A

SYSTEMATIC ARRANGEMENT

OF

BRITISH PLANTS.

IN FOUR VOLUMES.
A
SYSTEMATIC ARRANGEMENT
OF
BRITISH PLANTS;
WITH AN EASY
INTRODUCTION TO THE STUDY OF BOTANY.
ILLUSTRATED BY COPPER-PLATES.

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THE FOURTH EDITION, IN FOUR VOLUMES:
CORRECTED AND ENLARGED
BY WILLIAM WITHERING, ESQ.
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ordinary Member of the Royal Medical Society;
Fellow of the Linnean Society, &c.

"Primus gradus sapientiae est res ipsas nosse." Linn.

"In crescunt quotannis Scientiae, emendatur quotidie, et ad fastigium
suum optatum sensim sensimque, plurium virorum opera et studio
junctis, feliciter proerant." Thunberg.

VOL. III.

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CLASS XII.

ICOSANDRIA.

MONOGYNIA.

PRU'NUS. Cal. beneath, 5-cleft: Bloss. 5 petals: Drupa with an entire nut.

[Dracontium.]

DIGYNIA.

CRATÆ'GUS. Cal. superior, 5 cleft: Bloss. 5 petals: Berry with 2 seeds.

[Prunus insitia.]

TRIGYNIA.

SOR'BUS. Cal. superior, 5-cleft: Bloss. 5 petals: Berry with 3 seeds.

PENTAGYNIA.

MES'PILUS. Cal. superior, 5-cleft: Bloss. 5 petals: Berry with 5 seeds.

PY'RUS. Cal. superior, 5-cleft: Bloss. 5 petals: Fruit a Pomum, with 5 cells and many seeds.

SPIRÆ'A. Cal. beneath, 5-cleft: Bloss. 5 petals: Capsules many, crowded together.

POLYGNIA.

RO'SA. Cal. 5-cleft: Bloss. 5 petals: Cup like a berry, with many seeds.

RU'BUS. Cal. 5-cleft: Bloss. 5 petals: Berry compound.
MONOGYNIA.

PRUNUS. Calyx 5-cleft; beneath: petals 5: drupa 1-celled, closed at the top: nut with projecting seams.

**Pa'dus.** P. Flowers in bunches: leaves deciduous, with 2 glands at the base on the under side.

*It 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 gives it an agreeable flavour. A strong decoction of the bark is used by the Finlanders to cure venereal complaints; which practice is corroborated by the testimony*
ICOSANDRIA. MONOGYNIA. Prunus.

P. Umbels mostly on short fruit-stalks: leaves egg-spear-shaped, smooth, doubled together.

E. bot. 706—Sheldr. 54. 1 and 6—Hunt. ewel. 188. 1. p. 181.
ed. ii—Blackw. 449—Mattb. 233, and 235—Dod. 808.
1—Ger. 1502. 1—Ger. 1319. 1—Fuchs. 425—f. B. i. a.
220—Trag. 1026—Lonic. 1. 13. 2.

Leaf-scales toothed. Floral-leaves 3-cleft, serrated; the intermediate one leafy. The terminating buds producing leaves, the lateral ones flowers, which are from the last year's shoots.

Blossoms white. Fruit red. LINN.

Common Wild Cherry-tree. Woods and hedges not uncommon; but probably from the stones of the garden varieties dropped by birds. RAY.—[In Hertfordshire, growing to a large size. Mr. WOODWARD.]

T. May.*

P. Umbels sitting: leaves egg-spear-shaped, downy underneath, doubled together.

Ludw. 108—Blackw. 425—Sheldr. 54. 5—Ger. 1323. 11.

Leaf-stalks with 1 or 2 glands towards the end. Umbel sitting, 3-flowered. Flowers on fruit-stalks, from the shoots of the last year but one. Involvec. 4-leaved. LINN.

Black Cherry-tree. Mazzardis. Hedges in Suffolk. RAY.

[Herts. Mr. WOODW.]

T. May.†


mony of M. Broerland in the Stockh. trans. He directs 6 ounces of the dry, or 8 of the fresh bark, to be boiled in 8 to 4 pints of water. The dose is 4 ounces 4 times a day.—It alone cures the slighter infections, and combined with Mercury facilitates the cure of the severer states of the disease. VENEL. and a decoction of the berries is sometimes given with success in the dysentery. The wood being smooth and tough is made into handles for knives and whips. Sheep, goats, and swine eat it. Cows are not fond of it. Horses refuse it.

* It loves a sandy soil, and an elevated situation. The gum that exudes from this tree is equal to gum arabic. Hasselquist relates, that more than 100 men, during a siege, were kept alive for near two months, without any other sustenance than a little of this gum taken into the mouth sometimes, and suffered gradually to dissolve. The common people eat the fruit either fresh or dried; and it is frequently infused in brandy for the sake of its flavour. The wood is hard and tough. It is used by the turner, and is formed into chairs, and stained to imitate mahogany. This tree is the original stock from which many of the cultivated kinds are derived. LINN.

† It grows best in a rich soil on the sides of hills, unmixed with other trees. It bears cropping, and suffers the grass to grow under it. In Hertfordshire there is a cultivated variety, called Carrens, which are larger, and much finer flavoured than the common sort. Mr. WOODWARD.
ICOSANDRIA. MONOGYNIA. Prunus.

Woodv. 85—Park. 1512. 1—Ger. 1311. 1—Matth. 265—Lonic. i. 52. 1—Fuchs. 403—Trag. 1019—Dod. 805—Lob. obs. 595. 2—Ger. em. 1497. 1.

Leaves, when expanding from the bud, coiled. Flowering-buds producing no leaves. Linn. Calyx sometimes 6-cleft. Style crooked.


Hedges, [probably from the fruit of the cultivated varieties accidentally dropped there. St.] T. April.*

insititia. P. Fruit-stalks in pairs: leaves egg-shaped, slightly woolly, coiled; branches with thorns.

E. bot. 841—(Blackw. 305, is a var. of P. domestica.)

As large as P. domestica. Branches reddish brown, smooth, some of them terminating in a thorn. Stipulae narrow, fringed, sharp, cloven at the base. Upper surface of the leaves smooth. Cup smooth. Linn. Stipulae cloven down 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; but Mr. Relhan says sometimes the colour of bee-wax.


Fl. den. 926—E. bot. 842—Shelv. 73—Woodv. 84—Fuchs. 404—Trag. 1016—F. B. i. a. 193—Lonic. i. 51—Blackw. 491—Matth. 266—Dod. 753. 2—Lob. obs. 595. 1—Ger. em. 1497. 5—Park. 1033—Ger. 1313. 1. 2.

Leaves spear-egg-shaped, serrated; serratures terminated by an excretory duct, the terminating one blunter and shorter. Leaf-scales strap-shaped, between serrated and toothed; the points of the teeth as if dead. Linn. Styles sometimes 2. St.


* It loves a lofty exposure, and is favourable to pasturage. The varieties have probably originated from the red and white cultivated plumb, either sown by design or accident. The cultivated garden plumbs are derived from this species. The bark dyes yellow.

† The fruit is acid, but so tempered by a sweetness and roughness as not to be unpleasant, particularly after it is mellowed by the 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 a mild purgative, not improper for children.

† This 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.
Digynia.

Crataegus. Cal. 5-cleft: petals 5: berry beneath, opening at the top, 1-celled, 1 or more seeded.

C. Leaves egg-shaped, cut, serrated, cottony underneath.

Aria.

Fl. dan. 302-Crantz. ii. 2, 2-Mill. ill.-Hunt. Evel. 181. i.


Seeds 4, in each cell 2, like those of the pear. Crantz. Styles 2 to 4, with as many seeds. Du Roi. Leaves quite white underneath. Calyx woolly. Petals scalloped towards the end, and woolly at the base. Fruit red.


C. Leaves heart-shaped, with 7 angles; lowermost lobes terminalis. straddling.

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 are sometimes used as a substitute for tea, and is, I believe, the best substitute that has yet been tried. The fruit bruised and put into wine gives it a beautiful red colour, and a pleasant subacid roughness. An infusion of a handful of the flowers is a safe and easy purge. The bark powdered, in doses of 2 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 Cratægi, Polyehloris, and Betula; Phalaenæ quefifolia, quercus, lanestris, carulocephala, pavonia, neustria, Oxyacanthæ, Citræ, prunaria, and brumata; Aphis padi; Curculio cerast, and Pruni; and Scarabæus boricola.

It loves dry hills and open exposures, and flourishes either in gravel or clay. It bears lopping, and permits the grass to grow. 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 the autumnal frosts, and an ardent spirit may be distilled from it. It seldom bears a good crop of fruit 2 years together. Sheep and goats eat it. On Breiddin Hill it is very difficult of access, for 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.

Vol. III.
ICOSANDRIA. DIGYNIA. Cratægus.

Jacq. austr."443—Fl. dan. 798—Hunt. Evel. 182. i. 176. ed. 2d—E. bot. 298—Matth. 263—Clus. i. 1. 10. 2—Dod. 803. 2—Lob. obs. 614. 2—Ger. em. 1471. 2—Ger. 1287. 2—Trag. 1010—Park. 1420. 2—J. B. i. a. 63—Cam. epit. 162—Lonic. i. 50. 2.


Oxyacantha, C. Leaves mostly 3-cleft: segments blunt, serrated.

Jacq. austr. 292. 2—Matth. 163—Blackw. 149. 2—J. B. i. b. 49—Fl. dan. 634.

Var. 2. Monogynta. Flowers with 1 pistil; leaves, segments more acute and expanding.

Jacq. austr. 292. 1—Fl. dan. 1162—Sheldr. 21—Barr. 563—Clus. i. 121—Lob. obs. 614. 2—Park. 1025—Walc.—Blackw. 149. 1—Trag. 984—Ger. 1146. 1—Dod. 751. 1—Ger. em. 1327. 1

Var. 3. Trigyna. Flowers with 3 pistils.


All the above varieties are found in our hedge rows, that with 1 pistil is the most common, and that with 3 the most rare. Flowers white, but in clayey soils pinky red. Berries mostly a coral red, but sometimes yellow, or white. Leaves, the segments more or less blunt or acute; the middle segment 3-cleft; the segments more or less serrated upwards, but entire at the base. Capsules mostly 1-seeded, but sometimes there is a 2d cell, and the rudiment of a 2d seed.


T. May, June.*

Var. 4. Glastonbury Thorn. Appendages at the base of the leaves kidney-shaped, toothed, very large. It does not grow within the ruins of the abbey at Glastonbury, but in a lane beyond the church-yard on the other side of the street by the side of a pit. It appears to be a very old tree. An old woman of

† Upon 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, this plant is universally preferred for making hedges, whether to clip or to grow at large. The wood is tough, and is formed into axle-trees and handles for tools. The berries are the winter food of Thrush and many other birds. The different species of Cratægus afford nourishment to Papilio Cratægi; Phalaena carulocephala, Oxyacantha, and Cratægata.
90 never remembers it, otherwise than as it now appears. There is another tree of the same kind 2 or 3 miles from Glastonbury. They tell you it has no thorns, but that I found to be a mistake: it has thorns, like other Hawthorns, but which also on large trees are but few. There is a full-sized tree of this kind in the garden at Piper's Inn. It blossoms twice a-year; the winter blossoms, which are about the size of a sixpence, appear about Christmas, and sooner if the winter be severe. These produce no fruit. The berries contain only 1 seed, and there seemed to have been only 1 pistil, but it was late in the season when I examined it. I was informed that the berries, when sown, produce plants nowise differing from the common Hawthorn. Probably the tree which gave birth to the legend grew within the walls of the abbey, and may have died from age, or been destroyed at the time of the reformation.

TRIGYNIA.

SOR'BUS. Cal. 5-cleft: petals 5: pomum 5-celled, open at the top, 3-seeded.

S. Leaves winged, smooth on both sides.

aucupária,

Mill. ill.-Hunt. Ecol. 218. i. p. 211. ed. 2d-Fl. dan. 1034—
Park. 1419. 2-Trag. 1009-Crantz. ii. 1. 4.

Leaves, rib channelled. Leaves 7 or 8 pair, sitting, spear-shaped, serrated, the intermediate ones the longest. Corymbus terminating. Berry round, of a pleasant red or scarlet. Seeds 3, 4, 5, reddish. Relhan. Flowers whitish.


S. Leaves winged, woolly underneath.

domestica,

Jacq. austr. 447—E. bot. 350-Crantz. ii. 2. 3-Nash. i. at p. 10. f. 1. 3-Matth. 261-Clus. i. 10. 3-Dod. 803. 1-Lob.

* It 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. It is converted into tables, spokes for wheels, shafts, chairs, &c. 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 somewhat like perry, which is drank by the poorer people in Wales. In Germany the fowlers use the berries to entice the Redwings and Fieldfares into nooses of hair suspended in the woods; hence its trivial name.
Fruit the size of a crab. Does not produce fruit till grown to a considerable age. Linn. Cells 5. All the seeds seldom coming to perfection. Bloss. white. Fruit brownish. Crantz. Styles always 15. vid. E. bot. where it is removed to Pyrus. 

Pyrus domestica. E. bot.—True Service, or Sorb. Mountainous forests. Mountainous parts of Cornwall, and the Moore-lands of Staffordshire. [In the middle of a thick wood in the forest of Wire, near Bewdley, Worcestershire, 1 mile from Mopson’s Cross, between that and Dowles Brook.]

T. April.*

S. Leaves wing-cleft, cottony underneath.

**Fl. dan. 301—Linn. fl. fasc. i. 6.**

Linnæus considers it as a new tree, produced between the Crataegus Aria and the Sorbus 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.

**Bastard Service.** On mountains. [On the walls of Castle Din-as y bran, near Llangollen, Denbighsh. Mr. GRIFFITH.] T. May.

**PENTAGYNIA.**

**MES PILUS.** Cal. 5-cleft : petals 5 : berry with 1, 2, or 5 cells.


* The fruit is mealy and austere, not much unlike the Medlar. The Chermes Sorbi and Coccinella bipustulata live upon this and S. aucuparia. Linn. The wood is valuable for making mathematical rulers and excise-men’s gauging sticks. Nash.

† Many people are fond of the fruit when it becomes soft by keeping; it is somewhat austere, and binds the bowels.
ICOSANDRIA. PENTAGYNIA. Pyrus.

PY'rus. Cal. 5-cleft: petals 5: pomum beneath: 5-celled, many-seeded.

P. Leaves serrated, smooth: flowers forming a corymbus. communis.

Blackw. 453—Matth. 251—Lob. obs. 590. 2—Ger. em. 1457—
Park. 1500. 1 and 2—Dod. 800—Ger. em. 1456—Ger.
1267 to 1270—Lonic. i. 11—Trag. 1045.
Bloss. white.—Pear Tree. Woods and hedges. T. Apr. May.*

P. Leaves serrated: flowers in a simple umbel.

Fl. dan. 1101—E. bot. 179—Blackw. 178—Ger. 1276. 1. 2. 3.
—Ger. 1272. 4—Ger. em. 1461—Park. 1503. 2.

Leaves more circular than those of the preceding species. Petals tinged with red on the outside.

Crab Tree. Wilding. Woods and hedges. T. May.†

Var. 2. cultivated.—Blackw. 141—Mill. ill.—Ger. 1273 to
1274—J. B. i. a. 1—Lob. obs. 590. 1—Ger. em. 1459. 1—
Park. 1503. 1—Dod. 789—Ger. em. 1459. 2—Lonic. 1. 10.1.

* It 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. The leaves afford a yellow die, and may be used to give a green to blue cloths. The fruit is austere; but when cultivated highly grateful, as is proved by the great variety of excellent pears which the industry of mankind has raised, for they all originate from this. 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. Horses, cows, sheep, and goats eat the leaves, which afford nourishment to Papilio polychloros; Phalaena Populi, Labyrintha, quercifolia, putilbunda, carusocephala, brunata, Pomonella; Aphis Pyri; Chermes Pyri; Curculio Pyri; Musca Pyrastris. Linn.

† It flourishes better on declivities and in shady places, than in open exposures or boggy lands. Grass and even corn will grow beneath it. It is much used as a stock, on which to ingraft the better kind of apples; because its roots are neither killed by frost nor eaten by field mice. 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 by the country people Verjuice, and is much used in recent sprains, and in 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, but little inferior to Old Hock.—Horses, cows, sheep, and goats eat it; swine are very fond of the fruit. Linn. Phalaena dispar, Populi, Fascinina, Chrysorrhiza, Psi, Oporana, brunata, Pomonella, Monacha; Aphis Mila; Scarabaeus Horticola feed upon it.
ICOSANDRIA. PENTAGYNIA. Spiræa.

Apple Tree. Orchards, and hedge rows. T. May.*

SPIRÆA. Cal. 5-cleft: petals 5: caps. 4 or more, 2-celled, 2-valved, many-seeded.

salicifo'lia. S. Leaves spear-shaped, blunt, serrated, naked; flowers in a compound bunch.

FIr. Ross. 21'GMeL slh. ill. S^Kntfh. 3-Chs. m

A Shrub about 4 feet high. Serratures of the leaves not very regular. Flowers rose red, paler when expanded. I am indebted to Mr. Gough of Kendal for the knowledge of this being a native. He says that it sometimes occurs in moist hedges in Westmorland, in many places on the borders of Windermere, and that it has lately been discovered by Mr. Dalton of the academy of Manchester, by the road between Pool Bridge and Colthouse, near Hawkshead, Cumberland. It is well known in our gardens by the name of Spiræa frutex. S. July.

Filipen'dula. S. Leaves interruptedly winged: leaflets strap-spear-shaped, irregularly serrated, very smooth: flowers in tufts.

Fl. dan. 635—E. bot. 284—Blackw. 467—Kniph. 3—Fuchs. 562. Trag. 883—Lonic. i. 220. 2—Ger. 900. 1—Matth. 865—Clus. ii. 211. 2—Dad. 56. 1—Lob. obs. 420. 3—Ger. em. 1058. 1—Park. 435. 1—Pet. 71. 6—H. ox. ix. 20. row 1, left hand figure.

Caps. numerous, disposed in a circle. Linn. Stem herbaceous. Leaflets mostly alternate, smooth on both sides and shining. A pair of little leaflets sitting on the leaf-stalk between each pair of larger leaflets. Fruit-stalk crooked before the flowers expand. Petals cream-coloured, purplish underneath, turned back. Styles many.


* The juice fermented is called Cyder, of which large quantities are made in Herefordshire, Devonshire, part of Worcestershire 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 by many that the liquor would be now improved by a fresh importation.

† The tuberous pea-like roots, dried and reduced to powder, make a kind of bread, which, in times of scarcity, is not to be despised.—Hogs are
S. Leaves interrupted ly winged; leaves egg-shaped, doubly Ulma'ria, serrated, hoary underneath; flowers in tufts.  

Curt. 340- Ludow. 23-Fl. dan. 547-Blackw. 465-Kniph. 1  
-Clus. ii. 198. 1-Dod. 57-Ger. em. 1043-Park. 592. 1  
-Pet. 71. 8-H. ox. ix. 20, row 1. 1. fig. 3d.-Ger. 886-  
J. B. iii. 488. 2.  

Stem angular, reddish. Leaves bright green above, white underneath, irregularly serrated; the terminating leaf divided into 3 segments. Flowers yellowish white. Cal. segments and petals sometimes 4. Capsules 5 to 8, but mostly 6, twisted spirally together.  

Common Meadowsweet, Queen of the Meadows. Moist meadows, and banks of rivers.  P. June, July.*  

POLYGYNIA.  

RO'SA. Petals 5: Cal. urn-shaped, 5-cleft, fleshy, contracted at the neck so as to form at length a coloured berry of 1 cell, opening at the top; seeds many, hispid, dispersed in the pulp.  

(1) Germens more or less globular.  

R. Germens and fruit-stalks smooth; stem and leaf-stalks arven'sis, prickly: flowers in tufts.  

E. bot. 188-Walc.-J. B. ii. 44. 1.  

Leaves simply serrated. Fruit-stalks beset more or less with hairs terminated by globular heads, not subdividing as in a tuft, nor rising exactly from the same point as in an umbel; sometimes solitary. Prickles bowed downwards. Blossoms white. Styles as soon as they have passed through the neck of the calyx, compacted into a cylinder resembling a single style, terminated by a knob composed of the summits. This circumstance will alone distinguish it from the other species. Fruit globular, red. St.  

[This is the most common rose in the west of Yorkshire, and about Manchester. Have not seen it within 50 miles of Darlington. Mr. Robson.]  

S. July.  

Var. 2. Huds.—Wild Dog Rose, with only 1 flower. Ray  


are very fond of them. Linn.—When expanded and enlarged by cultivation, it is a beautiful addition to the flower garden.  

* 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. Sphincter ocellata, and Filipendula feed on both species. Linn.
spinosis’sima. R. Germens and fruit-stalks smooth: stem and leaf-stalks fully set with straight prickles; leaflets circular, smooth.

**E. bot. 187—Fl. dan. 398—Ger. 1088—J. B. ii. 41. 1—Park. 1018. 8—Clus. i. 116. 1—Dod. 187—Ger. em. 1270. 3—J. B. ii. 40. 2.**

*Prickles* awl-shaped, straight, horizontal, very thickly set, unequal. *Fruit-st.* with or without prickles. *Cal.* leaves entire. *Linn.* Leaf-stalks not prickly. Leaflets very small, roundish, sitting. Leaf-scales small, half-berd-shaped, toothed. *Woow.* *Bloss.* white, or cream-coloured, sometimes red. *LIGHTF.* Prickles very unequal in size, some flat, others like needles. The R. spinosis’sima, and the R. pimpinellifolia of Linnaeus, we are now assured, are the same plant.

**Burnet Rose. Pimpernel Rose.** Heaths and sandy places: [Hedges near Yarmouth, frequent. Mr. Woodward.—Perran Downs, Cornwall. Mr. Watt.—Hedges and ditch banks about Worcester. Dr. Stokes. Frequent in the sandy country about Bewdley.]


**Cipbian Rose.**

Var. 3. Fruit-stalks prickly; flowers cream-colour, changing to white.

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.*

villo’sa.


**E. bot. 582—J. B. ii. 38. 1—Park. par. 419. 7.**

*Stem* smooth, 2 or 4 prickles near together below the knots. *Leaves* blunt. *Petals* red. *Linn.* Fruit-stalks, germens, leaf-stalks, edges of the leaf-scales, and serratures of the leaflets beset with hairs of various lengths, terminated by a gland. Leaflets 6, with an odd one, egg-spear-shaped, more or less pointed. *Petals* longer than the calyx. *Fruit* not always hispid. Mr. Woodw. *Leaves* doubly serrated. *St.* *Leaves* cottony on both sides.

**Apple Rose.** Mountainous hedges and shady places in the northern counties. [Grass Wood, near Kilnsay, Yorkshire, Curt.]

*The ripe fruit is eaten by children; it has a grateful sub-acid taste. The juice of it, diluted with water, dyes silk and muslin of a peach-colour; and with the addition of alum a deep violet; but it has very 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.*
ICOSANDRIA. POLYGYNIA. Rosa.

—In the vallies of mountainous countries. In the Craven part of Yorkshire. Mr. Wood. — Near Ulswater, Cumberland. Mr. Woodward.] S. June.

Var. 2. Huds.—Wild Briar, or Dog Rose, with large prickly hips. Ray.

Petals rather larger; leaves broader, shorter and more pointed; and prickles more hooked than in the north country plant. No other observable difference. Mr. Woodward. Stem wrinkled, not hairy or glandular. Leaves egg-shaped, serrated, 1 and 2, but mostly 3 pair, cottony on both surfaces. Fruit-stalks, floral-leaves, calyx, germens, edges of the leaves, and leaf-stalks set thick with globular glands supported on longer, shorter, finer, or coarser hairs or bristles. Prickles a little hooked downwards, rather flat, not broad. The leaves when rubbed have a faint agreeable scent.


(2) Germens egg-shaped.

R. Germens and fruit-stalks prickly at the base: prickles rubiginosa. on the stem bent back: leaves rusted underneath.

Fl. dan. 870—Jacq. austr. 50—Walc.—Dod. 186. 2—Ger. em. 1269. 1, left hand fig.—Ger. 1087. 1—Park. par. 419. 8.

Branches smooth, but with scattered pretty large prickles. Leaves generally 7, egg-shaped, pointed, scattered over underneath with purplish resinous globules. Leaf-stalk rough with hairs, and minute prickles, and as are the floral-leaves, beset with minute glands on pedicles. Germ. nearly globular, beset, especially at the base, with a few small prickles. Fruit-st. with very minute prickles. Bloss. red. The R. Eglanteria differs in growing taller, having straight prickles, and blossoms large, yellow, and scentless. Linn. Leaves doubly serrated, smooth above, except a few scattered hairs along the mid-rib, even in the newly expanded leaves, half doubled together, not so full-scented as those of the Garden Sweet-briar. Glands rust-coloured or red. Its habit and mode of growth the same with that of the garden sort. In the Garden Sweet-briar the leaves beset above with very short hairs, oval-egg-shaped, and not unfrequently oval; the glands yellowish. They seem at least varieties. St. Fruit black when ripe. Lightf. That of the Garden Sweet-briar scarlet, sometimes smooth. St. German, prickles not numerous, and chiefly on one side. Leaves, the rusty appearance chiefly confined to the lower leaves. The sweet scent seems to be owing to the glands.

and Tipton. In Mr. Terne's garden, Worcester, from a gravel pit near Claines Church. Dr. Stokes.] S. June, July.

canina. R. Germens and fruit-stalks smooth: stem and leaf-stalks prickly.

Curt. 299—Knipl. 7—Fl. dan. 555—Blackw. 8—Ludw. 70—Walk. 5—Park. 1017. 1—J. B. ii. 43. 2—Trag. 986. 2—Ger. 1087. 2.

Stem smooth, with 2 alternate hooked prickles between each knot. Leaf-stalks with hooked prickles. Leaves sharpish, bare of hairs on each side. Floral-leaves 2, opposite, fringed. Petals with 2 lobes, flesh-coloured. Linn. Leaf-stalks 2 or 3 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. Cal. segments 2, furnished with long teeth on both edges, 2 without, and the 5th with teeth on one edge. Petals red, sometimes nearly white; 1 lobe larger than the other.


RU'BUS. Cal. 5-cleft: petals 5: styles from the top of the germens: drupa clustered, 1-celled, fixed to a conical receptacle so as to resemble a berry.

(1) Shrub-like.

idaeus. R. Leaves winged, with 5 or 3 leaflets: stem prickly: leaf-stalk channeled.

* A perfumed water may be distilled from the blossoms. The pulp of the berries, beat up with sugar, makes the conserve of hips of the London Dispensatory. Mixed with wine it is an acceptable treat in the north of Europe. Several birds feed upon the berries. The leaves of every species of rose, but especially of this, are recommended in the Epb. nat. curiosor, 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.

It is a difficult matter to say which are species, and which are varieties only, in this genus: Linnaeus seems to think that there are no certain limits prescribed by nature.

The different species nourish the following insects: Phalaena Salicella, Pavania, Libatrix, Retularia; Tenithrode Rosæ, Cynosbati; Ichneumon Bedeguaris; Cicada Rose; Apbis Rosæ; Scarabæus auratus; Musca pellecent; and those moss-like prickly excrescences, which are frequently found upon the branches of roses, especially upon the last species, are the habitations of the Cynips Rose. This excrescence was formerly in repute as a medicine, and was kept in the shops under the name of Bedeguar. An infusion of the full blown blossoms of all the roses, especially the paler kinds, is purgative; but the petals of the red roses, gathered before they expand, and dried, are astringent.
ICOSANDRIA. POLYGYNIA. Rubus. 459

Fl. dan. 788—Woodw. 138—Clus. i. 117—Dod. 743. 1—Lob. obs. 619. 2—Ger. em. 1272. 2—J. B. ii. 59. 2—Lonic i. 41. 2—Park. par. 559. 1—Trag. 973—Ger. 1089. 1—Matth. 1010.

Stems upright, or slightly bent, green, 2 feet high, biennial, producing fruit the 2d year, after which they die down, thick set with small prickles. Leaves serrated, cottony underneath. Fruit-stalks rough with hair. Linn. Blossoms white. Berry red.


S. May, June.*

R. Leaves 3 together almost bare; lateral leaves 2-lobed: cæ’siuns. stem prickly, cylindrical: panicle few-flowered. Woodward.

E. bot. 826—Dod. 742. 2.

Stem 3 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 leaflet egg-shaped, the lateral ones with generally 2 lobes. Linn. Fruit-stalks round, downy, long, with from 1 to 3 flowers, sometimes prickly. Fruit composed of fewer and larger granulations from 1 to 5. Woodward. Blossoms white. Fruit bluish black.

Dew-berry Bush, or Bramble. Woods and hedges, [and balks of cornfields. Mr. Woodw.] S. June, July.

R. Leaves winged, with 3 or 5 leaflets: stem and leaf-frutico’sus. stalks prickly: panicle oblong. Woodward.

E. bot. 715—Fl. dan. 1163—Mill. ill.—Schmied. 2—Blackw. 45. 7—Kniph. 5—Matth. 1009—Dod. 742. 1—Lob. obs. 619. 1, ic. ii. 211. 2—Ger. em. 1272. 1—Park. 1013—Fuchs. 152—Trag. 970—Ger. 1089. 2—J. B. ii. 59. 1—Lonic. i. 41. 1.

Stem angular, very long, with runners often several times the

* 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 it is inferior to the Strawberry. The white berries are sweeter than the red, but they are generally contaminated by insects. The fresh leaves are the favourite food of kids.
height of a man in length, spreading and climbing far and wide, and sometimes striking root; prickles alternate, strong, bowed back. Leaves sharply and unequally serrated, either green on both sides, or white and cottony underneath; the middlemost leaf largest, heart-shaped, on a leaf-stalk, the rest sitting, the lowermost very small, pointing backwards. Link. Leaves, the lower 5-fingered, the upper 3-fingered, and sometimes simple or with 2 or 3 lobes. Petals flaccid, white, or purplish. Granulations about 0. Hall. Stems always angular; prickles always strong and hooked. Leaves 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 long leaf-stalk, the next pair on short leaf-stalks, the lower on shorter leaf-stalks, and sometimes, though rarely, sitting. Mr. Woodward. Prickles broad at the base and flattened. Fruit black.

Var. 2. major. Leaves 3-fingered and 5-fingered. Woodw.

E. bot. 827—Blackw. 45. 1—Park. 1014. 2, but the fruit on the left hand side is that of R. fruticosus.

Stems roundish; when growing in hedges frequently stronger and larger than the R. fruticosus, but in ditches not larger than R. casius, and throwing out creeping runners; prickles smaller than those of var. 1, slightly bent, but not hooked. Leaves bright green above, beneath pale and slightly hairy, but never downy; the odd leaflet largest, on a long leaf-stalk, and, in the 5-fingered ones the 2d pair on very short leaf-stalks, egg-spear-shaped, pointed, broad at the base, sometimes slightly heart-shaped, cut-serrated, and more deeply and irregularly jagged than in var. 1; in the 3-fingered ones the lateral leaflets lobed. Fruit-stalks roundish. Flowers smaller, and later than those of var. 1, often abortive. Fruit with few and large granulations, and, when ripe, covered with a bloom. Dill. in R. Syn. 467, seems to have been clear that there were 2 sorts of Great Bramble, but he has not well ascertained their differences. This will probably prove to be a distinct species: a similar opinion has been lately expressed by Dr. Smith, who proposes to illustrate it by the name of R. corylifolius. It is remarkable that the segments of the calyx in this plant are clasped inwards upon the fruit, whilst in the R. casius they are expanded. I wish it to be determined by examination, if the segments of the calyx of the fruit are not always bent inwards and clasping the fruit in this plant, always expanding in the R. casius, and always reflected back in R. fruticosus. Woodward.


Var. 3. Fruit white. Bark and leaves of a pleasant green.


(2) Herbaceous.

R. Leaves 3 together, naked: shoots creeping, herbaceous. saxat'ilis.

Linn. Lower-leaves sometimes 5 together. Dr. J. E. Smith.

Fl. dan. 134—Clus. i. 118. 1—Ger. em. 1273. 4—Ger. 1090. 3—Park. 1014. 4—f. B. ii. 61.

Shoots thread-shaped, very long, dying down at the end of the year, rough with hairs, and often beset with weak thorns. Granulations of the berries distinct. Linn. Leaves generally 1 on a leaf-stalk, and the rest sitting, sometimes all on leaf-stalks, sometimes all sitting; cut-serrated, pale green, slightly hairy underneath. Fruit composed of a few large granulations, when ripe of a beautiful clear pink, and a pleasant sub-acid flavour. Bloss. purple or white. Mr. Woodward.


R. Leaves 3 together: stem without prickles, supporting a arcticus. single flower.

Fl. lapp. 5. 2—Fl. dan. 488.


This species is said lately to have been discovered in the Highlands of Scotland.

R. Leaves simple, lobed: stem without prickles, with 1 Chamae-flower: Male and female flowers on different plants. mo'rus.

E. bot. 716—Fl. dan. 1—Fl. lapp. 5. 1—Lightfs. 13. at p. 266—Park. 1014. 7—Ger. 1368—Ger. em. 1420.

Male and female flowers on different plants, but Dr. Solander discovered the roots of the 2 plants to be united under

* The berries, when ripe, are black, and do not eat amiss with wine. The green twigs are of great use in dying woollen, 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.
ICOSANDRIA. POLYGYNIA. Fragaria.

ground. Linn. Stem hardly a foot high. Bloss. white, or purple. Berries red.


P. May, June.

FRAGARIA. Calyx 10-cleft; petals 5; seeds naked, smooth, on a receptacle which is egg-shaped, coloured, deciduous, resembling a berry.

ves'ca.

F. Leaves 3 together: runners creeping.

Blackw. 77. 1—Ludw. 136—Kniph. 8—Sheildr. 3. 6—Dod. 672.


7—Euch. 853—J. B. ii. 395. 3—Trag. 500—Lonic. i. 215. 1.

When growing in woods the segments of the calyx cut at the point. Reich. Wires long, slender, smooth, often tinged with purple. Leaf-stalks woolly. Leaves, leaflets 3, egg-shaped, serrated. Fruit-stalks with 2 or more flowers. Bloss. white. Fruit red.

Strawberry. Hedge banks, &c.


Hyde Park; Hampstead Wood. Merret.

Var. 3. Fruit white.

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

* 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 up 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. In the Highlands of Scotland also they are sometimes brought to table with the dessert. The Papilio Rubi, Phalana Pavonia, Rubi, Fasculina, and Sambucaria, are nourished by the different species.

† The berries, either eaten alone, or with sugar, or with milk, are universally esteemed a most delicious fruit. They are grateful, cooling, sub-acid, juicy, and have a delightful smell. Taken in large quantities they seldom disagree. They promote perspiration, impart a violet scent to the urine, and dissolve the tartarous incrustations upon the teeth. People afflicted with the gout or stone have found great relief by using them largely, and Hoffman says, he has known consumptive people 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. The Cicada Spumaria (Cuckow-spit) is very frequently found upon the leaves, and the Coccus Polonicus upon the roots.
This has been supposed to be the common stock from which all the different sorts cultivated in gardens are derived, but one of the garden sorts with a very large berry, called the Hautboy Strawberry, the var. β of Linn. bears male and female flowers on different plants.

F. Stem prostrate, without creeping runners.


Shoots thick, depressed, covered with spear-shaped stipules of the colour of rusty iron. Leaves growing by threes, 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.

Mr. 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. Gmelin considers it as a Comarum, and calls it C. fragarioides.


P. April, May.

POTENTIL'IA. Calyx 10-cleft: petals 5: seeds roundish, naked, wrinkled, fixed to a receptacle, which is small, juiceless, spongy, tubercled.

(1) Leaves winged.

P. Leaves winged: stem shrub-like.


Whole plant set with fine silvery hairs. Stems reddish. Leaflets strap-spear-shaped, turned back at the edges, dark-green above, pale underneath. Leaves hardly to be called winged, consisting of 2 pairs set crosswise, rising from the same point, with a terminating one divided down to the base into 3 open segments. Bloss. yellow.

Shrubby Cinquefoil. On the south banks of the Tees below Thorpe, and Eggleston Abbey, and also near Greta Bridge and Mickle Force Teesdale, Yorkshire. Ray. Mr. Robson assures me that it still grows in great abundance upon these spots.

S. June.*

* 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.
ICOSANDRIA. POLYGYNIA. Potentilla.


Cur. 203—Fl. dan. 544—Matth. 1016—Dodd. 600. 1—Lob. ic. i. 693. 1, obs. 395. 1—Ger. em. 993—Park. 593—
Ger. 841—Pet. 41. 11—Fuchs. 619—J. B. ii. 398. b—
H. ox. ii. 20. row 2. 4—Trag. 480—Lonic. i. 240. 2—
Blackw. 6.

With long creeping runners. Leaves silvery and white underneatb; leaflets curiously folding themselves up. Receptacle hairy. Bloss. yellow.

Silver-weed. Wild Tansey. Goose-grass. Goose Tansey. Sides of paths and roads, and in low pastures, especially where water has stood during winter.
P. June, July.*

rupes'tris. P. Leaves winged, and by threes: stem upright, without creeping runners.

Jacq. austr. 114—Curt. ii. 107. 1—Ger. em. 991—Park. 397—
7—Pet. 41. 6—J. B. ii. 598. d. 2—H. ox. ii. 20. row 1. 1—
Knipb. 11. very luxuriant.


On the sides of Craig Wreidhin, Montgomeryshire. P. July.

(2) Leaves with finger-like divisions.

argen'tea. P. Leaflets 5 together, wedge-shaped, snipt, cottony underneath: stem upright.

E. bot. 89—Fl. dan. 865—Matth. 1020—J. B. ii. 398. e. 1—
H. ox. ii. 19. 11.

Stems numerous, wood-like, 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 5 divisions; segments wedge-shaped, entire towards the base but wing-cleft towards the ends. Floral-leaves with 1 or 3 strap-shaped entire segments. Cal. downy, as long as the blossom. Petals small, yellow, soon shedding. Mr. Robson.

Silvery or hoary Cinquefoil. Meadows and pastures in a gra-

* The leaves are mildly astringent. Dried and powdered they have been given with success in agues. The usual dose is a meat spoonful of the powder every 3 hours between the fits. The roots in the winter time eat like parsneps. Swine are fond of them. Cows, horses, goats, and swine eat it. Sheep refuse it.
VELLY soil. [Side of the turnpike road in the parish of Holt Castle, Worcestershire. Mr. BALLARD.—On Blackheath. Mr. JONES. About Harrowgate plentiful. Mr. ROBSON.] P. June. Sept.

P. Leaflets 5 together, serrated at the end; points of the al’ba. serratures approaching to the margin: stem thread-like, trailing: receptacles hairy.

*Jacq. austr. 115—Kniph. 8—Clus. ii. 105. 1—Ger. em. 989. 10—Park. 396. 2—J. B. ii. 398. e. 2—Trag. 507—Ger. 839—Fuehs. 623—J. B. ii. 398. e. 1.*

Leaflets entire, except towards the end; serratures 5 to 7, slightly downy above, underneath paler and more downy, with the veins and edges white with a silky down. Leaf-stalks downy. Fruit-stalks long, slender, downy, 1-flowered. Petals white, inversely heart-shaped, as long as the calyx. WOODWARD. *White Cinquefoil.* In Wales. P. July, Aug.

P. Leaflets 5 together; stem creeping; fruit-stalks 1-flowered. rep’tans.

*Fl. dan. 1164—Kniph. 7—Lud. 116—Curt.—Woodw. 59—Walc.—Lonic. i. 216. 2—Fuehs. 624—J. B. ii. 397—Lonic. i. 216. 1—Blackw. 454—Mattb. 1018—Ger. 836. 1—Dod. 116. 1—Lob. ii. 690. 1. obs. 393. 3—Ger. em. 987. 1—Pet. 41. 3—Park. 399. 1—H. ox. ii. 19. 7.*

Stem and fruit-stalks cylindrical. Leaves, segments ending in purplish points; leaflets sometimes 3. Flower-scales spear-egg-shaped, in pairs. The Tormentilla reptans has been thought a var. of this, but not to mention other differences, the Potentilla reptans has a creeping stem striking out roots at the joints, but the Tormentilla reptans a trailing stem not striking root. M. AFZELIUS.


P. Root-leaves 5 together, sharply serrated, dented at the ver’na. end: stem-leaves 3 together: stem declining.

*E. bot. 37—Kniph. 8—Allioni 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, very much branched, thread-like, scarce perceptibly sprinkled with hairs, with many flowers. Leaf-

* The red cortical part of the root is mildly astringent and antiseptic. A decoction of it is a good gargle for loose teeth and spongy gums.—Horses, cows, goats, and sheep eat it.

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scales entire, broad, pointed, growing to the leaf-stalk. Leaf-stalks long, somewhat hairy. Leaflets sitting, naked, deeply serrated towards the end, with the serratures somewhat hairy; the uppermost with shorter serratures, and, as it were, dented at the end; the lateral ones shorter, broader, and often cleft. Floral-leaves broader than the leaf-scales, with often 3 sitting-leaflets. Fruit-stalks solitary, long, somewhat hairy. Petals yellow, nicked, with sometimes a tawny spot at the base, sometimes without. Stam. and Pistils yellow. Plant when grown to maturity nearly smooth. Whole plant beset with soft, shining, silky hairs. Root-leaves roundish, on long leaf-stalks; leaflets wedge-shaped, sitting, serrated, and truly dented at the top, entire downwards, the upper one the largest. Stems numerous, Stem-leaves 3-cleft. Leaf-scales in pairs, spear-shaped, embracing the stem. Fruit-stalks terminating, and axillary, long, slender, each with 1 flower. Fl. leaves spear-shaped. Cal. segments not very unequal, half as long as the blossom. Petals inversely heart-shaped. Woodward.


E. bot. 561—Fl. dan. 114—Hall. hist. t. 21, right hand fig.; enum. 6. 4—Clus. ii. 106. 3—Ger. em. 989. 9—Park. 399. 4—F. B. ii. 398. a. 2—Pet. 41. 4.

Petals bright yellow, with an orange-coloured blotch at the base. Leaves with 3 or 5 segments at the end, but not dented as in the P. verna.

Pastures near Kippax, 3 miles from Pontefract. Ray. [Rocks of Malghyrdy, Ben Teskerney, Ben Lawers, and Craig Cailleach. Mr. Brown.] P. June, July, Aug. Mr. Curtis thinks that Ray’s plant is no other than the P. verna. It was inserted in the Fl. angl. as the P. opaca, but Mr. Afzelius convinced me that the plant found in our Botanic Gardens under that name is really the P. aurea. It has been suggested that this latter is only a var. of P. verna, but its habit is very different.
TORMENTILLA. Cal. 8-cleft: petals 4: seeds roundish, naked, fixed to a small juiceless receptacle.

T. Stem somewhat ascending: leaves sitting. 


Several highly respectable Botanists have thought that the Potentilla and Tormentilla ought to constitute but one genus, the only difference consisting in the number of the petals and of the clefts of the calyx; but after mentioning this circumstance, I think their present disposition more favourable for investigation. Unwilling as we are to change a Linnaean name, his epithet erecta (upright) given to the present species, is so very erroneous, and so calculated to mislead, that we have chosen with Mr. Curtis to call it T. officinalis.


T. Stem trailing: leaves on leaf-stalks.

All the leaves on leaf-stalks. Stipules spear-shaped, generally on short leaf-stalks, serrated upwards, entire at the base; the upper frequently 3-cleft. Stipule spear-shaped, entire, with 2 or 3 clefts.

When cultivated in a garden, it frequently varies with 4 and 5 petals, which probably induced Mr. Hudson to think it a var.

* 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.
of Potentilla reptans. If a var. of any thing, it must be of Tor- 
mentilla officinalis, but I believe it to be a distinct species. 
WOODWARD. In a garden sometimes producing 5 petals, and 
10 clefts in the calyx, which confirms the opinion of those who 
maintain that Potentilla and Tormentilla are not distinct genera. 
Independent of the generic character, this species, as Mr. Afze- 
lius remarked to me, differs from the 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. 

Woods and sandy barren pastures. [About Manchester. Mr. 
CALEY. Lakenham, near Norwich. Mr. CROWE. Berkham- 
stead, Herts. Mr. WOODW.] P. June, July.

uru'num. G. Flowers upright: fruit globular, woolly: awns hooked, 
Ait. H. Kew.

Ludw. 36-Curt. 113-Knph. 9-Blackw. 253-Walc.-Fl. 
dan. 672-Fuchs. 384-Woodw. 259-Pet. 40. 1-Ger. 842, 
1-Matth. 984-Clus. ii. 202. 2-Dod. 137. 1-Lob. ic. 693, 
26, row 2. 1 and 2.

Stem somewhat angular. Leaves winged, hairy, with 2 pair 
of leaflets; the lower pair circular, jagged and toothed, unequal; 
the upper pair egg-spear-shaped, jagged and toothed; and an 
odd one larger than the rest, frequently cloven into 3 segments. 
The 1st pair Linnæus considers as stipulae. Petals yellow. Ger- 
mens hairy. Styles smooth, purple, with a double flexure towards 
the end.

Common Avenz, or Herb Bennet. Woods and hedges. 
P. June—Aug.*

Var. 2. large-flowered. Huns.—Fuchs. 385-Trag. 37. 
Tedford Wood in the Welds, Lincolnshire, and in Cam- 
bridgeshire. Ray.

riva'le. 

D. Flowers nodding: fruit oblong: awns feathered, twisted: 
petals blunt, roundish wedge-shaped: leaves winged. 
Ait. H. Kew.

E. bot. 106-Fl. dan. 722-Knph. 1-Lob. ic. i. 694-Clus. ii.

* The roots, gathered in the spring, before the stem grows up, and 
put into ale, give it a pleasant flavour; and prevent its going sour. In- 
fused in wine it is a good stomachic. Its taste is mildly austere and aro-
matic, especially when it grows in warm dry situations; but, in shady 
and moist places, is has little virtue. Cows, goats, sheep, and swine eat 
it. Horses are not fond of it.
ICOSANDRIA. POLYGYNIA. Dryas.

203. 1—Ger. em. 995. 4—Pet. 40. 3—H. ox. iv. 26. 7—
J. B. ii. 398. n. 2.

Anns hairy. Linn. Upper-leaves with 3 or 4 lobes. Leaf-scales undivided, or jagged. Fruit-stalks purplish, becoming less bent when the seeds ripen. Cal. oblong, flat at the base, greenish purple, cloven half way down. Bloss. streaked, of a dilute deadish red.

Water Anns, or Bennet. When cultivated in a dry soil the flowers are apt to become double, or proliferous.

Var. 2. Flowers double; sometimes proliferous. Mr. Robson.

