction has been found serviceable in ascites and anasarca; but the medicinal virtues of this plant are as yet far from correctly understood, and experiments should be conducted cautiously, as its effects in disordering the system are sometimes rather violent. E.)

‡ (The Σπαρτος of Dioscorides, the Spart of the ancient Greeks, was rather the Esparto grass of Spain and Portugal, of which ropes are now made, equivalent to the hemp of northern climes; than the modern Spartium, to which the term may be applied for its utility in furnishing bands to tie vines; but most of the names of this plant have direct reference to its use, as a domestic utensil frequently composed of it, and hence it has been inferred that besoms were originally made of Broom, and thus denominated. E.)
DIADELPHIA. DE Candria. Spartium. 827

S. scoparium. Leaves ternate or solitary: branches without prickles, angular.

Curt.—(E. Bot. 1339. E.)—Kniph. 3—Riv. Tetr. 63. 1, Genista.—Woodv. 89—Fl. Dan. 313—Blackw. 244—Sheldr. 7—Dod. 761. 1—Lob. Obs. 531. 1, and Is. ii. 89. 1—Ger. Em. 1311. 1—Park. 229. 1—Ger. 1130. 1—Fuchs. 219—J. B. i. b. 388. 3—Trag. 961—Lonic. i. 39. 2.

Leaves and leaf-stalks slightly hairy. Calyx the upper segment with two teeth larger than those of the lower. Blossom standard nearly circular, slightly notched at the end. Keel, the petals rather hooked, united at the lower edge by an intertexture of very fine, soft, woolly hairs. Stamina, four long and six short. Style bowed almost into a circle, and after flowering into a spiral; the extremity, which one should be inclined to regard as the summit, not hairy. Blossom golden yellow, large and showy. (Branches numerous, straight, angular, evergreen. Plant three to six feet high or more. Leaves small, smooth, deciduous. E.)


Dry fields and thickets.

* The buds are sometimes preserved as pickles, (and eaten in the manner of capers. The plant, when burnt, affords a tolerably pure alkaline salt. Dr. Mead relates the case of adropsical patient who was cured by taking half a pint of a decoction of green Broom tops, with a spoonful of whole mustard seed, every morning and evening. The patient had been tapped three times, and tried the usual remedies before. Mon. Med. 138. An infusion of the seeds drank freely has been known to produce similar happy effects. I knew them succeed in one case that was truly deplorable; but out of a great number, in which the medicine had a fair trial, this proved a single instance. A strong lixivium of the ashes was used successfully in the Swedish army in 1759, to cure dropics consequent to a catarhal epidemic fever. Med. Com. i. 373. Some use the seeds roasted, so as to make a kind of coffee, (and the tender tops as a substitute for hops. The wood produced by large old plants is ornamental for veneering. The fibres may be obtained by steeping the Broom in water; of these Pliny says the Asiatics made the most enduring fishing nets; though it seems probable the historian might intend Junceum, more prevalent in those countries, and to this day appropriated to various economical purposes, for which our northern species answers only in a secondary degree. E.) The plant merits a place among our flowering shrubs, on account of the profusion of its golden blossoms. (Cows, horses, and sheep refuse it. Linn. Notwithstanding the assertion of Linnaeus that sheep do not eat Broom, it is customary in some parts of Britain to pasture the flocks where it abounds in blossom, and thus, in the opinion of many intelligent farmers, is the disease called the Rot prevented. The same practice is very generally followed in the South of Europe, especially for winter food: though to prevent the stimulating effects of the plant, a good supply of water should always be accessible. Does not the benefit rather arise from the dry and hilly ground on which Broom is usually found? In dropics to which sheep also are liable, doubtless the plant itself proves salutary, as farmers well know: though Clarin, in the Faithful Shepherdess, sympathizes with

"The lazy clowns
That feed their heifers on the budded Brooms.

Orobanche is found attached chiefly to leguminous plants, especially to this (and the following), whence called Broom-rape—the latter part of the compound, from the turnip-shaped bulb at the base of its stem. E.) Phalera Pisi, (Chrysomela Linera, Lampaes chloroseptala, Apion melanopum, Cassida marcia, Halicta oriculata, Larva fuscella, Geometra ryfata, feed upon it; also, more rarely, Apion Sportii. The blossoms yield an abundant supply of honey for bees. E.) When the seeds are fully ripe and the legumen becomes black, it has the power of discharging its contents to a considerable distance (by an expansive vis elastica, usually excited by the solar heat. E.) The Rev. James Hall has
reported a method of procuring flax from Broom. The process is detailed in Month. Mag. vol. 28, p. 616. This discovery may prove important to the paper manufacturers. This kind of flax has also been bleached and spun with good success. The peasantry, where neither flax nor hemp can be obtained, use no other for making cloth. The remaining twigs are well calculated for carpet brooms. In North Britain cottages and ricks are thatched with it; and in certain districts where fuel is scarce, it has been encouraged for that purpose. Who can gaze without delight upon the splendid wreaths of blossom, “Yellow and bright as bullion unalloy’d?”

More especially if the spectator be acquainted with the Scottish pastorals, ever true to nature, and replete with allusions to “the bonnie, bonnie Broom.” Indeed the pathetic incidents associated with our oft despised plant, and described with such exquisite naïveté, prove that these northern Paphian bowers possess an equally magic influence with the famed myrtle groves of more genial climes, and amply attest the ubiquity of all potent love. If the veracity of these tender tales be not impeachable, neither the “Puing of the bracken,” nor even “Ower the muir among the hether,” ever proved more productive of perilous adventure than the spot, where

“Down among the Broom the Broom,
Down among the Broom, my dearie,
The lassie lost her silken snood,
That gard her greet till she was weary.”

And what can be more touching than the lament while absent from all such rural joys, “More pleasing far are Cowden knows,
My peaceful happy home,
Where I was wont to milk my ewes
At ev’n among the Broom.”

In a burst of genuine patriotism, yet not forgetting the ruling passion, Burns happily celebrates these favourite haunts of love and poesy, “Their groves of sweet myrtle let foreign lands reckon,
Where bright-beaming summers exalt the perfume;
Far dearer to me yon lone glen of green breckan,
W’ the burn stealing under the lang yellow Broom;
Far dearer to me are yon humble Broom bowers,
Where the blue-bell and gowan lurk lowly unseen;
For there lightly tripping amang the wild flowers,
A-listening the finnet, oft wanders my Jean.”

Nor was our humble shrub much less distinguished even by royalty, mid the “uncivill civil warres” of the fourteenth century, than the antagonist Rose herself; for a sprig of this Planta Genista was the adopted badge of Getroi, Duke of Anjou, father of our Henry the Second; and from this cognizance he acquired the name of Plantagenet, by him transmitted to his princely descendants, who all bore it from Henry, who has been called the first royal sprig of Genista, down to the tyrant Richard, the last degenerate scion of the plant of Anjou. The historical fact is thus commemorated in an interesting little work entitled the “Wild Garland.”

“Time was, when thy golden chain of flowers
Was link’d, the warrior’s brow to bind;
When rear’d in the shelter of royal bowers,
Thy wreath with a kingly coronal twined.
The chieftain who bore thee high on his crest,
And bequeath’d to his race thy simple name,
Long ages past has sunk to his rest,
And only lives in the voice of fame.

* (Supposed from genuum flexitate, but its applicability is not very apparent. E.)
DIADELPHIA. DECANDRIA. GENISTA.

829

G. TINCTO'RIA. Branches scored, cylindrical, upright, without thorns: leaves spear-shaped, smooth: legume cylindrical.

Dicks. H. S.—Fl. Dan. 526—E. Bot. 44—Kniph. 6—Puchs. 808—Trag. 604
—Dod. 763. 1—J. B. i. b. 391—Ger. 1134. 1—Clus. i. 101. 2—Lob. Obs. 521. 2, and Is. ii. 90. 2—Ger. Em. 1316. 1—Park. 229. 7.

Flowers in leafy spikes. Flower-leaves shorter than the blossoms. Calyx with five nearly equal clefts. Blossom standard egg-shaped, blunt; wings oblong, oval; keel compressed. Summit a little knob. Blossom yellow. (Stems one or two feet high. Seeds numerous. Leaves alternate, sessile, undivided, spear-shaped, smooth, sometimes having a few hairs at the edge and underneath. Fl. Brit. E.)


G. PILO'SA. Leaves egg-spear-shaped, blunt, (hairy beneath: E.) stem tubercled, prostrate, (without prickles. E.)

Jacq. Austr. 208—E. Bot. 208—Kniph. 5—Rose 3. 1—Clus. i. 103. 2—Ger. Em. 1313. 6—Ger. 1132. 6—J. B. i. 393. 2.

Stem and branches tough, lying close to the ground, even beneath the moss. Stem much branched; the old branches naked, the young ones clothed with leaves. Leaves numerous, minute, oval, or oval-spear-shaped, entire, smooth above, with white silky hairs underneath. Flowering branches ascending. Flowers in short terminal spikes. Fruit-stalks short, hairy. Calyx hairy, yellowish green; lips nearly equal, pointed. Blossom yellow, hairy without, excepting the wings. Legume hairy, Woodw. (with few seeds. E.)

(Hairy Green-weed. E.) Pastures, heaths, dry and hilly places. About Lackford, four or five miles from St. Edmund's Bury, and on Soap Rocks, near the Lizard Point. E.) Sir J. Cullum. Heaths near Bury, which are perfectly yellow with it when in flower, but after flowering it is with difficulty found, the stems lying so close to

Though the feeblest thing that nature forms,
A frail and perishing flower art thou;
Yet thy race has survived a thousand storms
That have made the monarch and warrior bow.

The storied urn may be crumbled to dust,
And time may the marble bust deface;
But thou wilt be faithful and firm to thy trust.
The memorial flower of a princely race.” E.)

* A yellow colour may be prepared from the flowers, and for wool that is to be dyed green with woad, the dyers prefer it to all others. (In the Journal of a Naturalist it is said that this plant is seldom eaten by cattle, except in cases of great necessity, and remains untouched, if other food be obtainable, giving a deceitful appearance of verdure to a naked pasture. The poorer people in certain districts collect it by cart loads about the month of July, when the seed of Wood-waxen proves a little harvest to them, at which women can gain two shillings per day; but it is considered a laborious occupation, the plant being drawn up by the roots, which are strongly interwoven in the soil. Vegetable filaments are very differently constituted from those afforded by animals, and are differently disposed to receive colours. The dye that will give a fine colour to the one, may be rejected by the other; and this plant is rarely or never used by the dyer for cotton articles.” E.) A dram and a half of the powdered seeds is mildly laxative. A decoction of the plant is sometimes diuretic, and therefore has proved serviceable in dropsical cases. (It is esteemed in Russia as a cure for hydrophobia. E.) Horses, cows, goats, and sheep eat it. Ray asserts that it renders the milk bitter. Apion Genista, described in Linn. Tr. x, inhabits this species. E.)

G. AN'GILICA. Thorns both simple and compound: leaves egg-spear-shaped: (flowering branches destitute of thorns. E.)


(Stems much branched, about a foot high, reclining, furnished with acute spines. E.) The old branches tough, without leaves, beset with thorns; thorns very sharp, slender, a quarter to half an inch long; the shoots of the year fasciated at the end of the old ones, but sparingly from the sides, with numerous leaves intermixed with soft thorns. Leaves sometimes oval, smooth, entire, small, bright green. Flowers pale, yellow, small, few. Woodw. Calyx yellow. Summit a small knob. Seed-vessel turgid, with from three to fourteen seeds. (The leafy branches of the present year become next season woody, awl-shaped thorns. Sm. E.)


U'LEX. Calyx two-leaved: Legumen scarcely longer than the calyx.

U. EUROP'US. Calyx shorter than the blossom, with two spear-shaped deciduous scales at the base: (smaller branches erect. E.)

(E. Bot. 742. E.)—Fl. Dan. 608—Clus. i. 106. 2—Dod. 759. 1—Ger. Em. 1319. 1—Park. 1004. 1—J. B. i. b. 400. 2.

(Stems several feet high, very numerous, furrowed, hairy, and extremely thorny, branches. Spines angular, pungent, smooth. Leaves springing from the base of the spines, solitary, awl-shaped, roughish, deciduous. Calyx sometimes woolly, but not equally so in all plants; its teeth converging. E.) Blossom yellow, large, (half as long again as the calyx, emitting a smell like honey. E.) Besides the pair of scales at the top of the fruit-stalk close to the calyx, there is a single scale at its base, on the outer side.

COMMON FURZE, (so called chiefly in the south of England; WHIN in the east; and GORSE in the north. E.) Heaths, road sides, and pastures, but does not flourish in very poor soil. Extremely luxuriant in Cornwall, growing to the height of six or eight feet. P. May—Aug.*

* Gorse is in some respects a very hardy plant, and will make fences upon the bleaker mountains, and close to the sea side, where the spray of the sea kills almost every other
(U. na'kus. Calyx about the length of the blossom, with two dark-coloured spots at the base: smaller branches decumbent.

shrub; but it is impatient of cold, is often destroyed by severe frost, and is rarely found in the northern parts of our island. (When it can no longer exist in open exposed moors, it may still be observed in sequestered dunes at a height of two thousand feet, in the north of England. Winch. Furze bushes, growing upon many downs in Wales, Devon, and Cornwall, assume commonly the appearance of large, green, dense balls, every tender leaf being constantly shorn away by the sheep and rabbits that frequent those places. E.) In Cornwall, where fuel is scarce, it is cultivated to advantage, and is generally cut to make faggots for heating ovens, which it does very soon, burning rapidly, and with a great degree of heat. (The burning of Furze and heath on commons between Candlemas and Midsummer, by stat. iv. and v. William and Mary, c. 23, is punishable with whipping and imprisonment; yet, on pretence that where the old covering is consumed, young plants will sprout up, and afford tender browse for cattle, fires are often unseasonably kindled which spread desolation, and exhaust the soil:

—- "Crepitantibus urere flammis." E.)

The ashes are used to make ley. Team horses may be supported by this plant, if it be cut young and bruised in a mill to break the thorns. (Mr. Evans informs us that Mr. Davis, of Lachtony, near Kidwelly, cultivates ten acres of Furze, which he propagated by seed; (six pounds to an acre is sufficient for this purpose. E.) With these Whins, which he cuts every year, he keeps his whole team and riding horses through the winter; he gives it mixed with hay to his horned cattle. The produce per acre is from 12 to 15 tons weight. A man will bruise 36 bushels per day. This plant, in some parts of Wales, grows to 10 or 12 feet high, and its stems are often cut for fuel. Goats, cows, sheep and horses feed upon the tender tops. During the winter of 1813-1814, the bat-horses and mules of the British army in position before Bayonne were chiefly supported by this kind of fodder, and the practice is general in the south of France.—In the Scilly Islands the chief food of the horses, or rather ponies, is the Furze which they find on the hills. "This plant, which is as singular by its chevaitx-de-frise, branches, as enlivening by its golden blossoms, is only to be found in temperate climates." There indeed

"The prickly Gorse, all shapeless and deformed, And dangerous to the touch, has yet its bloom, And decks itself with ornaments of gold." Cowper.

Furze was formerly used for burning lime, and for other agricultural and domestic purposes; but since the general diffusion of coal by canals and improved roads its relative importance for fuel is greatly diminished. According to Evelyn, Furze was cultivated on poor lands in Devon and Herefordshire, and yielded a crop of fuel and fodder valuable as that of wheat. It also forms an excellent cover for game, and shelter for seedling forest trees. In calm and sunny weather the crackling of Furze bushes, occasioned by the explosion of their elastic pods, is distinctly audible.

—- "The path with tangling Furze o'er-run, When bursting seed-bells crackle in the sun."

The odour also exhaled from the incalculable myriads of blossoms, especially when lavishly wafted by some gentle gale athwart the traveller's way, is very delightful, though peculiar, and, as some think, resembling that of the honey with which the flowers are richly fraught. The climate of Sweden being too severe for the spontaneous production of this plant, Linnaeus had never seen it in perfection till on his visit to England; when, on first beholding its brilliant and widely extended exuberance, he is said to have actually prostrated himself in a transport of admiration. We have ourselves witnessed the pleasurable emotion of far less ardent lovers of the beauties of nature, on viewing the golden expanse as exhibited in a Cornish May; and those even just landed from the

—- "Litora myrtetis latissima;"

Where

"E'en the rough rocks with tender myrtle bloom."

VOL. III.
A plant of more humble growth, with shorter spines, and smaller flowers than the preceding. Calyx silky, less woolly, with teeth deeply cut and standing apart. Blossom of a less bright colour than the former. Fl. Brit. Stems and branches less deeply furrowed, and the leaves more permanent; but the best characteristic is that pointed out to me by Mr. Stackhouse, who first observed that U. Europæus has a pair of distinct scales at the base of the calyx, which are pale and deciduous like the leaves; but that U. nanus has a pair of dark-coloured spots, not deciduous. These, when examined under a glass, are really scales, but very minute. The calyx in this species is scarcely at all woolly. Both species vary much as to hairiness, as well as in the length of their thorns; but the luxuriant and more upright growth of the former is strongly contrasted by the dwarf and stunted appearance of the latter.


**ONONIS.†** Cal. with five divisions: Standard striated: Legumes rhomboid, sessile.

O. spinoa. Flowers in bunches, solitary: leaves solitary or three together: branches thorny.

Entirely confined to U. Europæus, and to be met with all the summer in Britain, (though not known on the Continent), is Apion (Curculio) Ulicis. Kirby. On this plant also will be found Abia sericea, Apion immune, and Arctia Russula: and the minute Ips rhododactylus preys upon, and penetrates the larger stems. E.)

* (Whether this later flowering kind be really a distinct species, or, as we cannot but suspect, merely arising from fortuitous circumstances, here may appropriately be introduced a stanza from the "Wild Garland."

"Mid scatter'd foliage pale and sere,
Thy kindly floweret cheers the gloom;
And offers to the waning year
The tribute of its golden bloom.
Beneath November's clouded sky,
In chill December's stormy hours,
Thy blossom meets the traveller's eye,
Gay as the buds of summer bowers.

Flower of the dark and wintry day!
Emblem of Friendship! thee I hail!
Blooming when others fade away,
And brightest when their hues grow pale." E.)

† (From ἀγης, an ass; and ἀγήμως, to delight; asses being fond of it. E.)
slightly hairy. Branches terminating in softish thorns. Thorns at the base of the young branches, strong, early in the summer not pungent. Leaves almost smooth, Calyx hairy; segments awl-shaped, unequal. Blossom twice as long as the calyx. Woodw. In its young state, before the thorns are formed, it has frequently been mistaken for O. arvensis. Flowers red.


O. arvensis. Flowers in bunches, two together; leaves three together, the upper ones solitary; branches without thorns, somewhat woolly.

(E. Bot. 682. E.)—Ger. 1142. 3.

In the autumn of 1779, I examined many hundreds of O. arvensis in the corn-fields at Berkhamstead, Hertfordshire, without finding a single one with thorns. Stems and branches woolly. Leaves somewhat woolly, broader, more egg-shaped, and not so elliptical as those of O. spinosa. Flowers more numerous, mostly solitary, on the young shoots, alternate. Calyx, segments more tapering. Woodw. Mr. Pitt, of Pendeford, near Wolverhampton, sent me specimens which he assures me never become thorny, and that the thorny sort is never found in that neighbourhood. I found it in great plenty on St. Vincent's Rocks, without the least appearance of thorns on any of the plants, though I examined a great number. A smaller plant than O. spinosa. Stems and branches woolly, cylindrical, a little hairy. Leaves set with glandular hairs; the upper oblong-egg-shaped, toothed. Leaf-stalks short, fixed to a broad toothed leaf-scale. Flowers scattered, intermixed with leaves. Calyx, some of the hairs long and tapering, others short and tipped with glands; segments, four of them pressing on the standard, the lowermost supporting the keel. Blossom standard circular, with a small point at the end, with short hairs on the outside, of a fine rose-colour, streaked with deeper coloured lines; wings more than half as long as the standard, egg-shaped, white; keel coloured and streaked as the standard. Anthers yellow. Germen with hairs tipped with glands. Seeds about six. Flowers sometimes nearly white. The hairiness of the leaves and the want of thorns best distinguish this from O. spinosa, whose thorns are so remarkable, and whose leaves are scarcely, if at all, hairy on the upper surface, though in both they are edged with hair-like glands terminating in small globules.


Var. 2. Stems prostrate; whole plant clammy.

Whole plant clammy, not so downy as O. arvensis. Flowers larger and fewer. Leaflets oblong wedge-shaped. Calyx segments shorter and blunter. Whether distinct from O. arvensis it is difficult to say, but I

* A decoction of the roots has been recommended in calculous complaints and jaundice. Cows and goats eat it; sheep are very fond of it; horses and swine refuse it. Linn. (The younger shoots, without thorns, do not appear to be objectionable to cattle. It is sooner found by the old herbarists Arcesta bovis and Remora aratri. It seems difficult to destroy it by following. The following species is nearly as troublesome where it prevails. Apion Ononis, of Kirby, inhabits this plant. E.)
am inclined to Mr. Hudson's opinion, as being removed into a garden it became upright, and more downy. If a variety, it is of *O. arvensis* and not of *spinosa*. Woodw. This has been taken for *O. repens* of Linneus; but Dr. Afzelius informed me that species had not been found in England, which confirms Hudson's opinion, formed after cultivating them together, that this is not specifically different from the *arvensis*. Mr. Woodward describes the *arvensis* as more downy than this, but my specimens from the southern coast are much more downy than those in the cornfields of the midland counties.


**ANTHyllis.**† *Calyx* inflated, inclosing the legume.


Stems ascending, about a foot high, cylindrical, downy, with five or six pair of leaflets. Leaves downy, hairs adpressed. Flowers sessile, deep yellow. Each head supported by two floral leaves, the larger six or seven cleft, the smaller with four. The structure of the *filaments* is singular; towards the top they swell out like a hollow bladder, in shape of an inverted pyramid, and the anthers are fixed to the central part of the base of the pyramid. *Style* thickest at the curvature, thinner above and below. (*Calyx* membranous, whitish, hairy. E.)


* (These species appear to afford a favourite repast to the large brown-shelled snail *Helix hortensis*, (rendering them almost as fit for pates as the delicious *H. pomacea* of the Continent,) as we have observed on the rocks near Teignmouth. E.)

† (From *αδερ*, a flower; and *ενα*, the first down on the chin; the whole plant being covered with soft down. E.)

‡ (As a vulnerary, its utility is at least problematical: though in Threlkeld's time (1727) it was regularly sold in Dublin market "by the name of Stanch, being astringent." *Strip. Hibern.* E.) A yellow dye may be obtained from it. It affords an excellent pasturage for sheep. Where the soil was a redish clay, Linneus remarked the blossoms to be red, but in white clay, white. (In Portugal we have always found them red. In England, most commonly, as the rustic poet observes,

"The yellow Lamb-toe I have often got,
Sweet creeping o'er the banks in sunny time." E.)

Goats and cows eat it. (Though not in cultivation, Mr. Salisbury considers it well worth attention, as, where it flourishes most, (in calcareous soil), cows produce better milk and in greater quantity. E.)
Var. 2. Blossoms scarlet, or purple.


(On the downs of Sussex this plant is found with white blossoms. Mr. Borrer, in Bot. Guide. Also near the old fortification on Bryn Gwydryn, Anglesey. Rev. Hugh Davies. E.)

PFSUM.* Calyx, two upper segments shorter; Style with three angles, keeled, and pubescent above: Legume tumid.


Roots striking very deep in the earth. Stems trailing, short; the outline of the whole plant oval. Leaves numerous, alternate; leaflets oval, alternate, sessile, smooth, the outer not invariably smaller, on the lower leaves five to seven, on the upper nine to eleven, always one more on the outer side of the leaf-stalk, generally cloven, sometimes simple. Leaf-scales in pairs, oval spear-shaped, broad, arrow-shaped at the base. Flowers towards the end of the fruit-stalks, crowded, on short pedicles. Wood. Blossom pale red and purple.

Sea Pea. Sea-shores. On a stony beach between Aldeborough and Orford, Suffolk. Ray. Woodward. Near Hastings; and on the west side of Dungeness, near Lyd. Ray. Rye and Pevensey, Sussex; Guildford, opposite the Comber; and Inghelm Mills, Lincolnshire. On the sharp ridge running from Portland Island to Bridport, some distance to the right of the ferry, amongst loose pebbles, about fifteen or twenty feet above high water mark; but the cows eat it down so that it is difficult to procure a specimen in flower. Mr. Stackhouse. (Abundant on the beach near Walmer Castle, Kent. Mr. Dillwyn, in Bot. Guide. Sandown beach, Hampshire. Pulteney. Beach near Penzance. Heath. E.)

P. July—Aug.†

* (From πισός, a garden; as being generally cultivated. E.)
† In 1555, during a time of great scarcity, the people about Orford were preserved from perishing by eating the seeds of this plant, which grew there in great abundance upon the sea coast. Cows, horses, sheep and goats eat it. It affords nourishment to Phalaena Pisi. (Different kinds of Peas, especially those cultivated as pulse, are subject to the ravages of innumerable Aphides, or Plant-lice. These insects are endowed with fecundating powers most extraordinary, being at one time viviparous, at another oviparous; and, what is without parallel, the ingress of one original pair serves for all the generations, (about twenty), which proceed from the individual for a whole succeeding year! see Kirby and Spence Entomology, i. 176.—Thus to whichever kingdom of nature our attention is more immediately directed, for

"Each moss,
Each shell, each crawling insect, holds a rank
Important in the plan of Him who framed
This scale of beings;"

we cannot but be struck with the "Opera mirifica Dei;" and such contemplations must ever afford to the intelligent mind a noble and refined luxury, a rational delight, and one that charms with continued variety. E.)
O'ROBUS.* Calyx, the two upper teeth shorter but more deeply divided: Style slender: Summit pubescent above.

O. sylvaticus. Stems decumbent; hairy, branched: leaflets seven to twelve pair.


Stems numerous, one to two feet long, trailing, much branched, slightly hairy. Leaves winged, alternate; leaflets oval, or elliptical, terminated by a pointed extension of the mid-rib; on short hairy leaf-stalks, somewhat alternate, six to twelve pair, without an odd one, but with a sort of beard at the end of the general leaf-stalk. Flowers numerous, on short pedicles, crowded, mostly pointing one way, on the top of a long naked fruit-stalk. Stipule half-harrow-shaped, two at the base of each general leaf-stalk, smaller than those of O. tuberosus, and ending in a more acute point. Calyx short, green, tinged with red, fringed, lips nearly equal, the upper with two teeth, the lower with three, rather longer. Blossom long and narrow, reddish white, veined with purple, compressed. Woodw. (Root rather woody. Legume nearly an inch long, smooth. E.)

(Sir J. E. Smith reports an extraordinary variety to have been found at Hafod, in South Wales, by Mr. Todd, with simple leaves, five times as large as its natural leaflets, and which cannot by any culture be made to flower. E.)


(O. niger. Leaves winged, of from four to six pair to elliptic-lanceolate leaflets: stipule linear-awl-shaped, simple, entire; stem branched, angular, erect.


Root tapering, sweet according to Linnaeus. Herb smooth. Stems several, one and a half to two feet high, upright, branched, leafy, angular, not winged. Leaves usually of about five pair of elliptic-oblong, blunt, bristle-pointed, veiny leaflets an inch long, not invariably opposite; the common stalk very little elongated beyond them. Flower-stalks axillary, rather longer than the leaves, each bearing a cluster of four or five elegant, blueish-purple, flowers. Legumes blackish, cylindrical.


* (From ὠπός, to excite; and βοῦς, an ox; the plant refreshing and nourishing cattle. E.)
O. tuberosus. Leaves winged, spear-shaped; stipule half-arrow-shaped, very entire, (toothed at the base: Fl. Brit. E.) stem simple, erect.

—Sib. 1—Ger. Em. 1237. 2—H. Ox. ii. 21, row 2. f. 3—Fl. Dan. 781—
Thal. 1—Park. 1062. 5.

Stems at first decumbent, but upright when in flower. Linm. (About a foot high, winged, slender, leafy. Root tuberous, black on the outside, and knobby. Leaves one to three pairs, sessile, elliptical, the upper ones narrower and nearly strap-shaped, without an odd one, but the leaf-stalk is extended into a point. Stipulae in pairs at the base of the leaf-stalks. Flowers four or five in a bunch, on short slender pedicles. Woodw. Stems with two or three membranous leafy edges. Style strap-shaped, not pointed at the end. Seeds compressed, about twelve. Blossoms purple, large, three or four together. Legume flatish, black, pendent.

(The leaves are sometimes narrow, linear, constituting O. tenuifolius, of Roth. E.)


LATHYRUS.† Cal. two upper segments shorter. Style flat, dilated upwards, downy on the upper surface.

(1) Fruit-stalks single-flowered.

L. APH'ACA. Tendrils without leaves; stipule arrow-heart-shaped.

Curt.—(E. Bot. 1167—Part. 3. E.)—Gies. 41—Mill. Ill. 43—Lob. Obs. 518. 1, and Ic. ii. 70. 1—Ger. Em. 1250—Park. 1067—H. Ox. ii. 4. 7.

Stems quadrangular, trailing. Stipulae oval-spear-shaped, arrow-shaped at the base, in pairs, smooth, somewhat sea-green, marked underneath with numerous parallel ribs, larger towards the top of the stem. Fruit-stalks long, from the bosom of the leaf-scales, alternate. Tendrils solitary, simple, opposite to the fruit-stalks. Floral-leaves awl-shaped,

* The roots, when boiled, are savoury and nutritious; ground to powder they may be made into bread. They are held in esteem by the Highlanders of Scotland, who dry them in their pockets, and chew them, as our people do tobacco, and find that they prevent the uneasy sensation of hunger. They imagine that they promote expectoration, and are efficacious in curing disorders of the lungs. They know how to prepare an intoxicating liquor from them. Penn. Tour. 1772. p. 310. Ray's Hist. Plant, p. 916. This plant is supposed to be the Chara named in Caesar's Commentaries, De Bell. Civ. iii. 40. "Ipse autem, consumptis omnibus longè latèque frumentis, summis erat in angustiis."

† The meaning of this name, derived from Theophrastus, is not apparent; unless the conjecture from Lat. ab iis qui fuerunt, cum Valerio, quod appellatur Chara: quod ad maximam lacte, multum inopiam levabat; id ad similitudinem panis efficiendam"—Also the same mentioned by Dio, on which, mixed with milk, the soldiers of Valerius's army subsisted under a penury of bread. Vid. also Sibbald Miscel. Antiq. fo. 1710. E.)

Horses, cows, goats, and sheep eat it.
minute, one at the base of each flower. **Calyx** divided almost to the base; **segments** equal, smooth, nearly as long as the blossom, strap-spear-shaped. **Blossom** greenish yellow at the base. **Woodw.** (*Legume* compressed, smooth. E.) The stipule in this plant supply the place of leaves, and as such they might be considered, but the real leaves are very minute, and only exist, according to Curtis, for a short time after the sprouting of the seed. **Flowers** yellow, small.


A. June—Sept.

**L. NISSOlia.** Leaves simple, without tendrils: stipule awl-shaped.


**Stem** upright, (supported by other plants,) simple, angular, twisted, slightly hairy. **Leaves** alternate, smooth, sword-shaped, resembling those of Grass. **Stipule** in pairs, at the base of the leaves. **Fruit-stalks** axillary, slightly hairy, shorter than the leaves, with rarely more than one flower. **E.** **Blossom** beautiful crimson. **Legume** strap-shaped, slightly downy, terminated by a straight style. **Woodw.** (What are usually termed *leaves* in this species, are by De Candolle considered as dilated *petioles*; and see a further illustration in *Fl. Lond.* E.)


*(2) Fruit-stalks with more than one flower.*

**L. Hirsutus.** Fruit-stalks mostly two-flowered: tendrils with two leaves: **legumes** hairy: **seeds** rough.

Stems angular, twisted, slightly hairy, about two feet long. Leaflets, a single pair, slightly hairy, with three strong ribs, terminated by an awn. Leaf-stalks triangular, furrowed above, ending in tendrils mostly dividing into three. Stipules half-arrow-shaped, pointed, with long appendages, two at the base of each leaf-stalk. Fruit-stalks very long. Flowers about one or one inch and a half from each other. Flower-scales awl-shaped, small, about a quarter of an inch beneath the terminal flower, and at the base of the short pedicle of the lower. Calyx one-third the length of the blossom; clefts extending half way down; segments five, equal. Pods short, covered with hair, each hair proceeding from a gland. Woodw. Blossom variegated with purple and white, with yellow lines within. (Stems climbing. Stigma permanent, very blunt. E.)


L. pratensis. Tendrils with two leaves, mostly simple: leaflets spear-shaped.


(Root tuberculous. Stems slender, climbing, two or three feet long. E.) much branched. Leaves smooth. Leaf-stalks furrowed, triangular, terminating in tendrils. Stipule spear-arrow-shaped, large, in pairs at the base of each leaf-stalk. Fruit-stalks long, with four, five, or more flowers. Pedicles short, hairy. Flower-scales awl-shaped, very minute, one at the base of each pedicle. Calyx one-third as long as the blossom, somewhat hairy, cloven half way down; segments rather unequal. Legume black, smooth. Tendrils sometimes two or three cleft. Woodw. Blossom yellow; standard with six or seven purple lines just above the claw. Anthers oblong.


P. July—Aug.*


* L. pratensis has been recommended as a new plant for experimental agriculturists, and premiums have been offered for its cultivation. But it does not seem to be agreeable to cattle, as where they have a choice of food they seldom touch it. Besides it produces very few seeds, and those are for the most part devoured by a species of Curculio. Mr. Swayne. (Apion Erii and Lathyri, according to Kirby, are found upon this species; also the caterpillar of the white butterfly, Lencophasia Sinapis, feeds upon it. The merits of this Vetchling, as to produce and nutrient qualities, are only in proportion of three to seven of the red clover. It is nauseously bitter, Hort. Gram. E.)
Stems widely spreading, climbing or trailing to the height of five or six feet. Leaf-stalks rough at the edge. Leaflets strap-shaped, not broader than the stem. Stipule awl-shaped, very narrow. Linn. Flowers not more than six in a bunch, as small again as those of L. latifolius. Hall. (Fruit-stalks longer than the leaves, bearing from four to ten flowers. Blossom purple, wings violet, keel greenish. Legume declining, smooth, deep red colour. Fl. Brit.

Var. 2. Leaves broader than the stem. Blossom red and white.

Leaves sometimes even broader than those of the next species, and having more than three ribs; but the stipule are always narrower than the stem in this species, and always broader in latifolius. The flowers in latifolius are considerably larger and more numerous than in L. sylvestris. E.)


P. July—Aug.

L. latifolius. Tendrils with two elliptical leaflets: stem winged.


(Much like the preceding, but larger. Tendrils often five-cleft. Flowers numerous, large, beautiful. Fl. Brit. E.) Leaflets rolled in, elliptical, several times broader than the stem, sometimes four. Stipulae broader than the stem, nearly halberd-shaped. Linn. Leaves with four or five ribs; varying much in length, but always broader than the stem. Blossom pale purplish rose-colour.


P. July—Aug.*

L. palustris. Tendrils with several elliptic-lanceolate leaflets: stipule spear-shaped: stem winged.


* The beauty of its flowers has obtained it a place in our shrubberies and gardens. (It may readily be entwined over the trellis or around trees, by which its luxuriant clusters of gay flowers will be displayed to advantage. Prof. Martyn suggests that the prodigious crop yielded by this plant, and the lasting nature of its roots, even on a barren soil, should render it a fit object for agricultural experiment. E.)
Whole plant smooth. Stems with somewhat membranous edges. Leaflets two or three pair, spear-shaped. Tendrils three-cleft. Flowers three to six or more, pointing one way. Woodw. Blossom blueish purple. (Legume pendulous, smooth. Fruit-stalks twice as long as the leaves, bearing three to six flowers. Stem climbing with tendrils, four feet long.)


**VICTA.** Summit bearded underneath.

* (According to Varro so denominated a vinciendo, as binding other plants with its tendrils. E.)

† (The habits of this Vetch are similar to those of *V. cracca*; but it seems more impatient of exposure. When transplanted to open situations, the produce is inconsider-
V. *cracca*. Flowers tiled: leaflets spear-shaped, pubescent: stipules mostly entire.


Leaflets rolled in. In corn-fields large and luxuriant, in meadows small and hoary. Blossom sometimes white. Linn. Stem when climbing on bushes three or four feet high, quadrangular, scored, slightly hairy. Branches numerous, short, alternate, from the bosom of the upper-leaves. Leaves alternate, very long; leaflets strap-spear-shaped, often alternate than opposite, hairy, pointed, from ten to twelve pair. Tendril terminating the leaf-stalk, branched. Stipules half-arrow-shaped, pointed. Calyx bluish, the two upper teeth extremely short, the lowermost longest. Flowers small, very numerous, pendent, closely tiled. Woodw. Blossom bluish purple, with two deeper purple spots at the extremity of keel; standard heart-shaped, without a short point in the notch. Legume with five seeds, (smooth, brown. E.)


able compared with that of *V. cracca* or *V. sepium*; though in its natural place of growth, the produce is six times that of either of these Vetches; it is likewise superior in quantity of nutritive matter. Horses, cows, and sheep ate this Vetch with more eagerness than they did the other Vetches or grasses that were on several trials offered to them. Hort. Gram. Apion Viciw is plentifully found upon it. Scott beautifully describes this elegant climber, which both for foliage, flowers, and general habit, is not exceeded by any in this island.

"And where profuse the Wood Vetch clings
Round ash and elm in verdant rings,
Its pale and azure-pencilled flower
Should canopy Titania's bower."

The pious and philosophic Paley, in his evidence of a designed and studied mechanism in the productions of nature, adverting to the general structure of climbing plants, of which the present species affords an excellent illustration, states—"In these plants, from each joint or axilla, issue, close to each other, two shoots; one bearing the flower and fruit, the other, drawn out into a wire, a long, tapering, spiral tendril, that twists itself round any thing which lies within its reach. Considering, that two purposes are here to be provided for, (and together), fructification and support, the fruitage of the plant, and the sustentation of the stalk, what means could be used more effectual, or more mechanical, than what this structure presents to our eyes? Why, or how, without a view to this double purpose, do two shoots, of such different and appropriate forms, spring from the same joint, from contiguous points of the same stalk? It never happens thus in robust plants, or in trees." "We see not (says Ray) so much as one tree, or shrub, or herb, that hath a firm and strong stem, and that is able to mount up and stand alone without assistance, furnished with these tendrils."—"Make only so simple a comparison as that between a pea and a bean. Why does the pea put forth tendrils, the bean not; but because the stalk of the pea cannot support itself, the stalk of the bean can?—We may add also, as a circumstance not to be overlooked, that in the pea tribe these clasps do not make their appearance till they are wanted; till the plant has grown to a height to stand in need of support." Nat. Theol. How instructive are these rational deductions. If one train of thinking be more desirable than another, it is that which regards the phenomena of nature with a constant reference to a supreme intelligent Author:—for

"There's nothing bright above, below,
From flowers that bloom, to stars that glow,
But in its light the soul may see
Some feature of the Deity."—E.)
Flowers two or more together, nearly sessile.

*Dr. Plot, in his Nat. Hist. Staffordshire, p. 204, says, that this and the preceding species advance starved or weak cattle more than any other provender. (It is hardy, durable, nutritious, and productive, but the seeds do not readily vegetate. It should, therefore, be cultivated by planting out the roots, which are abundant, and easily separated: Salisbury. Mr. Sinclair observes that its strong creeping root must exclude it from arable lands. It might be cultivated in the manner of lucern, than which, though greatly deficient in weight of crop, it is, nevertheless, more nutritious. Though not quite so showy as the preceding species, we cannot but welcome with pleasure this gay enlivenier of the lonesome lane, where—"Purple tassels of the tangling Vetch Hang elegant."

Indeed it is worthy of introduction nearer home in the wilderness or hedges. E.)

† (The Common Vetch, *Vicia sativa*), has been cultivated as fodder for cattle from time immemorial. Ray informs us, that in 1686, it was sown almost all over Europe, and was chiefly used in England, mixed with peas and oats, to feed horses; but it was sometimes sown separately for soiling cattle, and was reputed to cause milch cows to yield much milk. It is of a hardy growth, and when sown upon rich land, will return a large supply of green fodder for the consumption of horses, or for fattening cattle. Eneyc. Agric. E.) In Gloucestershire and Worcestershire it is sown as pasturage for horses, and eaten off early enough to allow of turnips being sown the same year. The seeds are excellent food for pigeons. (Dr. Bevan observes that not only the flowers, but the young spotted leaves of Vetches are peculiarly attractive to bees; (and so likewise those of the bean); a predilection in these natural chemists conjectured to arise from the injured or diseased parts exuding a honied secretion. E.) Horses, cows, sheep, and goats eat it. (Spring Tares, as sown in March or April, are more upright and tender, but afford fine summer fodder. Though the seeds are alike in appearance, it is necessary to discriminate the kinds, or the crop may fail altogether. Samples grown in a hot house, or frame, will quickly determine the sorts. Winter Tares, sown at wheat seed-time, remaining all winter, are cut six weeks earlier in the spring. They trail on the ground. Salisbury.—Winter Tares afford most nutritive matter, and are generally preferred. Sinclair.—Livia Cracea frequents this species. E.)
More common than Var. 1. So nearly allied to it that there scarcely seems to be any fixed limits between them. Linn. Stem trailing. Leaflets more pointed. Stipules marked, but less distinctly, with the burnt dots. Flowers mostly solitary, but of the same colour of those of var. 1. It is clearly a variety of *V. sativa*, as it may be traced through all its stages from its smallest size up to the largest plants of *V. sativa*. Woodw.


Sibthorp considers this as a distinct species, and gives the following specific character. *V. angustifolia*. Legumens nearly sessile, about two together, expanding; lower leaflets inversely heart-shaped, with a point in the notch; upper ones strap-shaped. Fl. Ox. Smith latterly entertains a similar opinion, but while admitting *V. angustifolia* of Sibthorp to be the same plant with his own, insists that "those who describe the flowers otherwise than solitary, have confounded this species with *V. sativa* var." Whereas the author of Fl. Ox. expressly declares his *V. angustifolia* to have "legumes about two together." How to reconcile this discrepancy we know not, unless by abandoning the supposed new species, and stating, what our specimens would appear to indicate, that neither the size of the plant, the number or colour of the flowers, nor the darker or less apparent spots of the stipule, afford invariable characteristics. E.)


* This species shoots earlier in the spring than any other plant eaten by cattle, vegetates late in the autumn, and continues green all winter. But it is difficult to collect the seeds, as the pods burst and scatter them about; and, moreover, hardly a third part of them will vegetate, being made the nidus of an insect. A patch of them sown in drills in a garden, was cut five times in the course of the second year, and produced twenty-four tons per acre of green food, which when dry would weigh nearly four tons and a half. Bath. Soc. iii. Mr. Swayne has since observed to me that, though palatable to all kinds of cattle, it is difficult to cultivate on a large scale, the seeds being generally devoured by the larvae of a species of *Attelabus*, (probably *A. punctiger* (Apion punctifrons, Kirby), said to resort to this Vetch only, E.) which larvae are the prey of a species of *Ichneumon*. Apion (*Curculio*) subnudicicum, is also found upon it. (Mr. Sinclair states horses and oxen to be very fond of it. Its produce is very inferior on a clayey soil. E.)
(3) Flowers solitary, nearly sessile.

V. lathyroides. Legumes solitary, upright smooth: leaflets about six, the lower ones inversely heart-shaped: stipule half-arrow-shaped, very entire: seeds cubic, warty. E. Bot.


Stipula not spotted. Whole plant hairy except the seed-vessels. Root small, fibrous, annual. Stems several, a foot high or less; weak, trailing. Leaflets four to six pair, and never more, opposite, the upper ones mostly spear-shaped. Tendrils never branched. Stipula half-arrow-shaped, the upper spear-shaped, pointed. Flowers small, bluish purple, sometimes white.

The true leading characters of this species are, the blossom being scarcely longer than the calyx, the seeds cubic, and the tendril never branched. Woodw. In the fig. of E. Bot. Fl. Dan. and Kniphofius, the tendrils are wanting; in those of Jacquin and Rivius they are represented as unbranched, agreeable to Mr. Woodward's observation, but in Dickson's specimens, published in his fourth fasciculas of dried plants, the tendrils are branched.


V. luttea. Legumes sessile, reflexed, hairy, solitary: stems diffuse: standard smooth: (stipula coloured. E.)


(Stems one to two feet long. Bloss. sometimes striped, or nearly white. E.) Leaves alternate; leaflets three to five pair, mostly alternate, oblong, blunt, and dentate, or strap-spear-shaped. Stipula spear-shaped, minute. Tendrils terminal, simple, or divided into two or three. Blossom pale yellow. Seed-vessel woolly. Woodw. (Permanently differing from the still more rare V. hybrida, in the smooth vexillum of the flower, in the dark spot upon the stipule, and in the much less obtuse leaves. D. Turner. E.)


(P. Aug. E.)

V. hybrida. Legumes sessile, solitary, reflexed, hairy: standard villous: (leaflets abrupt. E.)
Leaflets inversely egg-shaped, dentate, small, sprinkled with hairs. Stipules not brown, but entirely green. Flowers yellow, greyish above, hairy. In other respects accords with *V. lutea* Linn. (Rather taller than the preceding, and less diffuse. Leaflets more abrupt. Stipule wholly green. Flowers rather larger, and with a reddish not grayish tinge externally. But the best characteristic is supposed to be the standard being clothed with hairs. E.)

(Hairy-flowered Yellow Vetch. E.) Meadows and pastures. Glastonbury Tor Hill, as well as *V. lutea*; Ray and various subsequent authorities, and scarcely any other station known. E. P. June—Aug.

*Ervum*. Leaflets and whole plant entirely smooth. Stipules green, or pale brown. Flowers like those of *lutea*, but their calyx-teeth are generally more equal in length. In colour they are for the most part less yellow, and sometimes quite blue, as represented in the figure, but both species are extremely variable in that respect. Legumes quite smooth in every stage of their growth, and contain rarely more than five seeds. E. Bot.


*V. levigata*. Legumes sessile, solitary, reflexed, smooth: stems nearly upright: leaves very smooth.

*E. Bot.* 483.

Leaves and whole plant entirely smooth. Stipules green, or pale brown. Flowers like those of *lutea*, but their calyx-teeth are generally more equal in length. In colour they are for the most part less yellow, and sometimes quite blue, as represented in the figure, but both species are extremely variable in that respect. Legumes quite smooth in every stage of their growth, and contain rarely more than five seeds. E. Bot.


(Stems many, climbing with tendrils, branched, angular, furrowed, smooth, about eighteen inches long. Leaves in two pairs, with leaflets large, egg-spear-shaped, sharp-pointed, slightly hairy on the under surface. Stipule large, half-arrow-shaped. Flowers axillary, solitary; on fruit-stalks of various length, very rarely two-flowered. Seeds five or six, roundish, smooth, mottled with black and grey. Fl. Brit. The breadth of the leaflets is variable, sometimes approaching to strap-shaped. E.) Seeds protuberating. Flowers, standard and keel reddish purple, wings yellowish white.


ER'VUM.* (Stigma capitate, pubescent all over. E.)

E. tetrasper'num. Fruit-stalks mostly two-flowered: pods smooth: seeds four.

* (From *eruo*, to pluck out; as necessary to be eradicated from the growing corn; to separate the tares from the wheat. E.)
DIADELPHIA. DECANDRIA. ORNITHOPUS. 847

Curt.—Riv. Tetr. 53, Cracca minor, siliquis gemellis.—(E. Bot. 1292. E.)—Ger. 1032. 2—Fl. Dan. 95.—J. B. ii. 315. 2—H. Ox. ii. 4. 16—Anderson.

Stem two-edged, nearly quadrangular. Leaflets generally ten, and mostly alternate. Fruit-stalks of a hair-like fineness, with one or two flowers. Flowers small, violet, often blood-coloured. Legume oval-oblong, smooth. Linn. (Flower-stalks and calyx besprinkled with soft hairs. E.)

(Mr. Woodward observed a lower and much branched variety with five, six, or seven, rarely four seeds, in gravelly soil, near Cambridge. E.)

Smoother-podded Tare. (Welsh: Corbysen lefn bedair ronynog. E.)

Corn-fields, hedges, and borders of ploughed fields. A. June.

E. hirsutum. Fruit-stalks many-flowered: seeds two: (pods rough with hairs. E.)


(Much resembling the preceding species, but the stem smoother, leaflets rather broader and more reflexed: the whole plant somewhat larger, two or three feet long, slender, climbing. E.) Stems weak, much branched, angular, scored. Leaf-scales, the lower with two or three awl-shaped teeth, the upper awl-shaped, entire. Leaflets mostly strap-shaped, eight to twelve pair, somewhat alternate, terminated by a branched tendril. Fruit-stalks axillary, shorter but not so slender as in E. tetraspermum. Flowers two, three, or four, on very short pedicles; when two, separate; if three, two of them together; if four, in pairs. Legume hairy. Woodw.

Flowers small, pale purple, or white.

Rough-podded Tare. (Welsh: Corbysen flewog. E.) Sandy corn-fields and meadows. (A. June—Sept. E.)*

ORNITHOPUS.† Seed-vessel cylindrical, articulate, curved.

O. perpusillus. Leaves winged: legumens incurved, jointed: (flowers capitate, bracteated. E.)


Root slender, nearly as long as the stems; lateral fibres few. Stems trailing, from one to six inches high. Root-leaves numerous, prostrate, the lowermost sometimes on leaf-stalks, the rest sessile; leaflets egg-shaped, or elliptical, opposite or alternate, from three to fourteen pairs, with an odd one smaller. Flowers one to five, terminal, opposite a leaf. Le-

* Horses, cows, goats, and sheep eat it. Linn. In wet seasons whole fields of corn have been overpowered and wholly destroyed by it. (Hence it is sometimes called Strange Tare. This evil is occasioned both by the wild and cultivated Tares being mixed with samples of seeds of wheat and barley. When ground in the flour they affect it with a strong disagreeable flavour. Mr. Holdich suggests that field tares should never be suffered to go to seed, but rather be fed off and ploughed down, soon enough to prevent their spreading. Both these True Tares not only illustrate the old adage, that "ill weeds grow apace;" but that they likewise increase by superabundant fertility; for it appears from experiment, that a single seed will, by the produce of one plant only, multiply itself a thousand fold in a very short time. E.)

† (From oφίς, ophīs, a bird; and πόδιος, a foot; the curved legume exactly resembling a bird’s foot. E.)
DIADELPHIA. DECANDRIA. HIPPOCREPIS.

Gyme slightly compressed, bowed inwards. St. Leafits set with very fine silvery hairs. Blossom, standard very slightly notched at the end, marked with crimson lines, the claw yellowish brown; wings white, with a reddish tinge; keel pale straw colour. Seeds six. A beautiful plant, and not uncommon on dry heaths and downs; (varying from one inch to a foot in the extent of its branches: and remarkable for its seed-vessel, (lomentum of Willdenow, as being articulate, each cell containing one seed, and separating transversely at the joint) resembling a bird's foot. E.)

Var. 2. Flowers entirely yellow. Each leafit with a dark purple blotch.

About Sidmouth.


HIPPOCREPIS.* Seed-vessel many-celled, compressed, incurved, with several notches along one of the seams.


Stems several, ascending, a span high, smooth. Stipulae rather spreading. Leafits fifteen, oval-strap-shaped, expanding, rather firm in texture. Fruit-stalks between angular and scored, longer than the leaves, from the bosom of the upper leaves two or three. Umbel orbicular, with eight flowers. Blossoms standard somewhat arched, striated, underneath, not bent back at the edges except at the base, which is indented, forming a small cavity on each side. Linn. Root thick, woody. Stipulae in pairs, oval, blunt. Leafits seldom more than six pairs, opposite, heart-shaped, or elliptical and indented. Flowers six to ten, disposed in a circle round the summit of the fruit-stalk, after flowering bent down. Pedicles slightly hairy, very short. Woodw. Plant sometimes quite free from hairs. Blossom dull yellow, with brownish streaks. (Legumes above an inch long. E.)


* (From ἵππος, a horse; and κρέπις, a shoe; to which the figure of the legume may be compared. E.)
HEDYS'ARUM.* Keel broad and blunt: legume compressed, jointed, one seed in each joint.

H. ono'brycii. Leaves winged: legume with one seed, prickly: wings long as the calyx: stem elongated.

Onobrycii—J. B. ii. 335. 2—Ger. 1063. 1—Clus. ii. 232. 2—Dodd. 518. 2
—Lob. Obs. 327. 1, and IC. ii. 81. 1—Ger. Em. 1243. 1—Park. 1082. 1.

(A very showy plant. E.) Stems cylindrical, scored, (two or three feet long. E.); at first trailing, but when in flower ascending. Stipulae in pairs, oval-spear-shaped, terminated by a long point, membranous at the edges, sometimes fringed with a few hairs. Leaf-stalks furrowed above, slightly hairy. Leaflets eight to ten pair, with an odd one; those of the lower leaves elliptical, of the upper spear-shaped, or strap-spear-shaped, all with projecting points at the end, the uppermost with the mid-rib beneath and edges fringed. Fruit-stalks long, slightly hairy. Bunches long, closely tiled upwards. Flowers numerous. Floral-leaves awl-shaped, longer than the pedicles. Calyx one fourth the length of the blossom. Woodw. Calyx, segments spear-shaped, hairy, the two upper distant, the lowermost the shortest. Blossom standard egg-shaped, with a little tooth in the notch at the end, red in the middle, with eight or ten deeper coloured lines, white at the edges, and mottled with red, the lines on the outside fainter, but more numerous; wings very small, not half the length of the calyx, spear-shaped, red and white; keel reddish, with deeper coloured lines. Legume oblong, hairy.


ASTRAG'ALUS.† Caps. generally two-celled; gibbous: the solitary filaments cylindrical.

(1) Stems trailing, leafy.

A. hyposgot'tis. Stem prostrate: flowers in roundish heads: legumes egg-shaped, compressed, hairy, grooved, the point reflexed: leaflets blunt.

* (From սղ, sweet; and ար, perfume; certain species exhaling an agreeable scent. E.)
† This is cultivated like clover for feeding cattle, and is particularly advantageous in dry hilly situations, and chalky soils, (being equally valuable both green and in hay. In the south of England, Mr. Salisbury states it is the life and support of the upland farmer. Mr. Sinclair proves that for sheep especially, it is more economical than turnips. For various details respecting its uses and culture, see Young’s Annals, Hort. Gram., &c. E.)
‡ (From αστρομος, a bone of the foot; which the legume of this plant somewhat resembles. E.)
Stems (three to six or nine inches long, E.) weak, as many as six or upwards, towards the base lying close to the ground, the heads of flowers rise up at some distance from the root, as if without any leaves or stems belonging to them. **Leaflets** six to twelve pair, with an odd one elliptical, or spear-shaped, hairy, especially on the upper side, opposite. **Leaf-stalks** hairy, furrowed. **Stipulae** egg-spear-shaped, sessile, in pairs, fringed. **Fruit-stalks** mostly from near the ends of the branches, ascending, larger than the leaf-stalks, about as long as the leaves, hairy, hairs white towards the base, black above. **Flowers** five to six, rarely more, in a close head, on short pedicles. **Calyx** beset with black hairs; teeth short, nearly equal. **Blossoms** bluish purple, sometimes white. Woodw. Dr. Afzelius first satisfied me that what had been taken for *A. arenarius* by Hudson, Lightfoot, and Relhan, was *A. hypoglottis* of Linn. Mant. which information is since confirmed by specimens received from Professor Thunberg.


**A. glycyphyllum. Stems prostrate: legumes obscurely triangular, incurved: leaves longer than the fruit-stalks: leaflets oval.**


(2) Stalk bare, without a leafy stem.

A. uralensis. (Stemless: flower-stalk upright, longer than the leaves: legumes awl-shaped, villous, upright: leaflets silky. E.)


Leaflets twenty to thirty. Spike short, rather oblong. Flowers sessile, Calyx egg-shaped, inflated; teeth short. Blossom purple or violet, rarely white. Whole plant, the blossoms excepted, covered with white shining soft hairs. Leaf-stalk surrounded at the base with spear-shaped withered scales. Leaflets oval, oval-spear-shaped, and spear-shaped, with an odd one. Fruit-stalks much thicker than the leaf-stalks, but little longer than the leaves. Flowers eight or ten, crowded. Floral-leaves, the lowest longer, the rest shorter than the calyx. Woodw.

(A. ura—

(1) Stalk sometimes decumbent. Flowers cream-coloured, or buff, with more or less of a purple tinge on the keel and wings. Leaflets more or less silky. Legume more egg-shaped and inflated than in A. uralensis, covered with short, spreading, black as well as white hairs.

Yellowish Mountain Milk Vetch. A. campestris. Linn. Willd. A. ura—

(From ἄποθες three; and φύλα, a leaf; descriptive of its ternate leaves. E.)

† (Sir H. Davy has shown that the nutriment of Clover contains a greater proportion of bitter extractive and saline matter than the proper grasses; and that when pure Clover hay is to be mixed as fodder, it should be with summer hay rather than after-math hay. Agric. Chem. The flowers of all the species, dried and powdered, may be made into bread, which, in times of scarcity, has preserved the inhabitants of less hospitable climates from perishing. Trefoils may also be deemed the husbandman’s weather-glass, always con—
(1) **MELILOTS.** Capsule naked, one-celled, containing several seeds.

**T. ornithopodioides.** Capsules eight-seeded, mostly three together, twice as long as the calyx: stems declining.

**Curt.** 124—**Fl. Dan.** 368—(E. Bot. 1047. E.)—Ray 14, 1, at p. 332—**Pluk.** 68. 1.

Stems prostrate, two to five inches long, disposed in a circular manner. **Leaflets** three, sessile, inversely heart-shaped, sharply and distantly serrated. **Leaf-stalks** long, slender. **Stipules** spear-shaped, sharply pointed, large, in pairs at the base of the leaf-stalks. **Fruit-stalks** axillary, much shorter than the leaf-stalks. **Flowers** from one to four, but usually two on a fruit-stalk, parallel to each other. **Calyx** more than half the length of the blossom, pale green, with deeper lines, cloven half-way down; segments nearly equal, awl-shaped. **Blossom** pale red. **Legumes** short, thick, terminated by a short point turned downwards, which gives them something of the appearance of a bird's claw. Woodw. **Root** fibrous, furnished with small fleshy knobs, as in *Vicia lathyroides* and others of this Class, apparently to resist accidental drought, during summer. E. Bot. E.)


**A. June—July,**

**T. officinale.** Capsules in unilateral bunches, mostly two-seeded, hairy, wrinkled, stem upright. E.)

Knph. 7—**Fl. Dan.** 934—(E. Bot. 1340. E.)—Gmel. iv. 7—**Sheldr.** 72, Common *Melilot*—**Ludw.** 113—Dodd. 567. 2—**Lob. Obs.** 501. 2, and **Jc.** ii. 43. 2—**Ger. Em.** 1235. 4—Park. 719. 1. 2—**Ger. 1034. 3—**Riv. Tetr.** 6, *Melilotus*—**Blackw.** 80—**Matth.** 1162—**Trag.** 391—H. Ox. ii. 16, row 2. 2—**Fuchs.** 749—**J. B.** ii. 370—**Ger. 1034. 4—**Lonic.** i. 106. 1.

Tracing their leaves when storms impend. The different kinds exhibit a striking exemplification of spontaneous movement in vegetables, both leaves and flowers appearing to court the light with avidity, by regularly following the course of the sun. They afford nourishment and protection to various insects, among which will be found *Apion flavifemoratum*, *A. Melilotum*, *A. vicinum*, *A. Lati*, *A. assimile*, *Lycoemia tarsata* and *Alsus*, *Geometra clathrata* and retata, *Papilio Cinxia*, and *Phalaena Passerina*; also the caterpillar of *Phalaena (Bombyx) Trifolii*, whose *pupa* is sometimes surreptitiously occupied by the Ichneumon chrysopus, which rests therein till matured. Vid. Linn. Tr. v. iii. t. 2. The under surface of the leaves of several species of *Trifolium* is liable to be infested with minute black spots, which prove to be *Polythrinicum Trifolii*, Grev. Scot. Crypt. 216., and under the microscope are each found to consist of "little roundish tufts of filaments, densely crowded, semi-transparent, erect, simple, with numerous articulations; sporidia two-celled, scattered among the filaments." E.)
Leaves of the lower-leaves oblong-wedge-shaped, those of the upper elliptical, sharply serrated, toothed. Stipules, the lower with three or four awl-shaped teeth; the upper spear-shaped, entire. Bunches long. Flowers bent back, scattered. Pedicles short, hairy. Floral-leaves awl-shaped, small, one at the base of each pedicle. Calyx one third the length of the blossom, clefts extending half way down, segments nearly equal. Woodw. Blossom yellow. (Stem about two feet high, branched, furrowed. When dried, this plant exhales a fragrant odour like that of Anthoxanthum. E.)

(A variety bearing white blossoms has been observed by Mr. Winch growing on Willington Ballast, Durham; and on the Ballast Hills below Gateshead. E.)


(Stems six to eighteen inches long, solid; by which latter circumstance, according to Smith, it is essentially distinguished from T. hybridum of Linn. E.) Stipulae in pairs, oval-spear-shaped, lengthened out into an awn. Leaves varying in shape, but generally oval and blunt, sharply serrated, with a strong mid-rib, and numerous branching ribs terminating in the serratures. Leaf-stalks and fruit-stalks long, upright, rising nearly at right angles from the stem. Flowers in a close head, upright, when shrivelling bent downwards. Pedicles short. Stipulae small, awl-shaped, one to each pedicle. Calyx teeth nearly equal, the two upper rather longer, reddish. Blossom white. Standard oval. Woodw. Leaves inversely-heart-shaped, and egg-shaped. Calyx greenish white, with purple streaks. When the flowering is partly over, the heads assume a peculiar appearance, the florets diverging from the centre, spreading outwards and downwards like an umbrella.

Var. 2. Bloodwort. Leaves a dark purple.

Var. 3. Proliferous. Small heads of leaves growing out of the flowers.

* This is more fragrant when dry than when green. (It was formerly considered emollient and digestive, and therefore used in fomentations and cataplasms, but it has been laid aside as too acid and irritating. E.) A water distilled from the flowers possesses but little odour in itself, but improves the flavour of other substances. Horses are extremely fond of it; cows, goats, sheep, and swine eat it. (The capsules containing the seeds are so tough and adhesive, that even threshing will not dislodge them; so that in samples of wheat, the wrinkled capsule is called the seed. Prof. Martyn. Mr. Holdich, in his Essay on the Weeds of Agriculture, asserts this to be the most pernicious seed in wheat, a few seeds communicating a very strong and disagreeable smell to the flour. In arable land, it cannot be too much guarded against, and ought never to be sown with seed corn. It should be sedulously rooted up by weeding in the spring, for where it has once got in the land, it propagates itself by scattering many seeds before the crop be ripe. It does not appear to have been cultivated in England. E.)
Canal between Limehouse and Bromley. Curtis.
(Var. 4. *T. repens hybridum.* Huds. *T. hybridum.* With. Ed. 3 and 4, but not of Linnaeus. It is distinguished by its ascending and more branched stem.
Moist pastures near Peckham and Battersea. Hudson. E.)


P. May—Sept.*

(3) **Calyx villous.**

*T. subterraneum.* Heads hairy; three or four-flowered: involucre central, reflexed, rigid, stellate, inclosing the fruit.


The white filaments, which put forth from the extremities of the fruit-stalks, resemble roots, but they do not penetrate the earth as supposed by Dillenius, but rise upwards, their ends expanding into little star-like points, and finally inclose the seed-vessels in a kind of prickly head.

*Curt. Stems* (three to six inches long. E.) numerous, prostrate, disposed in a circle round the root. *Stipulae* in pairs, oval-spear-shaped. *Leaf-stalks* long, downy. *Leaflets* sessile, inversely, heart-shaped, blunt, obscurely serrated, downy, especially underneath. *Fruit-stalks* from the bosom of the leaves, the lower shorter, the upper as long as the leaves, with three or four flowers. *Floral-leaves* none. *Calyx* cylindrical, cloven half way down; segments nearly equal, bristle-shaped, fringed with soft hairs. *Blossom* white; standard oval, claw long and narrow. Woodw. *Tube*

* (Dutch Clover is so called from the seeds being usually imported from Holland; but as it is probable it might be raised as well in England, and the quantity required for annual sowing is prodigiously great, one house alone supplying forty or fifty tons, it must be highly desirable that such an article of commerce should be provided at home. E.)

Horses, cows, and goats eat it. Sheep are not fond of it. Swine refuse it. Linn. (This species, being remarkably sensible to atmospheric changes, affords a good rustic hygrometer. The leaves are always relaxed and flaccid in dry weather, but erect in moist or rainy. E.)

Wherever this plant abounds spontaneously, it is considered as an indication of the goodness of the soil. The richness of meadows and pastures is naturally owing to their abounding principally with the Trefoils, and others of the same class, with a due mixture of the more acceptable grasses. Pulteney's View. (On the soil of our moors, (in the north of England) being turned up for the first time, and lime applied, White Clover appears in abundance; a circumstance in no way satisfactorily accounted for, but which is known to take place in wastes both in Britain and North America. See Pursh's *Flora Americana,* ii. 477. Winch. In such situations the seed might have lain dormant a very great length of time, till stimulated into vegetation by the application of lime. Ashes have in the same manner been found suddenly to augment the growth of clover before scarcely observable, to the great surprise of farmers. Dutch Clover creeps on the ground and forms a fine bottom. It has not the property of blowing cattle in so great a degree as other sorts. Salisbury. Top dressings and frequent use of the roller encourage its growth wonderfully. Pure Clover may be very hurtful to sheep. Hort. Gram. It is peculiarly subject to depredation from the small weevil, *Apion flavipes,* which deposits its eggs in the heads of this species only. Kirby. The Welsh Apostle Maenwyn, better known as St-Patrick, landing near Wicklow, A.D. 433, on a mission from Pope Celestine, met with much opposition to his doctrine, till plucking a Trefoil, and thereby illustrating the mystery of the Trinity in Unity, his Pagan hearers are said to have become converts, and were baptized. Hence originated the custom of wearing the Shamrock, (a bunch of Trefoil) on the anniversary of that Saint; and hence has it become the national emblem of Ireland as is the Rose that of England, or the Thistle of Scotland. E.)
of the blossom very long. There is something so singular in this plant, that its economy merits further inquiry. The strong horny stellated substance which grows from the extremity of the fruit-stalk, stretching its rays outwards and downwards, incloses and presses the capsules to the ground, thus partially burying them. (Mr. G. E. Smith observes, that its seedlings are distinguished in winter by the varied pale and dark spotted pattern upon their leaves; and that upon the sandy ground below Folkstone church, this plant, with its singular stellated floral-radicles, may be studied to advantage. E.)


Stems numerous, prostrate, four to seven inches long, scarce perceptibly downy. Stipulae in pairs, oval-spear-shaped, taper-pointed, scored, smooth. Leaf-stalks furrowed above. Leaves alternate. Leaflets nearly sessile, obtusely oval, or oblong-wedge-shaped, smooth on both sides, strongly ribbed, the ribs terminating in pointed serratures, scarcely distinguishable by the naked eye, in the youngest leaves only the mid-rib lengthened into a projecting point. Heads terminal, with a pair of stipulae similar to, but broader than, those beneath. Calyx smooth, shorter than the blossom; teeth expanding, triangular, pointed but not rigid at the end. Blossom pale red. Standard spear-shaped, somewhat keeled. Wings and keel equal. Woodward.


T. scabrum. Heads sessile, lateral, egg-shaped: segments of the calyx unequal, rigid, finally recurved: (stems procumbent. E.)


Whole plant harsh to the touch. Stems prostrate, four to seven inches long. Stipulae oval-spear-shaped, terminated by an awn, scored with red lines. Leaf-stalks short. Leaves few. Leaflets oblong-wedge-shaped, sessile. Calyx scored, hairy; teeth triangular, the lowermost long, expanding, sharp, and giving the plant its roughness. Blossom but little
longer than the calyx, whitish. Woodw. It is in its seeding state that the segments of the calyx are most remarkably reflexed.


A. May—June.

T. striatum. Heads sessile, mostly lateral, egg-shaped: (calyx furrowed, hairy; with straight, bristle-shaped teeth. E.)


(Plant soft to the touch. E.) Stems from six to eighteen inches high, mostly upright, sometimes declining, but never prostrate. Leaf-scales in pairs, oval, pointed, scored, very downy. Leaves alternate, distant, the lower on long, the upper on short leaf-stalks, the uppermost sessile, or nearly so. Leaflets of the lower leaves oblong-wedge-shaped, of the upper spear-shaped, sessile, downy on both sides, ribs not strongly marked, serratures barely distinguishable with a glass. Heads oval, woolly, sometimes on short fruit-stalks, some terminal, but mostly in pairs. Calyx just shorter than the blossom, scores almost hid by long soft hairs; teeth nearly equal, straight, awl-shaped, not stiff. Blossom pale red. Standard spear-shaped. Wings and keel equal. Woodw. The ribs upon the calyx, and its rounded nearly globular shape when ripe, readily distinguish this species.


A. June.

T. arvense. Spikes extremely villous, oval; teeth of the calyx bristle-shaped, equal, hairy, longer than the blossom.


Whole plant villous. Stem upright, (six to twelve inches high, E.) cylindrical, firm, much branched. Stipulae in pairs, spear-shaped, scored with red veins, and ending in an awn. Leaf-stalks very short. Leaflets of the lower leaves elliptical, of the upper nearly strap-shaped, somewhat notched at the end, the mid-rib lengthened into a short point. Calyx reddish, longer than the blossom, scored; teeth bristle-shaped, nearly equal, fringed with long hairs. Woodw. (Blossoms pale red, minute. Spikes sometimes long and cylindrical, (whence its trivial name. E.) Calyx teeth pinky; the hairs when much magnified appear rough and knotty. E.)
Rev. S. Dickenson observes that it is highly aromatic when dried, and that it long retains its odour.


**Var. 2. Dwarf.** Ray. 14. 2. (Densely silky. Sm. E.)


Sea coast. Bracklesham, Sussex. Yarmouth Denes; Lowestoft, plentifully. Mr. Woodward. (Upon sand at New Romney, and near Sandwich. Mr. G. E. Smith. E.)

**T. medium.** Spikes loose; blossom nearly regular; stipulae awl-shaped, converging; stems zigzag, branched. Afzel.


Differs from *T. pratense* as follows: Leaves longer, more strongly ribbed, smooth above. Stipulae spear-shaped, green, not awned. Haller. Leaves longer and narrower, and blossoms of a deeper colour than those of the cultivated Clover. Ray. (Heads of flowers larger. Hook. Vid. Afzelius. Linn. Tr. i. E.)


**T. pratense.** Spikes crowded; blossoms unequal; calyx with four of the teeth equal; stipule awned; stems ascending. Afzel.


Flowers upright, when out of lower leaves roundish, those of the upper oval, slightly downy, dark blackish green, with a whitish, angular mark in the centre. Stipulae, the upper

* The true Marl Grass of the shops is the native *T. pratense*. Marl Grass was first cultivated by a farmer Smith, (I believe) of Somersetshire. See Billingsley’s Agricultural Report for Somerset.) A circumstance which particularly distinguishes *T. medium*, is its propagating itself by root. Mr. Swayne. (Calculated from its creeping roots to last longer in the ground than *T. pratense*, but it is not yet cultivated. It does not possess the dangerous quality of causing cattle to be love or blown, by eating it when fresh and green. Salisbury. —By actual experiment Mr. Sinclair proves the produce and nutritive qualities of this species to be decidedly inferior to the Broad-leaved Clover, *T. pratense*, but adds, that “though unfit for alternate husbandry, for permanent pasture on light soils its value is undoubtedly considerable. Hares and rabbits are very fond of this Clover, selecting it from other kinds. Hort. Gram. E.)
oval, terminated by an awn, scored with red veins, slightly woolly. *Head* single, usually roundish, situate between a pair of nearly sessile leaves, and in part surrounded by their stipulae, smaller, and of a deeper purple than those of *T. medium*. *Calyx* short, slightly woolly, generally scored with red veins; teeth bristle-shaped, woolly, usually tinged with purple. *Blossom* reddish purple, sometimes white; of one petal; tube long; standard longer than the wings and keel, blunt, notched at the end; wings upright. St. *Stems* always bowed upwards at the base. *Branches* and leaves upright, not wide apart. *Calyx* lower tooth far shorter than the tube of the blossom. Afzel.


English Botanists have considered this as a smaller var. of *T. pratense*, the *stipulae* being awned and the teeth of the calyx nearly equal, as in that species; but it differs in other respects very materially, the *leaves* being opposite, the *leaflets* small, short, inversely heart-shaped, the *fruit-stalk* very long and destitute of floral-leaves. Afzel. *Linn. Tr*. i. 227.

Between Peckham and Camberwell. Hudson.

Var. 3. *Cultivated*. Larger and more upright than var. 1. Leaves somewhat paler and thinner. Flowers somewhat paler. Does not propagate itself by seed, or continue so long in the ground. Ray.

*Fl. Don.* 989.

*Stems* strong, almost smooth, furrowed, twice as tall as those of var. 1. *Heads* large, oval, hairy. *Petals* more expanding, and *styles* shorter than those of var. 1. *Mill.*

*The heads are used in Sweden to dye woollen green. With alum they give a light, with copperas a dark green. (This is one of the oldest and most useful plants in cultivation, yielding an abundant and nutritious crop; but it soon exhausts the ground. Mr. Salisbury remarks that the seeds of Clover have the property of remaining long in the ground after it has appeared to be exhausted, when ashes laid on will by their stimulating effects, cause the seeds to vegetate. Hence some persons have affirmed that (soap) ashes, when scattered over land, will produce Clover, (vid. *T. repens*.) Though

"Nature should provide
Green grass and fatt'ning Clover for their food,"

Cattle should be turned into heavy crops of Clover at first very cautiously, or it may soon prove fatal, especially if wet with dew or rain. When intended for immediate use, it should be mown in the middle of the day. Clover seeds of all kinds are necessary ingredients in laying down pasture lands.—Bees extract much honey from the sweet scented blossoms. The young plants are often injured by the same little jumping beetles, *Haltica*, that attack turnips. See Obs. on the Clover Weevil in *Linn. Tr. vi.* A small weevil, also *Apion flavifemoratum*, feeds upon the seed of Purple Clover, and in most seasons does the crop considerable damage. But this mischief is moderated by the penetrating *Ichneumon*, from whose research the insect, concealed even within the legume of the plant, is not secure. Indeed, so wisely and mercifully is the balance adjusted throughout the whole economy of nature, that, though the impending evil be calculated to excite serious apprehension, we may rest assured that He who rides on the tempest and directs the storm, also works by means imperceptibly minute for the general welfare of created beings. E.)
Broad-leaved Clover. Meadows and pastures.*

Var. 4. Flowers cream-coloured: in other respects exactly resembling T. pratense.

A single specimen, found by the Rev. Mr. Swayne, in a field belonging to Tracy Park, near Bath. (Two solitary plants observed in a field of purple, near Uxbridge, by Mr. W. Christy. E.)

This plant has not the general hairiness, the long horns of the stipule, or the very long tooth of the calyx, so striking in T. ochroleucum.

(Var. 5. T. pratense perenne. Perennial Red Clover of Sinclair.
Hort. Gram.

Root slightly creeping, extremely fibrous. Of a darker green than the common Broad-leaved Clover, with more hairs on the stem and leaves, and less upright. The sheaths are terminated with narrower and longer points, which are set with longer hairs. Flower-stalks longer and more slender, with a disposition to grow flexuose. Heads of flowers less crowded, though equally large. When young the flower-head is extremely pubescent.

In the fertile grazing lands between Wainfleet and Skegness, in Lincolnshire, this true Perennial Red Clover abounds.†

T. ochroleu'cum. Spikes villous, terminal: stem upright, pubescent: lower leaflets inversely heart-shaped: lower tooth of the calyx as long as the tube of the blossom.