Moistish mountainous pastures about Settle, and Ingleton, in Yorkshire. Ray. Curt.—And about Snowdon. [Sides of rivers and mountains in the north, common. Mr. Wood.—Near Norwich. Mr. Pritchford.—Marsham, near Swaffham. Mr. Woodward.—Water of Leith, near Edinburgh.—County of Durham, common. Mr. Robson.—In a meadow at Aldridge, plentiful. Mr. Pitt.]

P. June, July.

G. Flowers large, yellow.—Dr. Smith conjectures this to be a hybrid between G. rivale and urbanum. Its awns are hairy as in the former, its habit, colour, and size more resembling the latter.

Mr. Robson says, "I have cultivated this Geum some years, and find no alteration with it. I saw it this spring in Mr. Curtis's garden, named G. intermedium, where it has been long cultivated, and Mr. Curtis agrees with me in opinion that it is a distinct species."

[Near Darlington, frequent. Mr. Robson.—About half a mile from Sawlow, on the road to Giggleswick, Yorksh. Mr. Caley.—At Matlock, Dr. Smith. E. bot.]

D. Petals 8: leaves simple.

E. bot. 451—Penn. hebr. 33. at p. 285—Fl. dan. 31—Chus. i. 351. 2—Ger. em. 659. 6—Ger. 533. 4—Lob. adv. 209, ic. i. 495. 1—Gisek. iii. 66—Lob. obs. 260. 2, ic. 495. 2—Park. 106. 1.

Dry'as. Cal. 5 or 10-cleft: petals 5 or 8: seeds with tails, formed by the feathered style: receptacle broad and flat.

Octopet'ala.

* 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 ropy malt liquor. St.
Leaves very blunt, and almost nicked. Root-leaves egg-shaped, bent back at the edge, perennial, white underneath. Stalk bare, with 1 flower. Blossoms flat, falling off, of a snowy white. Seeds oblong. LINN.


COMARUM. Cal. 10-cleft, permanent; segments alternately smaller: petals 5; seeds naked, smooth: recept. globular: fleshy, woolly, permanent.

carus. C. Leaves winged: petals smaller than the calyx.

Dicki. b. l.—Kniph. 9—Fl. dan. 636—E. bot. 172—Ger. 836. 4—J. B. ii. 398. c. 2—Dodd. 117. 2—Lob. ic. 691. 1—Ger. em. 987. 4.

The calyx, petals, stamens, styles and receptacles of a dark red purple, approaching to blackness.


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.

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

CLASS XIII.

POLYANDRIA.

MONOGYNIA.

(1) Petals 4.
PAPA'VER. Calyx 2-leaved: Capsule 1-celled; crowned.
CHELIDO'NIUM. Calyx 2-leaved: S. vess. a long Pod.
ACTÆ'A. Calyx 4-leaved: Berry 1-celled: Seeds in a double row.

(2) Petals 5.
CIST'TUS. Caps. nearly globular: Cal. 5-leaved: 2 leaflets smaller.
TIL'IA. Caps. 5-celled; like leather: Seed 1: Cal. deciduous.
[Delphinium Consolida.]

(3) Petals many.
NYMPHÆ'A. Berry many-celled; outer coat like bark: Cal. large.

DIGYNIA.

POTE'RIUM. Flowers M. and F. on the same plant. Cal. 4-leaved: Bloss. with 4 divisions.
F. Berry formed of the indurated tube of the blossom.

TRIGYNIA.

DELPHIN'IUM. Cal. none: Bloss. 5 petals; upper petal horned-shaped behind: Nectary cloven; sitting.
[Chelidonium hybridum. Reseda Luteola.]

TETRAGYNIA.

[Myriophyllum verticillatum.]
POLYANDRIA.

PENTAGYNIA.

AQUILE'GIA. Cal. none: Bloss. 5 petals: Nectaries 5; horned in the lower part.

[Hepatica nobilis.]

HEXAGYNIA.

STRATIOTES. Cal. with 3 divisions: Bloss. 3 petals: Berry 6-celled; in a sheath.

[Hepatica nobilis.]

POLYGYNIA.

ZOSTE'RA. Spike-stalk strap-shaped; bearing fruit on one side: Cal. none: Bloss. none: Stam. alternate: Seed solitary; alternate.

CLEM'ATIS. Cal. none: Bloss. 4 petals: Seeds many; awned.

THALIC'TRUM. Cal. none: Bloss. 4 or 5 petals: Seeds many; awnless; naked.

A'RUM. Sheath 1 leaf; cone-shaped: Sheath-Fruit-stalk, naked above; bearing Pistils below, and Stamens in the middle.

HELLEB'ORUS. Cal. none: Bloss. 5 petals; permanent: Nectaries many: Caps. many seeded.

CALTHA. Cal. none: Bloss. 5 petals: Caps. many: Nectaries none.

ANEMO'NE. Cal. none: Bloss. 6 petals: Seeds many.


SAGITTA'RIA. Flowers M. and F. on the same plant. Cal. 3 leaves: Bloss. 3 petals.

M. Filaments about 24.

F. Seeds many; naked.

RANUN'CULUS. Cal. 5 (or 3) leaves: Bloss. 5 (or 8) petals: Seeds many: Petals with a Nectary in the claw.

ADO'NIS. Cal. 5 leaves: Bloss. 5 or 10 petals: Seeds many: angular; covered with a thick skin.

[Nymphaea alba. Papaver somniferum.]
POLYANDRIA. MONOGYNIA. Actæa.

MONOGYNIA.

ACTÆ'A. Bloss. 4 petals: cal. 4 leaves: berry 1-celled: seeds semi-circular.

A. Bunch egg-shaped: fruit berry-like.

**Blackw.** 565—Fl. dan. 498—Clus. i. 86. 2—Dod. 402. 1—Lob. obs. 389. 1. and ic. i. 682. 1—Ger. em. 979—Park. 379. 1—Ger. 829—H. ox. i. 2. 8—F. B. iii. 660. 1.

**Petals** rhomb-shaped, flat, membranaceous. **Linn. Blossoms** white. **Berries** black.

**Herb Christopher. Bane-berries.** Woods and shady places. Near Malham Cove, and in a wood near Clapham, Yorkshire. [Whitfell Gill, or Arthur's Foss, near Askrig, Yorkshire. **Curt.** On Ingleborough: Mr. **WOODWARD.** And in the fissures of the very curious natural pavement of limestone at the foot of it. **St.** About 'Thorpe Arch, and in Wensley Dale, near Askrig, Yorks. Mr. **Wood.**] P. May, June.*

CHELIDONIUM. Bloss. 4 petals; cal. 2 leaves: pod strap-shaped; receptacle of the seeds (generally) lattice-like.

**C.** Fruit-stalks forming umbels.

**Ludw.** 132—Kniph. 8—Fl. dan. 542—Woodw. 263—Blackw. 91—Mill. 92. 1—Walc.—Fuchs. 865—F. B. iii. 482—Trag. 107—Ger. 911—Clus. ii. 203. 1—Dod. 48—Lob. obs. 440. 1, and ic. i. 760. 2—Ger. em. 1069. 1—Park. 617. 1—Lonic. i. 165. 3—Matth. 628—H. ox. iii. 2. row 1. 2.

**Leaves** winged; segments, nearly circular, scolloped. **Flowers** yellow. **Stamens** sometimes not more than 20. **Seed-vessel** cylindrical, but compressed.

**Greater or Common Celandine.** [Hedges, rough shady places, on rubbish and uncultivated ground.] P. May—July.

**Var.** 2. Jagged-leaved.

**Kniph.** 8, **first fig.**—Fl. dan. 676—Mill. 92. 2—F. B. iii. 483—Clus. ii. 203—Ger. em. 1069, 2—Park. 617. 2.

* The 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 shady places, and toads are fond of damp and shady situations. Sheep and goats eat it; cows, horses, and swine refuse it.
C. *laciniatum*. Leaves with 5 lobes. Lobes narrow, sharply jagged.

Mill. who, during the cultivation of it for upwards of 30 years, could never perceive any alteration in it. Sr. Among the ruins of the Duke of Leeds's seat at Wimbedon.*

**Glau'cium.** C. Fruit-stalks with 1 flower: leaves embracing the stem, indented: stem smooth.

* Fl. dan. 585—E. bot. 8—Fuchs. 520—F. B. iii. 398—Kniph. 4—Trag. 123—Clus. ii. 91. 1—Dod. 448—Lob. obs. 141. 1. and ic. i. 270. 2—Ger. em. 367. 1—Ger. 294. 1—Pet. 52. 7—Matth. 1061—Lonic. i. 82—H. ex. iii. 14. 1. f. 1—Park. 262. 1 and 2.

Plant sea-green. Leaves roughish; root-leaves with winged clefs; those of the stem only lobed. Bloss. yellow. Pods rough, separated by a partition into cells. Linn. Stem much branched. Stem-leaves embracing the stem, deeply indented, rough above, smooth beneath. Branches forked. Fruit-stalks thick, slightly hairy, with 1 or 2 flowers. Cal. large, oval, hairy. Petals large, egg-shaped, yellow. Pods very long, bent in various direction, terminated by an arrow-shaped summit. Woodw. Pods often 10 or 12 inches long.—It is remarkable that a high wind does not affect the petals, and yet it is difficult to pluck the flowers without some of them falling off. Mr. Atkinson.


cornicu'la'-tum. C. Fruit-stalks with 1 flower: leaves sitting, wing-cleft: stem rough with hairs.

* Curt. Glaucium—Clus. ii. 91. 2—Dod. 449. 1—Lob. obs. 141. 2 and ic. i. 271. 1—Ger. em. 367. 2—Ger. 294. 2—F. B. iii. 399. 1.*

Plant sea-green. Root spindle-shaped. Root-leaves in a circle, on short leaf-stalks; wings alternate; indented at the ends, the upper ones largest, the terminating ones broad, blunt, with 3 or 4 indentures, hairy. Stem slightly hairy, furrowed,

* The juice of every part of this plant is yellow and very acrimonious. It cures tetter's and ringworms. Diluted with milk it consumes white opaque spots upon the eyes. It destroys warts and cures the itch. There is no doubt but a medicine of such activity will one day be converted to more important purposes.
forked, branched. Stem-leaves half embracing the stem, alternate. Fruit-stalks terminating, and from the bosom of the upper leaves, slightly hairy, with sometimes 1 or 2 leaves, similar to those of the stem but smaller. Petals oval, deep orange, veined, with an elliptical purplish spot at the base of each. Caps. very long, nearly straight, terminated by a blunt knob, very hairy.

**WOODWARD.**

*Red Celandine.* Sandy corn fields, Norfolk, discovered by Mr. Stillingfleet. A. July, August.

C. Fruit-stalks with 1 flower: leaves wing-cleft: segments strap-shaped: stem smooth; pod with 3 valves.

_E. bot._ 201–*Kniph._ 10–*Clus._ ii. 92, 2–*Dod._ 449, 2–*Lob._ 141, 3, and *ic._ 272, 1–*Ger._ *em._ 367. 4–*Park._ 264. 3–*f._ *B._ iii. 399, 2–*Pet._ 52. 8–*H._ *ax._ iii. 14, 2, *f._ 2.


*Papaver caule ramoso,* &c. *Hort._ *ups._ 136. n. 2. y. *St._


**PAPAVER.** Bloss. 4 petals: cal. 2 leaves: summit target-shaped, radiated, scollopixed; caps. (often) many celled, opening with holes underneath the permanent summit.

P. Capsule nearly globular, knobby, bristly: stem leafy, *hybridum._ many-flowered.

_E. bot._ 43–*Lob._ *obs._ 144. 1, and *ic._ i. 276, 1–*Ger._ *em._ 373, 1–*Park._ 369, 1–*f._ *B._ iii. 396, 1–*Pet._ 52. 5–*H._ *ax._ iii. 14, 9–*Ger._ 300. 1.

Caps. with 6 furrows like a melon. *Summit 6-cornered._ Linn._ Furrows from 6 to 10. *Summit, rays as many. Mr._ Robson. Leaves doubly, wing-cleft; segments strap-shaped, nearly equal, the terminating one 3-cleft; nearly smooth above,
nerves underneath with strong hairs pointing upwards. Branches
and fruit-stalks channelled, with strong hairs pointing upwards.
Capsules roundish-oval. Woodw. Petals small, dark dirty
Mr. Pitchford. At Wells, Norf. Mr. Crowe. About Durham.
Mr. Robson.]

A. June, July.


E. bot. 643-Fl. dan. 867-Curt. 313-7. B. iii. 396. 2-Lob.
obs. 144. 2, and ic. 1. 276. 2-Ger. em. 373. 2-H. ox.
iii. 14. 10-Pet. 52. 6-Ger. 300. 2.

Leaves with 3 divisions, wing-cleft. Fruit-stalks rough.
Calyx hairy. Linn. Leaves winged; wings opposite, decur-
rent, spear-shaped, deeply wing-cleft, terminating one 3-cleft;
nearly smooth above, nerves and leaf-stalks rough underneath with
diverging hairs. Stems and fruit-stalks with hairs pointing up-
wards. Petals wedge-shaped, narrow. Caps. elliptical, ribbed,
set with strong hairs. Woodw. Root-leaves with a broad mid-
rib, set with 3 or 4 pair of wings, and an odd one, each of which
is cloven into 3. Petals inversely egg-shaped, scarlet, with a
black spot towards the base, white before the calyx opens. Ger-
men inversely conical. Summit. rays 5 to 8. Caps. cells as
many as rays on the summit; bristles strong, white, pointing
upwards.


maritimum. P. Capsules nearly cylindrical, bristly: stem supporting a
single flower.

Whole plant set with bristly hairs laid flat. Stem-leaves 2,
sitting, wing-cleft. Root-leaves wing-cleft; leaf-stalks longer
than the leaves. Petals wedge-shaped, scarlet, black at the
base. Sent to me by Mr. Atkinson, from Roosebeck, where it
grows in great abundance in a sandy soil, and hath, he says, in-
variably only 1 flower upon a plant. I collected similar speci-
mens by the sea side at Weymouth in May. All the plants I
have seen are only about 4 inches high. If when cultivated in a
good soil it still continues to bear only a single flower, there can
be no doubt of it being a distinct species. In reply to my fur-
ther enquiries, Mr. Atkinson says, "The Poppy with 1 flower
upon a plant I have seen growing in gardens near the coast very
luxuriantly, with this difference only, that the leaves are not
quite so rough as when growing upon the sand banks."

A. June, July.

Rhaeas. P. Capsules smooth, urn-shaped: stem hairy, many-
flowered: leaves wing-cleft, jagged.
POLYANDRIA. MONOGYNIA. Papaver.

Curt. 215—E. bot. 645—Blackw. 560—Ludw. 17—Kniph. 5, the 2d fig.—Woodw. 186—Fuchs. 516—Trag. 120—Ger. 299. 1—Lonic. i. 81—H. ox. iii. 14. 6—Dod. 447—Lob. obs. 143. and ic. i. 275—Ger. em. 371. 1—Park. 366. 4—Pet. 52. 2—Matth. 1057—Blackw. 2.

Stem, hairs expanding. Linn. Leaves hairy: leaflets strap-shaped, indented, serrated. Fruit-stalks long; hairs expanding. Lyons. Stem cylindrical, branched. Capsule not globular but urn-shaped, and nearly as broad as it is long. Summit with 10 or 12 rays. Bloss. bright full scarlet.


A variety frequently occurs with an oval shining black spot at the base of each petal, 4 lines long and 3 wide. From this originate many beautiful varieties frequent in gardens. Woodw.

P. Capsules oblong, smooth: stem many-flowered: du'gium. fruit-stalks with bristles laid to: leaves wing-cleft, snipt.


Stem 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 6 to 10. Petals dilute scarlet. A strict attention to the proportionate length and breadth of the capsule, and to the hairs on the fruitstalk being laid close or expanding, will always distinguish this species from the P. rhasing.


Var. 2. shaggy. Whole plant very hairy: segments of the leaves snipt.

Fl. dan. 902.

This seems to be an intermediate plant between the P. rhasing and the P. dubium, if it be not a distinct species. The bristles on the fruit-stalks are laid close as in the latter, but the segments of the leaves are very much snipt at the edges. The calyx is studded with large transparent globules, with a taper bristle springing out of each. The capsule is nearly twice as long as it is broad, so that it is longer than in the P. rhasing, but shorter than in the P. dubium.

[About Shanklin Chine, and in pastures in various parts of the Isle of Wight.] A. June.

* The petals give out a fine colour when infused, and a syrup prepared from the infusion is kept in the shops. It partakes in a small degree of the properties of opium.
POLYANDRIA. MONOGYNIA. Nymphaea.

somni'ferum. P. Calyx and capsules smooth: leaves embracing the stem, jagged.


Stem, leaves, calyx, and capsule smooth. Summits 10. Linn.

Petals white, tinged with purple, with large deep purple blotches at the base. Ray.


A. June, July.*

cam'bricum. P. Capsules smooth, oblong: stem many-flowered, smooth: leaves winged, jagged.


Summits 5 or 6, distinct. Capsules oblong, narrower below, with a kind of beak at the end. Linn. Leaves winged, nearly smooth; root-leaves on very long hairy leaf-stalks; wings 2 or 3 pair, oval-spear-shaped, deeply cut, almost lobed, the terminating one with 3 lobes; stem-leaves on short fruit-stalks, the upper sitting. Fruit-stalks slightly hairy, with 1 flower. Petals egg-shaped, pale yellow, scored towards the base. Woodw.

Yellow Poppy. Mountains of Wales, and about Kendal. [By the Ferryhouse on Winander Mere, Westmoreland, and near Holker, Lancashire. Mr. Woodward.] P. June—August.

NYMPHÆ' A. Bloss. many petals: cal. 4 or 5 leaves: summit round, flat, sitting: berry superior, lopped, many-celled.

lute'a. N. Leaves heart-shaped, very entire: calyx 5-leaved, much larger than the petals.

* 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 seed-vessels. 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. A syrup, made with a decoction of the heads, is kept in the shops, under the name of Diacodium. The seeds are sometimes used to make emulsions, but they have nothing of the narcotic virtues of the other parts of the plant.
Fl. dan. 603—Blackw. 497. a and b, and 499. 1—E. bot.
159—Lonic. i. 177. 2—Kniph. 8—Fuchs. 536—Trag. 697—
J. B. iii. 771—Matth. 894—Clus. ii. 77. 2—Dod. 585. 2—
Lob. obs. 324. 2. and ic. i. 594. 2—Ger. em. 819. 2—
Park. 1251. 2—Pet. 71. 3—Ger. 672. 2.

Calyx, leaves roundish. Petals very small. Linn. Leaves
egg-shaped, with a deep notch at the base. Calyx, leaves yellow,
except at the base on the outside, where they are green. Petals fleshly, yellow. Stamen after shedding their pollen bent
back. Seed-vessel, cells often more than 15. Flowers on long
fruit-stalks.

Yellow Water Lily, or Watercan. Slow rivers, pools, and
ditches. [River Avon, at Pershore, Worcestersh. Mr. Bal-
lard. Mr. Waldron Hill.] P. July, August.*

N. Leaves heart-shaped, very entire: calyx 4-cleft.

Fl. dan. 602—Blackw. 498. a and b, and 499—E. bot.
71—Matth. 893—Ger. 672. 1—Clus. ii. 77. 1—Dod. 585.
1—Lob. obs. 324. 1, and ic. i. 595. 1—Ger. em. 819. 1—
Park. 1251. 1—Pet. 71. 1.

Petals in several rows, resembling a double flower. The
flower opens about 7 in the morning; closes about 4 in the after-
noon, and then lies down upon the surface of the water. Linn.
Leaf-stalks and fruit-stalks round; within full of pores, 4 of which
are generally larger than the rest; hairs interwoven between.
Calyx, leaves smaller than the outer petals. Relhan. Summits
17 or 18, placed in a circle, and corresponding with as many
cells in the germen. Stamens fixed to the side of the germen.
St. Leaves oval, with a deep notch at the base. Leaflets nearly
central. Petals numerous, white.

Water-lily. Water-can. Candock. Watersocks. In slow rivers
and ponds. [Marazion Marsh. Mr. Stackhouse. River Stow
near Stafford. In the large pool at Patshull, Staffordsh.

P. July.†

* 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. 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.

† It extends itself by long runners which form a root at the end, and
send up leaf-stalks in deep water. The root is bulbous. It is one of the
most beautiful of the English plants, and may be propagated by transplant-
ing the bulbous roots in winter. Mr. Stackhouse. Botanists often affect to
desire the labours of the florist, who wishes, by multiplying the petals,
to produce double flowers, stigmatising them by the name of monsters.
They may be monsters, but they are often beautiful monsters. Who

does
TIU/A. Bloss. 5 petals: cal. with 5 divisions: seed-vessel leather-like, globular, 5-celled, 5-valved, opening at the base.

Europae'a. T. Flowers without a nectary: berry 4-celled.

Leaves heart-shaped, serrated. Floral-leaf yellowish green, nearly as long as the fruit-stalks, and attached to it for about half its length. Blossoms whitish.


Var. 2. Leaves unequally serrated: fruit cottony: cells 5.

Du Roi.


Var. 3. Fruit 6-cornered.

Whitstable, Surry, and near Darking. Meer.


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, the botanist who turns away with disdain from this splendid object of creation must be fastidious indeed. The petals gradually lessen as they approach the center of the flower, where the outer filaments expanding in breadth gradually assume the form of petals, as is generally the case in the double flowers of our gardens. The roots are used in Ireland and in the island of Jura to dye a dark brown. Swine eat it; goats are not fond of it; cows and horses refuse it. Both the species support the Aphids aquatilis and Leptura aquatica.

* It flourishes best on the sides of hills, but it will live very well in meadow grounds. It is easily transplanted, and grass grows beneath it; it is useful to form shady walks and clipped hedges. The wood is soft, light, and smooth: close grained, and not subject to the worm. It makes good charcoal for gunpowder and for designers. It is used for leather-cutters' boards and for carved work. 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 flowers are fragrant, and afford the best honey for bees. The sap inspissated affords a quantity of sugar. It supports the Sphinx Tilia; Phalaena lanestris, dispar, antiqua, Psi, Bucephala; Aphid Tilia; Acurii telarius.
CISTUS. Bloss. 5 petals: cal. 5 leaves; 2 of them smaller: caps. from 1 to 10-celled; from 3 to 10-valved.

1. Shrub-like; without stipulae.

C. Stems trailing: leaves hairy, opposite, oblong, edges mariformis, rolled back: flowers in bunches.

E. bot. 396-Dill. elib. 145. 173-ſ. B. ii. 18.

Stems numerous. Flowering branches ascending, hairy. Leaves egg-shaped, blunt, opposite, sitting, green on both sides but covered with white hairs. Bunches terminating, with 3 or 4 flowers, with small spear-shaped floral-leaves. Petals yellow, finely scolloped. Mr. Woodward.


2. Herbaceous; without stipulae.

C. Leaves opposite, spear-shaped, 3-fibred: bunches with- gutta'tus, out floral leaves.


Annual Cistus. Sandy pastures on M. Llechlddue, near Ho- lyhead, Anglesea. And in the island of Jersey. Miller.

A. June.

3. Herbaceous; with stipulae.

C. Spreading, woolly: flowers in bunches, upright, pe- salicifo'lius, dicles horizontal.

Clus. i. 76. 2—Lab. obs. 552. 1; and ic. ii. 118. 1—Ger. em. 1280. 17—Park. 661. 7.

Calyx longer than the capsule. Linn. Petals yellow, smaller than the calyx, very soon shedding sometimes wanting. Huds.

Willow-leaved Cistus. Sandy meadows and pastures near Brean-Down, Somersetshire. A. June, July.

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POLYANDRIA. MONOGYNIA. Cistus.

(4) Somewhat shrub-like; with stipulae.

Helian'the- C. Trailing: stipulae spear-shaped: leaves oblong, edges rolled back, somewhat hairy.

Curt.-Knibh. 12—Fl. dar. 101—Walc. 5—Park. 656. 1—Cfur. 1. 73. 1—Lob. ic. ii. 117. 1—Ger. em. 1283. 4—J. B. ii. 15. 2—Lob. ic. ii. 117. 2—Ger. em. 1282. 3—J. B. ii. 16. 1—Ger. 1100. 3 and 2—Matth. 744—Trag. 221.

Petals nearly circular, very entire, deep yellow, with generally a tawny ring surrounding the receptacle. Bunch before flowering nodding. Leaves sprinkled with scattered hairs. Linn. Stems 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 4 at each knot of the stem. Calyx the 3 larger leaves composed of strong green ribs, connected by a semi-transparent dotted membrane; the 2 outer spear-shaped, green, and which are more like floral-leaves. Petals yellow, a little toothed on the outer part. Stam. yellow, Germen silky, white. Style club-shaped, green. Capsule, cell 1, valves 3.


P. June—Aug.

Var. 2. Blossoms white. Gogmagog Hills.

Var. 3. Blossoms rose-coloured.

Var. 4. surrejanus. Huds. C. surrejanus, which see.

Inclined to consider it with Mr. Hudson, as a variety of C. Helianthemum, there being so great a resemblance, and the material difference being only the shape of the petals, and that of the calyx, though the last differs but very little. Woodward.


Dill. elth. 145. 174.

Differs from the preceding only in the petals being more pointed, narrower and reflected, and the leaves being more hairy. Bloss. yellow. C. Helianthemum. & Huds.


polifo'lius. C. Trailing: leaves oblong egg-shaped, hoary: calyx even: petals serrated.
DIGYNIA.

POLYANDRIA. DIGYNIA. Poterium.


Mountain Cistus. Brent Downs, Somersetshire, near the Severn Sea.

P. July.

DIGYNIA.

POTERIUM. Stamens and pistils in different flowers, on the same plant. Calyx 4 leaves: blossom, with 4 divisions.

Male. Stam. 30 to 40.

Fem. Drupa juiceless; beneath; 1 or 2-celled: formed of the indurated tube of the blossom.

P. Thornless: stems somewhat angular.


Barren flower with 2 feeble pistils. Berry dry, angular. Seeds 4-cornered, tapering to each end. Linn. Fem. flowers at the top of the spike. Flowers greenish, sometimes purplish on the outside. The plant has the habit of the Sanguisorba officinalis, and its fruit bears also a near resemblance, but the number and disposition of the stamens, &c. will readily distinguish them.


P. April, May.*

* The leaves and seeds are mildly astringent, and have been used 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. Bot. arr. ed. i. p. 78;—but not answering the farmers expectations, it is now in a great degree laid aside. Cattle are said not to be fond of it, nor is its produce sufficient to answer the expense attending its culture. Curt. On Salisbury Plain, between Salisbury and Everley, this plant forms almost the whole staple of the herbage over a great extent of that most excellent sheep-walk. It is kept sheared.
TRIGYNIA.

DELPHINIUM. Calyx none: petals 5 or 6: nectary cloven, horn-shaped behind: caps. leguminous, many-seeded.


Riv. pent. 124, Delphinium—Kniph. 2—Ludw. 54—Blackw. 26—Fl. dan. 683—Lonic. i. 182, 2—Fuchs. 27—Trag. 569—J. B. ii. a. 210—Dod. 252. 2—Lob. obs. 427. 1, and ic. i. 739. 2—Ger. em. 1083, 5—Ger. 923, 4—Park. par. 279. 3—Dod. 252. 1—Lob. obs. 426, 2, and ic. i. 739. 1. Ger. em. 1082. 1.

Branches round. Leaves divided down to the base into 3 or 5 parts, which are deeply cut into slender strap-shaped segments often forked at the end. Floral-leaves 2, 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, tube projecting backwards and inclosed within the tube of that petal, the upper side thin and skinny, the under green and fleshy. Anthers double, yellow. Germin conical, woolly. Styles none. Summits 2, white, small, fleshy, flatted, and lying close together. Flowers blue, by cultivation white, purple, red, or bay.


sheared very close by the large flocks which pasteur 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 valuable to sheep.

* 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 often become double. Sheep and goats eat it. Horses are not fond of it. Cows and swine refuse it. Phalina Delphi- niwm lives upon it. Linn.
PENTAGYNIA.

AQUILEGIA. Calyx none: petals 5: nectaries 5, horn-shaped, alternating with the petals: caps. 5, distinct.

A. Nectaries bowed inwards, nearly equal to the petals: vulgaris. leaflets all on leaf-stalks, lobes distant, roundish, blunish.

Kniph. 5—Ludw. 181—E. bot. 297—Fl. dan. 695—Mill. ill.—Dod. 181. 1—Lob. obs. 440. 2, and ic. i. 761. 1—Ger. em. 1093. 1—H. ox. xii. 1. row 3. 1—Fuch. 102—Trag. 137—J. B. iii. 484. 1—Park. 1367. 1—Matth. 629—Swart. ii. 8. 9—Lonic. i. 85. 1—Column. phys. 1—Ger. 935. 1.

Stem upright, 3 feet high, branched, somewhat angular. Leaves, the lower on leaf-stalks, doubly 3-fold; leaflets roundish, with 3 lobes, cut-scrolled: the uppermost leaves finger-like, 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.


HEXAGYNIA.

STRATIOTES. Sheath 2 leaves: cup 3-cleft, or 3 leaves: petals 3: berry 6-celled; 6-cornered: beneath.

S. Leaves triangular-sword-shaped: edge fringed with Aloides, prickles.

E. bot. 379—Fl. dan. 337—Mill. ill.—Bergen de Aloide. at p. 1—Dod. 589. 1—Lob. obs. 204. 1, and ic. i. 375. 2—Ger. em. 825—Ger. 677—Park. 1249. 1—J. B. iii. 787. 1—Per. 71. 5.

* The beauty of its flowers has long introduced it into our flower borders. Goats eat it. Sheep are not fond of it. Cows, horses, and swine refuse it.
Stamens and Pistils are generally found in the same flower, but they have been sometimes observed to be on different plants; and where they are found in the same flower, the anthers have been found to be barren. Linn. Leaves strap-shaped, pointed, gristy; serratures prickly. Stalk 2-edged, 1-flowered. Sheath as long as the fruit-stalk; sheath-leaves 2, concave, pointed. Calyx leaves 3, white, egg-shaped, blunt. Petals egg-shaped, white. Lyons.

Water Aloe. Fresh-water Soldier. Slow streams, and fen ditches. [In Norfolk, very frequent. Mr. Woodward. In pools about 4 miles from Holmes Chapel, Chesh. Mr. Hunter. In the Gyme near Thorn, Yorkshire. Mr. Robson.] P. June—July.*

POLYGYNIA.


Es. bot. 467—Fl. dan. 15.

Stems much branched. Leaves floating, long, grass-like, blunt, from leaf-scales. Leaf-scales sheathing, pointed. Flowers in a cavity, 3 or 4 inches long, on one side of the leaf near the base, which is at first covered with a thin transparent skin. Woodward.

Sea Grasswrack. On the sea shores, almost every where. [Salt water ditches, Yarmouth. Mr. Woodward.] P. June—Aug.*

* 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 arises and floats on the surface, where it grows to maturity. Sometimes 8 or 10 form a circle on the surface, to which the strings were radii, and the old plant at the bottom the centre, and in this manner they sometimes rise so thick as entirely to fill up the surface of ditches, preventing all other plants from growing in it. I should suppose the mother 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 in the Spring, I apprehend, produce the fresh offsprings. 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.

+ Thrown on the sea 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, and it 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.—Horses and swine eat it. Cows are not fond of it.
POLYANDRIA. POLYGYNIA. Arum.

Z. Seed-vessels on pedicles, olive-shaped.

LOB. obs. 471. 2, and ic. ii. 248. 2—Ger. em. 1569. 8—Park.

1292. 1—F. B. iii. 794.

Differs also from Z. marina, in the roots being matted into a ball. LINN. It varies much both in the length and breadth of the leaves.

Shores of the Isle of Mersey. Portsea Island at Gatham Haven. RAY.

P. June—Aug.

A'RUM. Sheath 1 leaf, cone-shaped: fruitst. naked above, bearing germens at its bottom, and stamens in the middle.

A. Leaves halberd-shaped, very entire: spike-stalk club-macula'tum. shaped.

CURT. 114—Riv. mon. 124. 1, Arum.—Mill. ill.—Blackw. 228—Fl. dan. 505—Woody. 25—Bulliard—Fuchs. 69—J. B. ii. 784—Dod. 329. 2—LOB. obs. 325. 2, and ic. i. 597. 2—Ger. em. 834. 1—H. ox. xiii. 5, row 3. 1—Lonic. i. 200. 1—Trag. 774—Matth. 596—Park. 373. 1. 2.

Spike-stalk, the upper part purple, sometimes buff-coloured, and sometimes mottled with buff and purple. Germens greenish yellow, the upper terminating in a hair-like or awl-shaped style or summit, purple at the end. Anthers with 2 open cells. Nectaries, the row above the stamens exactly similar to the upper germens. Leaves generally spotted with black spots, and sometimes with white streaks. Sheath conical; pale green. Berries red, growing in a naked cluster.


* The berries ripen about the close of summer. CURT.—The root and the leaves when recent, are so extremely acrid, that it is highly disagreeable to taste them. The root has been employed in medicine as a stimulant, but when reduced to powder it loses much of its acrimony, and there is reason to suppose that the compound powder which takes its name from that plant, owes its virtues chiefly to the other ingredients. There is no doubt but this acrid quality may be turned to very useful purposes, but we must first learn how to ascertain its dose.—The root, dried and powdered, is used by the French to wash their skin with, and is sold at a high price, under the name of Cypress Powder. It is undoubtedly a good, and an innocent cosmetic.—When the acrimony of the roots is extracted, either by boiling or baking, they certainly will afford a very mild and wholesome nourishment. Many nations prepare the only bread they have, from plants as acrimonious as this: first dissipating the noxious qualities by the force of heat,—Starch may be made from the roots.
POLYANDRIA. POLYGYNIA. Anemone.

ANEMONE. Cal. generally none: petals 5 to 10: capsules many, with awns or tails formed by the style.

(1) Fruit-stalks with an involucrum; seeds with tails.

pratensis. A. Leaves doubly winged: petals the ends turned back.

Woodw. 148-Clus. 1. 246. 2-Dod. 433. 2-Lob. 10. 283. 1

Ger. em. 386. 4-Fl. dan. 611-Kniph. 1.

The flower is smaller and of a darker colour than that of the A. pulsatilla, nodding, but the ends of the petals bent back. Linn.

Dark-flowered Anemone. Dry hilly pastures. Whichwood Forest, near Cornbury Quarry, and Burford Downs, Oxfordshire.

Dr. Sibthorpe. P. April.

Pulsatilla. A. Leaves doubly winged; petals straight.

Ludw. 119-E. bot. 51-Fl. dan. 153-Relb. at p. 208-Mattth. 620-Clus. i. 246. 1-Dod. 435. 1-Lob. obs. 149. 2, and ic. i. 281. 2-Ger. em. 385. 1-Park. 341. 2-Kniph. 1-
H. ox. iv. 26. rozw 1. 1-Pet. 40. 9-Ger. 308. 1 and 2;
and 309-Lonic. i. 83. 2-J. B. iii. 409. 2 and 3.

Semen downy, with 1 flower. Flower at first covered by the involucrum, afterwards nodding, on a long fruit-stalk. Involucr., many-cleft, downy. Petals downy without, within smooth, of a deep purple. Seeds crowned with the hairy lengthened styles. Woodw.


(2) Flowers naked; seeds without tails.

nemorosa. A. Seeds pointed: leaves snipt: stem with 1 flower.


* The whole plant is acrid, and blisters the skin. The juice of the petals stains paper green—Goats and sheep eat it. Horses, cows, and swine refuse it.
POLYANDRIA. POLYGYNIA. Anemone.

Petals 3 inner and 3 outer. Linn. Plant smooth, excepting the leaves. Stem-leaves doubly 3-fold; leaflets egg-spear-shaped, variously jagged or lobed; veins slightly hairy. Petals, the outer tinged with purple at the base. Mr. Woodward. Stem and fruit-stalk purplish. Petals, the outer row with the deepest tinge of purple underneath. The flowers are sometimes double, and sometimes entirely of a purplish red colour.


Fuchs. 162—Trag. 95. 2—Lonic. i. 163. 5—Kniph. 1—Ger. 306. 1—Fl. dan. 140—Lob. ic. i. 674. 1—Ger. em. 383. 1—Park. 325. 5.

Differs from A. nemorosa as follows: Petals yellow, 2 alternately on the outside, 2 alternately within, and 1 without that which is next to it, and 1 within that which is next to it. Fruit-stalk with 2 leaflets, the latter of which is at the base. Linn.

Var. 2. Stem zigzag at the bottom, supporting only 1 flower: Fruitst. naked: Bloss. with only 5 petals.

The fig. of Fuchsius and Fl. dan. represent this variety.


A. Seeds pointed: leaflets snipt: petals spear-shaped, apenninae. numerous.

Curt.—Clus. i. 254. 2—Dod. 434. 2.

Petals blue; sometimes elliptical. Woodward.


* The flowers fold up in a curious manner against rain. The whole plant is acrid. When sheep that are unaccustomed to it eat it, it brings on a bloody flux. Goats and sheep eat it. Horses, cows, and swine refuse it. Linn.—The paper in which the dried specimens are preserved is stained brown, which renders it probable that it may be employed as a dye. Stokes.

This plant is sometimes found with yellow dots on the under surface of the leaves, in which state it is figured in Ray 3. i. 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. Pulterney, in Linn. Tr. ii. p. 395, has rendered it probable that they are formed of a minute species of Lycoperdon, 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 the Betonica officinalis is liable to be affected in the same manner.
POLYANDRIA. POLYGNYIA. Clematis.

**CLEMATIS.** Cal. none: petals 4, rarely 5 or 6: styles permanent: capsules many, with tails: receptacle a knob.

**Vitalba.** C. Leaves winged: leaflets heart-shaped, climbing.


**Petals** leather-like, spear-shaped. **Leaflets** entire, or toothed.

**Linn.** Stem scored. **Leaves** opposite, on leaf-stalks; leaflets on leaf-stalks. The leaf-stalks twine about any thing they can lay hold of, and thus support the plant. **Fruit-stalks** branched, with triple divisions, woolly, from the bosom of the leaves. **Petals** green on the outside, cream coloured within rolled back, scored, woolly. **Styles** becoming very long, slender, crooked, and covered with fine silky hairs.

**Traveller's-joy.** **Great Wild Climber.** **Virgin's Bower. Honesty.** Hedges and shady places, in calcareous soil. [Common in the Southern and Western Countries, but I have not observed it North of Worcestershire.]

S. July, Aug.

**THALICTRUM.** Cal. none: petals 4 or 5: capsules many, rather beaked.

**alpinum.** T. Stem unbranched, almost naked: bunch simple, terminating.


A delicate little plant, scarcely a span high. **Petals** 4. **Stam.** 12. **Pistils** 8. **Flowers** on crooked fruit-stalks. **Blossoms** brown. **Linn.** **Root-leaves** compound, on long leaf-stalks. **Stem** leafless, or in very luxuriant specimens with one nearly sitting leaf. The number of Stam. and Pistils variable.

**Mountain Rue-weed.** Moist rocks and on the sides of alpine rivulets in Scotland and Wales. [On Ben Lomond. Dr. Hope, On Malghyrdy, Ben Teskerny, and Craig Cailleach. Mr. Brown. Cronkley Fell, Durham, Mr. Robson.]

P. June.

**flavum.** T. Stem furrowed, leafy: leaflets acute, 3-cleft: panicle much branched, upright, compact; flowers upright.

*E. bot. 367—Knibh. 5—Fl. dan. 939—Moris. umb. 12. 2—H. ox. ix. 20. rov. 2. 1—Dodd. 58. 1—Lob. obs. 508. 3, and
POLYANDRIA. POLYGYNIA. Thalictrum.

ic. ii. 56. 1—Ger. em. 1251. 1—Park. 264. 1—Pet. 71. 2—Ger. 1067. 1—f. B. iii. 486.


Linn.

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

Lightfr.

H. ex. ix. 20. 3.

Leaf its the lower irregular, sometimes wedge-shaped, with 3 clefts; sometimes oval, entire, with a sort of lobe on one side; the upper spear-shaped, entire, or with 3 clefts. Flowers numerous, close and thick. Woodward; yellowish white.

Meadow Rue-weed. Moist meadows, pastures, and banks of rivers. P. June.*

T. Leaves triply winged: leafits 3-cleft: panicle large, expanding: flowers on crooked fruit-stalks.


Distinguishable by the purplish points of the leaves, and a bluish bloom on the stem. Linn. Leaf its broad and blunt; the number of clefts variable. Panicle branched, flowers few, scattered, at first nodding afterwards upright. Woodward.


T. Leaves with many divisions; flowers nodding: flowering branches axillary; 2 or 3 together.

Jacq. austr. 420—E. bot. 611.

Grows in meadows, or in stoney places with the Th. minus, but is distinct from that. It approaches the Th. sibiricum. It flowers nearly a month sooner than the Th. minus. Root perennial, throwing up 1 or 2 stems every year. Stems crooked, 2 or

* A cataplasm, made of the leaves, has been known to give relief in the Sciatica. The root dyes wool yellow. Cows, horses, goats, and sheep eat it. Swine are not fond of it. Linn.
3 feet high, cylindrical, scored, purplish green, leafy, panicked. Branches always several from the same point, of different lengths. Leaves small, egg-shaped or roundish, 2 or 3 cleft towards the end; rather glaucous, green above, quite so underneath. Flowers sweet, pendent. Petals 4, purplish green. Stam. 15 to 20. Anthers yellow. Pistils 4 to 7. Seeds spear-shaped, furrowed, acute. It may be distinguished from the Th. minus by its always sending out 2 or 3 branches from the same knot on the stem or larger branches, and by the leaves being dark green above and glaucous underneath; whilst in the minus the branches rise singly and the leaves are of a lighter green above, and scarcely to be called glaucous underneath. This plant is also much more branched and one third taller than the minus. Jacquin. This species seems first to have been described by Crantz, in his Stirp. Austr. fasc. ii. p. 108, who particularly notices its differing from the Thalictr. minus in its branches growing 3 together, the darker colour of its leaves, the greyer green of their under surface, and their pellucid veins.

Jacquin observes above that this plant approaches the Thalictr. sibiricum, but omits to mention the differences, which are sufficiently obvious. In that the fruit is different; the stem is green, not purplish, the leaves are finely serrated, and very much smaller than even those of the Th. minus.

In the specimen now before me, which was sent by Mr. Rob- son of Darlington, the leaves are trebly winged, the leaves urn-shaped, 3-cleft at the end; the petals 4, purplish; the stam. 14 to 18, the anthers yellow, the pistils from 5 to 7.

[Discovered by Mr. E. Rosson, about 2 miles from Darlington, in a dry exposed situation, among bushes. He says it frequently attains the height of 4 or 5 feet, and that he has since seen specimens which were collected in Cumberland.] P.

ADO'NIS. Cal. 5 leaves: petals 5 or more: nect. none: seeds naked.

æstiva'lis. A. Flowers with 5 petals: fruit egg-shaped.


Only 1 or 2 flowers on a plant. Petals 5 or 6; longer and narrower in the A. autumnalis; scarlet.

[Corn fields on Salisbury plain, near the road from Ambresbury to Everly.] A. May, June.

autumnalis. A. Petals about 8: fruit egg-cylindrical.

The seeds in both species are covered with a thick permanent coat, not opening like a capsule, so that having no proper capsule they may be considered as naked. The shape of the fruit mentioned in the Spec. char. applies to the whole mass of seeds upon the fruitstalk. Several flowers on a plant. Fruit oblong or cylindrical, not egg-shaped as in the preceding. Petals 7 or 8; dark scarlet almost black at the base.


**RANUNCULUS.** Cal. deciduous, 5 (or 3) leaved: petals 5, (rarely 2, 3 or 8) with a nectariferous scale or pore within the claw: styles permanent: seeds incrusted, upright.

(1) Leaves undivided.

R. Leaves heart-shaped, angular, on leaf-stalks: stem 1- Fica'ria; flowered: flowers with 8 petals: calyx with 3 leaves.


Root composed of oblong egg or club-shaped bulbs. Leaves smooth, rather shining. Cal. leaves 3 or 4. Petals 8 or 9; bright yellow. Small egg-shaped germinating bulbs are said sometimes to be found in the bosom of the leaf-stalks.


R. Leaves egg-spear-shaped, on leaf-stalks: stem declin-Flam'mula; ing.

*Curt.-E. bot.* 387.-Fl. dan. 575-Dod. 432. 1-Lob. obs. 382. 2, and ic. i. 670. 1-Ger. em. 961. 2-H. ox. iv. 29. 34-Walc. 5-Park. 1215. 2-Ger. 814. 2.

Leaves long, rather a doubling of the leaves. Leaves more or less toothed or serrated. Flowers yellow. The plants with leaves serrated are represented in

* Its beautiful scarlet blossoms have gained it admittance into our gardens.

* The young leaves may be eaten in the spring along with other pot-herbs. Goats and sheep eat it. Cows and horses refuse it. Cusculio deralis is found upon it.
POLYANDRIA. POLYGYNIA. Ranunculus.

Lesser Spearwort. Bogs, boggy meadows and sides of rivulets.  

Lin'gua. R. Leaves long spear-shaped: stem upright.  


Leaf-stalks short. Mr. Woodward. A much larger plant than the R. lingua. Leaves in length equal to many times their breadth, ending in a long tapering point, but in R. lingua they are in length only 3 or 4 times their breadth, and do not end in a long taper point. They are sometimes toothed at the edge. Bloss. large, deep yellow.  


gramin'cus. R. Leaves spear-strap-shaped: stem upright, very smooth, few-flowered.  

Baub. hist. iii. 866. 3.  

About a foot high. Leaves quite smooth, sitting, long and narrow like those of the grasses. Flowers pale yellow, smaller than those of the R. lingua.  

Specimens brought from North Wales, by Mr. Pritchard.  

rep'tans. R. Leaves strap-shaped: stem creeping.  

Dicks. b. i.—Knibh. 9—Lights. i. frontispiece—Fl. dan. 108—Amman. 13. 1—Fl. lapp. 3. 5.  

* It is very acrid. Applied externally it inflames and blisters the skin. Horses eat it. Cows, sheep, goats, and swine refuse it. Its acrimony rises in distillation. Some years ago a man travelled in several parts of England administering vomits, 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 make a patient vomit instantaneously, it is preferable to any other medicine yet known, and does not excite those painful contractions in the upper part of the stomach which the white vitriol sometimes does, thereby defeating the intention for which it was given.
POLYANDRIA. POLYGYNIA. Ranunculus.

I am almost certain that it is merely a variety of *R. Flammula*, having observed a series of gradations between the two. HALL. Woodward. Brown. It approaches very near to some states of *R. Flammula*. Lightf. Stem slender. *Leaves* 1 to 4 at each joint, upright. *Flowers* solitary, terminating, or at the joints; small, yellow. Woodward.

_Narrow-leaved Crowfoot._ Sides of lakes, rare. West end of Loch Laver. [Stony margin of Coniston Water, Lancash. Mr. Woodw.—In a field between an old entrenchment and the high road near Manchester race ground, Mr. CALEY. On the margins of Loch Tay. Mr. Brown.] P. July, Aug.

(2) *Leaves* dissected and divided, not uniform.


_Curt._—_E. bot._ 624—Fuchs. 156—Trag. 97—_J. B._ iii. 857. 3—Lonic. i. 163. 2—Kniph. 2—Fl. dan. 665—Lob. ic. 669. 2—Ger. 954. 7—Park. 326. 7—Pet. 38. 2—_H. ax._ iv. 28. 15—Pet. 38. 6—Ger. 807. 8.

*Root-leaf* heart-shaped. *Stem-leaves*, the lower bird footed, on leaf-stalks, broader, blunt; the upper fingered, sitting, opposite, embracing the stem. *Stem* forked or 3-forked. *Calyx* united at the base, scarce perceptibly woolly. *Petals* during the season for the leafing of trees wanting, in the season of the flowering of trees 2 or 3, in the season of fruiting 5, whence it may be easily taken for a different plant. Linn. *Nectary* a small oblique hole at the bottom of the petals not covered by any scale. Curt. *Calyx* and Blossoms yellow.

_Sweet Wood Crowfoot._ Goldilocks. Woods, groves, and hedges. [In a clayey soil. Mr. Woodw.] P. April, May.

R. *Lower-leaves* hand-shaped, the upper fingered: fruit sceleratus. oblong.

_E. bot._ 681—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. ax._ iv. 29. 27 and 28—Matth. 610.

POLYANDRIA. POLYGYNIA. Ranunculus.

Shallow waters. A. May, June.*

*Ranunculus.* a'cris. R. Calyx expanding: fruit-stalks cylindrical: leaves with 3 divisions, and many clefts, the uppermost strap-shaped.


Stem with hairs laid to. Cal. hairy, coloured. Leaves hairy, segments black or deep purple at the points; stem-leaves sitting, but sheathing the joints. Leaf-stalks hairy. Fruit-stalks not furrowed. Bloss. yellow.


*3* Leaves dissected and divided; uniform.

*Ranunculus.* parvisl'o'rus. R. Seeds rough with tubercles ending in hooked points: leaves heart-shaped, hairy, lobed or toothed: stem prostrate.

E. bot. 120-Ray 12. 1. at p. 326.-H. ax. iv. 23. 21-Pet. 38. 9-Pluk. 55. 1.

Whole plant trailing close on the ground. Root-leaves on very long leaf-stalks, kidney, or heart-shaped, toothed. Stem leaves kidney-shaped; upper ones sitting, simple or with 3 divisions, all the leaves extremely soft to the touch like the nose of a horse. Flowers small, yellow. Seeds flattened; the hooked prickles very minute.


*Ranunculus.* hedera'ceus. R. Leaves roundish, 3-lobed, very entire: stem creeping.

* The whole plant is very corrosive; and beggars are said to use it to ulcerate their feet, which they expose in that state, to excite compassion.
—Goats eat it. Cows, horses, and sheep refuse it.

† 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.—It is very acrid, and easily blisters the skin.
POLYANDRIA. POLYGYNIA. Ranunculus.

Curt. 247—Fl. dan. 321—J. B. iii. 782. 2—H. ox. iv. 29. 29
—Pet. 38. 12.


R. Leaves under water hair-like; those above with nearly aquat'illis. central leaf-stalks.

2—Park. 1216. 8—H. ox. iv. 29. 31.

Flowers on fruit-stalks which arise from the same sheath with the leaves; white, with a yellow spot at the base. Nectary a short open tube.


Var. 2. large-flowered. None of the leaves hair-like; flowers very large.

In a pool that had been a quarry, near Sodbury, Gloucestershire. Mr. Swaine.

Var. 3. circinatus. All the leaves hair-like, forming a roundish outline.

Plut. 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.


Var. 5. fluviatilis. All the leaves hair-like; segments very long, parallel, taking the direction of the stream.

Fl. dan. 376—J. B. iii. 782. 1—Lob. ic. i. 791. 1—Ger. em.
827. 3—Park. 1256. 5—Pet. 39. 4.

Rivers. River Tame about Tamworth, &c. the Isis, near Oxford, [and in shoals in the Severn, where it is called Rait. St.] This is a troublesome weed in ponds, otherwise its flowers are very beautiful, 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.*

* So far is this plant from possessing the deleterious qualities usually attributed to it, that Dr. Pulteney, in the fifth Vol. of the Lin. trans. Vol. III. has
hirsutus. R. Root fibrous: stem hairy: calyx pimpled, hairy, taper pointed, at length reflected. (Curtis.)

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 3 more distinct, the middle and outermost rounder and less deeply divided at the edges, with a portion as if cut out from the inner edge; 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 3-lobed, the middle leaflet on a leaf-stalk. Flowers pale yellow.

Woodward.

Mr. Curtis thinks it not an uncommon plant, but that its reflected calyx has imposed upon botanists, who from that circumstance have considered it as the R. bulbosus.

Moist clayey places, where water has stood during the winter. Salt marshes near Gravesend. Ray.—Various places about London; side of the road between Croydon and Mitcham; and plentifully by the sea side on the gravelly banks about Southampton. Curt.—Road sides, rubbish, &c. Cambridgesh. Relh. [Amongst corn in a clayey soil, and on new made banks of salt marshes, Yarmouth. Mr. Woodward.]

A. June—Sept.


E. bot. 515—Mill. ill.—Curt.—Kniph. 7—Walcz.—Fl. dan. 551—Dod. 431. 1—Lab. obs. 380. 3; and ic. i. 607. 1—Ger. 953. 6—Park. 329. 5—Pet. 38. 4—Fuchs. 160—J. B. iii. 417. 4—Ger. 806. 6—Matth. 614.

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 the R. repens. Curt. Upper leaves, divisions strap-shaped. Bulb formed above the bulb of last 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 6 plants, the roots were all distinct, excepting one, which appeared, from its size, to be a seedling, with the old bulbs at the bottom. Per-

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.
Trollius. 499

Trollius. 499

Bulbous root globular, but pressed. Nectaries short, inversely heart-shaped; but in the R. hirsutus, it is oblong-egg-shaped. This circumstance alone is sufficient to distinguish the two species.


R. Calyx expanding: fruit-stalks furrowed: suckers creeping: leaves compound.


The stem creeping and striking out roots from the joint, will always distinguish this from the R. bulbosus. Fruit-stalks with 5 furrows, and one or two flowers. Cal. hairy, deciduous, not reflected. Bloss. of a deeper yellow than in the R. acris.

Creeping Crowfoot. Butter Cups. Meadows, pastures, on rubbish under hedges, and in gardens, in moist situations.

P. June—Aug.

R. Seeds prickly: upper leaves doubly compound, strap-shaped, flowers small, pale yellow. Seeds more obviously prickly than those of the R. parviflorus. Seeds and flowers existing on the same plants, at the same time.


TROLLIUS. Cal. none: petals about 14: capsules many, egg-shaped, many-seeded.

T. Petals approaching: nectaries as long as the stamens. Europæus.

Kniph. 4—Fl. dan. 132—E. bot. 28—Clus. i. 237. 1—Dod. 430. 1—Lob. obs. 385. 1, and ic. i. 675—Ger. em. 955. 12—Ger. 809. 13—J. B. iii. 419—H. ox. xii. 2. 2—Matth. 613—Park. par. 219. 11.

* 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 cornfields, where cattle are excluded, may possibly be the reason why we have not heard of mischief being done by it in this country.
POLYANDRIA. POLYGYNIA. Helleborus.

Blossoms closed, yellow. Nectaries yellow, not longer than the stamens. Germens upright. Linn. Leaves round in their circumscription, divided to the base into 5, 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. Mr. Woodward.


It is cultivated in our flower gardens.

HELLEB’ORUS. Bloss. none: cal. 5 leaves, often coloured: nectaries 2-lipped, tubular: caps. like a legumen; many-seeded, rather upright, beaked.


Jacq. anstr. 106 — Curt. — Blackw. 509 and 510 — E. bot. 20C — Kniph. 1 — Fuchs. 274 — J. B. iii. 636 — Clus. i. 275 — Dod. 385 — 2 — Lob. obs. 387. 2, and ic. i. 680. 2 — Ger. em. 976. 2 — Park. 212. 2 and 3 — H ox. xii. 4, 5 — Ger. 825. 2

— Trag. 405 — Lonic. i. 171. 2 — Matth. 1221.


E. bot. 613 — Woodv. 19 — 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. ox. xii. 4, 6 — Ger. 826.

All the leaves on the stem, none towards the root. Linn. Leaves deep green. Branches, leaf-scales, floral-leaves, and flowers pale greenish yellow. Stipule at the divisions of the
POLYANDRIA. POLYGYNIA. Caltha.

branches oval-spear-shaped, embracing the stem, solitary, with 3 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. Mr. **WOODWARD**. Flowers numerous, somewhat globular, green, sometimes tinged with purple at the edges. *Stem about a yard high.*


**CALTHA. Cal.** none: **petals** 5: nectaries none: caps. several: many-seeded.

C.


Caps. from 4 to 12. Mr. **HOLLEFEAR**. Leaves kidney-shaped, entire, sometimes regularly toothed. Petals yellow, from 5 to 7. Stamens in 2 rows, inner row with broad anthers, outer row twice as long, club-shaped, with the anthers compressed.

Var. 2. Blossoms double.

Park. 1213. 2-Clus. ii. 114. 2-Ger. em. 818. 3-Ger. 681. 3.


**SAGITTA'RIA. Stam.** and pist. in different flowers on the same plant: cal. 3 leaves: bloss. 3 petals.

* The dried leaves are frequently given to children to destroy worms, but they must be used sparingly, being violent in their operation; and instances of their fatal effects are recorded. The country people put the root into sets and made through the dewlaps of oxen. A decoction of 1 or 2 drams, either of this, or of the preceding species, is a sharp purge.

† 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 yellow. The remarkable yellowness of butter in the spring has been supposed to be caused by this plant; 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 the country people strew the flowers before their doors.

Fem. *Seeds* many, naked.

*Sagittaria.*

*S. elegans.* Leaves arrow-shaped, acute.

*E.* bot. 84—Gies. 64—Fl. dan. 172—Walc. 5—Dod. 588. 2—Lob. obs. 161. 2, and ic. i. 302. 1—Ger. em. 416. 2—Park. 1247. 2—J. B. iii. 789—Pet. 43. 11.

Stalk with 6 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 a network of veins. Leaf-stalks tapering, convex underneath, concave above, covered by the water. *Flowers* 3 in a whirl.

*Flower-scales* small, oval spear-shaped, 1 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. *Cal.* 1 leaf with 3 divisions. Lower flowers female, the upper male, but with from 1 to 5 pistils; none with stamens only. *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.

*Common Arrow-head.* Ditches and banks of slow rivers.

P. July.*


On the Thames shore, over against Lambeth palace; and before the E. of Peterborough's house, above the horse ferry, on Westminster side. *R. Syn.* The other varieties mentioned by authors appear to me to differ merely in size. The *S* of Linnaeus and *S* of Hall, is surely imaginary, for the strap-shaped leaves will be always 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. *Horses, goats, and swine eat it; cows are not fond of it.*
CLASS XIV.

DIDYNAMIA.

GYMNOSPERMIA.

(1) Cups mostly 5-leaf.

LEONU'rus. Anthers sprinkled with hard particles.

GLECO'MA. Anthers in pairs; each pair forming a cross.

MENTHA. Filaments distant; straight; Bloss. nearly regular.

VERBE'NA. Bloss. nearly regular: upper segment of the cup shorter.

TEU'CRIUM. Bloss. without any upper lip; upper segment of the petal divided.

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

GALEOB'DOLON. Bloss. upper lip entire, vaulted: lower lip 3-cleft; segments broad, acute: Anthers fleshy on the back. (Huds.)

BETO'NICA. Bloss. upper lip flat; ascending: Tube cylindrical: Stam. as long as the mouth of the tube.

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

GALEO'PISIS. Bloss. with 2 teeth upon the lower lip.

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

NE'PET.A. Bloss. lower lip scollopred; Mouth with the edge reflected.

BALLO'TA. Cup with 10 scores: Bloss. upper lip vaulted.

MARRU'BIIUM. Cup with 10 scores: Bloss. upper lip flat and straight.

[Origanum. Melissa Nepeta.]

(2) Cups 2-lipped.

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

THYMUS. Cup (mouth small;) closed with soft hairs.

(* In Melissa Calamintha, and M. Nepeta, the mouth of the cup is also closed with hairs.)

PRUNELLA. Filaments all forked at the end.

ORIGANUM. Cups forming a tilted cone.

CLINOPODIUM. Cups inclosed in an involucreum.

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

MELISSA. Cup angular; skin-like; upper lip ascending.

[Teucrium.]

ANGIOSPERMIA.

(1) Cups. cloven.

OROBANCHE. Caps. 1 celled: Bloss. nearly equal; 4-cleft: a gland under the base of the germen.

(2) Cups 4-cleft.

LATHRAEA. Caps. 1-celled: Bloss. gaping: a gland under the base of the germen.

BARTSIA. Caps. 2-celled: Bloss. gaping: Cup coloured: (not coloured in our species.)

EUPHRAEA. Caps. 2-celled: Bloss. gaping: lower Anthers with thorns.

RHINANTHUS. Caps. 2-celled: Calyx compressed: Bloss. gaping.

MELAMPYRUM. Caps. 2-celled: Bloss. gaping: Seeds 2; bulging.

(3) Cups 5-cleft.

LIMOSELLA. Caps. 1-celled, many-seeded: Bloss. bell-shaped; regular.

SCROPHULARIA. Caps. 2-celled: Bloss. facing upwards; the lip with a middle segment more inward.

SIBTHORPIA. Caps. 2-celled: Bloss. wheel-shaped: Stam. placed 2 and 2; approaching.

DIGITALIS. Caps. 2-celled: Bloss. (tubular) bell-shaped; bellying on the under side: Stam. declining.
DIDY-NAMIA. GYM-NOSPERMIA. Ajuga.

ANTI-RHII'NUM. Caps. 2-celled: Bloss. gaping; with a projecting nectary beneath.

PEDICULAR'IS. Caps. 2-celled: Bloss. gaping: Seeds coated.

LINN'E'A. Berry 3-celled, juiceless: Bloss. bell-shaped: Calyx superior.

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GYMNOSPERMIA.

AJUGA. Bloss. upper lip very small: stamens longer than the upper lip.

A. Plant woolly, forming a 4-sided pyramid: leaves ob-long, toothed: root-leaves the largest.

Fl. dan. 185—Blackw. 64. 2.

Plant as taken from the bottom to the top resembling a pyramid, very simple, clothed with leaves pointing 4 ways, gradually increasing in height, the whole often decorated with leaves which, excepting the root-leaves, are of a violet colour, serpentine at the edge, imperfectly scollopèd. Flowers whitish, or bluish. Suckers none. Flowers 3 together. Linn. Stem and leaves very hairy; root-leaves oblong wedge-shaped, sitting, entire, very large; stem-leaves oval, slightly toothed or scollopèd, not 3-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 3 together. Calyx very hairy, divided half way down; segments awl-shaped, nearly equal. Mr. Woodward.

I have never seen a specimen of British growth; the plant generally taken for it is the A. alpina. Mr. Woodward thinks he had once in his garden the A. pyramidalis, which he received from the North of England, but does not recollect the particular place. Dr. Hope informs me that it has been found on Ben Nevis in Lochaber, and on the Burn of Killogower and Ord of Caithness.

B.

A. Stems simple; leaves nearly all of a size. Linn. middle alp’na, stem-leaves the largest; root-leaves smaller, tapering into leaf-stalks.

E. bot. 477—Ludw. 8—Kni ph. 3—J. B. iii. 432. 1—Pet. 34. 4—Riv. nov. 76; Bugula montana.—H. ox. xii. 5. 3. bad. -Pluk. 18. 3; bad; not agreeing with his description; very unlike the A. pyramidalis, and too meagre for the
DIDYNAMIA. GYMNOSPERMIA. Ajuga.

A. alpina—Clus. ii. p. 43, Bugula carnea flore, quoted by Linnaeus, seems from the creeping suckers, to be only a hairy var. of the A. reptans.

"The pairs of 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) 3 or 4 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 bracteae sometimes quite entire, sometimes toothed; the uppermost only tinged with purple; whereas in A. pyramidalis, they are all reddish. Flowers from 10 to 20 in each whorl. Calyx chiefly hairy at the teeth. Flowers pale, streaked with deeper blue." E. bot.

This plant, according to Dr. Smith, has been lately found near Durham by Mr. Robson, and on the summit of a mountain near Castleton, Derbyshire, by Mr. Dawson Turner.

Mountains. Carnedd Llewelyn, Caernarvonshire. Ray.

P. June, July.

rep'tans. A. Plant smooth; with creeping suckers: leaves egg-shaped, scolloped.

E. bot. 489—Curt. Fl. dan. 925—Sheldr. 35—Riv. mon. 75, 1, Bugula.—Fuchs. 391—J. B. iii. 430. 2 and 3—Walch.—Kniph. 3—Trag. 311—Blackw. 64. 1—Lowic. i. 145. 2—H. ox. xi. 5. row 3. 1—Barr. 337 and 338—Matth. 962—Dodd. 135. 2—Lob. obs. 252. 1, and ic. i. 475. 2—Ger. em. 631. 1—Park. 525—Ger. 506. 1.

In high and dry situations it becomes somewhat hairy, the stem less distinctly 4-sided, the spike tapering upwards; the creepers short; approaching to the A. genevensis, but has only 1 stem from a root whilst the latter has many. Mr. Gough. Leaves egg-shaped. Root-leaves scolloped, on leaf-stalks. Stem-leaves nearly entire, sitting, in opposite cross pairs; the upper purplish. Bloss. blue, red, or white, in long leafy spike.

Common Bugle. Moist meadows, pastures, and woods.

P. May—July.

Chamaep'thyss. A. Leaves 3-cleft, strap-shaped, very entire: flowers sitting, lateral, solitary: stem spreading.

E. bot. 77—Kniph. 8—Ludw. 130—Riv. mon. 14. 1, Chamaep'thyss—Fl. dan. 733—Hox. xi. 22. row 3. 1—Dodd. 46. 1—Lob. obs. 207. 2, and ic. i. 382. 2—Ger. em. 525. 1—Matth. 940—Ger. 421. 1—Park. 283. 1—Fuchs. 886—J. B. iii. 295. 1 and 2—Trag. 80—Blackw. 528—Lonic. i. 159. 2.

Bloss. yellow, with minute red dots. Relhan. Stem hairy.
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 on one side of the stalk, single, or in pairs. Calyx very hairy. Bloss. lower lip, middle segment somewhat heart-shaped, smooth, the rest very hairy.

Ground Pine, Germander. Teucrium Chamepithys. Linn. But the structure of the upper lip of the blossom is not like that of the Teucrium, deeply divided with the stamens standing in the division, but short and slightly notched as in the Ajuga. On this account it has been removed from the former genus by Haller, Schreber, &c. and Dr. Smith in E. bot. ranks it as an Ajuga, to which genus it undoubtedly ought to be referred in a practical system.

Sandy fallow fields. On the Lays about the border of Triplow Heath, Cambridgeshire; about Rochester and Dartford, Kent, Roehill.

A. April—June.*

TEU'CRUIUM. Upper lip upright, deeply divided, even below the base: stamens in the division.

T. Leaves wedge-egg-shaped, cut, scolloped, on leaf-stalks, Chama'drys; flowers 3 together: stems somewhat hairy.

E. bot. 680—Woodv. 243—Kniph. 11—Tourn. 97. 1. b.—Sheldr. 87—Blackv. 180—Riv. mon. 10—Euch. 869—f. B. iii. 288. 1—Ger. 530. 1, 2, and 3—Matth. 818—Trag. 204—Lonic. i. 62. 4—Dod. 43. 1, and 2—Lob. obs. 260. 1 and i.c. i. 491. 1, and 2—Ger. em. 636. 1 and 2—Park. 104—H. ox. xi. 22, 10 and 11—Clus. i. 351. 1.

Floral-leaves serrated. Bloss. purple; lip flat, with 3 shallow clefts. Linn. Stem cylindrical, hairy. Leaves on leaf-stalks, deeply jagged, entire at the base, hairy; the upper oval-spear-shaped, often purple. Flowers on fruit-stalks. Mr. Woodward. Calyx the upper segment broadest, the 2 lower ones narrowest, beset with white globules. Bloss. reddish purple, beset without with white globules; middle segment of the lower lip lopped, with a double row of hairs at the base.


* 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 intermittent fevers.

† The plant 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.
Scor'donia. T. Leaves heart-shaped, serrated, on leaf-stalks: flowers in lateral bunches, pointing one way: stem upright.

Curt. 295-Kniph. 11-Blackw. 9-Dod. 291-Lob. obs. 262. 1, and iic. i. 497. 2-Ger. em. 662-Park. 111. 2-H. ox. xi. 20. 15-Riv. mon. 12-Fl. dan. 485-Trag. 15. 2-Lonic. i. 112. 3-F. B. iii. 295. 1, and 294.

Stems 4-cornered, hairy. Branches opposite. Leaves heart-spear-shaped, opposite, wrinkled. Flowers in pairs. Calyx a little woolly, upper lip broad, bent back, pointed; the lower with 4 very shallow clefts terminating in pointed teeth bent inwards. Bloss. straw-coloured, woolly; tube longer than the calyx; upper lip none, but the top of the tube slightly cloven.


P. July.*

Scor'dium. T. Leaves oblong, sitting, toothed, nakedish: flowers in pairs, on fruit-stalks, axillary: stem pubescent, spreading.

E. bot. 838-Blackw. 475-Fl. dan. 593-Woodw. 57-Matth. 842-Ger. 534. 1 and 2-Trag. 885-Riv. mon. 11-Scor'dium.-Dod. 126. 2-Lob. obs. 261. 3, and ic. i. 497. 1-Ger. em. 661-Park. 111. 1-H. ox. 11. 22. 14-Lonic. i. 196. 3-Fuchs. 776-F. B. iii. 292. 2.

Stem cylindrical, hairy. Leaves hairy, sitting, 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. Woodward. Flowers pink.


NE'PETA. Bloss. middle segment of the lower lip scollopéd; mouth, the edges reflected: stamens approaching.

Cata'ria. N. Flowers in spikes: whirls on short fruit-stalks: leaves on leaf-stalks, heart-shaped, tooth-serrated.

* The people of Jersey are said to make use of it in brewing. It possesses the bitterness and a good deal of the flavour of hops, but upon trial it gave too much colour to the liquor.

+ 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 gets a garlick flavour. Sheep and goats eat it. Horses, cows, and swine refuse it.
VERBE^NA. Bloss, funnel-shaped, segments nearly equal: calyx one of its teeth lopped: seeds 2 or 4; naked.

V. Spikes thread-shaped, panicled: leaves with many officinalis, jagged clefts: stem solitary.

* 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, that they can hardly be kept out of the garden wherein it grows. Mr. Miller says, that cats will not meddle with it if it is raised from seeds; and, in support of this opinion, quotes an 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.  

S. — Sheep eat it. Cows, horses, goats, and swine refuse it.
MENTHA. Bloss. nearly equal; 4-cleft: the broader segments notched at the end; stam. upright, distant.

Obs. The species and varieties of Mint are not sufficiently ascertained. The proportionate length of the stamens and the blossom seems a variable circumstance, and if so, should not form a part of the specific character.

(1) Flowers in spikes. [M. piperita.]

sylvestris. M. Spikes oblong: leaves oblong, serrated, cottony, sitting: stamens longer than the blossom. Linn. Sometimes not longer. HUDS.

E. bot. 686—Kniph. 9—Riv. mon. 51. 1—Fl. dam. 484—Clus. ii. 33. 1—Dod. 96—Lob. obs. 273. 1, and ic. i. 509. 2—Ger. em. 684. 3—Park. 33. 6—H. ox. xi. 6. 6—Pet. 31. 11—Fuchs. 292—J. B. iii. 221—Trag. 20. 1—Mattb. 714.

Leaves whitish, woolly and cottony underneath. Linn.


Woodv. 270—Cam. epit. 477—Ger. 552. 2—Dod. 95. 4—Lob. obs. 271. 4. and ic. i. 508. 1—Ger. em. 680. 4—Park. 31—Dod. 95. 3—Lob. obs. 271. 3. and ic. i. 507. 2—Ger. em. 680. 3—Pet. 31. 7—Fuchs. 290—J. B. iii. 220—Trag. 20. 2—Lonic. i. 113. 2—Mattb. 712.


Spear-mint. Watery places and banks of rivers. Near Exmouth, Devonshire, and on the banks of the Thames. HUDS. 

P. July, Aug.

Var. 2. many-spiked. Spikes numerous; leaves spear-shaped.

Differs from the preceding in the following particulars. 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.*


M. Spikes oblong; leaves roundish, scolloped, sitting. *rotundifolia.*

E. bot. 446-Riv. mon. 51. 2-Ger. 555. 1-Pet. 31. 12-
J. B. iii. 219. 2.

Leaves rather serrated than scolloped. Whole plant woolly. *Flowers pale red.*


(2) *Flowers in Heads.*

M. Leaves egg-shaped, serrated, nearly sitting, downy; hirsuta; stamens longer than the blossom.

E. bot. 447-Ger. 555. 2-J. B. iii. 224-Blackst. 32.


Sides of rivers and wet places. P. Aug.

Var. 2. Heads and leaves smaller, rounder, and blunter. *Flowers smaller, not so much branched. Ray.*

* The flavour of this species being more agreeable than that of the others, it is generally preferred for culinary and medicinal purposes. A conserve of the leaves is very grateful, and the distilled waters, both simple and spiritual, are universally thought pleasant. The leaves are used in spring sallets; 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 retchings, and frequently with success. From the circumstances noticed under *M. arvensis,* it has been 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 near so soon as an equal quantity of the same milk kept by itself. Dr. Lewis says, 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; however, 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 appears either green, or red, as it is viewed through the flat side or through the edge of the bottle.
DIDYNAMIA. GYMNOSPERMIA. Mentha.

Ray 10. 1. at p. 231.

Round-headed Mint. On the road side from Pevensoy to East Borne. Ray. [Cornwall. Mr. Watt. Near the mill at Lilleshall, Shropshire.]

aquatica. M. Leaves egg-shaped, serrated, on leaf-stalks: stamens longer than the blossom.

Kniph. 11—Riv. mon. 49. M. pal. spic—H. ox xi. 7. 6—Fuchs. 722—J. B. iii. 223—Math. 486—Dodd. 97—Lob. obs. 272. 2, and ic. i. 509. 1—Ger. em. 684. 1—Park. 1243—Pet. 31. 6.—Lonic. i. 114. 1—(Fl. dan. 673, is totally unlike it.) The length of the stamens variable. Hudson. Stem reddish towards the top, and set with a few bristly hairs pointing downwards. Leaves egg-spear-shaped, a little hairy on both sides, sometimes woolly. Branches generally shorter than the leaves. Calyx coloured, ribbed, hairy without, scored within; teeth not quite equal, glands semi-transparent. Bloss. hairy without. Stamens half as long again as the blossom, nearly equal. Bloss. pale red.

Water Mint. Watery places and banks of rivers. [Sides of the river at Tamworth, the stamens in some specimens longer, in others shorter than the blossom.]

piperita. M. Leaves egg-shaped, on leaf-stalks: stamens shorter than the blossom.

E. bot. 687—Pet. 31. 9—Ray 10. 2. has stamens much longer than the blossom, though referred to by Linn.

Flowers sometimes in whirls. Hudson. Leaves broader than the common sort of Pepper Mint. But this sort is perhaps rather to be arranged along with the Water Mints. Dill. in R. Syn. Stem upright. Blossoms purplish red. Under each whirl there are 2 pointed, spear-shaped, hairy floral-leaves.

Var. 2. Flowers in spikes. Sr.

Woodw. 169—Knigge diss.—Blackw. 291. 2, and 1—Pet. 31. 10.

Spikes terminating the stem and upper branches, consisting of from 9 to 12 whirls. Whirls, the lower on fruit-stalks at a distance from each other. In external appearance corresponding with M. viridis, for which it may easily be mistaken, but in M. viridis the stem is taller, the leaves with scarcely any leaf-stalks, narrower in proportion to their length, spikes longer, composed of more whirls. Knigge. This is the Pepper Mint of our gardens. It belongs to the division of the spicatae, has the nearest affinity to the M. viridis, and appears to me to be a species distinct from the M. piperita of Linnaeus. Sr.
Both this and the preceding, viz. the Linnaean M. piperita, possess the same kind of odour and flavour, but in this the flavour is less heavy and more pungent. It is probable they will prove to be distinct species, and even when out of flower they may be distinguished, for in 1, the leaves are egg, or egg-spear-shaped, and somewhat hairy on both sides, so as to give a roughness to the touch. In 2, the leaves are spear-shaped, and quite smooth on the upper surface. This plant sends out suckers very freely.


(3) Flowers in whirals.

M. Leaves egg-shaped, acute, serrated: stamens shorter gentilis. than the blossom.


Very much resembling M. arvensis, but not so hairy, the stems red, and the stamens not longer than the tube of the blossom. Whirls of flowers lateral. Bloss. lower segment pointed. Calyx sprinkled with resinous dots. Linn. Stems red, smooth. Leaves bare or slightly hairy. Huds. Stems with more or less of a reddish tinge towards the top. Leaf-stalks flat, short. Whirls composed of 2 lateral umbels on very short fruit-stalks. Floral-leaves 4 or 5 under each whirl, 2 spear-shaped, the rest smaller and strap-shaped. Calyx slightly ribbed, coloured, sprinkled with shining dots. Blossom 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, falling off. Germens 4, on a yellowish green fleshy receptacle. Bloss. pale red.


M. Leaves egg-shaped, acute, serrated: stamens as long arvensis, as the blossoms.

Kniph. 11-Fl. dan. 512-Fuchs. 435-Trag. 16. 2-J. B. iii. 217. 2-Lob. oss. 270. 1, and ic. i. 505. 2-Ger. em. 684. 2-Park. 37. 5-Pet. 31. 5-Matth. 718-Trag. 24-H. ox. xi. 7, row 2. 5. j. 2.

* The stem and leaves are beset with numbers of very minute glands, containing the essential oil, which rises plentifully in distillation. Pepper Mint water is well-known as a carminative and anti-spasmodic. The essence of Pepper Mint is an elegant medicine, and possesses the most active properties of the plant.
DIDYNAMIA. GYMNOSPERMIA. Mentha.

Stems spreading. Whirls lateral. Whole plant hairy. Stamens equal in length to the border of the blossom. Bloss. lower segment blunt. Calyx hoary. Linn. Stamens often lie within the tube, so that were it not for the blunt middle segment of the blossom, it might be supposed to be M. gentilis, Poll. Whole plant covered with soft white hairs, of a paler green than M. gentilis. Stem not tinged with red; hairs pointing downwards. Leaves towards the top egg-spear-shaped, towards the bottom roundish. Whirls composed of 2 opposite umbels, sitting. Calyx pale green, beset with soft white hairs, interspersed with very minute semi-transparent glands. Blossoms hairy within and without. Stamens in some plants longer than the blossom.

Corn Mint. Watery places and moist corn fields.

P. July—Sept.

Var. 2, sativa. Stamens longer than the blossom. M. sativa. Linn. In this variety the leaves are sometimes smooth.


Marsh Mint. Marshy places, sides of rivulets, and gardens.

P. July, August.*


P. Aug. Sept.†

* It prevents the coagulation of milk; and when cows have eaten it, as they will do largely at the end of summer, when the pastures are bare, and hunger distresses them, their milk can hardly be made to yield cheese; a circumstance which sometimes puzzles the dairy maids. Horses and goats eat it; sheep are not fond of it; cows and swine refuse it.

† The expressed juice, with a little sugar, is not a bad medicine in the hooping cough. A simple and a spirituous water, distilled from the dried
**DIDYNAMIA. GYMNOSPERMIA. Glecoma.**

**GLECO'MA. Cal. 5-cleft: anthers in pairs, each pair forming a cross.**

**G. Leaves kidney-shaped, scolloped.**

Hedera'ce


The *stamens* are sometimes imperfect, consisting of filaments only half the usual length, and 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 suckers. 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 odour. *Bloss.* blue; sometimes, though rarely, flesh-colour.

**Var. 2. More upright and more hairy.**

Riv. mon. 67. 1, Hedera terrestris-Vaill. 6. 5-Clus. ii. 38. 2-Ger. em. 704. 6-Park. 677. a.

[Near Worcester. St.]


P. April, May.*

**LAM'NIUM. Bloss. upper lip entire, vaulted; lower lip inversely heart-shaped: mouth with a bristle-shaped tooth on each side.**

dried leaves, are kept in the shops. They are prescribed in hysterical affections, and are not without considerable anti-spasmodic properties. An infusion of the plant may be used with the same intention. *Musca pipiens; Cassida viridiss, Phalaena Chrysitis* live upon the different species.

* The leaves thrown into the vat with ale, clarify it and give it a flavour. Ale thus prepared is often drunk as an antiscorbutic. 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. *The Phalaena bibatrix and the Cynips Glecomae* live upon it. Linn.
DIDYNAMIA. GYMNOSPERMIA. Lamium.

album. L. Leaves heart-shaped, tapering to a point, serrated, on leaf-stalks: flowers about 20 in a whirl.

_E. bot._ 768—_Ludw._ 162—_Curt._ 115—_Kniph._ 3—_Riv._ mon. 62, 1—_Fl._ dan. 594—_Blackw._ 33—_Walc._—_Trag._ 8. 1—_Ger._ 566—_Matt._ 1129—_Dod._ 153. 1—_Lab._ 280. 2, and _ic._ 1. 520. 2—_Ger._ em. 702. 1—_Park._ 605. 3.

_Flowers_ white, sometimes, though rarely, with a pinky tinge; 12 to 20 in a whirl. _Anthers_ hairy, black.


purpureum. L. Leaves heart-shaped, blunt, on leaf-stalks.

_E. bot._ 769—_Curt._—_Sheldr._ 69—_Fl._ dan. 523—_Blackw._ 182, 1—_Kniph._ 3—_Riv._ mon. 62. 2, _Galeopsis minor_—_Ger._ 568. 4—_Walc._—_Dod._ 153. 2—_Lab._ obs. 280. 1. and _ic._ 1. 120. 1—_Ger._ em. 703. 3—_Park._ 605. 1. and 587. 11—_H._ ox. xi. 11. 9.

_Flowers_ 6 in the bosom of each leaf, in a double row. _Calyx_ awned, fringed. Lyons. _Leaves_ serrated, downy, but not rough; the ends often with a purplish tinge, and mostly pointing downwards. _Bloss._ lower border of the mouth whitish, with purple streaks, the rest pale red; sometimes nearly white.

Red Dead Nettle, or Archangel. Dee Nettle. Rubbish, corn-fields, and kitchen gardens. A. April—Sept.

dissectum. L. Leaves deeply and irregularly cut, stem-leaves extending down the leaf-stalks.

_Pet._ 33. 3—_Pluk._ 41. 3.

_Leaves_ deeply cut, so as almost to be lobed, tapering down into leaf-stalks. Mr. Woodward. Mr. Woodward suspecting this might be distinct from the _L. purpureum_, wished it to be cultivated in order to ascertain that point. Mr. Robson, with this view, introduced it into his garden, where it has shed its seed, and propagated itself 3 or 4 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. He further observes, that both sorts are common about Darlington, often growing together, we may therefore conclude that the difference is not owing to soil and situation. _Lamium rubrum minus foliis profunde incisis._ Ray Syn. 240. _L. purpureum_, β _Huds._ and Bot. Arr. ed. ii.

Kitchen gardens and fallow fields, not unfrequent. On a bank between Pimlico and Chelsea. _Curt._ A. April—Sept.*

* 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.
DIDYNAMIA. GYMNOSPERMIA. Galeopsis. 517

L. Floral-leaves sitting, embracing the stem, blunt. amplexicaule.


Flowers of 2 kinds, the first expanding in February and March, only a little longer than the calyx, the latter opening in May and June, 4 times as long as the calyx, all containing stamens and pistils. Curt. Lower-leaves on leaf-stalks, heart-shaped, blunt, deeply and bluntly serrated, the upper in opposite pairs, heart-shaped broad sitting, inclosing but not embracing the stem, with 5 lobes: lobes scolloped, the middle one as broad again, and with 3 clefts at the end, the lateral ones small. Bloss. purple. Mr. Woodward.


GALEOPSIS. Bloss. upper lip vaulted, somewhat scolloped; lower lip 3-cleft: mouth with a concave taper-pointed tooth on each side.

G. All the whirls remote; calyces bell-shaped, pubescent; La'danum. teeth longer, strap-bristle-shaped, diverging.

Knip. 12—Riv. mon. 24. 1—Pet. 33. 11.

Stem, knots scarce sensibly swoln. Cal. teeth hardly to be called thorny or pungent. Bloss. helmet kneeling. Linn. Stem upright, 4-cornered, somewhat hairy, with spreading branches. Leaves opposite, on leaf-stalks, sometimes spear-shaped, serrated, and sometimes very entire; taper-pointed, naked, or somewhat hairy, with 3 or 4 serratures on each edge. Flowers red, slightly woolly. Bloss. helmet toothed; lips scolloped, the middlemost segment red and white. Cal. teeth taper-pointed, or thorny. Huds.


Var. 2. Calyx woolly.

Stems branched, thickest upward. Leaves entire, or distantly toothed, mostly pointing downwards. Cal. very hairy at the edges, and on the outside; teeth terminated by awns as long as the teeth. Blossoms reddish purple; upper lip oval, hairy without; lower lip bent back, irregularly scolloped, with 2 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.
DIDYNAMIA. GYMNOSPERMIA. Galeopsis.

[At the foot of Scoot Scar near Kendal, and Giggleswick Scar near Settle. Mr. Gough.]

In a cornfield 2 miles west of Stratford upon Avon, near a limestone quarry. A. Sept.

grandiflor'a. G. All the whisks remote: calyces tubular, very hairy; teeth spear-shaped, taper-pointed, short, straight.

Dicks, b. s.-Riv. mon. 24, 2-Pet. 33, 10.

Stem upright, 4 cornered, of equal thickness between each joint; branching, woolly. Leaves serrated, woolly, or silky, on leaf-stalks, opposite; those near the root egg-shaped, those of the stem spear-shaped, taper-pointed, with straight veins. Cal. teeth thorny. Bloss. yellow, woolly; helmet toothed; lips scollop. In habit it agrees with the 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 calyces in this species are straight and glandular, but in the preceding white, and curled like wool or cotton.


tetrahait. G. Upper whisks nearly contiguous: calyx bellying, teeth very long, bristle-shaped, equal: stem swollen below the joints.


Var. 2. Blossoms white, and much larger than those of 1.

Cannabis spuria flore albo magno eleganti. R. Syn. 240.

Var. 3. Terminating flower salver-shaped.

Found by Dr. Smith at Matlock in 1788. The terminating flowers were always regularly 4-cleft, and salver-shaped, with 4 equal stamens, while all the rest had their proper form. See E. Bot. 207.

In all these varieties the leaves are egg-spear-shaped, and only upper parts of the stem and branches are hairy.


canna'bina. G. Upper whisks nearly contiguous: calyx tubular, shorter teeth strap-shaped, unequal, 3 of them larger.
The specific character will hardly distinguish this from the G. Tetrahita, but an attention to the following circumstances will do it. Stem and branches very hairy in every part. Leaves paler green and more hairy underneath. Calyces purplish red. Bloss. about 1 inch long, pale yellow; lower lip deeper yellow, its middle segment purple. The seeds produced similar plants year after year, and the beauty of its blossoms might challenge a place in the flower garden. G. Tetrahita, & Fl. Lapp. and Suec. "Huds. Ray Syn. 241. 9. G. versicolor. CURT.

It varies in having the leaves broad and egg-spear-shaped, or narrower and spear-shaped.

[Hedges at Kirkby in Furness, and in fallow ground near Hutton Roof, Westmoreland. Mr. Atkinson. Moist cornfields in a gravelly soil, and under a moist hedge at Birches green near Birmingham.] A. July, Aug.

GALEOB'DOLON. Bloss. upper lip entire, vaulted; lower lip without teeth, 3-cleft; segments broad, pointed: anthers fleshy on the back.

G. (Huds.)


Lower leaves heart-shaped; the upper egg-shaped, pointed. Flowers in whirls, sitting, 6 to 12 in a whirl. Whirls with an Involutum. Bloss. yellow; middle segment of the lower lip tawny, marked with 3 lines. Huds.—Floral-leaves bristle-shaped, 1 at the base of each flower. Bloss. lower lip beautifully striped and spotted with deep orange. Mr. Woodward. Stems 4-cornered, furrowed. Leaves spear-shaped, on leaf-stalks, unequally serrated, hairy, especially at the edges. Whirls the uppermost with 6 flowers, the rest with from 7 to 10. Involutum leaves growing to the base of the calyces. Anthers fleshy or glandular on the back part. Seeds oblong, convex on the outer side, 3-cornered on the inner. Galeopis Galeobdolon. Linn. Pollichia Galeobdolon. Gmelin, who includes under his genus Pollichia the Lamium amplexicaule, but that has teeth on the side of the blossom, and the name Pollichia had before been given to another plant. See Hort, Kew, and Schreber.
DIDYNAMIA, GYMNOSPERMIA. Betonica.

Yellow Archangel. Yellow Dead Nettle, or Weasel snout. Woods, shady places, and moist hedges. (Bath Hills, near Bungay, Suffolk; and woods, Norfolk. Mr. Woodward.—Hedges near Malvern Chase. Mr. Ballard.—Woods near Worcester. St.—Staffordshire and Warwickshire, frequent.) P. May.

BETONICA. Calyx awned: blossom upper lip upright, flat; tube cylindrical.

officinalis. B. Spike interrupted: blossom upper lip entire, lower lip the middle segment notched: calyxes smoothish.


Var 2. White flowered.


STA'CHYS. Bloss. upper lip vaulted; lower lip bent back at the sides, the larger middle segment notched: stamens after shedding the pollen bent to the sides.

sylvatica. S. Six flowers in a whirl: leaves heart-shaped, on leaf-stalks.

Curt. 183—E. bot. 416—Fl. dan. 1102—Riv. mon. 26. 2; Stachys sylvatica.—Blackw. 84. 2—Clus. ii. 36. 1—Ger. em.*

* This plant was formerly much used in medicine, but it is discarded from the modern practice: however, 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 provokes vomiting. Sheep eat it. Goats refuse it.
DIDYNAMIA. GYMNOSPERMIA. Stachys.

704. 5—Park. 908. 1—H. ox xi. 11. 10—Pet. 32. 7—Trag. 5—Lonic. i. 109. 3—Blackw. 84. 1.

Stem leaves and calyx hairy. Floral-leaves spear-shaped, pointed. Blossoms deep purple with white spots. Mr. Woodward. Tube of the blossom much longer than the calyx.

Var. 2. Leaves angular. **Hedge Nettle Woundwort.** Hedges and woods. P. July, Aug.*


S. About 6 flowers in a whirl: leaves strap-spear-shaped, palus tris, half embracing the stem sitting.


**Whirls** with 6 to 10 flowers. Linn. Stems 4-cornered, rough with hairs pointing downwards. Leaves in opposite pairs, very soft, unequally serrated, spreading half way round the stem. Floral-leaves, 2 small ones under each whirl. Calyx purple, be-set with fine hairs terminating in small globules. Bloss. reddish purple, mottled; tube white; mouth compressed; upper lip, and all the segments of the lower lip, slightly notched at the end.

**Clews Woundwort, or All-heal.** Watery places and banks of rivers. P. Aug.

S. Six flowers in a whirl: leaves blunt, almost naked: arven sis. blossoms as long as the calyx: stem feeble.

**Curt. 246—Fl. dan. 587—Riv. mon. 27. 2, Stachys arv. min.—Pet. 33. 12.**

Stem 4-cornered, blunt, with spreading branches: rough with hair. Leaves heart-shaped, bluntly serrated, much less hairy than the stem. Leaf-stalks hairy. Cups sitting, hairy, with 5 equal, sharp-pointed, shallow clefts. Bloss. whitish, almost smaller than the cup; helmet very entire; lip with 3 cleft, the middle one the broadest, purplish, dotted, not nicked. Linn. Blossoms flesh-coloured. Hall. It neither possesses the striking character of any other genus, nor sufficient marks of distinction to form a genus by itself. Curt. Tube of the blossom not longer than the calyx.

**Corn Woundwort.** In cornfields. [Thorp Arch, Yorkshire. Rev. Mr. Pierson. On St. Vincent’s rocks, Bristol.]

A. June—Aug.

* It will dye yellow. The whole plant has a foetid smell, and toads are thought to be fond of living under its shade. Sheep and goats eat it. Horses, cows, and swine refuse it.
Germanica. Many flowers in a whirl: serratures of the leaves lapping over each other: stem cottony.

F. Jacq. austr. 319- Knip. 10- E. bot. 829- Riv. mon. 27. 1, Stachys mont.- Fl. dan. 684- Barr. ic. 297- Fuchs. 766- J. B. iii. 320- Trag. 9. 1- Lonic. i. 110. 1- ii. 30. 4- Ger. 563. 2- Matth. 830- Dod. 90. 3- Lob. obs. 285. 4, and ic. i. 530. 2- Ger. em. 695. 2- Park. 48. 2- H. ox. xi. 10. 1.

Whole plant white with a thick silky down. Lower leaves heart-spear-shaped; the upper spear-shaped, thick wrinkled, sharply serrated. Bloss. lip covered with down. Mr. Woodw. Leaves very thick, soft and cloth-like. Bloss. purplish red.

Base Horehound. German Woundwort. Hedges about Witney Park, Oxfordshire, plentifully, and 4 miles S. of Grantham, near the London road, opposite Easton. [Frequent in Oxfordshire. Mr. Newberry.—Between Blenheim and Ditchley. Woodw.]

Ballota. Calyx salver-shaped, with 5 teeth and 10 scores: bloss. upper lip concave, scollopred.

Nigra. B. Leaves heart-shaped, undivided, serrated: calyx teeth tapering to a point.

Knip. 6- Blackw. 136- E. bot. 46- Fuchs. 154- J. B. iii. 318. 1- Riv. mon. 65. 1, Marrubiastr.-Matth. 825- Clus. ii. 34. 1- Dod. 90. 1- Lob. obs. 279. 1, and ic. i. 518. 2- Ger. em. 701, 1- Park. 1230. 3- H. ox. xi. 9. 14

-Pet. 32. 4.