Stem more hairy, and stipule sheathing to a greater extent, and running out into longer awns than in T. pratense. Gouan. Leaves alternate; leaflets sessile, the lower ones heart-shaped and egg-shaped in the same plant. Woodw. These circumstances, together with the great length of the lower tooth of the calyx, sufficiently distinguish it from the yellow-flowered var. of T. pratense. (Bloss. sulphur coloured, in roundish, dense, heads. Stems twelve to eighteen inches high. E.)

Ray’s Trifolium pratense hirsutum majus, flore albo-sulphureo, Syn. 328, belongs to this species, as Hudson determined, and not to the variety above-mentioned.


* Much cultivated. It is either grazed, or made into hay. Swine, goats, horses, and cows are fond of it. Linn. It seldom remains in the ground more than two years. Mr. Woodward.

† (It should be combined with other grasses, and is either suitable to the alternate husbandry, (for which T. medium is inadmissible on account of its creeping roots), or for permanent pasture, for which it is peculiarly adapted. Such are its advantages for clayey and peaty soils: in dry light land T. medium is preferable. Hort. Gram. E.)

‡ (Smith pronounces the herbage to be very “ sparing and not lasting; ” and suspects the plant may prove merely annual. Apion assimile is found upon it. E.)


Herb varying much in luxuriance, always considerably hairy. Stems spreading, branched, clothed with soft horizontal hairs. Leaflets strongly ribbed. Flowers in round or ovate heads. Calyx very hairy, furrowed; its orifice is surrounded with an elegant red and white circle when about half grown. Standard of the blossom red; the other petals pale red or white. E. Bot. (In nothing so remarkable as in the enlarged spread segments of the calyx, of a rich brown colour when the seeds are ripe. Fl. Lond. E.)

Starry-headed Trefoil. T. stellatum. Linn. Discovered by Mr. Rorer in July, 1804, growing in great plenty between Shoreham harbour, Sussex, and the sea, (but on the Ballast Hills, and no where else in Britain. E.) A. July. E.)


(Stems numerous, spreading, often decumbent, about a foot long, branched, cylindrical, scored, slightly hairy. Bloss. pale red. One of those Trefoils distinguished by the teeth of the calyx becoming remarkably leafy, and much dilated, as the flower fades, and the seed ripens. In this it agrees with T. stellatum, but differs from pratense and its allies, as well as from arvense, whose teeth, though permanent and rigid, do not become leafy or dilated. Sm. E.)


(4) Bladder Trefoils. Calyx inflated and gibbous.


(5) (Hop Trefoils. Standard of the blossom incurved, permanent.


(Stems leafy, hairy, from four to ten or twelve inches long, cylindrical below, angular when they turn upwards. Leaflets notched, toothed, veiny, smooth, a little glaucous. Common foot-stalks always longer than the partial stalk of the central leaflet. Stipules ribbed, often fringed. Flowers about fifty, bright yellow; standard finally deflexed, dry and membranous, sheltering the single-seeded, small, pointed, solitary legume. Sm.

T. procumbens of Huds. Lightf. Curt., &c. is considered by Linnaeus only a variety of T. filiforme. Aftel. the T. minus of Relh. Sm. E.)


T. filiforme. Spikes oval, loosely tiled, few-flowered: stems trailing.

(E. Bot. 1257. E.)—Ray 14. 4. Stems three to six inches long. Stipules in pairs, oval-spear-shaped. Leaf-stalks very short. Leaflets mostly heart-wedge-shaped, very entire at the base, serrated upwards, strongly veined, smooth, nearly sessile. Fruit-stalks from the bosom of the leaves smooth. Flowers when wild mostly three, seldom more than five. Pedicels extremely slender, from half to one line long. Floral-leaves awl-shaped, very minute, one at the base of the pedicle of the middle flower, none on the others. Calyx half as long as the blossom, with five scores; the two upper teeth shortest, the lower longer, the lowermost the longest. Blossom pale yellow; standard egg-shaped, somewhat notched, keeled. Woodw. (Seed one, rarely two. E.)

Slender Yellow Trefoil. (Welsh: Meillionen felen eiddil. E.) Poor sandy heaths and pastures.


* (This Trefoil is eaten by cattle, but is not recommended for culture, its produce being late and inconsiderable. E. Bot. E.)

† (According to Mr. Salisbury this is a very useful plant, seeding freely, growing readily, and affording a fine bite for sheep and cattle. But its being an annual must diminish its value to the agriculturist. E.)
Stems numerous, six to twelve inches long, much branched. Stipulae in pairs, obtusely oval-spear-shaped. Leaf-stalks short. Leaflets heart-wedge or egg-shaped, very entire towards the base, serrated upwards, the odd one on a short leaf-stalk, the side one nearly sessile, smooth. Fruit-stalks from the bosom of the leaves, longer than the leaf-stalks, slightly downy. Pedicles very short. Floral-leaves none. Flowers after flowering bent back, hanging loosely and separate. Woodw. Stem a little hairy. Leaflets inversely heart-shaped, mid-rib a little hairy underneath, with about seven semi-transparent lateral ribs. Flowers yellow; loosely tiled. This is the most common sort of *Hop Trefoil,* and may be found in almost every dry, sandy, or gravelly pasture, especially where the turf is fine, but varying greatly in size according to the richness or poverty of the soil, and flowering from May to August. On considering that the above described plants frequently grow intermixed, are very similar in general habit, and subject to considerable variation in size, we hesitate to admit the latter as a distinct species. On this point the acute Greville observes, "I cannot find sufficient difference between *T. filiforme* and *minus,* to make them even varieties. The middle leaflet is both sessile and petiolate on the same specimen in both plants, and is so represented in E. Bot. 1257 as *T. filiforme.* The teeth of the calyx, said by Sir J. E. Smith to be glabrous in the same plant, are figured in E. Bot. slightly hairy in both. The peduncles are pubescent in each; as to the latter being somewhat flexuose or straight, and the heads few or many-flowered, no importance can surely be placed on such characters." Fl. Edin. p. 162. E.)

**T. suffocatum.** Without stem or stalk: flowers nearly sessile on the root: (seed-vessel inhumed, two-seeded. E.)

*(E. Bot. 1049. E.)—Jacq. Hort. 60.* Flowers in clusters, sessile, axillary, buried in the earth. Calyx oblong, compressed, smooth, five-cleft, segment reflexed. Blossom within the tube of the calyx, colourless, (pale pink, according to Sm. transient. E.) Leaves ternate, inversely egg-shaped, smooth, somewhat toothed. Linn. Every part of the plant, except the leaves, is buried in the sand, (so that even its seeds are actually perfected subterraneously, and without light: E.) but on putting down a knife or a stick the whole plant may be raised, and then its flowers and fruit come into view. The clusters in some of the older plants are as large as a small nut. Woodw.


**LO' TUS.* Calyx tubular: wings converging longitudinally upwards: legume straight, (cylindrical, spongy within. E.)

* (The origin of this name seems involved in mystery. According to Herodotus it is of Egyptian extraction, and may probably be derived from λός, to desire; as though valuable
L. corniculatus. (Heads depressed, of few flowers: stems recumbent, pithy: legumes spreading, nearly cylindrical: claw of the standard obovate: filaments all dilated. Sm. E.)


Stems three to eight inches long, spreading, slightly branched, more or less clothed with appressed hairs. Leaves shortly petiolate; leaflets obovate, pubescent, especially beneath. Stipules resembling the leaves. Flowers bright yellow, four or five in a depressed, pedunculate head; the peduncle long, erect. Calyx with five subulate teeth, hairy. Standard of the corolla streaked with red, often quite red before expansion. Legumes narrow, subcylindrical, purplish brown, near an inch long. Grev.


Stems one to three feet high, erect, pubescent, chiefly above, quite hollow, branched. Leaves obovate, or roundish-ovate, much larger than in the preceding, but similar in other characters. Stipules resembling the leaves. Flowers six to twelve, bright yellow, the standard veined with red. Calyx with the teeth hairy and somewhat denticulate under a lens. Legumes spreading, narrow, cylindrical. Grev.


* The flowers become greenish when dried: in which respect they resemble those of the plants which produce indigo. Cows, goats, and horses eat it. Sheep and swine are not fond of it. Thrips Physapus is found upon it, (also Apion Loti.—The minute gall-gnat, Tipula Loti, sometimes inhabits the blossom, and strangely metamorphoses its appearance. It is likewise a favourite food of the caterpillar of the white butterfly, Leucophasia Sinapis. E.)—In Hertfordshire it is cultivated as pasturage for sheep. With.—It is strongly recommended by Anderson, (both for fodder and hay though under the erroneous name of Milk Vetch. E.)—There is no doubt but it might be cultivated to advantage. In moist meadows it grows much higher than any of the Trefoils or Medicago lupulina, and makes extremely good hay. Mr. Woodward. (The Bird's-foot Trefoils contain more bitter extractive and saline matters than either the grasses or clovers: in pastures and meadows, therefore, where clovers happen to be in small quantities, a portion of L. corniculatus would doubtless be of advantage, but it requires intermixture with other plants, especially in irrigated meadows. Hort. Gram. It is said to be particularly well adapted to poor soil, though after once being eaten off, its growth is not rapid. E.)

† (Mr. Sinclair states that he has raised this plant from seed on two different soils, the above characters remaining permanent; and expresses his surprise that two plants so distinct in habits should have so long been considered varieties only. "What renders a
Several varieties of one or other of the above species have been recorded, as more or less attenuated, smooth, hairy, or hoary. R. Syn. 334. Hall. 383. E.

(L. decumbens. Heads of few flowers: stems recumbent, nearly solid: legumes somewhat spreading, cylindrical, two-edged: calyx hairy, its teeth shorter than the tube.

Stems widely spreading, partly quite prostrate, a foot or more in length, filled with light pith, angular, leafy, smooth, somewhat glaucous. Leaves glaucous, smooth above; occasionally clothed beneath with short, close, bristly hairs. Leaflets and stipules similar, lanceolate, pointed, oblique, except the terminal one, which is obovate-lanceolate. Common foot-stalk but half the length of the leaflets, channelled, slightly bordered. Flower-stalks axillary, four or five times the length of the leaves, smooth, stout and firm, obscurely angular, each bearing an umbel of from three to six bright yellow flowers, accompanied by a terminate leaf without stipulas. In starved plants the flowers are solitary. Partial stalks and calyx all over silky, with more or less abundant, short, close hairs; the calyx-teeth lanceolate, tapering, spreading, shorter than the tube, somewhat hairy, with wide rounded interstices. Separate portion of each filament of considerable length, the longest dilated upwards. Legumes nearly erect, or but slightly spreading, smooth, dotted, cylindrical, without any depression or channel, both sutures rather prominent, forming a ridge along each margin.

Hitherto confounded with L. corniculatus, or the following.


(L. angustissimus. Peduncle one or two-flowered: stem much branched, prostrate, tubular: legumes two-edged, very slender, somewhat compressed: calyx loosely hairy: teeth fringed, twice the length of the tube.

E. Bot. 925.—J. B. ii. 356—H. Ox. ii. 18. 1.

Pubescence consisting of fine, long, loose and spreading hairs, like those of L. major, but far more constant and abundant. Root beset with small tubercles, certainly annual. Stems partly ascending, densely leafy, very hairy, six to ten inches long, with a small internal cavity destitute of pith. Leaflets and stipules ovate, pointed, rather glaucous, hairy on both sides. Flower-stalks spreading, weak and slender, once or twice as long as the leaves, hairy, each bearing for the most part two, rather small, bright yellow flowers, sometimes but one, very rarely three, with a terminate leaf at the base of their partial stalks. Cal. widely funnel-shaped;

specific distinction of most importance to the farmer, is the difference which exists between them in an agricultural point of view. The weight of green food, or hay, produced by L. major is triple that of L. corniculatus, and its nutritive powers are little inferior, but it is extremely bitter. It does not appear to be eaten by any cattle when in a green state; but when made into hay with common grasses, sheep, oxen, and deer eat it without reluctance. In moist clayey soils it would doubtless be a most profitable substitute for red clover, but the excess of bitter extractive and saline matters it contains seems to forbid its adoption without a considerable admixture of other plants," Hort. Gram. E.)
its teeth linear, narrow, green, twice as long as the tube, copiously fringed with long spreading hairs, totally unlike the calyx of \( L. \) decumbens. Filaments all rather dilated upward. Legumes spreading, with prominent sutures, smooth, of a shining brown, very slender, often inversely undulated, from the projection of their numerous orbicular seeds.


**MEDICA'GO.** *Pistil bent, pressing down the keel: S. Vess. a legume, compressed, spiral.*

M. \( satv'va. \) Flowers in upright bunches: legumes narrow, regular, spiral: stem upright, smooth.

Kniph. 8—(E. Bot. 1749. E.)—Chus. ii. 242. 2—Lob. Obs. 498. 1, and \( L. \) ii. 36. 2—Ger. Em. 1189. 2—Park. 1114. 1—H. Ox. ii. 16, row 1, 2, and ii. 15, row 3. II.—J. B. ii. 378. 1.

Stems striated, declining. Branches alternate. Stipulae spear-shaped, ending in an awn. Leafstalks short. Leaflets three together, elliptical, entire at the base, serrated upwards, the mid-rib lengthened into a thorn-like point, slightly downy above, smooth, and scored with veins underneath, on leaf-stalks, that of the terminal one the longest. Fruit-stalks from the bosom of the leaves, longer than the leaves. Bunches thick. Pedicles short. Floral-leaves awl-shaped, one at the base of each pedicle. Calyx nearly smooth; teeth awl-shaped, nearly equal. Blossom purple. Legume twisted spirally with two or three distant turns. Wood. (Root rather woody. Stems two or three feet high. E.)

**Lucerne.** **Purple Medick.** (Welsh: \( Maglys rhuddlas. \) E.) Meadows, pastures, and ditch banks, supposed to be not strictly indigenous.

P. June—July.†

* (So called by Tournefort from \( Medica, \) the more proper name of the plant, \((\nu\theta\nu\nu\nu \) of Dioscorides), it having been originally introduced into Greece by the Medes, in the time of Darius Hydaspes. E.)

† Modern writers upon husbandry strongly recommend the cultivation of this plant for the purpose of feeding cattle, but it is not yet generally adopted, though in the neighbourhood of London its merits seem to be well understood. It requires a deep rich soil, and, in such, will continue to flourish many years, if kept free from weeds. One pound of Lucerne seed contains about 150,000 seeds, so that, supposing only one seed in three to vegetate and to survive accidents, one pound would produce 50,000 plants. (The seed does not ripen to perfection in this country, but is annually imported from France. Lucerne will yield a heavy crop of green food by the first of May, with three other cuttings during the summer, and is more valuable than either Clover or Vetches. It roots deep in the earth; and hence will continue a full crop when other grasses are burnt up in a dry season. Lucerne is three years in coming to full produce; but in the second year an acre will keep four horses, or two horses and two cows, all the summer.—Millar adduces various interesting facts relative to its utility, and we have ascertained that half an acre of Lucerne, the rows eighteen inches asunder, and the plants nine inches apart, will support a pair of carriage-horses, (cut and brought to them in the stable), without corn or hay, in good
M. **falcata**. Flowers in upright bunches: legumes sickle-shaped; stem prostrate.


( *Root* long and woody. *Habit* like the preceding. *Stems* hairy. *Leaves* and *stipules* same as *M. saliva*; *clusters* usually shorter and more dense, but variable. *Flowers* pale yellow or violet, frequently green, from a combination of these two colours. *Legumes* black, downy. *Seeds* from four to eight, kidney-shaped, yellowish. The pollen is conveyed to the stigma by the curved germen releasing itself with a spring from the closed keel of the flower. Sm. E.)


P. July.*  

M. **lupulina**. Spikes oval, upright; seed-vessels kidney-shaped, rugged, with one cell and one seed; stems trailing.

*E. Bot. 971. E.*— *Fl. Dan. 992—Curt. 120—Kniph. 11—Riv. Tetr. 8, Melilotus minima—H. Ox. ii. 15, row 4. f.—Fuchs. 819—Trag. 593—J. B. ii. 380. 4—Dod. 576. 2—Ger. Em. 1186. 5—Park. 1106. 6—H. Ox. ii. 16. 8—Ger. 1020. 2—Lon. 1. 106. 4.*

*Stems*, six to 18 inches long, somewhat angular, unless supported by other plants, trailing. *Branches* very numerous, alternate. *Stipules* oval-spear-shaped, with a long awn. *Leaves* on very short leaf-stalks. *Leaflets* three together, oblong-wedge-shaped, serrated upwards, notched at the end, with the mid-rib lengthened into a projecting point. *Head* oval. *Flowers* small, 30 or 40 together. *Calyx* slightly downy, nearly as long as the blossom; teeth awl-shaped, the two upper ones rather shorter. *Blossom* yellow. *Legume* turning black when ripe. Woodw.; sometimes quite smooth and hairless.

*In hot, dry, barren, sandy places it is well worth the trouble of sowing for the purpose of hay, a practice long since adopted in some parts of Sweden. Cows, horses, goats, and sheep eat it. (It is supposed to produce as good fodder as Lucerne, though less available to the scythe. Vid. Experiments by Thos. Le Blanc, Esq. in Martyn’s Mill. Dict. E.)*


Var. 2. Legumes about 10, slightly compressed, rough with numerous tubercles. Ray.

H. Ox. ii. 15. 4.

* Cows, horses, goats, and sheep eat it; but it is less grateful to them than the other species. Linn. It is cultivated in Norfolk under the name of Nonsuch, and is usually mixed with Rye-grass (Lolium perenne). The crop is then called black and white Nonsuch. Mr. Woodward. In the Isle of Wight I have seen it sown along with clover and Rye-grass. (It is best adapted to light, deep soils, and may be advantageously sown for sheep food in open fields, and helps the land by ploughing in previous to a wheat crop, as practice recommended in Young’s Annals of Agriculture, and approved by Mr. Sinclair. But being an annual, the latter authority justly observes, it is only fit for the alternate husbandry; for to sow the seeds of this plant with others on land intended to remain for permanent pasture would be subversive of the intention; as every spot this plant occupied would be naked the second year; and these spots afford encouragement to the growth of weeds, and the decaying roots to grubs. The larvae of the brown moth Lasiocampa Medicaginis, Curt. Brit. Entom. pl. 191. feed upon this plant, though not exclusively, others of the same tribe likewise suffering from their depredations. E.)

† (A plant much relished by cattle; but, being an annual, is probably not so valuable for cultivation as some other species. The different varieties are introduced into flower gardens on account of the curious shapes of the legumes, called Snail’s-horns, Caterpillars, &c. Salisbury. E.)

(Var. 2. Leaves inversely egg-shaped, covered with white silky down. Prickles of the legumes stiffly hooked. Blossom small, pale yellow. E.)

H. Ox. ii. 15, row 2. 15—J. B. ii. 386. b.—Riv. Tetr. 88, Cochleata, row 4, f. 4, Ech. Min.—J. B. ii. 386. 2. a.—Park. 1115. 7. a.—Fl. Dan. 211.


Var. 3. Leaves inversely egg-shaped, hairy; prickles of the fruit very short, depressed, not rigid.

Pluk. 113. 6—H. Ox. ii. 15. 11.


(M. polymorpha appears to be a very valuable plant, according to local and other circumstances. The leaves may be more or less serrated, and the spots thereon sometimes scarcely observable.

Mr. G. E. Smith attracts attention to a plant of the above description, not unfrequently found from the foot of the chalk escarpment at Folkstone to New Romney and Rye. This plant is said to be distinguished by its beautifully reticulated legumes, small, pale yellow flowers, and pale green, smooth, herbage. Mr. S. conjectures it may prove to be M. denticulata. Willd. It is figured in Sm. Obs. pl. i. also in Mag. Nat. Hist. i. 398. In the former work will also be found some curious observations on the structure of the legumes of certain species of Medicago. E.)
CLASS XVIII.

POLYADELPHIA.

POLYANDRIA.

HYPERICUM. * Cal. with five deep divisions: Petals five: Filaments numerous, united at the base into three or five sets: Capsule with three or five cells, and many seeds.

(1) Styles three; Stems shrub-like.

H. ANDROSiE'MUM. Fruit like a berry: stem two-edged.

Curt. 265—(E. Bot. 1223. E.)—Dod. 78. 2—Lob. Obs. 357. 3, and Ic. i. 632. 1—Ger. Em. 513. 1—Park. 376. 1—Blackw. 94—Ger. 435—H. Ox. v. 6. 12.

(Plant about two feet high; aromatic when rubbed. Root woody. E.) Leaves opposite, sessile, smooth, entire, egg-shaped; at the base of the branches very large, those of the branches decreasing in size as they approach the summit, and nearly spear-shaped. Calyx segments unequal. Berries black when ripe. Woodw. Flowers terminal, an inch over, four together. Fruit-stalks cylindrical, smooth. Calyx: the outer segments much larger. Petals yellow, concave, striated, unequal at the end from a hollow in the margin on one side.


* (From ὑπέρ, against; and ἑιδίως, an image or spirit; it being considered an amulet or preservative from evil spirits. E.)

P. July—Sept.*

(2) Styles three; stems herbaceous.

H. quadrangulum. Leaves egg-shaped, with pellucid dots: stem quadrangular.


Stem often reddish, one to two feet high, branched; edges membranous, marked with short dark-purple glandular streaks. Leaves crossing each other in pairs, sessile, oblong-egg-shaped, ribbed, dotted along the edges with black glands, particularly on the under side. Calyx, segments ribbed, rather expanding, a little toothed at the end. (Flowers only half the size of the last, forming a leafy, dense panicle. E.) Petals yellow, ribbed, concave, generally marked with dark-purple lines and dots, filled with a purple liquor, which stains paper permanently. Anthers with a small black gland. Styles yellow. Summits purple. (Plant yielding a lemon-like odour. Sm. E.)


P. July—(Aug. E.)

H. perforatum. Stem two-edged: leaves blunt, with pellucid dots.


* (Often admitted into gardens, and ornamental in front of shrubberies. Formerly esteemed for medicinal qualities, and therefore denominated Tutsan, Taut-saine, q. d. Allheal; but its real merits, if any, are little understood. The leaves, given in substance, were supposed to destroy worms. By distillation, they yield an essential oil. The dried plant boiled in water with alum dyes yarn of a yellow colour; and the Swedes give a fine purple tinge to their spirits with the flowers. Cows, goats, and sheep eat it; horses and swine refuse it. The Rev. Hugh Davies entertains no doubt that this plant has a claim to the Welsh name Gwaed y gwyr, (Androsaemum, αγγος δια, man's blood), prior to Santibucus Ebulus, because, if the yellow flowering tops are bruised between the fingers, they will immediately communicate a deep crimson stain. The Ebulus claims it on the strength of a fabulous tale, that the plant originally sprung from the blood of the Danes slain in Britain, whence also its English name Dane-wort. E.)
Whole plant quite free from hairs, more bushy and of a darker green than the preceding; much impregnated with an odorous essential oil which stains purple. Stems upright, two feet high, E.) nearly cylindrical, the edges running from the base of the leaves to the bottom of the knot below, beset above with small black dots. Leaves in cross pairs, oblong, rounded at the end, with seven, and sometimes five, semi-transparent lines, with several black dots near the edges on the underside; the semi-transparent dots numerous. Fruit-stalks from the bosom of the upper leaves. Calyx, segments spear-shaped, taper-pointed. (Flowers yellow, Petals ribbed, set near the edges with dark purple glands, one of the sides very entire at the edge, the other serrated. Stamens 30 or more. Anthers with a globular black gland at the top between the lobes. Germin egg-shaped. Styles thread-shaped, yellow. Summits sometimes crimson. Common Perforated St. John's Wort. (Irish: Allais Muire. Welsh: Eurinllys trydwell. Gaelic: Achlasan-Challum chille. E.) Thickets, woods, hedges, dry banks. P. July—Aug.*

* (This plant has long held a place in the Materia Medica, but its use is undetermined, notwithstanding such encomiums as the following by old authors. "Diureticum est et vulnerarium insigne," Ray. "Egregium est medicamentum in mania sumptum." Sala. Grembs. "Mili quoque saepeus expertum: idem prastat et in melancholia." Needham. Dr. Swediaur recommends an infusion of the flowering heads in hemoptysis, and worms. The anti-manical properties attributed to this herb by empirics, and the portentous appellation bestowed upon it of "Fuga Demonum," appear to have rendered it obnoxious to various popular superstitions both at home and abroad. On the Eve of St. John the Baptist, the people of North Wales fix sprigs of it over their doors, and sometimes over their windows, in order to purify their houses, and by that means drive away fiends and evil spirits, in the same manner as the Druids were accustomed to do with Verain. Bingley's Tour. In Germany, ceremonials are practised, (somewhat resembling those of Hallow E'en in Scotland), to prognosticate the good or bad fortune of young men and maidens in obtaining partners for life. On Midsummer night the young girls fasten sprigs of St. John's-wort against the walls of their chamber, and by the state of the sprig on the ensuing morning, anticipate whether or not their condition shall soon be changed; if fresh, no longer are they to remain in single blessedness; if withered, then must be prepared the willow garland, for so are they destined to droop and pine away.

"The young maid stole through the cottage door,
And blushed as she sought the plant of power:
"Thou silver glow-worm, O lend me thy light!
I must gather the mystic St. John's Wort to night,
The wonderful herb, whose leaf will decide
If the coming year shall see me a bride,"

And the glow-worm came
With its silvery flame,
And sparkled and shone
Through the night of St. John,
And soon has the young maid her love-knot tied,
With noiseless tread,
To her chamber she sped,
Where the spectral moon her white beams shed:
"Bloom here—bloom here, thou plant of power,
To deck the young bride in her bridal hour!"
But it drooped its head, that plant of power,
And died the mute death of the voiceless flower.
And a withered wreath on the ground it lay,
More meet for a burial than bridal day.

_E. Bot._ 296.

_Stems_ several, two or three feet high, upright; sprinkled with black dots. _Leaves_ large, embracing the stem, egg-shaped, membranous at the edge, with black dots underneath. _Calyx_ leaflets very blunt, yellow green, marked with short black lines. _Petals_ large, very entire, yellow, with black lines above and a few black spots underneath the edge, Leers; or sometimes, according to Mr. Bourne, with dusky purple streaks on the under surface. (Young radical _shoots_ bright red. _Sm. E._)


_Curt. 162—_Fl. Dan. 141—(_E. Bot._ 1226. E._)—_Claus. ii._ 181. 3—_Dod. 76. 2

And when a year had passed away,  
All pale on her bier the young maid lay!  
And the glow-worm came  
With its silvery flame,  
And sparkled and shone  
Through the night of St. John,  
As they closed the chill grave o'er the maid's cold clay."

In Spain, similar rites are observed on the like occasion, but accompanied by a yet more whimsical fancy; for the lovely damsels of the banks of Guadalquiver, chanting the following strain,

"Come forth, come forth, my maidens, and slumber not away,  
The blessed, blessed morning, of St. John the Baptist's day,  
There's trefoil on the meadow, and lilies on the lea,  
And hawthorn blossoms on the bush, which you must pluck with me."

select their garland to adorn a "snow-white wether," from whose deportment, while an involuntary prisoner, the prognostics are deduced. Whether this plant, the renowned Vervain, or some other, were esteemed the most efficacious preservative from every ill accident by our ancestors, we know not, but certain it is that in more credulous ages implicit reliance was placed in such charms; and so important was their influence considered that it was usual in trial by combat, according to the law of arms, to exact an oath from both appellant and defendant, not merely that "the cause for which they were to fight was just and true;" but that "they had nothing to do with witchcraft or magic; nor carried about them any herb, or other kind of charm!" after which ceremonial, both having performed their devotions, they prepared themselves to fight, first with spears, then with swords, and last with their daggers. _Inter alia, vid. Annesley v. Ketrington, temp. Ed, III. E._)
Plant delicate, semi-transparent, pale green. Stems a span long, numerous, compressed, slender. Leaves oblong, smooth, set with glands near the edges, scored with semi-transparent lines. Flowers sometimes in pairs. Floral-leaves none. Calyx segments unequal, leafy and large, spear-shaped, terminated by a very small point, a little toothed at the edges, marked with dark purple spots and streaks. Petals yellow, with a tinge of red on the outside, set with a few blackish glands at the end. Stamens in three sets, five or six in each. Anthers without glands. Summit sometimes tinged with red. (Caps. red in ripening, a colour which the leaves assume in decay. Sm. E.)

Var. 2. Leaves ternate.


Stems six to eight inches long, trailing and creeping, chiefly hairy on the upper surface. Flowering branches ascending, five to six inches high. Leaves sessile, frequently slightly notched at the end, with five ribs, and with dots only visible with a glass, and against a strong light. Panicle branched, leafless. Floral-leaves oval-spear-shaped, minute, reddish, edged with red glands, a pair beneath each division. Calyx reddish, about one-fourth as long as the blossom, deeply divided; segments oval, edged with minute red glands. Blossom reddish yellow, with green stripes, usually closed, (opening only in sunshine, E.) twisted spirally, sometimes merely folded up. Woodward. Stem three to eight inches long. Petals yellow, with eight greenish lines, and a small greenish gland on the inner side of the claw. (Filaments much less deeply subdivided than in our other species. Caps. ribbed. Sm. E.)


H. montanum. Calyx prominently serrated with glands: stem cylindrical, upright: leaves egg-shaped, smooth, (clasping the stem. E.)
Hypericum, (E. Bot. 371. E.)—FI. Dan. 173—Col. Ecphr. 74. 1—Trag. 73. 3—Pet. 60. 7—J. B. iii. 383. 2—H. Ox. v. 6. 9—Fuchs. 74.

**Stem** two feet high, cylindrical, smooth. **Leaves** in pairs, (nearly two inches long, sessile, egg-shaped, the upper egg-spear-shaped, smooth, with seven ribs, and reticulated with veins, the edges set with black dots, the surface with pellucid ones. E.) **Flowers** in panicles. **Panicles** branched, terminal, or from the bosom of the upper-leaves. **Floral-leaves, fruit-stalks,** and **calyces** beset with strong hairs, each terminated by a black gland. **Calyx** divided almost to the base; segments spear-shaped, pointed. Woodw. (Bloss. pale yellow. E.)


**H. hirsutum.** Calyx lanceolate, serrated with glands: stem cylindrical, upright: leaves egg-shaped, somewhat downy.

**Curt.** 182—(E. Bot. 1156. E.)—Kniph. 8—Pet. 60. 10—H. Ox. v. 6. 11—Fl. Dan. 802—Fuchs. 76—J. B. iii. 383. 2.

**The flowers** close in the night; those of **H. perforatum** do not. Lim. **Stem** upright, (about two foot high, E.) nearly cylindrical, with short soft hairiness. **Leaves** in cross pairs, those of the stem egg-shaped, broader than those of **H. perforatum**, rough with short hair, with seven or nine ribs, and numerous semi-transparent dots; those of the branches spear-shaped. **Floral-leaves** with glandular serratures at the edges. **Calyx** segments spear-shaped, with about twelve glands on each. **Petals** yellow, entire, with six or eight ribs, and a few black glands at the end. **Stamens** about twenty-four. **Germen** egg-shaped. **Styles** thread-shaped, yellow. **Summits** crimson. (Flowers only half the size of those of **H. montanum.** Conjectured by Smith to be the Ascyron of the old herbalists, rather than **H. quadrangulum** as sometimes supposed. E.)


**H. pulchrum.** Calyx ovate, serrated with glands: stem cylindrical: leaves embracing the stem, heart-shaped, smooth.

**Curt.**—Fl. Dan. 75—(E. Bot. 1227. E.)—Walc.—Trag. 74—Pet. 60. 6—Lonic. i. 130. 2—J. B. iii. 383. 1.

(A truly elegant plant, well meriting the trivial name bestowed on it by Tragus. E.) **Stem** upright, (12 to 18 inches high, E.) often red. **Leaves**
in distant pairs, heart or obtusely egg-shaped, green above, sea-green beneath, with numerous semi-transparent dots. Flowering-branches from the bosom of the upper leaves, slender, with one or more flowers at the end, and one or two small leaves. Floral-leaves none. Calyx very short, deeply divided; segments oval, blunt; glands black. (Blossom golden yellow, reddish on the outside. E.) Petals set at the edge with black glands. Woodw. Leaves in opposite pairs. Filaments shining, yellow, in three sets, above eighteen in each. Anthers scarlet.


(H. barbatum). Calyx and petals fringed and dotted: leaves ovate, dotted, clasping the stem: stem erect, slightly angular.


Stems a foot or more in height, leafy, straight, scarcely branched except at top; round and purplish at the bottom. Leaves sessile, opposite, bluntish, entire, slightly revolute, smooth, veiny, sprinkled on both sides with dark purplish glandular dots. Flowers yellow, in a terminal, leafy, upright, forked panicle: bracteae and calyx-leaves spear-shaped, dotted, strongly and copiously fringed with long pale glandular hairs. Petals obovate, minutely fringed or toothed, dotted. Stamens in three sets. Anthers orbicular. Styles three. E. Bot.

Bearded St. John’s Wort. This beautiful species was discovered by Mr. G. Don, by the side of a hedge near the wood of Aberdalgy in Strath Earn, Perthshire.

P. Sept.—Oct. E.)

(3) Styles five; stems shrub-like.


E. Bot. 2017—Curt. Mag. 146—Jacq. Fragm. 6. 4—H. Ox. 35. 2—fig. only.

Roots creeping. Branches simple, leafy, square, each terminated by a flower larger than in any other Hypericum, of a rich golden yellow, with five, rarely four, styles. Petals often lobed. Leaves sessile, elliptic-oblong, entire, paler beneath. Anthers numerous, reddish. E. Bot. In our specimens the leaves are neither decidedly blunt, nor punctate, as described in E. Bot. Flowers growing singly; petals nearly one and a half inch long.

Large-flowered St. John’s Wort. This showy plant was brought to England by Sir G. Wheeler in 1676, from its native woods about Belgrad, near Constantinople; is said not to grow indigenously in the intermediate countries; but it has been found recently in considerable abun-
dubitably wild, about three miles from Cork, in the way to Bandon, by Mr. Drummond, Curator of the Botanic Garden of Cork. E.)

(Scotland also claims a station for this rare plant, in woods above Largs, on the western coast; as intimated by Mr. Hopkirk, in Hook. Scot.: and we have now the pleasure to communicate, by means of our friend Dr. Bostock, the first English native habitat, viz. in a wood near Hale, Lancashire, the seat of John Blackburne, Esq. M.P. where it has been lately found by Mr. Shepherd, Curator of the Liverpool Botanic Garden. E.) P. July—Sept.*

* (It thrives well under trees, and is ornamental in shrubbery grounds. For remarks on the synonyms vid. Linn. Tr. vol. v. E.)
CLASS XIX.

SYNGENESIA.

ÆQUALIS.

(1) All the Florets strap-shaped.

CICHO'RIUM. Recept. slightly chaffy: Down chaff-like: Cal. double.

HYPOCHÆRIS. Recept. chaffy: Down somewhat feathery: Cal. tiled.

TRAGOPO'GON. Recept. naked: Down feathery, on a pedicle: Cal. simple.


LEONTODON. Recept. naked: Down on a pedicle, simple: Cal. tiled, double; scales flexible.

CRE'PIS. Recept. naked: Down hair-like: Cal. double, with scales of different shapes, (outermost deciduous. E.)

PRENANTHES. Recept. naked: Down hair-like: Cal. double, containing about five florets.

LACTU'CA. Recept. naked: Down hair-like, on a pedicle: Cal. tiled, simple, scale membranous at the edges.

HIERA'CIUM. Recept. naked, dotted: Down hair-like, sessile: Cal. tiled, egg-shaped.

SON'CHUS. Recept. naked: Down hair-like, sessile: Cal. tiled, tumid at the base.

LAP'SANA. Recept. naked: Down none: Cal. double, (scales of the innermost channelled. E.)

(2) Flowers in globular heads.

CARLI'NA. (Cal. tumid; outer scales spinous, inner rays coloured: Recept. chaffy: Down feathery. E.)
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SYNGENESIA.

ARCTIUM. (Cal. globose; scales spinous, bent inwards, and hooked. E.)
CARPDUUS. (Cal. tiled, with spinous scales, tumid: Recept. hairy: Down deciduous, hair-like. E.)
ONOPORDON. Cal. with spreading, spinous scales, tumid: Recept. cellular, somewhat chaffy.
SERRATULA. Cal. nearly cylindrical, tiled; scales rather acute, but not spinous: (Down permanent. E.)

[Centaurea nigra.]

(3) Florets all tubular.

EUPATORIUM. Recept. naked: Down feathery: Cal. tiled: Style cloven, prominent.
(CHRYSOCOMA. Recept. naked: Down simple, rough: Cal. hemispherical, tiled: Style scarcely longer than the florets. E.)
SANTOLINA. Recept. chaffy: Down none: Cal. tiled, hemispherical.
BIDENS. (Recept. chaffy: Down awnlike, rough with reversed prickles: Cal. tiled with channelled scales. E.)


SUPERFLUA.

(1) Florets all tubular.

ARTEMISIA. Recept. almost naked: Down none: (Cal. tiled; scales converging: E.) Florets of the circumference without a petal.
TANACETUM. Recept. naked: (Seed with a membranous crown: Florets of the circumference trifid, sometimes wanting. E.)
CONYZA. (Recept. naked: Down hair-like, rough: Florets of the circumference trifid: Cal. tiled. E.)
GNAPHALUM. Recept. naked: Down feathery or hair-like: Cal. tiled with membranous coloured scales: (Florets of the circumference awl-shaped. E.)

(2) Flowers radiate.

**BEL' LIS.** *Recept. naked, conical: Down none: Cal. hemispherical, with equal scales.*

**MATRICARIA.** *Recept. naked, nearly cylindrical: Down none: Cal. tiled, nearly flat; scales membranous at the edges. E.***

**CHRYSAN'THEMUM.** *Recept. naked, rather convex: Down none: Cal. hemispherical, imbricated; scales with a dilated, membranous border. E.***

**PYRE'THRUM.** *Recept. naked: Seed crowned with a border: Cal. hemispherical, imbricated; scales rather acute, membranous at the edges. E.***

**DORO' NICUM.** *Recept. naked: Down hair-like: Strap-shaped florets, without down: (Cal. a double row of equal scales, longer than the disk. E.)*

**I'NULA.** *Recept. naked: Down hair-like: Anthers with two bristles at the base.*

**ERI'GERON.** *Recept. naked: Down hair-like: Florets of the circumference very slender: (Anthers simple. E.)*

**SOLIDA'GO.** *Recept. naked, pitted: Down hair-like: Cal. tiled with close scales: Florets of the circumference five or six, remote.*

**CINERA'RIA.** *Recept. naked: Down hair-like: (Cal. simple, cylindrical; scales equal: Seed quadrangular. E.)*

**SENE'CIO.** *Recept. naked: Down hair-like: Cal. with scales shrivelled at the ends.*

**TUSSILA'GO.** *Recept. naked: Down hair-like: Cal. tumid at the base; scales somewhat membranous: (Seed ovate, compressed. E.)*

**ASTER.** *Recept. naked: Down hair-like: Cal. lowermost scales spreading: (Florets of the circumference more than ten. E.)*

**ANTHEMIS.** *Recept. chaffy: Down none: Cal. hemispherical: (Florets of the circumference numerous: Seed crowned with a slight border. E.)*

**ACHILLE'A.** *Recept. chaffy: Down none: Cal. oblong: Florets of the circumference about five, somewhat heart-shaped.*
SYNGENESIA. ÆQUALIS. TRAGOPOGON.

FRUSTRANEA.

CENTAUREA. Recept. bristly: Down hair-like, or feathery: Florets of the circumference tubular; (dilated, without stamens or style. E.)

NECESSARIA.


[Tussilago Farfara. Erigeron.]

ÆQUALIS.

TRAGOPOGON.* Receptacle naked: Calyx simple: Down feathery, pedicellate.

T. PRATENSIS. Calyx as long as the rays of the blossom; (leaves entire, keeled, acuminate, dilated at the base: E.) fruit-stalk cylindrical.


Blossoms yellow, showy, two inches over, opening early and closing before noon. (The feathery down of the seeds assumes an enlarged cobweb-like spherical form distended by the pedicels. E.) Whole plant smooth, stiff, strong, upright. Leaves very long and narrow, tapering. Calyx, leaves purplish at the edge. Anthers purple. Pollen yellow. Seeds crooked. Receptacle, having glandular substances in the little hollows at the base of each floret, which, when the blossoms fall, turn brown, the receptacle remaining white. (Root spindle-shaped, milky, sweet. Stems a foot and half high, often tinged with purple. Leaves alternate, embracing the stem, keeled, sharp-pointed, widening at the base. Fl. Brit. Mr. Woodward remarks that in Norfolk the calyx invariably exceeds the blossom; Mr. Stackhouse observes the same in Cornwall. E.)


B. June.†

T. PORRIFO’LIUS. Calyx half as long again as the rays of the blossom: leaves entire, stiff and straight: fruit-stalks thickening upwards.

* (From πρόνης, a goat; and πυς, a beard; which the down of the seed somewhat resembles. E.)
† Before the stems shoot up, the roots, boiled like Asparagus, have the same flavour, and are nearly as nutritious. Cows, sheep, and horses eat it. Swine devour it greedily.
Stem-leaves shorter than in *T. pratensis*, scarcely longer than the space between the joints. *Calyx* about one-third longer than the blossom. *Blossoms* dull purple. *Wood* (closing about noon. *Herb* glaucous, smooth, three or four feet high. *Anthers* nearly black. E.)


**P. ECHIOPIDES.** Outer calyx of five broad, prickly leaves, larger than the inner: (down standing on a pedicle. E.)


**ROOT-leaves** oval, scolloped, stiff with numerous warty protuberances, which, as also the ribs and edges, are set with short thorn-like hairs. *Stem*

Goats are not fond of it. (Both these species are among the most regular indices of the *Horologium Florae*, closing their flowers so invariably about mid-day, that they have obtained the rustic designation of *Go to Bed at Noon*: for even the ploughman knows that

> "In every copse and sheltered dell,<n
> Unveil'd to the observant eye,<n
> Are faithful monitors, who tell<n
> How pass the hours and seasons by.<n
> Broad o'er its imbricated cup<n
> The *Goatsbeard* spreads its golden rays,<n
> But shuts its cautious petals up,<n
> Retreating from the noontide blaze."

Nor does the Burgomaster, luxuriating in his earthly paradise, disdain this humble memento of the winged moments;

> "Then to lay one down<n
> Upon a primrose bank, where violet flowers<n
> Smell sweetly, and the mead's in bloomy prime,<n
> Till Flora's clock, the *Goatsbeard*, mark the hours,<n
> And closing says, Arise, 'tis dinner time;<n
> Then dine on pyes and cauliflower heads,<n
> And roam away the afternoon in Tulip beds." E.)

* The roots are esculent, and when cultivated in gardens for boiling or stewing are called Salsafy. (They are usually in season during winter, are very sweet, and contain a large quantity of milky juice. Salisbury. E.)

† (From *πιπες*, bitter; a prevalent flavour of these plants. E.)
SYNGENESIA. AÉQUALIS. SONCHUS.

firm, cylindrical, scored, usually purplish, much branched; with scattered, stiff, thorn-like hairs. Leaves heart-spear-shaped, waved at the edge, set with sharp stiff hairs, particularly on the edge and mid-rib. Flowers solitary, on fruit-stalks. Fruit-stalks somewhat thickening upwards. Calyx, leaves of the outer heart-shaped, taper-pointed, ending in a sharp awn, very much expanding, fringed with stiff hairs; scales of the inner fringed on the back. Down the length of the inner calyx, on a foot-stalk three or four lines long. Seeds shining, beautiful when magnified. Woodw. Blossom golden yellow, about an inch broad.


P. HIERACIODES. (Calyx loose, outer scales much shorter than the inner: leaves lanceolate; radical ones toothed: down sessile: stem hirsute. E.)

E. Bot. 196—Ger. 234. 8—Ger. Em. 298. 7—J. B. ii. 1029. 2.

(Plant darker green than the preceding species, hairy, but not bristly. E.) Stem (about three feet high, branched, E.) firm, scored, rough with stiff hairs. Leaves wavy, rough, the lower on leaf-stalks, the upper sessile, spear-shaped, pointed, toothed; the uppermost strap-spear-shaped. Fruit-stalks branched, each branch bearing one flower. Calyx scarcely to be called double, the loose scales on the top of the fruit-stalk approaching to and at length tiled with the calyx, the leaves of the inner row nearly strap-shaped, parallel, hairy on the outside, exactly the length of the feather, sessile, thinly downy. Seeds longitudinally and transversely furrowed. Woodw. (Flowers bright yellow, rather larger than the last. E.)


SON'CHUS.† Recept. naked: Calyx tiled, tumid at the base: Down hair-like.

S. cæruleus. Fruit-stalk and calyx hispid: leaves notched, almost lyrate: (terminal lobe very large, triangular. E.)

(E. Bot. 2425. E.)—Fl. Dan. 182—Chas. ii. 147. 1—Ger. Em. 294. 7—Park. 908. 1—Park. 807. 1—J. B. ii. 1006—Ger. 231. 6.


* This is an agreeable pot-herb when young: the juice is milky, and then not too bitter.
† (According to Theophrastus the name is derived from ἄνθος ἢν ἱεράς, from its yielding a salubrious juice; but to which species this distinction applies is not obvious. E.)
We readily restore the more ancient and discriminative appellation, this being the only blue-flowered British Sonchus. Mountainous pastures. Borders of corn-fields about Willington and Howden-Pans, Northumberland. Wallis's Northumb. p. 186. (This alpine plant has hitherto been admitted into the British Flora solely on the above authority, the error of which Mr. Winch has recently detected, as referring only to Cichorium Intybus. The genuine S. ceruleus has however been discovered in Aberdeenshire, on the mountain of Loch-na-gore, and on the Clova mountains by Mr. G. Don. E.)

P. July—Aug.

S. ARVEN'SIS. Fruit-stalks and calyces rough with hair, in a sort of umbel: leaves notched, heart-shaped at the base, (root creeping. E.)


S. PALUS'TRIS. Fruit-stalks and calyces rough with hair, in a sort of umbel: leaves notched, arrow-shaped at the base: (root fleshy, branching, but not creeping. E.)

SYNGENESIA. ÈQUALIS. Sonchus.

(On the bank of the Waveney, between Beccles and Yarmouth. Mr. Woodward. Near Streatham Ferry, Isle of Ely, Rev. R. Relhan, (but said not to have been found there latterly. Several places about Nottingham. Deering. River side at Reedham, Norfolk, Mr. Wigg, in Bot. Guide. A single plant said to have been found at Lochend, by Mr. Neill. Grev. Edin. E.)

P. July—Aug.

S. oleraceus. Fruit-stalks cottony: calyx smooth: (leaves notched toothed. E.)

E. Bot. 843. E.)

Leaves closely amplexicaul. Fruit-stalks at length becoming smooth. Linn. Upper-leaves frequently jagged and indented, like the lower, but not so deeply. Woodw. (Flowers rather small, pale yellow, rarely white, only expanded in fine weather. Root spindle-shaped, milky and bitter, as is the whole herb. Stem branched, brittle, two or three feet high. Leaves with acute lobes, more or less toothed or spinous. E.)


Var. 1. Levis. Leaves smooth, the lower wing-cleft, lower segments long.

Curt. 193—Ger. 231. 5—Clus. ii. 146. 1—Dod. 643. 1—Lob. Obs. 119. 1, and Ic. i. 235. 2—Ger. Em. 292. 3—H. Ox. vii. 3. 1—Pet. 14. 10—Ger. 230. 4—Matth. 497.


Smooth Broad Sow-thistle.

Var. 3. Asper. Leaves prickly, jagged, shining on the upper surface, the edge waved and set with thorny teeth; the lower lobes rounded.


Stem two or three feet high, upright, thick, angular; the angles thin, membranous, tinged with purple. Leaves wing-cleft; segments variously jagged and toothed, some extending almost to the mid-rib, the lower leaves a foot long; mid-rib broad, white, and smooth. Fruit-stalks soon losing their tomentose character. Calyx scales each with two or three little thorns on the back.

Prickly Jagged Sow-thistle. Uncultivated ground, sides of roads and hedges.

Var. 4. Leaves prickly, entire. St.


* The leaves and tender shoots are good among other pot-herbs. They are a very favourite food with hares and rabbits. Sheep, goats, and swine eat it. Horses are not fond of it. (The beautiful parasitic Uredo Sonchi, which before bursting through its cuticle is of a bright scarlet colour, and at length of an orange yellow, is found on the stalks and leaves of this species and S. arvensis. E.)
SYNGENESIA. AQUALIS. LACTUCA. 885

4—Lonic. i. 93. 1—Dod. 643. 2—Lob. &c. i. 234. 2—Ger. Em. 291. 1—H. Ox. vii. 2. 8.

(Prickly-dented Sow-thistle. E.) Fields, and in woods where the under-wood has been cleared.

Var. 5. Leaves inversely egg-shaped, tapering below into leaf-stalks.

Pluk. 61. 5—Pet. 14. 1.


Var. 6. Leaves strap-oblong, rounded at the end.

Pluk. 62. 4—Pet. 14. 3.

(Narrow-leaved Sow-thistle. E.)

Var. 7. Stemless; leaves spread on the ground, deeply wing-cleft; segments sharply toothed.

I found this singular variety on Portland Island in the month of May. The flowers sessile close upon the root. Possibly the effect of its maritime situation.

LACTUCA.* Receptacle naked: Calyx tiled, cylindrical scales membranous at the edge. Down hair-like, pedicellate.

L. scariola. Uppermost leaves perpendicular, sinuated, their mid-rib prickly on the back.


L. virosa. All the leaves horizontal, toothed; mid-rib prickly on the back.


Stem two to four feet high. Root-leaves oblong, wedge-shaped, toothed at the edge. Stem-leaves arrow-shaped, embracing the stem, either entire or wing-cleft, sharply toothed. Flower-leaves arrow-shaped, half embracing the stem, broad at the base, tapering to a sharp point, one at the base of each flowering branch. Flowering branches expanding. Flowers sessile, or on short fruit-stalks. Floral-leaves similar to the stem-leaves but smaller, one at the base of each fruit-stalk, and others still smaller

*(From lac, lactis, milk; the whole plant being lactescent. E.)


**B. July—Aug.**

**Var. 2. Leaves entire.**

**Pet. 15. 1—Trag. 268—Lonic. i. 91. 3—Lob. Adv. 89, and Ic. i. 241. 1—Ger. Em. 309. 1—Park. 813.**


With variety 1, but less frequent. Ray.

**L. SALIG'NA.** Leaves hastate-linear or pinnatifid, sessile: mid-rib prickly on the back.

**Jacq. Austr. 250—(E. Bot. 707. E.)—Hall. Jen. 4, at p. 207—C. B. Pr. 68. 1—Park. 783. 4—H. Ox. viii. 6. 18—Pet. 15. 4.**

(*Plant very slender. Stem two feet high, wavy, pale brown or whitish, leafy throughout. Sm. E.*) *Leaves* arrow-shaped at the base; the lower wing-cleft; segments few, alternate, strap-shaped, finely toothed, with a sharp point at the end, somewhat hooked, the terminal one long: the upper entire, strap-shaped; the mid-rib not always prickly. *Floral-leaves* arrow-shaped, broad at the base, tapering to a point. *Flowers*

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* The juice smells like opium; it is milky, acrid, and bitter; (and may be administered beneficially as a mild anodyne. *Lettuce* lozenges are sold in the shops, and recommended for coughs. E.) Dr. Collin, of Vienna, relates twenty-four cases of dropsy, out of which twenty-three were cured by taking the extract prepared from the expressed juice, in doses from eighteen grains to three drams in twenty-four hours. It commonly proves laxative, in a degree diaphoretic, and removes thirst. It must be prepared when the plant is in flower. (Dr. Swediaur says the juice is sedative and diuretic, and commendable in dropsy and jaundice. The Caledonian Horticultural Society, in 1824, awarded their honorary gold medal to Mr. F. G. Probart, of Lincolnshire, for his method of cultivating and preparing *Lactucarium*, or *Lettuce Opium*. Mr. Salisbury remarks that all kinds of garden, or other *Lettuce*, yield milky juice with similar properties: but that the juice is not milky till such time as the plant produces seed-stalks, and then the taste in general is too nauseous for it to be eaten. This juice is often sufficiently tenacious to detain ants and other insects, and so exuberant as to exude even upon the touch of their light feet. Can its narcotic quality produce any morbid influence over these little invaders? *Livia Lactacea* is not deterred by these dangers. Mr. Markwick relates that the leaves chopped small, are used to fatten ducks and turkeys. The land tortoise feasts upon this and other latescent plants. It is fabled that, after the death of Adonis, Venus, inconsolable, sought sweet oblivion by reclining on a bed of *Lettuce*; perhaps a figurative allusion to its anodyne properties.

"And now let *Lettuce*, with its healthful sleep,
Make haste,"—Columella. E.)
nearly sessile, small, Woodw. yellow, (longer than the glaucous calyx, expanding only in fine weather, forming tufted clusters. E.)


**PRENAN'THES.* Receptacle naked: Calyx double: Down hair-like, nearly sessile: Florets about five, in a single row.**

P. _Mura'lis._ Florets five: leaves runcinate.

_Curt._—(E. Bot. 457. E.)—Fl. Dan. 509—Clus. ii. 146. 2—Lobs. Obs. 119. 2. and ic. i. 236. 1—Ger. Em. 293. 5—Park. 805. 2—J. B. ii. 1004—Pet. 15. 5.

(1) Down pedicellate. A slender, smooth, brittle, lactescent plant, about a foot high; stem leafy, hollow, cylindrical. Florets yellow, opening wide, longer than the purplish calyx. Fl. Brit. E.) Root-leaves on long leaf-stalks, deeply notched; lower segments few, small, somewhat oval, terminal one large, somewhat triangular, with five lobes, resembling the leaves of _Ivy_ in its creeping state, (sometimes purplish beneath. E.) Flowering branches subdivided. Fruit-stalks slender, each with one flower. Woodw. Stem-leaves amplexicaul, deeply notched; segments opposite, toothed, terminal one largest. Calyx, outer, scales three, spear-shaped; inner strap-shaped, generally coloured. Seeds oblong, compressed, scored. Down supported by a short pedicle, (which lengthens as the seed ripens. E.)

(1) (From _prono_, prone, and _avOog_, a flower; the blossom drooping or hanging down, E.)

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**LEON'TODON.† Receptacle naked: Calyx tiled, double; the inner scales parallel, equal: Down hair-like.**

(1) Down pedicellate.

L. _Tarax'acum._ Outer scales of the calyx entire, reflexed: leaves smooth, notched, and acutely toothed.


(Root spindle-shaped, black. E.) Scape hollow, smooth, cylindrical, fragile, semitransparent, nearly a span high, bearing one large flower. Leaves all radical, varying from wing-cleft, in a very dry situation, to nearly entire in a moist one. Calyx, scales perfectly smooth. Seeds furrowed longitudinally, sharply toothed upwards. Down on a long pedicle; rays simple. Woodw. The notches in the leaves hollowed out like the teeth in a large timber saw. Seeds flat, scored, prickly upwards. Blossom yellow, closing early in the afternoon."

* (From _prono_, prone, and _avOog_, a flower; the blossom drooping or hanging down, E.)
† (From _lao_,-a lion, and _avOog_, a tooth; its jagged leaves resembling such. E.)

Var. 2. Leaves narrower, fewer, more deeply cloven. Seeds reddish-brown. Ray.

Pet. 11. 8.

Grows along with var. 1. and flowers most of the summer.

Var. 3. Palustris. Outer scales of the calyx upright, close to the inner, entire; leaves spear-shaped, very entire, or only toothed.

(E. Bot. 553. E.)—Scop. 48. at ii. p. 100.

Root-leaves oblong, broader towards the end, pointed with teeth, smooth, mid-rib red. Calyx smooth; outer scales egg-shaped, pointed, somewhat membranous at the edge; the inner strap-shaped. Lyons. Calyx, the lowermost scales at first upright, afterwards bent back. Huds.

(That very accurate Botanist Mr. Dawson Turner appears to have enjoyed most favourable opportunities of remarking this plant, the L. palustre of Fl. Brit. Lyons, and Relhan; L. Taraxacon of With. Ed. 3: and he thence infers that it is not specifically distinct from L. Taraxacum. He states, "they both grew abundantly in the marshes about Yarmouth, and I constantly remark that though all which are found in the wettest places are clearly L. palustre, yet, as the soil becomes dry, the scales of the calyx are less erect, the colour is less purple and shining, and the leaves take regularly more and more of a runcinate form, till at last they quite lose themselves in the common species. Bot. Guide, p. 441. Messrs. Hooker and Greville also entertain doubts of this species.

* Early in the spring, whilst the leaves are yet white, and hardly unfolded, they are an excellent ingredient in salads. (It may be readily blanched by cultivation: (by which mean it is in a great measure deprived of its acid juice), and its use is supposed to have been introduced by French refugees. E.) The French eat the roots and the blanched leaves, with bread and butter.—(At Gottingen, the roots roasted are used by the poor as a substitute for coffee. Along the banks of the Rhine, Dandelion is especially cultivated for this purpose. Rev. H. T. Eliicomb. E.) Children that eat the plant in the evening experience its diuretic effect, hence the origin of a vulgar name both in this country and among other European nations. When a swarm of Locusts had destroyed the harvest in the island of Minorca, many of the inhabitants subsisted upon this plant. The expressed juice has been given, to the quantity of four ounces, three or four times a day; and Boerhaave had a great opinion of the utility of this and other lactescent plants in visceral obstructions. (As a deobstruent, no plant excels it. The expressed juice is the most efficacious way of giving it; next to that the extract. I often join with it advantageously the common Fumitory. Purton. The globular white heads, formed by the expansion of the pappus or down, afford amusement to children;

"Dandelion with globe of down,
The school-boy's clock in every town,
While the truant puffs amain
To conjure lost hours back again."

At rural fêtes we have likewise observed the youngsters aiding the music of the merry dance with a humble imitation of Panedd pipes, made of the hollow flower-stalks fitted into each other. E)—Goats eat it; swine devour it greedily; sheep and cows are not fond of it; horses refuse it; the seeds are acceptable to small birds. Phalaena Pascodina and Thrips Phygoops feed upon it. Linn. (Cryptocoeplus sputecus harbours in the flowers. The milky juice is most abundant in the root before the flower-stem shoots up. The bitterness is destroyed by drying, therefore the recent roots only should be used. Drs. W. Philips and Pemberton have published in its favour, E.)


P. June—(July. E.)

(2) Down sessile.

L. AUTUMNA'LE. Stem branched; fruit-stalks scaly: leaves spear-shaped, toothed, very entire, smooth: down mostly sessile.

(E. Bot. 830. E.)—Fuchs. 320—J. B. ii. 1031—Trag. 265—Dod. 639. 4—Ger. Em. 297. 3—Lonic. i. 92. 3—Ger. 233. 4—Dod. 639. 4—Lob. Obs. 120. 1, and Jc. i. 237. 2—Ger. Em. 296. 2—Park. 794. 4—H. Oz. vii. 7. 6—Math. 766—Pet. 12. 1.

Root in the second or third year dying at the end, appearing as if bitten off. Stems sometimes thrice as tall as the leaves. Leaves spear-shaped, quite smooth; teeth bluntish. Flowering branches nearly of an equal height. Calyx inversely egg-shaped, tapering downwards, beset with tapering blackish hairs, and a small quantity of cottony substance. Down of the central florets, sometimes tapering out into a kind of short pedicle; feathered, brownish-white, which colour readily distinguishes it from Hypochceris radicata, which it very much resembles, and the others of the same tribe which flower in the meadows at the same time. St. Florets yellow on both sides. Style and summit set on the upper part with very short and exceedingly fine, white, bristly hairs. Down about the length of the seed, rather longer than the tubular part of the blossom. Seeds compressed, striated.


P. July—Aug.

Var. 2. Leaves hairy. Ray.
With variety 1, and with us the most common. St.
Var. 3. Leaves wing-cleft.

Hieracium prae morum laciniatum. R. Syn. 164.
Pastures about London.

Pet. 12. 3.

Hedges about London.
Hieracium folio acuto minus. R. Syn. 164.

Pet. 12. 4.

With var. 4.
L. hispidum. (Stalks naked, single-flowered: E.) all the scales of the calyx upright: leaves toothed, very entire, hispid, bristle-like hairs forked.

Curt. 314.—(E. Bot. 554. E.)—Fl. Dan. 862—The figures of the older Botanists are not sufficiently exact to allow of determining whether they intended them for this or the next species.

Leaves on leaf-stalks, spear-shaped, somewhat hoary; hairs forked and simple. Seeds slender, rough, striated, the upper part of the ridges toothed, the lower warty; as long as the down. Woodw. Root as if bitten off. Stalk six to sixteen inches high. (Flowers drooping in the bud, bright yellow; florets of the circumference greenish on the outside. E.) The floral-leaf mentioned by Linnaeus as discriminating this species from L. hirtum, which has no such appendage, is not always present.


Var. 2. Leaves entire, and sometimes with shallow teeth, spear-shaped, rough. Linn.

Clus. ii. 141. 2—Ger. Em. 302. 3—Park. 799. 19—J. B. ii. 1038—H. Or. vii. 7. 12, row 2. 5—Pet. 11. 5—Ger. 238. 3. These figures are cited on the authority of Ray.


L. hirtum. All the scales of the calyx upright: leaves toothed, hoary; hairs undivided: Linn. outer row of seeds destitute of down. Hal.


Leaves rather stiff, and as it were dry to the touch, and the central parts very much curled when dry; segment oblique; the hairs undivided at the point. Calyx pendent before flowering, channelled when the seeds are ripe: the outermost scales dilated on each side at the base, with a fold between. Blossom, the florets of the circumference yellow underneath, and not greenish. Linn. Stem six inches high. Seeds of the circumference crowned with shallow leafy scales, instead of down; those of the centre with a feathered down. Hall. A much smaller plant than L. hispidum, calyx smooth, leaves hoary. In L. autumnale the calyx is hairy and the leaves smooth. Afzel. The want of down to the outer row of seeds sufficiently distinguishes this plant from its congeners. Flowers yellow.

HIERACIUM.* Receptacle generally naked: Calyx tiled, egg-shaped, sometimes double: Down mostly sessile, hair-like, rarely plumose.

(Obs. This genus has been found so intricate, that the means of discriminating the intermingling varieties have scarcely yet been discovered. We have ventured to admit several species, which, from the authority on which they rest, may be considered well ascertained; but, notwithstanding the labours of Smith in Linn. Tr. and other works, we are still unable altogether to rectify the confusion of synonyms which in some of the older species has long prevailed. E.)

(1) Stalk leafless, single-flowered; Down simple.

H. pilosella. Leaves very entire, egg-shaped, cottony beneath: suckers creeping.

Suckers covered with down, and hairy, lying close to the ground, not throwing out flowering stems in the autumn, as do H. dubium and auricula. Florets pale yellow, with a broad purple stripe on the under side. Woodw. Calyx, hairs terminated in black globules. (Seeds brown, striated. E.)


P. May—Sept.†

* (From ἕπαξ, a hawk; because that bird, according to Pliny, was wont to quicken his sight with its juice; or rather, perhaps, from the mixture of black and yellow in some species resembling the colour of a hawk's eye; and whence, possibly, the above inference. E.)

† This differs from other lactescent plants, being less bitter, and more astringent (It was formerly kept in the shops as an astringent, and designated Auricula muris, from the resemblance of the hairy termination of its leaves to a mouse's ear. E.) It is esteemed hurtful to sheep. An insect of the Cochineal genus (Coccus polonicus) is often found at the roots. Act. Ups. 1752. Goats eat it. Sheep are not fond of it. Horses and cows refuse it. (The different species contributing to the Horologium Florae, or Botanical Clock, (Vid. Anagallis), (as originally described by Linnaeus, and since exhibited in the Jardin des Plantes at Paris), we cannot refrain from transcribing the appropriate lines of Charlotte Smith.

"In every copse and shelter'd dell,
Unveil'd to the observant eye,
Are faithful monitors, who tell
How pass the hours and seasons by.
The green-robed children of the Spring
Will mark the periods as they pass,
Mingle with leaves Time's feathered wing,
And bind with flowers his silent glass.
Mark where transparent waters glide,
Soft flowing o'er their tranquil bed;
There, cradled on the dimpling tide,
Nymphæa rests her lovely head."
H. ALPY'NUM. Leaves oblong, entire, toothed: stalk almost naked: calyx shaggy with silky hairs.

(E. Bot. 1110. E.)—Liglifr. 18, p. 434—Allion. 14. 2—Col. Ecpfr. ii. 30. 1—H. Ox. vii. 7. 5—Pet. 11. 2—Ray 6. 2. at p. 168—(Fl. Dan. 27, may possibly be the same plant in a cultivated state.)

Leaves egg-oblong, slightly toothed, sprinkled on both sides with white expanding hairs. Stalk thick, with white hairs, brown at the base. Floral-leaves small, one or two on the upper part of the stalk. Calyx swoln, set with numerous white projecting hairs. Blossom large, deep-

But conscious of the earliest beam,
She rises from her humid nest,
And sees reflected on the stream
The virgin whiteness of her breast,
Till the bright day-star to the west
Declines, in Ocean's surge to lave;
Then, folded in her modest vest,
She slumbers on the rocking wave.

See Hieracium's various tribe,
Of plumy seed and radiate flowers,
The course of time their blooms describe,
And wake or sleep appointed hours.

Broad o'er its imbricated cup
The Goatsbeard spreads its golden rays,
But shuts its cautious petals up,
Retreating from the noontide blaze.

Pale as a pensive cloistered nun,
The Bethlehem Star her face unveils,
When o'er the mountain peers the sun,
But shades it from the vespert gales.

Among the loose and arid sands
The humble Arenaria creeps;
Slowly the purple star expands,
But soon within its calyx sleeps.

And those small bells so lightly rayed
With young Aurora's rosy hue,
Are to the noontide sun displayed,
But shut their plaits against the dew.

On upland slopes the shepherds mark
The hour, when, as the dial true,
Cichorium to the towering lark
Lifts her soft eyes serenely blue.

And thou, "Wee crimson tipped flower,"
Gatherest thy fringed mantle round
Thy bosom, at the closing hour,
When night-drops bathe the turfy ground.

Unlike Silene, who declines
The garish noontide's blazing light;
But, when the evening crescent shines,
Gives all her sweetness to the night.

Thus in each flower and simple bell,
That in our path betrodden lie,
Are sweet remembrancers who tell
How fast their winged moments fly. E.)

**H. TARAXACI.** Leaves spear-shaped, runcinate, smooth: stalk almost naked, (swollen towards the top: E.) calyx shaggy.

(\textit{E. Bot.} 1109. E)—\textit{Retz.} 4. 2—\textit{Allion.} 31. 1.

Leaves so much like those of \textit{Leontodon autumnale}, and the stalk and flowers so exactly resembling those of \textit{H. alpinum}, that if the stalk and flower of the latter were added to the leaves of the former, a fair specimen of the plant in question would be produced. \textit{Stalk} (three to six inches high, E.) with the minute rudiments of leaves, hairy, thickening towards the (yellow, E.) flower, swelling at the end, like the calyx, with brown hairs. Linn. (The fructification of \textit{Taraxaci}, on accurate examination, will be found far too dissimilar to that of \textit{T. alpinum}, to allow of the conjecture that it might prove a hybrid offspring from the latter. E.) Down sessile, decidedly feathery, (which, rather than "simple," would refer this plant, according to the new arrangement, to the genus \textit{Apargia}. E.) Lightf. on whose authority it principally rested as a British plant, (till re-discovered by T. Wynne Griffith, Esq. E.)


(2) \textit{Stalk naked, many-flowered.}

**H. du\textit{bium.}** Leaves nearly entire, egg-oblong, obtuse, hairy: suckers creeping: (calyx bristly. E.)

(\textit{E. Bot.} 2332. E)—\textit{Fl. Dan.} 1044.

Leaves longer and narrower than in \textit{H. pilosella}, slightly concave, hairy on both sides, but more sparingly so than in \textit{H. pilosella}, green above, greyish, but not cottony, underneath. \textit{Stalks} six to nine inches high, upright, nearly smooth below, with mostly two flowers, rarely one. \textit{Pedicles} equal, wide apart, as the \textit{calyces} clothed with hairs, bearing black glo- bules. \textit{Florets} pale-yellow on both sides. \textit{Seeds} oval, scored; \textit{down} sessile, as long as the calyx. Such were the appearances in June and July, but in autumn as follows:—\textit{Suckers} throwing out branches, and terminated by a flowering stem. \textit{Branches} not rooting, with alternate leafy branches. \textit{Stem} declining at the base, with five and six flowers. \textit{Fruit-stalks} alternate. \textit{Floral-leaves} spear-shaped, one at the base of each flower, and similar ones on the fruit-stalks. Cultivated some years in my garden. The roots received from the North of England for \textit{H. du\textit{bium}}. It approaches nearest to that species, and is, I apprehend, that plant, though somewhat varied. Woodw.

H. auricula. Leaves entire, spear-shaped, acute, hirsute: suckers creeping: (calyx shaggy. E.)

Leaves spear-shaped, rough with small hairs. Stalk and calyx beset with black bristles. Planted in a garden it rose the next year to three feet high, with flowers in a kind of umbel on long fruit-stalks. Linn. Root as if bitten off, with numerous simple fibres. Suckers leafy. Stalk upright, scarcely six inches high, somewhat hairy, hairs scattered. Leaves mostly very entire, pointed, naked. Flowers in a panicle, three to six, yellow. Huds. (A plant little understood. E.)


(H. aurantiacum. Leaves elliptical, entire: stem almost naked, simple, hairy, bearing a corymbus of many flowers: calyx shaggy.


Root creeping, and throwing out many scions. Stem a foot high or more, erect, cylindrical, very hairy, scarcely bearing one or two small leaves. Blossom deep-brownish orange colour. Calyx and flower-stalks clothed with long hairs, like those on the leaves or stem. Leaves nearly all radical, elliptical, broad, entire, hairy, especially on the rib. Receptacle naked. Seed-down rough. Stalk and calyx invested with black glandular hairs. E. Bot.

Orange Hawkweed. Not uncommon in gardens; and found truly wild in several woods in Banffshire, and at Craigston near Turref, by Mr. George Don. Coalston woods. East Lothian. Mr. Maughan. Hook. Scot. At Failsworth, four miles from Manchester. Mr. John Bradbury. Eng. Fl. P. July. E.)

(3) Stem leafy; Down sessile.

H. sabaudum. Stem upright, many-flowered: leaves egg-spear-shaped, toothed, semi-amplexicaul, (rough underneath. E.)


Stem (dying down in winter; E.) sometimes branched from half or two-thirds of the way up; the uppermost branches often springing from one point as an umbel; those below alternate. In branches where the top of the stem has been bitten off the leaves often assume the figure of those of H. umbellatum; the fruit-stalks become congregated, as in Gmel. ii. 14. 1, and Fl. Dan. 872. See also var. 4. St. Flowers numerous, yellow, open only a few hours. (Stem stiff and upright, three feet high, cylindrical, furrowed, rough, scarcely hollow, but spongy within, terminating in a branched, many flowered, hairy panicle. Calyx brownish green, hairy, the lower scales loose. Seeds angular, chestnut-coloured, rather rough. Fl. Brit. E.)
P. Aug.—(Sept. E.)

Var. 2. Leaves covered with a short and just perceptible down. Ray.  


Var. 3. Leaves longer, with fewer teeth, one flower only on the stem.  

Pluk. 37. 3—Pet. 11. 6.

On a dry bank at the edge of a wood in a lane leading from Hornhill to Rickmansworth, Hertfordshire. Ray.

Var. 4. Leaves broad spear-shaped, on very short leaf-stalks. St.  


(H. denticulatum. Stem erect, leafy, many-flowered, solid, cymose, with downy glandular stalks: leaves elliptic-lanceolate, finely toothed, smoothish, glaucous beneath.  

E. Bot. 2122.

Stem a yard high, roughish, pithy, leafy from top to bottom. Leaves twice the size of the preceding, scarcely at all clasping. Flowers yellow, not an inch broad. Cal. a little viscid. Recept. cellular. Sm.


P. July—Aug. E.

H. prenanthoides. Stem upright, solid: panicle terminal: leaves spear-shaped, embracing the stem, glaucous beneath.  

(E. Bot. 2235. E)—Allion. 27. 1 and 3.

Whole plant more or less hairy, (three feet high. E.) Leaves fringed with hairs, edged with a few minute distant teeth; dark green above, glaucous underneath, (numerous, alternate. E.) Flowers numerous, bright yellow, forming a panicle. (Seeds very smooth, brown. Peduncle downy. The glaucous green of the leaves is alone sufficient to distinguish this from all our other species. (Differs from H. denticulatum. E. Bot. 2122, with which it was confounded in Fl. Brit, in having the leaves embrace the stem by their rounded dilated base, and in their singular roughness near the edge, which there forms a bristly border. E. Bot. E.


P. June—Aug.

(H. Lawsoni. Stem branched, solid, few-leaved: leaves elliptic-lanceolate, decurrent, glaucous, fringed, nearly entire.  

SYNGENESIA. \textit{EAQUALIS. \ HIERACIUM.}

\textit{Hieracium}, Moot black externally. Herb glaucous, abounding in bitter milk. Stems pithy, a foot high, or more, smooth, bearing one, two, or three leaves. Flowers very large and handsome, lemon-coloured; calyx hairy. Leaves chiefly radical, on long dilated footstalks, copiously hairy at the base. Sm.


P. July. E.


Stem one to two feet high, hollow, in which it differs from \textit{H. murorum}; furrowed, smooth, generally bright purple at the base. Leaves smooth, alternate, the lower on leaf-stalks, oval-spear-shaped; the upper spear-shaped, deeply toothed towards the base, entire at the summit; the uppermost very entire. Leaf-stalks and midribs of the leaves sometimes purple, especially underneath. Fruit-stalks smooth. Flowers solitary, smaller than in \textit{H. murorum}. Calyx scales strap-spear-shaped, with numerous black hairs on the back. Woody. Leaves notched like those of Dandelion but not so deeply. Flowers bright yellow.

\textbf{Marsh Suc\textsc{c}ory-leaved Hawkweed.} Moist meadows, woods, and sides of rivulets in the mountainous parts of Craven, Yorkshire, and both in the Lowlands and Highlands of Scotland. Hardrow Force, in Wensley Dale, Yorkshire. Mr. Wood. On the west side of the river just below the bridge at Kirkby Lonsdale, Westmoreland. Sir J. E. Smith. Near Rydal, Westmoreland. Mr. Woodward. At the Hermitage, near Taymouth. Dr. Stokes. Marshy ground at the foot of Pentland Hills. Dr. Hope. (Near Barnard Castle, Durham. Rev. J. Harriman. And Castle Eden Dean. Mr. Winch. E.)

P. July.


Taller, and more leafy than \textit{H. murorum, \textsc{g} sylvaticum.} Has rather elliptical than heart-shaped leaves, whose strong deep teeth point forward, and are by no means radiated. Leaves strongly speckled with black. From \textit{H. sylvaticum} it is also distinguished by the cymose, not panicked, growth of its stem; the flowers are also larger, more numerous, with a darker, thicker calyx, and the whole herbage of a darker green. Stem decidedly hollow. E. Bot. (This, according to Smith, “very distinct species,” is considered by Prof. Hooker as var. \textit{sylvaticum.} E.)

\textbf{Stained-leaved Hawkweed.} \textit{H. sylvaticum.} Oed. Sm. Linn. tr. vol. ix. 240. \(\beta. \) \textit{H. murorum \gamma.} Fl. Brit. This plant was brought from Westmoreland in 1781, by Mr. Crowe, from whose garden it has established itself, by seed, in the neighbourhood of Norwich, preserving its original
SYNGENESIA. ÆQUALIS.  HIERACIUM.  897

habit and characters. The late Mr. Teesdale also found it growing wild in Yorkshire, and designated it as a new species by the name it now bears. Rocky woods in the North Riding. Mr. Teesdale. On Breidden hill, Montgomeryshire. Mr. Bowman. (Rocks by Gordale Scar, Yorkshire, Mr. Dawson-Turner, in Bot. Guide. Fir wood east of Forfar, Mr. G. Don, in Hook. Scot. E.) P. July—Sept. E.)

H. muro'rum. (Stem branched, panicled, with a single leaf: root-leaves ovate-heart-shaped, toothed, wavy. E.)


(Stem eight to twenty inches high, scabrous and shortly pubescent, slightly branched upwards in a corymbose manner, and bearing mostly a single petiolate leaf, but when there are two, the upper one is usually sessile. Leaves more or less ovate, petiolate, subentire or toothed, the teeth spreading, hairy or subglabrous, often purplish beneath. Flowers rather large, deep yellow, on rather divaricate branches. Involucre (calyx), rough, with black bristly glands intermixed with a short pubescence, very different from H. Lawsoni. Grev. E.)


(Var. ð. Fl. Brit. is said to have been discovered on Ben Gloe, and other mountains of Scotland, by Mr. J. Mackay, who described it with leaves toothed and snipped, not spotted; stems only a span high, hairy, nearly naked; blossoms double the size of those of other varieties; calyx covered with soft hairs, of a black colour. Very nearly allied to this must be considered H. pulmonarioides of Villars, H. pulmonarium of E. Bot. 2307.

Stem branched, cymose, with few leaves, solid: leaves spear-shaped, deeply toothed, the teeth pointing forward. Radical-leaves numerous, rather clouded with purplish-brown than spotted, narrower than those of H. maculatum; flowers also fewer and larger, and stem not half so tall as in that species.

Gathered by Mr. W. Borrer on the banks of the Scottish river Nevis, near the bridge: also on Gorsdale Scar, Yorkshire. Mr. Winch. July. P. E.)

(Mr. Dawson Turner suspects a new species, most resembling H. muro'rum, will be found on the walls of Castleton Castle, Derbyshire. E.)
SYNGENESIA.ÆQUALIS. HIERACIUM.

(H. CERINTHOI'DES. Stem solid, bearing a corymb, with leaves hairy, slightly toothed; stem-leaves oblong, semi-amplexicaul: root-leaves inversely egg-shaped: leaf-stalks bearded with long hairs.

E. Bot. 2378—Gouan. Ill. t. 22, f. 4—Villars Dauph. v. 3, t. 32.

Herb rather glaucous, one to one foot and a half high; stem nearly smooth, stout, slightly angular. Flowers rather large, pale yellow, on bristly stalks. Cal. covered with shaggy, but short, hairs. Radical-leaves besprinkled, though often slightly, with dots, a little like those of Cerinthe. Sm.

HONEYWORT-LEAVED HAWKWEED. Near the head of Clova, &c. Another discovery of Mr. G. Don, who states it to be by no means a scarce plant in the Highlands of Scotland, growing upon rocks. P. Aug. E.)

(H. AMPLEXICAU'LE. Glandulos-pilose: stem corymbose: leaves toothed; radical ones oblango-ovate, petiolate; cauline ones cordate at the base, amplexicaul.

Has many points in common with the last species, but is every where covered with brownish glandular hairs, most thickly on the peduncles and involucre. Lower cauline leaves more or less oblong; upper ones truly cordate.


H. SYLVATIC'ICUM. (Stem solid, many-leaved, simply racemose: leaves egg-spear-shaped, toothed chiefly about the base: teeth pointing forward. Sm. E.)

(E. Bot. 2031. E.)—Allion. 28. 1—Lob. Obs. 517. 2, and Jr. i. 517. 1—Ger. Em. 504. 2—Park. 801. 2—Tabern. 505. 1—J. B. ii. 1034. 3.

(Channels bright yellow, smaller than those of H. maculatum, and much fewer, often but two or three in the panicle. Sm. E.)


Jacq. Austr. 87—Clus. 141—J. B. ii. 1027—H. Ox. vii. 5. 58—(E. Bot. 2379.

Root-leaves very variable in size, the smaller ones on very long leaf-stalks. Stem-leaves sometimes strap-shaped, and not embracing the stem. The whole plant woolly, and when cultivated rising to the height of four feet. (The copious long shaggy hairs of the stem, leaves, and calyx; and lemon-coloured flowers, nearly two inches over, distinguish this species. Sm. E.)
SYNGENESIA. EQualIS. HIERACIUM. 899

(H. Halleri, thus characterised: “Stem erect, with one or two flowers, slightly leafy; leaves hairy; lower ones obovate-oblong, stalked, toothed; upper lanceolate, much diminished; calyx shaggy.” Considered by Smith as decidedly distinct both from H. villosum and alpinum, for which latter it has sometimes been mistaken; but it appears to be a somewhat taller plant; with the calyx, according to Hooker, having “long silky hairs, principally near the margins of the scales,”—“by no means shaggy like H. alpinum—with a flower of a full golden yellow, not lemon-coloured like H. villosum;” Sm., is said to have been found by Mr. G. Don on Clova mountains, in the Highlands of Scotland.—In a recent number of that most accurate, elegant, and, as far as merit can establish such a title, truly national work, the Flora Londoniensis, Professor Hooker gives a representation of H. Halleri, (t. 215,) but considerable discrepancy may still be detected in the different accounts of this plant. The above learned author remarks, “This, however, like all the other species of the genus, is liable to much variety in the size of the plant and especially in the breadth and toothing of the leaves;” and, in allusion to H. Lawsoni, murorum, villosum, and alpinum, admits that he “can find no limits to any of the characters.” E.)


Stem upright, unbranched, one or two feet high, scored, purplish, leafy, somewhat hairy. Fruit-stalks terminal, few, one or two-flowered, one inch and a half long. Leaves oval, blunt, hairy on both sides, soft, the upper sitting, the lower tapering into leaf-stalks. Calyx not tiled. Leaflets dark green, hairy, uniform. Flowers deep yellow. Seeds reddish, scored. It approaches H. murorum, and sometimes grows along with it, but it differs in the colour of the flowers, the number of leaves on the stem, and is truly distinct. Jacq. (Remarkable for obtuse radical leaves, which taper gradually into a long foot-stalk. Scales of the involucre (calyx) with a few black glandular hairs. Hook. E.)


P. July—Aug.

H. umbellatum. (Stem erect, somewhat umbellate, nearly solid: leaves strap-shaped, somewhat toothed, scattered: but slightly hairy. E.)

Curt.—Kniph. 9—(E. Bot. 1771. E.)—Pet. 13. 10 and 11—Chus. ii. 140—Dod. 638. 2—Lob. Obs. 120. 3, and Tc. i. 240. 1—Ger. Em. 298. 5—Park. 801. 4—J. B. ii. 1030. 1—Fl. Dan. 680—Ger. 234. 6.

Stem two to four feet high, simple, cylindrical, scored, hollow, (pithy with a small cavity in the centre, Sm. E.) nearly smooth. Leaves numerous, without order, decreasing in size upwards, sessile, strap-spear-
shaped, with a few pointed teeth towards the base, edges and ribs slightly hairy. Flowers large, yellow. Fruit-stalks branched, cottony. Floral-leaves awl-shaped. Calyx scales strap-spear-shaped, the outer somewhat cottony, the inner smooth. Seeds cylindrical, smooth, furrowed. Down as long as the calyx. Woodw.


Var. 2. Leaves smooth, very entire, dark green; Dill. in R. Syn. truly linear.


P. Aug.

Crepis.† Recept. naked, (very slightly hispid: Fl. Brit. E.) Calyx double, outer one deciduous: Down hair-like, somewhat pedicellate.‡

C. Fetida. (Leaves between notched and winged, with reversed teeth, hisurate: leaf-stalks toothed: stem hairy: calyx downy. E.)


C. Tectorum. Leaves spear-shaped, notched, sessile, smooth; the lower ones (runcinate, amplexicaul. E.)


* (In Scania, the Narrow-leaved Hawkweed is said to furnish an elegant dye for woollens. E.)
† (From xenis, a shoe; the blossom bearing some resemblance to the form of a slipper. E.)
‡ (It has been attempted to limit the present genus to such as have the down of the seed sessile, the others being denominated Barhhausia and Prendanthes; but the down, being far from invariable in this respect, affords no positive criterion. E.)
Plant of an ash-coloured green. Stem angular, furrowed, (one to three feet high. E.) Branches as long as the stem. Root-leaves resembling those of Leontodon Taraxacum; stem-leaves those of L. autumnale, but with the teeth at the base upright and longer; branch-leaves entire, strap-shaped, somewhat arrow-shaped and rolled back at the edge. Flowers of the appearance of those of Lapsana Communis, never drooping. Calyx furrowed, sprinkled longitudinally with clammy hairs. The plant, in most other respects, liable to great variations of structure and appearance, when growing in a rich soil as figured in Ger. 228. 2, when in a poor soil more slender, about a foot high, with strap-shaped leaves somewhat toothed, resembling those of Plantago Coronopus; (as in Gmel. ii. 6. St.) or a hand's breadth high. Linn. Root very long and taper. Stems purplish, often twisted, smooth. Calyx with black or brownish white hairs, terminating in small transparent globules; outer leaves five to ten, not deciduous; inner keeled towards the bottom. Florets yellow on both sides. Down sessile, rather longer than the seeds, or the tube of the blossom.


Var. 2. Leaves tapering to a fine point.

Pastures about London. 

Pet. 12. 7.

July—Aug.

Var. 3. Leaves entire, toothed, either spear-shaped or egg-shaped.

Pastures about London.

Pet. 12. 7.

Var. 4. Stems trailing, leaves strap-shaped, very narrow, apparently from the stem having been bitten off in the spring.

C. biennis. Leaves notched, wing-cleft, rough, toothed above the base: calyx bristly.

E. Bot. 149—Kniph. 6—J. B. ii. 1025. 3—C. B. Pr. 64—Park. 793—H. Or. vii. 4. 46—Pet. 12. 10.


SYNGENESIA. \textit{ÆQUALIS. Hypochæris.}


\textbf{(C. \textit{Pulchra}.} Leaves downy, toothed; radical ones obovate; those on the stem somewhat arrow-shaped and amplexicaul: stem panicled, corymbose: calyx pyramidal, smooth.


\textbf{Root} small, taper, branching. \textbf{Stem} one to two feet high, upright, downy, slender, cylindrical, hollow. \textbf{Root-leaves} inversely egg-shaped, thin, downy, toothed most in their lower part, the rest few, small, arrow-shaped, clasping the stem with their toothed base. \textbf{Flowers} small, yellow, closing about noon. \textbf{Anthers} and \textbf{stigmas} brownish. \textbf{Scales} at the base of the calyx not deciduous. \textbf{Down} of the seed nearly sessile, very slender, minutely toothed. Like its congeners said to vary much in luxuriance. \textit{E. Bot.} Vid. also Linn. Tr. vol. x. p. 345.


\textbf{HYPOCHÆRIS.*} \textit{Recept.} chaffy: \textit{Calyx} somewhat tiled: \textit{Down} pedicellate, feathery.

\textbf{H. maculata.} Stem solitary; almost naked: leaves egg-oblong, entire, toothed.


\textit{Leaves} spreading on the ground in a circle, oval, toothed at the base, very entire towards the end, fringed, with reddish angular spots, and scattered hairs. \textbf{Stem} naked, with one or two strap-shaped scales. \textbf{Calyx} outer scales blackish, fringed; the inner smooth, yellowish, half as long as the florets, hairy, composed of large scales. \textbf{Woodw.} \textbf{Stalks} generally simple, but sometimes with one, two, or three branches. \textit{Relh. Blossoms} yellow: (large, terminal. \textit{Down} feathery. E.)


\textbf{H. glabra.} Smooth: stem branched, nearly leafless: leaves toothed and indented: calyx oblong, tiled: (down of the marginal seed sessile. E.)

* (From \\textit{vulco} and \textit{xupos}; because swine are supposed to delight in certain species. E.)† The leaves are boiled and eaten like cabbage. Horses are fond of this plant when green, but not when dry. Cows, goats, and swine eat it. Sheep are not fond of it. Linn. The country people believe it a cure for tetter, and other cutaneous eruptions, possibly through a vulgar prejudice, founded on its spotted leaves. Mr. Wood.
SYNGENESIA. EQUALIS.  LAPSANA.  903


Differs from H. radicata in having much smaller blossoms, the scales of the calyx smooth, and the keel not fringed. Whole plant smooth. Stems (about a foot high, E.) nearly upright, with one or two branches, slender, hollow above, solid below. Leaves spear-shaped, indented, toothed. Fruit-stalks thickening upwards. Calyx like that of Leontodon autumnale. Blossom yellow, close. Seeds of the circumference with the down sessile; those of the centre, down pedicellate. Habit and appearance that of Leontodon autumnale. Linn. Stem sometimes simple, in the autumn much branched and reclining. Leaves in a circle round the root, shining; teeth triangular, Woodw. sometimes edged with white hairs. Calyx long, conical; scales smooth, blunt, purplish at the ends.


H. RADICATA. Stem branched, naked, smooth: leaves notched, blunt, rough: fruit-stalks scaly: (down of all the seeds stalked. E.)

Curt. 152—(E. Bot. 831. E.)—Fl. Dan. 150—Dod. 639. 2—Lob. Obs. 120. 2, and Ic. i. 238. 1—Ger. Em. 298. 6—Park. 790—H. Ox. vii. 4. 27—Ger. 227. 7—Park. 791. 8—Pet. 11. 11—J. B. ii. 1032. 1.

Root-leaves spread on the ground, oblong-wedge-shaped, waved or toothed, hairy. Branches one or more, thickest upward, each with one flower. Woodw. Calyx not distended at the base; scales strap-spear-shaped, set along the upper part of the keel with a row of short, taper, dark, purple bristles. Seeds scored, rough; pedicle longer than the seed; down rather longer than the pedicle. Chaff strap-shaped, tapering and yellow towards the top. Blossoms large, yellow within, reddish green without. (Root spindle-shaped, descending to a great depth. E.)

A dwarf variety with only one flower, and that nearly sessile, lateral, has been observed by Mr. Woodward.


LAPSANA. Receptacle naked: Calyx double: all the inner scales channelled: Down none.

L. COMMUNTS. Calyxes after flowering, angular: fruit-stalks slender, much branched: (stem bearing a panicle: leaves egg-shaped, stalked, toothed. E.)

* (Sheep and cows refuse it. Sinclair. This is the Porellina of old authors, supposed to be a favourite food with pigs; though probably not more so than some others of the same class, as Swine's Succory, Sow-thistle, &c. E.)
**Stems**

Stem two to four feet high, stiff, hollow, cylindrical, scored, hairy. Leaves alternate: the lower egg-shaped, on leaf-stalks; the upper spear-shaped, higher up strap-shaped, the uppermost awl-shaped. Leaf-stalks bordered, the border wing-cleft, one or two pair of wings, slightly hairy. Flowering branches long, naked, or with one or two awl-shaped scales, much branched at the top, each branch with one flower. Woodw. Stem nearly cylindrical, scored, hairy; the hairs terminated by minute globules. Branches smooth. Leaves toothed; rough with hair, the lower egg-shaped, on long leaf-stalks, the upper spear-shaped, sessile. Leaf-stalks flat, with two or three pair of small unequal wings. Calyx somewhat cylindrical; the outer, scales spear-shaped, closely embracing the base of the inner. Blossom yellow; florets fifteen to eighteen. Styles purplish. Summit dark purplish green.


A. June—July.*

(L. *pusilla*).

Stalks radical, subdivided, naked, thickening upwards: leaves obovate, rough-edged, toothed. E.)


Root small, woody, with a few stiff fibres. Leaves spreading in a circle, bluntly oval, tapering into a leaf-stalk, toothed on the sides, entire at the base and end, viewed with a glass slightly hairy, particularly at the edges. Stalk six to nine inches high, cylindrical, smooth, reddish and stiff at the bottom, green and hollow upwards, sometimes simple, oftener with one, sometimes two branches. Branches reddish and wire-like at the base, hollow and thickening upwards, sometimes again divided. Flowers pendant before opening, afterwards upright. Calyx outer scales small, dry, and shrivelling; the inner very pointed. Blossom yellow. Seeds oval, scored, crowned with the proper calyx. Woodw. In some situations much larger, the branches dividing and sub-dividing. Br.


* As a curative for sore breasts, (whence the old English name is derived), it is now entirely in disuse. At Constantinople it is eaten raw, just before flowering. (In some parts of England the young leaves are boiled and used as greens, but have a disagreeable flavour. "Lapsana vivere" is proverbial, signifying to live hard; in allusion to Caesar's army, which is reported to have sustained life for some time at Dyrrhachium by using the roots of this herb; but our plant being annual, and its roots little more than fibrous, we apprehend the passage of Pliny, xix. 9, must refer to some other vegetable. E.*
CICHORIUM.* Receptacle somewhat chaffy. Calyx double: Down chaffy, (shorter than the seeds. E.)

C. N'YIBUS. Flowers in pairs, sessile; leaves notched.


Stem angular, (two to three feet high, upright, straight. Root spindle-shaped, fleshy, white. E.) Stem-leaves spear-shaped, amplexicaul, toothed towards the base, fringed with bristly hairs terminating in globules. Flowers axillary to the upper leaves, only open during the middle of the day. Calyx, outer, scales six, reflexed, about half as long as those of the inner, set on the outside and edges with whitish hairs bearing small globules; inner, scales membranous, set along the back with similar hairs, woolly at the ends. Blossom of a fine blue, (sometimes white, E.); individuals with five or six semi-transparent lines, a little woolly on the outside. Cylinder of anthers striped blue and white. Germen, edge with little teeth. Summits blue. Seeds oblong, quadrangular, crowned with a small greenish cup edged with numerous white teeth. Chaff short, spear-shaped.

WILD SUCORY, (CICHORY, E.) or ENDIVE. (Welsh: Ysgalien y Meirch. E.) Borders of corn-fields. P. July—Aug.†

ARCTIUM.† Calyx globose: scales with hooked points, bent inwards.

A. LAP'PA. Leaves heart-shaped, without thorns, on leaf-stalks.

(E. Bot. 1298. E.)—Kniph. 3—Ludw. 106—Curt. 238—Woodv. 15—Matth. 1154—Lob. Obs. 318. 2, and 1c. i. 588. 1—Ger. 664. 1—Park. 1223. 1—Dod. 38—Lob. Obs. 318. 1, and 1c. i. 587. 2—Ger. Em. 809. 1—Pet. 23. 1—Fuchs. 79—J. B. iii. 570—Trag. 837—Blackw. 117. 1—H. Ox. vii. 32. 1—Lonic. i. 64. 2.

Leaves, the lower on long leaf-stalks, waved at the edges; the upper egg-spear-shaped. Woodw. Stems reddish. Stems and leaves with short

* (Pliny traces this name to an Egyptian origin. By the Greeks it was sometimes written *apxTos*, whence among the simple fare of Horace,

—— "Me pascunt olivae,
   Me Cichorea, levesque Malvee." E.)

† The leaves, when blanched, are eaten early in the spring in salads. They lose their bitterness by cultivation, (but the kind more generally adopted for horticultural purposes is C. Endivia, an exotic, and little more than annual, species. E.) The roots, gathered before the stem shoots up, are edible, and, when dried, will make bread. Sheep, goats, and swine eat it. Cows and horses refuse it. (The root dried and ground to powder will improve coffee, and is frequently drunk therewith, especially in Germany, where it is prepared in cakes, and sold for that purpose.—In Moscow, and generally throughout Russia, it is used, when roasted, as a substitute for tea and coffee. The cultivated variety, when sown in drills, is productive, but the stems being hard, render it unfit for provender. Indeed, agriculturally considered, it is, like several other beautiful plants, little better than a troublesome weed. Medicinally, it has been admitted into the Dispensatory as an aperient, detergent, and attenuant, but probably with no very active virtues. E.)

† (From *aper*, a bear; from the roughness of its globular heads.—Respecting the etymology of the old generic term *Lappa*, Ray observes, "Dici potest vel *Lappa* vel *Lappis*, prehendere; vel *Lappa* vel *Lappis*, i.e. lambe; quod praeter omnium vestibus adharet." E.)
white soft bristles. Fruit-stalks axillary. Calyx scales green and fleshy at the base, purple towards the top, keeled, ending in long stiff awns, yellow at the hooked points. Blossom, tube white; bordered. Anthers bluish purple. Style white. Summits expanding, white. Seeds oblong, angular, somewhat flattened. (Stem nearly four feet high, upright, with wide-spreading branches, leafy, cylindrical, furrowed, slightly hairy. Fl. Brit. Leaves larger than those of any other British plant, unless Butterbur. E.)


Road sides and rubbish.

Var. 3. Heads quite smooth, very large, an inch in diameter, green. Blossom purplish. New Cross, Kent. Ray.


Var. 5. Heads the size and colour of those of var. 4, rounder, brown or purplish, and with a considerable quantity of cotton. Ray. Pet. 23. 4—J. B. iii. 571. 1.

Near Halifax, Yorkshire. Ray.


Pet. 23. 2.


(In reference to the above varieties Prof. Hooker observes: "We have little hesitation in pronouncing them to be variations of the same species, having remarked, in a small compass of ground, some plants which had the calyx quite smooth; some thickly covered with cobweb-like filaments, and others in all the intermediate states." E.)

Serratula.† Calyx nearly cylindrical, tiled: scales not spinous: (Diminutive of serra, a saw; from its serrated foliage. E.)
SYNGENESIA. EQualis. SERRATULA. 907

S. TINCTORIA. Leaves (serrated, E.) lyre-shaped and wing-cleft; the terminal segment very large: florets all alike: (seed-down rather bristly. E.)


(HERB rigid, smooth and shining. Sm. E.) Stem two to three feet high, firm, four-cornered, scored, smooth. Leaves sometimes entire, mostly wing-cleft, alternate, half embracing the stem; wings spear-shaped, sharply serrated, or rather toothed, woolly above, and at the edges and veins underneath. Flowers purple, single or in clusters, terminal, or on the branches. Calyx scales numerous (slightly coloured, E.) cottony at the edges, the upper rather longer. Down yellowish, shining, hairy. Woodw. (The flowers of this plant, (as of some species of Carduus, not usually considered so,) are proved to be dioecious. See Linn. Tr. xii. 123. xiii. 593. E.)


Var. 2. Blossoms white.

Alconbury, five miles from Huntingdon, on the north road. Mr. Woodward. (In a small wood near Dulwich, (Aug. 1827), in abundance. Mag. Nat. Hist. i. 83. E.)

Var. 3. All the leaves entire. Mr. Wood.

Kniph. 2—Ger. 576. 1—Matth. 945. 2—Clus. ii. 8. 1—Dodd. 42. 3—Lob. Obs. 288. 2, and Ic. 1. 534—Ger. Em. 713. 1—Pet. 22. 5—Park. 475.

Var. 4. Lower leaves entire, the upper cut. Hall.

Ger. 576. 2.

Var. 5. All the leaves jagged, Hall; wing-cleft, without the large terminal segment. Wings spear-shaped, serrated.

Zanon. 94.

S. ALPINA. Calyx somewhat hairy, egg-shaped; leaves undivided, (cottony beneath: seed-down feathery. E.)


Root-leaves egg-spear-shaped, serrated, the serratures not ending in bristles but expanding, smooth above, woolly and whitish underneath. Stem-leaves seven to ten, spear-shaped, very entire, nearly sessile. Stem undivided, a span high. Flowers eight to twelve, in a broad-topped terminal spike. Calyx oblong, nearly cylindrical. Linn. About five inches high. Stem cottony. Leaves six or seven; cottony underneath. Flowers about six; blue. Down stiff and strong, plumose.

(ALPINE SAW-WORT. E.) On the highest rock of Snowdon; and on Brearcliff, near Burnley, Lancashire. Merrett. Sides of Highland Mountains,

* This plant is used by the dyers to give a yellow colour, fixed with alum; but is inferior to the Reseda, therefore confined to the coarser woollen cloths. (With blue it is said to afford a valuable green. E.) Goats eat it. Horses are not fond of it. Sheep, swine, and cows refuse it.
and near Moffat, Anandale. Lightfoot. On the highest rocks of Carnarvonshire, as Clogwyn y Garnedd; on Crib y Ddesiel, in places scarcely accessible. Mr. Griffith. (Castle, and near the Church at Bewcastle, Cumberland. Hutchinson. On Ben Lawers and Lomond, and on the west side of Helvellyn. Mr. Winch. E.) P. Aug.—Sept.


Fl. Dan. 37—Dill. Ethl. 70—Gmel. ii. 32.

Near a rivulet on the rock Rhiw'r Glyder above the lake Llyn y Cwn near Llanberis, Carnarvonshire. Ray.

CAR'DUUS.* Calyx tumid, tiled; scales spinous: Receptacle hairy: Down deciduous, capillary or feathery.

(1) Leaves decurrent.

C. palustris. Leaves toothed, spinous at the edge: flowers in bunches, upright; fruit-stalks without thorns: (down feathery. E.)


Stem five to six feet high and upwards, upper part and branches slender and with few leaves. Calyx, scales woolly, green, tipped with deep purple, without a rib along the back, ending in a short expanding, not pungent, thorn; inner pointed, without thorns. Blossom segments even with the anthers, shorter than the pistil. Down shorter than the blossom; rays fringed with long hairs, Woodw., (feathery. E.) Blossom purple; sometimes white.


B. July.†

* (Supposed to be derived from ἱππος, a technical verb denoting the operation of carding wool; to which process the heads of some species are applicable. E.)

† This and almost all the other species may be eaten like the Burdock, before the flowers are formed. Swine eat it; horses are very fond of it; cows refuse it. (The woody galls observable on thistles are occasioned by two-winged flies Tephritis Cardui. Thistles in general can only be considered as noxious interlopers, to be eradicated by all possible means; (not being allowed to seed even by the road side;) and for this purpose a new method has been lately suggested, which, though at first view, on a broad scale, apparently little less whimsical than that of catching birds by putting salt on their tails, has been thought worthy attention by practical agriculturists, as the following extracts from the Farmer's Journal evince:—"I have no doubt that salt may be of use in destroying thistles. I have made several experiments, which have uniformly been attended with success. The most effectual way is to cut off or bruise the thistle, and then put a small portion of salt on it; very few will survive this treatment." Another correspondent confirming the above report, "A small quantity of common salt, taken between the finger and thumb, and pressed upon the centre of the thistle, will in two or three days cause the plant to turn quite black; and in eight or ten days the root and every part will be destroyed. I have found this a cheap and certain mode of clearing land from thistles. One person will salt as many as four or five would cut up in the usual way; and with this difference, that the salt completely destroys the weeds, whereas the spud merely retards them for a short period, to be ultimately more productive." The same mode is equally effective with docks, nettles, &c., and as the mineral may now be obtained at a low price, and its application is a suitable occupation for children, the practice may merit more general adoption. E.)

C. tenuiflorus. Leaves spinous at the edge; branches straight, flowers in clusters, sessile; calyx nearly cylindrical, scales upright, but open, pungent: (down capillary. E.)

Curled—(E. Bot. 412. E.)—J. B. iii. 56. 1. (not 516, as in Fl. Lond.)—Park. 982. 5—H. Ox. vii. 31. 13—(Pet. 21. 3. E.)

Stem and branches quite straight, cottyony upwards; bordered. Leaves cottyony underneath. Calyx oblong-conical; scales upright, spreading at top, long, narrow, ending in a yellow thorn as long as the florets. Curt. Flowers pale-purplish red. (Florets fewer, aggregate, therefore more slender than in any other species. Plant three or four feet high.

* (This is not one of the most troublesome of its tribe; being annual, and less abundant than some others. Papilio Cardui has been observed upon it. E.)


Stem angular, cottony, frequently purple. Leaves half embracing the stem, cottony and glaucous underneath, hairy and deep green above; wings spear-shaped, the terminal one long, the side ones mostly divided to the base into two segments, one pointing upwards, the other downwards, terminating, as do also the wings of the part running down the stem, in sharp stiff white thorns, which are extensions of the ribs. Calyx with numerous ranges of spear-shaped scales, somewhat cottony, ending in sharp stiff white thorns, the inner strap-shaped, pointed, not thorny. Blossom purple. Down feathered, almost as long as the blossom. Woodw. (From two to five feet high, or more. Flowers large, solitary. E.)


C. NUTANS. Leaves decurrent half way down towards the next below: spinous: fruit-stalks crooked: calyx, scales expanding upwards: (flowers solitary: down capillary. E.)

Fl. Dan. 675—(E. Bot. 1112. E.)—H. Ox. vii. 31, row 1. 6.—Pet. 21. 1.—J. B. iii. 56. 3.

Stems two to three feet high, scored, cottony. Branches alternate. Fruit-stalks terminal, cottony. Leaves with wing-cleft; wings egg-shaped, with strong thorns. Calyx scales spear-shaped, cottony, the rib running along the back terminating in a thorn, the lowermost bent back, the inner without thorns. Down hair-like, nearly as long as the florets. Woodw. (Flowers smelling strongly of musk in warm weather; their drooping pos-

* Few plants are more disregarded than this, and yet its use is very considerable. If a heap of clay be thrown up, nothing would grow upon it for several years, did not the seeds of this plant, wafted by wind, fix and vegetate thereon. Under the shelter of this, other vegetables appear, and the whole soon becomes fertile. The flowers, like those of the Artichoke, have the property of curdling milk. Sheep and swine refuse it; neither horses, cows, nor goats are fond of it. Papilio Cardui and the Thistle Ermine Moth feed upon it. Linn. (This cumbrous weed, being biennial, is readily destroyed by mowing before its flowers form seed. Sm. E.)
ture distinguishes them from our other thistles. E. Bot. E.) Stem, leaves, and calyces overspread with a cobweb kind of woolliness. Calyx globular, flattened; scales very strong, horizontal when the flower is expanded, purplish towards the end, terminating in a strong yellow thorn. Blossom tube whitish, border purple. Filaments woolly. Pollen grey, globular, set with fine points.

**Musk Thistle.** Pastures, (waste ground, and fallow-fields. E.) In a calcareous soil. Road-sides in a sandy or gravelly soil. A. June—July.

(C. **tuberosus.** Leaves with slightly winged stalks, wing-cleft, lobed, fringed with prickles: stem unarmed, with about two stalked flowers: calyx-scales spear-shaped, pointed, rather spreading; down feathery. E.)

_E. Bot._ 2562.

*Root* sending down oblong perpendicular knobs. Stem two feet high, leafy, furrowed, hairy, simple, except at the top. Leaves variously cut, fringed with copious yellow prickles. Flowers on long, hairy stalks, at first rather drooping, bright purple, with a slightly downy calyx. E. Bot. Flowers resembling those of _C. heterophyllus_, but smaller. Linn.

**Tuberous Thistle.** _C. tuberosus._ Linn. _Cnicus tuberosus._ Willd. Sm. Discovered by A. B. Lambert, Esq., in a wood called Great Ridge, between Boyton House and Fonthill, Wilts, growing plentifully in one spot only. P. Aug. E.)

(2) Leaves sessile.

(C. **arvensis.** Leaves wing-cleft; spinous: stem panicked: calyx egg-shaped, with small spines: down feathery. E.)


The down of the seed is very long, (feathery, deciduous, not permanent as in _Serratula._ E. Bot. E.) Blossom pale purple, (rarely white. Root creeping, tuberous, and descending deep into the earth, very tenacious of life, and difficult to extirpate. Stems upright, three feet high, leafy, cylindrical, smooth, bearing many flowers. Leaves sessile, scarcely decurrent, alternate. Fl. Brit. We follow the arrangement of Curtis, since adopted by Smith, in removing this plant from the genus _Serratula_; which indeed seems to have been the intention of Linnaeus.


* (The down of this, as of some other species, may be advantageously used as a material in making paper. Flocks of goldfinches, (_Fringilla Carduei_), the united produce of the summer months, throughout October may be observed sporting and glistening in the sunny beam, aiding the breeze of autumn in scattering the down, (the proverbially "Light as Thistle down") as they busily pick out the seeds for their favourite repast. E.)

† It is said to yield a very pure vegetable alkaline when burnt, (suitable either for bleaching linen or the manufacture of glass. E.) Goats eat it; neither cows, horses, sheep, nor swine are fond of it. Linn. Horses sometimes eat the young tops, St. (The
C. MARIANUS. Leaves amplexicaul, halberd-shaped, wing-cleft, spinous: calyx without any leaves near it: thorns channelled, and set with other little thorns: (down capillary. E.)

Stem four to six feet high, leafy, cylindrical, scored, smooth. E.) Leaves generally ornamented with broad and beautiful white veins, though sometimes entirely green. The large purple blossom and the strong thorns of the calyx, an inch or more in length, sufficiently distinguish this from other indigenous species.

_Leaves_ amplexicaul, halberd-shaped, wing-cleft, spinous: calyx without any leaves near it: thorns channelled, and set with other little thorns: (down capillary. E.)

_Leaves_ generally ornamented with broad and beautiful white veins, though sometimes entirely green. The large purple blossom and the strong thorns of the calyx, an inch or more in length, sufficiently distinguish this from other indigenous species.

pappus may be employed as an useful ingredient for the manufacture of paper. The agriculturist whose lands are infested with these noxious weeds, should unceasingly exercise his small hoe or spud; though, for complete extirpation, the instrument for extracting Docks may be preferable. Follow and hand-weed; but in clay, where they will not draw, cut close with a spade, says Holdich. Mr. Curtis ascertained the annual increase of its root by planting a piece two inches long and the thickness of a goose's quill, and a small head of leaves. By the second of November the root had extended itself eight feet, and when dug up and washed it weighed four pounds. This is the common Way Thistle or Pasture Thistle, which grows almost everywhere. If neglected, no weed is more unsightly and injurious. The second growth, observes Mr. Holdich, often gets into reapers' hands; but the first, if not destroyed, will overtop the wheat, bearing numerous clusters of flowers, and shedding their winged seeds in most noxious abundance. The propagation by root seems also unceasing. The same writer states, "the roots are jointed, white, and of a very succulent texture. I have found in spring, innumerable small Thistles, as it were, bursting from their matrix, and have gently pulled the horizontal zigzag roots from the soil, with many green buds and shoots just appearing. This, therefore, is their manner of reproduction: the fibres left shoot out larger roots, which also rise higher in the soil, and spread; these form buds, and hence come our annual crop of Thistles. Thus Providence has contrived a necessity for perpetual exertion, attended with proportionate success. "By the sweat of thy brow thou shalt eat bread," is an ordination, the fulfilment of which is the principle which puts all mankind in motion. The necessity of subsistence produces industrious hands for every department of labour; but the indolent nature of man requires every stimulus to exertion. The weeds of the field excite emulation, and foul fields are always a reproach. Thus are we compelled by an unseen hand to better habits and more active industry." Essay on Weeds of Agriculture. The same argument may be found admirably extended in the "Pastoral Conversations" of Dr. Warton, exposing the folly of Atheism. The most unwelcome weeds are there proved not only to be essential to stimulate the requisite exertion of man, but, in a certain degree, to be indirectly conducive even to his sustenance, by supplying food to numerous tribes of insects, which again tend to the support of other animals, as birds, &c. on which he partially depends.—This, and several other of the Cardueae, may be considered dioecious.

Mr. Smith (in Linn. Tr., vol. xiii.) observes, _C. arvensis_ rarely produces seed; which is chiefly attributable to the separation of the sexes, and the plants of each sex growing together in large patches without intermixture: hence the chance of fecundation being effected is much diminished. This apparently defective arrangement would seem to be obviated by an extraordinary power of radication. E.) _Cassida liriophora_ inhabits this species of Thistle. _Uredo suaveolens_, "confluent, odoriferous, seeds purplish brown," is frequently found on the leaves, changing them to a light yellow in spots. In corn-fields may sometimes be observed a beautiful little nondescript mouse, the smallest of British quadrupeds, which attaches its nest, ("a wonderful procreative cradle," as Mr. White describes it, perfectly round, about the size of a cricket ball, most artificially platted, and composed of the blades of wheat,) containing eight young ones, suspended, as it were, in the head of a thistle! E.)
SYNGENESIA. ÆQUALIS. CARDUUS. 913

Ditch-banks and road-sides, borders of corn-fields, and on rubbish.

A. June—Aug.*

C. erioph'orus. Leaves with wing-cleft pointing two ways, every other segment upright: calyx globular, woolly: (down feathery. E.)


Stem four or five feet high, angular, scored, woolly, much branched. Root-leaves one to two feet long, wings distant, with two lobes, unequal, the larger strap-shaped, the lesser spear-shaped, very entire, but fringed with a few fine thorns; mid-rib stiff, extending out into a sharp thorn; above green, with numerous short stiff hairs pressed closely; underneath with a thick, woolly, white down. Stem-leaves embracing the stem; lobes not so regular, all spear-shaped, the terminal one long. Fruit-stalks slender, extremely cottony. Calyxes clustered, terminating the stem and branches; scales strap-spear-shaped, ending in a long softish thorn, covered and interwoven with a thick cobweb-like wool. Anthers extending beyond the blossom. Style much longer than the anthers. Summit very slightly cloven. Seeds large, whitish, nearly oval, without ridges. Down feathered, shorter than the blossom. Woodw. Blossom purple, or white, very large.

(The large lobes of the leaves pointing alternately horizontally and downwards, distinguish this plant at first sight.


B. July—(Aug. E.)

* This Thistle is eaten when young as a salad. The young stalks peeled, and soaked in water to take off the bitterness, are excellent, and may be either boiled, or baked in pies, (after the manner of Rhubarb. E.) The scales of the cup are as good as Artichokes. The root is palatable early in the spring. (The seeds yield an oil, which may be used in emulsions. ("Our Lady's Milk Thistle," according to Romish tradition, a proper diet for nurses! It is worthy of a place in the shrubbery fore ground, waving its ascribed efficacy. E.)

† (According to Miller, "one or two of these plants may be allowed a place in some abject part of the garden for its singularity." We should rather commend it to the shrubbery or wilderness, and there sparingly. Upon the disc of this, and other late flowering Thistles, may frequently be observed, with vital energies all but extinct, (in his sad extremity warning the proudest mortals) the torpid humble-bee, resigned to die upon his crimson couch:—"just lifts a limb to pray forbearance of injury, to ask for peace, and bids us leave him, leave him to repose," E.)

Y 2
SYNGENESIA. ÆQUALIS. CARDIUS.

C. PRATENSIS. Leaves spear-shaped, irregular, and edged with unequal prickles; cottony beneath: stem cottony, generally with one flower and two leaves: (calyx cottony: down feathery. E.)

E. Bot. 177—Pet. 22. 1—Clus. ii. 148. 1—Ger. Em. 1183. 1—Lob. Obs. 314. 4, and Lc. i. 583. 1—Park. 961. 3—J. B. iii. 45. 2.

Root fibrous and creeping. Stem one and a half to two feet high, soft, cob-webbed or cottony, cylindrical, generally unbranched and supporting a single flower, but sometimes a branch terminated by another flower rises from the bosom of the upper leaf. Root-leaves four or five, oblong-spear-shaped, ragged at the edge, and fringed with softish prickles unequal in size, not forming regular teeth, as represented in most of the figures. Stem-leaves generally two, sometimes only one, semi-amplexicaul; the upper not prickly at the edge, but terminated by a long soft thorn. All the leaves green, and more or less hairy above, grey and cottony underneath. Calyx, scales thick and strong, cob-webbed or cottony at the edges, terminating in a soft thorn. Blossom red. Anthers with five horny, yellow, spear-shaped points. Summit cylindrical, blunt, not notched at the end. (Mr. Woodward observes, that this plant varies with two, three, or even four flowers, distant, alternate. When more than one flower, the second overtops the terminal one. E.)


(C. HETEROPHYLLUS. Leaves embracing the stem, spear-shaped, fringed with small prickles, (either entire or jagged, woolly underneath: stem downy, mostly single-flowered: down chiefly feathery. E.)


Root creeping, knotty, black. Stem three feet high, erect, seldom divided, with one, or sometimes two flowers, leafy, cylindrical, furrowed, cottony. Leaves on the upper surface very smooth, cottony, white beneath; root-leaves on leaf-stalks; stem-leaves alternate, numerous, at the base heart-shaped, amplexicaul. Blossom terminal, becoming upright, drooping when expanded, large, purple stalked. Calyx egg-shaped, slightly pubescent, scales spear-shaped, erect, naked at the point, keeled, brownish, terminated by a little spine. Anthers whitish. Stigma strap-shaped, protruding, purple, notched at the end. Down of the outer seeds rough, of the inner ones feathery. Fl. Brit.

C. helenioides of Linnaeus differs materially, having a stem twice as high, many more leaves, altogether undivided, and four or more much smaller
flowers, sessile at the very top of the stem. Smith states that it is not known either wild or cultivated in Britain.


P. July—(Aug. E.)*

**C. acaulis.** Stemless: calyx smooth: (down feathery. E.)


Root-leaves spreading in a circle close to the ground, stalked, wing-cleft; wings irregularly lobed and waved, angular, thorny at the edge, green on both sides, hairy towards the base. Flowering-heads one or more, rarely sessile. Fruit-stalks one to two inches high, hairy. Calyx, lower scales short, oval-spear-shaped, upper spear-shaped, stiff, without thorns. Blossom even with the anthers. Style longer. Summit deeply cloven. Seed very small. Down long, feathered. Woodv. Blossom purple, large. Mr. Relhan informs me, that he once found a plant on Gogmagog Hills with a stem five inches high, bearing three flowers, and a leaf similar to the root-leaves under each flower: and thus it appears when cultivated in a garden.

(Mr. Oade Roberts has observed, on Painswick Hill, a variety with flowers perfectly white. E.)

**Dwarf Thistle.** (*C. acaulis.* Linn. *Cnicus acaulis.* Willd. Hook. Sm.) Mountainous and rocky dry pastures, especially in calcareous soil. (But too common in many fields, and upland grounds, in Dorsetshire. Pulteney. E.) Blackheath, near London. Dry heaths and commons in Norfolk, very frequent. Mr. Woodward. Dry heaths on the Western side of the county of Durham. Mr. Robson. (Dover, Box-hill, Newmarket; but very rarely, if ever, found in the north of England. Mr-

* (The Thistle has long been accounted the emblem of Scotland, as the Rose is symbolic of England, the Shamrock of Ireland. It appears to have been substituted by the town council of Edinburgh on their banner, to the exclusion of their patron, St. Giles, about the middle of the fifteenth century; a circumstance probably originating in the dawning light of the Reformation, and an increasing antipathy to popery. This species in particular has been deemed the badge of the house of Stuart, whose princes were wont to wear the *Cluas-an-fheidh* in their crown or bonnet. It is, indeed, as the token flower of resistance, far less illustrative of the national motto, "*Nemo me impune lacessit*" than several of its congeners; though but too significant of the fallen condition of that ill-starred race, since, (according to the Jacobite song),

"The die was risk’d and foully cast
Upon Culloden day." E.)
Winch. Opposite Moorhall, on the Bidford road; and between Alcester and Red-hill, on the hedge bank. Purton. On a sloping field between Stockwood and Queen's-Charlton, Somersetshire, abundant. E.)

P. July.*

ONOPORDON. Recept. like a honeycomb: Calyx tumid: Scales spinous.

O. ACANTHIUM. Calyx scales expanding, their points standing out: leaves egg-oblong, indented, (cottony on both sides. E.)


Plant generally covered with a white cottony pubescence. Leaves oval-spear-shaped; the lower extremely large, with deep triangular teeth, which are again toothed, and each tooth terminated by a sharp whitish thorn, productions of the ribs; the upper spear-shaped with a few distant teeth. Stem leafy, border irregularly toothed, and thorny, the thorns proceeding through and strengthening the border. Heads single, upright, terminal. Calyx scales ending in sharp thorns. Woodw. (Stem upright, about five feet high. Flowers terminal, solitary, erect, purple. E.)

ARGENTINE. COTTON THISTLE. On rubbish and road sides, (chiefly on a gravelly soil. E.) B. July—(Aug. E.)†

CARLINA.‡ Calyx radiated: the scales next the blossoms long, coloured: Recept. chaffy: Down feathery.

* Cows refuse this Thistle. It kills all plants which grow beneath it, whence it is very injurious in meadows. Linn. (However entertaining to the eye of the poet, when, "Wide o'er the thistly lawn as swells the breeze, A whitening shower of vegetable down Amusive floats; " to the agriculturist, (whose "frenzy" may possibly be of a different description,) this plant ever appears one of the most pernicious of weeds, which ought not to be tolerated even on the borders of fields, or waste places. Mowing proves but a palliative; the infested pasture should be broken up, and subjected to a course of crops. Where such renovating process cannot be immediately commenced, perhaps the application of salt, under certain circumstances, might prove a desirable expedient, vid. Holdich's Essay on the Weeds of Agriculture, 1825, p. 69. E.) The different species of Thistles afford nourishment to the Cassida viridis and nebulosa: Papilio Cardui; Cicada cornuta: Cimex Cardui; Musca solstitialis; and Aphis Cardui: (also Tingis Cardui, Vanessa Cardui, Cassida cruentata, Apion Carduorum, Andrea Listerella, Osmia Leuciana, Tortrix Mylleri, and Populana. E.)

† The receptacle, and the young stems, may be boiled and eaten like artichoke. The ancients thought this plant a specific in cancerous cases. Cows, sheep, and horses refuse it. (The seeds yield a favourite food for the smaller birds. (Apion Onopordi, according to Kirby, is found only upon this plant. The cotton is sometimes collected by poor persons for pillows and beds, instead of feathers. Gerard would seem to speak feelingly of the defensive weapons of such plants, when he describes them as "set full of most horrible sharpe prickers, so that it is impossible for man or beast to touch the same without great hurt and danger." E.)

‡ (From a certain exotic species, (supposed G. acanthis, whose root is bitter, pungent, and tonic,) said to have been indicated by an angel to the Emperor Charlemagne, for the cure of his army afflicted by the plague. E.)
C. vulgärís. Stem with many flowers, forming a terminal corymb: rays of the calyx yellow white: (outer ones wing-cleft. E.)

(FL. Dan. 1174—E. Bot. 1144. E.)—Matth. 669—Clus. ii. 156. 2—Dod. 739. 2—Lob. Obs. 489. 1, and Ic. ii. 20. 2—Ger. Em. 1159. 1—Park. 981—Fuchs. 121—J. B. iii. a. 81. 2—Trag. 859—Dod. 728. 1—Lonic. i. 68. 2—Ger. 997. 1—(Pet. 15. 10. E.)

Root long, spindle-shaped, with a few stiff fibres. Stem twelve to fifteen inches high, humid just above the root, cylindrical, ribbed, purple, slightly downy, dividing above like an umbel. Leaves numerous, clothing the whole stem and decreasing in size upwards, the lower sessile, the upper embracing the stem, deeply toothed, the teeth armed with numerous yellow thorns; those at the base of each branch larger than the upper stem-leaves; those of the branches smaller than the stem-leaves, the uppermost join and form the lower ones of the calyx. Calyx scales purplish, edged and terminated with branching yellow thorns; the innermost strap-shaped, pointed at the end, dry, fringed with long hairs towards the base, straw-coloured within; without, reddish brown towards the base, but straw-coloured at the point. Blossom segments spear-shaped, purple, straw-coloured below. Seed woolly; down sessile, rays nine to twelve, generally eleven, either single, or with two or three clefts, fringed with long hairs. Receptacle, the chaff longer than the florets. Woodw.

{Blossom, tube white, border in the outer florets purple, in the inner whitish; sometimes entirely white. Mr. O. Roberts. E.)


B. June.*

BIDENS.† (Recept. chaffy: Down rough with reversed prickles: Calyx tiled: scales channelled. E.)

B. cer/nua. Leaves spear-shaped, embracing the stem: flowers drooping, on bent fruit-stalks: seeds upright, (with about four bristles. E.)


* The flowers of this species expand in dry, and close in moist weather. They retain this property for a long time, and therefore are employed as hygrometers. It is said to be an excellent remedy in hysterical cases. Amen. Acad. III. p. 64. Goats eat it. Cows refuse it. Linn. Its presence indicates a very barren soil. (It particularly infests dry, sandy pastures. Hand-weeding when confined to local spots may be serviceable; but when spreading generally, no time should be lost in using the plough, harrow, and horse-hoe, and a judicious course of cleansing crops before returning the land to permanent pasture. Holdich. The divergent tuft with which the seeds are crowned, and by which they are wafted through the air, for

"The kind impartial care
Of nature, naught disdains;  
From field to field the feather'd seed she wings;"

did not escape the notice of Ossian, who, like other genuine poets, was an accurate observer of the most trivial phenomena, and who fancifully describes "the zephyrs sporting on the plain, pursuing the thistle's beard." The whole plant, after having perfected its seeds, turns white and shrivels, in which state it often remains through the winter or even second year, as Linnaeus observes, a mournful spectacle! E.)

† (From bis, double, and dens, a tooth; alluding to the awns of the seeds. E.)

**Nutant Double-tooth or Bur-marigold.** (Welsh: *Graham ogwydd.* E.) Wet ditches, marshy places. A. Aug.—(Sept. E.)

Var. 2. Flowers with radiated florets in the circumference: (and thus distinguished from *Coreopsis.* E.)

*Fl. Dan. 841—Barr. 1290—H. Ox. vi. 5. 22.*

Frequently on the same plant with var. 1. Woodw., as in the lower part of fig. Fl. Dan.


Var. 3. Dwarf.

*Fl. Dan. 312, (the left hand fig. and dissected floret.)—Ray 7. 2.*

Seems to differ in no other respect than in its dwarfish size and wanting the serratures on the leaves, which probably would appear if the plant acquired a more expanded growth in a moister atmosphere. Var. 2 merely exhibits an unusual degree of luxuriante.

**B. minima.** Linn. In the fish pond on the moor near Somerset Bridge, Surry. Dill. in R. Syn. In a splashy rivulet at the bottom of Tittensor Common, Staffordshire; and also near Birmingham. Stokes.

**B. tripartita.** (Leaves tripartite: seeds upright, with two or three bristles: calyx leafy at the base: bracteas unequal. E.)

*Ger. Em. 711. 1—Park. 595. 7—H. Ox. vi. 5. 20.*

Leaves, segments deeply serrated, the middle one much the largest. Calyx, scales oval, fringed with hairs, the inner smooth, with yellow membranous edges. Woodw. Flowers terminal, yellow, (nearly upright, uniform, tubular, smaller than those of the other species. Stem upright, two or three feet high, branched, expanding, leafy, bluntly four-sided, furrowed, smooth. Leaves opposite, smooth, sometimes with five segments. E.)


Var. 2. Dwarf:

*Fl. Dan. 312, (the right hand figure.)*

Only a starved plant, but its upright flower, and the incipient divisions on the leaves, sufficiently shew to which species it belongs.

* (A dye may be prepared from this plant, with alum, to stain cloths yellow. Lightfoot states that in chemical qualities it much resembles the celebrated *Verbesina mexicana*, and therefore infers the probability of its proving serviceable in calculous complaints. E.)
EUPATORIUM.* Recept. naked: Down feathery: Calyx oblong, tiled: Style prominent, cloven half-way down.

E. CANNABINUM. Calyx five-flowered: leaves with finger-like divisions.


Stem three or four feet high, branched. Leaflets mostly three, sometimes five, spear-shaped sharply serrated at the base, towards the point very entire. Calyx scales few, strap-shaped. Seeds black, scored, smooth, little more than a line long. Down sessile, hair-like, when viewed with a glass finely toothed, not three lines long. Woodw. Stem reddish, rather cylindrical, slightly woolly. Leaves serrated, slightly woolly. Calyx petaloid, coloured, a little hairy. Florets five and six. Blossoms purplish red, sometimes white; clefts shallow. Styles and summits with a tinge of red. Germen covered with minute shining globules.

HEMP AGRIMONY. WATER AGRIMONY. (Welsh: Byddon chwerw. E.)

Banks of rivers and brooks. P. July—Aug.†

Var. 2. Leaves simple, egg-spear-shaped.

This is the seedling plant of early flowers the first year; the second year, as I have frequently observed, it has digitate leaves. Woodw.


(CHRYSO'COMA.† Flowers discoid: Recept. naked: Down simple: Calyx hemispherical, imbricated: Style scarcely longer than the florets. E.)

(C. LIN'OSYRIS. Herbaceous: leaves linear, smooth: scales of the calyx loosely spreading.

PLATE XXXV.—E. Bot. 2505.

Root creeping, with long, stout fibres. Stem erect, round, rigid, simple, smooth, leafy, a foot high, or not so much. Leaves numerous, scattered, linear, acute at each end, entire, rather fleshy, rough with minute white points. Flowers few, terminal, corymbose, of an uniform yellow; their stalks hardly scaly in our specimens. Florets about thirty, uniform, acute. Seeds hairy. Down minutely rough. Cells of the receptacle with a slight jagged border, not amounting to scaliness. E. Bot.

FLAX-LEAVED GOLDYLOCKS. LINAREA AUREA TRAJI. Ger. Em. This rare plant, new to the British Flora, was discovered in the autumn of 1812.

* (Eupatol^, of Dioscorides, a surname of Mithridates, king of Pontus, by whom the plant was introduced as an alexipharmic. E.)
† An infusion of a handful of it vomits, and also proves a strong cathartic. An ounce of the root in decoction is a full dose. In smaller doses the Dutch peasants take it as an alterative, and antiscorbutic (the turf-diggers especially, being peculiarly subject to swellings and ulceration of the legs. E.) Goats eat it. Cows, horses, sheep and swine refuse it. (Dr. Swediaur recommends the root as a diuretic serviceable in dropsy. E.)
‡ (From xpre^, gold; and xo/n^, hair; not inapplicable to the general colour of the flower; but probably applied by Dioscorides to plants of which that circumstance was more obviously characteristic. E.)
by the Rev. Charles Holbech, of Farnborough, Warwickshire, (by whom we have been favoured with specimens,) whilst exploring the rocky promontory of Berry Head, Devon. It grows in great plenty, amongst coarse grasses, about two hundred paces from the westernmost battery, on the Dartmouth side. It has more recently been observed by Dr. Wollaston on the south-western extremity of the Mendip Hills, Somersetshire.

P. Aug.—Sept. E.)

**SANTOLINA.** Recept. chaffy: Down none: Calyx tiled, hemispherical.

**S. maritima.** Flowers forming a corymb: leaves oblong, blunt, scollopved, very downy. E. Bot.


(Root descending to a great depth, branched. Stems recumbent at the base, brittle, cylindrical, leafy; branches upright. Leaves numerous, alternate. Stigma protruding. Fl. Brit. E.) Whole plant white and cottony. Leaves spear-shaped, scollopved, blunt. Chaff as long as the calyx. Seeds two-edged, downless, whence it should seem to be rather a species of Santolina. Linn. Blossom bright yellow. (Florets remarkably prolonged down the sides of the germen, forming two ear-like appendages, whence the novel generic distinction, Diots, of Desfontaines. E.)


**SUPERFLUA.**


**T. vulgare.** Leaves doubly winged, cut, serrated.


*(Supposed to be derived from a district of Gaul, near the Alps, wherein it abounds. E.)*
SYNGENESIA. SUPERFLUA. ARTEMISIA. 921

(Sc. flowers golden yellow, numerous, forming a dense corymb: florets of the circumference rarely apparent. E.) Stem frequently reddish, upright, two feet high, scored, scarcely hairy. Leaves alternate, amplexicaul. Leaflets of the calyx blunt, membranous at the edge. Imparts an agreeable aromatic odour. E.)


Var. 2. Leaves curled.

Ger. 525. 2—Dodd. 36. 2—Lob. Obs. 432. 3, and Ic. 1. 749. 2—Ger. Em. 630. 2—Park. 81. a—J. B. iii. 132.

Ray informs us that this variety was first observed in England. It grows by the Tees near Coniss Cliff, Durham. Mr. Robson. (Lane near Wolsington, Northumberland. Mr. Winch. E.)

ARTEMISIA.† Recept. slightly hairy or naked: Down none: Calyx tiled: scales converging: Florets radiate, none.

(1) Stems trailing before flowering.

A. CAMPES'TRIS. Leaves many-cleft, strap-shaped: stems wand-like.

(E. Bot. 338—Fl. Dan. 1175. E.)—Ger. 948. 5, Abrot. camp.—J. B. iii. a. 194. 2—Pet. 20. 4—Dodd. 33. 2—Lob. Obs. 442. 3, and Ic. 1. 767. 2—Ger. 1106. 5—Park. 94. 7—Math. 852—Lonic. ii. 23. 2

Stems numerous, (often reddish, about two feet high, E.) angular, declining, much branched. Leaves, the upper frequently simple, very narrow. Heads very small, scarcely more than a line broad, numerous, single,

* Tansy is a warm and deobstruent bitter, and its flavour not ungrateful. (It is frequently admitted into gardens for culinary purposes. E.) The tender leaves and juice are sometimes used to give a colour and flavour to puddings. If a dead animal substance be rubbed with this plant, the flesh fly will not attack it. The Finlanders obtain a green dye from it. Cows and sheep eat it. Horses, goats, and swine refuse it. It affords nourishment to Aphis Tanaceti, and Chrysomela Tanaceti. Linn, (also to Andrena albicans and tubiata. The seeds are an excellent vermifuge. (This herb flourishes luxuriantly on the banks on the Avon, near Hanham and Keynsham, where Mr. Frederick Russell observed boys gathering a boat-load of it to convey to Bristol for the purpose of making wine. Dr. Threlkeld relates the case of a soldier at Montpellier who was cured of an obstinate dropsy by the decoction of Tansy alone. Of the juice of the tender leaves, with eggs, are composed Tansy cakes, used at the Paschal season by Papists, to dissipate the flatulencies occasioned by what the above authority terms, “the idle conceit of eating fish and pulse for forty days in Lent; but,” the Doctor adds, “I have seen several victims to superstition, who have broken an hale constitution by that presumptuous fasting, so that neither Tansy nor steel could repair it.” E.)

† (From Argeus, a name of Diana, who presided over women in child-bed; the plant originally so called being of more decided efficacy in promoting parturition. E.)
either sessile or in short branched spikes. Calyx scales few, bluntly egg-shaped, approaching, green, slightly downy at the back, the edges membranous, whitish, shining. Florets not longer than the calyx. Wookw. (those of the disk about twelve, tipped with purple; of the circumference two or three, awl-shaped, entire, yellow. Sm. E.) Leaves thread-shaped, from a quarter to one inch or more in length. Flowers axillary. *Herb* neither aromatic nor bitter. E.

FIELD SOUTHERNWOOD. Balks of corn-fields and road sides at Elden, Suffolk, and a mile from Barton Mills on the road to Lynn, Ray. Near Thetford, on the side of the road to Norwich. Mr. Woodward. (On Icklingham heath, near Bury. Sir T. G. Cullum. Fl. Brit. E)

P. July—(Aug. E.)

A. maritima. (Leaves many-cleft, downy; the uppermost undivided: flowers oblong, downy, sessile: receptacle naked. E.)

(E. Bot. 1706. E.)—Ger. 940. 1—Pet. 20. 2 and 3—Lab. Jc. i. 755. 1—Ger. Em. 1089. 1—H. Ox. vi. 2. 20—H. Ox. vi. 2. 19.

(Whole plant cottony, white, and aromatic. Flowering-branches bent. Flowers of the circumference only about three. E.) Leaves vary much in their division; the upper generally simple, strap-shaped, blunt. Woodw. Blossom brown. (Calyx downy on the outside, membranous at the edge. E.)

(In page 1706 of E. Bot. are described what are considered by some Botanists as two distinct species, viz. A. maritima and A. gallica, which latter, A. maritima y of Fl. Brit. the author states to be more properly represented by plate 1001 of E. Bot. The sole distinction, originally suggested by Willdenow, seems to be the drooping or upright flower; or, according to Smith, in A. maritima, "Flowers drooping, sessile;" in A. gallica, "Flowers erect, partly stalked, of few florets." E.)

(Rev. Hugh Davies describes a nearly similar var. with pendulous flowers, inclining to one side. On a rock below the mill in Bodowen Park, Anglesey. E.)

Var. 2. Segments of the leaves very short.

J. B. iii. a. 177—Barr. 460.

SEA SOUTHERNWOOD or WORMWOOD. Sea-shores. Yarmouth, and elsewhere on the coast. Mr. Woodward. Sea coast between Rampside and Barrow. Mr. Gough. Isle of Walney. Mr. Atkinson. (Garston, near Liverpool. Mr. Shepherd. On the shores of Wear, near Hilton Castle, Durham. Winch Guide. Frequent about Teignmouth. E.)

(A. maritima var. gallica, has been observed by Mr. Winch on Willington Ballast Hills, Durham; by Rev. H. Davies on rocks above the sea, south-west of Aberffraw, Anglesey; and by Mr. D. Don on the coast near Arbroath; also by Mr. Maughan at Pefler burn, and at St. Mary's Isle, with the preceding. In like circumstances, at Sandwich Haven, by Mr. Gerard E. Smith. E.)

P. Aug.—Sept.

* This in its wild state smells like maram or camphor, but in our gardens it is less grateful, though still much more so than the next species. It is used as an ingredient in distilled waters, and beat with thrice its weight of fine sugar is formed into a conserve. Its virtues are the same with those of the next species, but in a weaker degree. Horses eat it; cows, goats, and sheep eat it. (Threlkeld informs us that in Ireland the country people make it into sheaves, and bring it in cars out of the adjacent counties of Meath and Louth to Dublin, "of which alehouse-keepers make their purr, great consumption of which is made in winter mornings," Syn. Stirp. Hibern. 1727. E.)
SYNGENESIA. SUPERFLUA. ARTEMISA: 923

(2) Stems upright, herbaceous: leaves compound.

A. ABIN'THUM. Leaves compound, many-cleft, (clothed with short silky down: E.) flowers somewhat globular, pendent; receptacle hairy.


Leaves cottony on both sides, green above, white and shining underneath, the upper with three clefts, or simple, sessile, bluntly spear-shaped. Calyx, scales bluntly egg-shaped, green, cottony at the back, the edges membranous. Receptacle, down as long as the florets. Woodw. Stems numerous, a foot or more in height, scored, whitish, with very short down. Spikes upright. Flowers turned downwards. Blossom brownish white. (Root rather ligneous, branched. E.)

COMMON WORMWOOD. (Irish: Bofullan ban. Welsh: Chwerwlys; Wmmod wyd.) Road sides, rocky places and on rubbish. P. Aug.*

A. VULG’RIS. Leaves wing-cleft, flat, cut, cottony underneath: bunches simple: florets of the circumference five: (receptacle naked. E.)


* The leaves and flowers are very bitter, (and employed in some parts of Wales as a substitute for hops; also laid in drawers and chests to drive away insects from clothes. E.) The roots are warm and aromatic. A considerable quantity of essential oil rises from this herb in distillation, which is used both externally and internally to destroy worms. The leaves, put into sour beer, soon remove the ascescency. They resist putrefaction, and are therefore a principal ingredient in antiseptic fomentations. An infusion of them is a good stomachic, and, with the addition of fixed alkaline salt, a powerful diuretic in some dropsical cases. The ashes afford a more pure alkali than most other vegetables, excepting Bean-stalks, Broom, and the larger trees, (and hence that called Salt of Wormwood usually obtained, but without manifesting any peculiar quality from the specific herb. E.) In the Amæn. Acad. vol. ii. p. 160, Linnaeus mentions two cases, wherein an essence prepared from this plant, and taken for a considerable time, prevented the formation of calculous concretions in the kidneys or bladder; the patients forbearing the use of wine and acids. It might be suspected that, like other bitters, its long continued use must weaken the action of the nervous system, but in these instances no such effect took place. (It is said to have suppressed fits of the gout. E.) An infusion of it given to a woman that suckles, makes her milk bitter. It gives a bitterness to the flesh of sheep that eat it. Horses and goats dislike it; cows and swine refuse it. Linn. (Livia Absinthii and the rare and singularly elegant Plume-moth, Pterophorus spilodactylus, Curt. pl. 161, are found upon it. E.) Turkeys are fond of it. Mr. Hollefear. The plant steeped in boiling water, and repeatedly applied to a bruise, will remove the pain in a short time, and prevent the swelling and discoloration of the part. Stokes. (This is one of those domestic plants, which, associated with mallow, mugwort, hemlock, docks, &c. would seem to follow the footsteps of man, thriving amidst dust and rubbish, and to be found wherever a few miserable hovels are erected. Ramond and De Candolle observed several of these species among the ruins of cottages where shepherds had once lived, high on the Pyrenees; and some years since I remarked, says Mr. Winch, the same circumstance in the Highlands of Scotland. "The constant appearance of these weeds about towns and villages is a curious and inexplicable phenomenon, for no one ever cultivated such plants for utility, much less for ornament." Winch. Gcog. Dist.
924 SYNGENESIA. SUPERFLUA. ARTEMISIA.

[Text continues on the page]

1, and Ic. i. 764. 2—Ger. Em. 1103. 1—Park. 90 and 91. 2—Ger. 945. 1. 2
—Fuch. 44—J. B. iii. a. 184. 3—Trag. 344—Lonic. i. 151. 1.

Root woody. Stem three or four feet high, angular, scored, often reddish, downy above. Leaves above green and slightly cottony; underneath white with thick cotton; wings oval-spear-shaped, deeply serrated, almost lobed, the terminal one large, with three lobes. Calyx, scales extremely woolly; edges membranous. Florets longer than the calyx. Woodv. Fruit-stalks alternate, from the bosom of the leaves. Blossom purplish.

(A variety more entirely green is not uncommon. E.)


(3) Leaves mostly undivided.

A. CERULES'ENS. Stem-leaves spear-shaped, entire: root-leaves many-cleft: (florets of the circumference three: receptacle naked. E.)

(E. Bot. 2426. E.)—H. Ox. vi. 1. 5—Dod. 26. 2—Lob. Obs. 441. 2, and Ic. i. 765. 2—Ger. Em. 1104. 3—Matth. 687—Ger. 946.

(Plant rather shrubby, with slender, leafy branches, downy when young. Leaves of a blueish hoary hue, finely silky in an early state; Sm. downy on both sides. Flowers small, cylindrical, mostly erect, in leafy clusters or spikes. E.)

* In some countries it is used as a culinary aromatic. A decoction of it is a popular remedy for the ague. The Chinese make use of it as a vulnerary, applying the fresh plant bruised. Osbeck i. 394. A dram of the leaves, powdered, was given four times a day, by Dr. Home, to a woman who had been affected with hysteric fits for many years. The fits ceased in a few days. In this patient asafoetida and ether had been given to no purpose. (The powdered roots have been recently prescribed with much success in epilepsy, on the Continent. Notwithstanding these favourable reports, Mugwort is rarely employed in England, and has been rejected by the London College. E.) Sheep and swine refuse it; neither horses, cows, nor goats are fond of it. Linn. Dr. Anderson informs us, that sheep are very fond of it, devouring it with great greediness, especially the roots, which seem to them a most delicate morsel. Aphis Absinthii and Phalana Gamma live upon the several species. (The celebrated ancient caustic of the East, called Morá, is prepared from the cotton of the leaves of this plant; Kempfer: or, according to Abbe Grosier, from a species of a softer and more silky nature: but Miller, (judging from dried specimens), considers them the same. It was very generally applied by the ancient Chinese, and with great confidence. The downy pellets are still burnt upon the affected parts, and in apoplectic or lethargic cases, but not unaccompanied with punctures or scarification, to which any relief obtained may be more reasonably attributed. The lamugo of Mullein, and other plants, would probably prove equally serviceable. The ashes, when taken as snuff, are said immediately to stop bleedings at the nose. The eastern poets describe the manner in which this Artemisia must be gathered as a preservative against witchcraft, on the fifth day of the fifth moon, and suspended over the doors as a sure protection. Similar delusions appear to have been prevalent in Europe, as recorded by Gerard with a salutary caution. "Pliny saith, that the traveller or waifaring man, that hath the herbę tied about him, feeleth no wearisomnes at all, and that he who hath it about him can be hurt by no poisonsome medicines, or by any wilde beast, neither yet by the sunne it selfe. Many other fantastical devises invented by poets are to be scene in the workes of the amnicient writers, tending to witchcraft and sorcaste, and the great dishonor of God, wherefore I do of purpose omit them as things unwoorthie of my recording, or your reviewing." E.)
BLUEISH MUGWORT. Sea shores. Near Boston, Lincolnshire; (Mr. Tofield, Hudson; but not found there by any one else, and there seems equal reason to doubt whether the stations named by Gerard, viz. about Rye and Winchelsea Castle, and near Portsmouth, are now productive of the plant. E.)

P. Aug.

GNAPHA'LIIUM.* Receptacle naked: Down hair-like or feathery: Calyx tiled, membranous: Scales coloured at the edge.

(1) Herbaceous; yellow-flowered.

G. LU'TEO-AL'BUM. Leaves sword-shaped, half-embracing the stem, waved at the edge, blunt, downy on both sides: flowers crowded.


(Stems six to twelve inches high, spreading at the base, then upright, undivided, leafy, cylindrical, bearing broad-topped spikes, many-flowered. Flowers terminal, crowded together, thickly woolly at the base. Fl. Brit. E.) Plant covered with white cottony down. Calyx yellowish white, soft: scales egg-spear-shaped. Florets of the circumference numerous, often tinged with red.

JERSEY CUDWEED. EVERLASTING. Dry banks and walls in the island of Jersey, very common. Ray. Sea coast of Wales. Gerard. West sea coasts. Parkinson. A mile above the first of Bognor rocks. Blackstone. Mr. Relhan has lately found this uncommon plant in the road between Hanxtown and Little Shelford, Cambridgeshire, certainly wild, and also in a gravel pit in the same neighbourhood. E.) A. July—Aug.

(2) Herbaceous; white-flowered.

G. MARGARITA'CEUM. Leaves strap-spear-shaped, tapering, alternate, (cottony on both sides, densely so beneath: E.) stem branched towards the top: flowers in a corymb.


Florets of the circumference few. Stem extremely cottony, white, two feet high. Leaves numerous, strap-spear-shaped, long, sessile, growing without order, very entire, dark green and naked above, underneath greenish white, with a thick cotton. Flowering branches with numerous crowded heads at the end, on short branched cottony fruit-stalks, with a middle one sessile. Calyx bluntly egg-shaped, white, not cottony. Down simple, sessile, as long as the calyx. Woodw. (Receptacle tuberculated. Sm. E.)

AMERICAN CUDWEED. PEARLY EVERLASTING. Meadows, pastures, and banks of rivers. In a meadow near Bocking, Essex, and on the banks of

* (From γκάνθος, a fuller; certain species being soft and woolly as the nap of cloth: and, according to some writers, used as a substitute for cotton or flax, in filling couches and mattresses, and hence denominated Cotton-weed. E.)
Rymny river, Monmouthshire, for the space of at least twelve miles. Such are the stations given by Ray, and repeated by Hudson; but the former seemed to doubt its being a native. (We learn from Fl. Brit. that it has, however, recently been discovered by the Rev. T. Butt, near a rivulet in the heart of Wire Forest, Worcestershire; and by Dr. Salt in a meadow at Longdon, near Litchfield. E.) P. Aug.*

G. dioicum. Runners trailing: stem unbranched: flowers in a simple, terminal corymb, dioecious: (seed-down feathery. Sm. E.)

In the barren plants the heads almost globular: in fertile ones nearly cylindrical. Linn. Ripe seeds are rarely produced, as is the case with many plants which stole at the root. Root woody, brown, with a few stiff fibres. Runners several, creeping, leafy, from the crown of the root. Root-leaves in a thick tuft, oval at the end, tapering below into a long leaf-stalk, green and slightly hairy above, underneath white with a thick cotton; stem-leaves numerous, strap-shaped, half embracing the stem, green above, white and cottony underneath. Stems upright, simple, three to seven inches high, white, cottony. Heads three to eight, on short fruit-stalks. Calyx scales blunt, the outer short, green, cottony; the inner widening upwards, long, smooth, shining, white, frequently tinged with purple; in the barren plants shorter. Seeds short; down sessile, with simple rays, that of the fertile plants longer than the calyx, that of the barren plants not exceeding the calyx. Woodw. Blossom white, purple, or reddish.

(A larger variety, with leaves broader and woolly on both sides, has been sent from the Isle of Skye, by Mr. J. Mackay. Fl. Brit. This plant is said to preserve its habit on cultivation, and has been designated G. hyperboreum. We have been favoured with specimens from the original station by Mr. Winch, and observe in our herbarium G. dioicum, enlarged by cultivation, with a similar appearance. E.)


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* (The flowers are smoked through pipes in Lancaster county (U. S.) to cure the tooth-ach. Barton. Frequently cultivated as an ornamental plant in the gardens both of England and the Continent; said to have been introduced from America about the sixteenth century. Its enduring quality renders it valuable through the winter; (for, though inferior to several exotic species in brilliancy, its flowers equally retain their pristine appearance for years. This species appears to be dioecious. Vid. Brown, in Linn. Tr. xii. 128.—The fact that many species of the Syngenesia Class are dioecious, or have the barren and fertile flowers on distinct plants, not only escaped the observation of Linnaeus, but of his most enlightened successors: and even Jussieu points out G. dioicum as "Species una dioica insigni exceptione." For a further illustration of this curious subject, vid. Linn. Tr. vol. xiii. E.)

(3) Herbaceous; resembling a Filago.


Differs from G. rectum in having broader leaves, and a short clustered spike of black flowers. Lightf. Leaves more attenuated at the base, and less naked on the upper surface than in G. rectum. Sm. (Stem solitary, undivided, three to five inches high, cottony, leafy. Down stiff and rough. Receptacle somewhat honey-combed. Calyx, scales in the exposed half nearly black, shining, straw-coloured below: florets yellowish. Fl. Brit. E.)


*(This is an elegant little plant, whose peculiar appearance may well recommend it for domestic culture, and as a substitute for the foreign kinds, most of which, being less hardy, require artificial heat. As the Amaranth flower is the acknowledged symbol of immortality, with equal propriety may the Gnaphalium or Everlasting be dedicated to never-ceasing remembrance, or that high sentiment which is

"Of itself a holy tie, Yet made more sacred by adversity."

For such is the imperishable nature of our present species, that it retains a perennial bloom through successive years, and constitutes a principal ornament of the dried winter bouquet, for the vase of the saloon, or the head-dresses of our belles.

"Ainsi la main de l’amitié constante, Quand tout nous fuit, vient essuyer nos pleurs. Ton doux aspect de ma lyre plaintive A raminé les accords languissans; Dernier tribut de Flore fugitive, Elle nous légne avec la fleur tardive, Le souvenir de ses premiers présents." Dubois.

On the Continent, Phillips informs us, such lasting flowers are frequently used to decorate the monuments and graves of departed friends. Since the hill of Pere la Chaise has been converted into a cemetery for the city of Paris, the demand for these flowers in the French capital has been so considerable, as not only to employ many hands in the cultivation of them, but numerous families are regularly occupied, and entirely supported by forming these "Immortelles" into garlands and crosses, which are offered for sale by the cottagers near the entrance of this celebrated burial ground. In the darker ages of idol worship, of such were composed the wreaths which entwined the brows of heathen deities; and thus in Spain and Portugal in the nineteenth century, are the images of Romish saints adorned with the Eastern Everlasting, G. Orientale— to which the preceding remarks also more immediately appertain, though not inapplicable to some of our native species, especially the Pearly, Mountain, and Jersey Everlasting. E.)


Leaves green and hairy above, white and cottony underneath; root-leaves long, strap-spear-shaped, very narrow, in open ground forming a thick tuft; stem-leaves strap-shaped, embracing the stem, numerous. Stem in woods frequently solitary, twelve (or fewer, E.) to eighteen inches high, in open ground several from one root, shorter, often at first declining, but very soon ascending. Flowers in a long bunch. Flower-stalks very short, lateral, from the bosom of the leaves, with one to five or more flowers, the lowermost somewhat distant, the upper crowded. Flower-leaves similar to, but smaller than the stem-leaves. Heads very small. Calyx bluntly oval, greenish at the base, yellowish brown upwards, smooth, with shining edges; the outer short, the inner as long as the florets. Seeds minute; down sessile, as long as the calyx; rays simple. Woodw. Blossom yellowish. (A doubtful species. E.)


G. supinum. Stem undivided, trailing: flowers few, scattered: (leaves strap-spear-shaped, somewhat cottony on both sides. E.)


Root-leaves strap-spear-shaped, slightly hairy above, underneath cottony, and greenish white, one half to three quarters of an inch long, in tufts; stem-leaves sessile, narrower and longer. Stem one and a half to three inches high. Heads three and four, alternate, either sessile, or on short cottony fruit-stalks, from the bosom of the upper leaves, which are not longer than the heads. Calyx, scales spear-shaped, with a green longitudinal line at the base; the tips and edges shining, of a brownish yellow. Seeds elliptical; down sessile, rays simple, as long as the florets and longer than the calyx. Woodw.