Lower leaves heart-shaped, upper ones egg-shaped. Floral leaves bristle-shaped, hairy. Whirls extending half way round the stem. Calyx hairy, rim 5-cornered; teeth ending in sharp bristle-shaped points. Bloss. tube containing honey, closed above by 5 hairy tufts; upper lip hairy, not very entire, purple, variegated with white lines. The cups attaining their 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.

Stinking Horehound, or Henbit. On rubbish and in hedges, common.

Var. 2. Blossoms white, with a tinge of red. Not the B. alba of Linn. as Mr. Hudson supposed.

* It stands recommended in hysterical cases. The Swedes reckon it almost a universal remedy in the diseases of their cattle. Horses, cows, sheep, and goats refuse it.

**MARRUBIUM.** Calyx salver-shaped, rigid, with 10 scores: bloss. upper lip cloven, strap-shaped, straight.

M. Teeth of the calyx bristle-shaped, hooked.

*E. bot. 410–Fl. dan. 1036–Ludw. 145–Riv. mon. 66. 1, Marrubium 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 ic. i. 517. 2–Ger. em. 693. 1–Park. 44–Pet. 32. 3–H. ox. xi. 9, row 3. 1.*

Whole plant white with down. Lower-leaves roundish, wrinkled, with thick veins beneath; upper-leaves somewhat egg-shaped. Mr. Woodward. Leaves wrinkled, hoary. Calyx woolly, fringed on the inside at the bottom of the teeth with woolly hairs. Bloss. compressed, bowed; upper lip spear-shaped; lower lip, middle segment slightly scolloped, lateral segments spear-shaped; short. Anthers with a black substance in the middle. Bloss. white.

*White Horehound.* Road sides and amongst rubbish.  
P. July—Sept.*

**LEONURUS.** Anthers sprinkled with shining particles.

L. Stem-leaves spear-shaped, 3-lobed.  

*Kniph. 4–Ludw. 5–Fl. dan. 727–Riv. mon. 20. 1, Cardiaca.*  

–Blackw. 171–E. bot. 286–Dodd. 94–Lob. obs. 278. 1, and ic. i. 516. 1–Ger. em. 705–Park. 42. 7–Ger. 569–Fuchs. 395–Lonic. i. 110. 3–H. ox. xi. 9. 18.*

Flowers in whirls, purplish within, white 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.

* 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. In large doses it loosens the belly. 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.
DIDYNAMIA. GYMNOSPERMIA. Origanum.

Common Motherwort. Hedges, and on rubbish and dung-hills. [Ditchingham, Norfolk, in a hedge, and on an adjoining bank, in a gravelly soil. Mr. Woodward.] B. Linn. and Huds. P. Relh.* June—Aug.*

CLINOPODIUM. Stamens crooked; anthers approaching: involucr. bristle-shaped, beneath the whirls.


Fl. dan. 930—Kniph. 11—Clus. i. 354. 2—Lob. obs. 269. 2—ic. i. 504. 2—Ger. em. 673. 2—Park. 22. 4—H. ox. xi. 8. row 1. 1—Pet. 32. 9—Riv. mon. 43. 1, Clinopodium—Trag. 36. 2—Lonic. i. 118. 1—Matth. 814—Lonic. ii. 21. 1.


ORIG'ANUM, Flowers forming a 4-sided spike-like cone.

vulgar. O. Spikes roundish, panicked, clustered: floral-leaves egg-shaped, longer than the calyx.

Kniph. 4—Ludw. 90—Curt. 338—Woodw. 161—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. 12—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, 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

* 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.
DIDYNAMIA. GYMNOSPERMIA. Thymus.

up to the mouth; without beset with short fine hairs, and minute white shining globules. Bloss. 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.

Lob. obs. 264. 2—ic. i. 494. 2—Ger. em. 664. 2—Park. 12. 4—H. ox. xi. 3. 9.

This is commonly cultivated in our gardens, and has been supposed to be the O. Oceanis of Linneus.

Wild or Field Marjoram. Thickets and hedges, in a calcareous soil. [Catton, near Norwich. Mr. Woodward. In a wood near Cartmel Wells. Mr. Atkinson. Clapham, Yorkshire. Mr. Caley.]

P. July.*

THYMUS. Calyx 2-lipped; mouth closed with soft hairs.

T. Flowers in heads: stems creeping: leaves flat, blunt, serpyllum, fringed at the base.

Fl. dan. 1164—Kniph. 6—Ludw. 121—Vail. 32. 9, and 7—Curt.—Clus. i. 359. 1—Dod. 277. 1—Lob. obs. 230. 2, and ic. i. 423. 2—Ger. em. 570. 1—Park 8. 10—Pet. 31. 1—H. ox. xi. 17, row 1. 1—Fuchs. 251—J. B. iii. 269—Blackw. 418—Matth. 725—Riv. mon. 42. 2, Serpyll. f. minore.—Ger. 455. 1, and 2—Lonic. i. 119. 1.

Calyx teeth fringed. Stamens as long as the blossom. Linn. Filaments those inserted below the upper lip shorter than the tube, those below the under lip longer than the tube. Mr. Horlick. Stems woody, nearly cylindrical. Leaves oblong-egg-shaped, very entire, with hollow dots on both surfaces, fringed at the base with a few fine white hairs. Calyx coloured with a circle of white hairs running round the inside at the base of the segments, which, while the plant is in flower, lye flat to the sides of the calyx, but when the blossom falls off expanding close up its mouth. Bloss. purplish red.

* The whole plant is a warm aromatic. The dried leaves, used instead of tea, are exceedingly grateful; the essential oil of this plant is so acid, that it may be considered as a caustic, and is much used with that intention by farriers. A little cotton wool moistened with it, and put into the hollow of an aching tooth, frequently relieves the pain. The country people use the tops to dye purple. Goats and sheep eat it. Horses are not fond of it. Cows refuse it.
**DIDYNAMIA. GYMNOSPERMIA. Thymus.**


It is subject to considerable variations, the principal of which are:

Var. 2. *white flowered.* Huds. Blossoms white.

Var. 3. *large flowered.* Huds. Blossoms large.


Var. 4. *broad-leaved.* Linn. Larger. Leaves broad.


Okey Hole, Somersetshire.

*Serpillum vulgaris majus.* R. Syn. 231.

Var. 5. *Lemon.* Leaves with the scent of lemon peel.

*Clus.* i. 359. 2- *Dod.* 277. 2- *Ger. em.* 571. 7- *Park.* 8. 9-


It is used in sauces.


*Sheedr.* 52- *Wood.* 110.

Boxly Hill, by Kitt's Coffee-house.

Var. 7. *hoary.* Differs from 1 in the hairiness of the leaves. *Ray.*

*Vaill.* 32. 6- *Rev. mon.* 42. 3, *Serp. mont. birsut.*

Gogmagog Hills, and other barren places.


*Ray.*

Pastures on the summit of y Wydhva, Caernarvonshire, and on Snowdon.


*Serpillum. birsut. min. rep. inodorum.* R. Syn. 231.

Ireland.

† 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 the debauch of the preceding evening. A general opinion prevails, that the flesh of sheep, 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, (Gem. 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 plants is well known. Sheep and goats eat it. Swine refuse it. The *Phalama papilionaria* lives upon it.
T. Flowers in whisks, 1 upon each fruit stalk: stems up Acinos. right, somewhat branched: leaves acute, serrated.

Dicks. b. s.—Curt.—E. bot. 411—Kniph. 8—Riv. mon. 43. 2, Acinos—Clus. i. 354. 1—Dod. 280—Lob. obs. 270. 2, and 
and ic. i. 506. 1—Ger. em. 675. 1—Park. 21. 1—H. ex. xi. 18, 
row 1. 1—Pet. 32. 10—Fuchs. 896—J. B. iii. 259—Lonic. i. 
116. 3—Fl. dan. 814—Trag. 37—Ger. 548. 1—Matth. 815.

Stems ascending. Leaves in distant pairs. Mr. Woodward.
Plant hairy. Calyx scored, at the fore part at the base inflated, 
about the middle contracted, and then dilating into the lower lip. Mr. Hollefeard. The middle segment of the lower lip of 
the blossom notched at the end. Blossoms purple.

[Not unfrequent in Norfolk. Mr. Woodward, and Surry. St. 
On the side of Hamilton, Yorkshire. Mr. Robson. Wick Cliffs. 

MELISSA. Calyx dry, angular, the upper lip ex- 
panding and reflected: bloss. upper lip some-
what vaulted, cloven; lower lip, the middle 
segment heart-shaped.

M. Fruit—stalks axillary, forked, longer than the leaves; Nep‘eia, 
stem ascending, hairy.

Riv. mon. 47, Calamintha fol. incano—Gies. 1. 14—Curt.— 
Blackw. 167—Matth. 617—Dod. 98. 2—Lob. obs. 275. 1, 
and ic. i. 513. 2—Ger. em. 687. 3—Park. 37. 4. a.

Fruit—stalks much longer than the leaves; their branches 
again forked, the last generally bearing 3 flowers, the 2 outer of 
which have a pair of floral—leaves, the middle one naked. Floral— 
leaves very small, 1 pair at each division of the fruit—stalks. 
Flowers very small. Woodward. Leaves in opposite pairs, 
early sitting, egg—shaped. Fruit—stalks, the forks subdivided 
with 3 to 6 fruit—stalks, each supporting a flower. Calyx coloured, 
ribbed, beset on the outside with short hairs and shining glands, 
smooth within, but closed at the mouth with long hairs; the 3 
upper teeth equal, the 2 lower rather longer, equal, and more 
pointed, ribs 15. Bloss. pale bluish purple; lower lip beset at 
the base with white club—shaped bristles; lateral segments egg— 
shaped, the middle one kidney—shaped, toothed.

The want of the labiatae shape of the calyx, its nearly equal 
teeth, and the broad, scolloped middle segment of the lower lip 
of the blossom, cannot fail to direct the learner to the genus 
Nepeta, to which it really seems to belong. In a garden the 
leaves become six times as large as in its natural soil, but the
flowers are not larger, and the fruit-stalks are shorter than the leaves.

*Field Baum.* Sides of roads and cornfields, and hedge banks. [Norfolk, frequent. *Mr. Woodward.*] P. Aug.

The *Cassida viridis* feeds upon it.

**Calamintha. M.** Fruit-stalks axillary, forked, as long as the leaves.


**Fruit-stalks** generally shorter than the leaves, sometimes as long as, and near the ends of the branches longer. *Woodward.* Leaves in opposite pairs on leaf-stalks. **Fruit-stalks** 3-forked, the lateral arms forked. **Calyx** with 13 ribs, short hair, and shining globules; segments fringed, and the mouth closed with long hairs; teeth pointing upwards after the blossom falls off, the 3 upper equal, the 2 lower longer, and more pointed. **Blossom** tube beset within with white club-shaped hairs; **upper lip** lilac-coloured within; **lower lip** pale within, but marked with 3 round dots, and a few short streaks of a deeper hue. **Summit,** 1 segment greatly longer than the other, and hooked.


**MELITTIIS.** **Calyx** wider than the tube of the blossom: **bloss.** upper lip upright, entire; **lower lip** 3-cleft: **anthers** each pair forming a cross.

**Melissosphyllum.** M. **Calyx** three-lobed. E. bot.


**Calyx** upright, 3-cleft; the upper segment often marked with a small tooth on each side. **Blossom** white; **tube** twice as long as the calyx; **border** with 4 divisions, expanding, consisting of an **upper lip** roundish, upright, entire; and a **lower lip** with 3 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. *Woodward.* Whole *plant* hairy. **Leaves** opposite, egg-spear-shaped, wrinkled, serrated, the teeth
DIDYNAMIA. GYMNOSPERMIA. Melittis.

terminating in purplish glands. Fruit-stalks from the bosom of the leaves, 2 or 3 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. Bloss. white, stained with purple, except the middle segment of the lower lip, which is a full purple edged with white. Anthers of the shorter stamens lying close to each other in form of a cross.


M. Calyx four-lobed. E. bot.

E. bot. 636—Curt,—Mill. ill.—Ger. em. 690. 3. f. 2.

On the authority of Dr. Smith in the English Botany, we cannot hesitate to insert this new species of Melittis, there first distinctly separated from the M. Melissophyllum. It is one of the most beautiful of the plants natural to this island, and has been lately found by Mr. D. Turner and Mr. Sowerby, in great plenty about a mile from Ashburton in the road towards Plymouth, and also in Cornwall.—Dr. Smith observes the calyx is 4-lobed, having on each side two lateral, not vertical lobes, sometimes notched, but more generally entire. The blossom is larger than in the more common species, white, with a pale tinge of yellow on the upper side, the lower lip marked with a large undivided purple spot, surrounded by a white margin.

[ Cornwall and Devonshire, where it is admitted into gardens. My specimens gathered near Callington, in May 1794, appear to be this species, and not the Melissophyllum as at that time supposed.] P. May, June.

SCUTELLARIA. Calyx, rim nearly entire, closed after flowering; covered with a lid.

S. Leaves heart-spear-shaped, scolloped: flowers axillary. galericulata.

Curt. 155—E. bot. 523—Kniph. 8—Riv. mon. 77. 1, Scutellaria—Blackw. 516—Walc.—Fl. dan. 637—H. ex. xi. 20. revu 3. 6—Lob. obs. 186. 3. and i. 344. 2—Dod. 93. 2—Ger. em. 477. 10—Park. 221—Pet. 34. 10.

Stem nearly smooth. Leaves nearly smooth, scolloped at the base, entire upwards. Flowers hairy on the outside. Woodw. Plant much branched, about \( \frac{1}{2} \) a yard high. Bloss. blue. Anthers purple.

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DIDYNAMIA. GYMNOSPERMIA. Prunella.

_Hooded Willow herb_. Blue Skullcap. Banks of rivers and edges of ponds. [Side of the stews at Edgbaston.] P. Aug.*

mi'nor. S. Leaves heart-egg-shaped, nearly entire: flowers axillary.

_Dicks. b. s._-Curt. 288—E. bot. 524—Ger. em. 581. 3—Park. 220. 4.—H. ex. xi. 20. row 3. 8.—Pet. 34. 11—Ger. 466. 2.

Very small and slender. Leaves egg-shaped, with only 1 or 2 scollops at the base. Woodward. Plant from 4 to 8 inches high, generally unbranched. Leaves sometimes egg-spear-shaped, a little serrated towards the base, slightly hairy. Calyx with 2 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 reflected, but neither notched at the end nor keeled beneath. Bloss. reddish purple, the lower lip mottled within with deeper coloured spots. Anthers white. Summit slightly cloven.


PRUNEL'LA. Filaments forked, one of the divisions bearing the anthers: _summit_ cloven.

vulgar'is. P. All the leaves egg-oblong, serrated, on leaf-stalks: upper lip of the calyx lopped, 3-toothed.

_Curt. 229—Ludw. 19—Kniph. 5—Fl. dan. 910—Blackw. 24—Mill. 69. 2—Dod. 136. 1—Lob. obt. 251. 3. and ic. i. 474. 2—Ger. em. 632. 1—Park. 1680. 1—H. ex. xi. 5. row 1. 1. f. 4—Pet. 32. 11—Walc.—Riv. mon. 29. 1, Brunella—Ger. 507. 1—Fuchs. 621—J. B. iii. 428. 2—Trag. 310—Matth. 963.

* When the blossom falls off the cup closes upon the seeds, which, when ripe, being still smaller than the cup, could not possibly open its mouth, or overcome its elastic force, as the down of the seeds do in the compound flowers, and must consequently remain useless without a possibility of escaping. But nature, ever full of resources, finds a method to discharge them. The cup grows dry, and then divides into 2 distinct parts; so that the seeds, already detached from the receptacle, fall to the ground. Cows, goats, and sheep eat it: horses and swine refuse it.
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 7 ribs; lower lip with 2 spear-shaped segments, each marked with 3 lines, and serrated with short stiff hairs. Bloss. upper lip slightly notched at the end; lower lip, middle segment jagged. Summit, segments rolled back. Bloss. blue, purplish, or white.

Common Selfheal. Meadows and pastures.

ANGIOSPERMIA.

BART'SIA. Calyx 2-lobed, notched at the end, the points (sometimes) coloured: bloss. (sometimes) less coloured than the calyx; the upper lip longer: capsule 2-celled.

B. Upper leaves alternate, serrated: flowers distant, lateral, visco'sa.

Lightf. 14. at p. 321—Ger. 85—Pluk. 27. 5—Pet. 36. 6—Barr. 665.

Stem cylindrical, simple. Leaves sitting, spear-shaped, sharply serrated, slightly hairy. Flowers single, from the bosom of the leaves, on short fruit-stalks. Calyx very large, as long as the blossom, with 5 deep divisions; segments spear-shaped, clammy. Blossoms yellow. Woodw. Stems sometimes branched from the bottom upwards, nearly to the middle. Calyx with 4 nearly equal segments, rarely with 5. I have never seen it coloured. Filaments rolled in a spiral under the upper lip of the blossom. Anthers pointed at bottom. Miss Giddy.—Mr. Stackhouse also observes that the calyx is not coloured.

Marsh painted-cup. Marshes in Cornwall and Devonshire; about Latham, near Ormskirk, Lancashire; and about Ardencaple in the vicinity of Loch Gyle, near Loch Long, in the district of Cowal, Argyleshire. [Cornfields, near Plengwarry, and Cosgarne, Cornwall. Mr. Watt.] A. July, Aug.

B. Leaves opposite, heart-shaped, bluntly serrated. Dickl. b. i.—E. bot. 361—Fl. dan. 43—Pluk. 163. 5—Pou. in Clus. ii. 343.


DIDYNAMIA. ANGIOSPERMIA. Rhinanthus.


It differs from Euphrasia officinalis in the segments of the lower lip of the blossom not being entire, it agrees in the structure of the calyx, and the hairs of the anthers, in both which circumstances it differs from the Bartsia. St. Mr. Afzelius observed to me, that this agrees in generic character with the Bartsia alpina, but that the latter has not the character of the other Bartsias; he therefore would constitute a new genus to contain these two plants.

RHINANTHUS. Calyx 4-cleft, inflated: capsule 2-celled, blunt, compressed; seeds few.

Cris'ta gal-li. R. Upper lip of the blossom compressed, and shorter: calyx smooth.


Var. 2. Linn.—Blossoms smaller; lower lip purple. Cornfields between Wetherby and Catall, and near Burrowbridge, Yorkshire, and W. Newton, Northumberland. Ray.

EUPHRASIA. Cal. 4-cleft, cylindrical: anthers, the lower ones with one thorny lobe at the base: caps. 2-celled, egg-oblong: seeds few, leaning backwards.

officinalis. E. Leaves egg-shaped, stalked, sharply toothed.

The lower lobes of the lower anthers terminate in a thorn which bends the filament to one side. Linn. Stems reddish. Branches in opposite pairs. Leaves sitting, mostly opposite. Calyx with 5 flat sides and 5 corners, but segments rarely 5, unequal, spear-shaped, dark purple at the ends, and with a few dark purple globular glands strewed on the outside. Bloss. tube rather crooked, a little hairy, stained with yellow; upper lip streaked with a few purple lines, cloven into 2, segments ending in 3 teeth; lower lip, segments cloven at the end, with a very small tooth in the cleft, the lateral segments with 3 purple lines, the middle one with a yellow blotch. Anthers brown, with a few white hairs on the lower part where they open. Summit fringed with very minute glands round the edge. Seed-vessel slightly notched at the end, a little hairy towards the top, and marked with black dots. Seeds egg-shaped. Blossoms bluish white, with purple streaks.

Common Eyebright. Heaths; dry barren meadows and pastures. A. July—Sept. [But, on Arthur's Seat, near Edinburgh, I have found it in blossom in the beginning of May, in great plenty, but with stems from \( \frac{1}{2} \) to \( 1 \frac{1}{2} \) inch high, and the leaves bluntly serrated. St.]*

E. Leaves strap-shaped, all serrated.

Odontites.

Stem bluntly four-cornered, rough. Branches in opposite pairs. Leaves sitting, opposite, rough; spear, or strap-spear-shaped. Flowers pointing one way, forming long, terminating, leafy bunches. Calyx hairy without. Bloss. hairy; upper lip slightly notched at the end; lower lip, middle segment slightly indented at the end. Filaments flatted. The lobes of all the anthers ending at the base in a short taper point, and between the lobes are a number of white club-shaped substances. Germin compressed, hairy, surrounded and sheathed at the base by a skinny membrane. Summit knobbed. Leaves sometimes reddish. Blossoms dusky red, or purple.

Red Eyebright.

* It is a weak astringent, and was formerly in repute as a remedy for impaired vision. It will not grow but when surrounded by plants taller than itself. Cows, horses, goats, and sheep eat it. Swine refuse it.
DIDYNAMIA. ANGIOSPERMIA. Melampyrum.

Var. 2. Flowers white. Stem very light green. Leaves without the least tinge of red.

Sent to me by Mr. Bourne, who gathered it on Northington Farm, Grimley, near Worcester. Cornfields and pastures.

A. July—Sept.

MELAMPYRUM. Cal. 4-cleft: bloss. upper lip compressed, edges bent back: caps. 2-celled, compressed, slanting, opening on one side: seeds solitary, bulging.


E. bot. 41—Fl. dan. 1104—Kniph. 11—Riv. mon. 81. 1, M. cristatum—Pluk. 99. 2—J. B. iii. 446. 2—H. ox. xi. 23. 2.

Floral-leaves, the upper coloured; the lower spear-shaped. Bloss. helmet purplish, or white, with a yellow edge. Reil.—Whole plant nearly smooth, very much branched. Stems in the autumn 1½ or 2 feet high. Branches opposite, numerous, diverging, so that where numbers grow together they are so entangled that it is almost impossible to extricate them. Leaves opposite, sitting, strap-shaped but taper-pointed, those below the branches bent down, on the branches parallel. Spikes terminating the stem and branches. Floral-leaves: purplish, large, the middle tooth lengthened out into a long awl-shaped point bent down, 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. Bloss. reddish; I have never observed them yellow, though I have seen thousands of them. Mr. Woodward.

Crested Cow-wheat. Woods of Cambridgeshire and Bedfordshire, plentifully; and among corn at Waltingfield, near Wakefield. [Ripton Wood, Huntingdonshire. Mr. Woodward.]

A. June, July.


Fl. dan. 911—E. bot. 53—Riv. mon. 80, M. arvense.—Kniph. 1—Clus. ii. 45. 1—Ger. em. 90. 3—J. B. iii. 439. 2—H. ox. xi. 23. row 1. 1—Dod. 541. 2—Lab. obs. 23. 1, and it. i. 37, Trit. vacc.—Ger. em. 90. 1—Park. 1327. 4—Trag. 663.

Stem upright, slightly hairy, branched. Leaves opposite, spear-shaped, lengthened out into a very long point, near sitting, slightly downy. Flowers in an oval head. Floral-leaves long,
DIDYNAMIA. ANGIOSPERMIA. Melampyrum.

spear-shaped, wing-cleft, with teeth at the base, entire upwards.

**Woodward.** Bloss. yellow and dusky purple.

**Purple Cow-wheat.** Cornfields. Near Lycham, Norfolk; Horsley Bath, near Beeston Castle, Cheshire. Between Norwich and Cossey. [Costesey, near Norwich. Mr. Crowe. Bixley, near Norwich. Mr. Woodward.]  

A. July.*

M. Flowers lateral, pointing one way: leaves in distant praten’se, pairs: blossoms closed.

**E. bot. 113-Kniph. 11-Walc. M. sylvaticum—Ger. 84, 1 and 2—Clus. ii. 44. 2—Lab. obs. 22. 2, i. 36. 2—Ger. em. 91. 1—Park. 1326. 1—H. ox. xi. 23. 3.**

Lower lip of the blossom straight, not bent downwards, as in **M. sylvaticum.** Sr. Mouth closed, not gaping as in **M. sylvat. Linn.** Whole plant frequently brownish, beginning to flower early and continuing to flower all the summer, growing more and more branched, in the manner of **M. cristatum,** and in the latter part of the year extremely branched. Branches weak, opposite.

Leaves on very short leaf-stalks, stiffish, from the bosom of the lower ones an egg-shaped gland, possibly an abortive flower, those towards the base of the branches strap-spear-shaped, the upper spear-shaped, taper-pointed, dark blackish green, with sometimes a tinge of purple. Only the **floral-leaves** toothed, so that early in the spring very few will be visible, but later they are very numerous, the branches extending in length and continuing to flower till the spike is very long; the **lower** halberd-shaped, with only 2 or 3 teeth at the base; the **upper** nearly with winged clefts at the base, with long awl-shaped reflected teeth, and ending in an acute spear-shaped point. **Bloss. tube** somewhat furrowed, straight, white at the base, forwards faintly tinged with yellow; **lips** closely approaching, hairy within; **upper lip** slightly cloven; the **lower** with 3 shallow clefts. **Anthers** the back pair firmly adhering together, Mr. Woodward. **Leaves** spear-shaped, greatly tapering towards the point, all serrated, but the serratures extremely fine, and the edges of the leaves being rather turned back, they are not very readily seen. **Stem** feebly, cylindrical towards the bottom, 4-cornered upwards. **Calyx** purplish without; **segments** with minute stiff bristles along the edge; the 2 **upper** longer. **Bloss.** of a full yellow, very much compressed; the notch in the upper lip but barely perceptible; **lower lip** with 2 orange-coloured rising plaits; **tube straw-coloured.** **Filaments** 4, supporting what appears a single anther, which is egg-shaped, compressed, hairy at the edges, and open-

* The seeds, when ground with corn, give a bitterness and greyish cast to the bread, but do not make it unwholesome. Cows and goats eat it. Sheep refuse it.
DIDYNAMIA. ANGIOSPERMIA. Melampyrum.

ing at the front edge, divisible into 4 portions, but as readily breaking in any other direction; after flowering separating into 2 or 4 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 and so brittle as not to admit being straightened. The teeth at the base of the leaves, particularly of the leaves next to the flowers, sufficiently distinguish this from the M. sylvaticum, in which all the leaves are entire. The lower lip of the blossom in M. sylvaticum is turned downwards and outwards, but in M. pratense it turns upwards and inwards.

*Meadow Cow-wheat.*

Var. 2. Blossom white, with 2 yellow spots on the lower lip. Ray.

Woods and thickets, in soil that holds the wet, not uncommon. [Frequent in woods and hedges in a clayey soil in Norfolk and Suffolk. Woodw. In woods near the road from Birmingham to Hales Owen. Woods at Edgbaston.] A. July, Aug.*

This has frequently been mistaken for the M. sylvaticum, probably because it generally grows in woods or on the skirts of woods; but this is not the only instance in which too much attention to a trivial name has been the occasion of error.


*E. bot. 804—Fl. dan. 145—Kniph. 9.*

Diffs from M. pratense as follows: Stem more nodding. Leaves fully expanding. Bloss. only half as long, entirely yellow, and not with the tube white; mouth or the opening between the lips gaping and open. Linn. But the M. pratense has sometimes the whole of the blossom yellow, so that the circumstance of colour must not be too much trusted in distinguishing the two species. Stem upright, or nodding, weak, branched, leafy. Leaves very entire, all of them undivided, very long, spear-shaped.


* Where this plant abounds, the butter is yellow, and uncommonly good. Swine are very fond of 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.
LATHRÆ'A. **Calyx** with 4 or 5 divisions: germ-en with a depressed gland at the base of the seam: **caps.** 1-celled; receptacles lateral, sponge-like.

L. Stem undivided: flowers pendent; lower lip 3-cleft. *Squama'ria.*

Dicks. b. s.—E. bot. 50—Fl. dan. 136—Riv. 89, 2, Squamaria.

—Barr. 80—H. ox. xii. 16. 14—Matth. 964—Ger. 1387.

1—7. B. iii. 783. 2—Blackw. 430—Dod. 553. 1—Park.

1363. 4—Clus. ii. 120. 1—Ger. 1585. 1—H. ox. xii. 16.

«Great Toothwort. Grows only in shady places which the sun's rays can scarcely penetrate, it being almost destitute of leaves, and such plants alone can live without the solar light. Linn. Woods, shady lanes, and at the bottom of mountains, but rather rare. Maidstone, Kent, Harefield, thickets below Con-zickscar, near Kendal. [Informed that it is found in woods in Derbyshire. Mr. Woodward. In Plumpton. Mr. Jackson. Not confined to shady woods, but its choice of situation is determined by other causes, for it is found in very light dry soil, and so entangled with the roots of some neighbouring tree, especially with those of the Hazel, that I have reason to believe it parasitical. Mr. Gough. At the roots of trees in a wood near Gainsford, Durham. Mr. Robson.]**

P. April, May.

PEDICULA'RIS. **Calyx** 5-cleft: **caps.** 2-celled, sharp-pointed, slanting: **seeds** few, angular, pointed.

P. Stem branched: calyx crested with callous dots: lip palus'tris. of the blossom slanting.

E. bot. 399.—Riv. mon. 92, 1, Pedicularis.—Pet. 36. 3—Ger. 913.

Stem about a foot high. **Branches** expanding. **Leaves** and **flowers** distant. Mr. Woodward. Stem angular, purplish. **Leaves** winged; leaflets with winged clefts. **Flowers** solitary, in the bosom of the leaves. **Calyx** with 2 lips, opening sidewise; segments
DIDYNAMIA. ANGIOSPERMIA. Pedicularis.

cloven and jagged, 2 of them bordered with leafy appendages. Bloss. purple, sometimes white; helmet with a little tooth on each side, not notched at the end; lower lip fringed with fine soft hairs.


sylvatica. P. Stem branched: calyx oblong, angular, smooth; lip of the blossom heart-shaped.

E. bot. 400—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. 148. 2.

Stem very short. Branches from the root, long, spreading close to the ground. Leaves and flowers crowded. Mr. Woodward. 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. Bloss. purple, much slenderer than the calyx, tube compressed; upper lip with a little tooth on each side; lower lip with 3 divisions, the middle segment a little smaller. Filaments the 2 taller hairy towards the top.

Common Lousewort. Wet pastures and heaths. P. June, July.

Var. 2. Blossoms white.

[Near Redruth, Cornwall, towards the sea. Mr. Watt Near Berkhamsted. Mr. Woodward.]

ANTIRRHINUM. Calyx with 5 divisions: blossom either bulging at the base; or ending in a spur: capsule 2-celled, many-seeded, opening at the top and the divisions bent back.

(1) Leaves angular.

Cymbalaria. A. Leaves heart-shaped, 5-lobed, alternate; stems trailing.

* This is an unwelcome guest in meadows, being very disagreeable to cattle. 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 get loose, and they will be over-run with vermin. Cows and swine refuse it.
DIDYNAMIA. ANGIOSPERMIA. Antirrhinum.

Seeds wrinkled like the kernels of the walnut. **Bloss**. sometimes white. **Linn**. Whole plant smooth and shining. **Leaves**. the smallest with only 3 lobes; lobes of the lower blunt, of the upper pointed. **Flowers**. on long fruit-stalks bending at the top. **Bloss**. spur as long as the calyx. **Woodward**. **Stems**. thread-shaped. **Leaf-stalks**. very long, bending like tendrils. **Calyx**. segments equal, smooth. **Bloss**. pale purple; palate yellow, shaggy with orange-coloured hairs. **Nectary**. slender, crooked, rather longer than the calyx.

**Ivy-leaved Snap dragon**. Old walls. About London, frequent, [particularly adjoining to the Thames. Walls of Burleigh Castle, near Stamford. Mr. **Woodward**.] P. June—Oct.*

**A. Leaves**. egg-shaped, woolly, stems trailing.

**E. bot.** 691—**Curt.** 205—**Fl. dan.** 913—**Fuchs.** 167—**Ger.** iii. 372. 1—**Dod.** 42. 1—**Ger. em.** 625. 1—**Lonic.** i. 63. 3—**Park.** 553. 1—**H. ox. v.** 14. 27—**Matth.** 694—**Ger.** 501. 1—**Lob.** adv. 197, and *ic. i. 470. 1—**Riv. mon.** 86. 1, **Elatine**.

**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. **Bloss**. spur shorter than the body of the blossom. Mr. **Woodward**. **Fruit-stalks**. the lower generally shorter, the upper longer than the leaves. **Bloss**. yellow and purple. **Spur**. shorter than the body of the blossom. Mr. **Woodward**. **Round-leaved Snap dragon**. Cornfields. [Suffolk, frequent. Mr. **Woodward.**] A. July—Sept.

**A. Leaves**. halberd-shaped, alternate: stems trailing.

**E. bot.** 692—**Curt.**—**Fl. dan.** 426—**Sheldr.** 60—**Park.** 553. 2—**Ger.** B. iii. 372. 2—**Matth.** 1012—**Blackw.** 170—**Dod.** 42. 2—**Lob. ic. i.** 470. 2—**Ger. em.** 625. 2—**H. ox. v.** 14. 28.

The capsule opens by the separation of a valve on each side. **Linn**. **Fruit-stalks** whilst in flower expanding, afterwards declining. **Nectary**. A spur as long as the body of the blossom. Mr. **Woodward**. **Leaves**. the lower ones opposite, sometimes egg-shaped and toothed. **Calyx**. hairy. **Bloss**. upper lip yellow,

* Its trailing branches variously interwoven often cover old moist walls with a thick tapestry, and when in blossom make a beautiful appearance. Mr. **Woodward**.
DIDYNAMIA. ANGIOSPERMIA. Antirrhinum.

lower lip and the Anthers edged with deep purple.] Mr. Thomson.

Var. 2. Flowers regular, 5-cleft, and with 3, 4, or 5 spurs as in Peloria. Huds.


(2) Leaves opposite: nectary long, pointed.

repens. A. Leaves strap-shaped, crowded; the lower in fours; calyx as long as the capsule.

Dill. elib. 163. 197.

The lower leaves 4 or 5 in a whirl. Flowers in terminating spikes, pale blue. The flowering stem is stiff and upright, not at all corresponding with the idea given by the trivial name, which applies only to the root.

Creeping Snap-dragon. Fields, banks, and walls near Henly, and in Herts. Ray. [Specimens from the West of Cornwall, sent by Mr. Giddy.] P. July, Sept.

arvense. A. Leaves nearly strap-shaped; the lower in fours: calyx with clammy hairs: flowers in spikes: stem upright.

Dill. elib. 163. 198.

Leaves smooth. Flowers very small; blue. Floral-leaves and spur bent back. Linn.


Var. 2. Blossoms yellow.

Col. ecphr. 300. 1.

Near Settle, Yorkshire.

(3) Leaves opposite: nectary short, blunt.

monspes-sula'num. A. Leaves strap-shaped, crowded; stem shining, paniced: fruit-stalks spiked, shining.

J. B. iii. 459. 1.

Flowers sweet-scented. Bloss. spur straight, very short, shorter even than the calyx. Very nearly allied to A. repens. Linn. Floral-leaves spear-shaped, 1 at the base of each fruit-stalk. Bloss. pale blue, with darker spots; spur nearly as long

* This is considerably more bitter than the other species, and is said to have been used successfully in cases of foul ulcers, and in cutaneous eruptions.
DIDYNAMIA. ANGIOSPERMIA. Antirrhinum.

as the body of the blossom. Calyx very small, segments pointed.

W O O D W A R D.

Antirrhinum repens a Huds. Sweet smelling Snap-dragon.

A. Leaves mostly alternate, spear-shaped, blunt: stem

very much branched, spreading.

Dicks. b. s.—Curt. 296—Fl. dan. 502—Riv. mon. 85. 2, Linaria arb. min.—Lob. ic. i. 406. 1—Ger. em. 549. 5—
Park. 1334. 2—J. B. iii. 465. 1—Matth. 1198.

Leaves, only the 3 lowermost pairs opposite. Linn. Stem

much branched, hairy. Lower branches opposite, the upper al-
ternate. Leaves alternate. Fruit-stalks from the bosom of,
and equal to, or longer than the leaves. Calyx segments strap-
shaped, nearly equalling the blossom. Bloss. spur blunt, shorter
than the body of the blossom. Mr. Woodward. Bloss. purple
and yellowish white.

Least Snap-dragon. Gravelly cornfields. [Binham, Nor-
folk. Mr. Crowe, Near Berkhamsted, Herts. Mr. Wood-
ward.]

A. June—Sept.

(4) Leaves alternate.

A. Leaves spear-strap-shaped, crowded: stem upright:

Lina'ria. spikes terminating, sitting: flowers tiled.

Dicks. b. s.—Curt.—E. bat. 638—Kniph. 6—Fl. dan. 982—Riv.
mon. 83. 1, Linaria—Woodw. 221—Sheldr. 49—Ludew. 12—
Dodd. 183. 1—Lob. obs. 222. 2, and ic. i. 406. 2—Ger. em.
550. 1—Park. 458. 1—Ger. 460—Lonic. i. 154. 2—Fuchs.
545—J. B. iii. 456. 2—Blackw. 115—Trag. 357—H. ox. v.
12. 10.

Bloss. the palate woolly, orange-coloured. Nectary long,
awl-shaped. Caps. opening with equal divisions. Linn. Stem
nearly cylindrical, smooth. Branches nearly upright, from the
bosom of the leaves. Calyx smooth. Bloss. lower lip, segments
circular, the middle one much smaller, the projecting part orange-
coloured, woolly, the rest of the blossom pale yellow and
smooth.

Var. 2. Flowers nearly white.

Var. 3. Nectaries 2 or more to each flower.

Toad-flax. Snap dragon. Butter and eggs. Barren mea-
dows and pastures, road sides, common. P. July.—Sept.

Var. 4. Peloria. Blossoms regular, with 5 equal stamens and
5 nectaries.
DIDYNAMIA. ANGIOSPERMIA. Antirrhinum.

Curt.—Aoen. acad. i. 3. at p. 298—E. bot. 260—Kniph. 9.

Cup 1 leaf, with 5 divisions, equal, very short, permanent. Bloss. petal 1, funnel-shaped, yellow, paler towards the base, with 5 nectaries at the base. Tube long, straight, cylindrical, but distended from the middle downwards. Border with 5 divisions, blunt, equal, expanding, inner side filled with tawny hairs. Nectaries 5, awl-shaped, flat, resembling a horn, growing in a circle round the base of the tube. Stam. filaments 5, hair-like, equal, half as long as the tube, and fixed to the receptacle. Anthers roundish, fixed sidewise. Gemen egg-shaped. Style thread-shaped, as long as the stamens. Summit thick and blunt. Capsule egg-shaped, with 2 cells and 2 valves. Receptacles convex, growing to the partition. Seeds several, angular. Linn.


P. June, July.*

(5) Bloss. gaping ; without a spur.

Oron'tium. A. Blossoms without spurs : flowers nearly spiked : calyx longer than the blossom.

Dicks. b. s.—Fl. dan. 941—Curt. 234—Kniph. 12—Riv. mon. 82. 2, Antirrhinum arvense.—Dod. 182. 2—Lob. obs. 223, 1, and ic. i. 405. 2—Ger. em. 549. 4—Park. 1334. 1—Lonic. i. 155. 3.—Matth. 1199—Ger. 439. 4.


Calf's-mont Snap dragon. [Cornfields in a sandy soil, and turnep fields. Norfolk. Mr. Woodw.—and Worcestershire. Mr. Ballard.—Cornfields, Hants, common. Mr. Pitt.]

A. July, August.

ma'jus. A. Blossoms without a spur: flowers in spikes: cups rounded.

E. bot. 129—Kniph. 1. 3—Ludov. 51—Riv. mon. 82. 1, Antirrhinum—Mill. 42—Dod. 182. 1—Lob. obs. 221. 2, and ic. i. 404. 2—Ger. em. 549. 1—Ger. 438. 1—Matth. 1197.

* An infusion of the leaves is diuretic and purgative. An ointment prepared from them gives relief in the piles. 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.
DIDYNAMIA. ANGIOSPERMIA. Scrophularia.


Var. 2. Leaves sitting, bent downwards. Bloss. rose coloured or white.

Greater Snap dragon. Old walls; chalk cliffs near Dover, and between Northfleet and Gravesend. [Walls near Norwich, and Cambridge. Woodward.—Walls of Rushall Castle near Walsall. Mr. Pitt.—Somersetsh. and Devon, plentiful, and on Berkley Castle and Church in rich profusion.]

P. B. June, July.*

SCROPHULARIA. Cal. 5-cleft: bloss. with 5 divisions; tube globular; the lower segment reflected: caps. 2-celled, partition double.

S. Leaves heart-shaped, doubly serrated: bunch com-Scorodo'nia, pound, with leaves interspersed.

H. ox. v. 35. row 2. f. 2-Pluk. 59. 5-Pet. 35. 11.

Resembles S. nodosa and S. auriculata, but differs from the latter in the hairiness of the stem, and the want of appendages to the leaves. Stem very hairy. Leaves with a gaping hollow at the base, angles or serratures pointed, (Mant.) serratures blunt. (Syst. veg.) Bunch with leaves interspersed, which is not the case with the other species. Linn. Leaves downy, the upper terminated by an awn as are the serratures. Floral-leaves awl-shaped, a pair beneath each division of the fruit-stalks. Mr. Woodw. Bloss. dusky purple.

Balm-leaved Figwort. Watery places, and hedges. Island of Jersey, between the Port and St. Hilary. Sea shore about St. Ives, Cornwall.

P. July, Aug.

S. Leaves oblong-heart-shaped, 3-fibred at the base, nodo'sa. corners of the stem acute.

Fl. dan. 1167-Kniph. 2-Ludw. 72-Gunn. ii. 4. 1-Blackw. 87-Puchs. 194-J. B. iii. 421-Riv. mon. 107. 1, Scrophularia.—Matth. 1130-Dod. 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. 135. 3.

* 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.
Leaves 3-fibred as in Arctium Lappa, and Tussilago Petasiti. Bunch terminating. Linn. Stem, angles clearly acute, sometimes edged with a membranaceous 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. Woodward. Upper-leaves nearly sitting, spear-shaped. Fruit-stalks cylindrical, with short pellucid hairs terminated by globules. Calyx toothed and membranaceous at the end. Bloss. tube filled at the base with a honey-like liquor; upper segments purple; the rest pale green; the 2 lateral ones expanding; the lower rolled back. The little heart-shaped segment within the base of the 2 upper segments seems to deserve the name of nectary. Capt. sometimes with 3 or 4 cells.


P. July.*

aquat'ica. S. Leaves heart-shaped, blunt, on leaf-stalks running down the stem: corners of the stem edged with a membrane: bunches terminating.


Stem smooth, 4-cornered, corners membranaceous; the membranaceous leaf-stalks running down the corners of the stem, and forming a membranaceous edge, which is often waved. Linn. Leaves heart-egg-shaped, scollopèd. Panicle naked, branched; the lower branches opposite, the upper alternate, forked. Floral-leavesawl-shaped, a pair at the base of each branch. Mr. Woodw. Upper leaves egg-shaped. Flowers dirty red.

Water Betony, or Figwort. Watery places, and banks of rivers.

P. July. Sept.

vernalis. S. Leaves heart-shaped; those of the stem in threes: fruit-stalks axillary, solitary, cloven.

E. bot. 567—Fl. dan. 411—Riv. mon. 107. 2; Scrophularia flore lat.—Barr. 273—Clus. ii. 38. 1—Ger. em. 717—Park. 608. 4—C. B. pr. 112.

* This plant is hardly known in modern practice; but the rank smell, and bitter taste of the leaves, seem to indicate some active properties.—Swine that have the scab are cured by washing them with a decoction of the leaves. Wasps resort greatly to the flowers. Goats eat it. Cows, horses, sheep, and swine refuse it.
DIDYNA. ANGIOSPERMIA. Digitalis. 545

Stem and leaves hairy. Bloss. egg-shaped, yellow. Linn:
leaves doubly serrated. Fruit-stalks hairy, the primary ones longer than the leaves, the secondary short. Floral-leaves spear-shaped, hairy, a pair at the base of the secondary fruit-stalks.

Ward.

Yellow Figwort. Watery places and hedges. About Bury, and near Mitcham, Surry; Gloddaeth, Caernarvonsh. [Fornham, near Bury, Suff. Mr. Woodward.] 9 B. April, May.*


D. Segments of the calyx egg-shaped, acute: blossom purplu'rea, blunt, upper lip nearly entire.

Riv. mon. 104, Digitalis—Curta-Wood. 24—Fl. dan. 74—Tourn. 73, A. E. L. M.—Fuchs. 893—Trag. 889—F. B. ii. 812. 3—Lonic. 1. 74. 1—Blackw. 16—Dod. 169—Lob. ob. 308. 2, ic. i. 572. 1—Ger. em. 790. 1—Park. 633. 1—Ger. 646. 1—Lob. ic. i. 572. 2—H. ox. v. 8. row 1. 1—Swer. 6. 1 and 2.

Leaves wrinkled. Bloss. the bellying part sprinkled on the inside with spots like little eyes. Linn. Leaves scoloped; teeth small, deep; with a net-work of fleshy veins underneath. Leaf-stalks half embracing the stem. Floral-leaves spear-shaped, half embracing the stem, purplish towards the point. Mr. Woodward. Leaves sitting, a little woolly underneath. Flowers in long terminating spikes, all pointing one way. Blossoms purple, elegantly mottled within; inversely conical, but swelling out on the under side.

Common Foxglove. 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 rots the roots, which are otherwise biennial.

Very common in the midland, but rare in the eastern counties. June, July.*

Var. 2. Flowers white.

* The different species of Scrophularia afford nourishment to the Phalene Verbasi, Curculo Scrophularie, and Tentredo Scrophularie.

† It is certainly a very active medicine, and merits much attention. For some account of its medical uses see Withering on the Foxglove, 1785, octavo, with a beautiful fig. of the plant copied under the inspection of Mr. Curtis from his Flora Londinensis.
DIDYNAMIA. ANGIOSPERMIA. Linnaea.

[Shenstone lane near Hartlebury, Worc. St.—About Moxhull, Staffordsh.] The pure milk-white colour of the blossoms makes this variety an ornament to our flower gardens.

LINNÆ'A. Calyx double, that of the fruit 4-leaved, that of the flower with 5 divisions, superior: blossom bell-shaped; berry dry, 3-celled.

borealis. L. Flowers in pairs.

E. bot. 433—Fl. dan. 3—Blackw. 597—Fl. lapp. 12. 4—Kniph. 5—Ludw. 142—H. ox. v. 2. 19.

Stems thread-shaped, from 3 to 6 feet long, trailing. Leaves opposite, roundish egg-shaped, with 2 or 3 serratures on each side, ending in leaf-stalks. Branches alternate, undivided, upright, an inch long, bearing 6 or 8 leaves. Fruit-stalks terminating the older branches, solitary, a finger's length, upright. Blossom white on the outside, flesh-coloured within. LINNÆA.