G. uliginosum. Stem branched, spreading: flowers crowded, in terminal clusters: (leaves strap-spear-shaped, cottony on both sides. E.)
Stem three to nine inches high or more, upright, with a dense white cotton, much branched; branches spreading, more cottony and thicker towards the end, the lower often trailing, clothed with numerous leaves particularly towards the end, and these thickest and most cottony. Leaves elliptical, tapering into a long leaf-stalk, slightly cottony and greenish above, more cottony and whitish underneath. Flowers nearly sessile. Calyx scales membranous spear-shaped, smooth, brown, shining, when in seed blackish, almost hid in the cotton. Down sessile, with simple rays, as long as the calyx. Woodw. Whole plant, particularly at the base of the calyces and fruit-stalks, covered with a cottony substance. (Florets yellowish, all fertile. E.)

(Marsh Cudweed. E.) Black-headed Cudweed. (Welsh: Edafeddog benudda. E.) In watery places, especially where stagnant water has remained during the winter. A. Aug.

G. gal'ligum. (Stem branched, upright; flowers awl-shaped, tufted, axillary; leaves thread-shaped, revolute, sharp-pointed. E.)


Whole plant cottony, but the cotton shorter than that of G. germanicum or montanum. Stem much branched. Leaves awl-shaped, half embracing the stem, about an inch long. Woodw. (Receptacle convex, tubercled. Calyx, scales green, downy, with a thin white border. Florets of the disk about three; of the circumference more numerous, all tubular and fertile. Sm. E.)


G. (min'imum. E.) Stem upright, branched: (leaves spear-shaped, sharp-pointed, flat: E.) flowers conical, in axillary and terminal tufts.

(E. Bot. 1137. E)—Pet. 18. 11—H. Ox. vii. 11. 3. a.—Ger. 517. 8—Lob. Ic. i. 481. 2—Ger. Em. 641. 9—J. B. iii. a. 159—H. Ox. vii. 11. 3. b.

(Stems very slender, erect, two to eight inches high, woolly; branched, chiefly from the first cluster of flowers, sometimes quite simple. Leaves erect, almost appressed, very small. Flowers small, three to six together in clusters, sessile, and sometimes solitary. Calyx downy, scales subulate. Grev. Florets yellowish. Down rough. Receptacle tubercled. E.)

Least Cudweed. (Welsh: Edafeddog leif; Digoll lwyd. G. minimum. Ray. Bauh. Sm. Wildl. Relh. Hook. Grev. G. montanum. With. Huds. Hull. and supposed to be Filago montana of Linnaeus; but Smith observes that the real F. montana of Linnaeus has leaves and flowers nearly double the size of our plant; that it is far more woolly, especially the scales of the calyx; that all the blossoms are crowded together, never solitary, and that it is not found in Britain. E.) Sandy and gravelly ground. A. July—Aug.
SYNGENESIA. SUPERFLUA. CONYZA.

G. germanicum. (Stem erect, proliferous: heads globose, many-flowered, lateral and terminal: leaves acute: (calyx-scales bristle-pointed. Sm. E.)


(Stem six to eight inches high, leafy, terminated by a globular head of small ovate flowers, from beneath which spring several horizontal branches, in a proliferous manner, each terminated by a similar head of flowers; hence the old Botanists applied the term “Herba impia” to this plant, as if the offspring were undutifully exalting itself above the parent. Florets yellow. Hook. Whole herb grey and cottony. E.)


CONYZA.† Recept. naked: Down hair-like: Calyx tiled, roundish: Florets of the circumference trifid.

C. squarro'sa. Leaves spear-shaped, downy, crenate: flowers in a corymb: scales of the calyx with their points recurved.


Leaves oval-spear-shaped, irregularly serrated, woolly on both sides, decreasing in size upwards, those at the base of the flowering branches spear-shaped, or strap-spear-shaped, scarce perceptibly serrated. Flowers numerous. Fruit-stalks short, woolly. Floral-leaves spear-shaped, small, one on each fruit-stalk. Calyx, scales strap-spear-shaped, numerous, the lower green, the upper yellowish, points green and expanding. Seeds small, blackish, furrowed. Down sessile, as long as the calyx. Woodw. Stem two or three feet high; nearly cylindrical, reddish, rough with short woolly hairs. Blossom dusky purple, or yellowish. (The whole plant bitter, and slightly aromatic. Receptacle tubercled. E.)


* (As being used to cure chafed flesh. E.)
† It is given to cattle that have the bloody flux; and has been tried with success in similar disorders of the human body.
‡ (From κυνηγεῖν, i.e. cuni-lago: the leaves, according to Pliny, destroying gnats and fleas. E.)
SYNGENESIA. SUPERFLUA. ERIGERON. 931


E. CANADENSIS. (Stem hairy, panicked, many-flowered: leaves spear-shaped, fringed: lower ones toothed. E.)


Stem firm, frequently crooked, much branched towards the top. Leaves, the lower oval, tapering into a leaf-stalk; those above spear-shaped, with distant serratures, slightly hairy on the upper surface, more so underneath; those at the base of, and on the branches, strap-spear-shaped, very entire, sessile. Flowers numerous. Fruit-stalks slender, branched and simple. Calyx outer scales short, the inner longer, strap-shaped, with a green line along the back, whitish and membranous at the edge. Florets very small. Seeds minute. Down sessile, simple, as long as the florets. Woodw. Florets in the centre, yellow; those in the circumference white, with a tinge of red. Stem one to two feet high. E.)


E. ALPINUM. Leaves blunt, woolly underneath: stem with one or two flowers: calyx rather hairy.


Stems a finger's length, unbranched, supporting a single flower, scored, be-sprinkled with hairs. Leaves few, alternate, spear-shaped, green, nearly smooth above, set underneath with expanding hairs. Calyx, scales numerous, equal in length, spear-shaped; the outer scales broader, expanding, with longer hairs on both surfaces. Florets in the circumference white, as long as the calyx. Petals very numerous, strap-shaped, and entire. Style thread-shaped, white, acute, cloven. Central florets numerous, yellow; styles yellow, cloven, blunt. Fl. Suec. Down a reddish rust-colour. Sp. Pl. Limneus seems to consider E. alpinum and uniflorum, as one

* (More particularly troublesome on converted heaths; the scythe is of little use in destroying it: dressings of clay or marl will soon cause this weed to disappear. Its presence denotes sterility. Sinclair. E.)
† (From νέος, the spring, and γης, an old man; alluding to its hoary and gray appearance in that season. E.)
‡ (The bark of this plant, after having undergone the process of soaking, may be manufactured into excellent paper; as stated by M. Lonanne to the Agricultural Society of Turin.—The English name of Flea-bane is derived from its reputed power when burned, to destroy such vermin; and has been applied likewise to Conyza squarrosa, but more correctly to the present genus: and perhaps more especially to the plant of Dioscorides and Theophrastus, (E. viscosum), whose leaves interspersed with glutinous glands, and often purposely anointed with milk, attract and entangle the numerous insects which prove a sore annoyance in the south of Europe. E.)
species, observing that the former sometimes bears a panicle of white flowers, and the calyxes smooth. Blossom purple and yellow. (Calyx slightly hairy, not woolly as in E. uniflorum. Seeds bristly. Fl. Brit. E.)

**Alpine Flea-bane. E.** Found by Mr. Dickson on wet rocks on Ben Lawers; (but first discovered in this Island by the Rev. Mr. Stuart of Luss, on Ben Lawers, and on Shuc and Lochain. Mr. Brown. P. July. E.)

(The real E. uniflorum of Linnaeus is reported to have been found also on Ben Lawers, and on rocks by the river Almond, near Lindoch, seven miles from Perth, by Mr. Don, but these two species still appear to be involved in ambiguity. Vid. Linn. Tr. x. 346. and E. Bot. 2416. We have now before us Ben Lawers specimens from Mr. Brown, and a note by that learned Botanist to the following effect. "I am nearly convinced that E. alpinum of Linn, as he himself suspected, is merely a variety of E. uniflorum. Our plant, which does not perfectly correspond with the account he gives of either, may possibly be an intermediate var. The corolla of the radius always purple; the stem most frequently with only one flower, more rarely with two: the pappus never "rufo-ferrugineus," but greyish, though this is probably a variable circumstance. One specimen gathered in Ireland had the pappus of a very dilute ferruginous colour. Fl. Dan. 292. is certainly this plant, though the specimen there figured exceeds in size our native ones very considerably." Respecting E. alpinum and uniflorum, Prof. Hooker observes, "Smith gives to E. uniflorum the character of 'florets of the ray erect,' so they are frequently in E. alpinum; and as I can see no other mark either in Smith's figure or in the specimens that I have received from the discoverer Mr. G. Don, I feel little hesitation in uniting the two." E.)

**E. a'cre.** (Stem racemose: peduncles mostly single-flowered: leaves lanceolate-tongue-shaped: sessile. E.)


Stems six to eighteen inches high, somewhat angular, hairy, often purple. Leaves, the lower oval, tapering down into a leaf-stalk; the upper spear-shaped, the uppermost strap-shaped, hairy on both sides, but mostly at the edge, very entire, often waved at the edge. Calyx scales unequal, awl-shaped, hairy. Florets of the circumference purple, a little longer than those of the centre; florets of the centre yellow. Down sessile, simple, yellow, as long as the florets. Woody. Fruit-stalks supporting from one to three flowers. (Seeds rough. E.)

**Blue Flea-bane.** (Welsh: Amm rhychdlywedd rhuddllas. E.) Dry meadows and pastures in a calcareous soil. Narford, Norfolk; (and on old walls at Ely; E.) Mr. Woodward. St. Vincent's Rocks, Bristol. Lime Rocks, Dudley. Lilleshall Abbey, Shropshire. (Between Llanerch Bridge and the village of Dymerchion, Flintshire; and about Denbigh Castle, in which stations it was pointed out to the Editor by Mr. Griffith.—In a copse a little to the east of Bradbury; in Langton Copse, near Blandford. Pulteney. On Newborough Common, Anglesey. Welsh Bot. Ballast hills of Tyne and Wear; Hartlepool, Durham; Ryegate Hill, Surry. Mr. Winch. On a wall at Hords Park, and by the side of the turnpike road opposite to Faintree House, near Bridgnorth; At Allesley and Meriden, Warwickshire. Bree, in Purton. Kingsgate, near Ramsgate. Mr. W. Christy. Spoonbed Hill, Painswick. Mr. Oade Roberts. On
old stone walls at the Rookery, and other like situations, in the parish of
Brislington, near Bristol; and by the road side two or three miles from
Clevedon, Somersetshire, approaching from Bristol. E.)

TUSSILLA'GO.* Recept. naked: Down hair like: Calyx tumid at the base; scales equal, as tall as the surface of
florets, somewhat membranous: (Seed obovate, compressed.
E.)

T. FAR'FARA.† Stalk single-flowered, tiled: leaves somewhat heart-shaped, angular, finely toothed.

Root creeping (far and wide. E.) Leaves appearing as the flowers are
going off, with several blunt lobes sharply toothed, green above with
reddish veins, white and cottony underneath, the cotton easily rubbing
off. Leaf-stalks long, reddish brown. Stalks numerous solitary or in
clusters, three to five inches high, lengthening after flowering, cottony,
clothed with spear-shaped scales embracing the stalk, of a green mixed
with brown. Flowers while in blossom upright, after flowering hanging
down, but when the down of the seeds expands becoming upright again.
Calyx, scales strap-shaped, reddish brown. Blossoms yellow. Florets of
the circumference very narrow, in two or three rows, as long as the calyx,
expanding. Florets of the centre tubular, swelling upwards; clefts five,
spear-shaped, bent back. Summit before the anthers have discharged
their pollen covered by them, club-shaped and simple, but afterwards
lengthened beyond them. Down sessile, longer than the calyx. Woodw.

Common Colt's-foot. (Irish: Ahain. Welsh: Alan by chan; Carn yr
ebol. Gaelic: An gallon gainbliich; chluas-liath.

Pastures and moistish places, in moist, stiff, clayey soil, and on lime-
stone rubbish.

P. March—April.†

* (From tussis, a cough, the plant being useful in allaying pectoral disorders. E.)
† Farfarus, from its leaves resembling those of the White Poplar, (so called by the ancients) as

"Eos prosternebam ut folia Farfari."—Plaut. Pan. E.)

† It is the firstplant that vegetates in marl or limestone rubble, (and is very injurious to
ploughed lands. Holdich observes that every part of the root will produce a plant, and
though buried to the depth of a yard or more, it will vegetate, send up a stem to the sur-
face, and spread with astonishing rapidity. It must never be suffered to produce flowers, or
fully expand its leaves. Draining, paring, and burning, followed by a naked summer fal-
low, with hoeing in due season, will completely eradicate this nuisance. E.) The downy sub-
stance on the under surface of the leaves, wrapped in rag, dipped in a solution of saltpetre,
and dried in the sun, makes the best tinder. The leaves are the basis of the British Herb
Tobacco. (Pliny records its being used for smoking in ancient times as a remedy for ob-
stinate coughs, and recommends both the roots and leaves. E.) They are somewhat austere,
bitterish, and mucilaginous to the taste. They were formerly much esteemed in coughs and
consumptive complaints; and perhaps not without reason, for Dr. Cullen found them of
considerable service in scrophulous cases; he gave a decoction of the dried leaves, which suc-
cceeded where sea water failed, Mat. Med. p. 458.—Fuller relates the case of a girl, with twelve
934 SYNGENESIA. SUPERFLUA. Tussilago.

T. petasit'tes. (Panicle crowded, ovate-oblong: leaves heart-shaped, unequally toothed, with the lobes approximate, downy beneath. E.)


({Root much creeping. Leaves, which come off after the flowers, excessively large, all radical, on long foot-stalks. Scape a span high, thick, and scaly, with lanceolate spreading bracteas. Flowers purplish. Some plants have all the florets with perfect germens, in which case the stigma is deeply cleft and linear, and the anthers are imperfect and not united; others have imperfect germens, when the stigma is very much incrassated and ovate, tuberculated, and very slightly notched, whilst at the same time the anthers are perfect, united, or syngenesious, purple, with white pollen. The former with perfect germens, producing no seed, have almost universally gone by the name of T. hybrida, and to the latter the name of T. Petasites has usually been confined. As these plants frequently grow separate, the fruit is rare; but nature has made ample amends, and by the long creeping roots this species is multiplied, and proves very destructive to pasture lands. Hook. E.})

(The fertile plant, (as first suggested in England by Smith, and on the Continent by Ehrhart, though the former learned author deems it more correct to consider it as “a casual variety in which the fertile or seed-bearing organs predominate,” rather than as the proper fertile plant), T. hybrida, of authors, figured in Hook. Fl. Lond. 129. E. Bot. 430. Dill. Æth. p. 309. t. 230,) is this minutely described by Prof. Hooker. “Root, leaves, flower-stalk, thyrsus, bracteas, and involucr, precisely similar to those of the barren state of T. Petasites, except in the thyrsus being more elongated. Flowers nearly all fertile, very few barren. Fertile florets slender, tubular, of a purplish rose-colour, slightly incrassated above, the limb quinquifid, erecto-patent. Barren-florets very few, rather shorter and broader than the fertile ones, thickened upwards, limb quinquefid, patent. Stamens inserted above the middle of the corolla. Filaments white, short. Anthers oblong, furnished with an appendage at the extremity, purplish. Pollen white. Germin ovate, smooth, abortive. Style filiform, white, a little longer than the corolla. Stigma remarkably incrassated, minutely tuberculated, acute and bifid at the extremity. Anthers none. Germin ovate, striated. Style somewhat longer than the corolla, filiform, white Stigma slightly incrassated, bifid. Pericarp ovate, striated brown, terminated by a white sessile, simple, scabrous pappus.” E.)

(Long-stalked Colt’s-foot or Butter-bur. T. Petasites, fém. As the first described is the sterile, so this is the fertile state of the same plant, and not a distinct species, as generally designated under the name of T. hybrida. It grows in similar situations, but is less abundant. E.)

scrophulous sores, who was cured by drinking, daily, as much as she could, for above four months, of a decoction of the leaves made so strong as to be sweetish and glutinous. Med. Gymn. p. 91. Goat and sheep eat it. Cows are fond of it. Horses and swine refuse it. Linn. It may be destroyed by cutting off the crown of the root in March. Mr. Pitt. (The under surface of the leaves of this and the following species are frequently infested with the parasitic fungus Lycoperdon epiphyllum, hence designated Ascidium Tussilaginum. E.)
SYNGENESIA. SUPERFLUA. Senecio. 935


P. March—April.*

SENECIO.† Recept. naked: Down hair-like, long: Calyx conical, double; scales shrivelled at the ends.

(1) Florets all tubular. (S. viscosus.)

S. Vulgaris. Leaves winged-Indented, embracing the stem: flowers scattered.


A. April—Sept.‡

* The roots abound with a resinous matter. They have a strong smell and a bitterish acrid taste, (but have long lost their credit for the medicinal powers which once gave the plant a name. E.) Horses, cows, goats, and sheep eat it. Its large leaves, (equalling a hat in circumference, E.) afford shelter to showyers to poultry and other small animals, Linn., and are hollowed like a bonnet, by the Greeks called \( \pi \tau \varepsilon \varsigma \), whence the trivial name. The early flowering of this herb induces the Swedish farmers to plant it near the bee hives, (but, however productive it may be of honey, its polypus-like propensity should deter from introducing it unwarily. Curtis relates that a piece of Butter-bur root only two inches long, and the thickness of the little finger, after having been planted eighteen months was dug up, when it appeared that many shoots had extended six feet, and penetrated two feet in depth; the whole weighed eight pounds. E."

† (Derived from senea, an old man; alluding to the hoary appearance as exhibited in S. tenellifolia, E.)

‡ A strong infusion of the plant acts as an emetic. The bruised leaves are a good application to boils. The seeds are very acceptable to linnets and goldfinches when confined in cages. Cows are not fond of it. Goats and swine eat it. Horses and sheep refuse it. Linn.—A horse eat it. St. (Agrostis exclamationis, Arctia villica and other insects feed upon it. This is one of the most troublesome of the underling weeds which infest arable lands and gardens, and generally increase from negligence. The remedy is obviously to follow and practice more careful husbandry. Dr. Swediaur recommends this plant as an anthelmintic, and the juice is given internally to discharge bots from horses. E.)
(2) **Strap-shaped florets in the circumference, revolute.**

*S. viscosus.* Leaves wing-cleft, viscid; outer scales of the calyx loose, hairy, nearly as long as the inner.

_E. Bot. 32—Dill. Elth. 258. 336—J. B. 1042._

In appearance and size resembling *S. vulgaris*, but clammy all over with hairs which secrete a viscid liquor. Leaves in mountainous situations with a leprous scurf underneath. Frail stalks lateral, with two and three flowers. Calyx, the scales at the base as long as the tube, as it were dead at the ends. Linn. Rays sometimes wanting. Hall. Stems taller and stronger; leaves more divided; flowers larger; frail stalks longer, the upper forming a kind of broad-topped spike; seeds longer, and more deeply furrowed; and the down longer than in *S. vulgaris*. Woodw. Blossom yellow. The hairs on the calyx and on every other part of the plant at once distinguishes this from the *S. vulgaris*, even though the strap-shaped florets of the circumference should be wanting. (Stem a foot high or more, much branched. Whole plant fetid. E.)

**Clammy Groundsel.** Sandy ground. Fen banks in the Isle of Ely. Ray.


*S. sylvaticus.* Leaves sessile, wing-cleft, finely toothed; stem branching into a corymb, upright: (outer calyx short, smooth. E.)


Stem taller and firmer, though more slender than that of *S. viscosus*. Leaves narrower and more finely divided, frequently clammy in a hot sunny situation, but not so much as those of *S. viscosus*. Fruit-stalks much more branched. Flowers more numerous, much smaller. Seeds shorter and broader. Down shorter, Woodw., strong scented. Stem two to three feet high, with a fine woolliness of short, tapering, zigzag hairs, brittle, branching from the bottom. Branches, the upper rising nearly to the same height. Leaves somewhat woolly, with scattered short hairs, tapering, but not tipped with glands. Fruit-stalks somewhat cottony. Calyx conical, somewhat woolly; scales at the base awl-shaped, two or three, dead at the ends, thrice as small as those of the cup. Blossom yellow. St. (Stem three feet high. E.)

SYNGENESIA. SUPERFLUA. Senecio. 937

(S. lividus. Leaves clasping the stem, spear-shaped, pinnatifid and toothed: scales of the calyx short, with acute points, not discoloured.

E. Bot. 2515.

Most resembling S. sylvaticus, but the essential marks of distinction are the dilated base of the leaves, which embraces the stem, and the taper-pointed scales at the base of the calyx, which are not blackened and abrupt at the tip, as in every other species. The depth of the segments of the leaves is liable to variation. E. Bot.


(3) Strap-shaped florets in the circumference expanding; leaves wing-cleft.

(S. squallidus. Radius spreading, longer than the calyx: its florets elliptical and entire: leaves pinnatifid, their segments distant, somewhat linear.

E. Bot. 600.

At first sight much like var. S. Jacobcea. Stems upright, branched, somewhat hairy. Leaves embracing the stem, nearly smooth, flat, rather fleshy, often purplish beneath. Flowers solitary, at the end of terminal, straggling, bracteated corymbose stalks. Calyx smooth, almost hemispherical, its outer scales few and small. Inner florets very numerous. Those of the radius broad, spreading, elliptical, entire, of a bright golden yellow, at length reflexed. The plant smells like Tansy or Mugwort.

Inelegant Ragwort. On almost every wall in and about Oxford: whence we have been favoured with specimens by Dawson Turner, Esq.;—but a doubtful aboriginal. A. June—Oct. E.)


Jacq. Austr. 278—(E. Bot. 574. E.)

Stem unbranched, one to three feet high, scored with ridges, firm, thick as a quill, entirely covered by leaves, reddish, but clothed with cobweb-like cotton. Calyx green, not dead at the ends. Leaves either smooth on both sides, or clothed underneath with a cob-web-like cotton. Lower-leaves on long leaf-stalks; upper-leaves nearly sessile and upright. Segments strap-shaped, pointed; mid-rib underneath prominent, long, distant, very entire, rarely toothed; edges rolled back. Jacq. (Blossom deep yellow. Seeds hairy. E.)

The figure of Jacquin is a very exact representation of it as it generally appears in the north of England. It but seldom occurs with us in the state represented in Fl. Lond., and seems then to be a variety occasioned by a damper and more shady situation. Mr. Wood.

Var. 2. Plant but little cottony; lower leaves sessile; segments broader.
Stems angular, furrowed. Leaves sessile, hairy, particularly underneath; the lower rough to the touch; the upper less hairy; segments strap-yellow and toothed at the ends. Calyx, scales not dead at the ends, but shaped, and woolly, the outer strap-shaped, fleshy, the inner the same, but edged with a broad membranous border. The leaves in this variety do not stand upright as in the preceding, nor do they so effectually hide the stem; the segments are much broader, and the hairiness is not such as to give a hoary appearance to the plant. Upon the whole, its habit is so different, that had there not been a general coincidence in opinion, that cultivation alone is sufficient to occasion the differences pointed out, I should have considered them distinct.


Var. 2. Flowers without rays. In great plenty in gravel on the sea shore, three or four miles from Droghead, scarcely one in a thousand being radiated. Sherard in R. Syn.

Var. 3. Flowers without rays; whole plant hoary with dense cottony substance.

Marazion Marsh, Cornwall.

* (This plant has been recommended in a bruised state as an application to cancers. Internally, by Simon Pauli, against dysenteries. E.) If it be gathered before the flowers open, and used fresh, it dyes wool of a full green, but the colour is apt to fade. If woollen cloth be boiled in alum water, and afterwards in a decoction of the flowers, it takes a beautiful deep yellow. Horses and sheep refuse it. Cows are not fond of it. Linn. (Often entirely devoured by the black and yellow-ringed caterpillars of Phalaena Jacobae. Sm. Andrena fulicrus, and Nomada flavopicta are likewise found upon it; and Ceratina cervidea in the flowers, E.) Horses and Cows eat it when young.
S. AQUAT'ICUS. Leaves toothed, those at the root egg-shaped, of the stem wing-cleft; outer segment largest. Huds.: (calyx hemispherical. E.)

(E. Bot. ii. 1057. 3—Pet. 17. 2—Fl. Dan. 784—Clus. ii. 23. 1—Ger. Em. 280. 3.

Leaves wing-cleft, with some small wings at the base, and a very large one egg-shaped, scolloped, terminal, smooth. Fruit-stalks irregularly branching, with numerous awl-shaped scales. Woodw. (Seeds, both of disk and radius, smooth. Sm. Flowers larger than in the preceding; not so numerous. Rays of the circumference broader. Blossom yellow. In dryer stations this plant becomes very slightly woolly. E.)

Liable to vary much in its foliage. I have some specimens in which the leaves are wing-cleft for more than half their length from the base; others in which the leaves may be most properly considered as entire, with one or two pair of wings on the leaf-stalks, and others again in which the upper and lower leaves have no wing-cleft segments; hence I am induced to believe that this does not specifically differ from S. Jacobaea, the latter growing in dry uplands, the former in moist meadows. Hudson's S. aquaticus certainly corresponds with the Linn. Sp. char. of the Jacobaea, which can hardly be said of the upland plant which we call Jacobaea.


P. July—Aug.

(4) Strap-shaped florets in the circumference expanding; leaves undivided.

S. PALUDOSUS. (Rays toothed: flowers corymbose: Sm. E.) leaves sword-shaped, acutely serrated, somewhat cottony beneath: stem quite straight, (hollow. E.)


P. (July. E.)—Aug.

S. SARACENICUS. (Rays nearly entire: Sm. E.) flowers in a corymb: leaves spear-shaped, serrated, almost smooth: (stem solid. E.)

Distinguishable by its broad leaves, size, and root which creeps very much. Leaves rather toothed than serrated. Floral-leaves very slender; as long or longer than the partial fruit-stalk. Strap-shaped florets about seven or eight. Flowers yellow. (Ray with broad ligulate florets. Stem three to five feet high, smooth. Leaves alternate, sessile. Calyx slightly cottony; scales at the base spear-shaped. Seeds smooth. E.)


P. July—Aug.*

ASTE.R.† Recept. naked: Down hair-like; radiating florets more than ten: Calyx tiled; the lowermost scales expanding.

A. tripo'lium. (Stem smooth, corymbose: E.) leaves strap-spear-shaped, fleshy, smooth, three-ribbed: calyx scales blunt, somewhat membranous. *


Stems one to three feet high. Flowering-branches from the bosom of the upper leaves. Fruit-stalks branched. Calyx scales in two or three unequal rows, short, egg-shaped, scored, green and brown, with reddish brown anthers. Florets of the circumference spear or strap-shaped, pointed, frequently cloven at the point. Woodw. Flowers with somewhat of a sweetish scent, (and varying much in degree of colour, whence the specific name. E.) Florets of the circumference twenty-one to twenty-three, of a bluish lilac, (sometimes white. E.) Florets of the centre fewer, about eighteen, (deep yellow. Down of a reddish colour. Plant herbaceous, slightly glaucous, smooth, greatly varying in size. Leaves coriaceous, very entire. Lowermost scales of the calyx less decidedly spreading than in other species. E.)

Sea Starwort. (Welsh: Serenllys y morfa. E.) Salt marshes on the sea coast, in muddy soil, and in salt marshes in the inland parts of the kingdom, as near Shirley Wich, Staffordshire; in a meadow between

* Phalana fuliginosa, Jacobea, and promula, live upon the several species. (This plant is reported to have been valued as a vulnerary by the Saracens, and is certainly an astringent of no mean power. E.)

† (From Astër, a star; the flower assuming the stellate, or radiated form. E.)

Var. 2. All the florets tubular.

**Pet. 17. 12.**

About Bristol, frequent. Ray.

(A foreign species, *A. fragilis*, from North America, is reported by Mr. Winch to have become naturalized on an island at the junction of North and South Tyne; and may possibly, at some future period, like many other plants fortuitously introduced, obtain admission into the British Flora. E.)

**SOLIDAGO.**† *Recept. naked, pitted: Down hair-like: Florets of the circumference about five: Calyx, scales tiled, laid close.*

S. *virgau'rea.* (Stem serpentine, angular: leaves mostly sessile, partly serrated: flowers in crowded, downy panicles. E.)

Var. 1. Stem branched; leaves strongly serrated.


Var. 2. Stem branched; leaves indistinctly serrated.

*Fl. Dan. 663—Kniph. 7—Matth. 1006—Dod. 142. 1—Lob. Obs. 159. 1, and Loc. i. 298. 2—Ger. Em. 430. 1—Ger. 348. 1—Pet. 16. 9—H. Ox. vii. 23. 20.

From (six inches, E.) to four feet high. Lower leaves oval-spear-shaped, tapering into leaf-stalks, distantly serrated, but towards the point almost entire, rough, slightly hairy, dark green above, sea green underneath, with numerous reticulated veins; the upper alternate, nearly sessile, spear-shaped, entire, or nearly so. Flowering-branches axillary, the lower shorter, the upper longer than the leaves, with six to eight flowers on branched fruit-stalks. Flower-scales one or two on each fruit-stalk. Calyx, scales unequal, spear-shaped, with a green line along the back, and whitish, shining, membranous edges. Seeds brown, convex on one

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* Goats and horses eat it. Cows and swine refuse it. Sheep are not fond of it. Linn. May it not when growing in an inland situation, be depended on as a proof of the existence of salt springs? St. (It is not unfrequently gathered and sold for samphire, either by mistake, or from its being collected without hazard; but it is supposed not to possess the like detersive qualities. Called *Tripolium*, because, according to Dioscorides, the flower changes its colour thrice in one day; but no such phenomenon is observable in our climate. E.)

† (From *solidando vulnera*, on account of its reputed efficacy in healing wounds. E.)
side, flat on the other, hairy the whole length, nearly as long as the calyx. Woodw. Stem, leaves, calyx, and tubular parts of the florets thick set with very short, opaque, white, bristly hairs. Calyx within of a silvery white, the outer scales much shorter. Florets of the centre, segments reflexed: of the circumference six to eight, reflexed, with four or five faint longitudinal scores, and three or four teeth at the end. Blossom yellow.


Var. 3. Stem serpentine, unbranched; leaves spear-shaped; flowers in a spike-like terminating bunch. Mountains near Kendal. Mr. Gough.

Var. 4. Stem straight.

*Dill. Eth.* 306. 399.

(Three to seven inches high; stem straight, unbranched; leaf-stalks as long as the spear-shaped leaves. These plants are so variable in size, and other more proper characteristics; that it is most difficult to determine species and varieties. E.)


P. July.

**S. Lappon'ica.** Stem straight, unbranched: root-leaves egg-shaped, on bordered leaf-stalks: stem-leaves spear-shaped, sessile: flowers in a spike-like terminal cluster, axillary to the upper leaves.

* (The terminal wort, so frequently recurring in English compounds, is derived from the Saxon, being a general name for a herb in that language. E.)

† (The abundance of blossoms which this plant yields during the autumn affords a feast for bees when other flowers fail. Golden-rod, which will flourish in poor soil, should be cultivated near to every apiary. T. T. 1817.—Though Curculio Asteris, as its name bespeaks, is usually connected with the Chinese Aster, its larve will be found feeding on our present plant, to which it appears to be partial. Vid. Curt. Brit. Entom. vol. i. pl. 45.—It was formerly esteemed as a vulnerary, tonic, and diuretic, especially serviceable in calculous complaints. Vid. Med. and Phys. Journ. vol. 19. and a case in Gent. Mag. 1788. Notwithstanding, however, even Gerard’s authority and warm encomium, it has latterly fallen into comparative neglect. “In my practice,” says that author, “it shall be placed in the foremost rank;” and, alluding to the high price the herb bore as a foreign production, till discovered growing near London, the same honest writer very justly remarks, (what may well be applied to various other occasions), “which plainly setteth forth our inconstancy and sudden mutability, esteeming no longer of any thing (how pretious soever it he) than whilst it is strange and rare. This verifieth our English proverbe, ‘Forfetch and deere bought, is best for ladies;’ or rather for fantastical physitions. Thus much I have spoken, to bring these new fangled fellows backe againe to esteeme better of this admirable plant.”—Dr. Molyneux has the following remark, “Pulvis foliarum, aut florum, vel integre herbæ exsiccatæ, et in naris attractus, sternutationes fortissimè excitat.” But what will the modern beau think of the commentary of another physician, who says, “I look upon common snuffing to be the meanest way of debauchery; hurting the eyes and ears, and shocking the senses, stuffing the stomach and lungs,—and most practised by the most unpollite of men.”—Stirp. Hibern. E.)

I am indebted to Dr. Afzelius for the information that this Lapland plant had been found in Scotland, and I have now a specimen before me from the mountains of Westmoreland.

(On comparing the several kinds of *Solidago*, *S. Lapponica* seems still to maintain an independent character, and is remarkable for its unbranched stem, nearly straight, and root-leaves decidedly ovate or even orbicular, toothed, or bluntly crenate, and extending down the leaf-stalk, as we have endeavoured to represent in the annexed plate. E.)

*Cineraria.*

Recept. naked; Down hair-like; Calyx single, many-leaved, equal; (Seed quadrangular. E.)

*C. palustris.* Flowers in a corymb; leaves broad-spear-shaped, tooth-indented; stem woolly.


Stem one to three feet high, thick, hollow, angular, clammy, tomentose. Leaves varying extremely in form and manner of growth, clothed with the same woolliness as the stem, without order, sessile, or half embracing the stem, waved, sometimes barely toothed, those immediately beneath the corymb entire. Fruit-stalks branching, (tomentose. E.) Floral-leaves awl-shaped, one on each fruit-stalk. Calyx, scales nearly equal, spear-shaped, woolly, membranous at the edge. Blossom pale yellow. Florets of the circumference oval, veined, with two or three teeth at the end, or entire; four lines long, with a short narrow tube. Florets of the centre somewhat shorter. Anthers somewhat longer than the blossom. Style in the perfect longer than the stamens; in the fertile as long as the tube. Seeds small, (furrowed. E.) Down white, as long as the tube of the blossom; rays few. Woodw.

Marsh Flea-wort. Marshes in Lincolnshire. Fen-ditches about Marsh and Chatteris in the Isle of Ely; Caister near Yarmouth; about Pillin-moss, Lancashire; and Aberavon, Merionethshire. Ray. About Yarmouth, Norfolk. Mr. Woodward. (In Burton Moss, Westmoreland. Mr. Robson. Abundant by the turnpike-gate at Haddisco, Suffolk. Mr. Wigg. E.)

*Var. 2.* Leaves not jagged. R. Syn. 174. ñ. 3. Woodward.

*Lob. Ic.* i. 347. 1—*Ger. Em.* 484. 8—*Park.* 126. 4—*H. Ox.* vii. 19, row 2. 23—*Pet.* 16. 5.

*Var. 3.* Less woolly than var. 1. Stem slender, about eighteen inches high. Leaves strap-spear-shaped, toothed, the lower about four inches long, the upper two and a half to one and a half, and not more than one-fourth wide, not so numerous as in var. 1. Flowers smaller. Fructification similar.

Near Ramsay, Huntingdonshire. Mr. Woodward.

*C. integrifo'lia.* Flowers in a terminal umbel, with an involucrum at its base; root-leaves inversely egg-shaped, upper ones lanceolate; all woolly, obscurely toothed.

* (From *cineres*, ashes; descriptive of the grey colour of its downy or woolly leaves and stem. E.)

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SYNGENESIA. SUPERFLUA. INULA.


Root fibrous. Root-leaves on leaf-stalks, spatula-shaped, obscurely toothed, cottony underneath; stem-leaves sessile, spear-shaped, cottony. Stem three to six inches high, simple, cottony, angular. Flowers one to four, yellow. Flores of the circumference ten to fifteen; of the centre numerous, prominent. Calyx furrowed, the edges membranous. Seeds hairy. Down simple. Relh. The size of this plant varies much, as also the number of its flowers. I have before me a specimen two inches and a half high, with only two flowers, and another sent by Mr. Relhan, nine inches high, with an umbel of eight flowers. The fruit-stalk of the central flower but half the length of the others. (Remarkable for the white downy substance with which the leaves and stems, and in some measure the calyx, is covered. Hook. E.)


(Var. 2. Maritima. From one to two feet high, or more: all the leaves, especially those of the stem, larger and smoother than those of the above, radical leaves sometimes widely toothed.


INULA.* Receptacle naked: Down hair-like: Anthers with two bristles at the base of each.

I. HELLE’NIUM. Leaves embracing the stem, egg-shaped, wrinkled, cottony beneath: scales of the calyx egg-shaped, (leafy. E.)


Stem five or six feet high, branched towards the top, scored, cottony. Leaves, the lower on leaf-stalks, spear-shaped; the upper egg-spear-shaped, serrated or toothed, deep green, slightly hairy above, whitish green and thickly cottony underneath. Flowers very large, solitary, terminating the stem and branches. Calyx, the outer egg-spear-shaped, like the leaves; the inner bluntly egg-shaped, cottony. Blossom yellow. Flores of the circumference one to one inch and a half long, with three pointed teeth at the end. Down shorter than the florets. Woodw.

ELECAMpane. (Irish: Meacan Eclin. Welsh: Marchalan; Llwyglys. E.) Moist meadows and pastures. In Essex, frequent; about St. Ivé’s, Cornwall; Bugden, Huntingdonshire; between Denbigh and St. Asaph. Hudson: (and near the ruin and well at Wigfair, the seat of John Lloyd, * (For want of a more rational interpretation, supposed to be a corruption of Aēnō, as fabled to have sprung from the tears of Helen. E.)

I. Dysenter'ica. Leaves embracing the stem, heart-oblong, downy: stem woolly, forming a kind of panicle: scales of the calyx bristle-shaped.


Stem upright, twelve to eighteen inches high, E.) cylindrical, scored, cottony, branched towards the top. Leaves spear-shaped, obscurely toothed, arrow-shaped at the base, cottony on both sides. Flowers terminating the stem and branches, solitary. Calyx scales numerous, cottony. Blossom yellow. Florets of the circumference with three teeth at the end. Down as long as the tube of the blossom. Woodw.

A variety with very short rays has been described by Relhan, in Fl. Cantab. E.)


A. Aug.—Oct.

(I. Pulica'ria. E.) Upper-leaves embracing the stem, wavy, strap-spear-shaped, blunt: stem (very much branched, hairy: flowers hemispherical, those of the circumference very short. E.)


* The root is esteemed a good pectoral. Dr. Hill affirms, from his own experience, that an infusion of the fresh root, sweetened with honey, is an excellent medicine in the hooping cough. A decoction of the root cures sheep affected with the scab. Horses and goats eat it; cows, sheep and swine refuse it. (Mr. Rose has obtained a white substance from the concentrated juice of this plant much resembling starch, though neither exactly that nor gum, but a farinaceous powder holding a middle rank between the two.—It is cultivated for the sake of the root, which in Germany is used candied as a stomachic, and is gently stimulating, as Angelica; a decoction outwardly applied is said to cure Psora. E.)

† It has a peculiar scent, compared by some to that of soap. The Russian soldiers, in the Persian expedition under General Kelt, were much relieved from dysentery, by the use of this plant. Cows are not fond of it; goats and sheep refuse it. Linn. A horse eat it, but it is generally left untouched. St. (Cassida maculata is found on its leaves. E.)
**946 SYNGENESIA. SUPERFLUA. DORONICUM.**

*Stem* (about a span high, E.) cylindrical, scored, smooth, crooked, often tinged with purple, much branched. *Leaves*, the lower sessile; upper embracing the stem, spear-shaped, waved at the edge, slightly hairy and cottony. *Flowers* numerous, solitary. *Calyx* scales numerous, awl-shaped, woolly, the lower spreading. *Blossom* yellow. *Florets* of the circumference with three teeth at the end; often wanting. *Down* shorter than the florets; rays few. *Woodw.* (The general appearance and form of the *flowers* is the same in each species, and the *stems*, though frequently upright, are sometimes found trailing. *Fl. Brit.* E.)

**Small Elecampane.** *I. pulicaria, Linn.* *I. uliginosa, Sibth.* *I. cylindrica.* With. Hull. *Sym.* Road-sides, and where water has stagnated during the winter.

**I. crithmoides.** *Leaves* strap-shaped, fleshy, generally three-pointed: (calyx smooth. E.)

*E. Bot. 68—J. B. ii. a. 106. 3—Dod. 706. 1—Lob. Obs. 215. 1, and Ic. i. 393. 2—Ger. Em. 533. 3—Park. 1287—H. Ox. vii. 21. 16—Pet. 17. 9—Matth. 491—Ger. 427. 3.


**DORONICUM.†** *Receptacle* naked: *Down* hair-like: *Calyx* scales in two rows, equal, longer than the blossoms: *Seeds* of the circumference without down.

**D. pardalianches.‡** *Leaves* heart-shaped, blunt, finely toothed: root-leaves stalked; others embracing the stem; (both strongly veined beneath. E.)


*(Stem* erect, two or three feet high, rough with hairs, slightly viscid towards the top. *Flowers* terminal, solitary, large, yellow. *Scales* of the calyx

* (The young branches of this plant are frequently sold in the London market for samphire, but they have none of the warm aromatic taste of the true samphire, (Crithmum maritimum. E.)

† (So called from *Doronigi*, the Arabian name of the plant: and hence, as Mr. Phillips observes, its celebrity among those Nomadian tribes, (from whom the medical virtues of numerous plants have been made known in Europe,) may be inferred; or, as some imagine, from *7rapdoff*, a leopard, and *ce/xetv*, to strangle, or destroy: having been formerly used, mixed with flesh, to poison wild beasts: and expressive of the same practice, is the terminal to the English name of this and some other species, (as Wolf's-bane, Cow-bane, Flea-bane, &c.) derived from the Saxon. E.)

‡ (From *πατζες*, a leopard, and *πετρος*, a gift; and *νική*, victory; from its power of destroying. E.)
strap-shaped, sharp-pointed, hairy. Fl. Brit. Root tuberous at intervals, the tubers transversely striated, ovate, with fibres from each side; (Hook.) hence in general form resembling a scorpion, and thus Bauhin, "D. radice Scorpit." Lamarck. E.)


P. May—June.*

BELLIS.† Recept. naked, conical: Down none: Calyx hemispherical, with equal scales: Seed inversely egg-shaped.

B. perennis. (Fruit-stalk naked, radical: leaves obovate, crenate: root creeping. E.)


Stalk hairy, solid at the bottom, hollow upwards, sometimes with a few leaves. Relh. Leaves blunt, spread upon the ground. Florets in the centre yellow, those in the circumference notched at the end, white above, more or less empurpled beneath. (Receptacle hollow, conical. Few plants vary in size more than the Daisy according to the nature of the soil in which it grows; in poor land dwindling to little more than an inch in height, with a wiry stem; in rich mould rising to four or five inches in height, with all its parts proportionately expanded. These different appearances have induced some Botanists to describe varieties, or even new species, but which, on change of situation, have failed to maintain a permanent character. E.)

* (This plant can scarcely be deemed an aboriginal. The older authorities did not consider it indigenous, and though now occasionally found in an apparently wild state, it has merely in the course of time become naturalized. It had formerly a place in our gardens, the root being esteemed a valuable alexipharmic, but whatever may have been its virtues, its deleterious effects, when given incautiously, are unquestionable. Matthiolus records the instance of a dog being killed by it; and there is some reason to believe that the mortal career of the celebrated Conrad Gesner, the German Pliny, or as Boerhaave styles him, that "Monstrum Eruditionis," was prematurely closed by experimenting with this fatal herb. E.)

† (From bellus, pretty. E.)

‡ (Q. d. the eye of day, opening with the sun. Bairnowt in Yorkshire, probably from the delight which children take in gathering these flowers. E.)

§ The leaves are slightly acrid. The roots have a penetrating pungency. Horses, sheep, and cows refuse it. Linn. (Ludovici recommends it as an antiscorbutic. But, without insisting on its problematical virtues, this interesting little plant proves infinitely more attractive as La Belle Marguerite of the French, (perhaps so designated from its yearly aspect) the "Bonnie gem," of the Ayrshire ploughman; the "Wee, modest, crimson-tipped flower,"
Var. 2. Flower herbaceous, globular.

In Mr. Shelden’s copse near his house in Worcestershire. Ray.

to which the bard so feelingly compares his own hapless fate; and that description of
gowan, (for the Scotch seem to apply the term to several different flowers,) which,
though ever and anon about our path,

—“Lurks lowly unseen.”

Intimately interwoven with our earliest impressions, in that

“Sweet age of dear delusions,”) the Daisy becomes familiarly endeared; and ever continues far more alluring than the

gaudy show of many splendid beauties.

“By dimpled brook and fountain brim
The wood-nymphs, deck’d with Daisies trim,
Their merry wakes and pastimes keep.” Milton.

“The Daisy,” observes Mr. Phillips, “has been made the emblem of Innocence, because
it contributes more than any other flower to infantine amusement and the joys of child-
hood.”

—— “In the spring and play-time of the year,
That calls the unwonted villager abroad
With all her little ones, a sportive train,
To gather king-cups in the yellow mead,
And prink their hair with Daisies.” Cowper.

And thus Chaucer, in the fourteenth century:

—— “Of all the flowers in the mede,
Than love I most these flowers of white and red:
Such that men call Daisies in our town:
To them I have so great affection,
That I nam up, and walking in the mede
To see this flower ayent the sunne sprede,
When it upriseth early by the morrow,
That blissful sight softeneth my sorrow.
And when that it is eve I renne blithe,
As soone as ever the sunne ginneth west,
To see this flower, how it woll go to rest.”

Or in the more modern dialect of Leyden;

—— “Of the closing buds at eve,
Which for the parting sun-beams seemed to grieve,
And when gay morning gilt the dew-bright plain,
Seen them unclasp their folded leaves again.”

Shakspeare, Burns, and a tribe of inferior poets, have wreathed their chaplets with this
humble flower, and conferred additional interest on her enamelled meads; but none more
successfully than Montgomery, from whose beautiful little poem we regret our inability to
give more than one brief extract.

—— “Tis Flora’s page: in every place,
In every season, fresh and fair;
It opens with perennial grace,
And blossoms every where.
On waste and woodland, rock and plain,
Its humble buds unheeded rise,
The rose has but a summer’s reign,
The Daisy never dies.”

Nor has any inspired votary of the Muse exceeded either in elegant simplicity or genuine
CHRYSANTHEMUM.* Recept. naked, rather convex: Down none: Cal. hemispherical, tiled; scales with a dilated membranous border.

(1) Florets of the circumference white.

C. Leucan'themum. Leaves embracing the stem, oblong, serrated upwards, pinnatifid at the base; (radical ones obovate, stalked. E.)


Flowers large. Florets of the centre yellow; of the circumference white, spear-shaped, with mostly three teeth. Relh. Stem (one and a half to two feet high, E.) upright, scored, simple, or with few branches. Leaves

feeling the prose apostrophe of Miss Kent. "Who can see or hear the name of the Daisy, the common Field Daisy, without a thousand pleasurable associations! It is connected with the sports of childhood and with the pleasures of youth. We walk abroad to seek it; yet it is the very emblem of home. It is a favourite with man, woman, and child; it is the robin of flowers. Turn it all ways, and on every side you will find new beauty. You are attracted by the snowy white leaves" (petals) "contrasted by the golden tuft" (of tubular florets) "in the centre, as it rears its head above the green grass: pluck it, and you find it backed by a delicate star of green" (calyx), "and tipped with a blush colour, or a bright crimson.

"Daisys with their pinky lashes" are among the first darlings of Spring." Vid. "Flora Domestica." Phillips further states, "the Daisy not only closes its petals at night, but they are also carefully folded over the yellow disk in rainy weather;" (indeed so universally and so completely are they closed that acres which appear as covered with a white sheet during their expansion, are by the effect of a shower almost momentarily restored to their pristine verdure; E.) and justly remarks that "the power of thus securing the parts of fructification is almost peculiar to plants native of humid and fickle climates. (The use of the petals, which form a ray round these little yellow florets, is to secure them from the effects of inclement weather, until the pollen of the anthers is discharged on the stigmas so as to prepare seed for future plants, and when this part of the economy of nature is performed, the ray of the Daisy remains expanded, and does not "Shut when Titan goes to bed," but continues open until the petals decay."

"Daisies, ye flowers of lowly birth,
Embroiders of the carpet earth,
That stud the velvet sod,
Open to spring's refreshing air,
In sweetest smiling bloom declare
Your Maker and my God." Clare.

Transplanting to richer soil, and cultivation, (by transforming the yellow florets into petals so as entirely to exclude the disk), produces the Double Daisy, varying in colour from white to crimson. Hence also arises the very curious Proliferous, or Hen and Chickens Daisy, which exhibits a number of smaller flowers surrounding, but completely detached by their own stalks, from the principal central one. They are sometimes used as an edging to borders, but are subject to partial decay from drought and too much exposure to a hot sun. The common Daisy is a troublesome interloper on the mowed lawn; on smaller grass plots it might perhaps be advantageously saltine. Vid. Carduus. E.)

* (From ἀκρός, gold, and ἀκώς, a flower; descriptive of its large yellow blossoms. E.)
the upper sometimes embracing the stem, oblong-wedge-shaped or spear-shaped, serrated, sometimes toothed, and even wing-cleft at the base. **Flower** one, terminal. **Calyx**, scales spear-shaped, unequal. **Florets** of the circumference sometimes entire. Woodw. **Calyx**, outer scales green, edged with brown, the inner with a membranous border.


**C. SEGETUM.** Leaves embracing the stem, jagged upwards, tooth-serrated towards the base, (glauous. E.)

**Dicks. H. S.—(E. Bot. 540. E.)—Fl. Dan. 995—Clus. i. 334. 2—Dod. 263. 1—Lob. Obs. 298. 2, and Lc. i. 552. 1—Ger. Em. 743. 1—Park. 1370. 1—H. Or. vi. 4, row 2. 1—Pet. 19. 6—Trag. 144. 2—Lonic. i. 89. 1.

**Stem** upright, scored, smooth, branched, (one to two feet high. E.) **Leaves** sea-green, varying in figure, wedge-strap or spear-shaped, distantly serrated towards the base, usually deeply toothed or jagged, with frequently three clefts at the end, (terminated by a little projecting point. **Flowers** very large, yellow, E.) terminal. **Calyx**, scales oval, blunt, sea-green, with membranous edges. **Florets** of the circumference oval, about half an inch long. **Seeds** slightly serrated, whitish. Woodw. **Whole plant** smooth. **Summits** in the fertile flowers frequently three.


**PYRETHRUM.** † **Recept. naked: Seed** crowned with a border: **Calyx** hemispherical, tiled; scales somewhat acute, membranous at the edges. E.)

* The young leaves may be eaten in salads. Horses, sheep, and goats eat it. Cows and swine refuse it. (Livia Leucanthemi frequents this species. Geoffroy reports that this plant, gathered before it blossoms, and boiled in water, imparts an acid taste, penetrating and subtle like pepper; and that this decoction is an excellent vulnerary and diuretic. By agriculturists it is considered a troublesome weed, only to be extirpated from dry pastures by converting the land into tillage for several years. Sinclair. E.)

† An extremely troublesome weed in the Norfolk turnip-fields in a sandy soil. It was imported into Sweden along with corn from Jutland, about the end of the sixteenth century. In Denmark there is a law to oblige farmers to root it up from their corn-fields; (and Threlkeld states, (1727,) that in Britain, “Mannour-courts do amerce careless tenants, who do not weed it out before it comes to seed:” a laudable practice, worthy of being maintained, (as the laws of the Medes and Persians,) in perpetuo, and equally applicable to other palpable negligences, according to the quod damnum. E.) It may be destroyed by manuring the ground in autumn, followed by a summer fallow, and harrowing the land about five days after sowing the grain. Its yellow flowers, however, which follow the sun in a very remarkable manner, give a brilliancy to the fields in tillage, and please the eye of the passing traveller. Linn. A large quantity, which grew on some arable land, was cut when in flower, dried, and eaten by horses as a substitute for hay. Hollefear. It is used by the Germans for dying yellow. (It is most effectually eradicated by hand. E.)

‡ (An ancient Greek name, originally designating an herb still more pungently hot or fiery, according to a literal interpretation, than the present species. E.)
P. parthiunium. Leaves stalked, compound, flat; leaflets egg-shaped, cut; fruit-stalks branched: (flower-stalks corymbose; stem erect. E.)


This obscure plant is readily distinguishable from Anthemis Cotula, which it very much resembles, as also A. arvensis, by the want of chaff on the receptacle; and from Matricaria Chamomilla by its flattish calyx; its scales brown and uneven at the edge; its receptacle hemispherical, not conical; the rays of the blossom expanding, not bent down, and its flowers being thrice as large. Linn. Stem much branched, smooth, scored, sometimes purplish. Leaves, wings distant, twice or thrice divided, the extreme segments thread-shaped, mid-rib broad, membranous, and somewhat embracing the stem at the base, narrowing upwards. Flowers large, terminal, (upon long, naked, peduncles. E.) Florets of the circumference nearly strap-shaped, eight to nine lines long; of the centre, greenish at the base, yellow above; segments spear-shaped, expanding. Receptacle conical. Seeds brown, lopped at each end, with four whitish prominent angles. Woodw. (Calyx-scales smooth, and, compared with those of a Chrysanthemum, rather acute, as wanting the dilatation, or appendage characteristic of that genus, and having a narrow membranous border along the whole margin. The membranous crown of the seed, however, stamps the genus. Sm. E.) Florets of the circumference twenty or more; those in

* The whole herb has a strong smell and a bitter taste, and yields an essential oil by distillation. A horse refused it. St. (Simon Pauli relates wonders of its efficacy in hysteria; and Geoffroy adds, "all that bitters and carminatives can do may be expected from this." Modern practitioners, in England at least, have considered its virtues scarcely equal to those of Chamomile: but, perhaps, these contradictory accounts may, in some degree, be reconciled by the consideration of climate affecting the plant, if not the patient and the disorder. Several varieties, as the double, fistular, curled-leaved, &c. are found in gardens. E.)
the centre very numerous. (The genera of *Chrysanthemum*, *Pyrethrum*, and *Matricaria*, border very closely upon each other. To the present plant the words "squamae acutiusculae" of the calyx do not apply, for they are decidedly obtuse. This plant, though called *inodorum*, in opposition to the strong and disagreeable smell of its congeneris, is nevertheless not altogether scentless. (Hook. E.)


Var. 2. *Maritimum*. Outer scales of the calyx with finger-like divisions; inner ones fringed at the edge.

Only about four inches high, but, in other respects agreeing with the preceding.

On the beach at Weymouth.

*P. maritimum*. Receptacles hemispherical: leaves doubly winged, sessile, somewhat fleshy, convex above, keeled underneath: (crown of the seeds lobed: stems spreading. E.)

(E. Bot. 979. E.)—Ray 7. 1, at p. 188.

Root woody, running deep, perennial. *Stems* (six to twelve inches high, E.) reclining, darkish purple, smooth, firmer and stronger than those of *Anthemis nobilis*, and forming a fuller turf, but not creeping or spreading so wide. *Leaves* thicker and shorter, shining, dark green. *Flowers* (much smaller than those of *P. inodorum*, and the ray shorter in proportion, Hook. E.) several on a stem. Dill. in R. Syn. 186. *Florets* in the centre yellow; those of the circumference white. (Calyx smooth, with scales very thin and blackish at the edge. *Seeds* furnished with a three or four-cleft membranous border. *Plant* slightly aromatic. E.)


**MATRICARIA.** *Recept.* naked, nearly cylindrical: *Down* none: *Cal.* nearly flat, tiled; scales membranous at the edges.

**M. chamomilla.** (Leaves smooth, pinnate: leaves strap-shaped, simple or divided: rays expanding: calyx scales dilated, rather blunt. E.)


* (From its supposed efficacy in disorders of the *matrix*. E.)
**SYNGENESIA. SUPERFLUA. ANTHEMIS.**

Stem scored, branched, (about a foot high. E.) *Leaves* doubly winged, the upper often simply winged; wings distant; little wings with two or three clefts; leaflets strap-shaped, of an equal breadth with the mid-rib. *Flowers* solitary, terminal. *Calyx*, scales bluntly spear-shaped, hairy, membranous at the edge, with a green line along the back. *Florets* of the circumference white, nearly strap-shaped, at first expanding, afterwards bent back; those of the centre yellow. *Receptacle* almost cylindrical, dotted. Woodw. (In scent resembling the Officinal Chamomile. E.)


(The plant hitherto supposed to be *M. suaveolens* of Linnaeus proves not to be so: the real one, according to Smith, having flowers only half the size of those of *M. chamomilla*, and never having been found in these countries. E.)

**ANTHEMIS.†** *Recept.* chaffy: *Down* none: *Calyx* hemispherical, scales nearly equal: *Florets* of the circumference more than five.

(1) *(Florets of the circumference white. E.)*

**A. ARVENsis.** *Receptacle* conical; (scales lanceolate, acute, keeled, projecting: *leaves* bi-pinnatifid, hairy: seeds crowned with a quadrangular border. E.)

(E. *Bot.* 602—Fl. Dan. 1178. E.)—Kniph. 11—Tabern. 70. 1—Pet. 19. 8. *Plant* hoary. *Stems* spreading. It has the habit and size of *A. Cotula*, but the stems spread more, the fruit-stalks are longer, less scored, the grooves being only four or five; in *A. Cotula* about eight. *The leaves* are more grey and scentless. The inner scales of the *calyx* are broad and membranous at the end, not so in *A. Cotula*. *Chaff* spear-shaped, in the other slender as a bristle; apex of the seed crowned with a four-sided border as in *Matricaria Chamomilla*; in *A. Cotula* the seed has no such crown. Linn. *Stem* (twelve to eighteen inches high, E.) branched immediately above the root, scored, slightly hairy, pale green, with sometimes a tinge of red. *Branches* generally naked upwards. *Flowers* terminal. *Fruit-stalks* hairy, and somewhat thicker beneath the *calyx*. *Calyx*, scales oval, with an awl-shaped green line along the back, somewhat hairy; edges membranous. *Florets* of the circumference white, somewhat elliptical, with two or three teeth, four or five lines long: those of the centre with a greenish tube, swelling upwards, border yellow, bent back. *Chaff* spear-shaped, very much pointed, somewhat keeled, as long as the florets. Woodw. *Leaves* (with parallel segments, E.) terminated by semitransparent, conical, sharp points. *(Plant nearly scentless; flowers slightly fragrant. E.)*


* Its properties resemble those of *Anthemis nobilis*, the Official Chamomile. The Finlanders use an infusion of it in consumptive cases. Cows, goats, and sheep eat it. Horses are not fond of it. Swine refuse it. *(The larvae of *Cassida viridis* are nourished by it. E.)*

† *(From ανθη, or ανθην, a flower; as having a profusion of blossoms. E.)*

Var. 2. Double-flowered. All the florets narrow.


A. *cot'ula.* Receptacles conical: scales bristle-shaped: seeds without any border: (leaves bi-pinnatifid, slightly hairy. E.)


Fruit-stalks with about eight scores. Calyx, scales by no means widening towards the point, and scarcely membranous. Chaff very minute, like a fine bristle. Seeds not crowned with the four-cornered edge, but terminated by a simple pore. Linn. Plant palish green. Stem slightly downy, (twelve to eighteen inches high. E.) Legfis often cloven towards the end. Petals hanging down, and continuing in that state till morning. Curt. Outer florets white, tri-dentate; central florets yellow. 

**Fetid Chamomile or Mayweed.** (Mather. Irish: *Finel Moidiur.* Welsh: *Camri y cum.* E.) Corn-fields, road sides and waste ground. A. May—Aug.*

Var. 2. Double-flowered. All the florets narrow.

*Cotula foetida, flore pleno.* R. Syn. Fields between Hitchin and the Bald Oak, in the Isle of Thanet, and between Gillingham and Chatham. Ray.

A. *nob'ilis.* Leaves doubly pinnate, strap-shaped, acute, somewhat downy: (scales of the receptacle membranous, obtuse, not exceeding the florets. E.)


Stems trailing, hairy, (about a foot long. E.) Leaves doubly winged; wings rather distant; little wings sometimes with two or three clefts, pointed, hairy, greyish. Flowers solitary. Calyx hairy, with broad,

* Toads are said to be partial to this plant. It is very ungrateful and displeasing to bees. Goats and sheep are not fond of it. Horses, cows, and swine refuse it. Linn. It frequently blisters the skin of reapers and of children who happen to gather it; (the acri-mony is occasioned by an exudation from minute glands perceptible with a microscope. E.) The heads, rubbed between the fingers, smell disagreeably. (It is a strong and active bitter: a decoction given in the dose of a tea-cup full, will produce copious vomiting and perspiration; and powerfully promotes the action of an emetic. Its reputed efficacy in rheumatism is owing to its sudorific effect. A weak infusion nauseates the stomach, and produces a determination to the skin. Barton's Mat. Med. U. S. Similar effects have been reported by Langrish. It is one of the troublesome weeds which over-run corn-fields, and ought to be extirpated by more diligent husbandry. E.)
shining, membranous edges. Florets of the circumference somewhat elliptical, either entire, or with two or three teeth; those of the centre yellow. Woodw.


Var. 2. Nudum. Florets of the circumference wanting.

Dod. 260. 2—Lob. Obs. 446. 1, and Lc. i. 771. 2—Ger. Em. 754. 2—Park. 86. 2—J. B. iii. a. 119. 2—H. Ox. vi. 12. 3—Ger. 615. 2.

Chamaemelum luteum capitulo aphyllo. R. Syn. 185.

(Like the other species of this genus, it is sometimes observed with double flowers. E.)

A. marit’ima. Leaves winged, bipinnatifid, acute, somewhat hairy, fleshy, dotted: stem prostrate: calyx rather tomentose: (scales of the receptacle prominent, sharp-pointed. Sm. E.)

Kniph. 10—(E. Bot. 2370. E.)—J. B. iii. a. 122. 1—Till. Pis. 19. 3.

Stems (a span long, E.) widely prostrate, smooth, purplish. Leaves winged, cut, naked, sprinkled with hollow dots, more closely toothed towards the base, with a purplish, elevated, transverse line beneath the base. Fruit-stalks terminal, solitary, somewhat scored, downy, thicker above. Linn. Florets in the centre yellow, (forming a flattish dish. Seeds membranous at the edge. Smith observes that the scales of the receptacle distinguish it at once from Pyrethrum maritimum, not to mention the hoariness of the herbage. E.)


* The leaves and flowers have a strong, not ungrateful, aromatic smell, and a bitter nauseous taste, probably arising from an essential oil. An infusion of the flowers is often used as a stomachic, and antispasmodic. In large quantities, it excites vomiting. The powdered flowers, in large doses, have cured agues, even when the bark had failed. Both the leaves and flowers possess very considerable antiseptic properties, and are therefore used in such fomentations and poultices. From their antispasmodic powers, they are frequently found to relieve pain, either applied externally, or taken internally. Ray recommends the flowers in calculous cases. (The single wild flowers are more efficacious than the double ones cultivated in gardens. Chamomile, (which may easily be propagated by slips planted about a foot apart from each other,) was formerly used as a cover for walks, odoriferous to the tread, which, when mowed and rolled, looked well for some time, but, being subject to decay in large patches, they have been abandoned as unsightly. E.)
SYNGENESIA. SUPERFLUA. ACHILLEA.

(2) (Flowers entirely yellow. E.)

A. tincto'ria. Leaves bipinnatifid, serrated, downy beneath: stem corymbose erect: seeds crowned with a membranous undivided border. Sm. E.)


Stem (twelve to twenty inches high, E.) scored, slightly hairy, much branched. Leaves, the lower winged; wings spear-shaped, toothed, slightly hairy and green above, sea-green underneath; lower wings short, distant, toothed; upper wings wing-cleft; mid-rib broader than the wings; upper leaves wing-cleft; mid-rib broad, toothed; wings irregular, strap-spear-shaped, toothed; uppermost leaves sometimes simply toothed. Fruit-stalks long, naked, scored, slightly hairy, terminating the stem and branches, each with one flower. Calyx tiled; scales numerous, the outer of various lengths, spear-shaped, hairy, with a green line along the back, white and shining at the edge. Florets of the circumference broad, with three teeth. Woodw. Calyx hollowed on the underside round the fruit-stalks, downy. (Blossom entirely yellow, more than an inch over. E.)

OX-EYE CHAMOMILE. (Yellow Ox-eye. E.) Sunny pasture, but not common. On a bank near the river Tees, not far from Stogburn, Durham. Ray. Mr. Robson informs me it is not now to be found there. (Mr. Dickson has more recently gathered it in Essex; and Mr. G. Don, near Forfar. E. Bot. Sunderland Ballast Hills. Mr. Weighell. A single plant found by the road side near St. Anthony’s colliery, Durham, by Mr. Callender. Bot. Guide. E.) P. July—Aug.*

ACHILLE'A.† Recept. chaffy: Down none: Calyx egg-shaped, tiled: strap-shaped florets five to ten, somewhat heart-shaped.

A. ptar'mica. Leaves strap-spear-shaped, embracing the stem, finely serrated, smooth.


(Root creeping. Stem erect, one to two feet high, smooth. Leaves smooth, undivided. Flowers about half an inch in diameter, in a flattish terminal corymb; the rays short, truncate, white as is also the disk. Grev. Serratures of the leaves terminated by whitish bristly teeth. E.)

* The flowers afford a remarkably clear and good yellow dye. Those of Chrysanthemum segetum resemble them much in appearance, but experience proves they will not answer the same purpose. Horses and goats eat it. Sheep are not fond of it. Cows and swine refuse it.

† (From Achilles, reported to have studied plants under Chiron, and to have extracted vulnerary virtues from this herb. E.)

Var. 2. Fl. plena. Flowers double.

Clus. ii. 12. 2—Ger. Em. 606. 2.

Leaves truly spear-shaped, serratures deeper, as in the figures of H. Ox. Dod., &c. Woodw. All the florets except a few in the very centre, strap-shaped.

Small Holme Island in Winandermere, and at Chilmark, Wiltshire. Ray. At Ripton; found by Mr. J. Whitelocke, nurseryman at Fulham. Mr. Woodward.

(Achillea serrata. Retz. Willd.

E. Bot. 2531.

In foliage scarcely differing from A. Ptarmica, and in the flowers chiefly by the somewhat reduced size of the florets of the circumference. The character of serrated seems to apply equally to both.

Gathered near Matlock. E. Bot. E.)

A. MILLEFO’LIUM. (Leaves doubly winged, hairy: segments of the wings strap-shaped, toothed, pointed: stem furrowed. E.)

(E. Bot. 758. E.)—Kniph. 5 and 7—Ludw. 67—Fl. Dan. 737—Woodw. 64—Anders—Blackw. 18—Chus. i. 331—Dod. 100. 2—Lob. Obs. 431. 1, and Ic. i. 747. 2—Ger. Em. 1072. 2—II. Ox. vi. 11. 14—Pet. 19. 4—Ger. 914. 2—Lonic. i. 240. 1—Gars. 388—Ger. 914. 1—Fuchs. 727—J. B. iii. a. 136—Trag. 477—Matth. 1142—Dod. 100. 1—Lob. Obs. 430. 2, and Ic. i. 747. 1—Ger. Em. 1072. 1—Park. 694. 1—H. Ox. vi. 11. 6—Matth. 1141.

(Root creeping, putting forth runners. Flowers crowded together, small. Disk convex. Fl. Brit. E.) Stem angular, downy, (a foot high. E.) Fruit-stalks downy. Leaves (more or less downy, particularly underneath, E.) segments mucronate. Flowers in a corymb. Blossom white, reddish, or even purple. Calyx scales downy, membranous at the edges. Florets of the circumference five; border nearly circular, slightly cloven into three; those of the centre fifteen or more, but not more than four or five expanding at once.


* The roots have a pungent biting taste, (and when chewed occasion a copious discharge of saliva, thereby relieving tooth ach. They are often sold in the shops for the Pellitory of Spain. E.) The young tops are sharp and pleasant in spring salads. The powdered leaves excite sneezing, (supposed partly to be occasioned by the mechanical action of the spicula. E.) Horses, cows, sheep, goats, and swine eat it. (The double variety, sometimes called Batchelors’ Buttons, is considered ornamental in gardens, but it should be admitted with caution, the creeping roots extending more rapidly than may be desirable. E.)

† The flowers yield an essential oil. The leaves (and flowering heads, E.) are celebrated by the Materia Medica writers (as stimulant and stomachic in infusion, E.) but little attended to at present. (The leaf loosely rolled together, and put up the nostrils, causes, by an external blow of the finger, a bleeding at the nose, more or less copious, according to the state of the vessels within; whence the vulgar name Nose-bled. E.) Sheep and swine eat it. Horses, cows, and goats are not fond of it. (Though the pro-
SYNGENESIA. FRUSTRANEA. CENTAUREA.


Foliage less cut and more woolly than Common Yarrow. Flowers golden yellow, their stalks woolly. Aromatic when rubbed.

WOOLLY YELLOW MILFOIL or YARROW. A. tomentosa. Linn. Millefolium luteum. Ger. Em. On hilly pastures in the west of Scotland (discovered, according to Hooker, by Mr. Hugh Ross, on Spittle Hill, northwest of Balvie, Dumbartonshire; and on hills near Paisley. Mr. Hopkins, also grows in Ireland. E.) E. Bot. P. Aug. E.*

FRUSTRANEA.

CENTAUREA.† Recept. bristly: Down feathery or hair-like: Florets of the circumference tubular, irregular, longer than those of the disk.

(1) Scales of the calyx serrated with fringe.

C. cyanus. Calyx scales serrated: leaves strap-shaped, very entire; the lower ones toothed.


Stem one to two feet high, angular, firm, slightly cottony, branched upwards. Leaves numerous, whitish and cottony underneath, with three parallel ribs. Branches single-flowered. Calyx, scales spear-shaped, the outer green, tinged with purple, cottony, sharply serrated; serratures smooth, membranous, purplish without, white within, sometimes white on both sides; the inner entire. Florets of the circumference, segments spear-shaped, pointed; those of the centre, segments rather shorter than the anthers. Down short, hair-like. Woodw. Filaments surrounded just below the anthers with a fringe of silvery glandular hairs. Anthers almost black, horny at the top. Style a little hairy just beneath the summit. Summit cloven. Blossom generally a fine bright blue, sometimes white, or beautiful purple.

ductive and nutrient properties of Yarrow are inferior to those of other plants equally adapted to light soils, Mr. Sinclair considers it an indispensable ingredient of the most fattening and healthy pastures, in which he suspects it may not be destitute of sanitative effects. We are assured by W. P. Taunton, Esq. in Hort. Gram. that the prevalence of this plant indicates a siliceous soil. It is sometimes used in the north of Europe as a substitute for hops, and also supposed to increase the inebriating quality of malt liquor. E.)

* (It serves to decorate rock-work in gardens, but will not bear wet or shade. Sm. E.)
† (From the CENTAUR, Chiron, who is said to have established the reputation of this herb as a vulnerary. E.)

(C. Ja'cea. Calyx-scales membranous, torn, lower ones pinnatifid; leaves strap-spear-shaped; radical ones broader, toothed.

E. Bot. 1678—Fl. Dan. 519.

Lower-leaves obovato-lanceolate, petiolate, toothed; upper ones entire, sessile. Scales of the involucre (calyx) pale brown, shining; the outer ones deeply pinnatifid; the inner or uppermost torn, in which respect it differs greatly from C. nigra. Hook. Radiant florets numerous, large, light crimson, spreading; those of the disk much shorter, rather darker. Seeds to the latter only, inversely conical, crowned with a simple row of very short black bristles. Sm.

Brown Knapweed. Moist meadows and groves. Sent from Ireland in 1796 by Mr. Templeton. In Sussex. Mr. Borrer. In a plantation at Newbigging Muir, near Belmont castle 1811. Mr. Young. Invercarrity

* The expressed juice of the petals makes a good blue ink; it stains linen of a beautiful blue, but the colour is not permanent in the mode it has hitherto been applied. Mr. Boyle says, the juice of the central florets, with the addition of a very small quantity of alum, makes a lasting transparent blue, not inferior to ultramarine. Gent. Mag. 1748.

Cows, goats, and sheep eat it. Horses and swine refuse it. (Varieties of divers colours are often introduced as hardy annuals into flower gardens. Assuredly the imaginative powers of female intellect are never more amably or more successfully employed, than in illustrating the beauties of nature. With how much truth and elegance does the authoress of "Flora Domestica" depict our present species. "The beauty of flowers does not lie wholly in their vivid colours and bright contrasts; observe the Corn-flower,—what a beautiful crown of sky-blue florets! every floret a fairy vase, in the depth of which nature prepares sweet nectar for the butterfly and the bee! But when these have disappeared, there is beauty also in the winged children they have left, rocking each other in its green cradle. In some of the species, these winged offspring are peculiarily beautiful; they seem like fairies' shuttlecocks, elegantly variegated at the base, and set with the most delicate feathers of a jet black; so delicate are these feathers, that to the unassisted eye they show like hairs. Then examine how the pistil is affixed to its centre; how one minute groove is fitted to another, with a nicety of mechanism, so finished, so beautiful! What human hand could form one seed like this?—this little seed, which, in its minute and exquisite perfection, is scattered abroad by thousands, unnoticed and unseen!" Our plant was named *Cyanus* after a youthful devotee of Flora, whose chief occupation seems to have been loitering in the fields and weaving garlands with this and other corn-flowers; perchance, occasionally permitting a truant thought to wander into a tender vein, though never inspiring sweeter lays than those of the English Improvisatrice.

"There is a flower, a purple flower, Sown by the wind, nursed by the shower, O'er which Love has breathed a powerful spell. The truth of whispering hope to tell. * * * * * * Now, gentle flower, I pray thee tell, If my lover loves me, and loves me well; So may the fall of the morning dew Keep the sun from fading thy tender blue."

As an agriculturist, alluding to the gay Blue-bottle, Corn Poppy, May-weed, and Corn Marigold, beautiful but troublesome plants, Holdich justly remarks, in his Essay on Weeds, "The above class, with their gaudy colours, like heralds of spring and summer, proclaim bad farming to the landlord, the tenant, and the passenger; and announce the neglect of using clean seed-corn, judicious manuring, fallowing, the row culture, and horse-hoe husbandry." E.)
960 SYNGENESIA. FRUSTRANEÀ. CENTAUREA.


C. NIGRA. Calyx scales egg-shaped, fringe hair-like, upright; lower leaves lyrate, angular; upper ones ovate, nearly entire.

Var. 1. Flowers without rays.

Var. 2. Double. Florets all radiate.

Resembling C. Jacea, but without neutral florets in the circumference.

Leaves wing-cleft or toothed, sometimes entire, spear-shaped, sessile, more or less cottony. Calyx, outer scale spear-shaped, dark purple, almost black, with a long fringe, hairy; the middle ones yellow, strap-shaped below, spear-shaped and fringed at the end; the inner whitish, smooth, shining, strap-shaped, terminated by a broad, roundish, purple, little scale, convex without, concave within, ragged, not fringed. Florets all alike. Tube whitish, long. Border purple, longer than the anthers. Style shorter than the anthers, with a downy ring beneath the summit. Summit slightly cloven. Woodw. Upper leaves either egg or strap-shaped, sometimes entire.

Var. 2. Double. Florets all radiate.

This variety is common in Wiltshire, as I learn from Mr. Norris; and Mr. Stackhouse informs me that it is more frequent in Cornwall, and the west of England, than the sort without rays. It has sometimes been mistaken for C. Jacea, but in that the scales of the calyx are thin, membranous, or scariose, and ragged at the edges, not with a regular fringe of stiff black bristles as in this.

Outer florets purple, radiating, divided nearly half way down into five equal strap-shaped segments, without stamens or pistils. Other radiating florets exactly resembling these, but furnished with stamens and pistils. Central florets white; anthers and stamens purple. Stem fluted, cottony. Lower leaves spear-shaped, toothed, somewhat hairy; upper leaves strap-shaped, very entire.


C. SCABIOSA. (Calyx scales ovate, fringed, somewhat downy; leaves wing-cleft: segments spear-shaped, rather hairy, slightly toothed. E.)

E. Bot. 56—Matth. 969—J. B. iii. a. 32. 2—Ger. 588. 2, and 583. 5—(Pet. 22. 7. E.)

* (The herb steeped in alum water, before the flowers expand, dyes a fine yellow. Linn. E.)

† (A decoction of the hard heads of this plant have afforded at least a temporary relief in cases of diabetes, by diminishing the morbid secretion, and destroying its sweetness; but for a remedy for this cruel disease more worthy the attention of the faculty, vid. Withering's Memoirs and Tracts, vol. ii. p. 490. E.)
Root-leaves winged, on long leaf-stalks, with a winged mid-rib; wings egg-shaped, toothed, frequently with wing-cleft appendages at the base, the terminal one very large, confluent with the next pair; stem-leaves wing-cleft; segments spear-shaped, mostly entire. Flowers single, terminal. Calyx globose, (reflexed after the seeds are blown away, and rendered conspicuous by the shining silvery hue of its inside; Sm. E.) scales closely tiled, in several rows, egg-shaped, green, nearly smooth, fringed, tip and edged with black. Flores tubular: those of the circumference without stamens or pistils, reddish purple, scored; segments four, sometimes five. Style, pale below, purplish upwards, with a downy ring beneath the cloven summit. Seeds oval, brown, compressed, shining; viewed with a glass slightly hairy. Down yellowish, bristly, as long as the seed. Woodw. Stem nearly cylindrical, scored, (two or three feet high. E.) Flores of the centre marked on the outside with five dark purple lines, the tube and distended border filled with a honey-like liquor. Filaments peculiarly irritable. Herbage gives out a bitter, glutinous exudation. E.)

Greater Knapweed. Matfellon. (Welsh: Crammenog fwyaf. E.)
Borders of corn-fields.

(2) Calyx spinous; thorns compound.

C. CALCIT'RAPA. (Flowers lateral, sessile; calyx doubly spinous; leaves pinnatifid, toothed; stem hairy, widely spreading. E.)


A. July—Aug.*

C. SOLSTITIALIS. Flowers terminal, solitary: calyx doubly spinous; stem winged from the decurrent, thornless, spear-shaped, leaves: root-leaves lyrate.

Root fibrous. Stem two feet high, branched, spreading. Root-leaves lyrate-shaped, tapering: lateral segments spear-shaped, toothed, the terminal

* (A troublesome weed to the agriculturist in certain districts, and only to be eradicated by breaking up the ground so infested. E.)

2 b 2
one winged, triangular, halberd-shaped: *stem* and *branch-leaves* very entire, short, waved, sprinkled with a white cobweb-like wool. *Flowers* terminal, solitary. *Fruit-stalks* very long, leafy. *Calyx* egg-shaped, without any leaf at the base: scales white, those which surround the base longest, only toothed at the base, with hand-shaped, short, and nearly equal thorns, the rest with awl-shaped thorns as long as the calyx, and armed on each side with lesser thorns. *Blossoms* yellow. *Linn.* (Herb very bitter, slightly viscid. E.)

**St. Barnaby’s Thistle. Yellow Star-thistle or Knapweed.** (Both the Latin and English trivial names are supposed to allude to the season of flowering, though not peculiarly appropriate to this species. E.) Corn-fields and hedges. Not far from Cirencester, Gloucestershire; and Northfleet, Kent. In a field at Arminghall, near Norwich. Mr. Crowe. *Linn. Tr. ii. 236.* (Near St. Edmund’s hill, Bury. *Rev. Dr. Webb. Eng. Fl.* Near Dartford. Mr. W. Peete. E.) A. July—Aug.

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**NECESSARIA.**

**CALENDULA.**

*Recept.* naked: *Down none:* *Calyx* of many nearly equal leaves: *Seeds* membranous.

C. *ARVENsis.* *Seeds* boat-shaped, prickly; the innermost crowded together, incurved: the outermost upright, caudate.

*H. Ox. vi. 4. 6—Tabern. 713—Ger. 603—J. B. iii. 103.*

Nearly allied to *C. officinalis.* *Leaves* somewhat toothed, but heart-spear-shaped, not spatula-shaped. *Linn.* (Stem leafy, three to five inches high. E.) *Leaves,* the upper ones heart-shaped, lower ones strap-egg-shaped, all of them embracing the stem. *Flowers* yellow, not near so large, nor of so deep a colour as those of *C. officinalis,* (whose seeds are all incurved. E.)

**Field Marigold.** On Ballast Hill, Sunderland. Mr. Robson. On the shores of the harbour at Falmouth. (On the Den at Teignmouth. B. Botfield, Esq.) A. June—Sept. E.)

* (From *Calendula,* the first of every month; descriptive of its almost perpetual inflorescence during every month in the year. E.)

† (The *Mary-baide that shutteth with the light,* was formerly held in repute as a cordial; and according to an established authority, “no brothes are well made without dried Marigolds,”

“Fair is the Marigold for pottage meet.” *Gay.*

For which purpose, especially in Holland, the petals are picked, kept dried in casks, and sold in the shops. The English house-wives were likewise wont to reserve a corner of the garden for this herb. Why poets have almost invariably connected the plant with melancholy associations is not very obvious; but so it is:

“As emblem of my heart’s sad grief,
Of flowers, the Marigold is chief.”

Various others, especially of the Syngenesia Class, follow the example of

“*The Marigold,* that goes to bed with the sun,
And with him rises weeping:”
or, as the same habit is still more elegantly expressed,

"The flower enamoured of the sun,
   At his departure hangs her head and weeps,
   And shrouds her sweetness up, and keeps
   Sad vigils like a cloistered nun,
   Till his reviving ray appears,
   Waking her beauty as he dries her tears."

Lines scarcely surpassed by Shakspeare himself:

"Her eyes like Marigolds had sheathed their light,
   And canopied in darkness sweetly lay,
   Till they might open to adorn the day."

From the habit above noticed this flower has obtained the designation of Solis-sponsa, Spouse of the Sun; and, perhaps, with at least as much propriety as

"The proud giant of the garden race;"

which, if equally susceptible, is prevented the like manifestation by a peculiar rigidity, and which sustains its usual appellation merely from the resemblance of its expanded flower to the great luminary. The Marygold and Sun-flower have, at different periods, reciprocally interchanged names, which will account, in some little degree, for the discrepancy of certain poetical descriptions. The loyal and orthodox George Wither, of the sixteenth century, whose fair boast it was,

"That from every thing he saw
   He could some invention draw,"

thus improves our subject.

"When with a serious musing I behold
   The grateful and obsequious Marygold,
   How duly, every morning, she displays
   Her open breast, when Titan spreads his rays;
   How she observes him, in his daily walk,
   Still bending to'v'rd's him her smell slender stalk;
   How, when he down declines, she droops and mourns,
   Bedewed, as 'twere with tears, till he returns;
   And how she veils her flowers when he is gone,
   As if she scorned to be looked on
   By an inferior eye; or did contemn
   To wait upon a meaner light than him:
   When this I meditate, methinks the flowers
   Have spirits far more generous than ours,
   And give us fair examples to despise
   The servile fawnings and idolatries,
   Wherewith we court these earthly things below,
   Which merit not the service we bestow."  E.)

This is a very common plant in the corn-fields and vineyards of Portugal, and is used as food for milking cows. The milk yielded by the cows which are fed upon it is very good. When we consider the constant intercourse maintained between Portugal and Falmouth, it is not improbably that the seeds of the plants I found might have been imported from thence. (Thus have various exotics been introduced, and in time become naturalized; as illustrated by other foreign plants now to be observed on Ballast-hills, near Sunderland, and like situations. According to Dr. Penneck, in Jones's Botanical Tour, in the mild climate of Penzance even the Acanthus has fortuitously appeared.  E.)
CLASS XX.

CRYPTOGAMIA.*

MISCELLANEÆ.†

EQUISETUM. Fructifications forming an egg-oblong, terminal spike.

LYCOPO'DIUM. Capsules axillary, solitary, naked, kidney-shaped, with one cell, and elastic valves.

PILULA'RIA. Capsules four-celled, globular, sessile in the bosom of the leaves at each joint.

ISOETES. Barr. Fl. solitary, within the base of the leaves.

Fert. Fl. solitary, within the base of the outer leaves: Capsules two-celled, (one-celled. Hook. E.)

* (In the plants of this Class, the stamens and pistils are either imperfectly, or not at all, known; or not to be numbered accurately. The Orders are all natural families, in general acotyledonous; but certain peculiarities of the Filices seem to indicate an approach to the monocotyledonous organization. Excepting a few Genera included in the first and second Orders, Cryptogamous plants are either so minute in themselves, or in their efflorescence and organs of fructification, that for their investigation the microscope becomes essentially requisite; and with its aid, so manifold and surprising are the beauties of colour and conformation brought to light, that no genuine admirer of nature will be deterred from prosecuting researches into what may truly be termed a new creation. Subordinate as these tribes of vegetables may appear to our limited conceptions, they doubtless constitute an indispensable link in the great chain of being; and though the ignorance of some, and the indolence of others, may have frequently propounded the query, “Quorsum tantum laboris in rebus adeo tenuibus insumptum? cui bono hac omnia?” the more enlightened student will readily acquiesce in the just reply, “Ut cognoscantur sapientiam Creatoris, quas in minimis, non minus elucet, quam in magnis operibus.” Dillenius.

And thus does it behave the higher intelligence,

“To trace, in nature’s most minute design,
The signature and stamp of power divine,
Contrivance intricate, expressed with ease,
Where unassiated sight no beauty sees.” Cowper. E.)

† (The four Genera of this first Order, must be allowed to constitute a somewhat incongruous assemblage, very appropriately named. Some Botanists have proceeded to a further subdivision, forming from them nearly an equal number of Orders, according to a natural system; and a recent authority has included them among the Filices, from which, in general habit, they widely differ. E.)
FILICES.*

(1) Capsules without an elastic ring; in Spikes.

OPHIOGLOS’SUM. Capsules united by an enveloping membrane, so as to form a two-rowed, jointed spike.

OSMUN’DA. Capsules distinct, two-valved, forming a bunch-like spike.

(2) Capsules roundish, on pedicles, encompassed by a jointed elastic ring; and opening irregularly into two parts.

ACROSTIC’TICUM. Capsules covering the whole under surface of the leaf.

POLYPO’DIUM. Capsules forming distinct roundish spots on the under surface of the leaf.

ASPLE’NIUM. Capsules forming straight scattered lines on the under surface of the leaf.

* ("The production of perfect germinating seeds, contained in capsules, and consequently produced by impregnated fertile flowers, is as clear in Ferns as in Mosses, though nothing is certainly known of their stigmas, any more than of their anthers. We are nevertheless content to plead ignorance on the subject, and to presume, by analogy, that such parts may exist, rather than to assume the idea of some other mode of impregnation hitherto unknown, which would be going contrary to the first principles of philosophy; or, what is worse, returning to the old gratuitous fancies of spontaneous generation." Sm. The opposite conclusions of other eminent phytologists have already been noticed passim. The seeds of these epiphyllous plants are so minute as to have been overlooked by the older Botanists; and, according to vulgar notion, were only to be detected, if at all, at the precise hour of the night on which St. John the Baptist was born; and whoever possessed them, had the power of becoming invisible. Hence in the play of Henry IV,

"We steal as in a castle, cock-sure; We have the receipt for Fern-seed; We walk invisible."

And again,

"I’ll seek the shaggy Fern-clad hill, And watch mid murmurs muttering stern The seed departing from the Fern, ’Ere wakeful demons can convey The wonder-working charm away." Leyden.

Vestiges of this strange superstition may still be traced in some parts of England.

"The village maids mysterious tales relate, Of bright midsummer’s sleepless nights; the Fern That time sheds secret seeds." Bidlake.

Such were the opinions of the darker ages, but that the real seeds of Ferns are produced by natural process, though in an impalpable powder, ought long since to have ceased to be problematical; and no difficulty will be found in effecting their germination, if sprinkled on a suitable soil, in a proper temperature. Vid. Lindsay in Linn. Tr. vol. ii. and Tr. Hort. Soc. vol. iii. E.)
BLECH'NUM. *Capsules* forming lines adjoining and parallel to the ribs of the leaves.

PTER'IS. *Capsules* forming a line at the edge of the leaf.

ADIAN'TUM. *Capsules* forming oval spots under the reflexed points of the leaves.

TRICH'O'MANES. *Capsules* solitary, inserted on the very edge of the leaf.

MUSCI.*

SPHAG'NUM. *Capsules* smooth, not fringed, covered with a lid; without a veil.

* (Even at the risk of some little repetition, we cannot refrain from endeavouring to attract the attention, especially of the junior student, to these diminutives, (in stature too humble, as it were, to speak for themselves,) by transcribing a succinct, yet comprehensive, passage, on this interesting subject, from an intelligent writer, who justly observes that, "Mosses, by the inconsiderate mind, are generally deemed an useless or insignificant part of the creation. That they are not, is evident from hence; that He who made them has made nothing in vain; but, on the contrary, has pronounced all his works to be 'very good.' Many of their uses we know; that they have many more which we know not, is unquestionable, since there is probably no one thing in the universe of which we dare to assert that we know all its uses. Thus much we are certain of with respect to Mosses, that, as they flourish most in winter, and at that time cover the ground with a beautiful green carpet, in many places which would be otherwise naked, and when little verdure is elsewhere to be seen; so at the same time they shelter and preserve the seeds, roots, gems, and embryo plants of many vegetables, which would otherwise perish; they furnish materials for birds to build their nests with; they afford a warm winter's retreat for some quadrupeds, such as bears, dormice, and the like; and for numberless insects, which are the food of birds and fishes, and these again the food or delight of men. Many of them grow on rocks and barren places, and, rotting away, afford the first principles of vegetation to other plants, which could never else have taken root there. Others grow in bogs and marshes, and by continual increase and decay fill up and convert them into fertile pastures, or into peat-bogs, the source of inexhaustible fuel to the polar regions. They are applicable also to many domestic purposes; some are used in dyeing of yarn, and in medicine; others furnish convenient beds; some are useful in tiling of houses, stopping crevices in walls, packing of brittle wares and the roots of plants for distant conveyance. To which may be added, that all in general contribute entertainment and agreeable instruction to the contemplative mind of the naturalist, at a season when few other plants offer themselves to his view." A superabundance of Moss on orchard fruit-trees often becomes a serious evil, and may arise either from too dry a state of the soil, or more frequently, from excessive damp and crowded growth. The only effectual remedy for the latter inconvenience is under-draining and pruning, and occasionally scraping off the uninvited parasite with a wooden instrument, or with a piece of rough hair cloth, after soaking rain. It seems not improbable that the astringent quality of Mosses might be applied to useful purposes in the arts. Nor can we enter upon the present Order without acknowledging our obligation to the elaborate "Muscologia Britannica" of Drs. Hooker and Taylor, the professed object of which work is, "to fix this department of Botany upon a firmer basis; and by facilitating the investigation of one of the most beautiful parts of the creation, to place in a clearer light the wonders of the Divine hand." Though we have not materially deviated from the Linnaean Genera, (for, notwithstanding the researches of Muscologists both abroad and at home for half a century, no systematic arrangement has been established which can be
SPLACH'NUM. Capsule on a large fleshy receptacle: Veil very large.

POLYT'RICHUM. Capsule on a very small receptacle: Veil hairy.

MNI'UM. Capsule with a lid: Veil smooth: Fruit-stalk not issuing out of a fleshy receptacle.

PHAS'CUM. Capsule with a veil, and the rudiment of the lid which does not fall off.

BRY'UM. Capsule with a lid: Veil smooth: Fruit-stalk terminal, issuing out of a fleshy tubercle.

deeded altogether unexceptionable;) by embracing, under each species, the experience of the principal modern authorities, and adopting a more general and correct synonymy, the study of this minute tribe will be found to be considerably promoted. It does not appear, as yet, that any other European country affords a greater number of species of Mosses than the British Isles, in which have already been discriminated about three hundred. In Linn. Tr. vol. xiii. may be seen a Memoir by Mr. James Drummond, F.L.S. who occupied himself with the seeds or sporules of Mosses, and succeeded in raising more than thirty different kinds; proving also that those processes of germinating seed which Hedwig called corydons, are by no means analogous to those of Phanerogamous plants. The seeds, or sporules of Mosses, differ, in toto, from the seeds of the more perfect Orders of plants. They have no integument, no embryo, consequently no radicle and plunule, nor are they essentially necessary for the increase of the plant. The sporule is in itself an homogeneous substance, producing indifferently from its surface roots and stems. (Vid. Nees Von Esenbeck in Act. Acad. Nat. Cur. vol. xii.) The simplicity of the general structure corresponds. The Phanerogamous plants, and even the Ferns, are furnished with tubular vessels. In the vegetables in question none such appear; all their parts are composed of but one cellular form.(a) This want of tubular vessels is compensated by the softness, delicacy, and absorbent property of the cellular tissue. No species of Moss is altogether destitute of foliage, not even Buexbaumia aphylla. Nor is there a single instance of a petiolated leaf; neither does any Moss exist having hairy foliage, all are glabrous. Though Mosses are so diminutive as in some instances to be scarcely visible to the naked eye; but which are nevertheless as curious and complicated in their structure as the larger kinds; others will be found to attain two feet in length. Their most genial atmosphere is humidity. When crisped by a burning sun, or even dried for the herbarium, a slight shower, or sprinkling with water, will quickly resuscitate them; so remarkable is their power of rapidly imbibing moisture. The Entomologist will not fail to discover among their roots a number of rare insects, as Linnaeus elegantly observes in Syst. Veg. "Ha radices incolarum fovent; ne adurantur a bruma hyberna; ne exsiccantur a Sirio aestivo; ne corrumpantur a vicissitudine vernali; ne evellantur a putramine autumnali." To facilitate the study of this branch of science, in addition to the well-known works of our own countrymen, and the labours of German and French Physiologists already partially adopted; Prof. Hooker especially recommends "Stirpes Cryptogamse Vogeso-Rhenanae, auctoribus Mougesot et Nestler," containing eight hundred specimens of as many species; "Deutschland Moose," or a Moss Pocket-book, by H. C. Funck; and similar collections by Mr. Hobson of Manchester, and Mr. Drummond of Forfar, each of two volumes; nor should the fasciculi now publishing at Oxford be omitted; as not only insuring greater accuracy than the best of plates, but as being far less expensive. E.)

(* In B. sessile, tectorum, and striatum, the veil is hairy.

(a) For ingenious illustrations,(more immediately connected with a natural arrangement of plants,) of the two grand divisions, viz. Cellulares, (Cryptogamous, or Acotyledonous plants,) and Vasculares, (Phanerogamous, or Cotyledonous plants,) we would refer to Mag. Nat. Hist. vol. i. 32—136, et seq. E.)
CRYPTOGAMIA.

HYP'NUM. Capsule with a lid: Veil smooth: Fruit-stalk lateral, issuing from a tubercle surrounded with scales.

FONTINA'LI'S. Capsule veiled, sessile, enveloped by the scales of the receptacle.

BUXBAU'MIA. Capsule on a fruit-stalk, membranous on one side.

HEPATICÆ.*

MARCHAN'TIA. Barr. Fl. Calyx salver-shaped, with numerous anthers imbedded in its disk. 
Fert. Fl. Calyx target-shaped, flowering underneath: Capsules bursting at their tops: Seeds attached to elastic fibres.

JUNGERMAN'NIA. (Barr. Fl. sessile: Capsule on a stalk, rising from a sheath of four valves: Seeds attached to elastic filaments. E.)

TARGIO'NIA. Calyx two valved: Seeds very numerous, collected into a globe.

ANTHO'CEROS. Capsules awl-shaped, two-valved: Seeds connected with the valves.

BLA'SIA. Sheath cylindrical, protruding globular buds from its base.

RIC'CIA. Fructifications, granules buried in the leaf: Anthers cylindrical, sessile on the germen, perforated by the style: Caps. globular, crowned by the withered anthers: Seeds hemispherical, on pedicles.

* (The particular uses of Liverworts are but little understood; neither is their delicate structure much more so; though they have attracted the special attention of several eminent vegetable Physiologists, and have been very beautifully delineated. Nearly as diminutive as the genuine Mosses, like them is their general structure loosely cellular. Vid. vol. i. 349. Probably though in a lesser degree, they may prove astringent; to which quality Dioscorides would seem to allude, when he recommends their application as a stiptic for stanching and abating the inflammation of wounds. Their more general medicinal virtues, as likewise their English and Latin designations, were merely inferential, and derived from the fancied resemblance of these herbs to the viscus they were thus indicated to cure; for as Gerard reports, with a credulity not uncommon in his age, "It is singular good against the inflammations of the liver." E.)
LI'CHEN. Barren, scattered warts.
Fertile, smooth saucers or tubercles in which the seeds are imbedded.

* (Descending in the scale of vegetable creation, we now proceed to consider the two grand divisions of the present Order, viz. the Lichens, properly so called, (vid. vol. i. p. 353,) and the Submersed Algae, comprehending the sea weeds. (vid. vol. i. p. 353, 354.)

The particular properties of each individual species, so far as our very imperfect knowledge admits, will be found in the usual Notes; but on the general and combined result of the Lichens we may here further observe, that no sooner has a bed for vegetation been in the first instance prepared by the operation of atmospheric phenomena in the decomposition of rocks, than the seeds of these, to the common observer, obscure productions, all but "without form, and void," ever floating in the air, make it their resting place. Their generations occupy it till a finely comminuted earth is formed, which becomes capable of supporting the varied tribes of Mosses: acted upon by light and heat, these imbibe the dew, and convert the constituent parts of the air into nourishment. Their death and decay afford food for more perfect species of vegetables, (deposited by birds, or wafted by the waves of Ocean,) till at length a mould is formed, in which even the trees of the forest can fix their roots, and which is capable of rewarding the labours of the cultivator. The successive steps by which even a common wall becomes covered with vegetation, will illustrate this curious process. First may be perceived a green incrustation composed of the primary germination of various species of Polytricha, Brya, &c., and when this decays, a very thin stratum of vegetable earth is formed, which, by unceasing accumulation, in course of time forms a soil of sufficient depth for such diminutives as Draba verna, and other plants usually found in similar situations. However incompetent may be the finite conceptions of man fully to unravel or comprehend the ways of Providence, either in the visible or invisible creation, every rational effort so to do must equally tend to excite sentiments of devotion and gratitude, as to suppress the presumptuous aspirations of pride and ignorance.

These contrivances and manifestations, though to a certain degree inexplicable, are sufficiently obvious to all but the "brute unconscious gaze," and render such pursuits not only desirable as tending to satisfy a rational curiosity, but an imperative duty; for "to undervalue any thing which Infinite Wisdom has formed, is to overlook and contempt the Creator himself. Whatever God has thought proper to create, and to present to our view in the visible world, it becomes man to study and contemplate, that from thence he may derive motives to excite him to the exercise of reverence and adoration, of gratitude and praise." "The numberless astonishing instances of divine agency, which every where present themselves to our view in the scene around us, seem evidently intended to arrest the mind to a consideration of an "ever present Deity;" and I envy not the sentiments or the feelings of that man who imagines, that he stands in no need of such sensible mediums, to impress his mind with a sense of the benevolent care and omnipresence of God."(a)

In the second division of this Order, we must advert to those singularly elegant productions of which we can form but a very inadequate idea from the comparatively few which are at low tides exposed to our observation on their native rocks, or occasionally presented to our view among the rejectaments on the shore. Those who traverse the sea in ships, and "occupy their business in the great waters," do indeed "see the works of the Lord, and his wonders in the deep;" even when he "thunders in the excellency of his power;" but it remains for the scrutinizing eye of the philosopher to investigate more minutely these recesses of Ocean, wherein the last link in the chain of animated nature will be found to verge in mere vegetable existence; where the surface of the profound abyss exhibits interminable forests of Zoophytes, (or animated plants, as the term

(a) Vid. an excellent work, by Mr. Thomas Dick, entitled "The Christian Philosopher," Glasgow, 1828.
**CRYPTOGAMIA.**

**TREMEL'LIA.** Seeds dispersed through a jelly-like substance.

**UL'VA.** Seeds dispersed through its substance, growing in water; (fronds membranous or gelatinous. E.)

**BYS'SUS.** Substance, wool-like fibres.

**CONFER'VA.** Fibres hair-like, simple or branched, often jointed, growing in water: (or, according to Dillwyn and Smith: Seeds produced within the substance of the capillary or jointed frond, or inclosed tubercles united with it. E.)

**FU'CUS.** Substance leather-like: Fruit globular, capsule-like; or granulations within the substance, with an open pore above them.

**FUNGI.**

(1) Seeds on the under surface.

**MERU'LIUS.** Pileus with gills underneath, of the same substance with the rest of the plant.

Imports; for these productions, constituting the contiguous extremities of the two kingdoms, wherein the distinctions fade away so gradually,

"Shade unperceived, so softening into shade,"

that different learned naturalists have arranged them under either; emulating, and even exceeding, in fantastic form and diversity of brilliant colour, whatever appears on the more exposed surface of the earth, and, in particular situations, rising from the bosom of the deep, occasionally so densely commingled as actually to obstruct navigation. The more minute animals are ever found to be the most productive, and even these vast compages, which in the course of ages aspire towards the surface of the waters, are themselves the artificial formation and habitation of incalculably numerous reptiles and insects, exceeding in industry and power either the proverbial bee or emmet. These masses are again intermixed, and often crowned, with a profusion of real vegetables; and thus do the two kingdoms of nature co-operate in establishing the basis, not only of rocks and shoals, but eventually of superincumbent islands, while their inmost recesses are teeming with existence, "wherein are things creeping innumerable, both small and great beasts." Whatever has been ascertained in the structure and economical uses of the Marine Algae, (which appear to have passed altogether unnoticed by the most intelligent nations of antiquity,) will be found in our fourth volume. It will be only here necessary further to remark, that in the midst of these fastnesses do myriads of fishes deposit their spawn, and there securely do the young inhabitants shelter, till strong enough to encounter the agitations of the more open sea. These same weeds, not improbably, supply various animals with food; and are themselves preserved from violence and a degree of friction from the troubled element, which might otherwise quickly disorganize their delicate texture; by a lubricating glutinosity, (which also may have a tendency to obtund the acrimony of the saline particles,) not very dissimilar to that which facilitates the rapid movements of the finny race. But this nether vegetable world, peopled by countless tribes of animated beings, is but too likely to remain a hidden mystery; unless indeed the art of submarine navigation, as yet in its infancy, should ultimately reward scientific zeal with a sublime disclosure of the wonders of "the fifth day." E.)

* (No sooner have the choicest gifts of Flora disappeared, and the "golden pines of the year" faded away, than a succession of curious productions bedeck the earth, con-
AGAR'ICUS. *Pileus* with gills underneath, of a different substance from the rest of the plant.

FISTUL'NA. *Pileus* with separate tubes underneath: *Seeds* in the tubes.

BOLETUS. *Pileus* with united tubes underneath: *Seeds* in the tubes.

HYD'NUM. *Pileus* with solid cylinders underneath: *Seeds* on the cylinders.

HELVEI'LA. *Pileus* on a stem, smooth underneath: *Seeds* on the under surface.

AURICULA'RIA. Flat, membranous, attached when young by the whole under surface: *Seeds* on the upper surface, which becomes reversed as it attains maturity.

(2) *Seeds on the upper surface.*

PEZ'IZA. Cup-shaped or concave: *Seeds* discharged with elastic force from the upper surface only.

NIDULA'RIA. Leathery, sessile, bell-shaped: *Capsules* large, flat, attached to pedicles at the bottom of the bell.

PHAL'LUS. *Stem* supporting a cellular head: *Seeds* in the cells.

(3) *Seeds on every part of the surface.*

CLAVA'RIA. Oblong, upright, club-shaped: *Seeds* emitted from every part of its surface.

Further passages not transcribed.
(4) Seeds in the substance of the plant.

TU'BER. Fleshy, solid, not becoming powdery; nor opening at the top.

LYCOPER'DON. Firm, fleshy, becoming powdery and fibrous within; opening at the top.

RETICULA'RIA. Pulpy, changing to friable; opening indiscriminately: Seeds lodged in interlacing fibres or membranous cases.

SPHÆRIA. Fruit spherical, filled with black powder, mostly concealed by an outer coat; opening at the top.

TRIC'HIA. Capsule globular, egg-shaped or cylindrical, composed of interwoven fibres: Stem fixed to a membranous base.

MU'COR. Stem very slender: Seeds naked or in capsules at the ends of the stem.

(URE'DO. Capsules clavated, emitting numerous seeds without fibres intermixed. E.)

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MICELLANEÆ.

EQUISETUM.* Spike club-shaped, egg-oblong: fructifications target-shaped, opening inwards.

E. sylvat'icum. Stem bearing a spike: leaves compound, (curved downwards. E.)


The entire plant very much resembling in figure a fir-tree, all its leaves being in whorls. Linn. Stem from seven to fifteen inches high, smooth, slightly scored, pale yellowish brown. Sheaths of the same colour, but deeper. Leaves eight, ten, or fifteen in a whorl, bursting out from the upper knot of the stem. Fructifications about fifteen in a whorl towards the bottom of the spike. Anthers attached to filaments, which, being breathed upon, coil up, but, becoming dry, expand again. After several expansions and contractions they detach themselves, still contracting when moistened, gradually bending from a straight line into a circle, even before a drop of water come in contact with them. These contractions are often so sudden as quickly to throw the object out of the field of view. When examined under a microscope, presenting the appearance of many leaping insects in active movement.

* (Compounded of equus, a horse; and setae, hairs; from the resemblance it bears to a horse's tail.)
Wood Horse-tail. Moist woods and shady places near rivulets and in boggy ground. P. April—May.

Var. 2. Leaves pointing all one way. R. Syn. 131. 5. This happens when the stem has been trodden down.

Var. 3. Leaves very long and very slender. R. Syn. 131. 6.

In shady and moist situations. It is a variety of E. palustre. Bolt. Leaves of a pale yellow green colour. Ibid.

This change in the habit occasionally takes place in both species, and more or less in almost every plant in similar situations.

E. arvense. Fertile stem leafless; barren stem leafy, lying down: leaves in whorls.

E. PALUS'TRE. Stem angular: leaves unbranched.


Root black. Stem smooth. Leaves six to ten, furrowed, smooth, with black scales at the base. Leers. Barren-leaves resemble those of E. arvense, but the second leaves in that species are four-sided, and the sheaths have four teeth, whilst in this species they are five-sided, and the sheaths have five teeth. Bolt.

MARSH HORSE-TAIL. Puddled (Frog) Pipe in Scotland. (Welsh: Rhawn y march y gors. Marshy and watery places. P. June—July.* Var. 2. Many-spiked. Spikes terminating the upper leaves as well as the stem.

This variety generally arises when the primary stem has been bitten off. Bolt.

E. FLUVIATILE. (Sterile stems beset with innumerable, roughish, doubly-angular, branches; flowering ones unbranched, with numerous crowded, deeply toothed sheaths. Sm. E.)


(Fertile stems appearing first, a foot high, very robust, terminated by an oblong spike, two inches long or more; sheaths numerous, imbricated below. Sterile stems two to five feet high, sometimes near an inch in diameter at the base, with a great number of joints, and a profusion of long, simple, verticillate branches. Grev. E.) Sheaths of the barren stems surrounded at the top with a well defined blackish brown band: teeth lighter brown, smaller and narrower than those of the fertile stems. Leaves from three to fifteen inches long, very closely set. This species may be readily known at first sight by its great size, numerous leaves, and whitish stem. Woodw.; (or, on more minute inspection, (as first observed by Mr. J. S. Sowerby) by the five angles of the branches of the sterile stems having each a longitudinal furrow. E.)


To the agriculturist these weeds are injurious, wide spreading, and difficult of extirpation. Under-draining will probably be found the most effectual practice. Rhynchosorus Equiseti feeds upon the different species. E.)

* (This, like most of its congeners, is considered prejudicial to cattle. E.)
feet in height by the ruin of the ancient church at Walton, near Clevedon, Somersetshire. Anglesey. Welsh Bot. E.) P. May—June.* E. limosum. (Catkin terminal, elliptical: stem partially naked, smooth, as also the branches. E.)


Compared with E. palustre: Whole plant smoother. Root yellowish. Stem brown below, scored; not furrowed, (E. palustre is deeply so. E.) Sheaths close clasping the stem, the teeth of the lower brown, those of the upper black, and smaller than those of E. palustre. Leaves either straggling here and there, or in whorls on the middle part of the stem. Head dark brown, but not so dark as in E. palustre, also larger. For the above reasons I cannot think it a variety of that species. Woodw. (Stems erect, two feet high. A much smaller plant than E. fluviatile of Linn, whose principal stems are whorled from top to bottom with numerous very long spreading branches, and produce no catkins. E. Bot. E.)

We are favoured with the following curious particulars, by James Norris, Esq. "In March, 1794, near Bromham, where a small stream had formed a deep channel, my attention was directed to the roots of an Equisetum, growing abundantly on the brink of both its perpendicular sides; which presented them laid bare to view. The roots were surrounded at their joints by a series of six, seven, or eight bulbs, arranged verticillately, sessile, and about the size of a nutmeg, but shaped like a fig, with a prominent umbilicus at the larger end. In the succeeding April I observed many of these bodies in a state of vegetation, some still attached to the parent root, others separate. The young plants were then about a finger's length, issuing from the umbilicus, from whence also radical fibres were protruded downwards, and this accompanied with a proportionable loss of juice in the sustaining bulb. These were very different in strength, size, and appearance, from the recent shoots immediately proceeding out of the parent root. None of the bulbs were found within a foot or more of the horizontal surface of the earth." These bulbs differ much in dimensions from the size of peas to three quarters of an inch in diameter. If the full grown bulbs be detached and placed in a vessel of water, the process of vegetation may be conveniently attended to, for the young shoots, in a few days, will burst from the umbilical prominence, accompanied by their radical filaments. E.)

Smooth Naked Horse-tail. (E. fluviatile. Fl. Dan. Welsh: Rhawn y march led-did-dail. Common in the beds of rivers near the banks; also in shallow ponds, and ditches in marshes. P. May—June.† E. hyemal. Stem naked, very rough, somewhat branched at the base: (sheaths whitish, black at the top and bottom: teeth deciduous: catkin terminal. E.)


* (According to Haller this kind was eaten by the Romans; an assertion hardly credible, unless referring merely to the young shoots. Linnaeus states that oxen and rein deer are fond of it, but that horses refuse it. Doubtless, from the miserable necessities of northern sterility, our great naturalist has reported numerous plants as edible, which are scarcely calculated to sustain life. E.)

† (In Journ. Nat. 138, this plant is deemed a principal food of the water-rat, which is described, when feeding thereon, as making an audible "champing" noise. This noise we have frequently remarked beneath the surface of beds of weeds in large ponds, in situations unlikely to be haunted by rats; and have always attributed the sound to some, perhaps the like, process, (by suction,) of the finny race. E.)
Stem perennial, green, rough like a file. Sheaths of the joints pale, black at the base and edges, with imperfect teeth. Linn. Stems furrowed with eighteen or twenty rough angles, some of the joints three inches asunder. Sheaths with as many short blunt teeth as the stem has furrows. Spike terminal. Lightf. Differ from E. limosum in being sea-green, in the greater length of the joints, and in its extreme roughness. Woodw. (Roots black, creeping. E.)


Var. 2. Stem with few leaves. Hal.

Trag. 692. 1—Lon. 1. 176. 1—J. B. iii. 729. 1—C. B. Th. 248.

Var. 3. With numerous lateral branches. St.

Matth. 1028—Dod. 73. 3—Lob. Obs. 461. 2. Ec. i. 794. 1—C. B. 250.

When it has been browsed early in the spring, it puts forth numerous lateral branches. Griff.

(A plant which we have not seen, much resembling the last species, but smaller and more slender, stems seldom a foot high; sheaths black, with white, membranous, lanceolate, and more permanent teeth, and catkin blacker; E. variegatum. Sleich. Willd. Sm. Hook. E. Bot. 1987, has been found by Mr. G. Don on the sands of Barry; by the sea coast of Angus; and also at Baldogle, near Dublin, but by whom it does not appear. P. July.—Nov. E.)

LYCOPodium.† Capsules axillary, kidney-shaped, two-valved, elastic; many-seeded.

* The stems have long been imported from Holland to polish cabinet work, ivory, plaster casts, and even brass. Their cuticle is extremely rough and hard, beset with glass-like warts, which cause the epidermis to act like a file. (The silex is so abundant, that the vegetable matter may be destroyed, and the form retained, as was effected by Mr. Sivright. Under a high magnifying power, Dr. Brewster has detected a beautiful arrangement of the siliceous particles, of which some are grouped into oval forms, connected together like the jewels of a necklace, by a chain of particles forming a sort of curvilinear quadrangle; these rows of oval combinations being arranged in pairs. Many of these particles which form the straight lines do not exceed the five hundredth part of an inch in diameter. In the straw and chaff of wheat, barley, oats, and rye, he noticed analogous phenomena, but the particles were arranged in a different manner. The Doctor concludes that the crystalline portions of silex, and other earths which are found in vegetable films, are not foreign substances of accidental occurrence, but are integral parts of the plant itself, and probably perform some important function in the processes of vegetable life. Grev. Edin. Sir H. Davy has also found this plant to contain a large portion of siliceous earth. It is hurtful to horses and cows, and disagreeable to sheep. The teeth of cattle feeding on it, as is sometimes the case in Iceland, are said soon to fall out. In Northumberland, the dairy-maids scour their milk pails with the stems of this plant. E.)

† (From auxo, to a foot, or feet; the plants of this genus exhibiting a fancied resemblance to a wolf's claw. E.)
L. clava'tum. Leaves scattered, terminating in threads: spikes cylin-
drical, on fruit-stalks, in pairs.

Dickes. H. S.—E. Bot. 224—Dill. 58, 1.—Fl. Dan. 126—H. Ox. xv. 5, row 1. 2—Gem. i. Tab. Pict. f. 2—Blackw. 535—Pluk. 47. 8—Trag. 555—
Lon. i. 179. 1—Ger. 1374. 11—Matth. a. C. B.—Lob. Obs. 645. 1, Is. i.
244. 2—Ger. Em. 1562. 11—Matth. 63—Park. 1307. 4—J. B. iii. 766.

Stem creeping. Leaves open. Linn. Shoots from one to several feet in
length, firmly attached to the earth by woody fibres. Branches expand-
ing, distant, trailing; the lower ones again subdividing into forks. Leaves
closely tiled, strap-spear-shaped, pointed, and hooked, with long white
hairs at the end. In the summer, from the ends of the branches, the
fruit-stalks rise up, almost leafless, jointed, straight, rigid, from two to
four inches high, dividing at the top in two or three cylindrical, flower-
spikes. Spikes closely tiled with scales or husks, egg-spear-shaped,
pointed, hairy at the end, ragged at the edges. Each of these scales in-
closes a kidney-shaped yellow capsule, exploding when ripe a yellow
powder, which resembles sulphur, and burns with an explosion. Weis.
Fruit-stalk generally with two equal spikes, frequently with one, and
sometimes with three, which are unequal. Gough.

Common Club-moss. Wolf's-claw. Dry places on mountains, stony
heaths, and in woods. P. July—Aug.*

L. selagino'ses. Leaves scattered, fringed, spear-shaped: spikes
solitary, terminal, leafy.

1, at p. 43—Hall. Enum. 3. 1, at p. 109, and Hist. 46. 1, at ii. p. 56—
H. Ox. xv. 5, row 2. 11, the lower part of the figure, the upper being L.
inundatum. Pluk. 47. 7.

Capsules, those at the base of the lower leaves when viewed sidewise ap-
parently in threes, but really in fours, one pair above and the other pair
below; at length opening, and disclosing as many large solid seeds; those
at the base of the upper leaves yellower, of a looser texture, entirely
simple, round: Linn., (and not understood. Smith suggests they may
possibly be gemmae, like those of viviparous flowers. E.)

Plant from

one to three inches high.

Prickly Club-moss. (Welsh: Cwmp-fiesogel synh lleiaf. Mountainous
heaths and pastures. In Scotland, the north of England, and Wales.
Mountains in Westmoreland. Mr. Woodward. Rocks above Ffynnon
free, Lanneris. Mr. Griffith. (On Tywyn Trewan, and Tywyn, Aber-
Edin. In Ashness Gill, above Barrow Force, between Keswick and
Borrowdale. Mr. Winch. Near Middleton, in Teesdale, Durham. E.)
P. June—Sept.

L. inundatum. Leaves scattered, very entire: spikes terminal, leafy.

Dickes. H. S.—E. Bot. 239—Fl. Dan. 336—Dill. 61. 7—Vaill. 16. 11—

* In Sweden this plant is formed into door mats. It restores tropy wine in a few days.
The seeds flash when thrown into a flame, and it is said are used in the theatres to imitate
lightning. They are with difficulty made wet, and if scattered upon a basin of water the
hand may be dipped to the bottom without wetting it. (The powder of the capsules,
(seeds which have been proved to vegetate. Linn. Tr. ii. 31.) is used in Russia to heal
chops and sores. The Poles apply a decoction of the plant, with a linen cloth, to the heads
of persons affected with that very troublesome disease the Plica polonica, which is said to
be cured by this fomentation. E.)
H. Or. xv. 5, row 2. 11, the middle and upper branches, the rest belonging to L. Selaginoides.

Stem creeping. Spikes solitary, sessile, smooth, branched; the length of a finger or more, cylindrical. Spikes sessile, upright. Leaves awl-shaped, pointed, smooth, on the creeping shoots pointing one way, two lines long, and one broad at the base. Pol. Shoots, those bearing spikes an inch long, upright, cylindrical. Leaves strap-shaped, crowded, without terminal hairs. Capsules compressed, roundish, not kidney-shaped. Web.


L. selago. Leaves scattered; pointing eight ways: stem forked upright: branches all of the same height: flowers scattered.

E. Bot. 233—Dill. 56. 1—Fl. Dan. 104—H. Or. xv. 5, row 2. 9—Scheuch. H. i. 6. 2.

Leaves obliquely disposed in eight rows, which may be best observed by holding the ends of the branches perpendicular to the eye. Linn. Stems upright, branched, from three to seven inches high, forked; branches again forked, closely covered with leaves. Leaves spear-shaped, sharp-pointed, stiff, smooth, shining, scolloped or serrated, and cartilaginous at the edge. Capsules in the bosom of the upper leaves, kidney-shaped, flatted, yellow, opening like an oyster, and pouring out a pale yellow powder. Weis. The whole plant very firm and stiff; from two to five inches high.


L. anno'tinum. Leaves scattered, pointing five ways; somewhat serrated: stem jointed at each year's shoot: spikes terminal, smooth, upright.

(E. Bot. 1727. E.)—Dill. 63. 9—H. Or. xv. 5, row 1. 3—Fl. Dan. 127—Pluk. 205. 5.

Branches contracted at the last year's shoots, as in the female of Polytrichum commune. Leaves whorled, in fives, expanding, decurrent. Linn. Root branched. Trailing stem very long. Upright shoots from one to two inches and a half high, generally branched, supporting the spikes of fructification: (six to twelve inches high. E.)


* Internally the effects of this plant are very violent; but it destroys worms. A decoction of it relieves swine and cattle of vermin. Linn. Its properties seem to challenge further inquiry. (If given in too large doses it occasions convulsions. In the Island of Raasy, near Sky, it is used instead of alum, to fix colours in dyeing. Encyc. Brit. E.)
L. alpi'num. Leaves pointing four ways; tiled, acute: stems upright, cloven: spikes sessile; cylindrical.

E. Bot. 234—Dill. 58. 2—Fl. Lapp. 11. 6—Fl. Dan. 79—J. B. iii. 767. 1.

Stem creeping, from a span to a foot long. Branches alternate, at an inch distant from each other, upright, forked, of the length of a little finger. Little branches fasciculated, from twenty to thirty together, exactly four-cornered, the angles blunt. Leaves thickish. Fruit-stalks terminating a branch here and there, two or three lines high, forked, scarcely distinguishable from the branches, covered with smaller leaves, bearing as many spikes. Spikes egg-shaped, nearly smooth. Linn. All the branches divided, and frequently subdivided into forks. Dill. Upright shoots an inch and a half to three inches long; thinner than the spikes which they support.


PILULA'RIA.† Calyx common, woolly, globular, four-celled; opening in four directions: Anthers many; sessile: Pistils many: Style none.

P. globulif'era.


Stem slender, trailing, striking root at the joints, and sending out delicate narrow or nearly cylindrical leaves, two or three inches long, generally three from a joint. Fructifications globular, like pepper-corns, on very short pedicles at the base of the leaves. The curious fructification of this singular plant is beautifully illustrated in Fl. Lond. E.)


* (A very handsome species; said to be bitter, and to act as an emetic. E.)
† (From pilula, a small ball or pill; which the fructification of this plant remarkably resembles. E.)
‡ (This interesting little aquatic is not to be detected without deliberate inspection; being often found under water, and intermixed with plants whose leaves conceal or nearly resemble its own. E.)


Root fibrous; fibres numerous, simple, slender, striking deep into the mud. Leaves growing in thick tufts, six or seven inches long, extremely like young rushes, convex on the back, flat, or slightly convex in front; at the base swelling into a kind of bulb, covered by a thin tender skin, which bursts and discovers numerous minute whitish seeds, which, examined in the microscope, appear spherical, rough, somewhat transparent, and having three ribs meeting in a centre. Leaves so brittle that they break on the least attempt to bend them. The transverse diaphragms very visible. I have often found the plant in seed in July. Griffith. (The fronds themselves are highly curious. A transverse section represents four tubes; a longitudinal one shows that these tubes are separated at regular distances by transverse bars or dissepiments, as in the tube of a Conferva. Hook. E.)


Var. 2. Huds. Dill. 80. 1.

Leaves not so stiff, from the base of which arises a stem throwing off shoots at different distances. Richardson, in R. Syn.

I apprehend that Richardson here has applied the word stem, to the shoot which connects the offspring to the mother plant.

I have found leaves of it in Llyn Ogwen, but could not procure an entire plant. Mr. Griffith. At the bottom of Derwent-water. Mr. Woodward.

Var. 3. Huds. Leaves very brittle, sometimes twice as long as those of var. 1, narrower and more pointed, transparent, with many minute pores, Richardson, in R. Syn. Grows with var. 1. ib. 307.

FILICES.

OPHIOGLOS'sUM.† Capsules numerous, nearly globular,

* (Fish are said to feed, and grow fat, on these plants. The taller, more slender varieties, have been suspected to be occasioned by the frequent rising of mountain waters; but, as the shorter kind is observed to be intermixed, in the same situations, and in an equal state of maturity, this suggestion is scarcely satisfactory. E.)

† (From ὀphis, a serpent, and γλωσσα, a tongue; a name exceedingly appropriate to the appearance of the plant. E.)
without an elastic ring; united by a membrane into a two-rowed spike; opening crosswise when ripe: Seeds numerous, minute.

**O. vulgatum.** (Leaf egg-shaped, veinless, about as tall as the spike, which it bears. E.)

**Dicks. H. S.**—(Hook. Fl. Lond. 78. E.)—**E. Bot.** 108—**Sheildr.** 28—**Fuchs.** 577—**Lonic.** i. 103—**J. B.** iii. 708. 2—**Trag.** 323—**Kniph.** 6—**Cam. Epit.** 364—**Park.** 506—**Gars.** 425—**Tourn.** 325. 1—**Bolt.** 3—**Blackw.** 416. 1 and 2—**H. Ox.** xiv. 3, row 3. 1—**Barr.** 252. 1—**Math.** 594—**Ger.** 327—**Dod.** 139. 1—**Lob. Obs.** 471. 1, i. 808. 2—**Ger. Em.** 404. 1—**Fructification.** *Hedw. Th.* 4. 20. 21. 22. 23.

Stem solitary. Leaf egg-spear-shaped, embracing the fruit-stalk. Spike strap-shaped, at first green, when ripe brown. Woodw. Leaf sometimes slightly lobed with small appendages on one or both sides. Bolt. (always solitary. (This perennial herbaceous plant increases in height, and its age may be exactly ascertained, by the successive additions of caudices. Mr. Lyell, in Fl. Lond. E.)


P. May—June.*

Var. 2. Many-spiked. Fruit-stalk divided at the top, each branch supporting a spike; Bolt., and the spike itself sometimes divaricating.

**Blackw.** 416. 3—**Bolt.** 1. 1—**Lob.** i. 809. 1—**Ger. Em.** 404. 2—**H. Ox.** xiv. 5, row 3, f. 2—**H. Ox.** Tb. f. 3. 4. 5. 6—**Cam. Epit.** 364—**Park.** 506. the lesser figures.

**OSMUNDA.**† Spike branched: capsules distinct, sessile, globular, two-valved: without an elastic ring; opening either vertically or horizontally.

(1) Fruit-stalks distinct, rising from the stem at the base of the leaf.

**O. Lunaria.** Stalk solitary: bunch lateral: leaf winged, solitary.

**Dicks. H. S.**—(Hook. Fl. Lond. 66. E.)—**Kniph.** 11—**E. Bot.** 318—**Blackw.** 420—**Fl. Dan.** 18. 1—**Garid.** 78, at p. 346—**Col. Phyt.** 18—**Cam. Epit.** 643. 1—**Bolt. Fil.** 4—**Barr.** 252. 3—**H. Ox.** xiv. 5. 1—**Lob.** i. 77. 1—**Math.** 903—**Ger.** 328. 2—**Math. a. C. B.** 647. 1—**Clus.** ii. 118. 2—**Dod.** 139. 2—**Lob. Obs.** 470. 3, i. 807. 2—**Ger. Em.** 405. 2—**Park.** 507—**Fuchs.** 483—**J. B.** iii. 710—**Trag.** 914.

Within the base of the stem, early in the spring, may be found a complete

* (An ointment prepared from the fresh leaves has been recommended as a vulnerary to green wounds by Matthiolus, Tragus, and others; and is sometimes used as such in this country. E.)

† (Possibly derived from the Anglo-Saxon word *mund*, signifying strength, (and hence Osmond, an appellation of the Celtic deity Thor), in allusion to the supposed invigorating virtues of these plants. Fl. Lond. E.)
rudiment of the next year's plant. Linn. Wings of the leaf fleshy, crescent-shaped, (whence its trivial name in both languages, E.) semi-circular, and halberd-shaped. Woodw. About five inches high. Leaflets irregularly scolloped. Spikes, or rather panicle, from one to two inches long.


Leaves in pairs, doubly winged, wings cut. Willd. n. 875.

Var. 3. Leaves cloven into segments.

Bregn. Cent. 93—H. Ox. xiv. 5, row 2. 3—Fl. Dan. 18. 3.


Westmoreland, and the northern counties. R. Syn.

(Mr. Bolton found a variety on a high knoll in the grounds of Shibden Hall, near Halifax, with leaves shaped like an expanded fan, divided by narrow sections running almost down to the base into four or five lobes, which are deeply crenated at their extremities. E.)

(2) The leaf itself bearing the fructification.

**O. regalis.** Leaf doubly winged: bunches terminal, more than doubly compound.


Capsules opening vertically. Stackh. From two to four feet high, of a pleasant transparent green. Leaves doubly winged. Leaflets strap-spear-shaped, blunt, finely but indistinctly serrated, the lower and younger ones often lobed at the base. The upper wings change into clusters of capsules, and lose all appearance of foliage. Fructification, when ripe, red brown.

near Liverpool. Dr. Bostock. In Moreton Moors, three miles from Blymhill, Shropshire. Rev. S. Dickinson. Near Wareham, by Sandford Bridge; near New Bridge, between Wimborne and Ringwood. Pulteeney. By Lyn Traffwll, in the turbery at Trewilmot, Holyhead. Welsh Bot. By Loch Tay, Loch Fyne, and Derwentwater Lake. Mr. Winch. Bog near Coleshill pool. Bree, in Purt. Near Parker's mill, between Stonebridge and Bradnook's Marsh, Warwickshire. Smith, in Perry. Leith Hill Common, Surry; and covering half an acre, near Danbury, Essex. Mr. W. Christy. Goonhilly Downs, Cornwall. Rev. J. Pike Jones. About the cliffs near Dawlish, and other parts of Devon. Abounds on the rocks and in the woods near the Falls of Clyde, Lanarkshire. Moist hedges, New Forest, Hants. This plant, though before not to be found for many miles around Birmingham, in the year 1802, appeared on an archery butt on Moseley Common, artificially raised with mud from a deep pit, in which the seeds had probably lain for a length of time. It continued to flourish so long as the butt was permitted to remain, but has probably now again disappeared. By such accidental circumstances may we often account for many apparent errors in the stations of plants. See also Datura Stramonium. vol ii. p. 315. E.) July—Aug.*

PTE/RIS.† Capsules disposed in a line under the reflexed edge of the leaf.

P. cris'pa. Leaves more than doubly compound: leaflets alternate, roundish, cut.

Bolt. 7—(E. Bot. 1160. E.)—Fl. Dan. 496—H. Or. xiv. 4. 4. and 27—Pluk. 3. 2. and 3—J. B. iii. 743—H. Or. xiv. 5. 25.

Leaf-stalks waved, green. Fructifications in lines along the under margin of the leaflets, which is rolled back upon them, as in P. aqualina; after the discharge of the seeds increasing in breadth so as to cover the whole disk, except the mid-rib. Bolt. Leaf-stalks from two to seven inches long. Leaf from one inch and a half to three inches long. Leaflets of the barren leaves wedge-shaped and snipt at the edge; those of the fertile leaves much narrower, strap or strap-spear-shaped, and entire. Capsules surrounded with an elastic ring; of which Osmunda and Ophioglossum are destitute.

* (This "flower-crowned Prince of English Ferns" is available for rock-work, especially if removed with a portion of bog-earth; and can scarcely fail to appear ornamental in any suitable situation. The preservation of the vital principle in seeds, (which in some species would appear to increase with continued preservation, as in those of melon,) is one of those natural phenomena which are little regarded, because familiar to the most casual observer. But that some should lose their vegetative power by being kept out of the ground even for a short time after ripening, while others may be sent round the world, and exposed to every vicissitude of climate, or even be buried for ages in the earth, and yet vegetate with the first favourable opportunity, is truly surprising, and the cause past man's finding out. E.)

Impressions of the leaves are frequent in the nodules of iron stone found in Coalbrook Dale, Salop. It is the only species of an indigenous vegetable which I have ever discovered in a fossil state. But it is a native of Virginia also. St. All the other impressions of Filices, which I have seen on iron stone seem to be those of American plants. The root boiled in water becomes mucilaginous, and is used in the north of Europe to stiffen linen instead of starch.

† (The πέπλος of the ancient Greeks appears to have been some kind of Fern, so denominated on account of its wing-like figures; but further we know not. E.)
Crisped or Curled Fern. Parsley Fern. Stone Brakes. \((P. \text{ crispa})\)


Var. 2. Leaves curled.

Mr. Jackson has observed two varieties with curled leaves, the one curled like Parsley, the other like the flowering part of \(Osmunda \text{ regalis}\).

\((P. \text{ July. E.})\)

\(P. \text{ aquil'ina} \).

Leaves more than doubly compound: leaflets winged; the lowermost wing-cleft; the upper ones smaller.

\((E. \text{ Bot. 1679. E.})–\text{Ger. 969. 2—Bull. 207—Bolt. 10—Pluk. 182. 1—Blackw. 325—Fuchs. 596, misprinted 569—Dod. 462. 2—Trag. 542—Matth. 1291—Gars. 272—Lob. Obs. 473. 2; \text{ie. i. 812. 2—Ger. Em. 1128. 2—Park. 1037, misprinted 1039—H. Ox. xiv. 4. 3—Cam. Epit. 992.}\)

The root cut obliquely presents a kind of representation of the Imperial Eagle. Limn. Whence Linnaeus has named it \(P. \text{ aquilina} \), or Eagle Brakes.*


\((P. \text{ Aug.})\)

BLECH'NUM. Capsules forming two parallel lines near the rib of the leaf.

* (Thomas Smith, Esq. of the Temple, London, has observed an inner or real involucr, besides the one formed by the convolute margin of the frond, to which it is opposite, and, curling inward, covers the young capsules, and is only to be observed when the plant is in fructification; the whole being protected by the outer one, or margin of the frond. Hook. Scot. A similar membrane to this inner involucr has been detected in some few other species usually included in the present genus; hence it has been suggested that this difference might afford a character which would justify a new genus. The principle, perhaps, abstractedly, it were difficult to deny, but not less so, practically, the inconveniency of establishing a primary distinction on parts absolutely imperceptible to the naked eye. Dr. Greville informs us that the ferruginous filaments which are produced by the root of this plant, and some of its congeners, have been described by Agardh and other authors, as a Conferva !

† A tolerably pure alkali may be obtained from this plant. In many parts of England the ashes, mixed with water, are formed into balls; which are afterwards heated in the fire, and used to make lye for scouring linen. It makes a very durable thatch; and is an excellent litter for horses and cows. Where coal is scarce, it is used to heat ovens and to burn limestone; for it yields a very violent heat. In the more inhospitable climates, bread is prepared from the roots. The Fern-moth feeds upon it. (In Japan the very young shoots of the leaves are often sold in bunches as edible. The woody root is bruised, and the water being expressed in which it had been steeped, the pulp is eaten by the poorest people. Kempfer. Fern is so astringent as, in many places abroad, to be employed for dressing kid and chamois leather. The powder of it is given by country people to remove worms. Its medicinal qualities appear to be much like those of \(Polypodium \text{ Filix-mas}\). This elegant plant is not unknown in Scottish pastorals, and had more charms for the patriotic bard of Ayr than the boasted products of foreign lands:

"Far dearer to me yon lone glen o' green Breckan,

WF the burn stealing under the lang yellow broom," E.)
B. spicant. Barren leaves wing-cleft; fruitful leaves winged, narrower; segments very entire.

(E. Bot. 1159. E.)—Hedw. Theor. 5, the fertile and barren leaf, with the parts of fruct. dissect. and magnified—Curt. 127—Fl. Dan. 99—Trag. 550—Lon. i. 225. 1—Clus. ii. 213. 1—Dod. 469. 1—Lob. Obs. 475. 2; Jc. i. 815. 2—Ger. Em. 1140. 2—Park. 1042. 2—H. Ox. xiv. 2. 23—Ger. 978. 2—Bolt. 6—J. B. iii. 745. 2—Cam. Epit. 665—Gis. 49.

Flowering-leaves much narrower than the barren ones. Linn. Fructifications covered at first with a thin membrane. Capsule of one cell and two valves, connected by an annular elastic cord, containing many minute seeds. Hedw. Barren leaves, segments widest at the base, strap-, spear-shaped, the lateral ribs forked, sometimes, though rarely, terminating in minute scollops. Fertile leaves, segments not half so broad, separate, though the confluence may almost always be traced, and towards the end of the leaf gives a waved appearance to the mid-rib. Woodw. Fertile leaves, twelve to eighteen inches high, and near two inches broad, the lower part naked or with short imperfect leaflets. Barren leaves from the same root, but only about half as tall, clothed with leaflets nearly to the bottom. From the narrowness of the leaflets it is not easy to determine whether the rows of capsules may more properly be considered as contiguous and parallel to the mid-rib, which is the character of Blechnum, or disposed along the edge of the leaf which would refer it to Pteris. It appears, however, from Hedwig's microscopical dissections, that the anthers are found upon the mid-rib, and that circumstance is, I think, sufficient to determine that the rows of capsules more properly belong to that than to the edge of the leaf, notwithstanding Hedwig himself has referred it to the genus Acrostichum. See Pl. XIII. fig. 9, 10, 11.


Asplenium.* Capsules disposed in straight and nearly parallel lines on the under surface of the leaf.

(1) Leaf simple.

A. Scolopen'drium. Leaves heart-tongue-shaped, very entire; stalks hairy.


* (From σπέλια, spleen, belonging to the spleen; from its once supposed efficacy in curing disorders of that viscus. E.)
Asplenium

Leaf-stalks rising from the root, about two inches long. Leaf strap-shaped but rounded and hollowed at the base, from eight to twelve inches long, or more; one inch and a half to two inches and a half broad, the shortest leaves the broadest. Fructifications in lines, slanting upwards from the mid-rib, but not in contact with it.


Var. 2. Leaves curled and jagged at the edge.

*J. B. iii. 757. 3.*

Near a petrifying spring, by the side of a rivulet at the bottom of Garn dingle, three miles from Denbigh. Mr. Griffith.

Var. 3. Leaves with many clefts at the end.

*Clus. ii. 213. 3—Dod. 467. 2—Lob. Obs. 469. 1; Ic. ii. 805. 2—Ger. Em. 1138. 2—Park. 1047. 1—J. B. iii. 757. 2—H. Ox. xiv. 1, row 1. 2—Ger. 976. 2.*

**Phyllitis multifida.** R. Syn. 117. In a lane near Swaneling, not many miles from Southampton. Gerard Em. Near Bromham, growing in the mouth of a well very much shaded. Mr. Norris. Cawsey Wood, Durham. Mr. Winch. E.)

Var. 4. Leaves with clefts at the edges.

*Tourn. 451.*


Var. 5. Stalk branched, with three or more leaves.

*H. Ox. xiv. 8.*

Mr. Gough sent me a specimen of this variety in which the stalk divides into five branches, but is entire at the base for about two inches and a half, and furnished with its usual leafy border.

This was gathered on Warton Cragg, near Lancaster.

All the above varieties are much smaller than the plant in its more common state.

(Var. 6. Leaves much plaited and crenate at each edge, spear-shaped, (sometimes heart-tongue-shaped,) nearly as large as the common variety.

Found in woods at Stouts-hill, Gloucestershire, by the Rev. Mr. Baker. E.)

(2) Leaf wing-cleft.

**A. Ce'terach.** Leaves wing-cleft: lobes alternate, confluent, blunt.


*(When bruised, the whole plant emits a nauseous scent. To the taste it is mucilaginous and acid; and though not possessed of the powers ascribed to it by the older writers, not only for relieving the spleen and liver, but "all other griefes proceeding of oppilations or stoppings whatsoever," perhaps Ray's recommendation of it, from his own experience, as a good medicine in convulsive disorders, may deserve attention. E.)*
Leaves so covered underneath with scales as to conceal the fructifications. Linn. Leaves many from a root, three to six inches long, the hollows between the lobes of the same size and shape as the lobes, edges somewhat bent back when the fructifications ripe. Woodw.


P. May—Oct.*

(3) Leaves winged.

**A. Trich'omanes.** Leaflets nearly circular, scolloped.


Plant from three to seven inches high, consisting of a leaf, several of which rise singly from a black fibrous root; from one quarter to three quarters of an inch broad. Leaflets either circular or oblong; sometimes rather cut into lobes; capsules when ripe covering the whole under surface. (Its fructification is most abundant during summer, but may be found the whole year. It much resembles _A. viride_, but, besides the different colour, the latter has the **pinnae** rather ovate than oblong, serrated and cuneate at the base—nearly rhomboid. Fl. Lond. E.)


**A. vir'ide.** Leaves spear-shaped: leaflets circular, but with three or four angles.

Dicks. H. S.—(E. Bot. 2257—Fl. Dan. 1289. E.)—Bolt. 14. Leaf-stalks pale green, sometimes brownish towards the root, and in some specimens brown and glossy as in _A. Trichomanes_. Wings rhomboidal, fixed on the leaf-stalk by one of the corners, the upper and lower sides of the base very entire, the other two scolloped. Bolt. Wings more lopped at the base than in _A. Trichomanes_. Leaf-stalk green, which seems to be the only certain character by which it is distinguishable from that

* (The Rev. Hugh Davies informs us that the Scaly Spleenwort is becoming very scarce, from being gathered for bait in rock-cod fishing. E.)

† (This Fern has no pretensions to medicinal virtues, but is generally substituted instead of the more rare True Maidenhair for making capillaire, a syrup which, when perfumed with orange flowers, is considered an agreeable beverage. The Common Maidenhair is less sensible to cold than the other kind, and with several of its tribe may be introduced to advantage upon ornamental rock-work. E.)
species. Wood. In *A. Trichomanes* the wings or leaflets are less regular in their edges, and less distinctly scolloped; but in *A. viride* the inner and under edges are always entire, the upper and outer ones always scolloped. The general shape of the leaf in both species is the same, and rather strap than spear-shaped.


P. June—Sept.

Var. 2. Wings lobed and cut.

*H. Ox. xiv. 13. 3—Pluc. 73. 6—Tourn. 315. C. F.—Ger. 975.*

Scotland. Bobart, in *H. Ox.*

Var. 3. Leaf branched. Bolt.

*Bolt. 2. 3—H. Ox. xiv. 3. 11—Ger. 985. 2—J. B. iii. 755. 1.*

*A. Trichomanes ramosum.* Linn. *A. Trichomanes* β. Huds. On all the high rocks of Carnarvonshire. On a stone wall in a garden at Maidstone, Kent, and on limestone rocks Craven, Yorkshire. On the rocks below Ogden Kirk, on the opposite side of the Clough. Bolt.

*A. mari'num.* Leaflets egg-shaped, serrated: the upper edges expanded at the base, the lower hollowed out.


Stalks reddish brown. Leaflets in some specimens spear-shaped, acutely scolloped, the scollops equal in number to the lines of fructification, lobed at the base on the upper side. Woodw. *Plant* five inches high. *Stalk* crooked at the base.


P. June—Sept.

Var. 2. Leaflets deeply cut. Bolt.

*Sibbald Scot. Ill. t. 3, f. 1. 2—Bolt. 2. 4.*

Plants corresponding to Sibbald's figures we found in the Coves at Weemys in Scotland. Lightfoot. *Adiantum trapeziforme.* Hudson.

*(A. septentriona'le. Frond wing three-cleft: segments alternate, linear, jagged at the tops.*
From two to five inches high. Leaves mostly in pairs; strap-spear-shaped, on long leaf-stalks rising from the root. With. Readily distinguished by its bi or rarely tri-fid, (by no means pinnatifid,) linear fronds; as well as by the crowded fructifications, which, in an old state, have so much the appearance of those of an *Acrostichum*, that the plant was by the older Botanists invariably arranged under that genus. Its nearest affinity is *Asplenium Ruta-muraria*. Hook. Fl. Lond. E.) (Forked Spleenwort. *A. septentrionale*. Hull. Sm. Willd. Hoffm. Sw. De Cand. *Acrostichum septentrionale*. Linn. Huds. Lightf. With, to Ed. vii. Dicks. Bolt. Clefs of rocks and old walls, chiefly in the northern division of this Island; and tops of mountains, as Carnedd Lewelyn, in Wales; on Ingleborough, Yorkshire; at Patterdale and Keswick, and above Ambleside, Westmoreland. Rocks in Edinburgh Park. Dr. Hope. The rock of Stenton, near Dunkeld. Mr. Arnott, in Fl. Lond. Rocks on the southern side of Blackford Hill, Somersetshire. Mr. Brown. P. E.)

**A. alternifoliuim.** Leafits wedge-shaped, alternate, notched at the extremity.

(E. Bot. 2258. E.)—Jacq. Misc. 5. 2—Breyn. Cent. 97. From three to five inches high. (An intermediate species between *A. septentrionale* and *Ruta-muraria*, though perfectly distinct from both. Sm. E.)


(4) Leaves doubly compound; divisions alternate.

**A. Ruta-muraria.** Leafits wedge-shaped, finely scolloped.


(Fronds three or four inches high, resembling Rue leaves. E.) Stem bare for near half its length. Fructifications in two or three rows, on each the rib of the leaf. Bolt. The foliage at first sight has something of a Trefoil appearance. Smith very properly observes, that the Ferns can only be determined in their early state before the bursting of the membrane which covers the capsules, for in an advanced state the back of the leaf is covered with a confused mass of capsules, with hardly a vestige of their former disposition. He thinks this species may be best distinguished by the membrane always bursting towards an adjoining vein or nerve, never towards the edge of the leaf, unless when a vein is found on that side. See E. Bot. p. 150.

**White Maidenhair. Wall Rue. Tentwort.** (Welsh: *Dueg-redy-nen y Muriau*. Old walls and moist crevices of rocks. Southwold Church, Suffolk, Long Stratton Church, Norfolk. Mr. Woadward. Walls at Shirehampton, near Bristol; and about Bewdley. (In Anglesey;

P. June—Oct.


(Much larger than the foregoing. Fronds about a foot high. E.) Seeds saffron-coloured. Linn. Lobes, the extreme serratures so acute as almost to appear fringed. Woodw. Stalks black or deep red brown, glossy. Fructifications three to seven on each segment.

Black Maidenhair. Oak Fern. (From the Greek compound ὀμιχρος, applied by some old authors to this plant. Welsh: Dueg-redyfen ddu. Shady places and old walls. P. April—Oct.*

Var. 2. Wings long, divided into very fine and longish segments. Sherard, in R. Syn. Pluk. 282. 3. Wings with hair-like segments. Pluk. Fructifications none discovered. Possibly a variety of A. Adiantum-nigrum, into a very shady situation, but if a variety, it is a very extraordinary and beautiful one. Dill.

(On rocks at Cocken, Durham, but rare. Mr. Winch. E.)

Felix non ramosa, &c. Pluk. Alm. p. 150. par. the last but one, as corrected according to Mant. p. 78. par. 4. Mountains of Mourne in the county of Down, Ireland. R. Syn.


E. Bot. 240—Bolt. 17. 2. (but less sharply cut than in the preceding figure.)

Stalk black below, green upwards. Leaf bright green. Capsule in an advanced state, forming roundish, as well as oblong, patches. E. Bot.

Spear-shaped Spleenwort. On old walls and rocks about St. Ives, and other places in Cornwall. Hudson. On a wall in the village of Wharf, Yorkshire. Bolton. (In Whitaker's Craven it is asserted there is no such village. E.) On the great rock at Tunbridge Wells. Mr. Forster.

P. May—Sept.

POLYPODIUM.† Capsules disposed in distinct circular dots on the under surface of the leaf.

Obs. The investigation of the species of this extensive Genus has always been attended with difficulties and uncertainties; partly owing to the

* (Recommended by Hoffman as an antiscorbutic. E.)

† (Compounded of παλας, many, and πος, a foot; according to Theophrastus, from its root, which extends itself by numerous superficial cirri, or radicles, resembling the polypus; and thus supports the plant. E.)
prevalence of a general resemblance in habit, partly to the different appearances observable in them at different ages, or to deficiencies in the specific characters. Nor have authors always been scrupulously accurate in the application of the terms used in describing the leaves.

The plants should not be gathered for examination until of sufficient age to attain a full state of fructification. The terms employed in the subdivisions of the species, and in characterizing the individuals, should be precisely understood. The attention should be more particularly directed to the lower parts of the leaves, wings, &c. for there it is that the characters are most constant, and most observable, the extreme parts generally running together so as to baffle every attempt at definition.

The following tabular view of the different British species is offered as a mean of facilitating their investigation; the student, therefore, is advised first to compare the plant in question with these characters, and then to look forward to the descriptions given more at large.*

(1) Leaves wing-cleft.

P. vulgar e. Lobes oblong, somewhat serrated, blunt.

(2) Leaves winged.

P. Lonchitis. Wings crescent-shaped, finely and sharply serrated: stems with chaff-like scales.

P. Ilvense. Wings opposite, triangular, blunt, hairy underneath, very entire at the base.


P. Phegopteris. Wings strap-spear-shaped, wing-cleft, united at the base, hairy underneath.


(3) Leaves winged; wings deeply wing-cleft.


(P. cristatum. Frond pinnate: leaflets pinnatifid, acute: lobes ovate, blunt, crenate, sharply toothed: stalk scaly at the base. E.)

P. dentatum. Wings egg-spear-shaped, opposite: lobes egg-shaped, blunt, sparingly cut at the sides, finely toothed at the end.

P. fontanum. Wings egg-spear-shaped, alternate: lobes deeply scollop.
(4) Leaves doubly winged.

P. aculeatum. Primary wings crescent-shaped, acute: leaflets serrated with prickles: stem chaffy.


P. fa'mina. Primary wings strap-spear-shaped: leaflets slender, acute, wing-cleft or serrated: stems smooth upwards.

(P. dilatatum. Frond bipinnate: leaflets pinnatifid, deeply serrated, tipped with small spines: stalk scaly: involucrum circular. E.)

P. fragi'ile. Primary wings spear-shaped: leaflets wedge, egg, or strap-shaped: segments bluntly or sharply lobed: stem very slender.

P. trifidum. Primary wings spear-shaped, blunt: leaflets of the lower wings mostly three-cleft: stem bordered.


(5) Leaf triply winged.

P. Dryopteris. Leaves three on a stem, doubly winged.


(1) Leaves wing-cleft: lobes united at the base.


Ludw. 18—Curt.—(E. Bot. 1149. E.)—Fl. Dan. 1060—Kniph. 6—Bolt. 18
—Bull. 191—Blackw. 215—Tourn. 316—Walc.—Woodw. 271—Gars. 466
—Fuchs. 588—Trag. 540—Dod. 464. 2—Ger. Em. 1132. 2—Tourn. 316
—Ger. 972—Matth. 1293—Dod. 464. 1—Lob. Obs. 475. 1, 1c. i. 814. 2—
Ger. Em. 1132. 1—Park. 1039. 1—H. Or. xiv. 2, row 1. 1—Ger. 974. 1
—Cam. Epit. 993—Lon. i. 244. 1.

Lobes slightly serrated at the edge. Fructifications yellowish brown, in rows, parallel to the rib of the lobes.


Var. 2. Lobes doubly serrated.

Barr. 38.

Walls of Windsor Castle. Ray. Worcestershire. Dr. Stokes.

* The root is sweetish: by long boiling it becomes bitter. When fresh, it is gently aperient. An infusion of six drachms in half a pint of boiling water may be taken at twice. (Thus far may be matter of fact, though the medicine has long been neglected; but on the wonderful efficacy of several plants of this tribe in removing obstructions of the spleen, liver, and other viscera, it were no longer prudent to insist; for such reports, however sanctioned by the ancients, were, more than two centuries ago, very properly designated by honest Gerard as "old wives' fables, fit only for writers who fill up their pages with lies and frivolous toies." E.)
Var. 3. Lobes sometimes cloven at the end, sometimes enlarged by a lateral appendage.

Bolt. 2. 5. b. a portion of a leaf.

In a wood near Bingley, Yorkshire. Mr. Alexander; Braid Hill, near Edinburgh. Mr. Brown.


H. Ox. xiv. 2—Pluk. 30. 1—Bolt. 2. 5. a., a portion of the leaf.

In this state it never produces fructification. The same is observable of Asplenium Scolopendrium. Lightfoot.

On a rock in a wood near Dennys Powys Castle, not far from Cardiff, Glamorganshire. R. Syn. Near Kidderminster. (With copious fructification, in a wood by the Dargle, Wicklow. Mr. J. T. Mackay. E.)

P. June—Oct.

Var. 5. Acutum. Lobes very long, distantly serrated; tapering to an acute point.


(2) Leaves winged.

P. Lonchidis. Wings crescent-shaped, the convex side downwards: fringe-serrated: stems with chaff-like scales.


Leaves in circles round the crown of the root, which is rough with the remains of decayed stalks, keeled, from the wings being bent upwards on each side the leaf-stalks. Leaflets so closely placed as to be tiled, the lower edge covering the upper edge of the next beneath, serratures frequently but irregularly terminating in short spine-like teeth, furrowed underneath with veins, the margin of the upper half of the base of each leaflet parallel to the general stalk. Stalk furrowed above. Fructifications in dots, disposed in two parallel lines on each leaflet. Woodw. Plant from four to fourteen inches long, and from one to two inches broad; generally curved. Leaflets, the larger serratures ending in semi-transparent thorns.


(Aspidium Lonchitis. Sw. Willd. Sm. Hook. E.) Clefts of rocks. On the highest mountains of Carnarvonshire; on Glyder, near Llanberis. (On all the mountains of Breadalbane and Glen-lochail, sometimes two feet high or more, but quite distinct from P. aculeatum, Mr. Brown. In clefts of rocks near the summit of Ben Lomond. Rev. T. Gisborne. On Ben Lawers; also near Caldron Snout, Teesdale. Mr. Winch. Hudson’s station, “near Bingley,” is supposed, (in Whitaker’s Craven,) to refer to P. aculeatum. In a glen east of Lough Esk, Donegal; and on Glenade mountain, Leitrim. E. Murphy, Esq. E.) P. May—Sept.

P. Ilvense.* Leaflets opposite, united, blunt, hairy underneath: very entire at the base.

* (From the plant having been first observed in the Isle of Elba, (Ilva.) Sm. E.)
SCARCELY more than a finger's length. Stem greenish, not blackish purple.