[Lately found in a wood at Inglesmadie in Kincardinshire, by Mr. Beattie.] P. June.

SIBTHORPIA. Calyx with 5 divisions: blossom wheel-shaped, with 5 divisions: stamens in distant pairs: capsule compressed, roundish, 2-celled; partition transverse: seeds few.

Europæa. S. Leaves between kidney and target-shaped, scolloped.

E. bot. 649—Pluk. 7. 6—Pet. 6. 11.

Habit and stem of Hydrocotyle, fruit of Veronica. Root annual, but sometimes, as also the whole plant, perennial. Stems numerous, a foot long, thread-shaped, limber, not much branched, trailing, often throwing out roots, near the leaf-stalks, hairy. Leaves alternate, very remote, on leaf-stalks, like those of the Chrysosplenium, heart-ornicular, one side opening to near the centre, horizontal, with 6 or 7 slight lobes, the lateral ones the smallest, blunt, about the breadth of a pea, sprinkled with small, simple, scattered, transparent bristles. Leaf-stalk short, ascending. Fruit-stalk thread-shaped, from the bosom of the leaves, upright, solitary, as long as the flower, often shorter than the leaf-stalks, nodding after flowering. Floral-leaves awl-shaped, one towards the point of the fruit-stalks. Calyx 5-cleft, hairy. Blossom generally 5-cleft, small, purple at the bottom, about the size of that of the Limosella. Stamens equal, always 4, with a vacancy at one of the divisions of the blossom, whence its inequality, and its title to a place in this class. LINNÆA.
DIDYNAMIA. ANGIOSPERMIA. Limosella.


LIMOSEL'LA. Cal. 5-cleft: bloss. 5-cleft, equal: stamens approaching in pairs: germen 2-celled: caps. often 1-celled, 2-valved, many-seeded.

L. Leaves spear-shaped.

E. bot. 357—Fl. dan. 69—Hall. jen. 6. 3. at p. 295—H. ox. xy. aquatica. 2. rowf 2. f. 2—Pluk. 74. 4.—Pet. 65. 12.

Leaves rolled inwards. Bloss. hairy above. Stamens 2 and 2, in opposite pairs. Linn. Stems trailing. Leaf-stalks very long. Flowers solitary. Bloss. white without, reddish within. Bastard Plantain, or Plantain Mudweed. Muddy and gravelly places liable to be flooded, and where waters have stood during the winter.

A. July—Sept.

OROBAN'CHE. Cal. somewhat cloven: bloss. gaping: germen resting on a gland; caps. 1-celled, 2-valved, many-seeded.

O. Stem unbranched, pubescent: stamens the length of major. the blossom.

Curt. 232—E. bot. 421—Kniph. 7—Tourn. 81, Orobanche.—Clus. i. 270, 2—Dod. 552. 3—Ger. em. 1311. 2—H. ox. xii. 16. 1—Riv. mon. 89. 1, Orobanche.—Ger. 1130. 2—Pet. 69. 10—Lob. obs. 531. 1, a, and ic. ii. 89. 1—Ger. em. 1311. 1. a—Park. 229. 1. a—Matth. 536—f. B. ii. 781. 1—Lonic. ii. 24. 1.


Common Broomrape. This parasitical plant is found in dry ground, on the roots chiefly of the class Diadelphia, as Spartium scoparium, Genista tinctoria, Trifolium, Orobus tuberosus, and also on Hieracium sabandum, and Centaurea Scabiosa. [Also in cornfields in a sandy soil, which have probably had Broom growing]
on them. Broom Hills, very frequent. Mr. Woodward.—Shawley Wood, Worcestershire. Mr. Ballard.—On a dry bank near Clifton upon Teme, Worcestersh. St.—Raby Park, County of Durham. Mr. Robson.]

F. May, June.

ramosa. O. Stem branched; blossoms 5-cleft.

E. bot. 184; (the root in a diseased state, Mr. Woodward.)

Sabbat. iii. 12-Cam. epit. 311—F. B. ii. 781. 2—Clus.
i. 271. 1—Ger. cm. 1312. 3—Pet. 69, 11.

Root a solid bulb, elliptical, naked, or furnished with 1 or 2 spear-shaped sitting 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 terminating. Floral-leaves oval-spear-shaped, somewhat keeled, sitting. Calyx segments pointed, the 2 outer largest, the inner halved, the sides next the stem being wanting. Bloss. tube bellying, yellow at the base, the upper part and lips bluish purple, hairy on the outside; upper lip roundish, cloven, lower lip broad, 3-cleft, the middle segment largest, and with 2 yellowish prominencies at the mouth, similar to those in Melampyrum. Filaments within the tube, bluish. Anthers yellow. Style longer than the filaments and bending towards them, bluish. Summit blunt. Woodward. Stem about a span high, generally, but not always branched.

Branched Broomrape. Orobanche minor purpureis floribus ramoso. J. B. ii. 781. (Mr. Woodward.) Cornfields and dry pastures. Near Béccles, Suffolk. Ray.—Isle of Sheppey, and near Feversham and Rochester; about Glastonbury, and in Devonshire and Hants. Huds.—[Brome near Bungay, Suffolk, on the roots of Hemp and Galeopsis Tetrabita, both annual plants. Mr. Woodward.—Hemp fields near Wisbeach. Mr. Relhan.]

A. June—Sept.

Var. 2. Stem simple.

J. B. ii. 781. 1.

Stem very scaly, slightly downy; scales oval-spear-shaped. Spike loose. Floral-leaves oval-spear-shaped, somewhat keeled, as long as the calyx. Cal. with 4 deep divisions; segments awl-shaped, the 2 outer the largest, the inner one next the stem very small. Bloss. tube longer than the calyx; upper lip short, cloven, roundish; lower 3-cleft. Stamens within the flower. Woodward.

Field of oats 2 miles beyond Rochester on the left hand going towards Horn's-place. Ray.—[Northreps, Norf. a single plant.
Mr. Pitchford.—Specimen from Mr. Lightfoot agreeing with that of Mr. Pitchford's. Mr. Woodward. Dr. Smith, in E. Bot. is inclined to think that Ray's plant should be referred to the O. major, and doubts whether Mr. Pitchford's specimen from Northreps be the same with either, observing that it agrees better with the O. purpurea of Jacquin: but remarks also that the whole genus wants a thorough investigation.

CLASS XV.

TETRADYNA.MIA.

SILICULOSA.

(1) Pouch not notched at the end.

MOEN'CHIA. Pouch egg-shaped, crowned with the style: valves rather convex.

DRA'BA. Pouch with nearly flat valves: Style none.

SUBULA'RIA. Pouch with half-egg-shaped valves: Style shorter than the pouch.

MY'AGRUM. See Mœnchia.

BU'NIAS. Pouch deciduous; egg-oblong; prickly.

CRAM'BE. Pouch deciduous; globular; like a dry berry. Filaments 4, long ones cloven at the end.

I'SATIS. Pouch deciduous; spear-shaped; with 1 seed.

VEL'LA. Pouch with valves only half the length of the partition.

[Chellearia Coronopus.]

(2) Pouch notched at the end.

IBERIS. Two outermost petals the largest.

COCHLEA'RIA. Pouch heart-shaped: Valves blunt; bulging.

LEP'DIUM. Pouch heart-shaped: Valves sharply keeled.

THLAS'PI. Pouch inversely heart-shaped: Valves (in some species) bordered; keeled.
TETRADYNA. Mœnchia.

SILIQUOSA.

(1) Cup closed; the leaflets approaching lengthwise.

RATHEANUS. Pod jointed.
ERYSTHMUM. Pod 4-cornered.
CHEIRANTHUS. Gemen with a gland on each side its base.
HESPERIS. Glands within the shorter stamens: Petals oblique.
ARABIS. Glands 4: within the leaflets of the cup: Summit undivided.
BRASSICA. Glands, 2 within the shorter stamens; 2 on the outside the longer stamens.
TURRITIS. Petals upright.
DENTARIA. Pod, valves, rolling back when open.

(2) Cup open, the leaflets wide asunder upwards.

CARDAMINE. Pod opening: Valves rolling back.
SINAPIS. Pod opening: Cup expanding horizontally.
SISYMBRIUM. Pod opening: Valves nearly straight: Cup open.

[Brassica Napus.]

SILICULOSA.

MœN'CHIA. Pouch entire, egg-shaped, crowned with the style: valves rather convex, parallel to the partition: cells with many seeds. Gmelin.

sati'va.

M. Pouches inversely egg-shaped, on fruit-stalks, containing many seeds.

Fl. dan, 403-Knijf. 11-Tag. 655-Lonic. i. 154. 1-Ger. 213. 2-Dod. 552. 1-Lob. obi. 111. 3. and ic. i. 224. 2- Ger. em. 273. 2-Park. 868. 2-Pet. 48. 11-H. ex. iii. 21. row 3. 2-*. B, ii, 892-H. ex. iii. 21, row 2. 1-f. 4-Matth. 1172.
TETRADYNAMIA. SILICULOSA. Crambe.

Pouch, each side bellying out, but marked with a cavity pressed inwards, which cavity disappears in the cultivated plants. Linn. Stem 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. Bloss. yellow. Pouches on long fruit-stalks, terminated by a long style; partition extending beyond and forming a strong ridge round the seed-vessel. Woodward.


BU'NIAS. Pouch, or rather drupa, 4-sided, deciduous: angles unequal, acute.

B. Pouch egg-shaped, smooth, with 2 edges and 2 joints. Cakille.

E. bot. 231—Fl. dan. 1168—Kniph. 8—Lob. obs. 110. 3. it. i.
223. 1—Ger. em. 248. 5—Park. 821. 1—H. ox. iii. 6. 20.
—Pet. 46. 6—J. B. ii. 868. 1.

Plant smooth, sea-green, of a salt taste. Leaves fleshy. Pouches falling off, and leaving a cloven base behind. Linn. Root slender, woody, running deep into the sand, and terminated by a few rigid fibres. Stem woody, much branched. Leaves oblong wedge-shaped, sitting, deeply cut, or wing-cleft. Flowers pale purple. Fruit-stalks short. Pouches large and fleshy. Woodward. Stem 2 or 3 inches high, almost woody; large branches trailing, smaller ones ascending. Leaves wing-cleft, fleshy, smooth, the terminating segment largest. Glands, 1 within each shorter stamen, and 1 on the outside each pair of longer stamens. Pouch oblong-egg-shaped, crooked, 1 seed in each.


CRAM'BE. The 4 longer filaments cloven at the top, one of the clefts bearing the anther: seed-vessel simple, globular, deciduous.

C. Leaves and stem smooth.

* 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. Houses, cows, goats, and sheep eat it.
This plant lurks as it were under the disguise of a *Brassica*, as is evident from its fructification being so distinct. Linn. Whole plant smooth. Stems many, spreading, and much branched. Root-leaves on leaf-stalks, very large, spreading wide on the ground, variously waved, jagged, and indented, smooth, sea-green, sometimes tinged with purple; stem-leaves sitting. Fruit-stalks long. Flowers white. Pouch at first egg-shaped, terminated by a blunt summit, afterwards nearly globular. Woodw. Leaves fleshy, glaucous, indented and curled; upper ones nearly sitting and egg-shaped. Bloss. large, white, but the claws of the petals and the filaments often purple.


Var. There is one variety with jagged leaves, and another with yellowish blossoms.

**I'SATIS. Pouch or seed-vessel simple, oval-spear-shaped, compressed, 1-celled, 1-seeded, crowned by the style.**

tincto'ria, i. Root-leaves scolloped; stem-leaves arrow-shaped; pouches oblong.

Cultivated.—*Fuchs.* 332—*J. B.* ii. 909, 2—*Matth.* 635—*Dod.* 79, 2—*Lob.* obs. 190, 1. and *ic.* i. 352, 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 *ic.* i. 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.


Wild Wood. Cornfields, and borders of cornfields, but rather rare. Huds. New Barns near Ely. Relhan. [Culti-

* The young and tender leaves are boiled as cabbage, but when full grown they occasion giddiness. Horses, cows, goats, sheep, and swine eat it.
TETRADYUMIA. SILICULOSA. Subularia. 

viated about Heynsham, Somersetshire. Mr. Swayne. By the river Wear, near Durham. Mr. Robson. B. June, July.*

VEL'LA. Pouch globular, partition twice as large as the valves, and extending beyond them like the bit of a spoon.

V. Leaves wing-cleft: pouches pendent. an'nua.

Kniph. 10–Clus. ii. 130. 1–Lob. obs. 102. 3, and ic. i. 205.
5–Trew. pl. var.


SUBULAR'RIA. Pouch entire, egg-shaped: valves egg-shaped, concave, placed across the partition: style shorter than the pouch. aquatica.

S. Leaves awl-shaped.

Dicks. b. s.–E. bot. 732–Fl. dan. 35–H. ex. viii. 10. 29–Pet. 48, 8–Pluk. 188. 5.


DRA'BA. Pouch entire, elliptical-oblong, rather compressed; valves flat, parallel to the partition: style none.

* With the juice of this plant, it is said, the ancient Britons painted their bodies to render themselves more terrible to their enemies. It is much used by the dyers for its blue colour, and it is the basis of many other colours. It is cultivated for their use. Cows eat it; horses, sheep, and goats refuse it.
**TETRADYNAEMIA. SILICULOSA. Draba.**

**ver'na.**

D. Stalks naked; leaves sparingly serrated. **Linn.** Petals divided. **St.**  
*Fl. dan. 983—Curt. E. bot. 586—Thal. 7. E. Walc. Ded. 112. 2—Lobs. obs. 240. 2. and ic. 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—Knib. 1.*  

Flowers hanging down at night. Petals divided. **Linn. Stalks** smooth after flowering, but hairy when young. **Leaves** hairy, sometimes entire. Flowers when in blossom in broad-topped spikes, about 15 in each. It is difficult to find the full complement of stamens when the flower is fully expanded, as they drop when the germen begins to enlarge.  
*Common Whitlow-grais. Nailwort. Walls and dry places, and pastures. A. March, April.*

**stella'na.**

D. Leaves hairy, toothed or entire; stalk with 1 leaf: pouches oblong, upright. **Jacq. Petals** entire.  
*Jacq. austr. 432; and enum. 4. 3.*  
Leaves inversely egg-shaped, blunt, thick, tapering at the base into leaf-stalks, either entire or with a single tooth on each side, fringed and set on each surface with white hairs, the ends of which are star-like; these hairs are often wanting on the upper surface. **Stalk** cylindrical, upright, hairy like the leaves, especially on the lower part; furnished with 1, rarely with 2 leaves. **Corymbus** terminating, consisting of about 7 longish fruit-stalks. **Petals** pure white, large, entire, expanding. **Jacquin. Not Draba hirta** of Linneus. **Dickson. In the D. hirta** the petals are notched at the end.  
Found by Mr. Dickson on rocks in the Highlands of Scotland; on Ben Lawers, at great heights, and on the very summit, Mr. Brown.  
*A. May—Aug.*

**muralis.**

D. Stem branched; leaves egg-shaped, sitting, toothed.  
*Col. ecphr. 272—Barr. 816—Baub. pr. 50—Park. 843. 13—H. ex. iii. 20. 5—J. B. ii. 939. 1—Pet. 48. 5.*  
**Fruit-stalks** horizontal when the fruit is ripe, longer than the pouches. **Pouches** nearly slanting. **Flowers** white. **Linn. Root-leaves** entire at the base, toothed upwards. **Pouches** exactly eliptical, 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.

*One of our earliest flowering plants. It is good as a salald. Goats, sheep, and horses eat it; cows are not fond of it; swine refuse it.*
TETRADYNAMIA.  
SILICULOSA.  
Lepidium.

Speedwell-leaved Whitlow-grass.  Fissures of rocks, mountainous and stony pastures, especially in a calcareous soil, in Derbyshire, Yorkshire, and Westmoreland.  Arnbar Scar near Arncliffe, Littendale and Malham Cove.  [Near to a cotton manufactory a little below Malham Cove, Mr. Caley.]  
A. May.

D. Stem-leaves numerous, hoary: pouches oblong, slant-inca'na, nearly sitting.

E. bot. 388–Fl. dan. 130–Pet. 48. 3 and 4–Plak. 42. 1.

Root a hand's breadth long.  Root-leaves very numerous, disposed in a rose-like form, spear-shaped, cottony and somewhat hairy, entire, pointed; stem-leaves often upwards of 30, sitting, marked 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 terminating corymbus, which, when the fruit is ripe, becomes a bunch.  Petals white, slightly notched.  Pouches upright, egg-oblong, bent contrary to the sun, compressed, naked.  Fruit-stalks hoary, 3 times shorter than the pouches, stiff, approaching to the stem.  It flowers with the Anemone.  Linn.  Stems 6 to 9 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.  Mr. Woodward.


LEPIDIUM.  Pouch notched at the end, compressed: valves sharply keeled; 1 seed in each cell.

(1) Four stamens longer.

L. Leaves winged, very entire: petals notched, smaller petra'um than the calyx.

E. bot. 111–Jaq. austr. 131–Col. ecphr. 273–Crantz. i. 2.  
4. 5.

One of our smallest delicate plants.  Linn.  Leaves dark green; leaflets elliptical, tapering each way, on leaf-stalks, very entire, thickish, from 6 to 12 pairs, with an odd one.  Flowers in a close corymbus, which, as the fruit ripens, lengthens out into a bunch.  Petals spatula-shaped, white, as long as, and narrower.
TETRADYNAJIA. SILICULOSA. Lepidium.

than the calyx; generally very entire, but sometimes slightly notched. Pouches broad egg-shaped, blunt, convex underneath, flat above; valves keeled. Jacq. Stem branched from near the root. Leaves spear-shaped, horizontal, just sensibly broader than the mid-rib. Sr.

Mountain Dittander. Rocks, walls, and stony places. St. Vincent's Rock, on the low rocks over against Goram's Chair, and on the walls about Bristol. Uphill, Somersetshire. [Dovedale. Mr. Caley.] B. March—April.

latifolium. L. Leaves egg-spear-shaped, entire, serrated.


Stem branched, zigzag. Leaves smooth, sometimes entire, sometimes a little serrated about the middle part; lower ones unequal at the base. Calyx leaves purplish, white at the edge. Pouch hairy. Flowers numerous, in panicles, white.


(2) Stamens either 2 or 4.

didymum. L. Stem trailing, hairy; leaves with winged clefts; fruit double. (E. bot.)

E. bot. 248.

Stem a foot high. Leaves winged; leaves sitting, alternate, spear-shaped, toothed on the fore edge. Bunches from the bosom of the leaves, as long as the leaves. Flowers very minute. Caps. roundish, double, somewhat wrinkled. An intermediate plant between the Cochlearias and Lepidiums. Linn. Stamens 2, or 4. Flowers white.


ruderal. L. Root-leaves tooth-winged; branch-leaves strap-shaped, very entire; petals sometimes wanting.

* This is one of the acrid antiscorbutics, and was formerly used in the place of Horse-radish. An infusion of it vomits.
TETRADYNAMIA. SILICULOSA. Thlaspi.

Trag. 83. 2-Fl. dan. 184-Matth. 608-Dod. 713. 1-Lob. ic. i. 214. 1-Ger. em. 262. 4-Park. 829-H. ox. iii. 19, row 2. f. 3-Pet. 50. 1-Fuchs. 307-Get. B. ii. 914.


B. June, July.

THLAS'PI. Pouch inversely heart-shaped, notched at the end; valves like a keeled boat, often winged with a border; cells many-seeded.

T. Pouches round and flat; leaves oblong, toothed, smooth. arvensis.


Leaves arrow-shaped at the base, embracing the stem. Pouches deeply notched. Mr. Woodward. Stem about 2 feet high, with 7 or 8 membranaceous edges. Seeds spear-shaped, but compressed, hanging or pointing downwards. Bloss. white.

Treacle Mustard. Penny-cress. Cornfields, especially in a muddy soil.

A. June, July.*

T. Pouches roundish; leaves arrow-shaped, toothed, hoary. campes'tre.

Curt.-Ger. 204. 2-Pet. 50. 7-Fuchs. 306-Get. B. ii. 921. 1-

Trag. 87.

Leaves very soft, and almost velvety. Linn. Stems many from the same root, thickly clothed with leaves. Leaves growing without order. In some situations it is green and slightly hairy, in others very downy and white, and is then the Th. birtum of Hudson. Woodward. Stem clothed with leaves, undivided except at the top, where it separates into 7 or 8 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, smooth, convex

* The whole plant has something of a garlic flavour. The seeds have the acrimony of mustard. When cows eat it their milk gets a bad taste. Cows, goats, and swine eat it. Sheep and horses refuse it.
TETRADYANIA. SILICULOSA. Thlaspi.


Var. 2. Leaves, smooth, scarcely serrated; those at the root not indented.

*Blackw.* 407—*Dod.* 713, 3—*Lob.* obs. 108, 2, and *ic.* i. 213.

1—*Ger.* em. 262. 2—*Park.* 836. 2—*Pet.* 50. 8—*H.* ex. iii. 17. 14—*Math.* 566.

*Leaves* smooth, broader than 1, and not so tapering to a point. *Pouches* smooth. *RAY.*

*Thlaspi vaccaric* folio *glabrum.* *R.* *Syn.* 303. Between Beccles and Bungay, Suffolk. *RAY.*

Var. 3. *cottony.* Pouches, stem and leaves—cottony.*

This has been supposed to be the Thlaspi hirtum of *Linn.* but I am of opinion with Mr. Woodward, that it is only a variety of the *Thl.* campestre. It is like soft velvet to the touch, nor are the pouches properly rough with hairs, (hirsute) they are only cottony in a slight degree. It differs most obviously from the *T.* campestre, in the root-leaves being entire, and on very long leaf-stalks. It is about 10 or 12 inches high, but the Linnaean Thl. hirtum is not above half so high, and has root-leaves inversely-egg-shaped, and bread at the end, but in our plant they are strap-spear-shaped.

*Thlaspi hirtum* of Hudson and other English authors. [On Dartmoor.]

May, June.

perfoliature.* T. Pouches inversely-heart-shaped: stem-leaves heart-shaped, smooth, somewhat toothed: petals as long as the calyx: stem branched.


monta*num.* T. Pouches inversely heart-shaped: leaves smooth; root-leaves battledore-shaped, very entire: stem-leaves embracing the stem: petals longer than the calyx.
TETRADYNAMIA. SILICULOSA. Thlaspi.

Jacq. austr. 237—Cal. ecphr. 276. 1—f. B. ii. 926—Tabern. 852. 1—Ger. em. 268, right hand fig.—Clus. ii. 131. 2.

Root creeping. Ray. Root-leaves large, smooth, tapering down into leaf-stalks. Mr. Woodward. Seeds only 1 or 2 in each cell. E. bot. Flowers large, white. Anthers yellow.

Thlaspi folius Globulariae. Ray. Syn. 305. 4. In pastures about the ebbing and flowing well, a mile from Settle in Yorkshire, towards Ingleborough; also in many places of the mountainous pastures between Settle and Malham. Ray. I found it on the road from Settle to Malham, within about half a mile of the Tarn. Curt. [On Ingleborough. Woodward.]

P. June, July.

T. Pouch inversely heart-shaped: leaves glaucous, some—alpest're. what toothed, embracing the stem: petals as long as the calyx: seeds numerous.

E. bot. 81—Clus. ii. 131. 3—Tabern. 854. 19—Ger. em. 268. 7.


Ray Syn. 305. 6.*

Root leaves forming a tuft. Stem single, central, flowering early; other lateral stems afterwards shoot up, flowering later. Petals white, about the length of the calyx. Anthers purplish. Seeds 3 or 4 in each cell. E. bot. Dr. Smith observes, that Mr. Hudson's T. montanum is certainly the T. alpestre of Linn, and that his T. alpestre is the T. perfoliatum of Linn. Adding, and justly too, that the Botan. Arr. ed. ii. misled by this authority, had still further increased the confusion.

The present arrangement of these articles has been made without any view to Mr. Hudson's opinions, and are founded on the indisputable veracity, and well known accuracy of Ray, who, in his Synopsis, p. 305, No. 4 and 6, records two species, referring to the same figures which Linnaeus in the Sp. Pl. has quoted to the Thl. montanum, and Thl. alpestre, so that I must believe that Ray had seen both those species. He also particularly notices the creeping root of the T. montanum, a circumstance so inapplicable to the T. alpestre, that Dr. Smith is obliged to suppose this to be a mistake.

I am ready to allow that the Oxfordshire plants of Bobart, may be the T. perfoliatum, but think it highly probable that those of Merret and Nicholson must have been the true T. alpestre, or else Ray and Linnaeus would hardly have agreed in quoting the same synonyms.—Pastures above the ebbing and flowing well, 2 miles from Gristlewick, in stony ground among the grass. Yorkshire. Merret. On most limestone pastures in Westmoreland and Cumberland, Nicholson. Limestone rocks at Matlock. Dr. Smith.

B. July.
TETRADYNAemia. SILICULOSA. Cochlearia.

Bursa pasto'ris. T. Pouches compressed, triangularly inversely heart-shaped, smooth, without a border: root-leaves wing-cleft.

Ludw. 186—Curt.—Blackw. 5—Wallc. 5—Lob. 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—Linn. i. 139. 1—Park. 666. 1—Mattth. 569.

Root-leaves, sometimes entire. St. In cultivated ground the segments broader, on walls and in dry situations more deeply divided, and the segments much narrower. Curt. Leaves fringed with fine hairs; stem-leaves, the upper entire, strap-spear-shaped, embracing the stem. Bunches long, flatted at the top, terminating. Calyx hairy. Petals entire. Summit circular, fringed, concave. Anthers a little woolly. Germin egg-shaped, compressed, with a channel down the middle.


This plant is a strong instance of the influence of soil and situation, for it grows almost everywhere, and sometimes is not more than 2 inches high when it flowers and perfects its seeds; whilst in other situations it attains the height of 2 or 3 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, at first simple, in time becomes branched, the first branches issuing from its upper part.

COCHLEAIRIA. Pouch notched at the end, turgid, rough, many-seeded; valves bulging, blunt.

officina'lis. C. Root-leaves heart-circular; stem-leaves oblong, a little indented: fruit globular.

E. bot. 551—Kniph. 3—Ludw. 133—Fl. dan. 135—Blackw. 227—Woodw. 29—Pet. 49. 1—J. B. ii. 942—Dodd. 594. 1—Lob. obs. 156. 4, and ic. i. 293. 2—Ger. em. 401. 1—Park. 283. 2—H. ox. iii. 20. 1—Ger. 324. 1.

Root-leaves kidney-shaped, entire, veined, on long leaf-stalks; stem-leaves oblong, sitting, slightly toothed, and in a mountain specimen much larger than the root-leaves. Fruit-stalks long, slender, expanding, sometimes bent back. Pouch, style hardly discernible. Mr. Woodward. Stem angular. Root-leaves on long leaf-stalks, heart-kidney-shaped, fleshy; stem-leaves sitting, sometimes halberd-shaped, the lower sometimes on short broad leaf-stalks. Petals fleshy, clear white; clavis greenish. Pouch
either not notched at the end or scarce sensibly so, sometimes
pointed by the style; smooth; partition double. Seeds rough.

Scurvy-grass. Scrooby-grass. Sea shores, common, also on
inland mountains in Derbyshire, Yorkshire, Scotland, and
Wales. A. April, May.*

Mr. Hudson considers the C. groenlandica as only a var. of
this, and as far as appears from the specific character, the C. da-
nica may be nothing more, so great are the changes to which it
is subject; but the following metamorphosis of this Proteus-like
plant, is more extraordinary than any other thing of the kind
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 1 or 1 1/2 inch long.

Leaves smooth, entire, varying from circular to heart-shaped,
sometimes with a single indentation on each side, about 1/3
of an inch in diameter.

Fruit-stalks from the crown of the root, very slender, leafless, 1
to 1 1/2 inch long, supporting a single flower.

Blos. petals reflected, very much larger than the calyx, of a
bright rich lilac-colour, streaked with deeper purple lines.

Pouch circular heart-shaped, 2-celled, with 4 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 as-
sume any other appearance, so that concluding it to be a Coch-
learia I fully concurred in opinion with my good friend the Abbé
Correa 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 the Coch. danica fig. 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,

* 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, and this acrimony seems to reside in a
very subtle essential oil. Its effects as an anti-scorbutic are universally
known; and it is a powerful remedy in the pituitous asthma, and in what
Sydenham calls the scorbutic rheumatism. A distilled water, and a con-
serve, 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.

Vol. III.
TETRADYNAVIA. SILICULOSA. Cochlearia.

bearing angular leaves, and in every respect corresponding with the ordinary C. officinalis.

danica. C. All the leaves trowel-shaped, with halberd-shaped angles at the base.

E. bos. 696—Fl. dan. 106—Loc. obs. 338. 1, and ic. 1. 615.
2—Ger. em. 271—Park. 848. 1—f. B. ii. 939. 2—H. ex. iii. 20. 3—Petr. 49. 3.

Stem 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. Stems numerous. Mr. Woodward. Blois. white.


groenlandica. C. Leaves kidney-shaped, entire fleshy.

Barth. act. iii. t. 144.

Root-leaves very small, underneath very convex and fleshy, without veins, very entire, on long leaf-stalks. Linn. The Cochlearia which grows on the mountains of Wales, Derbyshire, Yorkshire, and Westmoreland, of which I have have now plants in my garden from Wales and Craven, yearly sow themselves, and have continued the same for above 10 years. Richardson in R. Syn. The same is confirmed in Mr. Sherard's garden at Eltham. Dill. ib. Miller also, who from his manner of speaking appears to have cultivated it, speaks of it as a distinct species, and says it is biennial, but that the C. officinalis is an annual. St. From the specimens I have seen, I suspect it to be only a starved variety of C. officinalis. Lightf. My specimens above mentioned seem to answer equally to the descriptions of C. groenlandica and officinalis, except that the leaves are veined. Mr. Woodward. From such differences in opinion, whatever may be the real plant of Linnaeus, I am inclined to suspect that ours is only a mountainous variety of the C. officinalis.

In reply to some enquiries sent to Mr. Griffith, he favoured me with the following observations: "The Cochlearia groenlandica is certainly not an annual. I cultivated it 3 or 4 years, during which time it retained its diminutive state, which gave me reason to suppose it distinct from the C. officinalis; but I have since repeated the experiment, and it became as large as the Cochl. officinalis."


A. Linn. Huds. B. Mill.
C. All the leaves egg-spear-shaped.

E. bot. 552—Fl. dan. 329—Blackw. 218—Dod. 594. 2—Lob. obs. 157. 1, and ic. i. 294. 1—Ger. em. 401. 2—Park. 285. 1.—H. ox. iii. 20. row 3. 2—Ger. 324. 2.

The root-leaves are generally entire, the stem-leaves generally indented, but sometimes they are all entire, or all indented, though I believe the primary root-leaves are always entire. Pouches roundish, fleshy, much larger than those of C. officinalis, and terminated by a longer style about 2-3ds of a line in length.

Woodward.


C. Leaves wing-cleft: stem depressed.


Stem and root-leaves prostrate, longer than the branches; leaflets cut along the fore edge, very entire along the back edge, the terminating 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. In this last respect it accords with the Myagrum. St. Bunches from the bosom of the leaves. Bloss. white.


Var. 2. Root-leaves deeply wing-cleft. St.

Pet. 49. 12.

Flowers white.
Horse-radish. Sides of ditches, banks of rivers. About Alnwick, Northumberland; banks of Skipton-beck, and elsewhere in Bolland, in Craven. 

P. May.*

C. didyma. See Lepidium didymum.

IBE'ESIS. Bloss. unequal, the two outer petals larger: pouch roundish, compressed: partition placed crosswise; 1 seed in each cell.


Similar to I. umbellata, (the common Candytuft) but smaller. Linn. Leaves strap-spear-shaped, generally with 1 or 2 teeth on each side. Flowers in a terminating spike-like bunch; white.


Dicks. b. i.—Curt.—Dod. 103. 2—Lob. ic. i. 221. 2—Ger. em. 276. 2—Park. 866. 2—f. B. ii. 937. 1—Pet. 50. 2—Fl. dan. 323—Ger. 194. 3—Ger. em. 251. 4—Park. 828. 7—Magu. bot. 187—H. ex. iii. 19. 5.

Stems numerous, with usually one sitting leaf below the middle. Root-leaves spread on the ground in a circle, smooth, with winged clefts, the terminating 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. Woodward. From 2 to 4 inches high. Leaf-stalks as long as the leaves. Flowers small, white, in a terminating spike-like bunch.

Rock Cress. Naked candytuft. Gravelly places and very barren heaths. Near Hampton Court, Richmond and Barnes

* The root scraped is in common use at our tables as a condiment for fish, roast beef, &c. and it is used for many other culinary purposes. 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 of it excites vomiting. A distilled water is prepared from it. Horses, cows, goats, sheep, and swine refuse it. *The Papilio Brinica* feeds upon the several species.
TETRADYNAMIA. SILIQUOSA. Dentaria.


SILIQUOSA.

DENTARIA. Pod cylindrical, bordering, opening with a jerk: valves rolling back, rather shorter than the sponge-like partition: summit notched: calyx close.

D. Lower-leaves winged; the upper ones undivided. E. bot. 309—Fl. dan. 361—Clus. ii. 121. 1—Lob. ic. i. 687. 2—Ger. em. 984. 1—Park. 620. 1—Ger. 833. 1.

Bulbs produced from the bosom of the leaves as in the Lilium bulbiferum, and the fruit in the like manner abortive. Linn. Stem simple. Leaves, the lower with 3 pair of leaflets, and an odd one confluent with the pair beneath; leaflets bluntly spear-shaped, serrated. Flowers flesh-coloured. Bulbs from the bosom of the upper leaves, scaly, which falling off take root, and produce new plants. It rarely produces seeds. Mr. Woodward. Bulbs black.


CARDAMINE. Pod long, 2-edged, opening with a jerk: valves rolling back, parallel to the membranaceous partition: summit a knob, entire: calyx rather open.

(1) Leaves undivided.

C. Leaves egg-shaped, very entire, on long leaf-stalks. Bellidifolia.

Fl. dan. 20—Facq. misc. i. 17. 2—Fl. lapp. 9. 2.

Root-leaves on leaf-stalks. In its larger growth there are leaves on the stem, but rarely, with leaf-stalks. Flowers white. Daisie-leaved Lady smock. Cardamine pumila Bellidis folio. Ray Syn. 300, though not now to be found at St. Vincent's rocks. And Mr. Griffith informs me that the Arabis stricta now grows in the places near Denbigh where the Cardamine was said to grow. The specimens before me were gathered wild in Scotland, and sent me by Mr. Milne.
petrae'a. C. Leaves oblong, toothed.

*Tetradynamia.* *Siliquosa.* Cardamine.

*Fl. dan. 386—Dill. elib. 61. 71—Lightf. 15. 2, at p. 347—Pet. 50. 3.*

Stem unbranched. Bloss. white.

*Mountain Ladies smock.* [Lofty rock in Caernarvonshire, as Moelyn-rhud near Phestiniog, y Clogwyn, du yn yr Arddu Glogwyn, y Carnedh near Llanberys; and on moist rocks above the Lake Llyn-du. Clogwyn du yn yr Arddes. *R. Syn.* In great plenty. Mr. *Griffith.* By the 1st mile stone from Shrewsbury to Welsh Pool. Mr. *Aikin.*]

F. May—July.

(2) Leaves winged.

impatiens. C. Leaves winged; leaflets spear-shaped, toothed or cut; stipules fringed. (*E. bot.*)

*E. bot.* 80—f. B. ii. 886. 1—Barr. 155—Ger. em. 260. 7—Parks. 1241. 4—H. ox. iii. 4. 1—Pet. 47. 7—Barr. 155.

Stem seldom branched. Leaflets of the upper leaves nearly entire, of the middle ones toothed, of the lower ones considerably cut and jagged. Stipules crescent-shaped, half embracing the stem. Petals small, white, deciduous; sometimes wanting.

*Impatient Ladies smock.* Mountainous meadows on the sides of rivulets, on rocks and moist stony places, in Derbyshire, Yorkshire, and Westmoreland. Giggleswick Scar. [Rocks opposite Matlock Bath, Derbyshire. Mr. *Woodward.* On loose earth thrown up from a quarry above Lench Ford, nearly opposite Shrawley, and in Clifty Wood near Hanley, Worcesters. *Sr.*]

A. May, June.

hirsuta. C. Leaves winged; leaflets opposite; stamens 4.


Stems generally numerous, the central one upright, the rest declining, hairy. Root-leaves very numerous, forming a circle on the ground; leaflets roundish, 3 or 4 pair, with an odd one much larger; stem-leaves, 2 or 3 on each stem, roundish or spear-shaped. Mr. *Woodward.* Stems from 3 to 5 inches high. Leaflets opposite, mostly 3 pair, the odd one at the end larger and more circular.

*Cardamine hirsuta.* *Huds.* *Cardamine minor arvensis.* D. *Lowyd,* in *R. Syn.* 300 n. 4.—(*Cardamine impatiens* *altera* *hirsuta.* *R. Syn.* 300, *is C. flexuosa.* ) *Hairy-leaved Ladies smock.* [Gravelly soil, on the driest banks as well as in moist places and by the sides of rivulets and springs. Common in
TETRADYNAMIA. SILIQUOSA. Cardamine.

Cornwall. Mr. Giddy and Mr. Stackhouse; and in Scotland, Dr. Hope. Warwickshire and Staffordshire, common.]

A. March—June.*

C. Stem zigzag: leaves toothed, mostly alternate, unequal flexuosa, at the base.

Curt. 277—Fl. dan. 735—Walc. C. hirsuta.

Stem 8 to 12 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 5 or 6 pair, with an odd one at the end: egg-shaped, irregularly toothed, unequal at the base. Stem-leaves alternate, irregular sitting. Leaflets 3 to 5 pair, with an odd one which is larger; some sitting, some on short leaf-stalks, irregularly toothed.

Fruit-stalks cylindrical, but compressed; slanting.

Calyx half the length of the blossom: generally purplish.

Bloss. Petals white, rounded at the end.

Stamens 6, longer than the blossom. Anthers yellow.

Pist. Summit pale green.

S. Vess. Pod straight, nearly upright, cylindrical, but compressed.

Seeds 6 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 terminating corymbus, 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 supposed by some to be only a var. of the C. hirsuta, but it has more generally been taken for the C. parviflora of Linnaeus, whilst others have supposed those two species only accidental varieties. It differs from the former in having uniformly 6 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 the C. parviflora has yet been found in our Island.


Cardamine hirsuta. Weber, Curtis, Walcot, Huds. Car-

* The young leaves are a good salad. It is pretty warm in the mouth, much resembling Water Cress in taste. Sr.
**TETRADYNAemia. Siliquosa. Cardamime.**

*damane impatien altera bisvuitior.* R. Syn. 300. Ditches, woods, shady, wet, and boggy places. [Rookery at Edgbaston, and in ditches at the tail of the Pool.] A. May—July.

*pratensis.* C. Leaves of the root-leaves roundish, those of the stem-leaves spear-shaped; very entire.

Curt. 175—E. bot. 776—Knipl. 12—Fl. dan. 1039—Woodw. 3C—Walc.—Sheildr. 109—Blackw. 223—Lob. obs. 106. 2; and it. i. 210. 1—Ger. em. 259. 1—Ger. 201. 1—Clus. ii. 128. 2—Dod. 592. 2—Lob. obs. 106. 3, and it. i. 210. 2—Ger. em. 259. 2—Ger. 201. 2—Park. 826. 2, and 1239. f. 4—H. ox. iii. 4.—Pet. 47. 5—Luoic. i. 159. 5—Fuchl. 325.—f. B. ii. 889. 1—Trag. 82. 1.

*Leaves* of the lower stem-leaves egg-shaped, higher up spear-shaped, those of the upper strap-shaped. Woodward. Flowers large, paler or deeper purplish red.

**Common Ladies smock.** Meadows and moist pastures.

P. A. May.*

Var. 2. Double flowered.

This is a beautiful plant in the garden, and is viviparous. [Meadows about Ross Hall, near Salop. Mr. Atkin. In a field S. W. of the Tap-house at Hagley, Worcestersh.]

*ama'ra.* C. Leaves winged: suckers from the bosom of the leaves.

Linn. Leaves of the stem-leaves angular, sitting. St.

Curt. 158—Allioni. 56. 1—Herm. par. 203—J. B. ii. 885—C. B. pr. 45. 1—Park. 1239. 2—Pet. 47. 1.


* 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 Dr. Baker in the Med. trans. i. 442. The dose is from 20 to 90 grains twice a day. Do they not act like the *Erythrum 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 I have never been fortunate enough to see them of much 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 people have only used the flowers, but Mr. Gregor's family use the flowering tops. Can this account for the different success? Goats and sheep eat it. Horses and swine refuse it. Cows are not fond of it.
TETRADYNAMIA. SILIQUOSA. Sisymbrium.


SISYMBRIUM. Pod cylindrical, opening; valves straightish, about the length of the partition: calyx and blossom expanding.

(1) Pods declining; short.

S. Leaves winged; leaflets egg-shaped.

Nasturtium.

Fl. dan. 690—E. bot. 835—Woodv. 48—Fuchs. 723—F. E. ii. 884—Trag. 82. 2—Dod. 592. 1—Lab. obs. 105. 3, and ic. i. 209. 1—Ger. em. 257. 5—Park. 1239. 1—H. ox. iii. 4. 8—Pet. 47. 2, and 3—Matt. 487—Louic. i. 114. 2—Blackw. 260.


B. June, July.

S. Pods oblong-egg-shaped, or cylindrical; leaflets spear-shaped, serrated.


Root creeping very remarkably. Leaflets of the root-leaves somewhat egg-shaped, those of the stem-leaves spear-shaped. Flowers small, yellow. Pedicles declining. Bloss a little longer than the cup. Nect. glands 4, in a circle. Seeds generally abortive, it increasing so considerably by the root. Mr. Woodward. Stem and fruit-stalks zigzag. Pods with us nearly cylindrical, probably because the seeds do not ripen, but

* Sheep eat it. Cows are not fond of it. Linn. The young leaves are acrid and bitterish, but do not taste amiss in salads. Lightf. 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 Papilio Cardamine lives upon the different species.

† This is very universally used as an early and wholesome spring salad. It is an excellent anti-scorbutic and stomachic, with less acrimony than the Scurvy-grass. It is an ingredient in the anti-scorbutic juices.
when they do, the pod assumes an oblong-egg-shaped figure as Linnaeus describes it.

_Creeping Water Cress._ *Water Rocket._ Marshy and watery places, and banks of rivers. Banks of the Thames, of the Aire below Leeds; Mr. Woodward. Near Bungay, Suffolk; the only place in Norfolk and Suffolk where it has been hitherto found. Mr. Woodward. On the banks of the Severn, near Worcester. St.)

P. June, July.

**amphibium. S.** Pods oblong-egg-shaped; leaves wing-cleft, serrated; petals longer than the cup.

*Water Radish._ *Radish Water-cress._ Watery places, and banks of rivers.

P. June—Aug.


_R. dan._ 984—_Kniph._ 12—C. B. _pr._ 38—1—_Park._ 1239, 2—_Pet._ 49, 8—_H. ox._ iii. 7. _nov._ 3. 4—_Ger._ 180—_Ger._ em. 234, 2.

When growing in water of some depth the leaves below the surface strap-shaped, winged, nearly like those of the _Hottonia_, those above spear-shaped, serrated. *Linn._ Stem upright, branched. _Leaves_ spear-shaped, variously toothed, smooth, half embracing the stem. _Fruit-stalks_ much longer than the pods, and much longer than in the _S. terrestre._ Pod oblong, very short, smooth, at first expanding, afterwards hanging down. Mr. Woodward. Stem smooth, scored, crooked at the joints. _Leaves_ egg-spear-shaped, scoloped and set with little teeth at the edge, with often from 1 to 3 winged clefts at the base. _Leaf-stalks_ semi-cylindrical, channeled above. _Fruit-stalks_ while in flower about ½ an inch long, and upright, but afterwards bending back and pointing downwards. _Flower_, the whole yellow.

_Sisymbrium amphibium aquaticum_ β *Linn._ S. _aquaticum._ *Pollich._ _Radicula sylvestris seu palustris._ R. _Syn._ 301. (St.) [In the Foss at York. Mr. Woodward.—Side of the river and wet ditches at Tamworth, and of the Severn near Worcester. St.)

Var. 2. Leaves deeply wing-cleft.

_Kniph._ 3—_Ger._ 185, 2—_J. B._ ii. 867, 2—_Pet._ 49, 10—_Lob._ i. 319—_Ger._ em. 240, 2—_Park._ 1228, 1.

_Leaves_, the clefts extending nearly to the mid-rib, segments spear-strap-shaped, pointed, generally very entire, or with 1 or 2 saw-like teeth. Merely a variety growing with that with entire leaves, and having intermediate specimens with leaves pretty deeply cut and serrated, as in _Lob._ and its copies. St,
TETRADYNA£IA. SILIQUOSA. Sisymbrium.

Sisymbrium amphibiaium terrestre. Linn. on the authority of the figures referred to by Vaill.*

S. Root annual: leaves wing-cleft: pods full of seed: terrestre. petals shorter than the cup.


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, very entire, somewhat shorter than the cups.


The S. islandicum with lyre-like winged leaves, the leaflets oval and toothed, figured in Fl. dan. 409, approaches very nearly to this, but the leaflets are not confluent with the mid-rib.

Edges of wet ditches, and on ground apt to be occasionally overflowed in the environs of London, as Tothill-fields, and between the Magdalen Hospital and Lambeth Marsh. Curt.—[Bungay Common, Suffolk. Mr. Woodward.—Near Stafford, on the road to the Castle-hill, St.]

A. June.—Sept.

(2) Stem naked, or nearly so.

S. Leaves smooth, nearly entire; the lowermost once or tenuifolium twice pinnatifid; the uppermost undivided. (E. bot.)

E. bot. 525—Curt.

Very much branched from the root. Leaves with nearly winged clefts. Mr. Woodward. Stem 1½ foot high, upright, cylindrical, woody at the base. Leaves with winged-clefts and jagged, smooth, expanding, of a disagreeable scent. Cal. 2 of the leaves almost upright; 2 bulging at the ends, bent back; before the blossom is expanded appearing as if tipped with 2 horns from the projecting points of 2 of the leaves, which are beset with 1 or 2 hairs. Petals of the larger size, twice as large as the calyx, yellow, with claws. Style very short. Podi 1½ inch long, round, marked with a prominent line on each side. Seeds egg-shaped, slightly compressed. Curt. Leaves, segments of those with winged clefts strap-shaped-oblong, expanding, toothed, and sometimes quite entire, the terminating one broader, spear-shaped, indented. Sr.

We are indebted to the accurate researches of Dr. Smith for

* Ends of the general fruit-stalks often swoln into a cauliflower-like substance, purplish, and containing small grubs of the same colour. Sr. Cows refuse it. Sheep and goats are not fond of it.
rescuing this plant from its former improper situation among the Brassicæ, and placing it with its congeners, the Sisymbria. 


monensis. S. Leaves between winged and toothed, somewhat hairy: stalks smooth. See Brassica monensis.

(3) Leaves compound or winged.

Sophia. S. Petals smaller than the cups: leaves doubly compound-winged.

Lud. 73-Fl. dan. 528-Shedr. Kniph. 6-Dod. 133. 2-

Lob. 426. 1, and ic. i. 738. 2-Ger. em. 1068-Park.

Pet. 46. 12-Euchs. 2-J. B. ii. 886. 2-Trag.

338-Ger. 910. 1 and i-Lonic.


Trio. S. Leaves notched, toothed, naked: stem smooth: pods upright.

Jacq. austr. 322-Curt. 311-Park. 834. 4-H. ox. iii. 3.

rost 3. 3-Pet. 46. 4-Col. ecphr. 265.

Stem nearly smooth. 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 long, strap-shaped, upright, but not pressed to the stem. Fruit-stalks short. Mr. Woodward. Blossoms small, yellow.


ERYSIMUM. Pod straight, strap-shaped, exactly 4-sided: cal. closed: summit a knob.

* All the parts of this plant are considerably acrid, and have a rank disagreeable smell.

+ The pods retain the seeds all winter, and small birds feed upon them. The plant has been sometimes prescribed in hysterical and dysenteric cases; and the seeds are given to destroy worms. Sheep and cows cat it. Horses and goats are not fond of it. Swine refuse it.
E. Pods pressed to the spike-stalk: leaves notched.

244—Sheldr.—Blackw. 28—Ger. 198. 1—Pet. 46. 2—Fuchs.
592—J. B. 863—Dod. 714—Ger. em. 254. 1—Trag. 102. 1
—Lonic. i. 165. 1—Lob. adv. 69, and ic. i. 206. 1.

Stem cylindrical, frequently purple, particularly at the angles of the branches. Branches very expanding. Pods roundish, somewhat awl-shaped, pressed so close to the spike-stalks as to appear naked. Mr. Woodw. Stem hairy, branched towards the top. Branches ascending. Leaves slightly woolly, the lower winged, the upper halberd-shaped. Calyx about half as long as the petals. Bloss. yellow. Germin cylindrical, tapering upwards. Summit flat, with a shallow nick. Pod conical, scarce sensibly 4-cornered, hairy. Seeds oblong. Flowers in long spikes, terminating.


A. May, June.*

E. Pods indistinctly 4-cornered: leaves lyre-shaped, the Barbaarea, terminating segment circular.

E. bot. 443—Fl. daw. 983—Walc.—Ger. 188—Fuchs. 746—
J. B. ii. 869—Trag. 101. 2—Lonic. i. 165. 2—Dod. 712. 1
—Lob. abs. 104. 2, and ic. i. 207. 2—Ger. em. 243—Park.
820—H. ox. iii. 5. 11 and 12—Pet. 46. 1—Matth. 572.

Stems strong, with about 8 deep furrows, and as many sharp ridges. Leaves half embracing the stem, winged, the terminating leaflet egg-shaped, notched. Cal. leaves in the flowers not yet expanded green, and 2 of them larger, with a helmet-shaped hollow at the top. Pods long, slender, somewhat cylindrical, slightly flattened, not very sensibly 4-edged. Blossoms yellow.


Var. 2. Leaves smaller, and more frequently scolloped. Ray.

Pet. 46. 2.

* 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 it. Cows, horses, and swine refuse it. By means of this herb a hoarseness, occasioned by loud speaking, was cured in 3 days, by Rondeletius. Linn.

Juice of Hedge Mustard is beyond any thing in ulcers of the throat. This was found by experience by the Honourable Harry Gray, Esq.

when all advice of Doctors and Surgeons availed nothing. This from his own mouth. —Manuscript note in a copy of Parkinson which formerly belonged to Mr. Saunders, surgeon at Stourbridge.]
Blossoms yellow.

If this be really an annual, as asserted by Dillenius and Petiver, it may prove distinct, but plants which grow in situations so different as the sides of streams and the rubbish of an old Castle on an elevated mount, are necessarily liable to great variations.


**Allia'ria.** E. Leaves heart-shaped.

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**cheiran-thoi'des.** E. Stem very much branched: leaves spear-shaped, oblique, waved and toothed: pods expanding.

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*T* The common people in Sweden use the leaves in sallads, early in the spring, and late in the autumn; they also boil them as Cale. It is sown in gardens as an early spring sallad. 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.

† The Prussians eat the leaves along with salted meats in the spring. They are useful with Lettuce and the colder sallads. The seeds excite sneezing. Cows and goats eat it. Horses, sheep, and swine refuse it. The *Curculio Allaria* feeds upon it. Linn.—When it grows in poultry yards the fowls eat it, and it gives an intolerable rank taste to their flesh.

In Wales it is much used as a frying herb.
CHEIRANTHUS. Gernien with a glandular tooth on each side: calyx closed, 2 of its leaflets bulging at the base: seeds flat.

C. Leaves spear-shaped, acute, smooth; branches angular: Chei'ri, stem shrub-like.

CHEIRANTHUS. Gernien with a glandular tooth on each side: calyx closed, 2 of its leaflets bulging at the base: seeds flat.

C. Leaves spear-shaped, acute, smooth; branches angular: Chei'ri, stem shrub-like.

HESPERIS. Petals turned obliquely: glands within the shorter stamens: calyx closed: pod stiff and straight: summit forked at the base, approaching at the top.

H. Stem simple, upright: leaves toothed: petals blunt. inodo'ra.

* The country people give the seeds to destroy worms, and with good effect.—Horses, cows, goats, sheep, and swine eat it.

† It has found a place in our gardens, where it has produced a considerable number of varieties, but none which have a more delightful scent than the wild one. The Phalana manticora, and Pronuba, feed upon it. Linn.
TETRADYNAMIA. SILIQUOSA. Arabis.

Jacq. austr. 347—E. bot. 731—Fl. dan. 924 and 921—Ruff. a. Hall. at p. 78—J. B. ii. 878. 2—Clus. i. 297. 1—Dod. 161. 1—Lob. obs. 175. 1, and ic. i. 323. 2—Ger. em. 462. 1—Park. 1682. 3—H. ex. iii. 10, row 1, 1.

So like H. matronalis as to be scarcely distinguishable but by a very experienced botanist, but the leaves are nearly halberd-shaped, with a transverse base, sharply toothed, especially at the base, softer, and not so rough. Calyx not coloured. Petals blunt, without a point. Stamens not projecting beyond the tube of the flower. Linn. Leaves roughish, and woolly on both sides, with sharp tooth-like serrations, spear-shaped, both broad and narrow. Petals very entire, or slightly nicked, white, flesh-coloured, purple, or purplish red; clavus pale, longer than the calyx. Jacq. Leaves egg-shaped, tooth-serrated, pointed, nearly sitting: I have not seen any halberd-shaped. Huds. Stem hairy. Leaves hairy, irregularly tooth-serrated, either sitting or on short leaf-stalks; not halberd-shaped. Flowers large, purplish red, in a terminating spike-like bunch; petals rounded at the end. Fruit-stalks expanding. The Sp. pl. refers the fig. of Dod. 161 to the 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 2 species are really distinct, and if so, to which of them our plant belongs. Specimens which I collected in Cornwall agree perfectly well with the fig. of Jacquin and the Flora danica.


ARABIS. Nectary, glands 4, within the leaflets of the calyx, resembling a reflected scale: pod long, compressed, strap-shaped, entire, and knobbed at the end.

thalia'na. A. Root-leaves spear-shaped, toothed, tapering into leaf-stalks: stem-leaves very entire; sitting.

Curt.—Fl. dan. 1106—Pollich. ii. at p. 243—Pluk. 80. 2—J. B. ii. 870. 2—H. ex. iii. 7. 5—Pet. 48. 2—Thal. 7. D —Pet. 48. 1—Barr. 269 and 270.

Root-leaves disposed in a circle on the ground, hairy; those of the stem nearly smooth. Flowers small, white. Hall. Stem 1 inch to more than a foot high. Leaves, hairs at the base simple, those on the edges and surface dividing into 2 and 3 forks. Nectary glands so very minute as scarcely to be discovered even with a magnifier. Curt.
A. Leaves toothed, rough with hair; those of the root spatula-shaped, those of the stem half embracing the stem, oblong: pods 2-edged, upright. Huds.


Turkey-pod. Coded Mouse-ear. Walls, roofs, dry sandy pastures [and cornfields. St. On walls near Mangotsfield, Gloucestershire. Mr. Swayne.]

A. Leaves embracing the stem: pods bent backwards, Turri'ta. flat, strap-shaped: cups somewhat wrinkled.

Jacq. austr. 11-E. bot. 178-Clus. ii. 126. 2-Ger. em. 272. 2-Park. 852. 2-Pet. 47. 1-H. ox. iii. 2. 23-Barr. 353.

Flowers straw-coloured. Linn. Glands as in Brassica. Mart. Root woody. Root-leaves on leaf-stalks, egg-shaped, toothed, pointed, rough with hair; stem-leaves oblong, toothed, cottony. Flowers upright, white. Fruit-stalks short. Glands within the shorter, and without the longer stamens. Style short, permanent. Seeds round, compressed. Lyons. Stem 1 to 2 feet high, cylindrical, 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. Woodward.

TETRADYNA MIA. SIL IQUO SA. Turr itis.

TURRITIS. Pod very long, angular, stiff and straight: calyx close, upright: bloss. upright.

T. Root-leave toothed, rough with hair; stem-leaves very entire, embracing the stem, smooth.


Tower Mustard. Smooth Towerwort. Meadows, pastures, pits, and waste places, in a gravelly soil. Near Chaleton and Lewisham, Kent; near Colchester. [Spixwort, Norfolk. Woodward. Lichfield. Mr. Whately. Castle Bromwich. Mr. Jones. Between Ashbourne and Okeover. St. In the quarries above Bath, which is one of the habitats mentioned by Ray for his Cardamine Bellidis folio. Mr. SWAYNE. St. Vincent's Rocks, near Bristol, which, being another habitat of Mr. Ray's plant, makes it probable that his Cardamine was our Turritis glabra.]

A. May, June.

hirus'ta. T. All the leaves hispid: stem-leaves embracing the stem.

Dicks. b. s.—E. bot. 587—Jacq. ic. i.—Walc.—C. B., pr. 42. 2—Park. 834. 6—Pet. 47. 12—H. ox. iii. 3. 5—Fl. dan. 1040.


A. May, June.
TETRADYNAMIA. SILIQUOSA. Brassica.

BRASSICA. Calyx upright, close: glands, 1 between each shorter stamen and the pistil, and 1 between each pair of longer stamens and the calyx: seeds globular.

B. Leaves heart-shaped, embracing the stem, smooth; orientalis. root-leaves rough, very entire: pods 4-cornered. LINN. All the leaves smooth.* Syst. Veg. POLLICH.

**Jacq. austr. 282—Kniph. Brassica campestris— J. B. ii. 835. 4—Clus. ii. 127. 1—Dod. 626. 2—Lob. obs. 215. 3, and is: i. 396. 2.—Ger. em. 536. 2—Park. 580. 9—H. ox. iii. 2. 19 and 20—Pet. 45. 5—Ger. 430. 2—J. B. ii. 835. 3.**

Petals white. LINN. Too nearly allied to the B. campestris. Huds. Stem-leaves egg-shaped, blunt at the end, heart-shaped at the base, smooth, sea-green, very entire. Petals white, with a tinge of straw colour. Fruit-stalks expanding. Pods 3 or 4 inches long, the lower standing wide. Specimen from Mr. Curtis's garden. WOODWARD.


B. Root and stem slender: stem-leaves uniform, heart-campes'tris, shaped, sitting.

**Jacq. austr. 282, is referred to by Hudson, and Fl. dan. 550.** by Linnaeus, but Jacquin considers his as a new species, which he calls B. austriaca, observing, that the angles at the base of the leaves are rounded, and not pointed, as in the fig. of the Fl. dan. He adds too, that the flowers are not in bunches as represented in that figure, but in broad-topped spikes, a few flowering at a time. Sr. Mr. Woodward suspects the reference to Fl. dan. observing, that Mr. Hudson does not cite it. (Ger. em. 536. 2, referred to by Hudson, is the same as Clus. ii. 127. 1, which Linneus refers to B. orientalis. J. B. ii. 835. 4, is also B. orientalis.)

Root-leaves lyre-shaped, somewhat rough with hairs; stem-leaves smooth. Blossoms yellow. LINN. Root-leaves oblong,

* These contradictions render it probable that the plant given in the bart. ups. and supposed to be the B. orientalis of Tourn. cor. and our European species, are distinct. DR. STOKES.
TETRADYNAEMIA. SILIQUSOA. Brassica.

indented, blunt, rough. *Flowers* yellow or white. Hudson. *Flowers* yellow in a garden specimen. Woodward. The only places of growth given by Hudson are those from Ray, which really belong to *B. orientalis*, to which they are above referred. St. Hence it is probable that we have not both species, and not unlikely that our plant may not accord well with either. I learn, however, very lately, from Mr. Pitchford, that the *B. canepetris* was found by the Rev. Mr. Sutton, of Norwich, at Bradley near Orford, Suffolk.

Na'pus. B. The root a regular continuation of the stem; spindle-shaped.

*Ludw.* 165-Blackw. 224-Walc.-Fuchs. 177-" B. ii. 843.

- *Trag.* 730-Lonic. i. 191. 3-Lob. obs. 200. 2-Gen. em. 235. 2-Park. 865-Pet. 45. 9-H. ex. iii. 2. row 3. 2. f. 3-Gen. 181. 2.

*Root-leaves* lyre-shaped, smooth; stem-leaves heart-shaped oblong, embracing the stem, a little toothed. *Calyx* expanding, approaching to that of *Sinapis*. Linn. *Stem* somewhat branched, cylindrical, smooth, about 2 feet high. *Leaves* smooth, sea-green. *Calyx* yellowish green. *Summit* a flattened knob. *Pod* with frequently 3 or 4 warty excrescences, not occasioned merely by the bulk of the inclosed seeds. There is a variety with the leaves hairy at the edge. *Bloss.* yellow.


Ra'pa. B. The root a regular continuation of the stem; round, depressed, fleshy.


*Turnep Cabbage.*

Var. 2. Roots oblong.

*J. B. ii. 838-Matth. 436-Dod. 673. 2-Lob. obs. 98. 2, and *ic.* 197. 2-Gen. em. 232. 2-H. ex. iii. 2. row 3. 2. f. 1

-Pet. 45. 8.

* The roots of the cultivated variety may be eaten like the Turnep, but they have a stronger taste, and its seeds, which are called Colseeds, afford a large quantity of expressed oil, called Rape Oil. What remains after the expressing of the oil is called Oil Cake, and is used for fattening oxen. In Norfolk the cakes are broken to pieces, and strewed on the land as a manure. It is thought to be a very efficacious one, and is sold from 41. to 61. per ton. About half a ton is laid on an acre. Woodward. Cows, goats, and swine eat it.
TETRADYNAMIA. SILIQUOSA. Brassica.

Turnips. Knolles. Cornfields, and borders of cornfields.

B. Apr.*

B. The root a regular continuation of the stem; cylindric-olera'cea, cal, fleshy.

E. bot. 637—Pet. 45. 6.

Stem-leaves very much waved, and variously indented, sea-green, with frequently a mixture of purple, the lower somewhat egg-shaped, sitting; the upper mostly strap-shaped. Flowers large, yellow. Cal. leaves egg-shaped, broad, yellow. Pods short, swelling. Mr. Woodward. Seeds dusky purple.


B. Leaves wing-cleft, wings cut serrated: stem nearly monen'sis, naked, trailing. Huds.

Lightf. 15. 1, at p. 347—Pet. 46. 7—Dill. elib. 111. 135, has wing-cleft leaves, the segments very entire. It accords best with the Linn. char. and is, I suspect, a distinct

* The roots are either eaten raw, boiled, or roasted. Pepper is com- monly 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. The rind is acrimonious. If the roots are kept in sand, or in a cellar, during the winter, they send out white shoots and yellowish leaves, which being rather sweet and not un- pleasant to the palate, are used as sallad, when other esculent plants are not to be had. But the greatest use of Turneps is in feeding oxen and sheep in the winter.

† Early in the spring the sea cabbage is preferred before the cultivated kinds; but, when gathered on the sea coast, it must be boiled in two waters, to take away the saltiness. 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. In some countries they bury the white cabbage when full grown in the au- tumn, and thus preserve it all winter. The Germans cut them to pieces, and along with some aromatic herbs and salt, press them close down in a tub, where they soon ferment, and are then eaten under the name of Sour Croot.—The cabbage, whilst young, is food for the Chrysomela saltatoria, and afterwards for the Papilio Brassica. The former may be kept off by strewing the ground with soot; and it is said the latter will not touch the plants if they are whipped with the green boughs of elder. If cab- bages are sowed or planted for several years together in the same soil, the heads become smaller and the roots knotty. This is occasioned by the larve of flies.—A horse eat the leaves, but did not seem fond of them. Sr. Cows grow fat upon them.
TETRADYNNAA. SILIQUOSA. Sinapis.

Plant from that of Lightf. and Pet. It corresponds exactly with some of my specimens of B. muralis. Sr.

Very much accords with S. murale in the size of the plant, leaves, flowers, and fruit. Root perennial. Leaves with almost winged clefts, being divided more than half way to the mid-rib, strap-shaped, beset with a few hairs; wings remote, bluntish, mostly 7. Stalks upright, smooth, Cal. closed. Petals yellow, entire. Linn. Stems smooth, reclining, from the centre of the leaves; 10 or 12 inches long, with commonly one leaf towards the base. Root-leaves with generally a few scattered hairs, especially about their leaf-stalks; wings 5 or 6 pair, oval, pointed, deeply indented, some alternate, some opposite, increasing in size towards the end, the terminating one larger, with 3 slight lobes, which are indented; the stem-leaf with strap-shaped wings, a little indented on their lower edges. Cal. hairy at the top. Petals twice as long as the calyx. Lightf.


SINAPSIS. Cal. expanding: bloss. claws upright: glands between the shorter stamens and the pistil, and between the longer stamens and the calyx: pod beaked, opening; valves shorter than the partition.

arvfrsis. S. Pods with many angles, swoln and bunched out by the seeds: smooth, longer than the 2-edged beak.


* The different species afford nourishment to the Papilio Brassicae, Repae, and Napi; Phalaena fuliginosa; Aphis Brassicae; and Chryzomela Hyoscyami.
Chadlock. Wild Mustard, or Charlock. Corn Cale. Cornfields, and borders of cornfields. A. May.*

Mr. Pitt, in his Staffordshire Reports, observes that the name Charlock, or as it is more commonly pronounced in the midland counties, Chadlock, is not confined to one plant only, but is indiscriminately applied to Sinapis nigra, Brassica Napus, Sinapis arvensis, and Raphanus Raphanistrum, as one or other of these abound more or less in different places.

S. Pods rough with hair: beak very long, slanting, sword-shaped.

Curt. 322—Blackw. 29—Ger. em. 244. 4—Pet. 45. 10—Fuchs. 538—J. B. ii. 856—Trag. 101. 1—Lonic. i. 164. 2—Matth. 563—Dod. 707. 1—Lob. obs. 100. 2, and ic. i. 203. 1—Ger. em. 244. 2—H. ox. iii. 3, row 1. 2.

Bunches and fruit-stalks scored. Pods with 3 knots, somewhat keeled; hairs expanding; beak keeled, even as far as the last joint. Linn.—Leaves rough, all deeply indented or lobed, and frequently with a pair of small wings on the leaf-stalk. Pods bunched with the seeds; beak scored, dark green, with a few hairs. Mr. Woodw.—Stem strong, hard, nearly cylindrical, branched, set with strong hairs pointing downwards. Leaves rough with strong hairs, deeply divided, segments 3 or 5, the terminating one very broad, large, toothed, and indented. Fruit-stalks set with strong hairs pointing downwards. Cal. leaves upright, opening a little at the top, yellow or purplish, smooth or hispid. Petals; limb inversely egg-shaped, yellow. Seeds white or reddish.

White Mustard. Cornfields and road sides. A. Aug.†

S. Pods smooth, laid flat to the spike-stalk.

Woodw. 151—Blackw. 446—J. B. ii. 855.


* The Scandinavians boil and eat it 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.

† It is sown in the winter, and early in the spring, to supply our tables with salading. The seeds have nearly the same properties as those of the next species.
**TETRADYNA MIA. SILIQUOSA. Raphanus.**

*Common Mustard.* Cornfields, ditch banks, road sides, [and banks of the Severn. St.] A. June.*

**RAPHANUS. Cal.** close, upright: *nect. glands* 2 between the shorter stamens and the pistil, and 2 between the longer stamens and the calyx: *pod* round, but protuberating, with cells, and nearly jointed.

Raphanus*—* R. Pods round, jointed, smooth, of 1 cell, *Linn.* originally of 2 cells, but, as the seeds increase in size, the partition becomes obliterated. *Hall.*

Curt. 267—B. *bot.* 856—*Linn.* *aman. acad. vi. at p.* 451—
*Fl.* *dan.* 678—*F. B.* ii. 851. 1—*Ger.* 179. 2—*Lob. ic.* i. 199. 1—*Ger.* 240. 1—*Pet.* 46. 10—*Ger.* 199—*Park.* 863. 4
—*H.* *ex.* iii. 13. 1 and 2—*Park.* 863. 5—*H.* *ex.* iii. 13, row 2, 4. f. 4.*

Stem rough with transparent hairs pointing backwards. Leaves sometimes rough with hairs; the lower lyre-shaped, wings alternate, heart-oblong, serrated, the lowermost very small, the odd one very large, rounded at the end, scollopated; the upper oblong-spear-shaped, scollop-serrated. *Leaf-stalks* generally rough with hairs. *Calyx* rough with white hairs, very smooth at the base. *Bloss.* generally yellow, but sometimes white or violet, with blackish veins. *Pod,* joints falling off separately. *Linn.* Differs from the *Sinapis arvensis* as follows: *Stems* even, and usually sea-green, generally branched from the bottom. *Calyx* upright, close. *Bloss.* white, and pale red, as well as yellow, and all in general striped with purplish veins. Curt.—*Plant* generally of a sea-green cast. *Petals* of whatever colour, veined with dark

* The seeds, reduced to powder, make the common mustard so much in request at our tables. They yield a considerable quantity of expressed oil, which partakes 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 loosen 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. This infusion, taken in considerable quantity, vomits; in smaller doses, it is an useful aperient and diuretic. Caraplasms, formed with crumb of bread, vinegar, and powdered mustard seed, 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. Its acrimony consists in an essential oil.—The *Phalarna fuliginosa* lives upon the different species.
MONADELPHIA.


CLASS XVI.

MONADELPHIA.

TRIANDRIA.

JUNIP'ERUS. M. and fem. flowers on different plants.

M. *Cal.* a catkin: *Bloss.* none.

F. *Cal.* with 3 divisions: *Bloss.* 3 petals: *Styles* 3:

Berry beneath; 3-seeded; the cup at the base.

DECANDRIA.

GERA'NIUM. *Pistil* 1: Common Receptacle beaked:

Caps. 5 dry berries; with a long beak; twisting.


POLYANDRIA.

(1) *Pistil* 1.

TAX'US. Male and fem. flowers on different plants: *Cal.*

4-leaved: *Bloss.* none.

M. *Anthers* 8-cleft.

F. *Summit* 1: Berry 1-seeded: *Seed* naked at the end.

(2) *Pistils* 2.

PINUS. *Bloss.* M. and fem. flowers on the same plant:

*Bloss.* none.

M. *Cal.* 4-leaved.

F. a cone-like *Catkin*: *Nuts* 2; with a membranaceous wing.

* In wet seasons it grows in great quantity amongst the barley, in Sweden, and the common people who eat barley bread, are afflicted with very violent convulsive complaints in those provinces, and in those seasons wherein this plant abounds. *Amer. acad.* vi. 430.—Horses eat it. Cows refuse it.
MONADELPHIA. TRIANDRIA. Juniperus.

(3) Pistils many.

LAVATERA. Outer Cup 3-cleft: Seed-coats in whirls; 1 seed in each.

MALVA. Outer Cup 3 leaves: Seed-coats several; in whirls; 1 seed in each.

ALTHAEA. Outer Cup 9-cleft: Seed-coats several; in whirls; 1 seed in each.

TRIANDRIA.


communis. J. Leaves 3 together, expanding; sharp-pointed; longer than the berry.

Fl. Ross. i. 54—Fl. dan. 1119—Ludov. 189—Mill. ill.—Blackw. 187—Sheildr. 70—Woodw. 95—Kniph. 1—Gars. 88—Tourn. 361. 2—Matth. 121—Ger. 1189. 1—Fuchs. 88—J. B. i. b. 293—Trag. 1074—Lonic. i. 24—Cam. epit. 53—Dod. 852—Lob. obs. 628. 2, and ic. ii. 222. 2—Ger. em. 1372. 1—Park. 1029. 1.

Anthers under the lateral scales often 5. LEERS. Berry continuing 2 years; green, at length blackish purple. RELH. Bark reddish. Berries bluish black.

Juniper Tree. Heaths. [Near Berkhamsted, Hertfordshire, and abundantly on a common between Blenheim and Ditchley, Oxfordshire. Mr. Woodward. On heaths, west of Bishop's Aukland. Mr. Robson.] S. May. *

* It grows in fertile or in barren soils; on hills or in valleys; in open sandy plains, or in moist and close woods. On the sides of hills its trunk grows long; but on the tops of rocky mountains and on bogs it is little better than a shrub. Linn.—"A great deal of it grows by the side of the road, between the General's Hut and Inverness, and indeed many of the neighbouring hills are almost covered with it: a ship load of the berries used annually to be sent from hence to Holland." Garnett's Tour.—It is easily transplanted, and it bears cropping. Grass will not grow beneath it, but the Avena pratensis destroys it.—The wood is hard and durable. The bark may be made into ropes. The berries are 2 years in ripening. When bruised they afford a pleasant diuretic liquor, but it is not easy to prevent...

Var. 2. alpine. Leaves broader and thicker. Berries longer, more oval than spherical. Lightfl.

J. B. i. b. 302. 1-Ulus. i. 38. 2-Ger. em. 1372. 3.

On the summit of Snowdon, and the mountains of Westmoreland. On Kendal Fell. R. Syn. [About 200 yards south west of Llyn y Cwn, Caernarvonshire. Mr. Griffith.]

Decandria.

Geranium. Cal. with 5 divisions: bloss. 5 petals; pist. 1: summits 5, common receptacle beaked: seeds 5, with a very long twisted tail.

(2) Blossoms regular; fruit-stalks 1-flowered.

G. Leaves circular, with 5 or 7 divisions: segments sanguin'eum, cleft; fruit-stalks with a joint; stem trailing.

Fl. den. 1107-E, bot. 272-Kniph. 7-Walc.— Clus. ii. 102, 1—

Lob. i. 660, 1-Ger. em. 945. 2-Pet. 64, 9-Fuchs. 209—

J. B. iii. 478, 2-Lonic. i. 152, 2-Trag. 348—Park.

par. 227. 6.

Stem hairy, from a foot to a cubit high. Leaves above rough, hairy underneath and on the edge. Fruit-stalks 3 inches long, hairy, with a knot and 2 floral-leaves about the middle. Relhan.

Calyx leaves oval, with membranaceous reddish edges, and terminated by a short red awn. Petals inversely heart-shaped, very large, equal, pale red, with deep red veins. Mr. Woodward.

Whole plant set with white expanding hairs. Leaves opposite.

Petals hairy at the base.


P. July. Sept.

prevent its growing sour. It is esteemed a good antiscorbutic. The Swedes prepare an extract from the berries which some people eat for breakfast, but it is fitter for a medicine than for food. The spirit impregnated with the essential oil of these berries is every where known by the name of Gin, or Juniper water. The berries sometimes appear in an uncommon form, the leaves of the cup grow double the usual size; approaching, but not closing; and the 3 petals fit exactly close, so as to keep the air from the Tipule Juniperi, which inhabit them.—Gum Sandarach, more commonly called Pounce, is the product of this tree. Horses, sheep, and goats eat it. Cinex juniperinutus, Thiers juniperina, and Cucinella g-punctata feed upon it.
MONADELPHIA. DECANDRIA. Geranium.

Var. 2. Leaves larger, paler, and more deeply divided. Ray. Pet. 64. 10.


Lancastri- en'se.

G. Leaves circular, with 5 or 7 divisions; segments 3-cleft: fruit-stalks with a joint: stem upright.

Dill. elth. 136. 163—Pet. 64. 11.

Flowers white, with reddish veins. Ray. Leaves smaller and more finely divided than in G. sanguineum; the flowers much smaller. The figure of Dillenius too large. Mr. Woodward. Bluss. sometimes pale flesh colour with red veins. Dr. Stokes. Grows intermixed with the G. sanguineum in the Isle of Walney, but the flower and every part of the plant is a third smaller; it grows upright, whilst the G. sanguineum creeps upon the ground. Mr. Atkinson. G. sanguineum 4 Linn. 7 Huds. G. haematodes lancastriense, flore eleganter striato. Dill. Ray; who remarks that it does not change when cultivated, that it is a smaller and more humble plant than the G. sanguineum, and that for these and other reasons he believes it a distinct species.

Isle of Walney, Lancashire, upon the bank, in a sandy soil. P. July, Aug.

(2) Petals notched, or cloven; fruit-stalks 2-flowered.

Perennial.

pyrena'icum. G. Petals 2-lobed: leaves circular, lower ones with 5, upper with 3 lobes; lobes blunt, 3-cleft.

Curt. 159—E. bot. 405—Ger. prov. 16. 2.

Stem hairy. Leaves hairy, the lower with mostly 7 lobes; lobes with 3 clefts, segments rounded or blunt, the middle one frequently scolpded, the upper with mostly 3 lobes; lobes with 3 clefts, more expanding than in the lower leaves. Fruit-stalks longer than the leaves. Floral-leaves pointed, 4 to each fruit-stalk. Calyx leaves broad and short. Petals as long again as the calyx, deeply cloven; lobes roundish, entire. Woodw. Stem forked twice or thrice. Fruit-stalks solitary, axillary. Sr. Hairs on the seed-coats few, upright. Petals nearly divided down to the base and much larger than in the G. pusillum, the seed-coats of which are rather silky than hairy, the hairs lying close. M. Afzelius.

Mountain Cranesbill. Meadows and pastures. On the banks of the river between Bingley and Keighley, Yorsk, near Enfield, and about Brompton, Chelsea, and in the dry part of the pasturage in Battersea Fields. [Near Oxford, Mr. Woodward.]
MONADELPHIA. DECANDRIA. Geranium. 589

Var. 2. Blossoms white. P. June, July.
In Chelsea garden, growing as a weed. Curt.

G. Stem 4-cornered, upright: leaves 5 or 3-lobed, toothed, nardo'sum. rough above, glossy underneath: petals scored, notched.


Stems spreading, more compressed than in G. striatum. Petals flesh-coloured, with 3 purple scores, running half way to the point. Linn. Flowers before blossoming hanging down, afterwards upright. Stems smooth, shining, swollen at the joints.

Leaves, the lower with 5 lobes, the upper with 3 lobes, opposite; lobes spear-shaped, straddling, entire at the base, irregularly serrated upwards, with 3 strong nearly parallel ribs, and with a few short stiff hairs arising from glands. Stipules and flowers-scales alike, small, pointed. Fruit-stalks short. Cal. leaves awned, smooth. Petals red, scolloped; scollops blunt, regular, Mr. Woodward.

Knotty Cranesbll. Mountainous situations in Cumberland.

G. Stem upright; leaves 5-lobed, cut-serrated: petals en-sylvaricum. tire, or only slightly notched.

E. bot. 121-Rose 1, at p. 472, G. palustre-Fl. dan. 124-Cam. epit. 602-Park. 705. 5-H. ox. v. 16. 25.

Panicle forked, nearly level. Pedicles much longer than the Involucrum. Calyx awned. As soon as the flowering is over it becomes upright, with the points bent back. Bloss. bell-shaped, expanding, violet-coloured, sometimes white, or variegated with white. Linn. Flowers before blossoming hanging down, afterwards upright. Leaves slightly hairy, the lower with 7 lobes, the middle with 5, the upper with 3. Fruit-stalks with sometimes more than 2 flowers. Floral-leaves awl-shaped, small. Calyx and fruit-stalks very hairy. Petals large. Mr. Woodward. 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 sitting. Calyces ribbed, membranaceous at the edge, ending in spit-points. Petals purple, slightly notched at the end, a little woolly at the base.

Corby Castle, Cumberland. St. Very common in moist shady places in most parts of the county of Durham, and the petals are as frequently found entire as slightly notched, nor are the leaves target-shaped as described by Linnaeus. Mr. Robson. Near Hales Owen, Shropshire.

P. June, July.

Var. 2. Dwarf, with very large flowers. Lightfoot.

Scotland.

(3) Petals notched or cloven; fruit-stalks 2-flowered. Annual.

dissectum. G. Fruit-stalks shorter than the leaves: leaves 5-lobed, lobes 3-cleft or many-cleft; petals notched, seed-coats with soft hairs.

Curt.—E. bot. 753—Fl. dan. 936—Vaill. 15. 2—Plot. oxf. 9; 4. at p. 146—Pet. 64. 6, and 7—Fuchs. 207—J. B. iii, 474. 1—Blackw. 58. 2.

Leaves divided down to the leaf-stalk into 5, and these again into 3, segments strap-shaped, usually entire, but the middle one sometimes sub-divided. Fruit-stalks very short. Flower-scales minute. Mr. Woodward. Calyx leaves 3-ribbed. Seed-coats beset with glandular hairs Mr. Holtefear. Stem hairs pointing downwards. Calyx hairs viscid. Curt. Calyx awned. Flowers red. Anthers blue.


A. May—Aug.

columbi'-G. Fruit-stalks longer than the leaves: leaves 5-lobed, lobes many-cleft; calyx 5-sided; seed coats smooth.

Aiton Hort. Kew.

E. bot. 259—Vaill. 15. 4—Pet. 64. 8.

Leaves hairy underneath; segments strap-shaped. Petals nicked, with a sharp point between the lobes. Linn. Leaves divided quite to the leaf-stalk; segments several, sub-divided. Pedicles very long, straddling a good deal. Calyx very large, bellying. Woodw. Stem hairy; hairs laid flat. Mr. Robson. Leaves a little hairy on both surfaces. Calyx somewhat hairy, skinny at the edges, terminated by short awns reddish at the ends. Petals marked with 3 lines; the little tooth between the lobes not very pointed, reddish blue. Stamens with 10 green glands at the base.

Long-stalked Cranesbill. Cornfields, pastures, and hedges. [Heydon, Norfolk. Mr. Bryant. St. Vincent's Rocks. In a barren gravelly soil near the entrance upon Barr-beacon from Birmingham.]

A. June—Aug.
G. Leaves kidney-shaped, 7 or 5-lobed; lobes wedge-shaped, 3-cleft, bluntish: calyx awnless: seed-coat hairy.

(Cavanill. diss. t. 82. f. 1.) on Gmelin's authority.

This plant seems to have been confounded sometimes with the molle, and sometimes with the rotundifolium. It differs from the former in its seed-coat being hairy and not wrinkled; from the latter in its awoless calyx and its notched petals. I have no doubt but it is the G. pusillum of Linnaeus, represented in Ray 16. 2. (a) and (b); though that being a dwarf or starved specimen has occasioned an improper trivial name to be applied to the species, and which, if continued, would infallibly occasion a repetition of the same doubts and difficulties which have hitherto attended the subject.

I am indebted to Mr. Robson for a full grown specimen of this plant, as well as for the following description of it.

The root throws out many cylindrical much branched stems, varying in length according to the situation and soil; procumbent when growing alone, but upright when growing among other plants, and frequently attaining the height of 2 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 7-lobed; upper leaves 5-lobed, more deeply divided, opposite, unequal; lobes wedge-shaped, 3-cleft, bluntish. Floral-leaves 4, 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, 5 with and 5 without anthers. Seed-coats even, covered with short bristles pointing upwards. Seeds smooth. Obs. Varies with leaves alternate towards the tops of the stem and branches, and with 3 or sometimes 4 flowers on a fruit-stalk. Mr. Robson.

—G. malvæfolium, Scop. but excluding his reference to Vai-llant.

[Hedges, and waste places as common about Darlington as the G. molle. Mr. Robson.] A. June, July.

Var. 1. pusillum. LINN. Stem spreading; leaves kidney-shaped, fingered; lobes strap-shaped, acute.

E. bot. 385—Vaill. 15. 1—Ray Syn. 16. 2. a. b.

when drawn through the fingers. Leaves opposite. Fruit-stalks alternate, axillary. Woodward.

High ditch banks. At Low Layton, early in spring. Dill. A.

molle. G. Fruit-stalks and floral-leaves alternate; petals cloven; calyx awnless; stem somewhat upright.

Curt. 141—E. bot. 778—Fl. dan. 679—Vaill. 15. 3—Pet. 64. 2.

Pedicles declining. Flower-scales cloven. Calyx scarcely awned, shorter than the blossom. Petals slightly cloven, without a tooth between the lobes. Linx. Stem hairy, hairs expanding. Mr. Robson. Trailing when growing alone, upright when amongst grass or other plants. Bloss, sometimes almost as large as those of G. pyrenaicum. Curt. Root-leaves kidney-shaped, with a circular outline, with 7 lobes, lobes with 3 clefts; the upper more distinctly kidney-shaped, and more finely divided. In the above it agrees with G. rotundifolium, but differs in the stem and branches being clothed with long soft hairs expanding horizontally. Woodw. Flowers purplish red; sometimes white. Ray. Seeds marked with transverse wrinkles, but in the rotundifolium they are dotted. In the G. rotundifolium the petals are entire, but cloven in the G. molle. M. Affzelius. Stem-leaves 5-lobed; lobes wedge-shaped, blunt. Fruit-stalks opposite the leaves. Glands 5, on the outside of the anther-bearing filaments, green.


(4) Petals entire; fruit-stalks 2-flowered. Perennial.

phaeum. G. Fruit-stalks solitary, 2-flowered, opposite the leaves; calyx somewhat awned; stem upright; petals waved.

E. bot. 322—Fl. dan. 987—Kniph. 5—Walc.—Clus. ii. 99. 1—Ger. em. 942. 3—Park. 704. 3.

Stems nearly cylindrical, woolly below, from 18 inches to 2 feet high; joints large, tinged with red. Leaves, the lower with 6 or 7 lobes, the middle ones with 4 or 5, the uppermost 3 or 4; lobes serrated. Fruit-stalks forked, with 2 flowers. Calyx thick set with short hairs, terminated by little globules, interspersed with a few long, soft, woolly, hairs; leaves with 3 longitudinal lines, and terminated by little blunt callous substances. Petals egg-shaped but angular, blackish purple, shining; claw white, marked with 5 lines, and woolly. Filaments purple, broad and woolly at the base, slightly united by means of 5 green glandular substances placed on the outside of them; after flowering turned outwards. Anthers whitish, the seams marked with a purple line.
MONADELPHIA. DECANDRIA. Geranium.

Pollen greenish yellow. Germen woolly. Style green, shorter than the stamens till the time of flowering. Seed-coats hairy.

Dusky Craneshill. Mountainous pastures. [In a dingle at Downing, Flintsh. Mr. Dickenson. In woods about Darlington. Mr. Robson. Near Cradley, Worcestersh.]

P. May, June.

G. Leaf-stalks nearly central; leaves with many divisions, praten'se, wrinkled: lobes with winged clefts, acute: petals entire.

Curt. 250—E. bot. 404.—Kniph. 5—Matth. 857—Clus. ii. 100. 1—Dodd. 63. 2—Lob. obs. 376. 3, and ic. i. 659. 2—Ger. em. 943. 1—Pet. 65. 7—Walcz.—Ger. 797. 2—Fuchs. 208.—J. B. iii. 475.—H. ox. v. 16. 14.

Pedicle while it is in blossom not longer than the involu- crum. Calyx awned, after flowering closed, nodding. Bloss. flat Petals blue, rounded at the end, not nicked. Style longer than the stamens. Begins to flower when the G. sylvaticum is going out. Linn. Stem 2 to 3 feet high. Leaves with 7 to 5 divisions; segments lobed, deeply toothed, hairy, with strong ribs underneath; those of the upper leaves almost strap-shaped. Leaf- stalks long. Floral-leaves 4, spear-shaped, pointed. Fruit-stalks very short, downy. Petals very large, blue, or white. Woodward. 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 5 to 7 divisions; segments with winged clefts, which are more or less jagged and toothed. Calyx ribbed, membranaceous at the edges, terminated by split-points, thick set with fine white hairs tipt by scarlet globules. Petals inversely egg-shaped, with 7 to 9 whitish lines, and a little hairy at the base. Filaments very broad, and somewhat concave at the base. Anthers purple. Pollen yellow.


G. Stem trailing: leaves heart-egg-shaped, scolloped, cut, maritimum, rough: fruit-stalks 1 to 3-flowered: stamens 5.

Dicks. b. s.—E. bot. 646.—Pluk. 31. 4—Pet. 65. 1—H. ox. v. 35. row 3. f. 2.

Umbel often leafy. Petals entire, often wanting. Fruit- stalks with often 2 flowers. Linn. Stems branched, lying close to the ground. Root-leaves on long fruit-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. Flowers 1 to 3, small. Beaks very small, not exceed-


lu'cidum. G. Calyx pyramidal, the angles raised and wrinkled: leaves roundish, 5-lobed.

Fl. den. 218—E. bot. 75—Kniph. 11—Thal. 5—J. B. iii. 481•
Park. 707. §—Walc.—Pet. 64. 12—H. ox. v. 15. 6.

Stems shining, yet slightly hairy. Leaves the same, kidney-shaped, with mostly 5 lobes: lobes with 3 lobes, the middle one with usually 3 scollops, the side ones entire; in rocky situations only half an inch broad, and not so much divided. Pedicles straddling. Flower-scales very minute. Mr. Woodward. Seed coat with several rugged longitudinal ribs, hairy at the top. E. bot. Whole plant often assuming a dark purplish red colour like the G. robertianum. Stem branched. Calyx not quite equal. Petals rose red.

Shining Cranesbill. Walls, roofs, rocky places, 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. Abundant about the entrance of Peak's Hole, Derbyshire.]

A. June—Aug.

rotundifo' G. Petals entire, as long as the calyx: stem spreading: leaves kidney-shaped, cut: seed-coat even, hairy: seeds reticulated. E. bot.

E. bot. 157—Pet. 64. 4. and 3—Fuchs. 205—J. B. iii. 473•
Ger. 793—Walc.—Matth. 855—Dod. 61. 2—Lob. obs. 376,
2, and ic. i. 638. 1—Ger. em. 938—Park. 706. 2—Pet. 64,
1—H. ox. v. 15. 2.

Stem straddling, cylindrical, downy, clammy. Leaves rounded, soft, downy, somewhat clammy, especially underneath, lobed, with a red point in the hollows. Leaf-stalks reddish brown. Calyx awned, wrinkled, open, with 3 longitudinal wrinkles. Petals wedge-shaped, very blunt, with 3 reddish
brown scores at the base, the under surface not lying upon, but raised from the calyx. **Anthers yellow.** Linn. 

**Stipula** spear-shaped; floral-leaves always of a deep red. Mr. Woodward. 

**Stem** velvety. Mr. Robson. **Seeds** dotted; **Petals** entire. These circumstances at once distinguish it from the **G. molle.** M. **Affzelius.** **Flowers** purplish flesh colour, sometimes white. 

**Round-leaved Cranesbill.** Walls, roofs, ditch banks, and sandy pastures, about Bath, Bristol, Battersea, Wandsworth, Mortlake, and Kew. [Suffolk, common. Mr. Woodward. St. Vincent's rocks, Bristol.]

A. May—July.

Obs. The **G. columbinum, malvæfolium, 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 the molle and the **malvæfolium,** and its notched petals from the rotundifolium.

**— malvæfolium.** Its awnless calyx distinguishes it from the columbinum, its hairy seed-coat from the molle, and its notched petals from the rotundifolium.

**— molle.** Its awnless calyx distinguishes it from the columbinum, its hairless and wrinkled seed-coat from the malvæfolium, and its notched petals from the rotundifolium.

**— rotundifolium.** Its entire petals and its dotted seeds distinguish it from the other three.

Should any further distinctions be necessary consult an ingenious paper in Gent. Mag. p. 487, for the year 1797.

G. **Leafis** by fives or by threes, lobes wing-cleft; calyx **robertia-num.**

**Curt.-Walc.-Blackw.** 480—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. oxv. v. 15. 11—Pet. 65. 5—Fuchs. 206—Trag. 108—F. B. iii. 480—Mattb. 858.

**Calyx** hairy, the 10 angles formed by the 1st and 3d outer leaves being each folded into 3 keel-like angles, the 2d and 5th each into 1, and the 4th into 2. **Petals** entire. **Scent** rank. The whole **plant** sometimes red. Linn. **Leafis** of the lower leaves distinct, those of the upper confluent. **Fruit-stalks** very long. **Pedicles** short. Mr. Woodward. Whole **plant** beset with pellucid hairs, but becoming smoother as the plant grows older. **Upper leaves** divided into 3 parts, the lowermost into 5; **leafis** united at the base, with winged clefts; segments terminated by a little sharp thorn. **Stems** tinged with red at the joints. **Calyx** awned, the angles more evident as the seeds ripen. **Petals,** claws long, border a little ragged, with 3 faint white lines. **Filaments** not very evidently united. **Anthers** red. **Pollen** yellow. **Style** hairy. **Summits** a fine crimson. **Stem** branched, spreading. **Blott.** red, sometimes white.
MONADELPHIA. DECANDRIA. Geranium.


Var. 2. White flowered.

[Road from Lichfield to Stafford, a little beyond the 4th mile stone, plentifully. Mr. Saville. Den of Portend, near the Loch of Monteith. Mr. Brown. Near Exeter. Mr. Martyn.]

Var. 3. shining. Whole plant shining. Leaves smaller and more deeply divided. Woodward.

*Pet. 65. 5. Mr. Woodward.*

Near Swanning, Dorsetshire. Shore of Selsey Island.

(6) *Fruit-stalks many-flowered: leaves winged.*


Riv. pent. 112. G. mosch. = Jacq. bort. i. 55—Blackw. 150—Matth. 856—Dod. 63. 1—Lob. obs. 376. 1, and ic. i. 658.