Linn. Leaflets six or seven on each side the stem; the lower ones opposite, the upper alternate; thick and opaque; generally cloven into five or seven segments, rounded at the ends.


P. July—Sept.

P. ARVONICUM. Leaflets spear-shaped, wing-cleft, hairy underneath: stem hairy. (E. Bot. 2023. E.)—Pluk. 89. 5—Fl. Dan. 391—Bolton believes his tab. 9 to be the same plant.)

From three to five inches high. Leaflets seven to fifteen pairs, cloven on each side into five or six segments; spear-shaped, hairy underneath. Bolt.


This seems sufficiently distinct from the P. Ilvensis found on the Scottish Alps by Mr. Dickson. Mr. Griffith thinks that Bolt. t. 9. is only a very small and stiff plant of P. fragile gathered in a high and exposed situation; and that it is not the plant found by Mr. Llwyd in Ray's Syn. (Swartz is also decidedly of opinion that this plant is different from P. Ilvensis. E.)

P. Phegopteris. Lowermost leaflets reflexed, each pair united at the base by a four-cornered little appendage.

Bolt. 20, (the lowermost pair of leaflets not accurately represented. E.)—H. Ox. xiv. 4. 17, f. 3, the quadrangular appendage not expressed.

Leaflets spear-shaped, wing-cleft. Linn. Plant sometimes nineteen, and stalk twelve inches, high. Leaflets, the lowermost pair not confluent as all the rest, and placed an inch and a half from the pair above it; in a vigorous plant bent almost back to back, in consequence of which, when dried and gummed on paper, they form an acute angle with the stalk, and might lead those who had not seen the plant growing, to suppose they grew in the same plane with the rest. Lobes semi-elliptical. Woodw. Whole plant hairy.


P. Oreopteris. Leaflets strap-spear-shaped: segments very entire, bluntish: clusters of capsules at the edges.

POLYPODIUM.

(Three times the size of P. Thelypteris. The peculiar characteristic of this species is the yellowish resinous glands sprinkled over the back of the leaves. These sometimes exhale a sweet smell, as remarked by Mr. Teesdale. E. Bot. E.) Stem smooth, with two furrows; ten to fifteen inches high or more. Wings, the upper and lower ones alternate; segments strap-spear-shaped, blunt, either entire, or finely serrated. The two or three lower pairs of wings gradually shorter, and the lowest pair often pointing downwards. Fructifications always at the edge of the lobes, both in the young and more advanced state, never becoming confluent.


(The fragrant scent of this species is supposed to have induced Hudson to imagine it the P. fragrans of Linnaeus. E.)

(3) Leaves winged; wings deeply wing-cleft.


From one foot and a half to four feet high. Lobes of the wings strap-shaped, the ends rounded. Fructifications from three to eight on each lobe, placed in two rows near to its base and distant from its edges; none at the end.


* The Siberians boil this Fern in ale, and are fond of the flavour which it imparts. The powder of the root (not unknown to the ancients as an anthelmintic, E.) is the celebrated Swiss remedy to expel the tapeworm. See Dr. Simmons's account of the Tena; (also Linn. Tr. vol. ii. p. 247. E.) I have frequently used it, and seldom without the desired effect. (An essential oil extracted from the same plant is used on the Continent, and proves equally efficacious, in doses of ten or more drops. In the reign of Henry the Sixth, so great a famine prevailed, that Fern roots were used for the purpose of making bread. It would be difficult now to ascertain the exact species, but probably the largest and most common kind. This Fern, and the Pteris aquilina, are burnt together for the sake of their ashes, which are purchased by soap and glass makers; the island of Jura alone yields one hundred and fifty pounds worth of these ashes annually. Gunner relates that in Norway the young curled leaves are boiled and eaten like asparagus; and that the larger leaves, dried and infused in hot water, afford an acceptable fodder and litter for cattle, in hard winters. It is used for rough thatching and beds, as the Highland Heather. The larger Ferns, either dug in, or burnt on, the ground, entice...
P. Thelypteris. Leaflets wing-cleft: lobes very entire, the under surface entirely covered by clusters of capsules.


Its habit like P. Filix-mas. Stem smooth. Old leaflets covered with capsules. Barren leaves broader and blunter. Linn. Root small, creeping. Dicks. Wings deeply divided, but the divisions do not reach to the mid-rib. Lobes when in seed much contracted, and narrower than before the capsules are fully formed, but this circumstance is very general through the whole tribe. (The slender creeping root, and the crossing, but separate leaflets, distinguish this species from every other. Sm. E.)


P. July—Oct.

(P. cristatum. Fronds pinnate: pinnae subcordate, oblong, pinnatifid: the segments oblong, obtuse, dentato-serrate: stipes chaffy. E.)

(Hook. Fl. Lond. 113—E. Bot. 2125. E.)

(Fronds many from the same root, yellow green, one to two feet high, linearo-lanceolate, erect, rather rigid, nearly bipinnate. Stipes green, beneath dark purple, on the upper side channelled, smooth, every where chaffy, scales ovate, acute, membranous, pale brown. Pinna upon the sterile fronds most approximate, upon the fertile ones more distant, all alternate, cordato-oblong, more or less attenuated, but obtuse at the apex, towards the middle three inches long, the inferior ones somewhat shorter, the superior ones gradually decreasing, and terminating in a short acuminate point. Rachis smooth. Pinnules or the segments of the pinna, alternate, oblongo-ovate, obtuse, at the base confluent with the flexuose nerve, smooth, the inferior ones somewhat lobed, at the margins irregularly and obtusely serrated, the rest have the margins inciso-serrate. Fructification dorsal, on the superior pinna disposed in a double series between the margin and the nerve of the segments. Sori roundish. Indusium membranaceous, pale brown, almost white, between round and reniform, fixed at the sinus, the margins free. Capsules numerous, small, spherical, brown, upon long foot-stalks, reticulated, surrounded by an elastic, articulated, incomplete ring, bursting transversely. Seeds

the soil greatly by their saline particles; and thus Horace, though not without a moral inference, Lib. i. Sat. 3. 37,

"Neglectis urenda Filix innascitur agris."

Scarcely any production of a tropical climate can present a more truly elegant appearance than does this and the sister Fern, of luxuriant growth, as fringing or feathering the high banks of the narrow lanes of South Devon. The Scotch term Bracken, (like Gowan,) we conceive to be rightly understood as generic, including several different plants, and thus it would seem to be almost indifferently applied both to our present species and Pieris aquilina, E.)
CRYPTOGAMIA. FILICES. POLYPODIUM. 997

round, deep brown tuberculated. Hook. Readily distinguished from its affinity to P. filix-mas by its yellow green hue, and broad pinnae. E.)


We suspect that Mr. Brown's specimens in With. Herbar. from Ben Bourde in Aberdeenshire ought rather to be considered this species than P. dilatatum. E.)

P. DENTATUM. Leaflets opposite, wing-cleft: lobes sparingly cut at the sides, finely toothed at the ends: stem very slender.


Nearly resembles P. fragile in size and habit. Root small, fibrous, bundled, a little woolly. Stems several, slender pale brown, shining, somewhat scaly at the base. Leaf spear-shaped, doubly winged. Wings distant, spear-shaped, mostly alternate. Leaflets egg-shaped, blunt, cut, unequally toothed; teeth distant, blunt, pale brown. Clusters of capsules near the incisions, towards the edge. Dicks.

Such is the account given by Mr. Dickson of this new species of Polypodium, which he first discovered in crevices of rocks in the Highlands of Scotland; but, though this description and his specific character mention it being doubly winged, neither his own figure, nor the specimens sent out in his Fasciculi of dried plants, authorize us to say that they are so. They are only simply winged, and the wings divided into lobes, nor have they any proper mid-rib. P. dentatum of Forsk. in Gmelin's Syst. Nat. is a different plant.


P. FONTANUM. Leaflets alternate, triangular, blunt, deeply wing-cleft: lobes sharply toothed at the end: stem very slender.

(E. Bot. 2024. E.)—Lob. Adv. 361. 2, and Ic. i. 310. 1—Bolt. 21—Barr. 432. 1—Pluk. 89. 2 and 3—Ger. 980. 2.

Its habit resembling P. fragile, but the leaflets closer together and not so deeply lobed. Fructifications in large dots, proceeding not from a roundish scale, but from an oblong white slender valve or chink. Linn. Plant three or four inches high. Stamens pale green, thread-like. Leaflets alternate. Bolt.


(4) Leaves doubly winged.

P. ACULEATUM. Primary wings crescent-shaped: leaflets rhomboidal, with prickly teeth: stem chaffy.

Mill. Ill.—Bolt. 26. 1 and 3—H. Ox. xiv. 3. 15, f. 1—Pluk. 179. 6, a young plant only winged.—Pluk. 180. 1, fully grown.—Pluk. 180. 3, in its middle state of growth.—(E. Bot. 1562, margin of the pinnule incorrect. E.)
Sometimes half a yard high. *Leaves* irregularly rhomboidal, with a projecting angle on the upper edge near to the mid-rib. The leaves immediately adjoining to the primary mid-rib are very unequal in size, the uppermost being the largest, and having its lower edge parallel to the primary mid-rib. In a young state, the leaf is only simply winged, as represented in Bolton’s pl. 26, fig. 2. (Primary wings one to two feet in length, of a true lance-shape, broadest in the middle, decreasing gradually towards the extremities: the rib channelled on the upper side. Second-leaves, one or two of the lowest pairs placed opposite, becoming gradually alternate upwards. Lobes from eight to twenty, the first pairs divided down to the nerve, thence gradually becoming confluent, losing themselves in the acute prickly termination of the second leaf. Seed-vessels near the top of the plant in two regular rows; lower down less regularly placed on the lobes. Bolt. E.)

(The most able Botanists are divided in opinion as to the identity of this species and *P. lobatum*; and different characteristics have been assigned to each, without producing general conviction; a proof, at least, that the specific distinction, if any, must be very obscure. Vid. Smith in E. Bot. Hook. Fl. Scot. 154. Grev. Fl. Edin. 221. Purt. Mid. Fl. 509. 510. E.)


**Var. 2. Leaves sprinkled with a moss-like down. Pluk.**

**P. spinulosum.** Primary wings spear-shaped; leaves strap-egg-shaped, wing-cleft, and serrated with sharp-pointed teeth.


This has been taken for *P. cristatum*, but it is very different from that; of a more delicate and transparent texture, the leaf-stalk but little, if at all, scaly, the opposite leaves on the wings not unequal in size, and the mid-rib of the leaves serpentine. It agrees with it in the disposition of the fructifications, and in the serratures ending in short awns.


**P. Filix-fe'mina.** Leaves strap-spear-shaped, wing-cleft, acute: stems smooth upwards.


Fructifications egg-shaped, somewhat fringed, solitary. Linn. Leaves deeply cut with one or two divisions; the teeth often ending in a short awn. Woodw. The most elegant of all our Ferns. One cluster of capsules on each lobe of the leaf. Bolt. So that in a ripening state the
whole of the leaf is always bare. The lower pair of leaflets on each wing, that is, the pair next to the principal or primary leaf-stalk, stand close to it, and parallel with it, pointing upward and downward. The breadth of the leaflets varies considerably in different plants, but when they are narrow and the wings distant, the whole has a remarkably light and elegant appearance.


(P. Filix-mas. Fronds are of a more narrow lanceolate figure, and of a paler pellucid green; the main stalk occasionally scaly, but in general quite smooth, and exactly quadrangular, though the latter circumstance varies. Leaflets shorter, and somewhat less linear than in P. foemina, deeply serrated, or partly pinnatifid, their segments sharply cut, without bristly points.

About the margins of clear springs. Several places near Tunbridge. Mr. T. F. Forster. Eng. Fl. Abundant at Tintern. Mr. W. Christy. E.)

(P. dilatatum. Frond doubly winged: leaflets deeply wing-cleft: segments oblong, blunt, sharply cut, tipped with little spines: common stalks scaly: involucrum circular.

E. Bot. 1461—Mull. Frid. 2. 4—Pluk. 181. 2—Bolt. 23.

In moist rich soil three or four feet high, and trebly winged; on dry rocks on banks about a foot high, the first pair of wings the largest, and the only pair that are triply divided. Bolt. Serratures ending in short awns. Woodw. Stem scaly all the way up. Lower leaves of the lower wings larger and longer than those opposite to them. First leaves from six to thirty inches high; rib destitute of leaf more than half its length; general figure of the leaf triangular, tapering upwards to a point. Second leaves of a triangular figure, tapering to the extremity. Bolt.


P. fragile. Primary wings spear-shaped: leaflets with a few irregular teeth towards the end: stem very slender and brittle.
Var. 1. Primary wings long, spear-shaped, acute, distant; leaflets distant, pointed.

From four to seven inches high. Stem red, bare for about two inches at the base; smooth, slender, brittle. Leaflets more than twice as long as they are broad. In habit approaching nearly to P. rhacicum, but it is not distinctly doubly winged like that plant, nor are the lobes of the leaflets regularly serrated at the edges, as in that.

Var. 2. Primary wings spear-shaped, acute; leaflets crowded.

Bolt. 27—Barr. 432—J. B. iii. 741. 2—Seguier. 1. 1.

From two to six inches high. Stem red, bare for half to one and a half inch from the base; smooth, brittle, but less slender than in the preceding. Leaflets not equal in length to twice the breadth.

Var. 3. Primary wings spear-shaped, blunt.
About three or four inches high. Stem red, bare for half to one inch from the base; smooth, brittle, slender.

This has a general resemblance to P. dentatum, but differs from that in the colour of the stem, in being doubly winged, and in the want of fine teeth at the ends of the lobes.

Mr. Griffith, of Garn, Denbighshire, favoured me with specimens of these three varieties gathered from the same root, and I have seen a single specimen uniting the characters of the two former.


P. trifidum. Primary wings spear-shaped, blunt: leaflets of the lower pair of wings mostly three-cleft: stem bordered.

E. Bot. 163.

Three or four inches high. Stem brown green, slender, bare for one inch or more at the base; edged with a narrow border on each side. Wings nearly triangular; leaflets three-cleft, the middle segments sometimes notched.

I am indebted to J. Wynne Griffith, Esq. for a beautiful specimen of this plant. It is sufficiently distinct from P. fragile, though in habit much resembling our third variety of that species. Both this and P. fragile have their capsules in a globular cyst, which seems attached to the foliage at one point only, and readily separates from it. (Dr. Greville considers them the same, and states that he possesses specimens "exactly intermediate." E.)

(Three-cleft Polypody. P. regium. Linn. Aspidium regium. Sw. Willd. Hook. Cystea regia. Sm. Cyathea incisa, E. Bot., where it is mentioned as having been found by Mr. T. F. Forster, jun. on a wall near Walthamstow, and that he thought it distinct from P. fragile. Mr. Griffith found it on Cwm Idwell. Rocks at the dropping well, Knaresborough. Mr. W. Christy. Ben Lawers. Maughan, in Hook. Scot. E.)

P. rhac'ticum. Primary wings spear-shaped, distant; leaflets deeply lobed: lobes regularly toothed at the edge.

Dicks. H. S.—Bolt. 45 and 2. 6.
Seven or eight inches high. Stem red, smooth, slender, convex on one side, bare for two or three inches from the base. Wings distant, spear-shaped, acute; leaflets strap-spear-shaped, the edges toothed. Mr. Bolton has very well observed, that the wings are distinct all the way up, not becoming confluent at the top, and that the leaflets on the upper side the secondary mid-rib are larger than those on the lower, by which it may be distinguished from *P. fragile*. The regular serratures on the sides of the lobes also afford a good distinction, the lobes in *P. fragile* being only serrated towards the end, and that very irregularly.


*(Red-stemmed Polypody.)*

**P. Dryopteris.** Stem supporting three-winged or doubly winged leaves.

*(E. Bot. 616. E.)—Kniph. 12—Bolt. 28—Trag. 538—J. B. iii. 741. 1—Lon. i. 224. 2—Ger. 974. 2—Clus. ii. 212. 1—Ger. Em. 1135. 3—Park. 1044, middlemost figure—H. Or. xiv. 4. 19.*

Fructifications near the rib of the secondary wings. Bolt. Plant from five to eight inches high. The three leaves placed near the end of the stem, one terminal and one on each side. The Rev. Mr. Baker observes, that, “at the point where the lower pair of pinnae branch from the stem the plant forms an obtuse angle and leans backward. This appears to be occasioned by four strong glands on the upper side of the stem and two on the lower. These glands attend the angles formed by the other wings, but decrease as they advance.”


**(Mr. Brunton has found a large variety of this plant near the first waterfall in Hackfall, Yorkshire, so different in appearance from the proper state, that a young Botanist would be at a loss to know to what species to refer it. Bot. Guide. 722. E.)**


* (Derives its specific name, *Calcareum*, from being occasionally found among the mossy roots of oak trees. It has been supposed to possess medical qualities somewhat similar to those of its congeners. E.)
1002 CRYPTOGRAMIA. FILICES. Adiantum.

E. Bot. 1565—Bolt. 1. 1.

Root stouter and less extending than in the preceding species. Frond more firm and rigid; stalk more scaly about the lower part. Branches smaller, rigid, and not loosely spreading. Masses of capsules of a browner hue, more crowded. Sm.


ADIANTUM.* Capsules forming oval spots under the ends of the leaves, which are folded back.


About five or six inches high. Leaflets fan-shaped, with four or five notches at the end of a very delicate semi-transparent green, which it retains in a dry state.


TRICHO'MANES.† Fructifications on the edge of the leaf, solitary, urn-shaped; ending in a thread-shaped style.

T. Tunbridgen'se. Leaves winged: wings oblong, forked, decurrent, toothed.

(Hook. Fl. Lond. 71. E.)—Fl. Dan. 954—E. Bot. 162—Pluk. 3. 5—Bolt. 2. 7—H. Oz. xv. 7. 50.

Wings sometimes, not always, serrated or scolloped. Bolt. Wings elliptical, narrow; teeth sharp. Woodw. Leaves all producing fructifications

* (So called from α, privative, and διαβε, to moisten or become wet; because its leaves are said to resist moisture; but how far this name may have been originally applied to our plant seems questionable. Hippocrates describes the Fern of the ancients as xαλλαφάκες, beautiful-leaved; Theocritus κλεοπό αδιατόν, the green Adiantum. E.)

† (This very elegant plant is chiefly used for making syrup of capillaire; for which purpose also the more common Asplenium trichomanes is occasionally substituted; an immaterial imposition, as neither plant seems to possess either pectoral, or any other active virtues. This Fern may be increased by planting in pots of lime rubbish, but sometimes requires shelter in the winter. E.)

‡ (From θηρίς, τηρίζει, hair. Respecting the latter part of the name etymologists are not agreed. The term, so far as intelligible, would seem to refer to the slender shining stalks common to most Ferns, which occasioned such plants to be called capillary herbs; and also to the reputation of improving the growth of human hair, an inference equally futile with many others deduced from analogous appearances. E.)
when growing in an open exposure, but in chinks of shady rocks they become luxuriant, assuming the appearance of *T. pyxidiferum*, and never bearing fructifications. Griff. Capsules two-valved, furnished with an elastic ring, and placed round the style-like column within the two-leaved involucrum. Sm.


**Var. 2. Fructifications on naked fruit-stalks.**

*Bolt*. 31.

Its habit, as represented by Mr. Bolton, is considerably different from that in *E. Bot.* and though the latter has indeed fruit-stalks springing from the mid-rib, they are not naked, but pass within the substance to the edge of the leaf. Rocks under Dolbadern castle, near the lake of Llanberris; and on the rock called Foal-foot on Ingleborough, Yorkshire. Bolton.


As this rare plant has hitherto been but imperfectly understood, we transcribe the very elaborate description of Dr. Hooker.

Caudex creeping, the thickness of a sparrow’s quill, clothed here and there with thick, downy roots. Stipe two to four inches long, flexuose, with a membranous margin. Frond four inches to a span high, ovato-lanceolate, triplicato-pinnatifid. The primary pinnae three inches long, the upper ones gradually shorter; and those as well as the secondary ones ovato-lanceolate, with the lacineae linear, undivided, emarginate, or bifid, and the margins entire; furnished with a slender brown nerve or mid-rib, prominent on both sides, and running through the middle. Rachis winged with a broad foliaceous margin. The substance of the frond is membranous, smooth, beautifully reticulated, with roundish areolie. Colour brownish green. Involucres in the axils of the pinnulae, solitary, of one leaf, oblongo-turbinate, between carnose and membranous, not serrated, but slightly notched on one side; the sides winged. Receptacle in the centre of the involucre, filiform, exserted. Capsules rounded, sessile, fixed by the disk, compressed, brown, collected together near the middle of the receptacle, their disk reticulated, the elastic ring large. Seeds round.

**Winged-stalked Goldilocks.** *T. alatum* and *T. brevisetum*. Br. in Hort. Kew. (*T. brevisetum*. Eng. Fl. E.) *T. pyxidiferum*. Huds. and Bolt., but not of Limn. *T. pyxidiferum*, and *T. Tunbridgense*, var. 3. With. *Hymenophyllum alatum*. E. Bot. *H. Tunbridgense* β Fl. Brit. *Filix humilis repens*. Ray. On dripping rocks; first observed by Dr. Richardson, at Belbank, half a mile from Bingley, Yorkshire, at the head of a remarkable spring, as recorded by Dillenius in Ray Syn. Found there also by Mr. Teesdale, in 1782, but has been since extirpated, according to Hallstone in Whitaker’s Craven. In Ireland it is
Sphagnum more common, having been discovered at Powerscourt waterfall, and in several spots of the romantic parts of Kerry. On shady banks and rocks exposed to the spray of the waterfall above Turk Cottage, Killarney, growing with the very rare Jungermannia Hutchinsie. Mr. Mackay. E.)

SPHAG'NUM.* Barr. Fl. club-shaped: Anthers flat: Caps. on the same plant, sessile: Mouth smooth, covered with a lid, without any entire veil.

S. PALUSTRE. Branches bent downwards, (swollen: leaves ovate, blunt, ventricose. E.)

Hedw. Th. 12. 42 to 45, and 13. 46. 47, Hist. i. 1. 1, Ib. ii. 3. 9—(E. Bot. 1405—Musc. Brit. iv. E.)—Vaill. 23. 3—Dill. 32. 1—Fl. Dan. 474—Schmid. 58. 5—Plut. 101. 1—Scheuch. II. i. 5, 4, at p. 38—Lob. Ic. ii. 242. 2—Dod. 473. 1—Ger. Em. 1559. 1—Park. 1306. n, h

The capsules burst with a cracking noise. Limn. Stems growing many together, from three to twelve inches high, upright, sometimes divided. Branches at short distances, two, three, or four from the same part, heavy and hanging down from abundance of moisture. Leaves white, egg-shaped, concave, soft, tiling the branches. Capsules at first sessile, but afterwards they attain short fruit-stalks. Dill. Involucrum scaly. Capsules nearly globular, when open urn-shaped, generally several together at the top of the stem. Lid convex, pointed, deciduous.


Var. 2. The whole habit more slender, more branched; capsules smaller.


Var. 3. Whole plant of a beautiful peach colour.

On Bogs in the New Forest, Hants.

In var. 1, the leaflets are concave, oblong, blunt; in 2, flat, awl-shaped, sharp.

S. ALP'NUM. Somewhat branched, upright: (leaves bristle-shaped, straightish: capsule somewhat ovate, furrowed: stalk zigzag: veil fringed. E.)

* (A name adopted from Pliny by Dillenius and Linnaeus; but to what kind of Moss it was originally applied cannot now be ascertained, any more than its correct significance. E.)

† (Mr. W. Curtis obtained the reward of the Society of Arts for his valuable application of this Moss to the packing of young trees for exportation. It should be laid in courses between the trees, and being wonderfully retentive of moisture, and seeming to possess an antiseptic property, which totally prevents fermentation or putrefaction, vegetation actually proceeds during the time the trees remain enclosed. Month. Mag. vol. 25. 300. Used by the Lapland women to wrap their children in: cradles thus lined affording an excellent defence from cold. This genus of plants is singularly elegant, even to the naked eye, but far more interesting when its beauties are displayed under the lens. E.)
Of a beautiful green colour. **Capsules** egg-shaped. **Leaves** strap-spear-shaped, pointing three ways. Neck. In a dense compact tuft, about a finger's length, sometimes dividing in the middle into two or three branches. **Leaves** a splendid intense green, long, narrow-pointed, straight, stiff. (Mr. Griffith brought from Snowdon plants of *S. alpinum* and placed them under a waterspot, where they soon became *Bryum flexuosum*. Its luxuriant growth in bogs accounts for its want of capsules. When this plant is moist, Mr. Griffith observes, the capsules lie concealed amongst the leaves by a singular hygrometric quality in the fruit-stalk; but as the moisture exhaled, they become nearly upright by several spiral revolutions from right to left. In *B. (Mnium) heteromallum* the revolutions of the fruit-stalk are reversed. E.)


**S. arbo'reum.** Branched, creeping; capsules lateral, pointing one way. See *Fontinalis secunda.*

**PHAS'CUM.** **Capsule** egg-shaped, furnished with a veil, but without a lid, or only an imperfect one which does not fall off.

1. **Capsule sessile.**
   
   **P. acauTon.** (Stemless; leaves egg-shaped, hair-pointed, concave, the upper ones folding over each other: capsule broad-oval. E.)
   

   A few lines in length, growing in clusters, assuming rather a globular shape from the convergency of the leaves, which are rather broad, membranous, concave, soft, nerveless, green, delicate, ending in a short hair which is more conspicuous in the dry plant. **Capsule** little larger than the poppy seed, so concealed within the middlemost leaves as to be more readily felt than seen. Dill. Although there is no proper lid to the capsule it opens at the top. The *veils* incline to one side.


   **P. muticuM.** Stemless; leaves egg-shaped, concave, converging, not terminating in hairs.
   
   Schreb. Phase. 1. 11 and 12—(E. Bot. 2027. E.)—Dill. 32. 12—Vaill. 27. 2.
Whole plant smaller than the preceding, capsules rounder and more shining, red yellow; leaves paler, not ending in a grey hair. Capsules ripe a month sooner. Dill.

(Beardless Earth-moss. E.)  
**P. acaulon** Linn. Garden walks, hedges, ditch banks.  
A. Jan.—Feb.

**P. subulatum.** Stem short: leaves spear-strap-shaped, upper ones bristle-shaped, broad at the base.


Capsules continuing all the summer, reddish and yellowish, in autumn ripening, turning brown, and opening. R. Syn. So minute as hardly to be visible if it did not grow in patches; from two to three lines high. Weis. _Shoots_ not branched. _Veil_ covering the capsule, conical, scored, blunt, of short duration. Neck. In a rich soil sometimes half an inch high, and with two or three branches towards the top. _Barren flower_ in the bosom of the leaves. _Lid_ none. Hedw. Only three or four lines high, but growing in patches is readily found, and the _capsules_ not larger than a seed of tobacco, are very visible on account of the slenderness of the leaves. Dill. They frequently fall off without opening.

_Awl-leaved Earth-moss._ Heaths in a sandy soil; ditch banks; not uncommon.  
A. March—Aug.

**P. serra'tum.** Shoots thread-like, jointed, branched; leaflets of the involucrum spear-shaped, serrated. Dicks.


Extremely minute, at first sight resembling a thread-like _Byssus_, and would scarcely be obvious to the naked eye if it did not grow in patches. It seems a link which connects the _Musci_ and the _Algae_, partaking of _Phascum_ and _Conferva_. It consists of numerous green filaments, which through a glass appear creeping, cylindrical, branched, jointed like a _Conferva_, the interstices pellucid, the joints darker green. Branches alternate, forked, awl-shaped at the end. Capsules egg-shaped, pointed, sessile irregularly on the sides of the shoot near its base; tawny when ripe. It has no _lid_ which separates. The _involucrum_ consists of three or four spear-shaped leaves, pointed and serrated. Schreber and Weber seem not to have been aware that the jointed shoots belong to the plant. Dicks. (The _veil_ is described as small, and of a pale brownish colour. Probably the most diminutive of British Mosses. E.)


(P. stoloniferum. Dicks. 7. 2. E. Bot. 2006. and With. to Ed. vii. is now considered a var. of this species; but rather larger, the shoots longer, the space betwixt the joints longer, and the leaflets bluntly toothed and reticulated. Growing on clay near Walthamstow. E.)


_Dicks. 1. 2—(E. Bot. 2107—Musc. Brit. v. E._

_Barren_ and _fertile_ stems growing intermixed, and forming small green tufts.
CRYPTOGAMIA. MUSCI. PHASGUM.

**Phascum.**

Barren shoots undivided, thread-shaped, fully half an inch high. Leaves very short, awl-shaped, alternate, rather bulging at the base, expanding at the ends. Fertile shoots undivided, one-eighth of an inch high. Leaves awl-bristle-shaped, as long again as the capsule. Capsule, one at the end of each shoot, single, sessile, buried in the leaves, inversely egg-shaped, pale yellow. Dicks.


(2) Capsule on a fruit-stalk.

**P. curvicol’luai.** Stemless: fruit-stalks crooked: leaves spear-shaped, taper-pointed, expanding.

Dicks. 1. 3—Hedw. Stirp. i. 11—(Hook. Fl. Lond. 54—Mus. Brit. v.—E. Bot. 905. E.)

Plant extremely minute, hardly visible to the naked eye, unless growing in clusters and bearing its swollen capsules. Involucrum, leaves straight, strap-spear-shaped; the other leaves egg-spear-shaped. Fruit-stalks very much bowed. Capsules egg-shaped, brown and mottled when ripe. Veil very small. Lid with a short beak. Often mixed with *Bryum ar genteum.* Ripens in May. Hedw. Leaves mid-ribbed, as long as the fruit-stalk.


**P. pilifer’um.** With a stem: leaves egg-oblong, upright, hair-pointed: (capsule globose, upright. E.)

Schreb. Phase. 1. 6 to 10—(E. Bot. 1888. E.)

(This plant is remarkable for its hoary appearance occasioned by the long white filiform extremities of the leaves, which are generally short and obtuse. E.)


**P. axilla’re.** With a stem: capsules not taller than the leaves: leaves awl-shaped, keeled, somewhat fasciculated. Hedw. Stirp. i. 34—Dicks. 1. 3.—(E. Bot. 1036—Mus. Brit. v. E.)

Exceedingly small; about one-eighth of an inch high, upright, sometimes sending out one or two branches at the base. Leaves, slender, bristle-shaped, surrounding the stems and rising above the ends. Capsules, egg-shaped, taper-pointed, on short fruit-stalks, sometimes from the sides of the stem and bosom of the leaves, but mostly terminal, solitary, or in pairs, naked or distinct, though the leaves extend beyond them; when ripe brownish. Dicks.


**P. rect’um.** Stemless: fruit-stalk thrice the length of the leaves: leaves spear-shaped, mid-ribbed, fine-pointed.

Diffsers from F. curvicollum in having beardless, though pointed leaves, a longer and nearly upright stalk, and longer-pointed capsule. E. Bot. F. Fruit-stalk and capsule a rich chestnut red. Fruit-stalks straight, sometimes two from the same root. Leaves five or six. Whole plant the twentieth of an inch in height. Capsule not wrinkled.

(Fontinalis.) Specimens from J. W. Griffith, Esq., who found it amongst trees in the front of Garn House, very near the road leading to Henllan. (Frequently found in fields that have lain untiled one or two years, together with Weissia Starkeana. Hooker. E.) April—May.

(FONTINALIS.) Capsule nearly sessile, furnished with a veil, and surrounded by a tiled involucrem.

Barr. Fl. bud-like, axillary; on the same plant.

Obs. Differing from Hymnum chiefly in the capsule not being supported on a fruit-stalk. Weis.

F. ANTIPYRE'TICA. Capsules lateral; leaves acute, keeled, doubled together, disposed in three rows.

Dill. 33. 1—(E. Bot. 359—Mus. Brit. xxii. E.)—Vaill. 33. 5—H. Ox. xv. 6. 32—Kniph. 12—Buxh. iii. 69. 2—Mich. 59. 9—Schmid. 58. 4—Hedw. Hist. i. 5. 27. ii. 9. 53. 54. 55. and 1. 5. Shoots a foot long or more, branched. The primary shoot sends out lateral and terminal ones, and these branch out again. Neck. Floating in water. Leaves two or three lines long, and half as broad, very entire at the edge. Capsules lateral, in the bosom of the leaves, on very short fruit-stalks, inclosed in a leafy scaly involucrem. Veil conical. Lid conical, blunt, starting with a spring from the ripe capsule. Fringe surrounding a central point. Seeds green. Dill.

GREAT R WATER-moss. Upon rocks and roots of trees, in brooks, rivulets, slow streams and ponds. (Delights in the neighbourhood of cataracts, and flourishes most where the stream is most turbulent. Drummond. E.) P. June—Sept.

F. mi'nor. Capsules terminal; leaves egg-shaped, acute, concave; pointing three ways; always in pairs.


* (From its natural station being in fresh springs and rivulets. E.)
† The specific name was given to this plant in allusion to its being employed by the Swedes to fill up the spaces between the chimney and the walls, and thus, by excluding the air, preventing the action of the fire. (The pale reddish tufts of the minute Conferv a nana, Dillw. 30, may sometimes be observed parasitically attached to this species in alpine rivers. Gray. E.)
CRYPTOGAMIA. MUSCI. Fontinalis. 1009


P. Aug.—Oct.


Leaves sometimes spear-shaped, pointed. Very nearly allied to F. antipyretica. Huds. Capsules egg-shaped, sessile. Neck. Long and slender; fertile stem generally forked; barren stem more branched; four to six inches long. Leaves long spear-shaped, partly embracing the stem, so slender as to appear awl-shaped to the naked eye. Hedw. Shoot four to twelve inches long, branched, floating in the direction of the stream. Lower parts of the stems losing their leaves resemble horse-hairs matted together. Stacks. Capsules usually produced on the shoots of the preceding year, or on the still older branches: never on the young shoots. Griff.

(Greville observes, "one of the most striking characters is the glistening or shining appearance, which is so evident, especially when dried, that Bauhin applies to it the epithet lucens." E.)

Scaly Water-moss. Mountain rivulets in Wales, the north of England and Scotland. In the rivulet by the old castle, near Llanberis. Mr. Griffith. Rivulets near Penzance. Mr. Stackhouse. (Water of Leith, near Redhall. Dr. Greville. E.)

P. June—Oct.

F. pennata. Capsules lateral: leaves pointing two ways; expanding.


Leaves with wavy wrinkles. Capsules sessile; nearly cylindrical. Neck. Shoots creeping and forming compact patches. Branches one inch long or more. Leaves closely compacted, about a line in length, and one fourth of a line in breadth. Capsules solitary or in pairs, chiefly on one side the branches, one line long and half as broad, smooth, green, changing to reddish. Mouth without a ring, closed with a white fringe. Lid pointed. Veil but half the size of the capsule; smooth. Involucre composed of spear-shaped, pointed, shining leaflets, taller than the capsule and closely embracing it. Pol. Stem thread-shaped, rigid; branches in opposite directions, decumbent with age. Leaves without veins.


A. Aug.—Oct.

F. capillacea. Capsules axillary: leaves strap-bristle-shaped, pointing one way; those of the receptacle very long, convoluted, awl-shaped. Dicks. ii. 1.

CRYPTOGAMIA. MUSCI. BUXBAUMIA.

Shoots five to seven inches long. Branches sometimes divided. Involucrum long, from the bosom of the leaves, chiefly where branches arise; out of these come forth Capsules green, small, egg-shaped. Dill.

HAIR-LIKE WATER-MOSS. Mountain rivulets in Scotland.

F. ALPI'NA. Capsules lateral: leaves mostly pointing one way, elliptical, bluntish, those of the involucrum spear-shaped, pointed. Dicks. ii. 2.

Dicks. ii. 4. 1.

Leaves short, twisted when dry, somewhat curled. Capsule, together with the involucrum, thrice as large as the leaves. Dicks. (Fringe simple, its fibres twisted. Br. Fruit-stalk nearly as long as the capsule. Foliage black when dried. E.)

ALPINE WATER-MOSS. On rocks and stones in the alpine rivulets of Scotland. On stones in Balalake, and rivulets about Llanberris, also in many small rivulets about Garn, Denbighshire; river Clwyd not ten yards above high water mark, in plenty: so that it is not exclusively alpine. Mr. Griffith. (On large stones on the side of Loch Tay which are occasionally under water. Mr. Brown. Aug. E.)


Hedw. Stirp. 3. 15—(E. Bot. 1180—Musc. Brit. xxii. E.)—Dill. 32. 6—Vaill. 27. 17.

Deep green. Branches sometimes subdivided. Leaves short, numerous, triangular, concave. Capsules oblong, on very short fruit-stalks, on every part of the stem, pointing one way, nearly enclosed by an involu¬crum of narrow leaves, ending in hairs, very numerous. Lid split-pointed, brown. Dill. An inch high, stiff, but not upright, more or less branched at the base.


BUXBAUMIA.* Capsule on a fruit-stalk: outer fringe with sixteen teeth; inner membranous, plaited. Barr. Fl. bud circular.


Leaves of the involucrum awned. Wild. Leaves, the lowermost open, oblong, the uppermost upright, spear-shaped, taper-pointed. Capsule sessile. Huds. 466.

* (Named by Linnaeus in honour of Dr. Buxbaum, a German, author of "An Enum¬eration of the Plants around Hal," and other works. E.)


B. aphylla. Stem none: base bulbous, surrounded with minute scales.

Hook. Fl. Lond.—E. Bot. 1596—Musc. Brit. xxii. Hooker observes: "This most singular of Mosses can scarcely be said to have any stems. All that might be so called, (or perhaps more strictly a perichactum) resembles a small bulb covered with hair-like processes, but which, when highly magnified, are found to be true leaves, membranous, reticulated, laciniate, and so narrow and minute, that they were either entirely overlooked or described only as hairs till lately. Whole plant not an inch high, of a red colour when quite ripe. Theca large, ovate, oblique, gibbous, flattish above, convex beneath. Lid conical, obtuse.

LEAFLESS BUXBAUMIA. On the ground. Rare. In a Fir wood at Sproston, near Norwich. Among Fir trees below Roslin Chapel. Mr. E. Maughan. Georgetown Hill, near Kinross. Mr. Arnott. E.)

SPLACHNUM.* Capsule cylindrical, veil and receptacle very large: fringe with eight teeth.

Barr. Fl. a bud on a different plant: circular, terminal.

S. SPHE'REICUM. Receptacle globular: leaves spoon-shaped but tapering to a slender point.

Hedw. Stirp. ii. 16—(Musc. Brit. ix.—E. Bot. 785. E.)

Fruit-stalk very long, greenish and reddish brown. Capsule very small. Lid blunt. Receptacle green. Linn. Stem upright, hardly one inch high, seldom branched. Leaves distant, alternate, spoon-shaped, but tapering to a point. Fruit-stalk very long, (three or four inches) upright, terminal, tawny at bottom, green above. Receptacle large, globular, green. Capsule cylindrical, blunt. Lid blunt. Fringe eight pair of teeth, yellowish. Hedw. Fruit-stalks sometimes four or five inches high.

(GREEN GLOBULAR GLAND-MOSS. On the ejesta of animals, in mountainous countries frequent. E.)


S. VASCULO'SUM. Receptacle nearly globular: leaves battledore-shaped, distant.


* (A name adopted by Linnaeus from Dioscorides, whose eπανεκούσε is synonymous with his βυξαμά, (Bryum,) and belongs to Mosses in general, or rather perhaps to Lichens, growing upon trees. E.)
Leaves spatula-shaped, bluntish, alternate, distant. Fruit-stalk one and a half inch high, upright, red. Receptacle large, spear-shaped, blood red. Capsule cylindrical, upright, brownish yellow. Fringe simple, composed of eight teeth, in pairs. Hedw. (This is perhaps the finest and most beautiful of all the British Mosses. We have seen it covering a spot of ground many feet in diameter with its brilliant green foliage, and spotted with its large, deep rich brown, shining capsules. Hook. E.)

(Blood-coloured or Obtuse-leaved Gland-moss. E.) Phascum pedunculatum. Huds. Ed. i adopted by Linneus. (Smith associates this plant with S. gracile. E.) Upon bogs, and on the points of rocks on the tops of the Highland mountains, as Ben Lomond, and in the Isle of Skye and elsewhere. Lightfoot. 697. On Scabarca Moss in the parish of Kirkmichael. Dr. Burgess. On mountainous moist heaths in Yorkshire, Westmoreland, and Wales. (Whether the plants of Hedwig and Hudson be the same, may be questionable; but Dr. Greville appears to have found the former in similar situations, and in extended patches, as on Ben Lawers, and the Clova mountains. E.) A. June—Oct. Huds.—P. Hedw.

Var. Acutifolia of that author, “distinguished by much shorter stems, a dingy, almost black colour, and, above all, by the acute termination of the leaves,” is represented in the same work, PI. 311. E.)


Receptacle empty, transparent, an extension of the fruit-stalk. Lim. Stem single or forked, from one to two inches high, upright, but feeble, and supported by other collateral stems. Leaves spear-shaped, acutely pointed. Stamens and pistils on the end of the same shoot. Veil bell-shaped. Capsule slender, cylindrical, upright. Receptacle large, shaped like an inverted decanter. Lid convex. Fringe single, of eight pair of teeth. Hedw. Fruit-stalks crimson, one to three inches long. Veil very small, deciduous. (One of the finest of Splachna. Grev. E.)

Purple Bottle or Gland-moss. Bogs and marshes, and often upon cow-dung. Bogs about Hitchin Ferry near Southampton, and by W. Wickham, and Addington near Croydon. Ray Syn. Geldesten Fen, near Bungay, Suffolk. Mr. Stone. (In a turbarv north of Tyfry, between that and Hendref, Anglesey; a spot which Mr. Davies indicates as well worthy the inspection of the Botanist in each season of the year. At Preswick Carr, Northumberland; and on the Durham moors. Mr. Winch. E.) According to Hedwig, P., and ripening its capsules in July.

A. March—May.

(Messrs. Turner and Hooker concur in opinion that Dickson’s S. Turnerianum, E. Bot. 1116, (S. sagittifolium, With.) is only a var. of S. ampullaceum. The whole plant is smaller, and the apophysis of the capsule narrower than in the common appearance. E.)

S. ANGUSTA'TUM. Receptacle egg-shaped: fruit-stalk very short: leaves serrated upwards, hair-pointed.


Upright, not branched, nearly one inch high. Leaves larger towards the top of the plant, sometimes a little toothed towards the end. Fruit-stalk hardly rising above the leafy involucrum. Capsule cone-shaped, but
lapped, leaning a little. **Mouth** fringed with eight pairs of teeth. **Veil** oblique. Hedw.

(NARROW-LEAVED GLAND-MOSS. E.) In moist alpine situations in Scotland. Dicks. ii. 3. (On the side of Lochawe, Scotland. Mr. Don. E.) P.


(Hedw. 8. 4. 6—E. Bot. 1590. E.)—Dill. 44. 4—Ray. 3. 2, at p. 128.

**Leaves** broad, shining. **Fruit-stalk** golden yellow. Dill. A different plant from the *S. vasculosum*. Linn. to which Hudson improperly referred it. Dicks. ii. 2.

(OVATE GLAND-MOSS. E.) Rotten spongy ground, as in the pastures called Emott Moor, Lancashire. Also in Montgomeryshire. Dill. On Ben Nevis. Dickson.

**S. Mnioides.** Receptacle inversely conical: capsule egg-cylindrical: leaves spear-shaped, very entire, ending in a long taper point.


**Fertile** shoots upright, undivided. **Barren** shoot generally branched. **Leaves** very entire, ending in a long point. **Fruit-stalk** upright, terminal, about half an inch long. **Capsule** upright, egg-shaped. **Receptacle** an inverted cone. **Lid** flat, bluntly pointed. **Fringe** eight pair of teeth, broad, united. **Veil** slender. Hedw. In the star-bearing shoots the edges of the leaves are sometimes set with hairs. Griff. The capsule is larger than the inversely conical receptacle, but in *S. Breweri* the receptacle is egg-shaped and larger than the cylindrical capsule. In both, the leaves are with or without hair-like points, but in *S. Breweri* the leaves are narrower and the points longer.

(GREEN TAPERING GLAND-MOSS. E.) Mountainous places. Dicks. I. 2. Near Llyn Idwell, Carnarvonshire. It frequently occurs upon the ejesta of foxes and badgers, which are very numerous about Snowdon. Mr. Griffith.


β. **Majus**, of a paler colour, and with elongated stems. **S.fustigiatum**. Dicks. E. Bot. 786. **S. purpureum**. With. **S. Brewerianum**. Hedw. ii 38. Dill. 44. 5. E.)

**S. ten'ue.** Capsules inversely conical: leaves egg-oblong, serrulated upwards, awn-pointed.

PLATE XVIII. f. 3—Dicks. 4. 2—(E. Bot. 1133—Musci. Brit. ix. E.)

**Fertile** shoots half an inch high. **Leaves** concave, inversely egg-shaped, entire, bordered, reticulated, the meshes confluent, keel curved, serrulated, ending abruptly in a serrulated awn-like point. **Fruit-stalks** one to one and a half inch high, the lower half bright pink, the upper half and the capsule dark purple. **Capsule** a continuation of the fruit-stalk, inversely conical, a little leaning to one side; teeth sixteen, in pairs. **Veil** extinguisher-shaped, but blunt, as if lopped. **Barren** shoots terminated by rosaceous cups; all the leaves spear-shaped, serrulated, ending in fine points; the sides approaching. Griff. (Approaches very
near to *S. urceolatum*, from which it differs in the habit of its leaves, its slender and almost cylindrical receptacle. Dicks.

**Slender Gland-moss.** Smith was of opinion that *S. purpureum*, With. Ed. iii. belonged to this species; but Hooker decidedly refers it to *S. Mnioides*. On Ben Lawers in the Highlands. On cow-dung about Llyn Idwell. Mr. Griffith. E.) P. June—July.

(*S. lingulatum.* Leaves lingulate, rounded at the top, their nerve disappearing below the summit: capsule obovate: apophysis obconical: lid convex, acuminate.


Mr. Arnott observes that this plant has each of the sixteen teeth geminate; a character which connects it with the genus *Splachnum*, and which is not to be found in any other *Weissia*. Its *columella* is also that of a *Splachnum*. But Prof. Hooker states that there are sixteen distinct equidistant teeth; each, indeed, having an evident line, and even a slight furrow down the centre, but it is never split nor perforated. *Stems* two to four inches and more in length; below generally decumbent, (from the usual current of water,) and simple, with numerous downy radicles, blackish; above erect, branched, deep green. *Leaves* deeply imbricated, erecto-patent, oblongo-lingulate, very obtuse, entire, somewhat undulated, reticulated with oblong *areolae*, furnished with a nerve of the same colour which disappears below the apex; the lower ones, as if from decay, of a blackish brown colour; uppermost ones deep green. *Fruit-stalk* flexuose, deep red.

**Tongue-leaved Gland-moss.** *S. lingulatum*. Dicks. Sm. Brid. *Weissia Splachnoides*. Hook. Tayl. This Moss has attracted much attention, both from its rarity, and the difficulty in determining its genus. It was first discovered in Scotland by Mr. Dickson; has since been found on Ben Lawers by Mr. G. Don; on Ben Lomond by Mr. D. Don; and by Prof. Hooker in muddy declivities, in profusion at the foot of Ben Cruachan, between Craigalleach and Meal-greadha, in Aug. affording a spectacle such as few Muscologists have had the opportunity of witnessing. E.)

*S. Frcelichianum.* Capsule a club-shaped termination of the fruit-stalk: leaves battledore-shaped.

*Hedw. Stirp.* iii. 40.

*Leaves* folded when dry; with much moisture they lose their colour at the edges, thence attaining a membranous appearance. The nerve or keel does not extend to the extremity of the leaves. *Fruit-stalks* pale upwards, of a fine pink colour near the base. *Capsule* a continuation of the fruit-stalk, inversely egg-shaped. I have not observed any teeth. Griff. *Plant* about an inch high. *Leaves* of a beautiful green, broadest at the end; mid-rib indistinct, hardly discernible in the lower leaves. *Fruit-stalks* half an inch long. *Receptacle* very short, and only to be distinguished from the fruit-stalk and capsule when the latter is ripe. Hedwig says the mouth of the capsule has eight pair of teeth, which always stand upright and never expand, as in the other species.

(Frcelichian Gland-moss. E.) Specimens sent me by J. W. Griffith, Esq. who first discovered it growing on the eastern side of Snowdon, about one hundred and fifty yards from the summit. P. Autumn.
POLYTRICHUM.* Capsule with a veil: outer fringe with thirty-two, (or sixty-four incurved teeth; inner, a flat undivided membrane. E.)

Barr. Fl. a circular bud, on a different plant: terminal.


*(E. Bot. 1197—Musc. Brit. x.—Schmid. 59. E.)—Dill. 54. 1—Happ. i. Polytrich. 1—Mich. 59. 1. I, E, M, O, P, Q, R.—Blackw. 375—Vaill. 23. 8—Ger. 1371. 3—Gars. 129—Fuchs. 629. 1—Trag. 528. 1—J. B. iii. 760. 1—Lon. i. 222. 3—Dod. 475. 2—Ger. Em. 1559, right hand fig. of the 3 lowermost—Barr. 251. 3—Kniph. 12—Trag. 916, the tallest of the figures, rising from a bed of Hyphnum sericeum.—Park. 1052, right hand fig. of the two uppermost—Lov. Obs. 645. 2. Je. ii. 245—Ger. Em. 1559. 2—Ger. 1370. 2—Park. 1307. 3.

Stems several inches high, seldom branched. Leaves near half an inch long, slender, pointed, turning back, finely serrated. Fruit-stalks terminal, solitary, two to four inches long, surrounded by an involucrem at the base. Capsule four-sided; mouth fringed. Veil very hairy, hanging down below the capsule, ragged. Weis. From four to twelve inches high, stiff, straight. Fruit-stalk golden red. Veil tawny. Dill.

(Common Hair-moss. E.) Great Golden Maidenhair, or Goldilocks. Woods and moors in wet boggy places. P. May—June.†

*(From πυγη, many; and τρις, hairs; alluding to the hairiness of the veil, or, as some have imagined, to the setaceous supporters of the capsules. E.)

† (Greville observes that "the membrane which closes the mouth of Polytrichum is not merely stretched across it, but passes to the base of the outer teeth, and lines them to the very apex, and thus forms a real membranaceous inner peristome. In P. alpinum the above structure is extremely evident."

‡ ("Never was the bountiful provision of Nature more wonderfully evinced, than in furnishing mankind with bed and bedding in the savage wilderness of Lycksele Lapland. The Great Hair-moss, called by the Laplanders Romst, grows luxuriantly in their damp forests, and is used for this purpose. They choose the starry-headed plants, out of the tufts of which they cut a surface as large as they please, for a bed and bolster; separating it from the earth beneath: and although the shoots are scarcely branched, they are nevertheless so much entangled at the roots, as not to be separated from each other. This mossy covering is very soft and elastic, not growing hard by pressure; and if a similar portion of it be made to serve for a coverlet, nothing can be more warm and comfortable. If it becomes too dry and compressed, its former elasticity is restored by a little moisture. Nature, in providing for the wants of man, has not forgotten to defend the capsule of the Hair-moss from the injury of the weather. It is covered with an umbrella, in the form of a cone, which, as the seeds begin to ripen, loosens from the capsule to which it had before adhered, and at length falls off. The stem which supports the seed-vessel previously recovers its position, and turning the capsule towards the earth, completely empties the seeds as from a pitcher." Wonders of Veg. Kingdom, p. 164. Bears also collect this useful little plant for like purposes, and birds line their nests with it.—"In Hampshire," says Mr. White, "our foresters make little neat besoms from the stalks, which they call silk-wood. When this Moss is well combed and dressed, and divested of its outer skin, it becomes of a beautiful bright-chesnut colour; and being soft and plant, is very proper for the dusting of beds, curtains, carpets, hangings, &c. These pretty implements of housewifery are worthy the attention of the brushmakers in town." E.)
leaves shorter, their margins pellucid; capsule obtusely quadrangular; apophysis indistinct;’ is included P. attenuatum, E. Bot. 1198, and P. gräcile, E. B. 1827. E.)

Var. 2. Leaves shorter and less flexible. Dill.


Whole plant smaller than the preceding, except the veil, which is larger and more pyramidal. Stem seldom more than one inch high, seldom branched. Dill. Fertile plant with one single tuft of leaves at the top of the stem, the lower part of which is naked. Receptacle orbicular. Veil single. Lid acutely conical, hanging over the capsule. Barren, about an inch of the stem covered with leaves, and supporting at its top a tiled receptacle, in the hollow of which are the filiform barren organs. Stackh.

(P. Juniperinum. Willd. Sm. Hook. We can perceive no other difference between P. strictum, E. Bot. 2435, and P. Juniperinum, than that the former is branched, while the stems of the latter are undivided, and we therefore cordially assent to the opinion of Mr. Turner, who considers them as the same species. Muse. Brit. E.)

On hills, dry or wet. P. May—June.

Var. 3. Linn. Leaves terminating in hairs.

(Musc. Brit. x.—E. Bot. 1199. E.)—Happ. i. Polytr. 2—Dill. 54. 3—Vaill. 23. 7—Buzb. i. 62. 3, a barren plant.

Stems not more than half an inch long, simple, leafless below. Leaves entire at the edges, ending in grey hairs. Fruit-stalks terminal, about one inch long. Weis. Leaves bent inwards a little, not serrated, terminating abruptly in a long whitish hair. Fruit-stalks and their sheathing involucrums purple. Dill. Barren and fertile plants in distinct patches.


Dry woods and sandy barren heaths. Spring.


Veil open, larger than the capsule. Linn. Leaves obscurely serrated. Capsules roundish, pendent. Hedw. Leaves somewhat slightly serrated towards the point. Capsules nearly as broad as they are long.


P. May.

(The authors of Muse. Brit. concur in uniting P. nanum, xi. E. Bot. 1625, with the present species. E.)


Hedw. Stirp. i. 14—(E. Bot. 1649—Musc. Brit. xi. E.)—Dill. 55. 7—Buzb. i. 63. 1—Vaill. 29. 11.

Stem near half an inch high, seldom branched. Fruit-stalks growing to the length of an inch, fixed rather below the top of the stem. Capsule cylindrical, upright, but leaning as it becomes older. Veil larger than
the capsule. Weis. *Leaves* awl-shaped, serrated, opake, reddish near the point, with an appendage somewhat broader than themselves. Capsule contracted beneath the rim, tapering at the base. Griff. *Leaves* serrulated at the ends and also on the back of the mid-rib. Capsules twice as long as broad.


P. March—July.


Ditch banks and road sides about Henllan, Denbighshire. Mr. Griffith.

**Hills in Cornwall, common. Mr. Stackhouse. Spring.**

(Hooker and Taylor include under this species, as var. *a. major*. "fruit-stalks two inches long; stems usually simple;" *P. rubellum*, E. Bot. 1939; also as var. *b. "fruit-stalks very short; stems branched with innovations;"* *P. Dicksoni*, E. Bot. 1605. E.)

**P. Hercynicum.** Shoots rarely branched: *leaves* spear-shaped, fleshy: capsules urn-shaped, upright: veils with scattered hairs.

*Hedw. Stirp. i. 15—(Musc. Brit. x.—E. Bot. 1219. E.)

**Stem** upright, undivided, one inch long. *Leaves* strap-shaped, keeled, very entire, bowed in, alternate, nearly upright, pointed, naked. Fruit-stalk terminal, solitary, upright, an inch long. Veil conical, pointed, pale. *Capsule* upright, oblong or cylindrical, the mouth between toothed and fringed. Lid conical, somewhat pointed. *Huds. Month* fringed with thirty-two short teeth, connected at the base. Hedw. Stars or male buds formed of five spoon-shaped pointed leaves. Griff. (Root densely woolly. E. Bot. E.) *Capsule* urn-cylindrical, rather narrower in the middle.


P. June—Oct.

**P. alpinum.** Shoots very much branched: *leaves* spear-shaped, toothed: fruit-stalks terminal: capsules egg-shaped.


**Shoots** from half to two inches long; very much branched. *Leaves* slightly toothed. *Capsules* egg-shaped, leaning when ripe. *Lid* conical, beaked. *Month* with a ring; fringe fine, short, upright, white. Web. *Capsule* unequally distended, green, blackish when old. *Lid* saffron colour, its point white. Dill. From two to three inches high. (The narrow leaves will distinguish this species from *P. urnigerum*, as the branched and somewhat fastigate stems will from *P. commune*. *Musc. Brit. E.*)


P. June—Aug.

**β. Huds. P. urnigerum**, which see.

**P. urnigerum.** Shoots very much branched: *leaves* spear-shaped, tooth-serrated: fruit-stalks axillary: capsules cylindrical.
Two or three inches high; with lateral branches somewhat forked, rising to nearly an equal height. Fruit-stalks lateral, two or three inches high. Involucrum red. Capsule cylindrical, egg-shaped, tawny, upright, leaning as it ripens. Lid yellow, beak white. Mouth with a ring, and covered by a white membrane. Receptacle none. Barren shoots unbranched, two inches high, stellated at the ends. Leers. Beak of the lid very slender. Griffith. (Leaves of a singularly glaucous green hue, (reddish only through age,) by which it may be distinguished at first sight. Muse. Brit. E.)

(Urn-bearing Hair-moss. E.) At the foot of Cader Idris. Dillenius. At Roslin, Rivelstone, and other places near Edinburgh. Frequent by road sides in the north of Ireland; also in the Highlands of Scotland. Mr. Brown. (On Gateshead Fell, near Newcastle. Mr. Winch. E.) Near the road side between Denbigh and Voylas, by the rivulet before you arrive at a place called Pennsylvania; and on Cader Idris, with the shoots hardly half an inch high, fruit-stalk as tall as usual. Mr. Griffith. P. June—Aug.

(P. septentrionale. E.) Leaves linear-subulate, obtuse, their margins, especially towards the top, involute, subserrulate: capsule ovate, subangulate, furnished with a minute apophysis: lid conical, acuminate.


(1) Capsules upright, cylindrical.

M. aciculare. Capsules slender: lid needle-like: leaves spear-shaped, upright, mostly pointing one way.


One inch or one inch and a half high. Branches upright. Leaves crowded. Fruit-stalks near an inch high, dark red; on the ends of the younger branches. Dill. Leaves spear-shaped. Fruit-stalks not half an inch higher than the tops of the shoots.

* (Adopted by Dillenius from the Greeks, whose μύος is supposed to be synonymous with Moss, E.)
CRYPTOGAMIA. MUSCI. Mnium.


Var. 2. Stems trailing; leaves somewhat open. Huds.


On large stones that lie in the rivulets in the moors of the Peak of Derbyshire, Petiver; and in the mountain torrents near Llanberris, Carnarvonshire. Dillenius. In the first brook after crossing Pont y Alwen, between Denbigh and Cerrig y Druidion. Mr. Griffith. P. Aug.

Var. 3. Shoots slenderer, upright; leaves pointing one way.

Like var. 2, but shorter, less branched, more upright, and of a yellower green. Griff. Grows with var. 1.


Shoots an inch long, seldom branched. Leaves in four rows: mid-rib purple, ending in a point. Fruit-stalks terminal, an inch long, pelucid, whitish. Capsules cylindrical, yellowish. Veil very long. Weis, (torn at the base, orange-coloured at the tip. Lid conical, reddish, thin. Teeth four, shining brown, erect, pyramidal, all separate from top to bottom. E. Bot. Even to the naked eye the size of the teeth is very remarkable, and the gemmiferous cups, unlike anything we know in other Mosses, form at once a striking character. Hook. E.)


A. Jan.—July.

Var. 2. Leaves exceedingly narrow, and pellicud.

R. Syn. p. 78. n. 5—Dill. 31. 2. E. F.


M. scoparium. Shoot branched: leaves strap-spear-shaped, bent back, pointing one way.


Grows in dense patches, branched, nearly upright, one to three inches high. Leaves slender, long, ending in a long sharp point, expanding. Fruit-stalks one or two inches high, generally solitary. Capsules cylindrical, thick, a little crooked, scored. Lid, beak as long as the capsule.
MOUTH toothed. VEIL long. Weis. Frequently several stalks in one involucrum. Willd.


(The above is var. a. majus: stems two or three inches in length, falcato-secund. Dicranum majus, E. Bot. 1490, according to Muse. Brit. wherein is also described var. fuscescens; smaller, leaves sub-secund, narrower, somewhat more crisped when dry. Dicranum fuscescens. E. Bot. 1597, the latter principally in mountainous countries. E.)

(2) Capsules leaning, roundish.

M. FONTANUM. Capsules roundish: lid blunt: shoot sometimes branched, upright: leaves spear-shaped, slender, bent inwards at the points.


The old shoots covered with brown knap, and buried three inches deep. From these proceed slender cylindrical shoots, some of which end in stars. Fruit-stalks two inches long; proceeding from the shoots of the preceding year. Neck. Readily known by its stiff habit. Shoots two to four inches long. Weis. Leaves serrated, open, in the young shoots mostly pointing one way. In this species, and also in M. palustre, the fertile and barren shoots adhere so closely at bottom as to appear but one plant. Leers. The veil falls off in May. Gough.

(A smaller var. with narrower leaves, is Bartramia marchica, E. Bot. 2074; Mnium marchicum, Hedw. according to Muse. Brit. E.)


Shoot very short. Fruit-stalks three inches long, terminal. Capsules dull yellow, inversely egg-shaped. Lid blunt. Growing in patches. Leaves scattered, two lines or more in length. Fruit-stalks terminating. Capsules upright, afterwards bending a little; one line long. Lid short, pointed, white. Veil smooth, reaching but half way down. Pol. Primary stem not branched, but after bearing fruit it sends out a new shoot from its extremity, as is the case with many Mosses with terminal fruit-stalks. Stamens and pistils in the same or in separate flowers. Ring none. Fringe double, sixteen teeth in each. The roots are so closely attached together, that without great care they break off, and the plant appears without a stem. Hedw. Short, sessile, sometimes undivided, sometimes with one or two branches. Leaves green, narrow. Fruit-stalks about two inches high, of a shining gold colour. Dill.

(3) Capsules leaning, oblong.

**M. simplici**. Capsules egg-oblong: fruit-stalks lateral: leaves awl-shaped.


With sixteen teeth in a single row, purplish. *Hedw.*


A. Mar.—May. P. *Hedw.*

In *Musc. Brit. Brya rufescens* and *callistomum* are arranged as varieties of this species. *E.*

**M. heteromallum.** Capsules egg-shaped: lid taper-pointed, bent, shoot seldom branched: leaves bristle-shaped.

*Hedw. Stirp. i. 26*—*E. Bot. 1272—Musc. Brit. xviii. E.*—*Vaill. 27. 7—Dill. 47. 37—Fl. Dan. 479—H. Ox. xv. 6, rue 3. 5, and in 7 the leaves straight—*Buxb. ii. 2. 8.*


A. March—May.

**Var. 2. Leaves shorter, lower ones pointing two ways.**

*E. Bot. 2508. E.*—*Dill. 47. 38.*

*Leaves* yellow green, suddenly narrowing from the base, upwards one-rowed, downwards two-rowed, curled when dry. *Veil* very slender, pale. *Dill.* *Leaves* broad and sheathing at the base, then bristle-shaped. *Fruit-stalks* shorter than the shoot. *Capsules* egg-oblong, equal in length to twice its breadth. *(Dicranum interruptum. Hedw. Sm. E.) Specimen from Mr. Griffith, who gathered it on the rocks of Clogwy Dû yr Arddu, Snowdon. (On banks near Gateshead, Durham. Mr. Winch. E. Bot. E.)*

**M. glaucum.** Capsule egg-oblong: lid taper-pointed, bent: shoots branched: leaves egg-shaped, acute, tiled.

*E. Bot. 2166—Musc. Brit. xvi. E.*—*Dill. 46. 20—Vaill. 26. 13—H. Ox. xv. 6, rue the last, 22.*
Leaves three lines or more in length, very entire. Lid awl-shaped, very sharp-pointed. Mouth fringed. Pol. Whole plant brittle, greyish when growing, or pale glaucous green; whitish when dry. Veil slender, white. Dill. One to three inches high; branches thick. Fruit-stalk one inch, but only half an inch higher than the shoots.


P. Aug.—Nov.


Hedw. Theor. 8, 1 to 4—(E. Bot. 1346—Musc. Brit. xvii. E.)—Dill. 46. 23. 24—Plak. 44, 7. Plak. 49, 1, several shoots rising from the top of that of the last year.

Shoots from one to three inches, with rust-coloured hair-like fibres on the lower part. Leaves slender, keeled, crooked, pellucid, sometimes wrinkled. Fruit-stalks sometimes in pairs; terminating. Capsules brown when dry. Dill.


Capsules crooked after shedding their seeds. Fruit-stalks slightly waved, Griff. Fruit-stalks yellow. Reyg. often two inches long, Rell. from the fork of the stem. Neck. crowded. Stems upright, two to five inches high; mostly two, sometimes with three divisions. Leaves slender, soft, pellucid, keeled, yellow green, yellow when dry. Dill. Stems two or three inches high, branching towards the top into two, three, or four shoots. Leaves, lower ones downy. Summit-leaves flat, large, forming stars, in which are the barren flowers. Fruit-stalks from the tops of the last year’s shoots, which now likewise support new shoots. Capsules leaning.


Stem sometimes simple. Dill. 236. Fertile flowers not discovered. Dill in R. Syn. 78, n, 3. Smaller than the preceding. Fruit-stalks axillary, numerous, not terminating in capsules, but in small globular heads containing a powder. This seems to be the barren plant.

M. RAMOSUM. Huds. Ed. i. 403, and Gmel. Syst. Veg.

M. PURPUR’HEUM. Capsules nearly cylindrical: fruit-stalks axillary: shoots branched: leaves oblong, acute, keeled.
CRYPTOGAMIA. MUSCI. MNIMUM.

Grows in very dense patches. Stem upright, mostly forked, and these shoots sometimes dividing again. Leaves spear-awl-shaped, in some shoots forming terminal stars. Fruit-stalks an inch high, at first upright, afterwards a little leaning. Lid conical, pointed, scarlet. Veil upright, afterwards oblique. Weis. (Fruit-stalks purple. E.)


Var. 2. (Dicranum strictum. E. Bot. E.) Leaves less rigid; spear-shaped.

(E. Bot. 2294. E.)—Dill. 49. 52.

Leaves ending in hair-like points. Capsule finely pointed. Dill. (May not the different situations of growth account for the variation of this plant from the preceding? E.)


(4) Capsules drooping.


Leaves upright but spreading; serrated. Barren flower terminal, star-like. Fruit-stalk terminal, crooked, surrounded by young shoots. Capsule, mouth narrow. Fringe, teeth short, upright, acute, red. Lid minute, scarcely beaked. Dicks. The fuscous woolly matter which surrounds the shoot is a constant attendant. Fruit-stalks at the base of the branches, golden red, hardly half an inch long, crooked. Capsule golden yellow, globular. Mr. Bradbury. Leaves serrated chiefly towards the end.


Shorter than the preceding. **Capsules** spear-shaped, i.e. largest at the end. **Leaves** deeply keeled, closing together when dry, very much crowded and compressed. **Stem** and leaves at the bottom black. **Lids** very short and blunt. Dill.


(The above species seems liable to considerable variation. Drs. Hooker and Taylor suspect Bryum interruptum, E. Bot. 2371; B. nigricans, E. Bot. 1528; and possibly B. annotinum, E. Bot. 1862, (the barren magnified figure), may not prove specifically distinct. E.)

**Mnium** *hygrometricum*. Capsules pear-shaped, lids flat: shoots rarely branched: leaves oblong, taper-pointed. (Hook. Fl. Lond.—E. Bot. 342—Musc. Brit. xx. E.)—Dill. 52. 75—Vaill. 26. 16—H. Ox. xv. 7. 17—Happ. i. Mnium 2—Fuchs. 629. 2—Trag. 528. 2—J. B. iii. 760. 2—Lon. i. 232. 4—Dod. 475. 1—Ger. Em. 1559. 4, the middle one of the three lower figures.—Park. 1052, left hand upper fig.—Fl. Dan. 648—Ger. 1371. 4.

Grows in large patches. **Stem** one to two inches high, but mostly buried in the earth. **Fruit-stalk** a full inch long. **Capsules** pear-shaped, golden yellow. Weis. It may be found in December, very small and close to the ground, the leaves very fine, from the midst of which projects the young **fruit-stalk** like the point of a pin. In January the four-sided **veil** appears, of a straw colour; in February and March the **capsules** are found, which ripen in April and May. **Leaves** tender, pellucid, veinless. Dill.


If the fruit-stalk be moistened at the bottom, the head makes three or four revolutions: if the upper part be moistened, it turns the contrary way. Linn.


Shoots half an inch high; lower leaves smaller, blunter, alternate, upper leaves larger, more acute, pellucid, smooth, sharply serrated and pointed at the end by an extension of the mid-rib. **Fruit-stalks** half to one inch long, when old saffron-coloured, issuing out of a purple tubercle encompassed by slender leaves. **Capsules** egg-shaped. Dill. (Foliage altogether of a pale, but bright green. Musc. Brit. E.)

CRYPTOGAMIA. MUSCI. Mnium.


(E. Bot. 2271—Musc. Brit. xxxi. E.)—Dill. 51. 71—Mich. 59. 2—Curt.—Vaill. 24. 4 and 5—H. Or. xv. 6, row the last, 3 and 4, as it sometimes appears before it produces capsules.

From half to one inch high, but larger in moister situations, mid-rib red, stiff. Leaves green, pellucid, finely crenated. Fruit-stalk saffron red, shining, one to two inches long, bent like a swan's neck. Capsule oblong, nodding, swollen, dark green. Lid brown. Leaves at the base of the fruit-stalk slender. Dill. Barren shoot simple; fertile branched at the base. Leaves sharply serrated and ending in a sharp point. (Whole plant of a yellow lurid green colour. Musc. Brit. E.)


Shoots, at the ends of some a very small brown star. Very nearly allied to B. caespiticium. Linn. Leaves short, broad, ending in a short hair. Fruit-stalk one inch long, issuing from the last year's shoots. Capsules swollen, reflexed. Lid hemispherical, shining. Ray. Capsules less pendent when ripe. Dill. From half to one inch high. Its sessile shoots, and expanding upper leaves, distinguish it from B. caespiticium, though it should not be in fruit. Neck. Differs from B. caespiticium in its greater size, the lids of its capsules being sharp-pointed, and its leaves not shining. Weis.

(The authors of Musc. Brit. consider E. Bot. 1862. the fructified specimens, (Bryum annotinum), rather to represent B. capillare: and that B. stellare, E. Bot. 2343, and Dill. 50. 67. also belong to the same species, the true B. stellare never having been found in Britain, E.)


Dill. 50. 68.

Leaves spear-shaped, pointed, not twisting when dry, turning brown when soaked in water. Fruit-stalk one inch long. Capsule oblong, pendent. Lid pointed; blunter when old. Dill. Stem half to one inch high, simple, or branched almost from the bottom. Leaves very entire, those on the stellated shoots broader.

(Doubts are entertained whether this may not prove a distinct species. The synonyms appear somewhat perplexed. E.)


M. puncta'tum. Capsules oblong-egg-shaped: stem unbranched: fruit-stalks often several together: leaves inversely egg-shaped, very entire, blunt, (broad, E.) dotted.
It varies in the **fruit-stalks** being solitary or incorporated, and also in the **fertile** shoots being upright, and the **barren** shoots creeping. Wild. Grows in large patches. **Stems** simple. **Leaves** with a scarlet rib, cartilaginous and purple at the edges. **Fruit-stalks** terminal, generally single, sometimes three or four together; one to two inches high; thicker downwards. **Capsules** mutant, egg-shaped. **Seeds** greenish. **Shoots** without capsules, ending in roses. **Habit**. **Leaves** pellucid, smooth, pale green. **Fruit-stalks** one to three on a plant. Dill.


**Leaves** longer and blunter than β of Linnaeus. **Capsules** not so pendulous. **Lid** spat-pointed. **Fruit-stalks** three to five on a plant. Dill.

In bogs in the West Riding of Yorkshire.

**Capsules** half ripe in spring. Dill.

**M. undulatum.** Capsules oblong-egg-shaped: **fruit-stalks** several together: **leaves** oblong, waved, serrated.


**Root** strong, creeping. **Shoots** three or four, to five or six inches long, branched or unbranched. **Leaves** thin, pellucid, strap-spear-shaped, waved and serrated. **Capsule** pendent; **lid** blunt. **Veil** straight, pointed. Dill. **Barren** flower surrounded by strap-shaped leaflets, in the centre of shoots ending in roses. **Leaves** strap-shaped; **mid-rib**-large.


**M. proliferum.** Capsules oblong-egg-shaped: **shoots** proliferous: **leaves** spear-shaped, pointed, forming terminal roses.

*(E. Bot. 2395—Musc. Brit. xxix. E.)—Dill. 52. 77—Buxb. 11. 1. 3.*

**Stems** straight, naked. **Leaves** terminal, large, shining, pellucid, disposed in a circle, widening upwards, ending in a point, scarce sensibly serrated. **Capsules** on a different plant, rarely appearing, pendent; **lid** reddish, blunt. **Fruit-stalks** one inch long, thick. Dill. Very elegant in form:

*(On the leaves of this Moss, and also upon Dicranum Bryaides, in Wallington woods, Northumberland, may sometimes be discovered one of the most elegant of the minute Gastromyci, viz. Leavgeum Trevelyani, which, as Dr. Greville observes, "whether we regard the extreme symmetry of its form, or its delicate structure, and pleasing colour, forms one of the most charming little objects the eye can possibly rest upon." It is beautifully illustrated in Scot. Crypt. Fl. pl. 132. and thus described: "sporangium sessile, ovo-globose, reddish-brown, splitting into regular linear, reflexed segments; columella minute; sporules pedicellated." E.)*
shrub-like. *Stem* naked at the bottom, foliage from one centre at the top. *Leaves* from three to six lines long, and two broad. Other shoots often rise from this foliage. Some of these are barren roses, but others send out fruit-stalks, one or two inches long, bearing pale orange capsules. *Veils* not observed. Weis.


**M. crū'dum**. Capsules oblong-egg-shaped: shoot unbranched: leaves spear-shaped, acute.


*Leaves* green, almost silky. *Fruit-stalks* long, red. Linn. Half an inch high; not branched. *Leaves*, upper ones thrice as long as the lower, crowded, upright but open. *Capsules* upright, then pendent, and lastly upright again. *Veil* turning up when the capsule hangs down. *Lid* hemispherical, beak short, stellated plant not so tall. A powdery brown substance in the centre of the star. Leers. *Fertile stem* half an inch; *Barren stem* half an inch high, or more. *Leaves*, the upper ones a little toothed towards the ends. *Capsule* bent horizontally. *Mouth*, outer fringe of sixteen teeth. Hedw. *Fruit-stalks* from the ends of the young shoots; pale red. Dill. The whole plant has a silky gloss. *Lower leaves* broader and shorter than those above; a few of the uppermost sometimes very slender pointed.


**M. cespiti'ciuM.** Capsules oblong-egg-shaped: shoots short, but branched: leaves spear-shaped, hair-pointed.


*Fruit-stalks* red at the bottom, yellow green at top. Reyg. Grows in broad dense patches. Only a few lines high; branched at the top, covered with a brown knap at bottom. *Leaves* very small, crowded, shining. *Fruit-stalks* an inch (or two) high, issuing from the roses of last year's shoots, surrounded at bottom with a leafy sheath or fence. *Capsule* at first upright; slender, egg-shaped. *Lid* red, shining, mammiform. *Mouth* slightly fringed. *Veil* brown, changing to tawny red. Weis. and Dill. *Leaves* mid-ribbed. *Fruit-stalks* from an oblong bulb, invested with hair-like fibres. Outer coat of the *capsule* with sixteen teeth.

(Under this species Hooker and Taylor include *B. bicolor*, Dicks. E. Bot. 1601. E.)


**M. pseudo-tri'quetrum.** Capsules oblong-egg-shaped: shoots branched: leaves egg or spear-awl-shaped, bordered, keeled, pointing in three directions.
Capsule, the neck downwards becomes gradually narrower. Dicks. Stems simple or branched: branches sometimes very slender, at others thicker and shorter; thickest where the fruit-stalks put forth, the leaves there expanding in the form of stars. Fruit-stalks near two inches long, purple. Capsules bent downwards, tumid, green. Lid small, shining, white. Veil short, brown, red. Dill.