10—Ger. 796—Trag. 347.

Very like the *G. cicutarium*; of an ambrosial scent. Linn. Whole plant more hairy than *G. cicutarium*; hairs glutinous, 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 with winged clefts. Woodward. Whole plant hairy. Stems swollen and crooked at the joints. Leaves opposite and alternate, the terminating one 3-cleft. Fruit-stalks with from 4 to 10 flowers, thickly set with fine white hairs, ending in pellucid globules. Calyx set with the same kind of hairs as the fruit-stalks; leaves unequal, ribbed, ending in spit-points. Petals with 3 fibres. Seed-coat with strong yellow hairs. Bloss. red or purple. Glands 5 on the outside of the anther-bearing filaments; green.


Curt.—Fl. dan. 986—Kniph. 11—Fuchs. 204—F. B. iii. 479—Dod. 64. 1—Lob. ic. 659. 1—Ger. em. 945. 3—Pet. 65. 3—H. ox. v. 15. 9—Ger. 800. 3, and 4—Cam. epit. 601—Riv. irr. pent. G. robertianum.
Petals entire, the 2 upper ones with a spot at the base, as is also the case with the G. moschatum and the G. pimpinelliformis of Dill. Giss. 173. Linn. Leaves more deeply cut in the summer than in the spring. Bloss. varying much in size even on the same plant. Petals the 2 shorter ones sometimes spotted, sometimes only one of them, and sometimes neither. Stokes. Plant either hairy or smooth. Leaves pointed, jagged. Woodward.

The various appearances of this plant at different seasons and in different soils, and its resemblance in many respects to starved specimens of the G. moschatum, have occasioned many errors. The spots on the petals are not to be trusted, neither are the incisions of the leaves. The musk odour of the G. moschatum, is the most obvious distinction. In the G. cicutarium the leaves are in general more deeply and more finely cut, and shoulder up close to the mid-rib with hardly the appearance of a leaf-stalk, but in the G. moschatum the leaf-stalks to some of the leaves are sufficiently obvious, and in the larger specimens the edges of the leaves are little more than serrated. Flowers rose red.

*Var. 2. fine-leaved* Leaves with winged clefts, segments strap-shaped.


Mr. Woodward thought this a distinct species, and so does Mr. Robson, but we are not yet in possession of specific differences sufficient to establish it as such. Ray refers us to Rivinus irr. pentap. icon. G. robertianum for a figure of his G. Pimpinelliformis, but that figure is a representation of G. cicutarium in its largest and probably cultivated state.

Both in this and in the preceding there are 5 glands of a dark colour on the outside the base of the anther-bearing filaments.

Var. 3. hoary. Flowers larger. Bloss. white. Stems thicker. Leaves not so finely cut. Ray. Leaves hoary with white hairs, possibly the effect of the sea air. Mr. Woodward.

Near Camberwell. Ray. Sea banks near Weems, Fifeshire. Light. [On Yarmouth Denes very plentifully, and elsewhere within the distance of a few miles from the sea. Mr. Woodw. St. Vincent's Rocks, Bristol.]*

* *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 the Geranium cicutarium, moschatum, and, perhaps, in some other species of Geranium. The seeds of this genus surround the pistil
MONADELPHIA. POLYANDRIA. Althæa.

POLYANDRIA.

ALTHÆA. Calyx double, outer 9-cleft: capsules many, 1 seed in each.

officinalis. A. Leaves undivided, angular, cottony.

Kniph. 6-Ludw. i-E. bot. 147-Woodw. 53-Fl. dan. 530-Blackw. 90-Park. 304. 1-Fuchs. 15-Trag. 371-T. B.


Stem upright, a yard high or more, cottony, cylindrical, somewhat branched. Leaves egg-spear-shaped, woolly, very soft, velvety; the upper smaller, with generally 3 imperfect lobes, serrated, with mostly 5 ribs underneath; the lower larger, with 7 ribs, sometimes serrated, sometimes rather scollopèd. Flowers from the bosom of the leaves, on fruit-stalks, in a kind of panicle. Flower-scales many-cleft, bristle-shaped. Petals nicked, flesh-coloured. Relhan. Stem and leaves clothed with a thick pile, feeling exactly like velvet. All the leaves obscurely lobed, doubly serrated; the lower egg-shaped, somewhat heart-

pistol at its base; each seed is 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 5 grooves or flutes to receive the 5 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. This power first 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 easily insinuate itself, and from thence, in due time, produce a new plant. The particular minutiae of the mechanical structure and operations of this curious seed will be better understood by inspection, than by the most accurate and 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 one edge of a white stone or china 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 plate, and drying it before a fire. I mention a white plate, because on that, I imagine, the fine hairs which display themselves from the sides of the tail, as that contracts, and which act as fulera, or feet, to assist and direct the seed in its motions, are most easily distinguished. Dr. Arnold.
MONADELPHIA. POLYANDRIA. Malva.

-shaped at the base; the upper egg-spear-shaped. 

Bloss. white, or pale flesh-coloured. Woodward. Leaves on leaf-stalks, angular. Calyx, the outer with sometimes 11 or 12 segments. Petals fringed at the base.

- Marsh Mallow. 
- Wymote. Salt marshes and banks of rivers. [Salt marshes, Norfolk and Suffolk. Mr. Woolw.—Sea shore near Marazion and Penzance, Cornwall. Mr. Watt.] P. Aug.*

MAL'VA. Calyx double, the outer mostly of 3 leaves: capsules 8 or more, in a whirl; 1, rarely 2-celled: 1 seed in each.

M. Stem declining: leaves roundish-heart-shaped, slightly pubescent.

- 5-lobed: flowers on fruit-stalks, generally in pairs: petals the length of the calyx. (E. bot.)

E. bot. 241.

M. parviflora. Huds. Said to have been found by him, as heretofore, by Mr. Sherard and Mr. Rand at Hithe in Kent. Dr. Smith observes that it is chiefly distinguishable from the M. rotundifolia in the petals scarcely exceeding the calyx, and the fruit-stalks being only 2 in the bosom of each leaf-stalk; though he is not quite satisfied that they are permanently distinct.

[My specimens gathered in Pembrokesh.] B. July.

M. Stem prostrate: leaves heart-shaped, circular, plaited, rotundifolia.

- 5 or 7-lobed: fruit-stalks when ripe declining.

Curt. 157—Fl. dan. 721—Fuchs. 508—J. B. ii. 549. 2—Trag. 369—Dod. 653. 2—Lob. obs. 371. 2; and i. 651. 1—Ger. em. 930. 2—Lonic. i. 156. 2.

Bloss. white, with a tinge of purple, but sometimes, as in the neighbourhood of Upsal, quite white and smaller. Linn. 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 1 flower. Bloss. white, with purple veins. Mr. Woodward. Leaf-stalks twice or more times longer than the leaves. Sr. When the larger leaves are laid quite flat, hardly any interval remains between the 2 edges at the base, so that they then appear quite circular. Flowers several together, on fruit-stalks of very different lengths. Calyx, outer scales spear-shaped, nearly as long as the inner cup.

* The whole plant, particularly the root, abounds with a mild, mucilage. The root boiled is much used as an emollient cataplasm, and an infusion of it is very generally prescribed in all cases wherein mild mucilaginous substances are useful.
Bloss. purplish rose red, sometimes paler, full twice as long as
the calyx.

_Malus._ Dwarf Mallow. Road sides, among rubbish. [On
Saint Vincent's rocks. Mr. Swayne.] A. June—Oct.

sylvestris. M. Stem rough; leaves 5 or 7-lobed, toothed: outer calyx
leaflets partly united at the base.

_Curt._—E. _bot._ 671—Blackw. 22—Woodw. 54—Fuchs. 509—
_J._ _B._ 949. 1—Ger. 785. 1—H. _ox._ v. 17. 8—Dodd. 633. 1—
Lob. _obs._ 371. 1, and _ic._ 1. 650. 2—Ger. _em._ 930. 1.

Stem more or less upright, rough, hairy, nearly of the same
thickness throughout, rather woody. _Leaves with 5 lobes, rarely
6 or 7, unequally serrated, hairy on both sides, with a dark pur-
ple stain near the insertion of the leaf-stalk. _Leaf-stalks 3-cor-
nered, rough. _Fruit-stalks nearly cylindrical, from the bosom
of the leaf-stalks or branches. _Cal._ _outer_, leaves spear-shaped;
both _inner_ and _outer_ hairy without, smooth within, toothed at
the edges, and the teeth terminating in long hairs. _Petals deeply
nicked, but not bitten, purple, with 3 or 4 darker streaks. _Sum-
mits_ 11 or 12. The colour of the flowers varies with more or
less of a bluish cast, and the leaves are liable to be variegated
with yellow white blotches.

Common Mallow. _Mauls._ Hedges, foot paths, and amongst
rubbish. [Though so common in most parts of England, it is
so scarce about Kendal in Westmoreland, that to find a plant of
it is regarded as a botanical discovery. Dr. Stokes. Its trivial
name ill accords with its usual places of growth in this country,
for though so common in the midland parts of England, I don't
recollect ever having found it in a wood.] A. June—Aug.

moschata. M. Stem upright: root-leaves kidney-shaped, cut: stem-
leaves with 5 divisions; segments between winged and many-cloven: leaflets of the outer cup distinct.

_Curt._ 228—E. _bot._ 754—_Fl._ _dann._ 905—_Col._ _ecphr._ 147—_Wak._
—_J._ _B._ ii. 1067. 1—H. _ox._ v. 18. 4.

Differs from _M. Alcea_ as follows: Stem not so tall, with so-
litary upright hairs rising from a prominent little point. _Seed-
coats_ rough with hairs. _Flowers_ of an ambrosial scent. _Linn._ In
the _M. Alcea_ the calyx has a protuberating ring at the base, and
the outer cup is formed of 3 egg-shaped leaflets, but the _M._
moschata has no such ring at the base of the calyx, and the leaflets
are spear-shaped. _Curt._ The _M._ moschata may also be distin-
guished by its musk-like smell, but this is not always percep-
tible, and there is reason to believe that in this case it has been
mistaken for the _M._ _Alcea_, a plant which I believe is not one
of our natives. _Flowers_ flesh-coloured. _Styles_ 14 to 18.
MONADELPHIA. POLYANDRIA. Lavatera.


LAVATERA. Cal. double, the outer 3-cleft: capsules many, equal in number to the summits; placed in a circle, 1 seed in each.

L. Stem woody: leaves with 7 angles, cottony, plaited: arbo'rea.

fruit-stalks crowded, axillary, 1 flower on each.

Garten. 136. 2, Calyx and fruit—Beil. Eyst. aestiv. vi. 6. 1, on the authority of Gaertner, and Cavanill. dist. v. 139. 2, on that of Gmelin.

Stem in the smaller plants like that of a cabbage, but taller; in the larger plants from 4 to 6 feet high, and as much as 4 inches in diameter. Leaves with 7, 5, or 3 angles; as soft as the finest velvet. Flowers mostly in pairs. Calyx, outer much larger than the inner; the segments broad, blunt, sometimes notched. Bloss. purplish red, with dark blotches at the base of the petals. The cylinder of united filaments woolly at the base.


TAXUS. Male and female flowers on different plants: blossom. none: calyx a 4 or a 7-leaved bud.

Male. Anthères target-shaped; 8-cleft.

Fem. Style none: seed 1, surrounded at the base by a pulpy receptacle; the upper half naked.

T. Leaves solitary, strap-shaped, prickle-pointed, near bacca'ta. together: receptacle of the male flowers somewhat globular.

**MONADELPHIA. POLYANDRIA. Pinus.**

Berries very singular, proceeding from a receptacle which half covers and protects the seed, coming to perfection in the 2d year. Seed with 2 seed-lobes. Linn. Bark reddish. Berries when ripe red.

**Common Yew Tree.** Mountainous woods and hedges. R. Syn. Mountains of Westmoreland, Cumberland, and hills of Herefordshire. Huds.—In a truly wild state out of the clefts of the rocks on Giggleswick Scar, where several grow out of the fissures, and spreading on each side, clothe the rock to some distance. In inaccessible situations, on the rocks of Borrowdale, and on Conzick Scar, near Kendal. There can be little doubt but these are its truly natural situations. Woodward.—On the mountain called Yew-barrow, clearly in its indigenous state, and in several other inaccessible places on the mountains of Furness Fells. Mr. Atkinson.—On castle Eden dean, undoubtedly wild. Mr. Robson.]

**PINUS.** Male and Fem. flowers on the same plant: bloss. none.

Male. Calyx scales forming a bud standing open: anthers naked.

Fem. Calyx scales forming a cone, 2 flowers in each scale: pistil 1: nut of 1 cell, without valves, bordered with a membrane.

**sylvestris.** P. Leaves in pairs, rigid: cones egg-conical, mostly in pairs, as long as the leaves: scales oblong, blunt.

*It 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.—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.—The berries are sweet, and viscid. Children often eat them in large quantities without any inconvenience.—Swine and Fieldfares are fond of them. The fresh leaves are fatal to the human species. Three children were killed by a spoonful of the green leaves. They died without agony, or any of the usual symptoms of vegetable poisons. The same quantity of the dried leaves had been given the day before without any effect. Percival's essays, 11. — Sheep and goats eat it, horses and cows refused it. Linn.—but there are instances of both having been killed by eating it, branches having been found in their stomachs. Gent. Mag. ixi. 94, 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.—Several mountainous places are named in the Gent. Mag. 1793. p. 197, in which it doubtless grows wild. These 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.
Cones whitish, pendent.

Scotch Fir. Highland mountains, both scattered, and in natural forests of many miles extent. Lightfoot. T. May.*

* It flourishes best in a poor sandy soil. In a grove, the trunk becomes tall and naked; 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 terminating 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 perpendicularly downwards; and if this is broken off, or interrupted in its passage by rocks, the stem ceases to shoot upwards, and the tree for ever 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 bark will tan leather.—The inhabitants of the North of Europe make bread from this tree 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. Their children are very fond of the fresh bark in the spring time, either shaved with a knife or grated with a rasp—the young shoots distilled afford a fragrant essential oil.—Sheep and goats are not fond of it; horses refuse it.—It affords nourishment to the Phalana Pini; quadra; Circulio Pini, and Cimea Abietis.
CLASS XVII.

DIADELPHIA.

HEXANDRIA.

FUMARIA. Cal. 2 leaves: Bloss. gaping, bulging, at the base, and containing honey: Filaments with 3 anthers.

OCTANDRIA.


DECANDRIA.

(1) Stamens all united.

SPARTIUM. Filaments adhering to the germen: Summit hairy, growing to the upper side of the style.

GENISTA. Pistil pressing down the keel: Summit rolled inwards.

ANTHYL LIS. Cup swoln and turgid; inclosing the legumen.

U'LEX. Cup 2 leaves: Legumen hardly longer than the cup.

ONO'NIS. Legumen diamond-shaped, sitting: Standard scored.

(2) Summit downy: Filaments 9 united; 1 distinct.

O'ROBUS. Style slender, nearly cylindrical; woolly on the upper or inner side.

PI'SUM. Style keeled, woolly above.

LATHYRUS. Style flat, and woolly above.

VI'CIA. Style bearded under the Summit.
DIADELPHA.

(3) Legumen 2-celled.

ASTRAGALUS. Legumen 2-celled, curved.

(4) Legumen with about 1 seed.

TRIFOLIUM. Legumen longer than the cup; with 1 or 2 seeds: flowers (mostly) in heads.

[Medicago lupulina. Hedysarum Onobrychis.]

(5) Legumens almost jointed; sometimes spiral. St.

HEDYSARUM. Legumen with roundish compressed joints: Keel very blunt.

ORNITHOPUS. Legumen jointed; bent like a bow.

HIPPOCREPIS. Legumen compressed; membranaceous; 1 of the seams hollowed out with very deep notches.

MEDICA'GO. Legumen spiral; membranaceous: compressed; Pistil pressing down the keel.

(6) Legumen of 1 cell; with 2 or more seeds: (without the marks of the former subdivisions.)

ERVUM. Cup with 5 divisions, nearly equal; and nearly as long as the blossom.

LOTUS. Legumen cylindrical; filled with cylindrical seeds.

Linnaeus also gives us the following natural arrangement of the different genera.


Winged with an odd Leafit. A s r a g a l u s, H e d y s a r u m.


Flowers in Umbels. Lotus, Ornithopus, Hippocrepis.
HEXANDRIA.

FUMA'RIA. Calyx 2-leaved: bloss. gaping: filaments 2, membranaceous, each supporting 3 anthers: caps. 1-celled; many seeded.

interme'dia. F. Root bulbous solid: stem simple: floral-leaves hand-shaped, as long as the blossom.

PLATE XXIX.

Flowers purplish red, and yellow, forming a loose spike. Floral-leaves divided into finger-like segments. S. Vess. oblong egg-shaped, opening at the bottom, 4 or 6 seeds in each. F. bulbosa. β Linn. F. minor. Gmelin.

This plant was first sent to me by Mr. Hall, then by Mr. Gough, and afterwards by Mr. Robson. The former found it in Levans Park, 5 miles from Kendal. Wattsfield, ½ a mile from Kendal, amongst a clump of tall trees, plentiful. Mr. Gough. Near Ulverstone; also between Cartmel and Kendal. Mr. Robson. At Perry Hall, near Birmingham, in a meadow between the House and the River. Mr. Pitt. At Blithfield, Staffordsh. Hon. Mr. Bagot. In a wood at Wickham, near Fareham, Hants. Mr. Garnier.

Lutea. F. Legumens strap-shaped: 4-sided: stems spreading, the angles acute.

E. bot. 588.

Segments of the leaves ending in a little point. Fruit-stalks about half the length of the flower; Floral-leaf strap-spear-shaped, about one third the length of the fruit-stalk. Bloss. yellow.

Yellow Fumitory. First found in England by Mr. Howard, growing on old walls near Castleton in Derbyshire. [Holmhead near Giggleswick, Yorksh. growing wild in great abundance. Mr. Gough.—Fountain's Abbey, Mr. Robson.]

officina'lis. F. Seed-vessels in bunches, 1 seed in each: stem spreading.

Fumaria intermedia.
Famaria capreolata.
Pouch roundish, falling off. **Linn.** Stem smooth. Leaves smooth, somewhat fleshy, sea-green, trebly compound, the last divisions with 5 or 3 clefts, the extreme segments spear-shaped. Flowers alternate, in long spikes. **Fruit-stalks** very short. **Floral-leaves** spear-shaped, membranaceous, 1 at the base of each fruit-stalk. **Seed-vessel** roundish, smooth. Mr. **Woodw.** Calyx leaves coloured. *Bloss.* upper lip keeled at the back, reflecting at the edges towards the end. Nectary distended, shorter than the fruit-stalk, inclosing a greenish tongue-shaped substance, purple at the edge. **Wings** each with 3 keel-shaped ridges near the extremity on the outer side. Style 3 or 4 times as long as the germin. Flowers pink and dark purple, in long terminating spike-like bunches; sometimes very pale, or nearly white.


F. **Seed-vessels** in bunches, 1 seed in each; leaves climbing, sparingly furnished with tendrils.

**Dick's, b. s.—Curt.**

**PLATE XXX.**

**Pedicles** bowed back. The extreme leaves running into tendrils. **Linn.** 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. Mr. **Woodward.** Stem sometimes trailing, and interweaving its branches among the grass, very much branched, sometimes 3 feet long. *Bloss.* pale red. *Sr.* Clearly distinct from the *F. officinalis,* as I have proved by sowing the seed. The leaves frequently run into tendrils. Mr. **Robson.** Seed vessels globular.


F. Legumens strap-shaped: leaves with tendrils.

**Fl. dan.** 340—**E. bot.** 103—**Dod.** 60—**Lab. obs.** 438. 2, and ic. i.758. 1—**Ger. em.** 1088. 2—**F. B. iii. a.** 204. 1—**Park.** 238. 6—**H. ox. iii.** 12. 3—**Ger.** 929. 5 and 6.

* Cows and sheep eat it. Goats are not fond of it. Horses and swine refuse it. **Linn.** A horse eat it. *Sr.* The leaves are succulent, saline and bitter. The expressed juice in doses of 2 or 3 ounces, is useful in hypochondriacal, scurvy, 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 the diseases arising therefrom. An infusion of the leaves is used as a cosmetic to remove freckles and clear the skin. Mr. **Woodward.**
Tendrils from the ends of the leaves. Linn. Leaf-stalks often crooked. Tendrils generally forked, and sometimes with 2 minute leaves near the end. Spikes lateral. Fruit-stalks straight, naked. Legumens with 2 seeds. Mr. Wood. Flowers few, yellow. Spikes short. Mr. Woodward. Stems 3-cornered, slender, purplish at the base. Leaflets egg-spear-shaped, ending in a sharp flexible point. Spurs towards the top of the stem or branches, of about 5 flowers, seldom more than 2 of which come to perfection. Calyx leaves inversely heart-shaped, white, very small. Bloss. standard oblong, concave, reflected at the end, not notched; Nectary blunt; keel a little concave at the top, and reflected at the edges. Filaments, 1 fixed to the standard, the other to the base of the 2 wings and uniting them. Germert heart-shaped; style crooked; summit flat, and ragged. Seed-vessel oblong, tapering, with 1 to 3 seeds. The shape of the S. Vess. at once distinguishes this from the 2 preceding species. The colour of the flowers varies from greenish to a yellowish white, and sometimes they have a purple tinge.


OCTANDRIA.

POLYG'ALA. Calyx 5-leaved, 2 larger wing-like, before the ripening of the seeds, coloured: caps. inversely heart-shaped, 2-celled: seeds solitary.


Walc.—Fl. dan. 516—Kniaph. 11—E. bot. 76—F. B. iii. 386. 3 and 4—Dod. 253—Lob. obs. 228. 1, and i. i. 416. 2—Ger. em. 564—Park. 1332. 2—Trag. 571—Lonic. i. 183. 1—F. B. iii. 362—Lob. i. 417. 1—Ger. em. 563. 3—Ger. 449. 4.
**DIADELPHIA. DECANDRIA. Spartium.**

*Stem* with us never nearly upright. *Flowers* with a pencil-shaped appendage. *Linn.* *Stem* 4-cornered, undivided. *Leaves* alternate, or in pairs, a little rolled back at the edges, the upper spear-shaped, the lower egg-shaped. *Calyx leaves* spear-shaped, concave, coloured. *Bloss. awnings* spear-shaped, more fully coloured than the calyx; *standard* composed of 2 petals, joined by a hairiness at the edges; *keel* cylindrical below, but towards the top expanding into 2 sets of club-shaped glandular appendages. *Filaments* in 2 sets, like 2 expanded hands, with 4 fingers to each. *Anthers* yellow, or orange. *Style* thicker upwards. *Summit* with 2 lips the one a fleshy knob, the other spear-shaped, concave. *Seed-vessel* bordered. *Bunches* terminating. *Bloss.* blue, or purple, or flesh coloured, or white. With us it sometimes grows quite upright.

*Common Milkwort.* Pastures and heaths, common.

P. June, July.*

**DECANDRIA.**

**SPARTIUM.** *Cal.* extending downwards; 2-lipped: *filaments* adhering to the *germen*: *summit* woolly above.

S. *Leaves* in threes, and solitary: branches without *scoparia*; prickles, angular.

*Curt.—Kniph. 3—Riv. tetr. 63. 1, Genista.—Woodv. 89—Fl. dan. 313—Blackw. 244—Sheildr. 7—Dod. 761. 1—Lob. *obs.* 531. 1, and *cc.* ii. 89. 1—Ger, *cm.* 1311. 1—Park. 229. 1—Ger. 1130. 1—Fuchs. 219—*f.* B, i. b. 388. 3—Trag. 961—Lonic. i. 39. 2.

*Calyx* the lip beneath the keel with 3, the other with 2 very short teeth. *Relhan.* *Legumen* fringed at the edge with long soft hairs. *Woodward.* *Leaves* and *leaf-stalks* slightly hairy. *Calyx* the upper segment with 2 teeth larger than those of the lower. *Bloss, 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. *Stamens* 4 long and 6 short. *Style* bowed almost into a circle, and after

*Linnaeus* found it to possess the properties of the Senega Rattlesnake root, (*Polygala Senega*) but in an inferior degree. Duhamel used it in pleuritic cases with the desired 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 ¼ of a pint daily, promotes expectoration, and is good for a catarrhous cough. I tried it with success.

Dr. Smith.

**Vol. III.**
DIADELPHIA. DECANDRIA. Genista.

Flowering into a spiral; the very end, which one should be inclined to regard as the summit, not hairy. Bloss. yellow.

Common Broom. Dry pastures. S. May, June.

GENISTA. Calyx 2-lipped, the upper 2, the lower 3-toothed; standard oblong, bent back from the stamens and pistil; legumen regular-shaped.

G. Branches scored, cylindrical, upright; leaves spear-shaped, smooth; legumen cylindrical.

Dick. b. s.—Fl. dan. 526— E. bot. 44— Kniph. 6— Fuchs 808— Trag. 604— Dod. 763. 1—J. B. i. b. 391— Ger. 1134. 1— Clus. i. 101. 2— Lob. obs. 521. 2, and in. ii. 90. 2— Ger. em. 1316. 1— Park. 229. 7.

Flowers in leafy spikes. Flower-leaves shorter than the blossoms. Calyx with 5 nearly equal clefts. Bloss. standard egg-shaped, blunt; wings oblong-oval, keel compressed. Summit a little knob. Bloss. yellow. It is justly observed in E. bot. that in this species the seeds are numerous, and not solitary as in Gen. Pl.


Pastures and borders of cornfields. S. July, Aug.

* The young flowers are sometimes preserved as pickles. The plant, when burnt, affords a tolerably pure alkaline salt. Dr. Mead relates the case of a dropical patient that 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. (Monita et praecpt. medica. p. 138.) An infusion of the seeds, drank freely, has been known to produce similar happy effects; but, whoever expects these effects to follow in every dropical case will be greatly deceived. I knew them succeed in one case that was truly deplorable; but out of a great number of cases, in which the medicine had a fair trial, this proved a single instance. A strong lixivium of the ashes was used in the Swedish army, in the year 1759, to cure dropsies consequential to a catarrhal epidemic fever. The urine became plentiful, and the dropsies soon disappeared. Med. comm. vol. i. p. 373.

Some use the seeds toasted, so as to make a kind of coffee. The plant, when growing large, merits a place among our flowering shrubs, on account of the profusion of its golden coloured blossoms. Cows, horses, and sheep refuse it. Linn. The Phalana pisi seeds upon it. When the seeds are fully ripe and the legumen becomes black, it has the power of discharging its contents to a considerable distance around by a peculiar elastic movement.

† A yellow colour may be prepared from the flowers, and for wool that is to be dyed green, the dyers prefer it to all others. A dram and a half of the powdered seeds, operates as a mild purgative. A decoction of the plant is sometimes diuretic, and therefore has proved serviceable in dropical cases. Horses, cows, goats, and sheep eat it.
DIADELPHIA. DECANDRIA. Genista.

G. Leaves spear-shaped, blunt: stem with tubercles, pro-pilo'sa, strate.

Jacq. austr. 208—E. bot. 208—Kniph. 5—Rose 3. 1—Clus. i.

Legumen with many or only 2 seeds. Reich. 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 spikes at the ends of the branches. Fruit-stalks short, hairy. Calyx hairy, yellowish green; lips nearly equal, pointed. Bloss. yellow, hairy without, excepting the wings. Legum. hairy.

Mr. Woodward.

Pastures, heaths, dry and hilly places. About Lackford, 4 or 5 miles from St. Edmund's Bury. Sir J. CULUM. 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 the ground. Mr. Woodward. Between Dolgelly and Llyn-Arran, at the foot of Cader Idris, about half a mile from the pool. Mr. Griffith.] S. May, June.

G. Very thorny; smooth: thorns simple and compound: anglica, leaves spear-shaped.

Dick. b. s.—E. bot. 132—Fl. dux. 619—Dod. 760—Lob. obs. 535. 2, and ic. ii. 93. 2—Ger. em. 1320. 4—Park. 1004. 4—Ger. 1140. 5—Lonic. i. 39. 1.

The old branches thorny, the flowering branches without thorns, or with scattered thorns. RELHAN. Stem much branched. The old branches tough, without leaves, beset with thorns; thorns very sharp, slender, ½ to ½ an inch long; the shoots of the year in bundles 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. Legumes short, broad, smooth, with 3 or 4 seeds. Woodward, Calyx yellow. Summit a small knob. S. vess. with from 3 to 14 seeds.


ULEX. Calyx 2-leaved: legumen scarcely longer than the calyx.

§ 2
Europa'us. U. Calyx shorter than the blossom, with 2 spear-shaped deciduous scales at the base.

E. bot. 742—Fl. dan. 608—Clus. i. 106. 2—Dod. 759. 1—Ger. em. 1319. 1—Park. 1004. 1—f. B. i. b. 400. 2.

Stems and branches deeply furrowed. Leaves deciduous. Calyx sometimes very woolly, but not equally so in all plants. Bloss. yellow. 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.

French Furze. Gorze. Common Furze. Heaths, road sides, and pastures, but does not flourish in very poor soil. Extremely luxuriant in Cornwall, growing to the height of 6 or 8 feet.

Gorze. Dwarf Furze. Whins. On Barren Commons. Flowers all the year, but never more fully than in September and October.

P.*

ONO'NIS. Cal. with 5 divisions; segments strap-shaped: standard scored: filaments united without an opening: legumens swoln, sitting, simple, of 1 cell.

* Gorze 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 destroys almost every other shrub; but it is impatient of cold, is often destroyed by severe frost, and is rarely found in the northern parts of our island. In Cornwall, where fuel is scarce, it is cultivated to advantage, and it is generally cut to make faggots for heating ovens, which it does very soon, burning rapidly, and with a great degree of heat. The ashes are used to make ley. Team horses may be supported by this plant, if it is cut young and bruised in a mill to break the thorns. Goats, cows, sheep, and horses feed upon the tender tops.
O. Flowers in bunches, solitary: leaves solitary or 3 together: spino'sa.

Ludw. 68—Kniph. 5—Sheldr. 79—Blackw. 301—Riv. tetr. 69.

Anonis—H. ox. ii. 17. row 1. 1. f. 3—Fl. dan. 783—f. B.

ii. 391.2—Ger. 1141. 1—Fuchs. 60—Trag. 869—Matth.

674—Dodd. 743. 2—Lob. obs. 492. 2, and ic. ii. 28. 1—Ger.

em. 1322. 1—Park. 994. 1—Lonic. i. 72. 1.

Stems lying down, woolly, reddish, thorny, especially from the base to the middle. Thorns awl-shaped, pungent, with sometimes 1 or 2 leaves. Flowers mostly solitary, but when 2 they are fixed to a cloven fruit-stalk. Retz. Whole plant more woody and rigid than O. arvensis. Stems 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. Bloss. twice as long as the calyx. Woodward. In its young state, before the thorns are formed, it has frequently been mistaken for the O. arvensis. Flowers red.


Barren pastures, hedge banks, holloways, either in a sandy or a marly soil.

P. July.*

O. Flowers in bunches, 2 together; leaves 3 together, the upper ones solitary: branches without thorns, somewhat woolly.

E. bot. 682—Ger. 1142. 3.

In the autumn of 1779 I examined many hundreds of O. arvensis in the cornfields at Berkhamsted, 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. Mr. Woodward. 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 the O. spinosa. Stems and branches woody, cylindrical, a little hairy. Leaves set with glandular hairs; the upper oblong-egg-shaped, toothed. Leaf-stalks short, fixed to a broad toothed

* A decoction of the roots has been recommended in cases of stone and jaundice. Cows and goats eat it; sheep are very fond of it; horses and swine refuse it. Linn. A horse refused the whole branch, but eat of the younger shoots when picked off. Dr. Stokes.
leaf-scale. *Flowers* scattered, intermixed with leaves. *Calyx*, some of the hairs long and tapering, others short and tipped with glands; segments, of them pressing on the standard, the lowermost supporting the keel. *Bloss. 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 6. *Flowers* sometimes nearly white. The hairiness of the leaves and the want of thorns best distinguish this from the 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 a small globule.


Var. 2. Stems prostrate; whole plant clammy.

Whole *plant* clammy, not so downy as O. *arvensis*. *Flowers* larger and fewer. *Leaves* oblong wedge-shaped. *Calyx* segments shorter and blunter. Whether distinct from O. *arvensis* difficult to say, but I 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*. Woodward. This has been taken for the O. *repens* of Linnaeus, but Mr. Azelius informed me that species had not been found in England, which confirms Mr. 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 in the midland counties.

**Creeping Rest-harrow.** Sea shore in sandy soils, frequent.

*Light.* Field by Charlton Church, between the gravel pit and Woolwich, towards Gravesend, and on the sand downs by Deal, and near Yarmouth. Ray. [At Sandscale, and in Walton, plentiful. Common in dry sandy pastures in Low Furness. Mr. Atkinson.]

**ANTHYL/ LIS.** *Calyx* bellying: *legumen* roundish, covered.

*Vulneraria*. A. herbaceous; leaves winged, unequal: flowers in a double head.

*Dict. b. s.—Kniph. 6—Fl. dan. 988—E. bot. 104—Dill. elib. 431. 320—Riv. tetr. 18. 1, Anthyllis—Ger. 1060. 1. and 1023. 1—J. B. ii. 362—Dod. 552. 1—Lob. obs. 530. 1, *and ic. ii. 87, 2—Ger. em. 1240. 1—Park. 1093. 1*
Stems cylindrical, downy. Leaves downy, the hairs lying close, with 5 or 6 pair of leaflets. Flowers sitting; deep yellow.

Each head of flowers supported by 2 floral-leaves, the larger with 6 or 7 clefts, the smaller with 4. The structure of the filaments is very 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 bend, thinner above and below. In England the flowers are seldom otherwise than yellow, but in Portugal they are as uniformly scarlet.


Var. 2. Blossoms scarlet, or purple.

In Pembrokeshire. Ray. [On the sand banks near Lland- wyn, Anglesea, Mr. Griffith. In Cornwall, Mr. Stack- house.]*

**Pisum.** Calyx, 2 upper segments shorter: style with 3 angles, keeled and pubescent above: legumens inflated.


*Smith spic. fasc. 1. 9.—Fl. dan. 338.—Munt. phyt. 825. 230—
Ger. em. 1220. 5—Park. 1060. 4. and 5.*

Whole plant, excepting the upper surface of the leaves, slight- ly downy. Root creeping. Stems angular. Leaf-stalks with many leaflets, flattish above, with tendrils. Leaflets, the outer smaller. Leaf-scales opposite, angular at the base on each side, scarcely toothed. Linæus. Roots striking extremely deep in the earth. Stems trailing, short; the outline of the whole oval, Leaves numerous, alternate; leaflets oval, alternate, sitting, smooth, the outer not always smaller, on the lower leaves 5 to 7, on the upper 9 to 11, there being always 1 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. Woodward. Bloss. pale red and purple.

Sea Pea. Sea shores. On a stony beach between Aldburgh

P. May—Aug.

* The country people get a yellow dye from it. It makes an excellent pasturage for sheep. Where the soil was a reddish clay Linæus observed the blossoms to be red, but in white clay white. Goats and cows eat it,
O'ROBUS. Calyx blunt at the base; the 2 upper teeth shorter but more deeply divided: style thread-shaped.

sylvaticus. O. Stems drooping, hairy, branched: leaves 7 to 12 pair.

Dicks. b. s.—E. bot. 518—Lightf. 16. at p. 390.

Stems branched, scored. Leaves, 6 or 7 pair. Bloss. red without, within white, with purple lines. Legum. compressed. Seeds 2 or 3. Linn. Stems numerous, trailing, much branched, but slightly hairy. Leaves winged, alternate; leaves oval, or elliptical, terminated by a point which is an extension of the midrib; on short hairy leaf-stalks, somewhat alternate, 6 to 12 pair, without an odd one, but with a sort of beard terminating the general leaf-stalk. Flowers numerous, to 12, on short pedicles, crowded, mostly pointing one way, on the top of a long naked fruit-stalk. Stipulae half-arrow-shaped, 2 at the base of each general leaf-stalk, smaller than those of the O. tuberosus, and terminated by a more acute point. Calyx short, green, tinged with red, fringed, somewhat lipped, lips nearly equal, the upper with 2 teeth, the lower with 3, rather longer. Bloss. long and narrow. Legum. short, smooth. Mr. Woodward.


 tuberosus. O. Leaves winged, spear-shaped: stipulae half-arrow-shaped, very entire; stem simple.

* In 1555, during a time of great scarcity, the people about Orford in Sussex, 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 the Phalæna pisi.
DICKS. b. s.—Curt.—Riv. tetr. 59, Orb. rad. tub.—Sibbald.  
1—Ger. em. 1237. 2—H. ox. ii. 21, row 2. f. 3—Fl. dan.  
781—Thal. 1—Park. 1062. 5.

Stems at first drooping, but upright when in flower. LINN.  
Leaflets 1 to 3 pairs, sitting, elliptical, the upper ones narrower  
and nearly strap-shaped, without an odd one, but the leaf-stalk  
extended into a sort of a point. *Stipula* in pairs at the base of  
the leaf-stalks. *Flowers* 4 or 5 in a bunch, on short slender pedicles. *Mr. Woodward.* Stems with 2 or 3 membranaceous  
leafy edges. *Leaflets* with 3 longitudinal veins, and terminated  
by a sharp point. Style strap-shaped, not pointed at the end.  
*Seeds* compressed, about 12. Blossoms purple, 3 or 4 together.  
Legum. flat, black, pendant.  

Heath Peaseling. Moist heaths and woody meadows, not  
rare.  

P. Apr. May.*

LATHYRUS. *Cal.* 2 upper segments shorter:  
*style* flat, broader upwards, woolly on the upper  
surface: *legumen* generally equal, broad.  

(1) *Fruit-stalks* 1-flowered. [L. hirsutus.]

L. Tendrils without leaves: stipulae arrow-heart-shaped.  

Aph'aca.  

Curt.—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 4-cornered, trailing. *Stipula* oval-spear-shaped, ar- 
row-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, minute, 1 at the base of  
each flower. *Cal.* divided almost to the base; *segments* equal,  
smooth, nearly as long as the blossom, strap-spear-shaped. Bloss.  
greenish yellow at the base. *Mr. Woodward.*  
The stipulae 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 *Mr. Curtis*, for a short time after the sprouting of  
the seed. *Flowers* yellow.

* 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 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 very efficacious in curing disorders of the lungs. They know how to prepare an intoxicating liquor from them.  

Yellow Vetchling. Sandy cornfields and meadows. [Histon, near Cambridge, and between Norwich and Bungay. Woodw.] A. June—Sept.


Currit-E. bot. 112-Buxb. iii. 43. 1-Dod. 529. 1—Lob. obs. 518. 2, and ic, ii. 71. 1—Ger. em. 1249. 2—Park. 1079. 4—J. B. ii. 309. 1.


The leaves are so like those of grass, that unless the plant be in flower it may be readily overlooked. It is very beautiful, and merits a place in our gardens.

(2) Fruit-stalks with more than 1 flower.


J. B. ii. 305—Riv. tetr. 41. L. siligus hirsutus.

Flowers purple. Linn. Stems angular, twisted, slightly hairy. Leaves, a single pair, slightly hairy, with 3 strong ribs, terminated by an awn. Leaf-stalks triangular, furrowed above, terminating by a tendril. Tendrils mostly dividing into 3. Stipulae half-arrow-shaped, pointed, with long appendages, 2 at the base of each leaf-stalk. Fruit-stalks very long. Flowers at about 1 or 1½ inch from each other. Flower-scales awl-shaped, small, about ¼th of an inch beneath the terminating flower, and at the base of the short pedicle of the lower. Calyx 1-3d as long as the blossom; clefts extending half way down; segments 5, equal. Pods short, covered with hair, each hair proceeding from a gland. Woodward. Bloss. with yellow lines within.

* The seeds, both of this and of all the other species, are nutritious, either eaten in broth or made into bread,
Rough-podded *Vetchling*. Cornfields and ditch banks. Fields about Hockley and Rayleigh; and elsewhere in Rochford, Essex. Near Munden Church and Laydon Hall in Denyg Hundred, Essex. [Blackst. [On the sides of two hills, the one north of Pensford, on the Bristol road, the other between Pensford and Keynsham, Somersetshire. Mr. Swayne.] A. July.

(3) **Fruit-stalks many-flowered.**

L. Tendrils with 2 leaves, quite simple: leaflets spear-shaped. **Linn. Tendrils sometimes 3-cleft**, **Linn.** and sometimes with 2. **Woodw.**

**Kniph. 11-Curt. 170-E. bot. 670-Riv. tetr. 43, L. pratensis**

-Fl. dan. 527-ᵩ. B. ii. 304. 2-Walc.-H. ox. ii. 2. 2-

**Anderson-Lob. obs. 517. 3, and ic. ii. 69. 2-Ger. em. 1231. 6-Park. 1061. 1.**

**Leaflets** between coiled and rolled inwards. **Stipulae** very entire, halberd-shaped. **Fruit-stalks 4-cornered. Linn.** Stem much branched. **Leaves** smooth. **Leaf-stalks** furrowed, 3-cornered, terminating in tendrils. **Stipulae** spear-arrow-shaped, large, in pairs at the base of each leaf-stalk. **Fruit-stalks** long, with 1, 3, or more flowers. **Pedicles** short, hairy. **Flower-scales** awl-shaped, very minute, 1 at the base of each pedicle. **Calyx** 1-3d as long as the blossom, somewhat hairy, cloven half way down; segments rather unequal. **Legum.** black, smooth. **Woodw.** **Bloss.** yellow; **standard** with 6 or 7 purple lines just above the claw. **Anters oblong.**

**Tare Everlasting.** *Common Tellow,* or *Meadow Vetchling*. Meadows, pastures, woods, thickets, and hedges. P. July, Aug.*

L. Tendrils with 2 leaves: leaflets sword-shaped: stem *sylvestris*, with membraneous borders between the knots.

**E. bot. 805-Riv. tetr. 39, L. sylvaticus. very large-Clus.**

ii. 229. 2-Lob. obs. 517. 1, and ic. ii. 68. 2-Ger. em. 1229. 1-Park. 1063. 3-Fuchs. 572-Trag. 613-Dod. 523. 2-ᵩ. B. ii. 302. 2-ᵩ. ox. ii. 2. 4.

Stems widely spreading, climbing, or trailing. **Leaf-stalks** rough at the edge. **Leaflets** strap-shaped, not broader than the stem. **Stipulae** awl-shaped, very narrow. **Linn.** Flowers not more than 6 in a bunch, as small again as those of **L. latifolius Hall.** **Stipulae** half-arrow-shaped, in pairs. **Tendrils** cloven

* L. pratensis has been recommended as a new plant for the experiments of the farmers, and premiums have been offered for its cultivation. But it does not seem to be a plant at all 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.
DIADELPHIA. DECANDRIA. Lathyrus.

latifolius. L. Tendrils with 2 leaflets: leaflets spear-shaped: stem with membranaceous borders between the knots.

Mill. ill.—Fl. dan. 785 and 325—Riv. tetr. 40, L. narbo-nensis—Garid. 108. at p. 300—Matth. 971.

Leaflets rolled in, elliptical, several times broader than the stem, sometimes 4. Stipulae broader than the stem, nearly half-arrow-shaped. Linn. Leaves with 4 or 5 ribs; varying much in breadth, but always broader than the stem. Bloss. pale purplish rose-colour.


palustris. L. Tendrils with many leaflets: stipulae spear-shaped.


P. July, Aug.

* The beauty of its flowers has obtained it a place in our shrubberies and flower borders. Dr. Stokes.
DIADELPHIA. DECANDRIA. Vicia.


(1) *Fruit-stalks long; many-flowered.*

V. Leaflets oval: stipules finely toothed.

Dick. *b. s.-Fl. dan. 277-E. bot. 79-Pluk. 71. 1-Hall. 12.*

at i. p. 172.

Stems numerous, and so much branched that they choke whatever plants they come near. *Leaves* with 8 or 9 pair of leaflets, and terminated by a long and very much branched tendril; *leaflets* egg-shaped, oftener alternate than opposite; smooth, with a network of veins, and terminated by a short point. *Stipulae* in pairs, small, deeply divided into several awl-shaped segments. *Fruit-stalks* long, thick, 4-cornered, and scored; upright. *Flowers* numerous, on the upper part of the fruit-stalk pendant, growing irregularly, mostly in two's and three's, with interruptions. *Calyx*, teeth awl-shaped. *Bloss.* rather large: *standard* and *wings* whitish, beautifully veined and streaked with blue. Mr. Woodward. *Bloss.* *standard* without a sharp point in the notch; *keel* not shorter than the wings. *Style* and *summit* so slender that one cannot certainly discern the beard on the under side at the end.

Wood Vetch. [Malham, near Settle, Yorkshire, and elsewhere in the North. Woodward. Thicket on the North side of Brecon Hill, Worcestershire. Nash. Orton, Cumberland; Barrowfield Wood, near Kendal. Woodward. Woods about Clifton upon Teme, Worcestershire, in moist places. St. Shelton bank near Salop. Mr. Aikin. Woods on a limestone about Newton Cartmel for a few years after the woods have been cut down. Mr. Hall. Urswick Woods, climbing up the trees for several yards, so as to be very ornamental. Mr. Atkinson. Beech Wood, close by the monument on Lansdown, Bath. It is the most beautiful climber of this island, both the leaves and the flowers being extremely elegant. Mr. Swayne. P. July, Aug.

V. Flowers tiled: *leaflets* spear-shaped, pubescent: *stipulae* entire.

Knib. *10-Curt. 310-Fl. dan. 804-Riv. tetr. 49, Cracca-H. ox. ii. 4. 1.*

*Leaflets* rolled in. In cornfields large and luxuriant, in meadows small and hoary. *Bloss.* sometimes white. Linn. *Stem* when climbing on bushes 3 or 4 feet high, 4-cornered, scored slightly hairy. *Branches* numerous, short, alternate, from the bosom of the upper-leaves. *Leaves* alternate, very long; *leaflets* strap-spear-shaped, oftener alternate than opposite, hairy, terminated by a short point, from 10 to 12 pair. *Tendril* terminating...
the leaf-stalk, branched. *Stipulae* half-arrow-shaped, pointed. *Calyx* bluish, the 2 upper teeth extremely short, the lowermost longest. *Flowers* small, very numerous, pendent, closely tiled. *Woodward*. *Stem* angular, scored, very long, climbing. *Leaflets* rounded at the end, and terminated by a sharp point. *Tendrils* terminating the leaf-stalks. *Fruit-stalks* from the bosom of the leaves, longer than the leaves. *Bloss*. bluish purple, with 2 deeper purple spots at the extremity of the keel; *standard* heart-shaped, without a sharp point in the notch. *Legumen* with 5 seeds.