(Messrs. Hooker and Taylor state, “It must be allowed that the differences between this Moss and \( \beta \) (\textit{Mnium} \textit{cosspiticium}) are almost insufficient, and that it is more distinguishable by its larger size, proliferous habit, and brown or purple hue, than by any more essential characters.” Muse. Brit. The same authors likewise reduce to the present species, \textit{Bryum hymnum}, Schreb. E. Bot. 1518: and \( \beta \) \( \textit{cubitale} \), Dicks. E. Bot. 2554. E.)


Var. 2. Larger in all its parts.

\textit{Dill. 51. 73—(Fl. Dan. 1122. 1. E.)}

Leaves spear-shaped, alternate. Fruit-stalks red, sometimes branched. Leaves pellucid, green, shining. When about to flower it sends forth some reddish shoots, with finer leaves encompassed by others of a paler green. Flowers in the summer. Dill. Leaves almost hair-pointed.

\textit{Bryum triquetrum} \( \beta \). Huds. 490. \textit{B. ventricosum} \( \beta \). With. Ed. ii. In marshy places. The red kind is found in the mountain torrents of Snowdon, and the green in high boggy heaths about London and Oxford. Dillenius. Near Celin House, two miles from Holywell. Mr. Griffith.

\textbf{BRYUM.*} Fruit-stalk: terminal, issuing out of a tubercle: Capsule with a veil.

Barr. Fl. a bud either on the same or on a different plant, often axillary.

\textbf{SUBDIVISIONS OF THE BRYA.}

A. Capsules sessile, or nearly so.
B. Capsules on fruit-stalks, upright.

1. Stemless.
2. Stem very short, rarely branched.
3. Stems trailing.
4. Stems upright.

* (From \( \beta \) \( \textit{germinus, pullulo}, \) to sprout or shoot up: probably alluding to the perpetual viridescence of these plants. It was first used as a generic name by Dillenius, and afterwards adopted by Linnaeus. E.)
**CRYPTOGAMIA. MUSCI. BRYUM. 1029**

### A. Capsules sessile, or nearly so.

#### B. *apocar’pum.* Capsules sessile, terminal: beak bent: veil very small.

*Hedw. Stirp.* i. 39—*Dill.* 32. 4—*Fl. Dan.* 480—*Happ.* iii. 2.

Shoots one to two inches high; somewhat branched. *Leaves* at the ends of the shoots and branches, paler, longer, hairy at the end; from amongst these rise up *fruit-stalks,* very short, purple, with a yellow tubercle. *Capsules* oblong, smooth, green, changing to yellow. *Mouth* purple, open, elegantly fringed. *Lid* scarlet. *Veil* pale yellow, deciduous. The *fruit-stalks* are so enveloped by the leaves at the extremity of the shoots, that neither they nor the capsules can be distinctly seen, but the scarlet lid strikes the eye. *Weis.* *(Fringe of sixteen red, entire, spreading teeth, broad at the base, tapering to a fine point. E.Bot.* According to the authors of *Musc. Brit.* the differences which have distinguished the several species here united arise merely from local circumstances. E.)


**Var. 2.** Shoots longer and more branched, *leaflets* ending in hairs.


In spreading tufts like the preceding, but the stems are longer, more branched, more leafy. *Leaves* broader, terminal hairs longer; dilute green in winter, hoary in spring. The ends of the *branches* often hooked, which never happens in the preceding variety. *Capsules* inclosed in leafy scales, green; the young ones at the ends, the old ones at the sides of the branches. *Dill.*

*Hedwigia ciliata.* *Hedw.* Rocks and trees.


*Dill.* 55. 10—(*E. Bot.* 1325. E.)


Rocks near Bangor. Dillenius. On stones on the side of rivers which are washed by the water in high floods. Mr. Griffith. (Mr. Sowerby gathered it on upright posts by the Thames at Wandsworth. E. Bot. E.) Autumn.


Hedw. Stirp. 11. 37—(E. Bot. 1423—Musc. Brit. xxi. E.)—Dill. 55. 9—Vaill. 27. 10—H. Ox. xv. 6, row the last, 13.

Plant smaller than B. striatum, leaves smaller, darker green: veil paler and more distinctly toothed at the base. Dill. Differs also from it in wanting the inner fringe, and having the edge of the veil scolloped. Hedw.

(Rough Single-fringed Thread-moss. E.) Orthotrichum anomalum. Hedw. (O. cupulatum. Hoffm. Hook. Grey. O. nudum. Dicks. E. Bot. 1325, is likewise included in this species by the authors of Musc. Brit. who appear to consider the real O. anomalum of Hedwig, (also in Musc. Brit. xxi., and B. striatum B. Linn.) to be distinct from the plant so denominated by Smith; but the difference is not very obvious. E.) On stones, walls, and the ground. Feb.—April.

(Var. 2. Leaves mid-ribbed, hair-pointed. Capsules on short fruit-stalks, terminal, with sixteen slender expanding teeth. Veil hairless, ribbed. April. E.)

B. striatum. Capsules oblong, sessile, axillary or terminal: veil hairy: leaves spear-shaped, acute.


Obs. Nearly allied to the Polytricha, but wanting the fleshy receptacle below the capsule. Linn.

Shoots one inch high, branched. Capsules lateral. Mouth nearly smooth, without a ring. Neck. Branched; two or three inches high. Leaves as if gnawed at the ends. Florets of both sorts on the same or on distinct plants. Fruit-stalk very short, sheathed at the base. Capsules egg-shaped. Lid small, beak blunt. Fringe double, sixteen teeth in each. Found both in flower and in fruit almost all the year. Hedw.


B. Capsules on fruit-stalks, upright.

(1) Stemless.


(E. Bot. 1510—Musc. Brit. xii. E.)—Dill. 45. 15—Buxb. i. 64.

Leaves shorter, broader, and softer than in B. murale, pellucid, green, not hoary with hairs. Grows much crowded with hairs, but not in a circular form. Dill.


Sometimes grows in tufts, but often spreads in shady places. Leaves opaque, approaching, rigid, fine green when wet, dull green when dry.

(Dillenius. (Particularly common in Devonshire, especially near Torquay and the hilly country about Tor-point. Muse. Brit. E.) Winter.)


Sometimes grows in tufts, but often spreads in shady places. Leaves opaque, approaching, rigid, fine green when wet, dull green when dry.


Very minute, unbranched, with scarcely any stem. Flowers terminal. Fruit-stalk upright, not longer than the capsule. Veil reddish brown. Lid conical, beak oblique. Very common on mud walls, spreading in broad and dense patches; seldom on the ground.

(Some authors discriminate var. a. vulgar; capsule ovate; and β. gracile; capsule oblong. This species is remarkable for the nerve of the leaf being furnished with a large, oblong, membranous appendage, to the surface of which are attached minute greenish bodies, probably gemmae, as represented by Hedwig. Musc. Brit. E.)


Hedw. Stirp. i. 28—(E. Bot. 2380. E.)
Stem unbranched, upright, very minute, not more than two or three lines high. Leaves concave and egg-shaped at the base, but very long and slender upwards. Barren flowers in the bosom of the leaves. Fruit-stalks on the same plant terminal, thrice as long as the stem, nearly upright. Fringe single, of sixteen teeth, deeply divided, red.


B. PYRIFORME. Capsules pear-shaped: leaves flat, oblong, acute.

Dicks. H. S.—(E. Bot. 413. E.)—Dill. 44. 6—Fl. Dan. 537. 1—Vaill. 29. 3—H. Or. xv. 7, row 2. 16, p. 631—Busb. i. 64. 1.

Fruit-stalks half to one inch long. Relh. n. 1015. Leaves one line broad, one and a half long. Involutum none. Fruit-stalk about three lines long. Capsule, mouth without fringe. Pol. Veil, before the capsules swells, four-sided; afterwards it tears into two, three, or four segments. Leaves tender, pellucid, pale green. Capsules large for the size of the plant, which rises but little above the ground. Dill.


B. STELLATUM. Capsules pointed, bearded: leaves egg-spear-shaped, pointed, somewhat rolled in. Dicks. ii. 6.

(E. Bot. 2384—Musc. Brit. xii. E.)—Dill. 49. 56.

(Stems very short, tufted; leaves oblongo-ovate, or ovate, rather concave, sub-opaque, mucronulate, furnished with a strong brown nerve. Musc. Brit. and according to the learned authors of that work, this appears to be Barbula agraria of Hedwig, a tropical plant, and a rare instance of such having been found in so northern a region; unless indeed Mr. Dickson should, by some accident, have mistaken a foreign specimen for one gathered in Scotland. E.)


B. CALCAREA. Capsules inversely conical, toothed: leaves upi ght cylindrical, bluntish. Dicks.


A dwarfish plant, smaller than B. paludosum, but the capsules sufficiently large and conspicuous. Lid conical, with a beak somewhat slanting. Veil slender, slanting. Dicks. Capsules with sixteen teeth; not with twelve as in Dickson’s figure.


B. CERVICULA'TUM. Capsules egg-shaped, unequal, toothed: leaves very slender.


Not branched; upright. Lower leaves very minute, spear-shaped; upper oblong-spear-shaped, concave, with a very long tapering point, expanding when moist, closing but not curling when dry; pale green. Capsules egg-shaped but less convex on one side, which gives it an appearance of leaning. Lid fine red, slanting, taper-pointed.
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B. paludosum. Capsule very blunt, mouth wide: leaves bristle-shaped.


 Differs from B. viridulum in its brown capsules, and the leaves not curling when dry. Linn. Extremely small, only observable from its growing in a quantity together. Leaves minute, hair-like, but expanding. Fruit-stalk terminal, two or three lines long. Capsules egg-shaped. Mouth wide, minutely fringed. Veil slender, upright. Differs from B. wires in the darker green of its leaves, their being more slender, not curling when dry, and in having smaller capsules. Weis. Leaves very slender, scarce sensibly broad, soft, dull, green. Capsules, lid deciduous, leaving large opening for the size of the capsule. Dill. Differs from B. viridulum in the leaves, which, though bristle-shaped, are broad at the base, the mid-rib only visible in the broader part; fruit-stalk twisting when moistened; capsule egg-shaped, with an orifice equal to its greatest diameter. Griff.


(In Musc. Brit, some doubt is entertained whether the true plant of this species has been found by any one but Mr. Templeton, (on limestone rocks in the neighbourhood of Belfast,) and with which the Dillenian figures do not accord. E.)


 Stems very short. Leaves very entire, blunter, flat above, convex underneath, naked. Fruit-stalk terminal, solitary, upright, half an inch long, purple. Veil conical, pale. Capsules fringed, smooth. Lid taper-pointed, purple at the base, half as long as the capsule. Huds. Fertile plant always taller and slenderer than the barren plant, but both of them short and thick. Fringe red, composed of thirty-two long slender filaments, spirally twisted together when moist. Hedw. Leaves stiff, like those of heath. Dill.


*Dicks. H. S.—(Dicks. 4. 11.3—E. Bot. 2306—Musc. Brit. vii. E.)*

Whole plant scarcely more than the eighth of an inch high, the smallest of this Genus which I have seen. Leaves three or four, when viewed through a magnifying glass strap-spear-shaped, ribbed underneath. Fruit-stalk yellowish, sometimes two from the same point. Capsule upright, oblong, somewhat cylindrical, brownish when ripe, with a swollen red ring. Lid taper-pointed, somewhat crooked, nearly as long as the capsule. Veil oblique, minute. Fringe toothed; teeth numerous, bent in. Differs from *B. paludosum* in the leaves not being bristle-shaped, and in the shape of the capsule. Dicks. (This species is remarkable in having two kinds of leaves, of which the outer and lower ones are much the shortest and broadly lanceolate, whilst the inner and uppermost are linear-lanceolate. *Musc. Brit. E.*)


B. Capsules on fruit-stalks, upright.

(2) *Stem very short: rarely branched.*


*Dicks. H. S. and Fasc. iii. 7. 5—(Musc. Brit. vii.—E. Bot. 1245. E.)*

Roots strong, brown. Shoots nearly upright. Leaves toothed, twisted at the end; with a mid-rib. Lid very blunt. Veil tumid, contracted at the base. Dicks.


* (By some this minute plant is considered the *Bryum ægypti*, of Hasselquist; abundant on the walls of Jerusalem; and therefore presumed to be “the Hyssop that springeth up out of the wall.” (Hyssopus Salomonis, Linn. sub *Brya truncatula*, fid. Sm. E.)
CRYPTOGAMIA. MUSCI. BRYUM.

Dicks. Fasc. iii. 7, 9—(Musc. Brit. xx.—E. Bot. 2493. E.)

From two to four lines high. Leaves crowded, upright, but expanding, acute, keeled, serrated upwards, yellow green, twisted when dry. Fruit-stalk terminal, near half an inch high, pale, yellow. Capsule cylindrical, but a little swollen at the base. Lid conical, blunt, rather thicker at the top. Veil awl-shaped.


B. convolutum. Capsules cylindrical: involucrum leaves blunt, rolled up so as to form a cylinder: leaves spear-shaped.

Dicks. H. S.—Hedw. Stirp. i. 32—(Musc. Brit. xii.—E. Bot. 2382. E.)—Dill. 48. 44—Schmid. 57. 5.

Grows in dense tufts, half an inch or more in height; branches issuing out of the thickened tops of the old shoots, which are stellated at the ends. Leaves loosely disposed, ending in hairs. Fruit-stalks from the last year’s shoots, one inch long, encompassed at the base by an involucrum of awl-shaped hairy leaves. Weis. Sometimes with forked branches. Leaves very slender, hardly a quarter of a line broad at the base, very entire. Involucrum terminal, embracing closely the base of the fruit-stalk. Capsule cylindrical, a line long, hardly a quarter as broad. Mouth without a ring; fringe red. Lid slender, upright, awl-shaped. Veil pointed, smooth, thread-shaped, reaching but half way. Pol. Inner involucrum-leaves heart-shaped, blunt.

(Convoluted Thread-moss. Tortula convoluta. Sw. Sm. Hook. E.)

B. setaceum. Huds. 481. Lightf. 729. (Mniuma setaceum of Linn. is a different species which has rigid bristle-shaped leaves.) Dicks. Bar- bula convoluta. Hedw. in the plate named setacea. Heaths, hedge banks, and walls, very common. A. March.


Dicks. 5. 3. a. b. c.—(E. Bot. 1571—Musc. Brit. xxviii. E.)

Habit that of B. trichoides, from which it differs as follows. Leaves spear-shaped, mostly pale, under the microscope reticulated, pellucid, finely but obscurely serrated at the end. Lid, beak short. Dicks.


B. extinctorum. Capsules cylindrical, entirely covered by the bell-shaped veils: shoots simple: leaves spear-shaped: (veil entire at the base. E.)


Fruit-stalks terminal. Capsule, mouth not fringed. Neck. Grows thick together in patches, half an inch to one inch high; sometimes a little branched towards the top; very leafy, ending in roses. Fruit-stalks not half an inch long, upright. Capsules cylindrical. Lid sharp-pointed. The veil covering the whole capsule and hanging down below it, distinguishes this from every other moss. Dill.


So small as hardly to be discernible if it did not grow in large patches. Stems one to three lines long, upright, seldom branched. Leaves very slender, sharp at the ends. Fruit-stalks terminating the last year’s shoots, one or two in a shoot. Capsules egg-shaped; fringed at the mouth. Lid red, pointed. Veil pointed. Weis. Fruit-stalks green, changing to a pale yellow. Capsules from green to yellow brown, and shining. Veil slender, the colour of the capsule. Lid very short, reddish, its point bent. Dill. Leaves awl-shaped, quite straight, curled when dry. Dicks. Fruit-stalk not twisting when wet. Capsules red at the base and at the mouth, which is small and contracted. Leaves strap-awl-shaped, the mid-rib extending the whole length. Grif.


Capsules, when the lid is fallen off, appearing quite lopped, inversely egg-shaped, and yellowish red, therefore evidently distinct from B. viridulum. Lid. Fruit-stalks three or four lines long. Capsule without a ring. Neck. One of the least of the mosses; grows in patches. Stem three or
four lines long, unbranched, ending in roses. Lid with a long slender point. Veil with a long taper point. Weis. Sheathing involucrum conical, lopped.


A. Sept.—Feb.


Dicks. iii. 8. 1—(E. Bot. 1216. E.)


(Both this and the following are considered as varieties of Dicranum variatum, in Musc. Brit. E.)


Dicks. 7. 10.

Shoots nearly stemless, upright, leafy. Leaves upright, strap-awl-shaped, yellow green. Fruit-stalk brown; thicker upwards. Capsule egg-shaped, brown, when dry the upper part becomes twisted. Fringe with a ring, toothed; ring prominent; teeth half the length of the capsule: upright but approaching, flattish, red orange. Lid conical. Veil not observed.

(Stemless Thread-moss. Dicranum callistomum. Sm. E.) Found by Mr. Dickson on barren rocks on Highland mountains in Scotland.


Hedw. Stirp. i. 27—Dill. 49. 57.

Stem short, naked at bottom, or with a few very short minute leaves. Leaves awl-shaped, mid-ribbed, very slender, rather pointing to one side. Fruit-stalk one to one and a half inch high, pale green or reddish. Capsules upright. Veil reaching but half way round, deciduous. Lid bluntly conical, somewhat bent.

(Slender-leaved Thread-moss. E.) Specimens from J. W. Griffith, Esq. of Garn, who first found it on our island, growing on the sides of turbaries (peat holes) near Llyn Aled, Denbighshire.

B. Capsules on fruit-stalks, upright.

(3) Stems trailing.


Var. 1. Lanuginosum. Shoot branched, lying down: leaves oblong, hair-pointed; capsules oblong; veils entire.
Leaves a little toothed at the sides, but this most conspicuous in the dried plant. Capsule upright. Mouth fringed with sixteen teeth, hair-like, separate quite down to the base. Hedw. Shoots rigid, from three to twelve inches long; prostrate. Branches numerous, short, thicker than the main stem. Leaves slender, pale green, ending in a long grey hair. Fruit-stalks terminal, or nearly so; short, yellow. Capsules small, egg-shaped. Lid red, sharp-pointed. Dill. Lid regularly conical, but very taper, and about one-third the length of the capsule.


Var. 2. Leaves fasciculated, not closely set, spear-awl-shaped, mid-ribbed, doubled together, ending in a short whitish hair; curled when dry.

E. Bot. 2005—Musc. Brit. xix. E.)—Dill. 47. 28. A. something resembles it, but that is described as hairless. Branched upwards. Fruit-stalk from one-fourth to three-fourths of an inch long, varying greatly in different specimens.

B. Hypnoides b. Linn. and Huds. (Trichostomum fasciculare. Turn. Sm. Hook. E.) On Snowdon. Dillenius and Griffith. Sometimes the branches are so short as to resemble bundles of leaves, and then the fruit-stalks are short in proportion. Dill. 47. 28. B. if furnished with hairs, would be a pretty good resemblance of it in this state.

Var. 3. Leaves fasciculated, egg-awl-shaped, mid-ribbed, keeled, pointed with a white hair.

From two to three inches long, trailing, branches and fruit-stalks longer than in var. 1. None of the figures exactly resemble it.

Var. 4. Leaves fasciculated, spear-awl-shaped, mid-ribbed, doubled together, hair-pointed, curled when dry.

Near two inches long. Less trailing than the preceding, but chiefly differing in the shape of the leaves, and being of a bright yellow green. (B. lutescens. Dicks. E.)

Var. 5. Leaves fasciculated, spear-awl-shaped, mid-ribbed, not hair-pointed: fruit-stalks very short.

Specimen from Mr. Griffith, who thinks it ought to be considered as a distinct species; and in favour of this opinion we may observe, that all the preceding varieties have hair-pointed leaves, but this and the subsequent ones are not so. The stems more or less trailing, and the leaves growing in bundles are always sufficient to distinguish B. Hypnoides and its reputed varieties from B. canescens, whilst the presence or absence of that hoariness which is caused by the hairs at the points of the leaves, will at once discriminate the four first varieties of B. Hypnoides from the subsequent ones.


Dill. 47. 30.
Leaves crowded, very small, yellowish or brownish green. Fruit-stalk from the upper branches, half an inch long. Dill. It forms a cushion on the rocks. Linn. In the specimens before me some plants are distinctly of the barren, and others of the fertile kind.

*B. hypnoides* & Huds. *(Trichostomum obtusum. Sm. E.)* On Snowdon.

Dillenius and Mr. Griffith. Aug.

Var. 7. Shoots long, prostrate, leaves pointing one way, in bundles or distinct, awl-shaped, bent, very slender and fine, but not hair-pointed.

There is not any figure of this. The plant is brown green, four or five inches long, branches few, very short; fruit-stalk scarcely longer than the leaves. Shoot distinct, composed of a bundle of brown red fibres. Specimen from Mr. Dickson.

**B. Capsules on fruit-stalks, upright.**

(4) Stems upright.

a. Capsules roundish.

**B. reticulatum.** Capsules pear-shaped, toothed: leaves egg-shaped, serrated, reticulated. Dicks, ii. 4.

*Dicks. 4. 6. a. b.—(E. Bot. 2507. E.)*

Shoots upright. Leaves distant, rather pointed, of a remarkable net-work texture, transparent, serrated towards the end, below very entire. Fruit-stalk from the base of the plant. Capsule teeth bent in. Dicks.


**B. pennatum.** Capsules very small: fruit-stalks terminal: shoot simple, upright, wing-cleft: leaves pointing two ways, spear-shaped vary entire.


Plant half an inch high; naked at bottom. Barren stems wing-cleft. Fertile stems, some star-like, some bearing capsules; very slender, bright green. Leaves distinct, egg-spear-shaped, pointing from two opposite lines. Fruit-stalks very slender, green, one-eighth of an inch long, rising out of an involucrum resembling that of the barren flower. Capsule upright, very small, green, roundish, but lopped when the lid has fallen off. Veil none observed. Lid very blunt, reddish. Fringe naked. Dicks. Veil falling off entire. *Hedw.*

*(Wing-cleft Thread-moss. E.)* *Mnium Osmundaceum. Dicks. Gymnostomum pennatum. Hedw. (G. Osmundaceum. Sm. Schistostega pennata. Brid. Muse. Brit. Hollows in old hedge-banks, in a rich soil on the road from Zele to South Tawton, four miles from Oakhampton: Mr. Newberry; (and in the same county, by the Rev. J. S. Tozer, near the village of Haberton, two miles from Totness; near Chelwill in the same parish; also near Meavy Parsonage; always on mouldering hedge-banks. Muse. Brit. We are also favoured by an unknown friend with the following station for this favourite Moss: April, 1826; It is now abundantly in fructification in Nottingham vol. iii. 2 6*
Forest, where it grows on the roofs of the sandstone caverns, just beyond the Jews' burying-ground, on the west side of the Gallows Hill. E.) B. April—June.

**B. verticillatum.** Capsules small roundish: fruit-stalks twisted when dry: shoots all of the same height: leaves hair-pointed.


*Leaves* bristle-shaped. *Fruit-stalks* solitary, purplish below. *Capsules* globular. *Veil* very much pointed, very small, oblique. Linn. Grows thick together in broad patches. *Stems* about an inch high; the old ones branched, the young ones simple. *Leaves* very slender, serrated towards the ends. *Fruit-stalks* full half an inch long, from the ends of the younger shoots, one or more in a place. *Capsule* at first slender, when ripe globular. *Mouth* wide, fringed, the teeth turned inwards. *Veil* deciduous: Weis. and Dill. *Leaves* mid-ribbed.


(In Musc. Brit. our first kind is described under var. a minor; *stems* shorter, leaves flexuose. To which is added var. β major; *stems* much lengthened out, branched; leaves longer; crisped, especially when dry. *Bartramia crispa.* Brid. Turn. E. Bot. 1526. E.)


*Dill. 47. 29; A. B. the fresh, C. the dried plant—Fl. Dan. 476—Happ. iii. 3. Plant* yellow green; much branched; leaves slender, curled. *Capsule* brown, beak very small. Dill. *Fruit-stalk* but little higher than the tops of the shoots. *Capsule* very small. *Lid* red, with a very slender needle-shaped point.


**B. patens.** Capsules egg-oblong, fringed; fruit-stalks very short: shoots nearly upright: branches expanding, rising to nearly the same height: leaves strap-spear-shaped.

Shoots somewhat slanting, nearly cylindrical, tapering towards the base, very much branched. Branches unequal, rather pointed, somewhat higher than the fruit-stalks. Leaves tiled, pressed to, the points standing out, quite straight, strap-spear-shaped, pointed, channelled. Fruit-stalks from the sides of the uppermost branches, few, solitary, very short, often zigzag. Capsules rather pear-shaped, small. Fringe fringed. Dicks. Capsules egg-oblong, as expressed in the figure.


Dicks. i. 4. a. b.

Shoots branched, star-like at the end. Leaves expanding, a little bowed back at the ends; somewhat whorled. Fringe naked. Lid flattish, the beak somewhat oblique; as long as the capsule. Dicks.


(E. Bot. 1644—Musc. Brit. xiv.—Fl. Dan. 538. 2. E.)—Hill. 47. 34.

Slender, one inch high, branches two or three, sometimes more. Leaves dark green, hairy, sharp-pointed. Fruit-stalks short, when young terminal. Veil brownish. Capsules short, roundish. Dill. In moist situations the capsules are rather longer, and sometimes the fruit-stalks are bent like those of B. fragile. Griff.


Stems forming tufts, from one to three inches high; almost upright, purplish, but little branched; covered at the base with fox-coloured wool. Leaves numerous, very green, bristle-shaped, soft, long. Fruit-stalks upright, short, purple. Veil conical, sharp, pale, deciduous. Capsules fringed, tawny. Lid conical, very short, tawny. Huds. Barren and fertile flowers in the same involucrum. Fruit-stalks short, stiff, but bending by the weight of the capsule, fixed to the end of the last year's shoot, but the growth of the new shoot makes it appear lateral. Outer fringe of sixteen teeth. In B. pomiforme, the leaves are more equally tapering, and the fruit-stalks are longer.

2 c 2

B. Capsules on fruit-stalks, upright.

(4) Stems upright.

b. Capsules egg-shaped.


Grows in large dense patches. Fruit-stalks from one half to one inch, the young ones terminal, the older form the forks of the branches. Lid reddish, pointed, very slender, readily falling off. Mouth with a short fringe. Weis.


Stem upright, three or four lines high, rarely branched. Leaves the lower ones smaller than those above. Lid, beak generally bent. Veil pale green to whitish, upright, splitting at the side.


Dicks. iii. 8. 3.

Shoot upright, simple. Leaves expanding, pointed by the projecting of the mid-rib. Fringe twisted. Veil awl-shaped, twice the length of the capsule. (The authors of Musc. Brit. assimilate this plant with their Tortula fallax, xil. the larger specimens, with longer and sharper leaves than the other varieties. E.)


(Veil striated, at length torn at the edge. Lid awl-shaped. E.) Resembles the B. cirratum so much that they are not to be distinguished without maceration. That, however, is a more slender plant, has fewer fruit-stalks, and the capsules are paler. Dill. (The authors of Musc. Brit. observe: "this species may be easily known from other Trichostoma by the greater length and narrowness of its leaves, and by their remarkably crisped appearance when in a dry state. The capsules are generally crowded, and the teeth of the peristome connected at the base in filiform pairs."


Autumn.

Ray mentions a var. with much smaller leaves, which is B. cirratum γ. Huds.

B. canescens. Capsules egg-oblong: leaves crowded, spear-shaped, bent back, white-haired at the ends.


Stem upright when young, afterwards declining, and sending out a few branches of various lengths. Leaves spear-shaped, keeled, pressed to when dry. Fruit-stalk straight, three-fourths of an inch in height. Capsule oblong-egg-shaped. Lid a slender cone. Mouth fringed with sixteen long, hair-like teeth, divided down to the base. Veil slender, long, ragged at the bottom. Fruit-stalks lateral. Hedw.


Musc. Brit. E.) Differs from B. Hypnoides in its upright stem, its leaves being very slightly serrated only at the ends, and in its longer fruit-stalk. Hedw. When moist and growing, yellowish green, when dry woolly, from the number of hairs which terminate the leaves. Dill.

Common in dry, high, barren, sandy places. Feb.—March. P.

Var. 2. Shoots simple, or but little branched.

Dill. 47. 27. A, B, C.

About an inch and a half high. Fruit-stalk lateral. Capsules upright, egg-cylindrical. Leaves spear-shaped, slender, keeled, hair-pointed; hairs grey and bent inwards when dry.

Specimen from Mr. Griffith, accompanied by others of a stunted growth, on bleak rocks, not half an inch high, and very much crowded with leaves.

Var. 3. Leaves spear-awl-shaped, mid-ribbed; shoots branched.
This was considered by Hudson as a variety of *B. Hypnoides*; but though the shortness of the fruit-stalks favours that opinion, the leaves being equally distributed, not fasciculated, and the want of trailing shoots, induce me to place it here.

*B. Hypnoides* var. Huds. On some stones forming a circular wall on the summit of Snowdon.

Aug.


**Dill. 47. 36.**

This Moss adheres together when dry, as it doubtless does when wet, like a *Conferva*; and when dry, preserves its beautiful blue green colour. It consists of thread like shoots crowded with very slender leaves, but dipped in water so that the shoots may separate, they appear but little branched, and the leaves seem less numerous. Dill. In some specimens now before me the fine bluish green colour like that of a Cantharid is very striking. Capsules urn-shaped. Fruit-stalks about half an inch long. Plant one inch and a half high. Leaves not crowded, spear-shaped, but very slender without a mid-rib, doubled together.


**Dicks. 7. 7.**

Shoots branched, branches expanding, nearly of one height. Leaves upright scattered, strap-shaped, keeled, dark green, those at the end forming a star; curled when dry. Capsules yellowish. Mouth red, ring slender, teeth short, upright, red. Lid with a long slanting beak. Veil slender. Dicks. Leaves very slender, strap-awl-shaped, with a mid-rib the whole length. Fruit-stalks hardly half an inch high.

(Dickson's Thread-moss. In Musc. Brit. we find this plant (E. Bot. 1430,) included under *Weissia cirrata*, *B. cirratum*. With. E.) On rotten wood and decayed trunks of trees. On a moist rock by the petrifying spring in Garn dingle, near Denbigh; and Wet rocks of Crib y Ddescil. Mr. Griffith.


in Musc. Brit. E. Bot. 2295, T. linoides is also considered to represent this species. E.) Barren hills, and moist banks. E.)

**B. crispum.** Capsules egg-shaped: fruit-stalks thicker at the top: leaves strap-shaped, broadest at the base, crowded, curled when dry.


In dense tufts, so close, that the under parts decay. About one inch high, branched. _Barren_ flowers in the bosom of the leaves. _Sheath_ scarlet. _Fruit-stalks_ terminal, short, straightish, thickening at the top so as to coincide with the pear-shaped capsule. _Capsule_ from the above circumstance appearing pear-shaped, but it is really globular egg-shaped. _Lid_ with a straight short beak. _Ring_ none. _Fringe_ double, sixteen teeth in each. _Veil_ pyramidal, hairy. _Hedw._ _Capsule_ when old with eight longitudinal streaks, in each of which lies concealed a pair of teeth belonging to the outer fringe after it has been bent back. When the seed has escaped, it contracts in the middle part. Inner fringe eight white hairs, the points of which unite in the centre. Outer fringe eight teeth, each of which at length splits into two. _Grif._ (A beautiful species; sometimes very minute. E.)


**B. vaginale.** Capsules egg-shaped, toothed: shoots rather serpentine: leaves hair-like but sheathing the base. _Dicks._


Near half an inch high, rather waved, upright. _Leaves_ serpentine, mostly pointing one way. _Beak_ slender, straight. _Fringe_ red of sixteen cloven flat teeth. E. Bot. E.) _Capsules_ urn-shaped.

**Sheathing Thread-moss.** _Dicranum crispum._ Hedw. Sm. Hook. Grev. E.) _Bogs in Scotland._ Dickson. (Said to have been found also by John Templeton, Esq., of Orange Grove, near Belfast, on moist banks of the Maryburn River, Ireland. E. Bot. E.)

**B. Weissia.** Capsules egg-oblong, with a ring, fringed: leaves pointing one way, strap-awl-shaped, stiff. _Dicks._


_Stem_ upright. _Leaves_ awl-shaped, but broad and sheathing at the base, rigid, not curling up when dry. _Involucrum_ sheathing. _Fruit-stalk_ terminal, always longer than the stem, nearly upright. _Lid_ a blunt cone. _Fringe_ single, of sixteen teeth.


**B. Hyperboreum.** Capsules egg-shaped, fruit-stalks short: leaves stiff, hair-like, crowded. _Gun._


Full half an inch high. _Capsules_ but little raised above the foliage. _Beak_ conical, slanting.

B. Capsules on fruit-stalks, upright.

(4) Stems upright.

c. Capsules oblong.


_Hedw._ Stirp. i. 7—(E.Bot. 1438—Musc. Brit. xiv. E.)—Dill. 48. 45.

_Stem_ upright, not branched, about half an inch high. _Fruit-stalk_ upright, generally terminating the old stem. _Veil_ long, conical, crooked. _Lid_ convex, beak straight whilst under the veil, afterwards crooked, but in a direction opposite to the bend of the veil. _Hedw._ _Stem_ sometimes branched. (See fig. Dill.) Leaves very slender, keeled, upper ones the longest. _Fruit-stalks_ red, half an inch high, or more. _Capsules_ and _lid_ red. Dill.


P. Aug.

B. barr'a'tum. Capsules oblong, slender: lid taper-pointed, slanting: fruit-stalks lateral: leaves spear-shaped, acute, the upper ones expanding.


Grows in tufts, half an inch high, somewhat branched. Leaves spear-shaped, pointed. _Fruit-stalks_ half an inch or more from the base or the middle of the branch, but never terminal. _Capsules_ slender. _Veil_ long. _Lid_ long, slender, conical. _Fringe_ orange-coloured or scarlet, twisted like a screw. _Curt._ (The 45th pl. of Dillenius is referred to by mistake in the observations of Mr. Curtis.) Branches of equal thickness, sent off from the lower part of the plant. Dill.

The authors of Musc. Brit. have reduced this, with several others, to _B. unguiculatum_: but Curtis observes, “we are convinced, from repeated observations, that it is a species perfectly distinct. It approaches very near to _B. imberbe_ and _unguiculatum_. From the former it differs in having the antherse or capsules terminated by long, twisted ciliate, and in having the peduncles always proceeding from the base of the surculus; this last character also strikingly distinguishes it from _B. unguiculatum_.”


(E.Bot. 2329. E.)—Dill. 48. 46.

_Fruit-stalks_ upright, solitary, terminating and lateral, half an inch long. _Capsules_ cylindrical, one line long, deep saffron-coloured, blackish at the base. Web. _Fringe_ long. Hal. Not an inch high, upright, unbranched
at first, but every year sending out branches after the flowering season. Leaves broad at the base, and keeled. Barren flower terminal. Hedw. Grows in dense tufts. Stems slender, half to one inch high, dividing into branches. Leaves very slender, pale green, upper leaves bent back. Dill.


Shoots forming patches about half an inch high; sometimes branched. Leaves open, near a line in length and a quarter in breadth. Fruit-stalks terminal. Veil smooth, reaching but half-way down the capsule. Pol. Leaves green, keeled, opake. Capsules oblong, thickest at the base, green, changing to brown. Dill.

(Bird’s-claw Thread-moss. Tortula unguiculata. Sm. Hook. Barbula unguiculata. Hedw. Dill., in which also Drs. Hooker and Taylor comprehend Tortula mucronulata, (B. mucronulatum. Dicks. With. E. Bot. 1299. T. aristata. E. Bot. 2393. T. barbata. E. Bot. 2391. T. hemilis. E. Bot. 1663. T. apiculata. E. Bot. 2494; and T. ericetorum. E. Bot. 2495. (B. ericetorum. With. Dill. 45. 13.) “We are led to include so great a number of synonyms under the above species from a careful examination of the descriptions and figures, as well as of authentic specimens. It is a plant which, growing in almost every variety of soil and situation, is subject to alter considerably in appearance. The form of the leaf, however, we find to be tolerably constant.” Musc. Brit. E.) Walls and sandy places; (banks and hedges, frequent. E.) A. March—April.


Grows in dense crip patches. Shoots upright, adhering together. Leaves a line or one and a half line long. Fruit-stalks from the forks of the branches, straight, three to seven lines long, closely clasped at the base by the involucrum. Capsules cylindrical, smooth. Ring none. Mouth fringed. Lid awl-shaped, straight. Veil smooth, extending but half-way down. Pol. One to one and a half inch high, somewhat branched. Leaves very numerous, slender, crooked, curled when dry, fine green, dull yellow when old. Veil slender, pale green, changing to brown. Capsules nut-coloured when ripe. Dill. (The widely serrated leaves are curiously hygrometrical, as may be observed under the microscope after maceration. Mr. Oade Roberts.


(E. Bot. 2263.—Musc. Brit. xvii. E.)—Dicks. 4. 5. a. b.

Shoots nearly upright. Leaves between upright and open, yellowish, the points when dry twisted. Dicks. (Stems perennial, two or three inches tall, simple or branched, leafy, smooth, except about the bottom, where they are a little downy with rusty fibres. Leaves linear-lanceolate, acute, keeled, single-ribbed, spreading, entire, except a few occasional teeth near the tip. Fruit-stalks few, half an inch high. Capsule erect, top-shaped. E. Bot.

Supposed to be distinct from B. flaves'cens. Scop.


Slender, but little branched. Leaves dark green, very narrow and short. Fruit-stalks terminating the new shoots, short. Capsules oblong, small, dark brown. Dill. (Some Botanists conceive this not to be essentially distinct from Tortula fallac, but its leaves are in general far more rigid, more erect, and very straight; though perhaps var. B. viridis, of Musc. Brit. may scarcely be discriminated from that species. E.)


B. capilla'ceum. Capsules oblong: leaves in two rows, bristle-shaped, somewhat sheathing at the base.


Capsules oblong. Leaves expanding, bristle-shaped. Huds. Differs from B. heteromallum in its open leaves, and the shape of its capsules; from B. flexuosum in its fruit-stalks slender, quite straight, not zigzag, and in

* (The Rev. Hugh Davies makes frequent mention of this dingle, (as a spot where "flowers of fairy brow," ) and describes it to be a very prolific station deserving the par¬ticular attention of Botanists. E.)


Var. 2. Leaves more crowded, shorter, roughish: capsules much smaller.

Not above half the height of the preceding. It assumes this habit when growing on rocks, or in dry situations, but still it preserves the jointed stalk, which is an unerring criterion of this species, Griff.; but which seems to have escaped the notice of Hedwig. Maceration in water renders these joints visible in a dried plant.

On the rocks above Cwn Ffynnon felen, near Llanberis abundantly. Mr. Griffith.

P. April—June.

C. Capsules on fruit-stalks, leaning.

(1) Stems none, or very short and unbranched.

B. SUBULATUM. Capsules cylindrical: lid conical, acute: shoot very short, unbranched: leaves egg-shaped, bluntnish.

Curt. 214—(E. Bot. 1101—Musc. Brit. xii. E.)—Fl. Dan. 1100. 2—Vaill. 25. 8—Dill. 45. 10—Busb. i. 63. 2; ii. 2. 3 and 4.

Grows crowded together; but little branched, terminating in roses. Capsules cylindrical, slender, three or four lines long, becoming crooked when dry, ripe in summer. Leaves pellucid, pale green, with or without hairs. Weis. and Dill. Plant from three to five lines high. Fruit-stalks sometimes in pairs. Veil permanent, Scop. nearly as long as the capsule. (Fruit-stalks terminal, from half to one inch long. Capsule lid very long; the teeth twisted together when old into an oblong shape with a brush-like point. Leaves with a strong mid-rib, ending in a longish grey hair which falls off when the leaf is old. Leaves larger than those of any other British species, succulent, pellucid in their lower half.


B. ELONGATUM. Capsule long and tapering at the base: shoot upright: leaves strap-spear-shaped.

Hedw. Stirp. i. 36.

Hardly half an inch high, upright. Barren and fertile flowers terminal, but on different plants. Fruit-stalk straight, upright, but a little bent at the top by the weight of the capsule. Capsule oblong, leaning, its lower part a cellular substance, not containing seeds. Lid convex, beak short. Mouth with a double fringe, sixteen teeth in each.

C. Capsules on fruit-stalks, leaning.

(2) Stems upright.


_Capsules_ scored at the mouth, pear-shaped, but crooked, with an irregular knob at the base. _Beak_ bent, fine red at the base.


_Hedw. Stirp. i. 24—(E. Bot. 1708—Musc. Brit. xii. E.)_

Different from _B. imberbe_, which has the leaves strap-awl-shaped and straight, and the beak of the lid conical. _Barbula fallax_. Hedw. but not his synonyms. Dicks. Full half an inch high. _Leaves_ curled when dry. _Lid_ slender, nearly cylindrical, not quite straight.

(Hooker and Taylor do no admit _Tortula imberbis_ to be distinct from the present species. Those authors observe: "we know of no plant of this genus that varies so much in the size of the stems as this; so that the dwarfish individuals, growing in dry fields, would scarcely be believed to be the same as those luxuriant specimens found on the moist banks of rivers. In the former situation, when about half an inch, or somewhat more, in height, it agrees with _T. unguiculata_. Sm. when an inch and upwards, it becomes _T. fallax_, and when nearly two or three inches, it is _B. Linoides_. Dicks."


The size of _B. virens_. _Shoots_ upright. _Leaves_ upright, twisted, curled, a little toothed. _Calyx_ slightly contracted in the middle, scored when dry. Dicks. _Capsules_ fringed; fringe very long for the size of the plant. _Lid_ depressed; beak long, slanting. _Leaves_ pellucid, decurrent. Griff.


_Hedw. Stirp. iii. 9—(Musc. Brit. xvi. E.)_

An inch high or more, growing shoot upon shoot; delicate, feeble, but upright. _Leaves_ sheathing at the base, very long and slender upwards, rather bent back and pointing one way. _Capsules_ oblong, rather swollen

(Long-leaved Thread-moss. E.) *Dicranum longifolium*. Hedw. Banks of rivulets in the Highlands of Scotland. Dickson. Also in Ireland, where it was first found under dripping rocks at Glenmalur, Wicklow. Musc. Brit. E.)

B. *Tetragonym*. Capsules nearly upright, somewhat globular: shoots four-cornered, the younger tendril-like: leaves pressed to, strap-awl-shaped. Dicks. ii. 8.

Dicks. 4. 9. a. b.—(E. Bot. 1135—Musc. Brit. x. E.)

Full-grown shoots upright, with leaves disposed in four rows, blackish, yellowish, green above, sometimes sending out young shoots from the ends; young shoots flexuose, like a climbing plant, reddish. Leaves of the full-grown shoots very closely tilled, pressed to, upright, strap-shaped, awl-shaped towards the end; those of the shoots minute, egg-shaped, few. Capsules upright, somewhat oblique, mouth contracted. Fringe with a ring. Dicks. (The fringe is without doubt simple. The young slender zigzag shoots, figured and so minutely described by Dickson, are only produced when the plant is placed in a moist and somewhat warm situation, almost entirely secluded from light and air, neither are they peculiar to this species, for I have produced them in *Mnium purpureum*, &c. &c. merely by placing it in such situations as I have described; in all cases where these are produced, I have further remarked that they invariably point in that direction from whence the very small portion of light or air entered, as to the hinge of the botanical box when the experiment was made in it. Br. E.)


B. *Daviesii*. Capsules egg-shaped, lopped, toothed: shoots branched; leaves crowded, strap-shaped, curved when dry. Dicks.

Dicks. 7. 6—(E. Bot. 1281—Musc. Brit. xiii. E.)


About one inch high, unbranched, upright. Leaves alternate, pointing two ways.
1052 CRYPTOGRAMIA. MUSCI. BRYUM.


Hedw. Hist. i. 6. 28 to 32.—(E. Bot. 2070—Mus. Brit. xii. E.)—Dill. 45. 12—Vaill. 25. 3—H. Ox. xvi. 6, row 3. 1, and row 4. 2—Buzb. v. 44. 1.

Branched, one or two inches high, stellated at the ends. Leaves numerous, broad-spear-shaped, pointed. Fruit-stalks an inch high, surrounded by an involucrum at the base. Capsules cylindrical; mouth with a long fringe. Lid a long cone. Weis. Grows in dense and elevated tufts. Stems upright, branched, one or two inches high. Leaves crowded, standing open, fine yellowish green when wet, but dull greyish and brownish in dry seasons. Dill. (Among the largest of the Tortula; specimens from Craigcailleach, in Breadalbane, measuring seven or eight inches in length, but always barren. Mr. Lyell has found, growing on the trunks of trees at Ramsay, Hants, a state of this plant (also without fructification), in which the nerves were gemmiferous. Muse. Brit. E.)


Barren Flowers terminal, globular, on fruit-stalks only half the length of those bearing capsules. From one half to near two inches high, generally branched, nearly upright. Leaves not crowded, short, very narrow, pale green, pointed. Dill. (By some supposed to be nearly allied to B. (Mnium) palustre. E.)


Stem one to three inches, upright, unbranched. Leaves the upper ones largest, viz. two or three lines long, and one broad. Fruit-stalks ter-

* When this Moss extends itself over thatched buildings, the thatch, instead of lasting only about ten years, will endure for an age; Linnaeus: (and may probably prove some little security against the liability to accidents from fire, which renders such covering very objectionable. E.)
minal, upright, one to two inches high sometimes two together. Capsules oblong, leaning, bent. Lid sharp-pointed, marked a scarlet circle. Weis. Sheathing, involucrum, pyramidal, its top closely embracing the fruit-stalk. Veil cylindrical, splitting one one side. Capsules cylindrical. Lid convex; beak very long. Fringe of thirty-two teeth, single. Hedw. Stem in part buried in the ground. Leaves deep green, thin, pellucid, very finely serrated, soon curling up when the plant is gathered. Dill. (Leaves strongly mid-ribbed, serrated and waved at the edge. It has much of the habit of a Polytrichum.


(Musc. Brit. xx.—E. Bot. 1598. E.)—Dicks. iii. 8. 2.


D. Capsules on fruit-stalks, drooping.

(1) Stem none, or very short and unbranched.


Shoots upright, single, or in tufts, dividing into several branches four or five lines long. Leaves half or one line long, half a line broad, not hairy at the end, very entire. Fruit-stalks terminating the shoots and the branches, three or four lines long. Capsules roundish, egg-shaped. Ring none. Lid short, bluntish. Veil smooth, reaching but half-way down. Pol.


Dill. 50. 69. G.

Yorkshire. Mr. Richardson.

(B. tozeri. Stem short, simple, erect: leaves remote, spreading obovate, entire, cuspidate, margined, loosely reticulated, the nerve vanishing beyond the middle: capsule drooping, somewhat pear-shaped.


Plant not more than half an inch in height. Stem naked below, very slender. Leaves not more than six or eight, remote, pale reddish colour;
the margin and nerve dark red. *Fruit-stalk* a quarter of an inch long. *Capsule* small, dark brown. To the naked eye strongly resembling *B. carneum*, but under the microscope, the leaves especially are abundantly distinct.

**MINUTE DIAPHANOUS THREAD-MOSS.** Discovered by the Rev. J. S. Tozer on clay banks by the river Dart, Devonshire, four miles above Totness. E.)

**B. Recurvatum.** Capsules roundish: leaves bristle-shaped. Dicks. ii. 7.


**B. Aureum.** Capsules pear-shaped: lid conical: shoot but little branched: leaves strap-shaped.


In this and in *M. crudum*, the stem is half as long as the fruit-stalk. Beautifully shining. Leaves of a greenish golden hue. Linn. Forming a firm turf. Distinguishable by its long slender leaves. *Fruit-stalks* an inch or more in length, terminating, purple shining, issuing from a brownish green involucrum. *Stellated* shoots with longer leaves. Weis. *Fruit-stalks* serpentine, pale red to golden yellow. *Capsules* pear-shaped, green, changing to yellow red. Dill.


Var. 2. Capsules egg-cylindrical.

H. Ox. xv. 6, f. 20.

This plant has the foliage of *B. Hypnoides*, and the capsules of *B. sericeum*. The structure, however, of the fringe, accords with the former. It varies much in size, the shoots from half to one inch high, and the fruit-stalks from one to two inches.

Specimens from Mr. Griffith, who found it on turbaries about Llyn Aled, Denbighshire; also about Llanberris. Dillenius in Hist. Musc. inadvertently refers the above figure to his own 51. 72, but it is very different from that.

**B. Argenteum.** Capsules egg-shaped: shoots cylindrical, tiled, smooth: leaves egg-spear-shaped, hair-pointed.
Grows in patches, about half an inch high, dividing into cylindrical shoots two or three lines long. Leaves egg-spear-shaped, ending in hairs, but so pressed to the stem as hardly to be discernible to the naked eye. Fruit-stalks from the base of the shoots, near half an inch high. Capsules egg-shaped, upright when green, pendent when ripe. Lid short, blunt. Mouth fringed. Veil deciduous. Weis. In autumn and early in winter green, afterwards shining, silvery white, especially when dry, which circumstance alone is sufficient to distinguish it from all other Mosses. Dill.


Var. 2. Shoots greener. Leaves not hairy. Dill. 50. 63.

Pale or darker green, sometimes shining. Leaves more crowded. Capsule, mouth not fringed.


Dicks. 4. 10—(E. Bot. 1021—Musc. Brit. xxix. E.)

Shoots simple, upright, pointed, of a flesh-coloured whitish hue, green towards the end. Leaves closely tiled, pressed to, egg-shaped, pointed, ribless, transparent, the ends when dry reclining. Root-leaves surrounding the shoots, expanding, spear-strap-shaped, with a rib, taper-pointed, thrice as long as the rest. Fruit-stalk from the base of the plant, thrice as long as the shoots. Capsule depressed-pendent, when moist rather upright, on a crooked fruit-stalk, in the dry plant club-shaped, very much elongated and tapering at the base, the surface somewhat granulated. Fringe with many teeth. Lid short, pyramidal. Veil not observed. Dicks. (This species, so remarkable for the form of its capsule, resembles the preceding in colour, and in its large reticulation. Musc. Brit. E.)


About half an inch high. Stamens and pistils in the same flower. Fruit-stalk from one to two inches high. Capsules pendent, but after discharging their seeds upright. Lid convex, beak very short. Mouth, fringe double, each of sixteen teeth. Hedw. Stems short. Lower-leaves few, shrivelled, brown. Upper-leaves fine pale green. Plants without capsules, taller. Dill.

**B. demis'sum.** Stem very short, branched: leaves ovate, cuspidate-acuminate, reticulated; the nerve excurrent: seta arched: theca curved and pyriform, pendulous.


Stems one to five lines long, with a few simple branches arising from their base. Leaves imbricated, yellowish green, reddish at the base; apex almost piliferous.

**Pendulous Thread-moss.** Discovered on Craig-calleach in Bredalbane, and the neighbouring mountains, by Dr. Hooker. _Grev._

_D._ Capsules on fruit-stalks, drooping.

_(2) Stems upright._

**B. nigri'tum.** Capsules egg-shaped, toothed: shoots in bundles: leaves spear-shaped, keeled, acute. _Dicks._


Plant black green. Fruit-stalk black red. Capsules shining, black, brittle. Lid convex, with a small point.


**B. pulvinat'um.** Capsules roundish: veils minute: shoot branched: leaves oblong, mid-ribbed, hair-pointed.


Fruit-stalks bending down so that the capsules are buried in the foliage: but in some stages of the growth they are upright. Neck. In circular convex dense patches, about half an inch high. Leaves, the lower ones brown and without hairs. Fruit-stalks terminal, very short, at first upright, but as the capsule ripens bending down. Mouth toothed. Veil deciduous. Lid short, pointed. _Weis._


Var. 2. Capsules shorter and rounder; plant white with hoary hairs.

Specimen sent by Mr. Griffith. The uppermost leaves ending in very white hairs, as long or longer than themselves.

**B. cubita'le.** Capsules club-shaped, oblong: shoots and fruit-stalks bent: leaves arrow-shaped, points bordered. _Dicks. ii. 9._

_(E. Bot. 2554. E.)—Dicks. 5. 2._

The largest of all the Brya. Shoots somewhat branched, rather recumbent at the base. Leaves expanding, taper-pointed, with a thick mid-rib and reddish edge. Fruit-stalk terminal, very long, a little above the base with an elbow-like bend, a gold coloured reddish brown, brightly glittering. Capsule depressed and pendent, club-shaped, very long. Fringe, teeth numerous, upright. _Dick._ Stems trailing near the root, often three
inches long. *Fruit-stalk* two to three inches long. Griff. *Leaves* sometimes bristle-pointed, but not always so. In the specimens of smaller growth the stems are nearly upright, and the bend at the base of the fruit-stalk is less observable.

(Elbow-stalked Thread-moss. E.) On moist banks in the Scotch mountains, near Aberfeldy. On wet brows by the sides of rivulets in the neighbourhood of Snowdon, Mr. Griffith; who considers this plant as not specifically distinct from *B. alpinum*. (Hooker and Taylor arrange it under *B. ventricosum*, which latter they consider scarcely distinct from *B. alpinum*. E.)


Grows densely compacted; variously branched; branches irregular in length. *Leaves* very numerous, oblong, keeled, straight, acute; opaque, smooth, shining, purplish green, but in old plants dark purple below, dark red above. Barren branches taper at the end, those with fruit-stalks broader. *Fruit-stalks* an inch high, dark red purple, issuing from a large purple tubercle. *Veil* purplish. Dill.

(This species is best known by its deep shining purple colour, its rigid stems and leaves, which latter are straight, as well when dry as when moist. It is difficult, nevertheless, to form a specific character that will separate it from some varieties of *B. ventricosum*. Muse. Brit. E.)

(Red Alpine Thread-moss. On rocks in mountainous countries. E.)

*P. April—June.*

*B. marginatum.* Capsules egg-cylindrical: lid beaked: *leaves* egg-spear-shaped, pointed, finely toothed, bordered. Dicks, ii. 9*.

Dicks. 5. 1. a. b.—E. Bot. 1493—Musc. Brit. xxxi. E.)


*Hypnum.* *Fruit-stalk* from a lateral tubercle, fenced with scales: *Capsule*, outer fringe with sixteen teeth.

*Bartr. Fl.* a *bud*, generally on a different plant.

**Subdivisions of the Hypnum.**

A. (1) Unbranched, winged with leaves: capsules upright.
(2) Unbranched, winged with leaves: capsules leaning.
(3) Branched, branches winged with leaves: capsules leaning.
(4) Branched, branches winged with leaves: capsules drooping.
B. (1) Branches irregular: leaves irregular: capsules upright.
(2) Branches irregular: leaves irregular: capsules leaning.

C. (1) Shoots winged with branches: branch leaves imbricated: capsules upright.
(2) Shoots winged with branches: branch leaves imbricated: capsules leaning.
(3) Shoots winged with branches: branch leaves imbricated: capsules drooping.

D. (1) Leaves bent back: capsules upright.
(2) Leaves bent back: capsules leaning.

E. Plant shrub-like: branches fasciculated.

F. (1) Shoots nearly cylindrical: capsules upright.
(2) Shoots nearly cylindrical: capsules leaning.
(3) Shoots nearly cylindrical: capsules drooping.

G. (1) Shoots crowded: capsules upright.
(2) Shoots crowded: capsules leaning.

A. (1) Plant unbranched, winged with leaves. Capsules upright.


Very small, but distinguished by its capsules, edged at the mouth with a deep red fringe. Linn. The smallest of the genus. Shoots two or three lines long. Leaflets seven or eight pair. Fruit-stalks as long, or longer than the shoots, generally solitary. Capsules upright, egg-shaped. Weis. Many growing together as if from one root, but each plate has its separate part, though sometimes two or three shoots spring from one root. Shoots not branched, short, reclining. Leaves green, not pellucid. Capsules small, upright, oblong, green. Veil very small, greenish. Lid scarlet. Fruit-stalks reddish, issuing from near the end of the shoots, and without any evident involucrum. Dill. Mid-rib of the leaflets pellucid. Stackh.

(Bryum-like Feather-moss. E.) Shady places, woods, and ditch banks.

(The arrangement of this species according to Musc. Brit. is as follows, Dicranum bryoides. Fruit-stalks terminal, perichaetial leaves resembling the cauline ones.


b. Stem elongated, somewhat branched, capsule erect. Dicranum osmundiodes. Turn. Sm. E. Bot. 1662. Hypnum asplenioides. Dicks. 2. 5. 5.)
7. Stem short, simple, capsule inclined. *Dicranum tamarindifolium.* Turn. Sm. E.)

A. (2) Unbranched, winged with leaves. Capsules leaning.

H. *denticulatum.* Seldom branched; fruit-stalks from the base; capsules cylindrical; lid blunt; leaves wedge-shaped, acute, in pairs, two-rowed.

(*E. Bot. 1260—Musc. Brit. xxiv. E.)*—*Dill. 34. 5—H. Or. xv. 6, row 1. 36—Vaill. 29. 8.

*Leaflets* triangularly egg-shaped, hooked. *Web. Shoots* several, lying on the ground, half to one and a half inch long, seldom branched. *Leaves* in a double row on each side, soft, pellucid, shining, pale green, pointed and bent back towards the end. *Fruit-stalks* from the base of the shoots, reddish, an inch or more in length. *Capsules* oblong, straight, covered by the veil, which is of a straw colour; becoming bent as it approaches to maturity. *Lid* short. *Dill.*

(Drs. Hooker and Taylor discriminate var. *a. angustifolium*; leaves ovato-lanceolate, distant, quite plane; and chiefly among mountains, the less frequent. *Var. b. obtusifolium:* leaves ovate, more or less obtuse, slightly concave. These learned Muscologists also consider *H. Donnianum,* *E. Bot.* 1446, as merely an intermediate variety. E.)


H. *trichomanoides.* Leaves oblong, blunt, hollowed on the under edge; capsules nearly cylindrical; beak bent.

*(The authors of the work above cited mention having in their possession specimens of this little plant gathered by the adventurous Mungo Park in the interior of Africa. This might have been the identical species to whose exhilarating influence even his prolonged existence may be ascribed, as happily alluded to in the very interesting "Wonders of the Vegetable Kingdom." "The exhausted traveller found himself in the midst of a vast wilderness, surrounded by savage animals, and by men still more savage. He was five hundred miles from the nearest European settlement, and, considering his fate as certain, he thought that he had no alternative but to lie down and perish. At this moment the extraordinary beauty of a small moss irresistibly caught his eye, and, though the whole plant was not larger than the top of one of his fingers, he could not contemplate the delicate formation of its leaves and capsules without admiration. Can that Being, thought he, who planted, watered, and brought to perfection, in this obscure part of the world, a thing which appears of so small importance, look with unconcern upon the situation and sufferings of creatures formed after his own image? Thoughts like these would not allow him to despair. He started up, assured that relief was at hand, and he was not disappointed." Ed. 2. p. 148.*

"Should fate command me to the farthest verge
Of the green earth, to distant barbarous climes,
Rivers unknown to song; * * *
* * * * * *
* I cannot go
Where universal I've not smiles around." E.)
Leaves convex above, the ends reflexed. Dill. Leaves inversely egg-shaped, but somewhat hollowed on the under edge: very broad at the end, but with a minute point. Fence leaves spear-awl-shaped. Capsules nearly upright. (The remarkable curvature of the leaf, (scymitar-shaped,) is peculiar to this Hypnum. Musc. Brit. E.)


Dill. 34. 6—(Musc. Brit. xxiv. E.)


(E. Bot. 1492—Musc. Brit. xxiv. E.)—Dill. 34. 7—Vaill. 23. 4; and 21. 17—H. Ox. xv. 5, row 2. 5, and row 3. 15.

Forming broad leafy strata on the trunks of trees. Plant from one to three or four inches long, creeping. Leaflets alternate, in two rows, in the young shoots very closely crowded. Fruit-stalks half an inch high, numerous on the mid-rib, or from the fork of the branches. Fence large, hairy. Capsule egg-shaped. Lid conical, beaked. Weis. Two or three inches long. Branches opposite, or alternate. Leaves soft, pellucid, yellow green, shining. Fence scaly. Veil sable, whitish, crooked. Dill.

(Flat Feather-moss. E.) Trunks of trees, common. P. March—April.
A. (4) Branched, winged with leaves: capsules drooping.


Leaflets about twelve pair on each shoot, when young; more in the older shoots. Capsules nearly cylindrical, drooping, broadest at the mouth. Veil turned up at the end. Weis. Leaves spear-shaped, with a point at the end. Web. Shoots several from one root, not branched; dark green. Fence at the base of the shoots, composed of a few scales. Lid scarlet, beak pointed, crooked. Veil pale. Dill.


H. lucens. Shoots branched; branches winged with leaflets: fruit-stalks lateral: capsules drooping: leaflets egg-shaped, dotted.

Dicks. H. S.—Dill. 34. 10—(Schmid 57. 2—E. Bot. 1902—Musc. Brit. xxvii. E.)

Trailing. Branches brittle, blunt. Leaves egg-shaped, pointed, flat, shining as if wet with dew. Fruit-stalks one inch and a half long, lateral. Capsules nutant. Scop. Shoots about two inches long, sometimes branched. Leaves large, thin, soft, pellucid, pale green, placed alternately in two or three rows. Capsules small for the size of the plant, egg-shaped, more or less nutant, dark brown. Lid spitz-pointed. Veil straight, sharp, whitish. Dill. (The shining aspect of this Moss is perhaps more likely than any other species to occasion that almost luminous appearance, remarked by the Rev. Palk Welland among the dark, cavernous rocks of Dartmoor. E.)*

* (Since writing the above, we perceive a like phenomenon has been observed by Mr. J. E. Bowman in the shady recesses of Rowter rocks, a mile or two north of Winster, Derbyshire; as reported in Mag. Nat. Hist. vol. ii. p. 407, fig. 106. Mr. B. attributes this "golden green light, perfectly phosphorescent, seen to the greatest advantage at the distance of a few yards, and losing its resplendent character when brought into the full light," to some minute vegetable furnished with a peculiar organisation. Nothing was visible upon the surface of the stone but a filmy irregular network of green, scarcely perceptible from its delicacy of texture, when highly magnified having the habit of a Conferus, and approaching nearly to C. velutina. Mr. B. adds, "its splendour is, doubtless, enhanced by the surrounding twilight gloom; but it is caused by rays of light concentrated by, and reflected from, the innumerable and inconceivably minute lenses of the leaf." It is denied that this light can be emitted either from the more obvious interspersed Musci, or reflected from the silicious particles of the gritstone. Were it not presumptuous to
CRYPTOGAMIA. MUSCI. HYPMUM.


B. (1) Branches irregular: leaves irregular: capsules upright.

**H. stellatum.** Shoots upright: leaves egg-shaped, ending in long points, rather expanding, coloured.

*Dick.s* *H. S.—Dick.s. 1. 7—(E. Bot. 1302—Mus. Brit. xxvi. E.)—Dill. 39. 35—*Vaill. 28. 10.

Shoots somewhat branched, rather tawny at the base, yellowish at the end. Leaves spear-awl-shaped, the ends standing out. Fruit-stalks few, lateral, nearly an inch long, almost upright, red. Capsules egg-shaped, but bulging on one side. Lid short, pointed, distinguishable at first sight from *H. cuspidatum,* by the leaves at the ends of the stems not being rolled in, but expanding. Dicks.

(Hooker discriminates var. *a. majus:* yellow brown, not rare in fruit: in marshes.

**Var. b. minus:** less upright, greener; with leaves more recurved: on walls and rocks. *H. squarrulosum.* E. Bot. 1709.


**H. Halleri.** Stem creeping, pinnate: the branches short, erect: all the leaves recurved, cordate, acuminate, obsolesly two-nerved at the base, subserulate towards the apex: lid obtusely conical.


Plant creeping closely on the rocks in diffused tufts, of a rich yellowish, or reddish brown colour. Stems two or three inches long, with erect branches. In general habit resembling the smaller varieties of the preceding species.

**Hallerian Feather-moss.** Rare. Discovered by Dr. Greville on Ben Lawers. 

*Scot. Crypt. E."

**H. sciuroides.** Shoot upright, somewhat branched, bent: leaves tiled, egg-spear-shaped, hair-pointed: capsules oblong, lid conical.

(E. Bot. 1903—Mus. Brit. xx. E.)—Dill. 41. 54—*Vaill. 27. 12—Kniph. 6—H. Ox. xv. 5, row the last, 27.

Shoots two inches long, cylindrical. *Involucrum* rising half way up the fruit-stalk. Neck. Stem creeping, three or four inches long. Shoots from one to one and a half inch: seldom branched. Leaves closely tiled, egg-spear-shaped, pointed, ending in hairs. Fruit-stalks lateral, upright, half an inch high. *Involucrum* slender, scaly. Capsules cylindrical-egg-shaped. Lid conical, pointed. Fringe white. Veil yellow at the end. Weis. Creeping, interwoven, fixed to the bark of trees.

venture a conjecture without having seen the identical specimens, we should be disposed to consider this questionable production might prove to be var. *Confervula gelatinosa,* or some analogous species. Consider also Note, vol. iv. p. 70. E.)
Branches numerous, upright, simple or divided, but generally bent like the tail of a squirrel. *Involucrum* at the base of the branches, slender, scales narrow, ending in short hairs. *Capsules* upright, dark brown when ripe. *Lid* very small. *Fruit-stalks* twisting when dry. Dill.


P. Feb.—April.


But little branched; branches cylindrical but flatted, entirely covered with the tiled leaves, which are slender, straight, spear-shaped, ending in a hair, seldom a full green, but generally yellowish or reddish. *Capsules* nearly cylindrical, slender, upright. *Fringe* white. *Lid* crimson, conical, acute. Hal. Has been confounded with *H. nitens*, but differs from that in having upright capsules, a very short involucrum, and few, but long branches. Dicks. Fasc. iii. p. 9.

(Reddish Shining Feather-moss. By error of the press *H. refuscens* of With. Ed. 3. 4 and 5. E.) Cryby Ddeseil, though rarely with capsules. Mr. Griffith. (On wet rocks in the Highlands of Scotland. Mr. Dickson. Covering the perpendicular rocks by the falls of Moness, in fructification. Mr. W. Borrer. This very beautiful Moss, with stems four or five inches long, is not uncommon in Scotland. Musc. Brit. E.)


(Crisped Feather-moss. E.) On chalk hills near Gravesend, and on the banks of the Thames above the reach of the tide. On St. Vincent’s Rocks, Bristol; and on the Welsh mountains. About Kirkby Lonsdale, Westmoreland. Sir J. E. Smith. On rocks in Garn gingle, three miles from Denbigh. Mr. Griffith. (Stony banks in the vale of Dudcombe, Painswick; in fruit. Mr. O. Roberts. E.) P. March—April.*

* (M. Parmentier has published some observations on this Moss, proposing it as a substitute for wool for stuffing mattresses and furniture. When beaten and properly prepared, it is said not to retain moisture, nor form into lumps. It is little liable to decay, and is
H. **medium.** Shoots creeping: leaves broad, spear-shaped, pointed, tiled but open: capsules cylindrical, fringed.


**LONG-HEADED FEATHER-MOSS.** Trunks of trees near the ground, and on stones. P. Jan.—Feb. E.)


Dicks. H. S. and Fasc. 5. 6—(E. Bot. 2006—Musc. Brit. xxv. E.)


(FINE-TUFTED FEATHER-MOSS. E.) Shady woods, and among rocks in mountainous countries.

H. **viticulosum.** Shoots branched, prostrate: leaves oblong, acute, expanding: capsules oblong: lid conical.


Covering trunks of trees in large patches. Stems fibrous, creeping, very long, branched. Branches upright, when dry cylindrical, and twisted like a rope. Leaves nearly triangular, the upper ones largest. Fruit-stalks about an inch high, rising from the bosom of the branches, out of small hairy scaly fences. Capsules small, shining. Lid very short, conical, pointed. Mouth appearing fringed when magnified, smooth to the naked eye. Weis. Fruit-stalks and capsules upright. Crisp when dry. Leaves triangular, keeled, pointed, but not hairy. Dill.


B. (2) Branches irregular: leaves irregular: capsules leaning.

H. **ruscifolium.** Stem elongated, somewhat branched: leaves heart-shaped, concave, finely serrulated, diverging: lid convex, beaked.


Adhering to stones under water, in broad patches, one or two inches or more in length, according to the rapidity of the stream. Branches upright, cylindrical below, flat above. Leaves egg-spear-shaped, closely tiled, two-rowed, and less compacted upwards. Fruit-stalks on the stem reported to be free from the property of imbibing and communicating contagion, which animal substances possess. Some other Mosses may be found still better adapted to such purposes. E.)
between the shoots, and from the bosom of the leaves. Capsules short, thick, drooping. Lid beaked. Mouth, fringe long. Weis. Leaves deep dull green. Fruit-stalks half an inch high. Dill. (The stems often exceed a span in length; and the leaves, in certain situations, attain a greater size than in any other species. Muse. Brit. E.)

(LONG-BEAKED WATER FEATHER-MOSS. E.) H. riparioides. Hedw. H. rutabulum c. Huds. and With. Ed. ii. (Recent authorities have decided H. prolixum, Dicks. to be only an elongated var. of this species. E.)

(On woods and stones in pools and rivulets. E.) The shoots are often incrusted with calcareous earth, which in time accumulates thereon so as to form masses of twenty or thirty pounds weight. Weis. P. March—Sept.

H. LUTES' CENS. Shoots trailing: fruit-stalks lateral: leaves egg-spear-shaped, scored.


Differs from H. sericeum in the shoots being longer, more slender, and limber; the branches more distant and less crooked, the fruit-stalks longer, the leaves and the involucrum longer; the capsules rather shorter, and bent; the lid also bending. Fruit-stalks from the shoot as well as from the branches. Dill. Plant of a pale yellow green.


Vaill. 27. 1.

Nerves on the leaves more than three. Capsules never upright. Scop.

(STRIATED FEATHER-MOSS. E.) On trees, in moist shady places.


E. Bot. 202—Vaill. 23. 2.


(MATTED FEATHER-MOSS. E.) First found by Mr. Teesdale, and since by Sir J. E. Smith, in woods on the south east side of the river at Matlock.

H. undu l'a'tum. Shoots branched: branches somewhat winged: leaves waved and folded: fruit-stalks lateral and axillary.


A span long, lying flat. Leaves closely tiled, in a double or triple series. Weis. Fruit-stalks long, slender, reddish. Veil straw-coloured, with a brown spot at the end. Capsules oblong. Lid spit-pointed. Mouth fringed. Involucrum, leaves narrow, short, bent back. Shoot not always branched; its rib yellowish. Leaves tender, pellucid, smooth, shining, pale green, not changing colour when dry. Involucrum lateral, and in
the angles of the branches, composed of short, narrow, reflexed scales. Fruit-stalks one and a half to two inches long. Capsules rust-coloured, crooked when ripe. Lid pointed. Dill.

(This fine species differs most strikingly from the rest of the genus by its peculiar habit, its white membranous and undulated leaves; and still more remarkably from all its British congeneries by its furrowed capsules, giving it the same relation with the Hypna as Mnium bears to Bryum. Musc. Brit. E.)


Shoots about two inches long, scattered, almost upright, but little branched, yellowish green mixed with white. Leaves spear-shaped, bristly at the end, everywhere surrounding the stem. Fruit-stalks lateral, half an inch upright, red; but rarely found. Capsules small, oval, oblique, rather nodding; yellow red. Lid short. Mouth fringed. Dicks. Scarcely upright, not crowded together, a little branched, shoots slender, yellowish pale green. Leaves slender, pressed to, soft, shining. Involucrum hairy. Dill.

(Whitish silky feather-moss. E.) In loose sandy soil on heaths, and places thinly clothed with grass: but seldom with capsules. Dill. May.


Slender, creeping, matted together, irregularly branched. Leaves small, triangular, pale green. Fruit-stalks half to three quarters of an inch in length. Capsules swollen, short, nodding. Involucrum slender, scales narrow, ending in hairs. Dill. (Leaves scored. Fruit-stalks often twisted, untwisting when moistened and turning the capsule from the right to the left.


Branches unequal. Leaves triangular, pointed. Lim. Spreading to a foot in length, reddish, elastic, rising upwards. Often grows upright. Branches frequently bent to the ground, their extremities taking root. Leaves broad, triangular, not keeled, tender, pellucid, pale green, pointed. Involucrum rigid, oblong, composed of reflexed scales, sometimes two or
three together. **Fruit-stalks** seldom more than an inch high. **Capsules** upright, thin; when ripe thicker, leaning, crooked. Dill.

(Great Triangular Feather-moss. E.) Woods about the roots of trees, and in dry barren pastures. P. Sept.—Jan.*


**Fruit-stalks** fine red, in some plants very long, in others scarcely an inch long. **Capsules** red, hooked, very short, fringed at the mouth. Linn. Much branched, slender, a foot long or more, either upright or floating. **Leaves** narrow, alternate, those on the stem fewer and broader than those on the branches, soft, pellucid, yellow green. **Capsules** not hitherto found. Dill.

FLOATING FEATHER-MOSS. E.) Stagnant waters. (Marshy places (sometimes in streams; rarely fructifying but in places that are only occasionally inundated. Musc. Brit. E.)


**Leaves** pellucid. **Mouth** fringed. Weis. **Leaves** triangular, green, shining when dry, not keeled. **Capsule** dark brown, shining. Dill.


(The authors of Musc. Brit. include under this species both H. crenulatum. E. Bot. 1261; and H. brevirostre. E. Bot. 1647. (not of Ehrh.) E.)

C. (1) **Shoots winged with branches**: capsules upright.


Deep green. **Shoots** hard, woody, pointed: in the middle, or towards the end, bowed in. **Branches**, if pressed down, recovering their former direction, on the pressure being removed. **Wings** strap-shaped, bowed in and curled at the ends. **Leaves** tiled, open, pressed to at the base. **Involucre** cylindrical, the leaves egg-spear-shaped, ending in hairs. **Fruit-stalks** numerous, solitary, very short. **Capsules** upright, egg-shaped, nearly cylindrical, reddish brown, shining. **Fringe** obscurely toothed. **Lid** roundish, with a beak a little oblique. **Veil** slanting. Dicks.

* (Used to pack glass and earthenware: for which purpose several other of the larger species might answer equally well. E.)
1068 CRYPTOGRAMIA. MUSCI. HYPNUM.


H. Pennatum. Leaves egg-spear-shaped, tiled, pointed, in two rows, compressed, waved: involucrum as long as the fruit-stalk.


Differs from H. complanatum in the leaves being transversely waved, and the fruit-stalk not being longer than the involucrum; and from Fontinalis pennata in the capsule standing out of the involucrum. Dicks.


Shoots about a span long, brownish, with dark rust-coloured wool underneath, by which it adheres closely. Branches from each side of the shoot, generally undivided, clothed with very slender soft and shining leaves. Involucrum hairy. Dill.


C. (2) Shoots winged with branches: capsules leaning.

H. prolif'erum. Shoots proliferous: nearly flat, not shining: fruit-stalks several together: involucrum bristly.

Its structure is very singular; one large compound shoot proceeding from the middle or disk of another, and this repeated several times in the same plant. Linn. A span long or more, doubly winged. Fruit-stalks an inch long (or more) from the middle of the shoot, and from the rib of the branches one to three (four or five) in a place. Involucrum large, conical, hairy. Lid conical, pointed. Veil oblique. Weis. Capsules leaning, reddish, thick. Mouth, fringe in a double row. Leaves so minute as hardly to be well distinguished by the naked eye. Capsules reddish, at first straight, then crooked. The leaves smaller, not shining, the shoots more serpentine, and the bristly involucrum distinguish this from H. parietinum. Dill. H. parietinum, and H. proliferum of Gmel. are both the same plant.


This singularly elegant Moss covers the surface of the earth in the thickest woods, through which the sun never penetrates, and where no other plant can subsist. Linnaeus.

(Here might be introduced that very bone of contention, H. recognitum, (E. Bot. 1495), which, unimportant as so minute a production may appear to ordinary perceptions, has actually occasioned a war (bellum civile), of the Giants; but not presuming to rank with the "Maximi," even "in minimis," and, availing ourselves of the privilege of the "statura brevi," we beg to refer the inquisitive student to the arena itself. Vid. Linn. Tr. vol. xiii. p. 461. Muse. Brit. 171. E.)

H. parietinum. Shoots proliferous, nearly flat, shining: fruit-stalks several together: involucrum scaly.

(Fruit-stalks four, five, or more together, at the base of the branches; about fifteen lines long. Shoot bent at the places where the branches issue out, so as to be zigzag. Very like H. proliferum in its mode of growth, and the proliferous shoots sending out other similar shoots, but the leaflets are more distinct, less compacted together, of a pale green with a silky gloss. Weis. Shoots lying on the ground, from a span to a foot long, consisting of three or four parts, shewing the annual increase; and as it grows in length at one end, the other end is converted into roots. Branches winged. The new shoot puts forth in the spring not from the end of the old one, but near to its end; it is very densely clothed with leaves, and after a time sends out branches. Fence scales reflexed. Dill. Both in this and in H. proliferum, the shoots resemble the winged leaves of Ferns.


(* Used in Sweden to fill up the chinks in the walls of timber houses.)*
Fertile shoots trailing, the barren ones upright. Fruit-stalks one or two inches long; from the bosom of the branches. Neck. Shoots from three to six inches, undivided, winged. Wings leafy. Fruit-stalks from the middle of the shoots, one or more in a place. Fence hairy. Capsules reclining. Lid conical, short, blunt. Weis. Sometimes branched, always sending out numerous lateral shoots, which are shorter as they grow nearer to the end of the stem. Leaves very numerous, pleasant green, narrow, bent back. Dill.

(Fern Feather-moss. Under the present species Messrs. Hooker and Taylor include H. dubium; also H. fallax, E. Bot. 2127. E.) Marshy places, and near springs. P. March—Summer.


(E. Bot. 2108—Musc. Brit. xxvii. E.)

It very much resembles an ostrich feather from its shining parallel rays, by which, and by its silky hue, it is readily distinguishable. Fructifications seldom to be met with. Linn.


P. March—June.

C. (3) Shoots winged with branches: capsules drooping.


(E. Bot. 2126. E.)—Dill. 36. 21.

Leaves yellow green, smooth, narrow, spit-pointed, upright on the upper, reflected on the lower shoots. Fruit-stalks often bent and twisted in a young state; afterwards becoming straight. Capsule oblong, crooked when old. Lid short. Involucrum pyramidal, its scales hairy-pointed. Dill.

(Fine Curved-leaved Feather-moss. E.) Wet heaths and marshy places.


Fruit-stalks from the middle of the rib of the shoot, single, purple, straight, as long as the shoot. Veil upright, awl-shaped, pale. Capsule yellowish red, more bowed back than in any of the rest; edge of the mouth entire, with a short open fringe within. Linn. Shoots two to four inches long, elastic when fresh, brittle when dry. Wings limber, alternate below, opposite and shorter above. Leaflets egg-spear-shaped, scored, ending in hairs, closely tiled. Weis. Branches straight. Leaves straight, which distinguishes it from H. Filicinum. Scop. Grows matted together, half upright, sometimes branched, three to five inches long. Side shoots awl-
shaped, numerous, opposite, surrounded on every side by small dull yellow green leaves. Dill. No fructification yet found in this country.


H. PRELON'GUM. Shoots somewhat winged, trailing, fibrous: branches remote: leaves egg-shaped.

Hedw. Stirp. iv. 29—(E. Bot. 2035—Musc. Brit. xxv. E.)—Dill. 35. 15—Vaill. 23. 9—Buxb. iv. 63. 3.

Leaflets serrated. At first sight distinguishable from all other Hypnum by its shoots being very long, very closely crowded together, covering the trunks of trees, in broad patches and hanging down. Shoots trailing, very tender, brittle when dry, a span long, or more, clinging to the trees by means of numerous brown, woolly fibres. Leaflets small, triangular, ending in a hooked hair, alternate, in a double row. Weis. From a span to a foot in length, doubly winged. Leaves very small, triangular. Fruit-stalks an inch long, purple. Capsules dull green, brown when ripe, short, nodding. Veil pale green, straight. Dill.

(A very variable species, under which Hooker and Taylor comprehend H. Stokesii, E. Bot. 2036; and H. Swartzii. E. Bot. 2034. E.)


D. (1) Leaves bent back: capsules upright.

H. RUGO'SUM. Shoots scattered, rather upright: leaves pointing one way, wrinkled at the base: fruit-stalks axillary.


Leaves spear-shaped, narrow, sharply pointed, closely tiled. Pol. Shoots seldom more than three inches long, thick, lying on the ground, crowded together, irregularly branched. Leaves exceedingly crowded, dry, crisp, their points in one direction, yellow green, when old or dry quite yellow. The fruit-bearing plants grow a little distant from the others, and have a different appearance. They are thinner, more pointed, the leaves more uniform, and less yellow. Involucrum open, scaly, at the origin of the branches. Fruit-stalks three quarters of an inch high. Capsules cylindrical, straight, slender, red when ripe. Dill.


H. FLAGELLA'RE. Shoots creeping: branches upright, rarely divided: leaves spear-shaped, taper-pointed, the ends reflexed.

Dill. 39. 42—(Musc. Brit. xxv. E.)

Leaves small, smooth, not very pellucid; produces its capsules in Sept. Dill.


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D. (2) Leaves bent back: capsules leaning.

H. scorpioides. Branches waved, trailing, hooked: leaves pointing one way, tapering to a point.


_Branches brown, hooked, and yellow at the ends. Linn. Shoots trailing, cylindrical, one to three inches long. Branches rising upwards, thick, bent and thicker at the ends, about one inch long. Leaves spear-shaped, often ending in hairs, wrinkled at the base. Fruit-stalks half an inch to one inch high. Capsules cylindrical, slender, leaning. Lid pointed. Mouth with a white fringe. Web._ [Barren plants longer and thicker than the fertile ones, colour dark red, the ends purple and green. Fertile plants entirely green, except here and there a little purple. _Dill._ (One of the largest of British Mosses; with leaves generally nerveless; but, according to Schwaegrichen and Mr. Tozer in Musc. Brit., occasionally two nerved; which shows how liable this, like most aquatic plants, is to vary. _E._)]

(Scorpion Feather-moss. _E._) Turfy bogs and marshes. Near Bishop’s Castle, Shropshire; and about Penter, near Bangor. Near Norwich, and in the north of England; and at Corriattackan in Strath Swandie in the Isle of Sky. Turf pits on Ellingham and Geldestone fens. Mr. Stone-On Snowdon and Cader Idris. Mr. Griffith. _P. Nov.—April._


Often six inches long, creeping, rib a beautiful purple, shining through the interstices of the leaves. Leaves ending in a sharp point, as fine as a hair. Fruit-stalks one inch to one inch and a half high, straight, springing from a cylindrical, scaly and hairy fence. Capsules egg-shaped, leaning. Lid blunt. Mouth wide open, fringe yellow. I have found capsules in July. Weis. _Dill._ Capsules rarely met with. _Ray._ Fruit-stalks solitary or in pairs. Lid not large enough to cover the mouth of the capsule, but joined to it by a kind of groove. Stackh.

(Drooping-leaved Feather-moss. _E._) Moist meadows, pastures and woods.

Var. 2. Smaller. Leaves triangular, open, reflexed. _Dill._

_Faill. 27. 5—Dill. 39. 39._

Not much different from var. 1, except in the leaves being smaller, paler, closer set, and more bent back. Weis. The capsules too are smaller, and the lid sharper. _Dill._

Wet places.

H. palustre. Shoots creeping: branches crowded, upright, on one side the shoot: leaves egg-shaped, pointing one way: capsules nearly upright.

_**E. Bot. 1655—Mus. Brit. xxvi. E.)—Dill. 37. 27.**_

_Branches upright, compressed, from half an inch to one inch high, numerous. Leaves in a double or triple series, sharp, hooked. Web._ Shoots slender, creeping, with few leaves, and those shrivelled. Branches generally simple, short. Leaves dull green, hooked at the end. _Fruit-stalks_
from the base of the branches, red, longer than the branches. Capsules oblong, a little inclining, brown when ripe. Lid larger in diameter than the capsule. Veil straight, pale. Dill.

(Creeping Marsh Feather-moss. H. luridum. Hedw. Crypt. 38, and with this variable species Messrs. Hooker and Taylor also include H. fluviatile, E. Bot. 1903, (not Hedw.) and H. adnatum, E. Bot. 2406, (not Hedw.) neither of which are properly British, according to the above authorities. E.) In wet places, and banks of rivers, not uncommon. P. Jan.—April.


Fruit-stalks from the base of the branches. Neck. Fruit-stalks more than an inch high, from the stem between the branches upright. Capsules egg-shaped, leaning. Shoots near a foot long or more, the rib rigid, brittle, surrounded by pale green leaves, those towards the end bent back. Dill.

(Rambling Mountain Feather-moss. E.) On mountains, in woods and heaths, in various parts of Britain. P. April.


Resembles the H. cupressiforme, but the shoots are more straight, less branched; leaves longer, hooked, their ends pointing one way; fruit-stalks twice as long, rising as well from the middle of the shoot as from the bosom of the branches. The shoots are remarkably rigid. Fruit-stalks two inches long, rising out of a slender, short, scaly involucrum. Capsules egg-shaped, distended, leaning. Lid conical, short, blunt. Weis. Plant yellowish or tawny when growing out of the water. Ray. Involucrum oblong, slender, scaly. Veil straight. Lower leaves less hooked than the upper ones. Dill.


H. cupressiforme. (Leaves closely imbricated, more or less falcato-secund, lanceolate, acuminate, entire except at the points, which are usually serrated, very faintly two-nerved at the base: capsule cylindrical, erecto-cernuous: lid conical, with a point.


So sportive is this plant that it is scarcely possible to define in a few words the marks belonging to any of the varieties. γ at first sight is totally unlike the more usual state of H. cupressiforme; but we have seen the one run completely into the other. β is now universally acknowledged to belong to our plant; and we are equally satisfied of Dickson's nigro-viride being no other.

u. vulgare. Stems broad, semi-cylindrical; leaves falcato-secund.

β. compressum. Stems slender, compressed; leaves falcato-secund.

H. compressum. Linn. (With. to Ed. vii. E.)

g. tenue. Stems very slender; leaves very slightly curved, narrow, lanceolate, quite entire.


(Cypress-branched Feather-moss. E.) On banks and trunks of trees, common.


March—April.

E. Plant shrub-like; branches fasciculated.


Readily distinguished by its stems closely compacted together, its shrublike appearance, from two to four inches high, terminated by a bush of branches. Branches upright, cylindrical, smooth, pointed at the end. Leaves egg-spear-shaped, pointed, flat, closely tiled. Weis. Fruit-stalks more than an inch long, from the base of the branches; upright. Capsules slender, upright. Lid conical, short. Veil slender. Dill. Fruit-stalks longer than the shoots. Veil covering the whole capsule. Leaves a little serrated. Leers. (The columella in dry weather raises the lid spirally, and allows the escape of the seeds; moisture contracts the columella in the same spiral manner, and again closes the capsule. Gray. E.)

(Tree-shaped Feather-moss. E.) Moist woods and shady places, about the roots of trees, and in moist pastures.

P. Feb.—March.


(E. Bot. 1182—Musc. Brit. xxv. E.)—Dill. 41. 49—Vaill. 23. 2 and 5—H. Ox. xv. 5, row the last.

In its tree-like mode of growth it resembles H. dendroides, but the shoots are longer, the trunk is taller, the branches expand more, and are more frequently branched again; the extremities are not straight, but hanging down, and the leaves expanding. When dry the leaves bent back at the points, but in H. dendroides they lie closely adpressed. Weis.

Stem four

* (Well adapted for packing whatever requires a soft elastic covering. E.)
or five inches high, covered with whitish pointed scales. Leaves serrated. Fruit-stalks shorter than the branches, bent. Capsules egg-shaped. Lid beak bent. Leaves broad at the base, tapering to a point, alternate. Involutenum scales ending in hairs, compact. Dill.

(Fox-tail Feather-moss. E.) Moist woods and shady places at the roots of trees, and by the sides of rivers. A. March—April.

F. (1) Shoots nearly cylindrical: capsules upright.


Hanks suspended from the bark of trees in numerous cylindrical-pointed branches bending upwards, and somewhat resembling the claw of a bird. Fruit-stalks from the base of the branches, half an inch high. Capsules upright, pointed, ochre colour when ripe. Dill.


Hedw. Stirp. i. 12—(E. Bot. 2420. E.)—Dill. 42. 66.


(Attenuated Feather-moss. With this species Hooker and Taylor assimilate H. atror-virens. Dicks. Sm. and H. filamentosum, of the same authors. E.) Woods, on trunks of trees, Scotland.


Dicks. H. S. and Fasc. i. 9—(E. Bot. 2405—Musc. Brit. xxiv. E.)

Shoots nearly upright, strap-shaped, slender, when dry very brittle, two inches and more in length, straw-coloured, sometimes simple, or with one or two branches. Leaves convex and concave, glittering, pressed to. Fruit-stalks lateral, upright, red, one and sometimes two inches long, solitary or two together. Capsules egg-shaped, upright, bulging on one side. Lid short, somewhat pointed. Dicks.


(Nearly allied to the preceding, and by some Botanists considered a variety of that species, is H. trifarium. Grev. Scot. Crypt. 279. therein charac-
tized, "Stems nearly simple, elongated; leaves ovate, obtuse, entire, trifidly imbricàted, suberect, tumid and concave, with a nerve disappearing towards the extremity." Stems slender, three inches to a foot or more in length, varying in colour from a rich brownish-purple to green. (Vid. also Musc. Brit. iv. Found by Dr. Greville on Ben Hallum and Ben Lawers. E.)


Shoots (on the ground) sometimes branched, soft, shining, pale green or yellowish. Leaves narrow, not hairy, pressed to. Fruit-stalks reddish, one third of an inch long. Capsules upright, slender, cylindrical. Lids pointed. Dill.


F. (2) Shoots nearly cylindrical: capsules leaning.

H. **ripa'rium.** Shoots branched: leaves pointed, open, distant.


Stem four to six inches long. Shoots few and irregular, cylindrical if above, winged if below the surface of the water. Leaves egg-shaped, closely tiled on the young cylindrical shoots, more distant and spear-shaped on the principal stem, and hairy at the end. Fruit-stalks an inch long, upright, lateral. Capsules egg-shaped. Lid conical, beak short. Mouth fringed. Veil upright, covering the young capsule. Involucrum very short. Weis. When growing out of the water, or where it is often exposed to the air, the leaves are shorter and blunter, surrounding the stem, but when always immersed in water they are longer, more pointed, and wing the stems. Dill.

(Short-beaked Water Feather-moss. E.) On walls, and moist stony places on the banks of rivers, on planks and stones about water mills, and in rivers. Bungay. Mr. Stone. (Garden wall at Tocknels, near Painswick. Mr. Oade Roberts. E.) P. Sept.—April.

H. **mura'le.** Shoots creeping: branches mostly upright, in one direction: leaves egg-shaped, concave. Dicks.


About an inch long, branches very short, mostly upright. Leaves numerous, dark green, not shining. Dill. Fruit-stalks from the base of the branches. Leaves ribless. (The authors of Musc. Brit. observe: the rostrate lid, and concave shortly-pointed leaves well distinguish this species from its affinities. E.)


H. **moll'le.** Shoots pendent, slender, very much branched: leaves tiled, egg-shaped, acute: capsules roundish. Dicks. ii. 11.
**CRYPTOGAMIA. MUSCI. HYPERNUM.**


Whole plant soft, flaccid, and flexible. Shoots bundled, floating, roundish, somewhat zigzag. Branches of very unequal lengths, the ends mostly blunted. Leaves upright, concave at the base, open at the end, broad-egg-shaped. Scaly bulb, leaves spear-shaped, taper-pointed. Fruit-stalks few, short, bowed in. Fringe with a ring, with many teeth. Lid and veil not found. Dicks. (Usually two or three inches in length. E.)


**Dicks. H. S.—(E. Bot. 2407—Musc. Brit. xxvi. E.)—Dill. 39. 34—Bazh. ii. 3. 1 and 2.**

The sharp rigid points at the ends of the middle and terminal shoots afford a ready mark of distinction. From one to four inches high. Fruit-stalks two or three inches long, upright, lateral. Involution scala, long. Capsules egg-shaped, thick, a little bent, leaning. Lid blunt, short, scarlet. Mouth fringed. Weis. Pale green, yellowish or reddish when in fruit. Leaves alternate, thin, pellucid, shining. Dill.


**Dill. 42. 62.**

Forming a compact interwoven tuft. Much branched; branches slender. Leaves very narrow, smooth, resplendent green, when dry pressed to, standing out when fresh. Fruit-stalks half an inch high, very slender, reddish. Capsules slender, at first upright, afterwards leaning a little, and again upright when ripe. Involution slender, hairy. Dill.


**H. filamentosum.** Shoots crowded, thread-shaped, branched capsules egg-shaped, fringed: involucrum buld-like. Dicks. ii. 11.

**Dill. 36. 18.**

Crowded, compressed, closely interwoven, so that it is hardly possible to extricate a single plant. Shoots and branches cylindrical, not thicker than a strong sewing thread. Fruit-stalks purple, an inch long. Capsules slender, straight reddish and bent when ripe. Involution oblong, large, composed of unequal scales. Dill.

**THREAD-BRANCHED YELLOW FEATHER-Moss. The same as H. atro-virens, according to Musc. Brit. Woods; trees and rocks among mountains.**

**F. (3) Shoots nearly cylindrical: capsules drooping.**

**H. purum.** Shoots winged, spreading, awl-shaped: leaves egg-shaped, blunt, approaching.

**Curt. 207—(E. Bot. 1599—Musc. Brit. xxiv. E.)—Fl. Dan. 706. 2—Dill. 40. 45—Vail. 28. 3.**

Branches bowed. Leaves ending in a spit-point. Neck. Readily known by

(Spotless Silky Feather-moss. E.) Pastures, meadows, banks, and woods.

P. Nov.*

(Var. Shorter; less regularly pinnate. E. Bot. 2189. H. illecebrum. With. Ed. 7. Sm.; but not of Hedwig, his species (having leaves with more acuminated and serrated points, and with a longer and more decided nerve), being American, and not British, unless recently discovered in Scotland, as reported by Mr. Arnott. Hook. E.)

(H. schre'beri. Leaves closely imbricated, nearly erect, elliptical, apiculate, concave, entire, faintly two-nerved at the base: capsule ovate, cernuous: lid conical. E.)

(E. Bot. 1621—Musc. Brit. xxiv. E.)—Dill. 40. 47—Vaill. 29. 10—Neck. Meth. 1. 10—Buxb. iv. 61. 1, the right hand of the upper figures; and 3. Longer and more slender than the preceding, branches and leaves more point-d, more shining when dry, more thinly set, and exposing more distinctly the red mid-rib. Dill.


From two to four inches or more in length. Wide spreading, much branched, rigid. Leaves ending in a sharp hair-like point, closely tiled, broader and more dense at the ends of the shoots, so as to give them a blunt club-like appearance. Fruit-stalks hardly half an inch long, mostly two together, upright. Capsules cylindrical at first, and upright; when ripe egg-shaped and pendent. Lid short, beaked. Involucrum rising nearly up a third of the fruit-stalk. Weis. Recumbent, matted together. Shoots thick, rigid, irregularly branched. Leaves green, numerous. Involucrum long, pointed. Capsules yellowish. Dill.


* This fine Moss being easily attainable, and free from impurities, whence the trivial name, fishermen make use of it to scour their worms.
manner in which the Moss envelops them, frequently growing from eight to twelve inches long, and producing thecae in the greatest profusion. E.)

P. Feb.—April.


Dicks. ii. 10.

(Musc. Brit. xxvi.—E. Bot. 2422. E.)—Dill. 43. 67.

(Stems variously branched, procumbent. Leaves, all of them slightly second, broadly ovate, with an attenuated obtuse point, the nerve running nearly to the summit. Capsule ovate, cernuous. Lid conical. Musc. Brit.; not subulate. Hook. E.)

(DULL-GREEN FEATHER-MOSS. In Musc. Brit. H. filamentosum, and attenuatum, Dicks., are not allowed to be distinct from the present species; and Dill. 43. 67., usually referred to our plant, is therein said to be a very distinct species, from Virginia. E.) Woods, at the roots of trees, and on rocks in mountainous countries.

G. (1) Shoots crowded: capsules upright.

H. SERICEUM. Shoots branched, creeping: leaves oblong, hair-pointed, tiled, capsules cylindrical: lid taper-pointed, bent.


Grows so firmly to the trunks of trees that it can scarcely be taken away entire. Linn. Shoots long, creeping, crowded, greatly branched. Branches short, roundish. Leaves slender, very closely tiled, ending in long hairs. Fruit-stalks half to one inch high, lateral, crowded. Involucrem short, thick, scaly. Capsules long, nearly cylindrical, but thickest at bottom, upright. Mouth narrow, fringe white. Lid beaked. Veil pale. Weis. Branches mostly pointing one way. Leaves soft, shining. Dill. With two or three ribs, which distinguish it from H. plumosum.

(SOFT RIBBED-LEAVED FEATHER-MOSS. E.) Leskea sericea. Hedw. On the ground on dry banks, trunks of trees, and walls.

P. Sept.—April.*

H. MYOSU'RON. Shoots very much branched, awl-shaped, crooked, tapering upwards and downwards.

Hedw. Stirp. iv. 8—(E. Bot. 1566—Musc. Brit. xxv. E.)—Dill. 41. 50—H. Ox. xv. 5. 27—Vaill. 28. 4.

Stem two to four inches long; branched towards the end. Leaves closely tiled, egg-spear-shaped, hair-pointed. Involucrem short, slender, scaly. Capsules upright or leaning. Weis. Shoots thin, creeping, sending out

* (None of our Mosses afford a more beautiful carpet; it frequently exhibits all the richness and softness of silk, especially when dry. Curt. Some such plant as this is not only described, but depicted ad vivum in Gerard, as "Muscus ex craneo hamano," and when thus found " upon the skull or bare scalps of men and women, lying long in chimney houses, it is thought to be a singular remedy against the falling evil,"—a remedy, truly, fit only to rank with other incomprehensible absurdities, superstitiously connected with the touch of executed malefactors, the blood of martyrs, the spells of witchcraft, or the black art itself, which may occasionally appear, by the aid of an overheated imagination, to work wonders. E.)
thready brown roots. Branches numerous, cylindrical, tapering at each end. Leaves crowded, egg-shaped, pointed, smooth, shining, pressed to when dry, rather standing out when fresh. Involucrum slender; scales straight, longer than the leaves. Fruit-stalks reddish, half or three quarters of an inch long. Capsules cylindrical, upright, tawny when ripe. Dill.


G (2) Shoots crowded: capsules leaning.

H. myosuriodes. Plant creeping, very much branched; branches cylindrical: leaves egg-spear-shaped, hair-pointed, upright, tiled: capsules cylindrical.

Dill. 41. 51—(E. Bot. 1567—Musc. Brit. xxv. E.)—H. Ox. xv. 6, row 3. 3—Vaill. 27. 6.

Pale green. Stem-leaves almost three-corned. Dill.

(This can only be confounded with the preceding species, (H. curvatum. Musc. Brit., H. myosuron, With.), but its more slender habit, its leaves more acuminated, less concave, with their shorter nerve, reflexed margins, serrated nearly their whole length, will ever keep it distinct. Musc. Brit. E.)


P. Jan.—March.

Var. 2. Leaves dark green, shining, hair-pointed.

Dill. 41. 53.

Leaves soft, dark green, shining, ending in hairs, which appear grey and reflexed when the plant is dry. Dill.

On old walls, as of Westham Abbey, near Stratford, Essex; and on rocks on Emott pastures, Yorkshire. Dill.


(E. Bot. 1037—Musc. Brit. xxiv. E.)—Dill. 42. 64—Vaill. 28. 2. 6. 7. 8—H. Ox. xv. 5, row the last, 21, p. 625—Buxb. iv. 63. 2.

Shoots on the ground six inches, on trees two inches long. Neck. Shoots abounding with thick set-slimber fibres forming broad patches, closely adhering to the earth. Branches very slender. Fruit-stalks numerous, upright. Capsules cylindrical, leaning. Lid pointed. Mouth fringed. Weis. Branches numerous, short, generally simple. Leaves too small to be distinctly seen by the naked eye; green, not shining. Involucrum small, hairy. Fruit-stalks an inch high, or more, fine purple. Capsules long, straightish. Veil upright, broad at the base, silvery, shining. Dill. (Different leaves on the same individual have the nerve varying much in length; yet in the older stems it will generally be found reaching to the point, and of a dark brown colour. Musc. Brit. E.)

(Creeping White-veiled Feather-moss. In Musc. Brit. we find H. subtile, Dicks., E. Bot. 2496, considered identical with this plant. E.)
On the ground under hedges, on the trunks of trees, especially young ones, on wood and stones. 

**H. velutinum.** Shoot creeping: branches crowded, upright: leaves awl-shaped.

(E. Bot. 2421—Musc. Brit. xxv. E.)—Dill. 42. 61—Happ. iii, Hypn. 6—


Leaves hairy at the end. **Fruit-stalks** lateral, an inch long. **Involucrum** scaly, inclosing the thick base of the fruit-stalk. **Capsules** cylindrical, or egg-shaped. **Lid** conical, short. Weis. **Shoots** crowded, interwoven, firmly adhering to the earth and the bottom of trees by the rust-coloured woolly fibres. **Stem-leaves** broader than the branch-leaves. **Involucrum** short, hairy. **Lid** blunt. Dill. (Very nearly allied to **H. rutabulum**; so also with **H. intricatum** of authors. Musc. Brit. E.)

At the roots of trees, in woods, and hedges, in shady places and barren pastures.

(VELVET FEATHER-moss. E.) Capsules appearing in autumn, and coming to perfection in Feb. and March.

Var. 2. Smaller, shorter, of a paler green. R. Syn.

 Shoots seldom more than three or four lines long. Leaves egg-shaped. Neck.

(H. confertum. Stems branched: leaves erecto-patent, ovate, acuminate, concave, serrated; nerve reaching half-way: capsule ovate, cernuous; fruit-stalk smooth; lid rostrate.


A small var. growing on trees, has leaves occasionally sub-secund.


P. Feb. E.)

**HEPATICE.**

**JUNGERMANNIA.* (Common Receptacle of the Fruit none:**

Perianth or Calyx monophyllous, tubular, rarely wanting: **Capsule** four-valved, terminating a peduncle which is longer than the perianth. Hook. E.)

(Many of these plants afford singularly beautiful microscopic objects. For a fuller account of the parts of fructification, see vol. i. p. 349 and 370 of this work; and the subject elegantly illustrated in a Monograph of British Jungermannia by Dr. Hooker, wherein nearly one hundred species are described. E.)

* (Named by Ruppius and Micheli in honour of Lewis Jungermann, a native of Leipsic, and Professor of Botany at Altdorf and Giessen in the early part of the seventeenth century. He published Illustrations of the Flora of Germany, and formed a fine Hortus-siccus, which is still preserved at Altdorf. E.)

† (And here we would observe, in respect to the wonderful discoveries of the microscope, especially in the Cryptogamic department of Botany, that by its aid we are enabled to
CRYPTOGAMIA. HEPATICÆ. Jungermannia.

SUBDIVISIONS OF JUNGERMANNIA.

A. Plant unbranched and without a mid-rib.

B. 1. Leaves winged; fruit-stalks terminal.

2. Leaves winged; fruit-stalks lateral, or at the base.

C. 1. Leaves winged; leaflets with appendages; fruit-stalks terminal.

2. Leaves winged; leaflets with appendages; fruit-stalks lateral, or at the base.

D. Shoots tiled with leaflets.

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A. Plant simple, without a mid-rib.

J. epiphylla. (Stem none: frond bluntly lobed, bearing the sheaths on its upper surface, with a little leaf at the base of each. E. Bot. E.)


Leaf variously scolloped and curled at the edge, pale green, firmly fixed to the mud by fibres from its under side. Weis. Fruit-stalks hollow, two inches high. Scop. Bears its fruit in the spring, but flowers in autumn, the barren flowers appearing like dots on the older leaves, and the fertile ones in the cylindrical sheaths. Involucrum of one leaf, irregular, wrinkled. Germen globular, smooth, on a very short fruit-stalk, which is ensheathed. Lower part of the involucrum fixed in a kind of groove. Style very short. Filaments on the germen of no determinate number. Knapp. Leaf short, roundish, moderately broad; segments blunt, shallow, fine green, pellucid. In winter a dark green head appears upon the middle of the leaf. In spring this head breaks forth from a valve on the surface of the leaf, circular and open at the top, afterwards cut into four shallow segments. Out of this the fruit-stalk rises, growing rapidly to the height of one and a half or two inches, white, pellucid, supporting a dark green globe which opens into four brownish and roundish segments, discharging a yellow brown powder mixed with fibres. This being done, the old leaf dies, and one or more young ones shoot out. Dill.

(In the situation of its anthers, observes Professor Hooker, J. epiphylla differs from every known species; they being placed singly, and immersed in small scattered tubercles upon the surface of the nerve. E.)

(Var. γ. furcigera, of the same author, is most abundant in autumn, when the apices of the fronds are produced in a very remarkable manner; forming branched elongations, which are considerably more narrow; and of a paler green than the rest of the frond, and have the ultimate recognize the power of the Creator great even in those things which ignorance regards as too minute to merit attention: for we thus perceive each little herb complete in its own peculiar structure, and beautiful in its symmetrical proportions, as the most magnificent productions of His hand: and to the observant eye, (the mental as well as corporeal vision), the stately monarch of the forest will be scarcely an object of more profound admiration, than the definitive Moss! E.)
branches always more or less forked. In the month of March, on plants of this description the branches become wider and of a deeper colour, and gradually partake more of the usual appearance of the plant: roots descend from their under sides, and the old fronds seem to be going into a state of decay: so that these curious processes are, in all probability, destined by nature as a mean of increasing the species, different from any that has yet been noticed in other Jungermannia. Hooker's Monograph. E.)


(The plant grows either in detached individuals; or thickly matted together so as to form light, pellucid, green patches of many inches in diameter, and firmly adhering to the ground by its roots. In the calyx, two remarkable peculiarities may be observed, in the widely-expanded mouth, and the stipulaceous processes, or bractae, as they might be called, at the base. The situation, too, of the fructification is very curious, unaccompanied by perigonal or perichaetial leaves; and the whole plant diffuses an agreeable odour, not unlike that of the Sweet Sedge (Acorus Calamus. Hook. The large bell-shaped plaited sheath will at once distinguish this otherwise diminutive plant. Purt. E.)


In stony shady places where it thrives well, it grows in tufts, and the plants support one another nearly upright, but when scattered amongst other Mosses on trees or on the ground it creeps. Leaves flat, compressed, very thin, pale green, pellucid, with a distinct vein running through the middle, more or less lobed, trifid or bifid at the end; lobes blunt. Dill.

(Forked Jungermannia. E.) On the ground, on rocks, in woods on the trunks of trees, and wet shady places, (forming large dense patches, closely appressed to the surface. E.) Bungay. Mr. Stone. (On the bark of a beech tree in Frith Wood, Painwick. Mr. O. Roberts.


The plant becomes more decidedly aruginose when dried. It produces viviparous germs towards the ends of the branches. Br.
On the bottom of trunks of trees among moss. At Callington, near Edin¬
burgh. Mr. Brown. P. April—May. E.)

**J. sinua’ta.** Frond doubly wing-cleft, flat, indented, open, ending in
two unequal lobes. Dicks. I. 16.


Leaves permanent deep green, thin, pellucid, flat, cut into winged seg¬
ments. Dill. *Leaves* lying one upon another, in which way it appears to
increase till it has covered a large patch of rock. (When moist and first
gathered, it exhalas a fine aromatic scent, which, uniting with the fra¬
grance of certain Mosses, imparts to the air a peculiar and refreshing
odour, often perceptible from grassy walks under trees or shadowy
rocks, especially after showers. Prof. Hooker perceives no difference
between this plant and *J. multifida*, except that the frond is somewhat
wider, and the divisions frequently, but by no means constantly, so short
that the margins appear to be here and there sinuate, rather than cut
into segments. E.)

*(Jagged Jungermannia. J. multifida var. β sinuata. Hook. E.) At
the head of Elm Crag Well, under Bell Bank, near Bingley, Yorkshire.
Dillenius; (a spot in which Mr. Hailstone detected it in fruit, April
1801. E.) Plentifully at the head of a spring in Middleton Wood, two
miles from Leeds, on rocks and stones entirely under water. Mr. Wood.
Stream head, between the Lodge farm and the Shepscombe road, near
Painswick. Mr. O. Roberts. P. April. E.)*

**J. pin’guis.** Frond oblong, indented, slippery: (stem none. E.)

Marsilea 2—Pluk. 42. 2—Vaill. 19. 4.*

Fertile plant smaller and more jagged, the other growing close to it, and by
mutual support becoming upright. Dill. in R. Syn. 110. *Fruit-stalks
with a sheathing involucrum, white, pellucid, from one to three inches
high. Capsules egg-shaped, black, shining, opening with four valves.
Other leaves of a longer form not bearing capsules are set with green
warty substances about the middle. Weis.*

*(Slippery Jungermannia. E.) Marshy places and bogs, (sometimes
under water. E.) Bungay, Suffolk. Mr. Stone. (Pentland Hills. Dr.
Greville. E.) P. April.*

**J. multif’ida.** (Stem none: E.) frond with doubly winged clefts.


Leaves pale green; clefts blunt. *Involucrum* at the base of the leaves, and
at the edges of the segments; cylindrical. *Fruit-stalk* about an inch
long from the base of the leaves. Neck. (Fronds prostrate; sheaths
white, which, with the great length of the valves, and their fringe-like
termination, at once distinguish this species. Purt. E.)

*(Many-lobed Jungermannia. E.) Woods and moist shady places,
Caen Wood, near Highgate, and Charlton, Kent, Dillenius; and about
Hampstead. Huds. P. April—May.*

B. (1) *Leaves winged: fruit-stalk terminal.*

**J. asplenioi’des.** (Shoots somewhat branched: leaves crowded, in
two rows, without auricles, obovate, obliquely, finely toothed.
E. Bot. E.)
Shoots three or four inches long; pale green. Leaves, upper edge fringed with little teeth, alternate. Fruit-stalks terminal, an inch long, rising out of a sheathing involucrum. Capsules egg-shaped, purplish black, shining. Weis. Trailing, sometimes branched. Leaves pellucid, pale green, without veins. I have never observed any roots. Dill.

(Spleen-wort Jungermannia. Sweet-scented Moss. E.) Road sides and on trees, in woods and wet shady places; also near springs and rivulets, when it is sweet scented. (It grows plentifully on the sides of the Holy Well of St. Winifred, in Flintshire: also at the spring consecrated to the Virgin Mary, near the chapel, in the sequestered dell of Wyg-fair, (Mary’s bower), Denbighshire. E.) Earsham and Sexton woods, near Bungay. Mr. Stone. (Var. 1 and 2 on the bank between the Beech lane and Longridge, Painswick. Mr. Oade Roberts. E.)

P. Feb.—April; Var. 1. Leaflets more crowded.

Fl. Dan. 1061—Dill. 69. 6—Mich. 5. 1, and 2—Vaill. 19. 7—H. Ox. xv. 6, row 2. 42—Scop. 62, 1337, instead of 1333 y at u. 7. 321.

Plant from one to two inches long. Fruit-stalks twelve lines long, terminating. Neck. Shoots more branched than in one, and shorter. Leaflets smaller and more crowded. Weis.

In the same situations with the preceding.

Var. 2. Leaflets not fringed.

This variety was found by Mr. Stackhouse growing under the water of the celebrated spring called Holywell, in Flintshire.


Plants growing in dense, wide patches, pale green. Stems scarcely half an inch long, procumbent. Leaves distichous, crowded, spreading, semi-amplexicaul, the margin entire, rarely notched. Peduncle a quarter to half an inch high. Calyx concealed by the perichaetial leaves. Grev.

Fern Jungermannia. J. scalaris. Schrad. Hook. which has often been mistaken for J. lanceolata, Linn. Hook. t. 18. a species which abundantly differs, not only in the absence of stipule, but in the large and naked calyx, and is at least a very doubtful native of Britain. J. lanceolata. E. Bot. Prof. Hooker considers J. scalaris of Schmidel to be no more than the gemmiferous state of J. Trichomanis, which has not unfrequently been so misunderstood. Abundant, upon a loamy soil, in woods, wastes, and hedge banks.

P. April—Oct. E.)

J. bidentata. (Stem procumbent, branched: leaves broadly ovate, decurrent, bifid at the apex; the segments very acute, entire: stipulae bi-trifid and laciniate: fruit terminal: calyx oblong, sub-triangular: the mouth laciniate. Hook. E.)

Involucrum terminal, obscuresly three-cornered. Fruit-stalk whitish, tender, an inch long. Neck. Shoots one to three inches long, generally branched. Weiss. Leaflets with two teeth at the end forming a half moon. Scholl. Leaves pale green, pellucid, alternate, fixed by a broad base to the rib, pointing upwards. Fruit-stalks leafy at the base. Capsules black brown. Dill. (Growing in more or less crowded patches of some inches in diameter. E.)

(This species is said to be aromatic. The fig. in E. Bot. omits to represent the stipules, which Hooker observes to be always present, though scarcely distinguishable to the naked eye. E.)


Involucrum with five teeth, a line or more in length. Neck. Shoot sometimes simple, taking root as it creeps along. Capsules appear in autumn; it blossoms in the spring. Leaves four-sided, teeth or scolplos from one to six. Shoots crowded, one inch to one inch and half long, in general branching into forks. Web. Creeping, crowded, sometimes branched. Leaves pellucid, numerous, broadest at the base, pleasant green, lower ones ending in three sharp teeth, upper ones in four or five. Fruit-stalk terminating. Involucrum toothed, angular. Capsule black. Dill.

(Five-toothed Jungermannia. J. quinquedenta Linn. Huds. J. barbata, Schreb.; which latter name Hooker has adopted, believing the other inapplicable, and that, except by accident or injury, five segments are never seen to exist on the leaves of this plant. E.) In patches of various dimensions, in woods and wet shady places. About Tunbridge, and in the west of Yorkshire. In the ascent to Flynnon frech, near Lanberris. Mr. Griffith. (On the rocks of Cromford Moor, near Matlock. Mr. Teesdale. E.)

J. macrorhiz'a. Shoots upright, branched: leaflets alternate, slightly notched, open. Dicks. ii. 16.

(Hook. Jung. 27—E. Bot. 1032. E.)—Dicks. 5. 10.

Leaves. the uppermost purplish. Root large, branched. Dicks. (Stem erect, branched; leaves loosely imbricated, patent, obcordate, emarginate; fruit terminal; cal. ovate, toothed, immersed in the leaves. Hook. Ehrhart compares the leaves to a heart cut out of paper: when growing in water the plant loses its purplish hue, and becomes dark green.


J. sphero-ceph'al'a. Leaflets with two teeth; fruit-stalks terminal or lateral, supporting a barren globular flower. Dill. 31. 6.

Small, whitish, creeping, leaves pointing two ways. Leaflets notched at the end, and the segments sharp-pointed. Scop. Roots extremely slender and numerous, from the mid-rib, and fixing the plant firmly to the ground. Fruit-stalks short, terminal and lateral. Capsules, or powdery heads, pale green. Leaflets tender, pellucid, cloven at the end, opposite. I have seen no other capsules than these powdery heads, Dill.
Cryptogamia. Hepaticæ. Jungermannia. 1087


B. (2) Leaves winged: fruit-stalks lateral, or at the base.

J. sphag'ni. Shoots taking root: fruit-stalks lateral: leafits roundish, very entire, tiled, pointing one way. Dicks. 6.


Shoots an inch or more in length; sometimes branched, sometimes not, bending in various directions, and here and there putting forth fibrous roots. Leaves roundish, brownish yellow, convexo-concave, all pointing one way, though placed in two rows, alternately lying on each other. Capsule one or two, issuing from the same side of the shoot near the top or the bottom. Fruit-stalkpellucid, white, a quarter of an inch high. Sheath whitish, oblong, brownish at the top. Capsule small, roundish, brown, but rarely seen. Differs from J. polyan'thos. Linn. in the leaves being of a brownish yellow, pointing one way, and also in the fibrous roots. Dicks. (Remarkable for its large radicular fibres. Grev. The leaves may always be known from those of other Jungermanniae, by the firmness of their texture, by the peculiar smallness of the cellules, combined with their general orbicular shape. Hook. E.)


J. viticulo'sa. (Leaves flat, naked, entire, ovate, slightly decurrent, bifariously arranged: stipulse small, nearly circular, laciniate, acuminate. E.)

(Hook. Jung. 60—E. Bot. 2513. E.)—Mich. 5. 4—Vaill. a. b. between f. 7 and f. 2.

Shoots three inches long; branches one or two inches. Leafits egg-shaped, yellowish brown, or only green when growing in the shade, the edges very entire. Peduncle an inch or an inch and a half long, white, cylindrical, cellulose, tipped with the brown, oblongo-ovate capsule.


J. polyan'thos. (Leaves horizontal, rotundo-quadrature, flat, entire, and emarginate: stipulse oblong, bifid; fruit upon very short branches, arising from the lower surface of the stem: calyx much shorter than the calyptra, bi-labiate, laciniate. Hook. E.)

(Hook. Jung. 62—E. Bot. 2479. E.)—Dill. 70. 9.


P. March—April.

J. bicuspida'ta. (Stem procumbent, branched in a stellated manner: leaves subquadrate, acutely bifid: the segments acute, straight, entire: fruit terminal: calyx oblong, plicate, the mouth toothed. Hook. E.)


(Stems very slender, half an inch to one inch in length. Leaves extremely minute, distant, alternate, very pale green, cleft half way down into two acute segments: peduncle half an inch long, very slender: calyx large in proportion to the plant. Grev. E.) Shoots less branched than in J. bidentata, and more limber, from half to one inch long. Weis.

(Forked Jungermannia. Not E. Bot. 281, (as quoted in former Editions), which Prof. Hooker considers to be a distinct species, closely allied to J. bidentata. E.) Shady places and moist woods.

P. March—April.


(Hook. Jung. 44—E. Bot. 2331. E.)—Dill. 69. 2.

Very slender, branched. Leaflets not distinguishable by the naked eye, alternate, roundish, pellucid, in single rows. Roots very fine woolly filaments fixed to the back of the mid-rib. Dill. (Plant brownish green colour; has a peculiarly neat appearance, from the leaves being most regularly disposed, all placed in a nearly horizontal direction, and, as it were, in a pinnated manner: lower leaves unequally two-lobed. Hook. E.)


J. ventrico'sa. (Stem prostrate, somewhat branched: leaves patent, subquadrate, obtusely and broadly emarginate, their sides incurved: fruit terminal: calyx oblong; the mouth contracted, plicated, toothed. Hook. E.)


Leaves more deeply cloven than represented by Micheli. Dicks. (May be distinguished from J. exsisa, by its larger size, more branched habit, the involute margins of the leaves, and the abundant, and very conspicuous gemmaceous globules, so compact as to resemble little balls; and principally produced in early summer. Hook. E.)


(Hook. Jung. 14. E.)—Dill. 70. 15.

Shoots upright, or reclining, but not creeping; branches numerous. Leaves alternate, not closely set, dull green, pellucid, the upper ones smaller,
with two or three teeth at the end; lower ones with more teeth. Dill. (Barren fructification unknown: fertile, lateral upon the surculi, and frequently arising from the axillae of the branches. Hook. Teeth acute, mostly on one side the leaflet.

(An elegant var. has been observed scarcely exceeding an inch in length, slender, and minute. E.)


J. PAUCIFLO'RA. Shoots creeping, very much branched, thread-shaped: fruit-stalks lateral: leaves bowed in, deeply divided: sheaths conical, remote. Dicks. ii. 15.

(E. Bot. 2482? E.)—Dicks. 5. 9.

Leaves alternate, remote, cloven down to the base. Segments equal, strap-awl-shaped, bluntish, concave, transparent, in the instertices opaque. Fructifications solitary, remote. Sheaths conical. Fruit-stalks as long again as the involucrum. Nearly allied to J. multiflora, and at first sight greatly resembling it, but differs from it in the number of its fruit-stalks, &c. Dicks.

(Few-flowered Jungermannia. E.) Near Croydon, growing on Sphagnum palustre. Dickson. Yorkshire. Mr. Teesdale. (Norfolk and Suffolk. Mr. Turner. E.)

C. (1) Leaves winged: leaflets with appendages: fruit-stalks terminal.

J. UNDULATA. (Stem erect, subdichotomous: leaves unequally two-lobed, waved, entire: lobes roundish, conduplicate, lower ones largest: fruit terminal: calyx oblong, incurved, compressed, the mouth truncate, entire. Hook. E.)


(Stems one to five inches long, mostly naked below. Leaves distichous, lower ones distant and small, upper ones larger and imbricated; colour varying from dull green to purplish: Peduncle about half an inch long. Calyx compressed and incurved towards the mouth which is entire and truncate. Grev. E.)

(Wavy-leaved Jungermannia.) Shady places, moist rocks, and in small streams. E.)

J. NEMOR'OSA. Shoots doubly winged above: leaflets fringed.


Leaflets broad at the base, and enveloping the mid-rib, so that there appears no interstice between the leaflets and the appendages or coloured scales placed above them. Weis. Plant mostly about one and a half inch long, branched or unbranched. Leaflets oblong, numerous, green, pellucid. Involucrum terminating, broad; at first leaning. Dill. (The strongly dentate-ciliated margins of the leaves in J. nemorosa will readily distinguish it from J. undulata; and J. umbrosa; Hooker; who suspects our author to have mistaken a purple var. \( \beta \) purpurascens, \( f. 16 \) for the real J. purpurea of Weis, (Mnium Jungermannia. Linn. E.)
CYPYTOGAMIA. HEPATICE. JUNGERMANNIA.


J. resupinata. Shoots doubly winged above: leaflets finely scollopèd, tilled, circular.

(Hook. Jung. 23. E.)

(Plant pale green. Stems not an inch long, procumbent, except in the fructified extremities. Leaflets spreading, the lobes nearly equal, except in the lower ones, where the upper lobes are smallest, margin entire. Peduncle nearly half an inch long. Calyx compressed at the mouth, incurved, and minutely denticulate. Grev. Much smaller than J. undulata. Hook. E.)

(Reclining Jungermannia. E.) In clefts of rocks, and on turfy heaths. P. April.

J. albicans. (Stem erect, subdivided: leaflets unequally two-lobed, lobes conduplicate, with a pellucid line in the middle, serrated at the extremity; lower ones larger, sub-cymitar-shaped; upper ones oblong-ovate, acute: fruit terminal: calyx obovate, cylindrical; the mouth contracted, toothed. Hook. E.)

(Reclining Jungermannia. E.) In clefts of rocks, and on turfy heaths. P. April.


(Hook. Jung. 21, f. 16—E. Bot. 2500. E.)—Dill. 69. 1—Mich. 5. 16, but more evidently fringed than in our plants.

Leaflets pointing from two opposite lines, nearly egg-shaped, transparent, smooth, embracing the stem, pointed, each furnished with a very small earlike appendage. I have never seen any other than barren plants. Linn. Stems hollow, reddish. Scop. Shoots creeping, strap-shaped, the ends rising upwards. Leaflets about a line in diameter, flat. Poll. Varies greatly in appearance. The young plants in wet places crowded, upright. Leaves very small, roundish, nearly flat, pellucid, alternate, without appendages. When older, the leaves are large, more closely set, convexo-concave, with scaly appendages at the base, resembling the leaves in shape. In some plants, when fully grown, the leaves are roundish; in others spoon-shaped; and in another variety, gathered on the banks of mountain lakes, I have found the leaves green, pellucid, not crowded, almost embracing the stem. Shoots sometimes branched, from one inch to a foot long when growing in running water. Have not found it in flower. Dill. Have frequently found it with fertile heads. Huds. I have found the capsule filled with ripe seeds, but closely enveloped by the leaves at the extremity of the plant, and probably never rising above them.
Since writing the above I have received a specimen from Mr. Griffith in fruit, the fruit-stalk more than an inch long. He found it for the first time in this state, last summer, when the rills were dry or nearly so, and thence concludes that it only flowers in very dry seasons. Possibly the very tender and delicate fruit-stalk may be destroyed in rainy seasons.

(SHELL-LEAVED Jungermannia. *J. cochleariformis*. Weis.) *J. purpurea*. Scop. Lightf. With. Ed. ii. *Mniurn Jungermannia*. Linn. (*J. nemorosa* var. *J. purpurascens*. Hook, who considers this species as scarcely differing from *J. nemorosa*, but in the deep purple colour of the whole plant. E.) Bogs, rivulets, and cascades in mountainous situations, and in ditches and turfy heaths. On Cader Idris, Snowdon, and Glyder. Dillenius. In moist peat earth on a mountain called Cowsand, and on the sides of hills in the forest of Dartmoor, Devon. Mr. Newberry. In all the rills near Snowdon. Mr. Griffith, (who says his plant is certainly the same that he has seen in all collections, without fructification, as *Mniurn Jungermannia*. E.)

P. March—Aug.

Var. 2. Leaves very entire.

Smaller than the preceding, upright, green, not purple. Seems to be the variety mentioned by Dillenius as growing in bogs. Specimens from J. W. Griffith, Esq.

C. (2) Leaves winged: leaves with appendages: fruit-stalks lateral or at the base.

*J. ovata.* Shoots creeping, branched: leaves egg-shaped, alternate, with appendages underneath: sheathing the involucrum inversely egg-shaped. Dicks. ii. 11.

Dicks. 8. 6.

Fruit-stalks terminal and lateral. Involucrum ragged at the top. Dicks.

(OVATE-LEAVED Jungermannia. E.) On barren heaths.

*J. triloba.* (Stem creeping, flexuose, branched: leaves imbricated above, ovate, convex, obtusely three-toothed: stipule broadly subquadrate, crenate: fruit arising from the lower part of the stem: calyx oblong, subacuminate, the mouth cleft on one side. Hook. E.)


About an inch long, trailing, branches distant. Leaves with three to five shallow clefts at the end. Involucrum about two lines long, terminating. Fruit-stalks very short. Weis.

(THREE-LOBED Jungermannia. *J. radicans*. E. Bot. Unknown to Dillenius, whose synonym, according to most authors, Prof. Hooker announces to belong to *J. quinquedentata*. Grows in large patches, often a foot in diameter, in subalpine situations, but is seldom found in fructification. E.)

P. March—April.

*J. reptans.* Shoots doubly compound: fruit-stalks lateral: leaves four-cornered, snipped towards the end: stipule four-cleft.


Jung.: f. 8. 13.
**Fruit-stalk** from the base. **Capsules** blackish, shining. Dill. Appendages underneath the leaflets. Neck. Tender, creeping, irregularly branched, limber, about one inch long. **Leaflets** very minute, ending in three or four little teeth. **Involucrum** three-sided, whitish, toothed. **Fruit-stalk** white, shining. **Capsules** oblong-egg-shaped. Weis. Dill.

(A beautiful species universally dispersed throughout Europe; in habit closely allied to *J. trilobata*, having, like that plant, its leaves imbricated on the upper surface, large dentate stipules, flagella beset with leaf-like scales, and a whitish membranaceous calyx, proceeding from the under part of the stems. Hook. E.)

(**Creeping Jungermannia.** E.) Moist shady places, and woods. P. Dec.—April.


(Hook. Jung. 8 E.)—Dill. 69. 4.

Shoots thread-shaped, half to one inch long. **Leaflets** short. Weber. **Involucrum** central, numerous, crowded, white, four-cleft. **Fruit-stalks** slender, white, long. **Capsules** large, reddish brown. Dill. (Stems exceedingly slender, in tufts, or solitary among Sphagna, half an inch to two inches long, irregularly branched in a distant lax manner. **Leaves** very minute, setaceous, in pairs. Colour pale green. **Peduncle** a quarter of an inch long. Grev. E.)


**D.** Shoots tiled with leaflets.

**J. complanata.** Shoots creeping: leaflets doubly tiled, with little scales underneath: branches of an equal breadth throughout.


**Leaflets** circular. **Fruit-stalks** terminal, very short. Neck. From one to two inches long, flat, irregularly branched, adhering close to the bark of trees in broad patches; soft to the touch and flaccid when wet. **Fruit-stalks** hardly a line long, rising from the origin of the branches as well as from their extremities, out of a scaly involucrum, which is lopped at the end. **Capsule** small, black, of short duration. Weis. Dill. (Fructification abundant at all seasons. Grev. The circumstance of the roots most frequently proceeding from the surface or vagina, (not from the margins,) of the leaves, in small tufts, is highly curious. Hook. E.)

(**Flat Jungermannia.** E.) Trunks of trees, in hedges and thickets, flourishing most in moist situations. P. Jan.—April.*

* (The wonderful structure of these diminutive vegetables can only be discovered under the microscope; and the capsules of the present species, as Curtis observes, afford, when ready to burst, and aided by the point of a needle, much entertainment; for the elastic hairs inside will instantly appear in motion, and throw off the globules attached to them in great numbers, and with considerable force. E.)
CRYPTOGAMIA. HEPATICÆ. JUNGERMANNIA. 1093

J. DILATA'TA. Shoots creeping: leaflets doubly tiled, with little scales underneath: branches broader towards the end.

(Hook. Jung. 5—E. Bot. 1086. E.)—Schmid. 67—Dill. 72. 27—Vaill. 19. 10
—Mich. 6. 6—Neck. Meth. 1. 3. at p. 273.


(The barren fructification may be seen on the same individual as the fertile, though it is far more abundant on separate plants. In this instance, (and some others,) the genus is to be considered both monoecious and dioecious. Hook. E.)


J. TAMARISCI. Shoots doubly compound: fruit-stalks terminal: leaflets roundish, with appendages underneath: stipulae egg-shaped, notched.


Greatly resembles J. dilatata, Neck.; but the shoots are much longer, crowded and lying one upon another, more slender, more branched; branches of a uniform breadth, blunt at the ends, not closely attached to the tree on which it grows, but rather hanging down. The mid-rib is more exposed to view, and on the under side appears jointed, and covered with small scales cloven at the end. Fruit-stalk terminating, very short. Capsule brown yellow. Weis. Dill. Leaflets circular, very entire. Capsule very minute. Pol. (By no means so common as the last. Patches conspicuous from their purplish colour, varying to green in shady situations. Hook. E.)


J. EXCISA. Shoots creeping, branched: fruit-stalks terminal: leaves tiled, concave, notched at the end: sheathing involucrum inversely egg-shaped. Dicks. ii. 11.

(Hook. Jung. 9—E. Bot. 2497. E.)—Dicks. 8. 7.

Shoots cylinrical, closely tiled with leaves. Involutum toothed at the top. Dick.

J. platyphylla. (Fronds procumbent, much branched, spreading, triply auricled beneath: leaves heart-shaped, obtuse: sheaths toothed. (Hook. Jung. 40—E. Bot. 798. E.)—Vaill. 19. 9—Dill. 72. 32—Mich. 6. 3 and 4—H. Ox. xvi. 6, row 2. 44—Happ. iii. Jungermannia. About a finger’s length, growing in close patches; doubly winged. Leaves egg-spear-shaped, tiled in a double row, with appendages underneath. Weis. Fruit-stalk short, lateral and terminal. Involucrum blunt, compressed, about one line in height. Capsules minute, upright, smooth, shining, yellowish. Pol. Grows in large tufts on walls and trunks of trees, one layer upon another, fixed only by the ends, irregularly branched. Leaves crowded, tiled, pellucid, thin, dark green, the edges and the ends turned down. Dill. (Rarely found in fruit. E.)


Leaves heart-shaped, rounder than in the preceding. Mid-rib entirely covered underneath by scales. Branches at right angles to the shoot. Have not seen it in flower. Dill.

Branches of trees. Dillenius.

(J. tomentella. Stem nearly erect, bi-pinnate: leaves nearly flat, unequally two-lobed, cut into numerous capillary segments; superior lobes bipartite, inferior, minute: stipulae subquadrate, laciniate: fruit axillary: calyx oblong, cylindrical, hairy, open at the mouth. Hook. E.)


P. March—April.
J. va'ria. Shoots nearly upright, tiled, pointing two ways: leaflets deeply divided.

_Dill. 73. 35—Mich. 5. 9._

Shoots short, stiff, brittle; frequently with green or yellowish globules at the end. _Fruit-stalks_ white, shining, five lines long, terminal. _Involucrum_ egg-shaped, with four teeth. _Capsules_ globular, black and shining. Pol. At first creeping, undivided, winged with leaves; when older, rising up somewhat branched, the leaves surrounding the branches. Dill.

_(Variable Jungermannia._ Considered by Prof. Hooker as synonymous with _J. albicans._ E.) Woods and heaths in moist shady places.

P. March—April.

(J. cilia'ris. Stems prostrate, winged: leaves alternate, two-ranked, convex above, irregularly palmate, fringed: sheaths cylindrical, smooth, obtuse. E. Bot. E.)

_(Hook. Jung. 65—E. Bot. 2241. E.)—Dill. 69. 3._

(Grows in densely-matted, large, purplish-brown patches. Hook. _Stems_ one to five inches long, irregularly branched in a somewhat pinnate, or bi-pinnate manner: _leaves_ beautifully ciliate as well as the _stipules_, close and imbricated; _reticulation_ large. _Peduncle_ scarcely twice as long as the _calyx_, which is obtusely obovate, much contracted at the mouth. Grev. E.)


J. adun'ca. Shoots thread-shaped, bent at the ends: leaves expanding, pointing one way: _fruit-stalks_ terminal, short. Dicks. iii. 12.

_(Hook. Jung. 4—E. Bot. 2448. E.)—Dicks. 8. 8._

_Leaves_ nerveless, cloven, points acute; three together, or rather pointing in three directions. Griff. ( _Stems_ scarcely so thick as a pack-thread, of a bright reddish-brown colour, several inches in length, flexuose. Hook. E.) _Shoots_ trailing, branched. _Leaves_ tilled, but standing open; spear-strap-shaped, channelled, the point a little turned back. _Fruit-stalk_ short, crooked. Sheathing involucrum short, roundish.

_(Reflexed Jungermannia. J. juniperina._ Sw. Hook. E.)—On shaded banks in the Highlands of Scotland. Dickson. (Prof. Hooker describes remarkably fine specimens, (almost a foot long,) by a cascade in a glen near the head of Loch Lomond. E.)

J. julace'a. Shoots cylindrical, upright: leaflets tiled on every side: flowers on _fruit-stalks_: (calyx large in proportion to the size of the plant. Hook. E.)

_(Hook. Jung. 2—E. Bot. 1024. E.)—Dill. 73. 38._

_Brittle._ _Fruit-stalk_ terminal. _Neck._ _Shoots_ slender, cylindrical, silky, from half to one inch high; sometimes forked. _Leaves_ so closely compressed as hardly to be observable, which distinguishes it from every other species. Web. Grows in very dense tufts; shoots and branches cylindrical, and silky when fresh. Dull greyish green, and brittle when

**Silvery Alpine Jungermannia. E.** Wet rocks and by the side of rivulets on Cadar Idris, Glyder and Snowdon, and the Highland mountains. Mr. Griffith. On rocks on the sides and tops of hills in Dartmoor, Devon. Mr. Newberry. P. Sept.—Oct.

**J. concinna'ta.** (Stem erect, branched: leaves very closely imbricated, erect, concave, ovate, obtuse, emarginate: fruit terminal: calyx none. Hook. E.)


Grows matted in tufts, reddish brown above, pale green below. Stalks a quarter of an inch high, very slender, brittle when dry, closely tiled with leaves, thickest at the ends. Leaves undistinguishable by the naked eye, smooth, membranous at the edge, always pressed to. Fruit-stalk terminal, short. Capsules brown. Lightf. Shoots compressed, but obscurely four-cornered. Scales of the involucrum, entire, rounded, which distinguishes it from J. julacea. Griff. (with which it has very generally been confounded both on the Continent and in Britain. E.)


**J. rupes'tris.** Shoots cylindrical: leaflets awl-shaped, pointing one way.

Dicks. H. S.—(E. Bot. 1277. E.)—Dill. 73. 40.


**J. trichophyl/la.** (Stem creeping, irregularly branched: leaves imbricated on all sides, here and there fasciculated, setaceous, jointed, patent straight: fruit terminal: calyx oblong, the mouth contracted, ciliated. Hook. E.)

(Hook. Jung. 7—E. Bot. 2352. E.)—Schmid. 42. 1 to 23—Dill. 73. 37.

Shoots only a few lines in length, closely surrounded by very slender leaflets, of a pale yellow green. Fruit-stalk terminal. Involucrum long, cylindrical, cloven. Weis. When magnified, the leaflets appear divided quite down to the base into three or four awl-shaped segments, composed of globular joints. Fruit-stalk half an inch long. Capsules black. Leers. Leaves pale green, extremely slender. Branches numerous, irregular. Dill. (Hooker describes the joints of the leaves as “a little longer than they are broad, and perfectly cylindrical.” E.)
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(Globular-jointed Jungermannia. E.) Turfy heaths near North Brierly, Yorkshire. Richardson, in Fl. Ang. 516. (On Craig Calleach and Schehallion, in Breadalbane, Perthshire; and on Ben Luyal, in the north of Sutherland. Dr. Hooker. E.) P. April.

J. alpīnā. Shoots cylindrical: leaves egg-shaped, expanding; involu-

crum tiled.


Shoots half to one inch high, crowded together in tufts, branching into short forks. Involucrum terminal. Fruit-stalk seldom found; very short. Web. One to two inches long; cylindrical, not brittle. Involucrum scaly, light red, resembling the bud of the Beach tree. Capsule dark red. Dill.


J. curvīfo'lia. Shoots creeping, branched, cylindrical: leaves tiled, roundish, taper-pointed, cloven, the segments hooked. Dicks. ii. 15.

(Hook. Jung. 16—E. Bot. 1304. E.)—Dicks. 5. 7.

The points of the leaves next to the involucrum upright. Dicks. (Fruit-

stalk about half an inch high, whitish and tender. Capsule dark brown, splitting into four acute valves, as in other species. E. Bot. (Colour of leaves and surculi pale green, changing to a fine purple, in those parts which are most exposed. Hook. E.)

Curv-leaved Jungermannia. (Forming patches of a deep purple colour, and a few inches in diameter. E.) Highlands of Scotland. Many places in the ascent to Crib y Ddeseil from Llanberris. On the summit of Carneddl Llewelyn, also near Llyn Llumbren, Denbighshire. Mr. Griffith.) (May. E.)

J. cine'rea. Shoots creeping, doubly winged above: fruit-stalk from the middle: sheath cylindrical: leaves rounded. Dicks. ii. 15.

Mich. 6. 18—Dill. 72. 28.

Grows creeping upon other mosses. Shoots short. Leaves round, grey, very small, tiled. If immersed in water and magnified, other secondary leaves may be found underneath these. Dill.


J. pu'mila. (Stem ascending, nearly simple: leaves elliptical, ovate: fruit terminal: calyx oblong-ovate, acuminate, the mouth con-

tracted, denticate. Hook. E.)


Grows matted together. Shoot simple, about one-eighth of an inch high. Leaves six to eight, circular, entire, tiled, nearly opposite. Sheath toothed. Fruit-stalk terminal, a quarter of an inch long, or more.

(Pedunculated Jungermannia. E.) Communicated by J. Wynne Griffith, Esq. who first discovered it an Cwm Idwell. (Aberdour. Gre-

TARGIONIA.* Calyx of two valves, compressed, containing at bottom a capsule, nearly globular, many-seeded. See vol. 1, p. 370.


E. Bot. 287—Mich. 3, Targionia—Dill. 78. 9—Buxb. 1. 61. 4—Col. Ecphr. 1, p. 331, f. 333.

Not larger than the little finger nail. Green, not pellucid; rough with white rising dots. Leaf heart-spear-shaped, at first green, afterwards dark purple, blackish underneath. Fructification at the end, on the underside, the size of a vetch. Calyx black; opening, containing the fruit covered with a yellowish skin, and filled with a yellowish pulp which rubs to powder between the fingers, and stains them. Col. Ecphr.


Calyx reticulated like the leaf of a Jungermannia. Capsules sessile; brownish when ripe. Dicks. The thick tops of this plant have much the appearance of some of the smaller Mosses, and have, doubtless, on that account been overlooked, but they have a glaucous hue which instantly announces them to the eye accustomed to observe them. Woodw.


MARCHANTIA.† Barr. Fl. Calyx salver-shaped: Anthers numerous, imbedded in its disk.

Fert. Fl. Calyx target-shaped, flowering on the under side: Capsules opening at the top: Seeds fixed to elastic fibres.

For a more particular account of the parts of fructification, see vol. i. p. 351 and 369.

M. polymorpha. Leaf bluntly lobed: calyx of the fertile flowers mostly ten-cleft.


* (So named by Micheli in honour of his friend and fellow-labourer in natural history Dr. Cyprian Targioni of Florence, whose valuable museum has been highly celebrated. E.)

† (Named after M. Marchant, a French naturalist; author of some ingenious papers in the Memoirs of the Academy of Sciences. E.)
CRYPTOGAMIA. HEPATICÆ. MARCHANTIA. 1099

From three to five inches long, one broad, and irregularly lobed; dark green, shining. Fruit-stalks in the angles of the lobes, one to three inches high. Capsules greenish, dividing into eight or ten segments. On the upper surface we here and there observe certain glass-shaped conical cups, on short pedicles, with a wide and scolloped margin. Weis, which inclose about four little bodies, very finely serrated at the edges. Pol. In figure somewhat resembling an oak leaf; surface reticulated. Dill. (A very elaborate description of the structure of this plant may be seen in Musc. Brit. E.)

(Star-headed Marchantia or Liver-green. E.) In wet places both shady and open. On wet shady walks, and on the sides of wells and springs. P. June—Aug.

Var. 2. Plant smaller; not shining.

Dill. 77. 7—Mich. 1 and 2—Lob. Obs. upper right hand fig.—Lob. Ic. 246—J. B. iii. 758. 2.

Leaves smaller and shorter than in 1; fine green, not shining, not reticulated; densely compacted one upon another. Dill.


Var. 2. Calyx with eight clefts.

Mich. 1. 5.

M. CRUCIATA. Fertile calyx with four divisions: segments tubular.

Dill. 75. 5—Mich. 4. Lunaria—Buxb. i. 62. 2.

Crowded in its growth, sometimes branched, new leaves proceeding from the ends of the old ones, from half to one inch long, pleasant green, not pellucid, nor veined. Calyx with four, and sometimes five divisions. Dill. Fruit-stalk white, tender, brittle; one to two inches high. Stackh.

(Cross-shaped Marchantia. E.) Shady courts and garden walks.

P. June—Oct.

M. HEMISPHERICA. Leaf scolloped: fertile calyx five-cleft: hemispherical.

(E. Bot. 503. E.)—Schmid. 31—Dill. 75. 2—Mich. 2. 2—Fl. Dan. 762—Buxb. ii. 5. 1.

Head hemispherical, with five globules underneath. Globules bursting, and pouring out seeds. Limm. Leaf from half to one and a half inch long, concave, edge waved and scolloped; at first simple, cloven when older, and a young one issuing from the end. Fruit-stalk an inch high, brownish, naked. Dill.

(Hemispherical Marchantia. E.) Sides of rivers and wet ditches, and wet rocks.

P. April—May.

M. CONICA. Leaf forked, indented: fertile calyx somewhat egg-shaped, with about five cells underneath.


Leaves pleasant pale green, slippery to the touch, creeping on the ground, dotted on the surface, producing new leaves from the end of the old ones.
Dill. Barren flowers on the leaf, resembling warts. Linn. Fruit-stalks three or four inches high, transparent, very tender. Common calyx, five cells bursting at the base, often varying in number from some proving abortive. Seeds when ripe hanging out attached to threads, having the appearance of the woolly substance which contains the seeds of Lycoper- dons. Woodw. Leaves in large clusters, indented, blunt, green, with several white tubercles.

(Conical Marchantia. E.) On the ground on the banks of brooks in shady places, and sometimes on rocks. Dillenius. Very common, but I have only found it in fruit on the shady banks of a ditch at Ditchingham, Norfolk, where I have observed it for some years. Mr. Woodward. In a wet ditch near Belsey Bridge, Ditchingham. Mr. Stone. Road from Kingshill to Cam, Gloucestershire, in fruit. Mr. Baker. (Stream side, between Painswick and the Edge, in fruit. Mr. O. Roberts. E.)

P. March—April.

M. andro'gy'na. Leaf forked, segments strap-shaped: fertile calyx entire, hemispherical.

Dicks. H. S.—(E. Bot. 2545. E.)—Dill. 75. 3. A. C.—Mich. 2. 3—Dill. 75. 3. B.

Shoots strap-shaped, forked, dotted; often notched at the end; mid-rib blackish. Web. Fruit-stalk terminal, half to one inch high. Plant green, strap-shaped, smooth, flat, in forked divisions. Dill. (Dr. Hooker suspects that the fig. in E. Bot. above cited, (excluding the two lower), rather belongs to M. hamisphaerica.


BLA'S1A.* Barr. Fl. solitary, imbedded in the substance of the leaf.

Fert. Fl. Capsule egg-shaped, one-celled, crowned with a tube through which the seeds escape. See vol. i. pp. 352 and 371.

B. pusil'la.


Seeds when ripe flowing out of a cup-like cylindrical vessel, so small that their figure is not discernible to the naked eye. Linn. Suec. n. 1053. Leaves in a circle from one to two inches in diameter, deep purple at the base, green at the edges, jagged. Grows in a circular form in shady places. Leaves thin, green, pellucid, with whitish veins towards the base, waved at the edge, cloven at the ends. Fruit-stalk one-eighth of an inch high, several rising in succession from near the ends of the leaves. Dill. (It bears capsules in the Spring months; gemmæ throughout the whole year. E.)

* (Named by Micheli, after Blasi, an Italian monk, addicted to the study of Botany. E.)

† (Besides the means of increase by seed, some of the Jungermannite, like most other Cryptogamous plants, possess the property of propagating their kind by gemmae; in the same way as many species of Allium, Polygonum viviparum, &c. among the Phænogamous. Hook. E.)
(Dwarf Blasia. Jungermannia Blasia. Three illustrative plates, and a very ingenious dissertation, are bestowed upon this little plant, by Dr. Hooker, to prove that it does not properly belong to the genus to which authors have hitherto referred it, but rather to Jungermannia. E.) On the sides of ditches and rivers in a sandy soil. At the breaking of Medlock River Bank at Feasington Wood between Garret and Knotmill, about a mile from Manchester. Harrison, in Dill. 298. Near Halifax. Bolton. On Hounslow Heath. Hudson. (and on Shotover-hill, April, 1821, in full fructification, by Mr. Baxter, though rarely found in that state in so southern a station. Parton. E.) P. Aug.—Nov.

RICCIA.* Capsules sessile, globular, one-celled, attached to the apex of the leaf, and containing from twenty to thirty seeds. See vol. i. pp. 352 and 371.


E. Bot. 255—Dill. 78. 18.
The edges of the leaves are not really fringed, but assume that appearance in consequence of their sending out fibrous roots. Web. About half an inch long. Fringe sometimes white. Schol. Leaves sometimes only inversely egg-shaped, and without any notch at the end; entire at the edge, bright green. Web. Very nearly allied to Targionia hypophylla. Huds.


R. MIN'IMA. Leaves smooth, deeply divided: acute.

Dill. 78. 11—Mich. 57. 6, magnified—Schmid. 45. 3, ends of the segments blunt.

Shoots hardly a line in breadth, generally forked, entire and pointed, or else notched at the end. In the substance and towards the base of the leaf, in the month of October we may observe greenish globules, changing to brown and then to black. Web.

(Identified with the following in Muse. Brit. E.)

(Least Riccia. E.) On Blackheath, near Greenwich. Dillenius. In places that have been overflowed. Hudson. A. Nov.—Dec.

R. GLAU'CA. Leaves smooth, channelled, two-lobed, blunt.

Schmid 44. 1—Hedw. Theor. 29. 165 to 174—(Part. 5—E. Bot. 2546. E.)—Vaill. 19. 1—Fl. Dan. 898. 1—Mich. 57. 4—Dill. 78. 10—Buxb. ii. 5. 5.

I have frequently observed black spots immersed in the substance of the leaves, which are what Micheli has described as capsules full of seeds, and which has been since clearly ascertained by Hedwig. Woodw. Leaves small, the under side firmly fixed to the ground, adhering at the base to each other, deeply divided, Pol. whitish green, thick, slippery, very smooth, broadish, furrowed on the upper side, frequently forked; segments blunt. Web. Growing in a circular form. Leaves thick, issuing from a centre, often cloven. Roots fine black fibres from the under surface of the plant which floats on the water. Ray. I have never seen it on the water, but in roads and wet corn-fields both in spring and autumn. Dill.

* (A name conferred by Micheli, in honour of Signor Ricci, an Italian knight. E.)
(With the above-described species, under the name *R. crystallina*, Drs. Hooker and Taylor include


Var. *b*. Frond thin, nearly plane, yellowish green, segments obtuse. *R. crystallina*. Linn. Depending on age and place of growth: the first var. growing on banks in dry and exposed situations; the latter in moist spots, as the mould of garden pots in the greenhouse and stove. E.)

(Glaucous Riccia. E.) Sandy moist heaths. In the same situations, and usually growing with Targionia Spharocarpus. Mr. Woodward. In clover stubbles near Bungay, Suffolk, frequently. Mr. Stone.

A. Oct.—April.


Not having seen its fructifications, it is still a doubt whether it really belongs to this genus. Linn. Floating in stagnant water; brown green in spring, pure green in summer. Dill.

(Forked-leaved Riccia. E.) Ditches and sides of pools. P. Jan.—Dec.

ANTHO'cEROS.* Capsule awl-shaped, two-valved: Seeds fixed to the partition or to the valves. See vol. i. pp. 352 and 3170.

A. punctatus. Leaf curled, indented, jagged, dotted.


(Jagged-leaved Anthoceros, or Spotted Horn-flow'er. E.) On heaths in moist shady places. Ellingham fen, Bungay, near the direction post. Mr. Stone. Brome, Norfolk, on the borders between the high and boggy ground. Woodward. (In a stubble field at Kinwarton, Warwickshire. Mr. Purton. E.) P. Aug.—April.

(A. le'vis. Leaf undivided, indented, smooth.

Dill. 68. 2—E. Bot. 1538. E.)

When recent, of a rich velvety green colour; the texture most beautiful when held to the light, but without spots, Stackh. who thinks this and *A. punctatus* may probably be one and the same species; *levis* the plant when barren, *punctatus* when fruiting, for the spots when highly magnified exhibit clusters of seeds or fertile flowers; and Dill. 68, 1 and 2, seem to countenance this hypothesis.

* (From *a* *pó*əs, a flower; and *xe·p*əs, a horn: the latter word supposed by etymologists to refer to the ancient drinking-vessels, and thus in Homer. In the present instance the curled, concave leaves of the plants bear some resemblance to these cups: though, by another interpretation, the term might, perhaps with equal propriety, be considered descriptive of the erect capsules and fruit-stalks. E.)
These suggestions of Mr. Stackhouse are in some degree corroborated by the researches of Drs. Hooker and Taylor. E.)

(Broad-leaved Anthoceros. A. major. E. Bot. First discovered in Britain by Mr. Stackhouse, in a shady over-hanging cavity in Fowey Harbour. Upon a tomb-stone on the north side of Arrow Church, Warwickshire: and on a ditch bank in a wet lane, near to Llanvayer Rectory, Monmouthshire. Mr. Purton. E.)

A. multifidus. Leaf with doubly winged clefts: segments strap-shaped. 

Dill. 68. 4.

Dillenius had not discovered this plant, but figured it from specimens sent by Haller. I am indebted to Mr. Dickson for specimens. Resembles Riccia fluitans, but the segments are pointed, not lopped at the end.

(Wing-cleft Anthoceros. Respecting this production, so imperfectly understood, the authors of Musc. Brit. state: "Whether we consider the descriptions of Dickson and Dillenius, or the figure of the latter, we have little hesitation in supposing that plant to be Jungermannia multifida." E.)
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