(2) *Flowers 2 or more together, nearly sitting.*

V. *Legumens* mostly in pairs, upright; *leaflets* inversely spear-shaped, blunt, notched; *stipulae* toothed; *seeds* compressed.

*E. bot.* 334—*Knipl*. 1—*Walt.*—*Riv. tetr.* 55, *Vicia.*—*Fl. dan.* 592—*Clus.* ii. 235. 1—*Dod.* 591. 1—*Lob. obs.* 522. 3, and *ic.* ii. 75. 1—*Ger. em.* 1227. 1—*Park.* 1072. 1—*H. ox.* ii. 4. 12—*F. B.* ii. 310. 2.


*Common Vetch*. *Fetch*. *Tare*. Dry meadows, pastures, and cornfields. A. Apr.—June.*

Var. 2. *Huds.* *Seeds* white.

Var. 3. *Leaves* narrower, somewhat strap-shaped. *Linn.*

*Riv.* *tetr.* 54, *V. angustif.*—*Dod.* 542. 2—*Lob. obs.* 522. 3, and *ic.* ii. 75. 2—*Ger. em.* 1227. 4—*Park.* 1071. 1—*H. ox.* ii. 4. 11—*F. B.* 312.

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. *Stipulae* marked, but less distinctly, with the burnt dots. *Flowers* mostly solitary, but of

* Dr. Plot, in his *Nat. Hist. of Staffordh.* p. 204, says, that this and the preceding species advance starve or weak cattle above any thing yet known.

* In Gloucestershire and Worcestershire they sow it as pastureage for Horses, and eat it off early enough to allow of Turneps being sown the same year. The seeds are excellent food for Pigeons. Horses, cows, sheep, and goats eat it.
the same colour with 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*. Mr. Woodw.

Stems scored, undivided. Tendrils 3-cleft. Leaves of the lower-leaves heart-shaped, 2 or 3 pair; those of the upper 4 or 5 pair, strap-shaped, blunt at the end, the mid-rib lengthened out into a thorn-like point. Blott. purple. Seeds 10 to 12.

*V. lathyroides* @, and possibly @ Huds. Mr. Woodward.

Dr. Sibthorpe considers this as a distinct species, and gives the following specific character. *V. angustifolia*. Legumens nearly sitting, about 2 together, expanding: lower leaves inversely heart-shaped, with a point in the notch; upper ones strap-shaped. *Fl. ox.* A. June.

Shotover, and divers other places. Ray. [In the lanes in the valleys of Dartmoor.]

A. May.

V. Legumens mostly 4 together, upright: leaves egg-shaped, very entire, the outer ones gradually smaller.

*Knibb. 5—Rev. tetr. 56, V. sepium.—Fl. dan. 699—Walc.—Trag. 624—J. B. ii. 313. 2—Ger. 1052. 1, and em. 1227. 2—Fuchs. 110—Matth. 547—Anders—Lonic. i. 248. 1.*


P. May, June.

(3) Flowers solitary, nearly sitting.

V. Legumens solitary, upright, smooth; leaves about 6, lathyroides. the lower ones inversely heart-shaped: stipulae half-arrow-shaped, very entire; seeds cubic, warty.

E. lot.

* 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 5 times in the course of the second year, and produced at the rate of 24 tons per acre of green food, which when dry would weigh near 4½ tons. Bath. Soc. iii. Mr. Swayne, who has since observed to me that though very palatable to all kinds of cattle, it is difficult to cultivate on a large scale, the seeds being generally devourcd by the larvæ of a species of Atteleabus, which larvæ are the prey of a species of Ichneumon.
Stipulae not spotted. St. Whole plant hairy except the S. vessels. Root small, fibrous, annual. Stems several, a foot high or less; weak trailing. Leafis 4 to 6 pair, and never more; opposite, the upper ones mostly spear-shaped. Tendrils never branched. Stipulae half-arrow-shaped, the upper spear-shaped, narrow pointed. Flowers small, bluish purple. Legum. upright, smooth, dotted. Seeds cubic.

The true leading characters of this species are, the blossom being scarcely longer than the calyx, the seeds cubic, and the tendril never branched. Woodward. In the fig. of E. bot. Fl. dan. and Kniphofius, the tendrils are wanting; in those of Jacquin and Rivinus they are represented as unbranched, agreeable to Mr. Woodward's observation, but in Dickson's specimens published in his 4th fasciculus of dried plants, the tendrils are branched.

Vicia lathyroides, var. y Huds. Ervum solaniense Sp. pl. Dr. Smith informs us is no other than this plant, and that it sometimes bears white flowers.


Lu'tea. V. Legumens sitting, bent back, hairy, solitary; with 5 seeds: standard smooth. LINN.

E. bot. 481-H. ox. ii. 21. row. 2. f. 2-j. B. ii. 313. 1.


hy'drida. V. Legumens sitting, bent back, hairy, with 5 seeds: standard woolly.

Jacq. hort. 146-E. bot. 482-J. B. ii. 314. 1.

Nearly allied to V. lutea. Leafis inversely egg-shaped, dented, small, sprinkled with hairs. Stipulae of the stem not brown, but entirely green. Flowers yellow, greyish above, hairy. In other respects accords with V. lutea. LINN. This
plant certainly accords with \( V. \) hybridra of \( E. \) bot. and is perfectly distinct from the \( V. \) \( \text{lavigata} \).

**Bastard Vetch.** Meadows and pastures. Glastonbury Tor. P. June—Aug.

**V.** Legumens sitting, solitary, bent back, smooth. Stems \( \text{lavigata} \). upright. Stipule greenish. Leaves smooth.

\( E. \) bot. 483.

Leaves and whole plant entirely smooth. Stipule green, or pale brown. Flowers like those of the *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. Legumens quite smooth in every stage of their growth, and contain rarely more than five seeds. (\( E. \) bot.)


**V.** Legumens on fruit-stalks, solitary, upright: leafs 4, bythyn’ica. oval-spear-shaped: stipule toothed.

\( J a c y. \) bot. 147—Allioni 26. 2.

Seeds protuberating. Flowers, standard and keel red purple, wings yellowish.

**Rough Vetch.** Gravelly cornfields and pastures, and ditch banks near Doncaster, Yorkshire. Isle of Purbeck. [Woods near Clifton upon Teme, Worcestershire. St. Portland Island half a mile to the left of the Ferry, on loose sand banks. Mr. Stackhouse.]

**ERVUM.** Calyx with 5 divisions, as long as the blossom.

**E.** Fruit-stalks mostly 2-flowered; seeds 4, globular.

\( C u r t. - R i o v. \) tetr. 53, \( C r a c c a \) minor silquis gemell.—\( G e r. \) 1052.

2—\( F l. \) dan. 95—\( F. \) B. ii. 315. 2—\( H. o x. \) ii. 4. 16—\( A n d e r s o n. \)

Stem 2-edged, nearly 4-cornered. Leafis generally 10, and mostly alternate. Fruit-stalks of a hair-like fineness, with 1 or 2 flowers. Flowers small, violet, often blood-coloured. Legum. oval-oblong, smooth. Linn. Stem weak, much branched. Leafis about 5 pair, strap-spear-shaped, or strap-shaped, generally somewhat alternate. Tendril frequently simple. Fruit-stalks from the bosom of the leaves, as long as, or longer than the leaves, solitary, or in pairs. Legum. perfectly smooth. Mr. Woodward.

Smooth podded, or Strangle Tare. Tine Tare. Cornfields, hedges, and borders of ploughed fields. A. June.

**Vol. III.**

\( \text{tetrasper} - \hbox{mum.} \)
Var. 2. Seeds 5, 6, or 7, rarely 4. Stem lower, extremely branched. These differences could not proceed from luxuriance of soil, as the spot where it grew was a remarkably dry gravel. Near Cambridge. Mr. Woodward.

hirsutum. E. Fruit-stalks many-flowered: seeds 2, globular.

Dicks. b. s.—Curt.—Dod. 542. 3.—Lob. obs. 522. 2, and ic. ii. 76. 1—Ger. em. 1228—Park. 1069—Riv. tetr. 53, Creaca minor.—J. B. ii. 315. 1—Fl. dan. 639.

Stems weak, much branched, angular, scored. Leaf-scales, the lower with 2 or 3 awl-shaped teeth, the upper awl-shaped, entire. Leaflets mostly strap-shaped, 8 to 12 pair, somewhat alternate, terminated by a branched tendril. Fruit-stalks axillary, shorter but not so slender as in the E. tetraspermum. Flowers 2, 3, or 4, on very short pedicles; when 2, separate; if 3, 2 of them together; if 4 in pairs. Legume hairy. Woodward. Plant smooth, except the legumes. Flowers 2 to 7, pale purple, or white. Both in this and the preceding species the summit is bearded underneath.

Wild Tare. Time Tare. Rough-podded Tare. Sandy cornfields and meadows.*

ORNITHOPUS. Seed-vess. cylindrical, but jointed and crooked.

perpusillus. O. Leaves winged: legumes bowed in, much larger than the winged flower-scale.

E. bot. 369—Kniph. 7—Dod. 544—Lob. obs. 527. 2, and ic. ii. 81. 2—Ger. em. 1241. 3—Park. 1092. 1—H. ox. ii. 10. 13—Lob. adv. 403. 1, and ic. ii. 94. 1—Ger. em. 1241. 4—Park. 1092. 1, of chap. 23.

Root slender, nearly as long as the stems; lateral fibres few. Stems trailing, from 1 to 6 inches high. Root-leaves numerous, prostrate, the lowermost sometimes on leaf-stalks, the rest sitting; leaflets egg-shaped, or elliptical, opposite, or alternate, from 3 to 14 pairs, with an odd one smaller. Flowers 1 to 5, terminating, opposite a leaf. Bloss. standard reddish white, with red lines. Legumes slightly compressed, and bowed inwards. St. Leaflets set with very fine silvery hairs. Flowers 2 and 3 together, generally terminating. Bloss. standard very slightly notched at the end, marked with crimson lines, the claw yellowish brown; wings white, with a reddish tinge; keel pale

* Horses, cows, goats, and sheep eat it. Linn. In wet seasons whole fields of corn have been overpowered and wholly destroyed by it.
straw-colour. Seeds 6. A beautiful plant, and not uncommon on dry heaths and downs; varying from 1 inch to a foot in the extent of its branches.


Hippocrepis. Seed-vessel many-celled, compressed, crooked, with several notches along one of the seams.

H. Legumens on fruit-stalks, crowded, bowed, serpentine. como'sa.


Hedys'arum. Keel broad and blunt on the outer part: legumen jointed, 1 seed in each joint.
Onobrychis. H. Leaves winged: legumens with 1 seed, prickly: wings as long as the calyx: stem growing long.


Stems cylindrical, scored; at first trailing, but when in flower ascending: Stipules in pairs, oval-spear-shaped, terminated by a long point, membranaceous at the edges, sometimes fringed with a few hairs. Leaf-stalks furrowed above, slightly hairy. Leaflets 8 to 10 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. Branches long, closely tiled upwards. Flowers numerous. Floral-leaves awl-shaped, longer than the pedicels. Calyx 1-4th the length of the blossom. Woodward. Calyx, segments spear-shaped, hairy, the 2 upper distant, the lowermost the shortest. Bloss. standard egg-shaped, with a little tooth in the notch at the end, red in the middle, with 8 or 10 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. Legumen oblong, hairy.


ASTRAG'ALUS. Caps. generally 2-celled; bulging: the solitary filaments cylindrical.

(1) Stems trailing, leafy.

hypoglot'tis. A. Stem prostrate: flowers in roundish heads: legumens egg-shaped, compressed, hairy, grooved, the point reflected. E. bot.

Disps. b. s.—E. bot. 274—Ray, 12. 3—Fl. dan. 614.

Flowers 8 or 10, forming a roundish head like clover. Legumen egg-shaped, grooved, with a double point which is bent back when ripe, covered with long, white, soft hairs. Linn.

† This is cultivated like Clover for feeding cattle, and is particularly advantageous in dry hilly situations, and chalky soils.
Astragalus.

Stems weak, as many as 6 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. Leaves 6 to 12 pair, with an odd one, elliptical, or spear-shaped, hairy, especially on the upper side, opposite. Leaf-stalks hairy, furrowed. Stipulae egg-spear-shaped, sitting, 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 5 or 6, rarely more, in a close head, on short pedicles. Floral-leaves oval-spear-shaped, 1 to each pedicle. Calyx beset with black hairs; teeth short, nearly equal. Bloss. bluish purple, sometimes white. Mr. Woodward. M. Afzelius first satisfied me that what had been taken for the A. arenarius by Hudson, Lightfoot, and Relhan, was the A. hypoglottis of Linn. Mantiss, which information is since fully confirmed by specimens which I have received from Professor Thunberg.


A. Stems prostrate: legumens nearly 3-cornered, bent glycyphyllos. like a bow: leaves longer than the fruit-stalks; leafits oval.


Stems much branched, smooth. Leaves alternate; leafits usually 5 pair, with an odd one, mostly opposite, sitting, or on very short fruit-stalks, smooth, very entire. Leaf-stalks furrowed above. Fruit-stalks from the bosom of the leaves. Flowers greenish yellow, numerous, in a close bunch, on short pedicles. Stipulae awl-shaped, 1 at the base of each pedicle Woodward. Leaves longer than the fruit-stalks; leafits rather pointed, slightly hairy underneath. Floral-leaves very slender, as long as the calyx. Pollen orange-coloured.

Wild Liquorice. Liquorice Cock’s-head, or Fetch. Meadows, pastures, and ditch banks, especially in a calcareous soil. About
DIADELPHIA. DECANDRIA. Astragalus.

Charleton, Kent. [In the ditch of Northampton Castle. Mr. Wood. Near Diss, Norfolk, and Huntingdon and Coddenham, Suffolk. Woodw. Baydales, Darlington. Mr. Robson.]

P. June, July.

(2) Stalk bare, without a leafy stem.

uralen'sis. A. Stalk upright, longer than the leaves: legumens awl-shaped, inflated, woolly, upright.

Jacq. ic. i. - E. bot. 466-Lightf. 17. at p. 401-Hall. it. belv. 2. 1. in opusc. at p. 308. and stirp. 5. 3. at p. 155. and hist. 14. 3. at 1. p. 195-Fl. dan. 1041, has yellow and purple flowers.

Leaves winged; leafits 23 to 33, egg-shaped, pointed, sitting; sprinkled with small whitish hairs. Leaf-stalks with 3 imperfect angles. Stalks twice as long as the leaves, cylindrical, hollow, somewhat scored, roughish. Spike short, rather oblong. Flowers sitting. Floral-leaves spear-shaped, shorter than the calyx. Calyx egg-shaped, inflated; teeth short. Bloss. purple, or violet blue. Legum. longer than the calyx; somewhat hairy. Linn. Whole plant, the blossoms excepted, covered with white soft hairs. Leaf-stalk surrounded at the base with spear-shaped withered scales. Leafits 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 8 or 10, crowded. Floral-leaves; the lowest longer, the rest shorter than the calyx. Mr. Woodward. It is evident that specific character and additional description given by Linnaeus to his Astr. Uralensis, do not apply well to Mr. Lightfoot's plant, in which the stalks are but little longer than the leaves, and the leafits rarely exceed 20 in number. But it is equally clear that the figure of Haller, which Linnaeus refers to, belongs to Lightfoot's highland plant, so that whatever mistake exists about it, our botanists are not responsible; and indeed the greater number of errors into which they have fallen, seem to have originated with Linnaeus himself. Whether our plant was at all known to him, can only be determined by his own herbarium.

Hairy Cock's-head. Mountainous and alpine pastures in Scotland. Cromarty, and at the bay of Farr. Mr. Robertson. On Carn-dearg, one of the lower heads of Ben Squivert id Glencream in upper Lorn, in a light sandy soil. Mr. Stuart. [On the top of North Queen's Ferry-hill, Fifeshire, but not so large as on Ben Lawers, where it was first observed by Mr. Don. Mr. Brown.]

P. July.

TRIFOLIUM. Flowers mostly forming a head: capsule or legumen scarcely longer than the calyx; not opening, but falling off entire.*
(1) **MELILOTS.** *Capsules naked, 1-celled, containing several seeds.*

T. Capsules 8-seeded, mostly 3 together, twice as long as the calyx: stems declining.


**Bunches egg-shaped.** An intermediate plant between *Trifolium* and *Trigonella.* **Linn.** Stems prostrate, 2 to 5 inches long, disposed in a circular manner round the root. **Leaflets** 3, sitting, mostly 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 1 to 4, but usually 2 on a fruit-stalk, parallel to each other. **Calyx** more than half the length of the blossom, pale green, with deeper lines; segments nearly equal, awl-shaped. **Bloss.** pale red. **Legumes** short, thick, terminated by a short point turned downwards, which gives them something of the appearance of a bird’s claw. **Woodward.**


A June, July.

T. Capsules in bunches, often 2-seeded, wrinkled, acute: stem upright.


**Leaflets** of the lower-leaves oblong-wedge-shaped, those of the upper elliptical, sharply serrated toothed. **Stipules,** the lower with 3 or 4 awl-shaped teeth; the upper spear-shaped, entire. **Bunches** long. **Flowers** bent back, scattered. **Pedicles** short, hairy. **Floral-leaves** awl-shaped, small, 1 at the base of each pedicle. **Cal.** 1–3d the length of the blossom, clefts extending

* The flowers of all the species, dried and powdered, may be made into bread, which in times of scarcity, has preserved the inhabitants of Scotland from perishing. The leaves of all the species fold up before rain. The *Papilio Cinxia,* and the *Phalana Fasciata,* live upon the different species.
half way down, segments nearly equal. Woodward. Blot. yellow.


(2) Legumens covered; many-seeded.

re'pens. T, Heads like umbels: legumens 4-seeded: stem creeping.


Stem undivided, cylindrical, a span long. Stipulae circular, blunt, but with a sharp point. Leaflets circular, very blunt. Fruit-stalks very long. Receptacle strap-shaped, solid. Chaff egg-shaped, oblong, blunt. Bloss. parallel. In the above respects it differs from the T. hybridum. Linn. Stipulae in pairs, oval-spear-shaped, lengthened out into an awn. Leaflets 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, 1 to each pedicle. Cal. teeth nearly equal, the 2 upper rather longest, reddish. Bloss. white; standard oval. Woodw. Leaflets 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.

White Trefoil. Dutch clover. Meadows and pastures.

V. May–Sept.†

Var. 2. Bloodwort. Leaves of a deep purple. St.

* This is more fragrant when dry than when green. A water distilled from the flowers possesses but little colour in itself, but improves the flavour of other substances. Horses are extremely fond of it; cows, goats, sheep, and swine eat it.

† Horses, cows, and goats eat it. Sheep are not fond of it. Swine refuse it. The leaves stand upright against rain. Linn.—Wherever this plant abounds spontaneously, it is always considered as an indication of the goodness of the soil; and this is well known to farmers. 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. Pulleney's View.
Var. 3. **proliferous.** Small heads of leaves growing out of the flowers. 

Canal between Limehouse and Bromley. **Curt.—[Worcestershire. St.]**

T. Heads like umbels: legumens 4-seeded: stem ascend- hy'bridum. 

**Mich. 25. 6 and 2—Vaill. 22. 5—Riv. 11. 2; Trifolium fl. albo.**

Stem ascending, branched, furrowed; about a foot high. **Stipulae** spear-shaped, sharp, terminating in a hair. **Leafs** egg-shaped, sharp, between serrated and toothed. **Fruit-stalks** not very long, but jointed. **Receptacle** egg-shaped, concave. **Chaff** spear-shaped, narrow, very sharp. **Bloss gaping.** It is very probable that this plant was at first produced by the pollen of T. pratense, fertilising the germ of T. repens. **Linn.**

**Trifolium repens hybrïdum.** **Huds.** On whose authority it stands as an English plant, but its existence as such wants further confirmation. Mr. Hudson mentions it as growing in moist pastures near Peckham and Battersea. **P. May—Sept.**

(3) **Calyxes woolly.**

T. Heads woolly; 5-flowered; a rigid tuft from the centre subterra'- reflected upon, and inclosing the fruit. 

**Curt. 128—Riv. tetr. 17. 2, Trifolium subterrâneum—Ray**


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 roots, and finally inclose the seed-vessels in a kind of prickly head. **Curt. Stems** numerous, prostrate, disposed in a circle round the root. **Stipulae** in pairs, oval-spear-shaped. **Leaf-stalks** long, downy. **Leafs** sitting, 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 3 or 4 flowers. **Floral-leaves** none. **Calyx** cylindrical, cloven half way down; segments nearly equal, bristle-shaped, fringed with soft hairs. **Bloss.** white; standard oval, claw long and narrow. **Mr. Woodw.** Tube of the bloss. very long. There is something so singular in this plant, that its economy well merits a further enquiry. The strong hairy stellated substance which grows from the extremity of the fruit-stalk, stretching its rays outwards and downwards, incloses and presses down the capsules to the ground.

**Subterraneous Trefoil.** Barren heaths and pastures in sandy or gravelly soil. About London, frequent. **Gamlingay by the**
wind-mills, and near Whitewood, Cambridgeshire. Between Eltham and Deptford, Kent. [Bath Hills, near Bungay, Suffolk. Mr. Woodward.—Mangotsfield Common, near Bath. Mr. Swayne. Salt marsh at Lymington, betwixt the town and the salt pans.]

A. May—Aug.

glomeratium. T. Heads sitting, hemispherical, rigid: calyxes scored; teeth expanded, equal.

Curt. 227—Barr. 882—Pluk. 113. 5.

Stem drooping. Calyx with 10 scores, naked, disposed in a beautiful manner, the stiff expanding segments filling up the interstices between the rest. Linn. Stems numerous, prostrate, 4 to 7 inches long, scarce perceptibly downy. Stipulae in pairs, oval-spear-shaped, taper-pointed, scored, smooth. Leaf-stalks furrowed above. Leaves alternate; leaflets nearly sitting, obusely 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 from the bosom of the leaves and terminating, with a pair of stipula similar to, but broader than those beneath. Calyx smooth, shorter than the blossom; teeth expanding, triangular, pointed but not rigid at the end. Bloss. pale red; standard spear-shaped, somewhat keeled; wings and keel equal. Mr. Woodward.


A. May, June.

sca'brum. T. Heads sitting, lateral, egg-shaped: segments of the calyx unequal, stiff, bowed back.

Curt.—Barr. 870—Vaill. 32. 1—J. B. ii. 378. 4—H. ox. ii. 13. 10.

Stems not much branched. Leaflets oval, thickish, somewhat scoloped at the edge. Heads from the bosoms of the leaves, hard, stiff, permanent. Calyx the outer teeth longer and stronger. Bloss. whitish, slender, as long as the calyx. Linn. Whole plant woolly. Stems prostrate, 4 to 7 inches long. Stipulae oval-spear-shaped, terminated by an awn, scored with red lines. Leaf-stalks short. Leaves few; leaflets oblong-wedge-shaped, sitting. Heads somewhat oval. Calyx scored, hairy; teeth triangular, the lowermost long, expanding, sharp, and giving the plant its roughness to the touch. Bloss. but little longer than the calyx, whitish. Woodward. It is in its seeding state that the segments of the calyx are most remarkably reflected.
**DIADELPHIA. DECANDRIA. Trifolium.**


A. May, June.

T. Heads sitting, mostly lateral, egg-shaped: calyces *stria'tum*. scored, rounded.

**Pl. dan.** 1171-[*Vaill.*] 33. 2-[*Ray*] 13. 3.

Calyx with 10 scores, hairy all over on the outside. Linn. Stems from 6 to 18 inches high, mostly upright, sometimes declining, but never prostrate. *Leaf-scales* in pairs, oval, with a point, scored, very downy. *Leaves* alternate, distant, the lower on long, the upper on short leaf-stalks, the uppermost sitting or nearly so; *leaflets* of the lower leaves oblong-wedge-shaped, of the upper spear-shaped, sitting, downy on both sides, ribs not strongly marked, serratures barely distinguishable with a glass. Heads oval, woolly, sometimes on short fruit-stalks, some terminating, 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. *Bloss. pale red*; *standard* spear-shaped; *wings* and *keel* equal. Mr. Woodward. The ribs upon the calyx, and its rounded nearly globular shape when ripe, readily distinguish this species.

**Soft-knotted Trefoil.** Dry meadows and pastures. [Bath hills, Bungay, Suffolk. Mr. WOODWARD. Wick Cliffs. Mr. SWAYNE.]

A. June.

T. Spikes woolly, oval: teeth of the calyx bristle-shaped, arven'še. woolly, equal.

**Dicks.** h. s.-[*Curt. Dod.*] 577. 1-[*Lob. obs.*] 498. 4, *ic.* and *ii.* 39, 1-[*Ger. em.*] 1193. 3-[*Park.*] 1107. 6-[*H. ox.*] ii. 13. 8-

**Fl. dan.** 724-[*Riv. tetr.*] 15. *Lagopus*-[*Ger.*] 1023. 2-[*Barr.*] 901 and 902-[*Matth.*] 983-[*Fuchs.*] 494-[*Trag.*] 595-[*Lonic.*] i. 106. 5-[*Blackw.*] 450.

**Bloss. wings** marked within with a blood-coloured spot. Linn. *Bloss.* pale red, shorter than the calyx. Whole plant woolly. *Stem* upright, cylindrical, firm, much branched. *Stipule* 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 nicked 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. Mr. Woodward. *Bloss.* pale red. *Spikes* sometimes long and cylindrical. *Calyx* teeth a fine red; the hairs when much magnified appear rough and knotty.
Mr. Dickenson observes, that it is highly aromatic when dried, and that it retains its odour long.


Root running deep. Stems trailing, 1 to 3 inches long. Fruit-stalks very short. Heads numerous, roundish. Blossoms white or pale flesh-coloured. Dill. in R. Syn.—Stems trailing. Leaflets rather elliptical, blunter than in 1, and by no means so pointed as in Dillenius's figure. Stipules more woolly than in 1. Heads nearly round, not so large as in the figure. Mr. WOODWARD.

Sea coast. Bracklesham, Sussex. [Yarmouth Denes, Lowes- toft, plentifully. Mr. WOODWARD.]


Root cylindrical, slender, branching, tough, very long, brown, perennial, above with many heads, and somewhat shrubby. Stems several, simple, scored, cylindrical, or slightly compressed, ½ to 1 foot high, zigzag at almost all the joints, ascending, and but seldom truly upright, with a slight hairiness, and sometimes almost smooth. Stipulae with a slight hairiness, especially at the edges, sometimes nearly smooth, spear-shaped, tapering both ways, approaching, scored, scarcely embracing the stem, with reddish lines below. Leaf-stalks cylindrical. Leaves, the 2 uppermost sitting; leaflets spear-shaped, with minute serratures not visible to the naked eye, but perceptible to the finger passed downwards, often marked with indistinct white blotches, with a slight hairiness on both sides, and especially at the edge, sometimes nearly smooth; those of the lower leaves blunt and nicked at the end; those of the rest rather pointed. Spike roundish, pleasing to the eye and smell, nearly sitting, generally single, sometimes 2, slightly woolly. Cal. smooth, with 10 scores; teeth green, beset with scattered hairs, the lowermost equal in length to the tube of the blossom, the rest gradually shorter. Jacq. 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.

DIADELPHIA. DECANDRIA. Trifolium. 637

with and other mountainous woods and pastures in the north, most plentifully. Curt. [High pastures, usually among bushes, and in woods and ditch banks. Bath Hills, near Bungay, Suffolk. Mr. Woodward. Grows commonly in hedges or in woods, seldom in the open ground. Plentifully in Shortwood near Pucklechurch, Gloucest. Mr. Swayne.] P. July.*


Fuchs. 817-Trag. 586-7. B. ii. 374-Ger. 1017. 1-Matth. 835-Riv. tetr. 11. 1, Trifolium-Blackw. 20-Kniph. 1-
Lonic. i. 104. 4.

Spike single, sitting between 2 opposite sitting leaves, the stipulae of which are somewhat egg-shaped, dilated, membraneous, skinny, with red veins, and form a kind of common calyx. Cal. of the fruit with 5 awns or bristles, the 4 uppermost very much expanding, but the 5th and lowermost upright. Link. Flowers upright, when out of blossom hanging down. Leaves of the lower-leaves roundish, those of the upper oval, slightly downy, dark blackish green, with a whitish angular mark in the centre. Stipulae the upper oval, terminated by an awn, scored with red veins slightly woolly. Head single, usually roundish and sitting, between a pair of nearly sitting leaves, and in part surrounded by their stipulae, smaller, and of a deeper purple than those of Tr. medium. Cal. short, slightly woolly, generally scored with red veins; teeth bristle-shaped, woolly, usually tinged with purple. Bloss. of 1 petal; tube long; standard usually longer than the wings and keel, blunt, generally notched at the end; wings blunt. Bloss. reddish purple, sometimes white. St. Stems always bowed upwards at the base. Branches and leaves upright, not straddling. Calyx lower tooth far shorter than the tube of the blossom. Afzelius.


Var. 2. smaller. Leaves inversely heart-shaped, the upper generally opposite. Spike bare. Ray.

Ray 13. 1.

* Cattle are not fond of it till it is touched by the frost. From the information of a farmer, to whom I pointed out the growing plant in flower. St. This is not Marle Grass. The true Marle Grass of the shops is the native T. pratense. Marle Grass was first cultivated by a farmer Smith, (I believe) of Somersetshire. (See Mr. Billingsley's Agricultural Report for Somerset.) A circumstance which particularly distinguishes the Trifolium medium, is its propagating itself by the root. Mr. Swayne.

† In a great scarcity of provisions bread has been made of the flowers. The heads are used in Sweden to dye woollen green. With alum they give a light, with copperas a dark green.
The English botanists have considered this as a smaller var. of T. pratense, the stipule 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. M. Aæzelius in Linn. tr. i. 227.

Between Peckham and Camberwell. Huds.

Var. 3. cultivated. Larger and more upright than 1. Leaves somewhat paler and thinner. Flowers somewhat paler. Does not propagate itself by seed, or continue so long in the ground.

Ray.

Fl. dan. 989.

Stems strong, almost smooth, furrowed, twice as tall as those of 1. Heads large, oval, hairy. Petals more expanding, and styles shorter than those of 1. Mill. Differs from 1 in nothing but size. Mr. Woodward. St. Mr. Swayne thinks it specifically different from the wild sort, whose heads are globular, but these are oval.

Broad Clover. Meadows and pastures.*

Var. 4. Flowers cream-coloured.

A specimen of this rare plant was sent to me by the Rev. Mr. Swayne, accompanied by the following observations. "A var. of Trifolium pratense with a yellowish white flower, found in a field belonging to Tracy Park, near Bath. I am confident it is a var. of Tr. pratense, as it exactly resembled that species in every thing but colour, and was the only plant of that colour in the whole field; indeed the only one I have ever seen."

On comparing the specimens sent by Mr. Swayne with the Tr. pratense, and Tr. ochroleucum, I am persuaded that his opinion is perfectly right. The structure in all respects corresponds with the former, wanting the general hairiness, the long awns to the stipule, and the very long tooth of the calyx so striking in the latter.

ochroleu'- T. Spikes woolly: stem upright, pubescent: lower leaflets inversely heart-shaped: lower tooth of the calyx as long as the tube of the blossom.

Dicks. b. s.—Curt.—J. acq. austr. 40.

Upper-leaves narrow, very entire. Spikes on fruit-stalks, oblong. Calyx the lowermost tooth the longest. Bloss. brimstone-coloured. Linn. Stem more hairy, and the stipule sheathing to a greater extent, and running out into longer awns than in the T. pratense. Gouan. Leaves alternate; leaflets sitting, the lower

* Much cultivated. It is either grazed, or made into hay. Swine, goats, horses, and cows are fond of it. Linn.—Seldom remains in the ground more than 2 years. Mr. Woodward.
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 the Tr. pratense.

Ray's Trifolium pratense birsium majus, flore albo-sulphures,
(Syn. 328) belongs to this species as Mr. Hudson had deter-
mined, and not to the var. just mentioned.

Brimstone Trefoil. Dry meadows and pastures, and thickets,
in a chalky soil in Essex, Cambridgeshire, Bedfordshire, Hert-
fordsire, Dupper's Hill, Croydon, and near Stamford. [Bath
Hills, near Bungay, Suffolk. Mr. Woodward.] B. June, July.

T. Spikes hairy, globular: stipulae spear-shaped, upright :  

calyx teeth spreading and dilated after flowering:  

leaflets inversely egg-spear-shaped; upper leaves op-

W
-po

Dicks. b. s.–E. bot. 220–H. ox. ii. 14, upper left hand figure

–Pluk. 113. 4.

Calyx hairy on the outside, teeth equal. Linn. Stem woolly,
with a few hairs. Stipulae in pairs, spear-shaped, lengthened
out, scored, fringed with long hairs. Leaves, the upper opposite;

leaflets of the lower-leaves oblong-wedge-shaped, of the upper ob-
long-wedge-spear-shaped. Leaf-stalks short. Fruit-stalks longer
than the leaf-stalk. Heads oval. Calyx as long as the blossom,
divided almost to the base; segments spear-awl-shaped, fringed

with long hairs. Bloss. pale reddish purple; standard spear-

aped, keeled; "wings hooked very near the base; "keel as long

as the wings. Mr. Woodward.

arr. but not Tr. stellatum of Linn. Common on the Southern
sea coast. Dartford Saltmarsh. Leigh and Little Holland,
Greenhithe and Northfleet. [In the meadows by the river side
between the Hot-wells and Bristol. Mr. Swayne. Norfolk.
Mr. Pitchford.]

A. June, July.

(4) Bladder Trefoils. Calyces inflated and belllying.

T. Heads roundish: calyx of the fruit reflected; upper fragi-ferum.

lip 2-toothed, inflated: stems creeping.

Dicks. b. s.–Curt.–Fl. dan. 1042–Vaill. 22. 2–J. B. ii. 379.
3. b.–H. ox. ii. 13. 14–Clus. cur. 39–Ger. em. 1208–
Park. 1109. 5.

Stems throwing out roots. Fruit-stalks longer than the leaves.
Calyx a little downy, nearly globular, woolly, (the upper part)
with 2 teeth, the lower at the base with 3 teeth. Bloss. white.
with us, but in other countries reddish. Linn. Bloss. purple.
Curt. Stipule in pairs, oval-spear-shaped, drawn out into a long point, smooth. Leaves heart or egg-shaped, smooth, very slightly serrated. Fruit-stalks naked, longer than the leaf-stalks. Mr. Woodward.


(5) Hop Trefoils. Standard of the blossom, bent inwards, permanent.


Curt. 161; T. agrarium—Vaill. 22. 3—Riv. tetr. 10. 1, T. Lupulinnum—Fl. dan. 796—Walc.— J. B. ii. 381. 1—H. ox. ii. 13. 1. and 2, the uppermost of the 3 figures.

Differs from the T. agrarium in having smaller flowers, and its long stems entirely drooping. Similar to T. filiforme, but larger, and has often 10 to 12 flowers in a head. Leaves not scored. When sown too proves distinct. Linn. Stems much branched, slightly downy. Stipule in pairs, oval-spear-shaped, not ending in an awn. Leaf-stalks short. Leaves alternate; leaves egg-shaped, or obtusely oval, smooth, slightly serrated, the terminating one on a pedicle, 1 to 1½ line long, the side ones nearly sitting. Fruit-stalks numerous, from the bosom of the leaves, solitary, longer than the leaf-stalk. Flowers upright, yellow, after flowering turning brown, and bent back. Pedicles short. Floral-leaves minute, awl-shaped, 1 at the base of each pedicle. Bloss. standard egg-shaped, scored, flat. Mr. Woodward. Leaves with about 10 or 12 semi-transparent lateral ribs. The plant considered by the English Botanists as the Trifolium agrarium, is the Tr. procumbens of Linnaeus, but all the synonyms given by Linnaeus to the T. agrarium belong to the T. procumbens, except that of Dodonaeus, which is the Medicago lupulina. The Trifolium procumbens of English authors is considered by Linnaeus only as a variety of the Tr. filiforme. Mr. Afzelius.

Hop Trefoil. Dry meadows and pastures. A. June.

*filiforme*. T. Spikes oval, loosely tiled, few-flowered: stems trailing.


Differs from T. procumbens as follows: When wild scarcely a span high. Branches trailing. Fruit-stalks hardly thicker than horse-hair. Flowers 3 or 5 in a head, but when cultivated often 12 to 15, distinct, on more obvious pedicles. In the T. procumbens the fruit-stalks are as thick as a thread, not to mention the
Difference of the leaves and habit. Stems thread-like. Leaves notched at the end, scored. Fruit-stalks longer than the leaves. Flowers bent down. Pedicles of the fruit clear and distinct.

Linnaeus. Seed 1. Leers. Stems 3 to 6 inches long. Stipulae in pairs, oval-spear-shaped. Leaf-stalks very short. Leaves mostly heart wedge-shaped, very entire towards the base, serrated upwards, strongly veined, smooth, nearly sitting. Fruit-stalks from the bosom of the leaves smooth. Flowers when wild mostly 3, seldom more than 5. Pedicles extremely slender, from \( \frac{1}{2} \) to 1 line long. Floral-leaves awl-shaped, very minute, 1 at the base of the pedicle of the middle flower, none on the others. Calyx half as long as the blossom, with 5 scores; the 2 upper teeth shortest, the lower longer, the lowermost the longest. Bloss. pale yellow; standard egg-shaped, somewhat nicked, keeled. Mr. Woodward.

Small Trefoil. Least Hop Trefoil. Poor sandy heaths and pastures. [Salt Marsh at Lymington.] A. May—July.

Var. 2. Lesser Hop Trefoil. Spikes from 8 to 20 flowered.

Curtis 307; Tr. procumbens—Ray 14. 3. at p. 332—H. ox. ii. 13. 1 and 2. b, the lowermost of the 2 figures—Lob. obs. 468. i, and ic. ii. 29. 2—Ger. em. 1186. 6—Park. 1111. 5.

Stems numerous, 6 to 12 inches long, much branched. Stipulae in pairs, obtusely oval-spear-shaped. Leaf-stalks short. Leaves heart-wedge or egg-shaped, very entire towards the base, serrated upwards, the odd one on a short leaf-stalk, the side one nearly sitting, 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 more loosely and separate than those of Tr. procumbens. Calyx larger in proportion to the blossom than that of Tr. procumbens, the 2 upper teeth short, the lower longer and more pointed. Standard egg-shaped, pointed. Mr. Woodward. Stem a little hairy. Leaves inversely heart-shaped, mid-rib a little hairy underneath, with about 7 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.

T. Without stem or stalk: flowers nearly sitting on the root. Jacq. hort. 60.

Flowers in clusters, sitting, axillary, as it were buried in the earth. Calyx oblong, compressed, smooth, 5-cleft, segments bent back. Bloss. within the tube of the calyx, colourless. Leaves in threes, inversely egg-shaped, smooth, somewhat toothed. Linnaeus. Stipulae cloven, bristle-shaped. Legum. 2-seeded; not longer.
than the calyx. Jacq. Every part of the plant, except the leaves, is buried in the sand. It has been overlooked on this account, nothing but leaves being visible, nobody thought of pulling them up for examination, 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. Mr. Woodward. First found in England by Mr. Wigg, on the driest sandy part of Yarmouth Denis, near the sea. A. June—Sept.

LOTUS. Calyx tubular: wings converging lengthwise and upwards: legumens straight, generally with cells.

corniculatus. L. Heads of the flowers flatted at the top: stems herbaceous, trailing: legumens cylindrical, expanding.

Fl. dan. 991—Curt. 107—Knipb. 7—Ger. 1022. 6—f. B. ii. 355—Wale.—Dod. 573. 2—Lob. obs. 501. 2, and ic. ii. 44. 1—Ger. em. 1190. 5—H. ox. ii. 18. 10—Anderson, Astragalus glycyphyllus—Fuchs. 527—Trag. 594—Lonic. 1. 106.3.


Var. 2. Linn. Larger: stem more upright.

Riv. tetr. 76. 1, Lotus.—f. B. ii. 356. 1.

Leaves, and especially the unexpanded heads, with a good deal of woolliness. Ray. Stem upright, 2 feet high, hardly angular. Leaves veined underneath. Lyons. Stipulae bluntly egg-shaped, or roundish, but terminating in a point. Mr. Woodward.

* The flowers become greenish when dried; in which respect they resemble the flowers of the plants which produce Indigo. Cows, goats, and horses eat it. Sheep and swine are not fond of it. Thrips Phytopus is found upon it. Linn. In Hertfordshire it is cultivated as pasturage for sheep. Bot. arr. ed. 1.—It is strongly recommended by Mr. Anderson. Curt.—There is no doubt but it might be cultivated to great advantage. In moist meadows it grows to a great height, and much higher than any of the Trefolii or Medicago lupulina, and makes extremely good hay. Mr. Woodward.


Lotus foliis longioribus et angusioribus. Hall. 385 θ II. (St.) Cornfields and moist places. Ray.—In the neighbourhood of Worcester. St.

Var. 4. Like 2, but less hairy. Ray. Whole plant downy.

Mr. Woodward.

Lotus pentaphyllis medius pilosus. R. Syn. 334. (St.) In the fields behind Mother-huff's. Ray.


Var. 6. smooth. Plant entirely hairless; stipula half-egg-shaped; filaments club-shaped.

High grounds North of Marlborough. June.

The common trailing sort, and the upright which grows in woods, ought, I think, to be specifically distinguished. The Legumens of the former grow gradually larger, those of the latter more taper towards the end. The seeds of the former (which are generally much devoured by the larva of some insect,) are considerably larger than those of the other. Mr. Swayne.

It is certainly to be wished that some person would cultivate these varieties in order to ascertain their differences more accurately. Var. 3 with strap-shaped leaves differs very much in its habit and in its flowering head from the large var. 2.

MEDICA'GO. Pistil bent, pressing down the keel and springing out of it with a jerk: S. vess. a legumen, compressed, bent, or twisted spirally.

M. Flowers in bunches: legumens narrow, regular, twist-sativa.

Kniph. 8—Clus. ii. 242. 2—Lob. obs. 498. 1, and ic. 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 scored, declining. Branches alternate. Stipula—spear-shaped, ending in an awn. Leafstalks short. Leaflets 3 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-talks, that of the ter-

u u 2

P. June, July.*


Fl. dan. 233–Kniph. 11–Riv. tetr. 84, Falcata;–H. ox. ii. 16. row 1. 1, and ii. 15. row 3. 1–Clus. ii. 243. 1–Ger. em. 1191. 3–Park. 1114. 3–F. B. ii. 383. 2.

Stems cylindrical, smooth, slightly scored, declining. Sti-pule in pairs, spear-shaped, almost all at the base, and some almost at the top of the branches, with 1 or 2 teeth on the outer edge. Leaf-stalks short. Leaves smooth, 3 together; leaflets elliptical or wedge-shaped, entire at the base, serrated upwards, mostly notched at the end, the mid-rib lengthened out into a projecting thorn-like point. Fruit-stalks longer than the leaves. Bunches rather loose. Floral-leaves awl-shaped. Cal. slightly downy; teeth awl-shaped, equal. Bloss. yellow or purple. Legum. crescent-shaped, terminated by a long claw. Seeds 5 or 6, compressed, fixed to the inner suture. Woodward.


P. July.†

* 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 people seem to be aware of its merit. It requires a deep rich soil, and, in such, will continue to flourish many years, perhaps forever, 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. 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 chaise-horses, (cut and brought to them in the stable,) without any corn or hay, in good working condition, for twenty weeks, that is from June to October inclusive, and they prefer it to any other kind of food. It should be given cautiously at first, as it then proves a powerful diuretic: and too great abundance will in some horses occasion the staggers. Pigs devour it greedily, and cows fatten on it.

† In hot, dry, barren sandy places it is well worth the trouble of sowing for the purpose of making hay. A practice long since adopted in some parts of Sweden. Cows, horses, goats, and sheep eat it.
DIADELPHIA. DECANDRIA. Medicago.

M. Spikes oval: S. vessels kidney-shaped, with 1 cell and lupuli'na. 1 seed: stems trailing.

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—Dodd. 576. 2—Ger. em. 1186. 5—Park.
1105. 6—H. ox. ii. 16. 8—Ger. 1020. 2—Lonic. i. 106. 4.

Legumens scored, wrinkled, somewhat rough with stiff hairs. LINN. Stems, unless supported by other plants, trailing. Branches very numerous, alternate. Stipulae oval-spear-shaped, with a long awn. Leaves on very short leaf-stalks; leaflets 3 together, oblong-wedge-shaped, serrated upwards, nicked at the end, with the mid-rib lengthened into a projecting point. Head oval. Flowers small. Calyx slightly downy, nearly as long as the blossom; teeth awl-shaped, the 2 upper ones rather shorter. Bloss. yellow. Legumen turning black when ripe. Woodward. Stem a little triangular. Flowers 30 to 40, and upwards.

Trefoil Medick. Melilot Trefoil. [Black Nonsuch, Norfolk. Mr. Woodward.] Cornfields, meadows and pastures.

A. May—Aug.*

Var. 2. Legumens about 10, slightly compressed, rough with numerous tubercles. RAY.

H. ox. ii. 15. 4.

Medica polycarpica fructi minore compresato scabrum. R. Syn. 333.—Medica cochleata, &c. H. ox. ib.—The rest of the syn-
nonyms in the Fl. Angl. belong to 1. Sr.

Cornfields near Peckham, Paddington, and behind Pindar's-
end, near Enfield. RAY.

Var. 3. Legumens smooth; not set with stiff hairs.

This new variety was discovered, and communicated by

Mr. ROBSON.

M. Fruit-stalks with 2 or 3 seed-vessels: legumens prickly: arab'ica.

stipulae toothed: leaflets inversely heart-shaped: stems spreading.

Curt. 176—Cam. bert. 27—Ger. 1021. 4—Ger. em. 1190. 4—
Park. 1115. 6—H. ox. ii. 15. row 12. 12.

Leaflets with a spear-shaped blood-coloured spot, which after
flowering disappears. Flowers four or five. Fruit with widely
diverging thorns. Legumen flat at the base, narrowing to-

* Cows, horses, goats, and sheep 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 sown mixed with Rye-grass (Lolium peren
nens.) The crop is then called black and white Nonsuch. Mr. Woodw.
In the Isle of Wight I have seen it sown along with clover and rye grass.
wears the top; wreathes flat; prickles expanding, hooked at the ends. Linn. Stem 4-cornered, with long whitish hairs below, smooth above. Leaf-stalks cylindrical, channeled, hairy in like manner. Leaflets 3, somewhat ribbed, smooth, marked above with a blackish brown heart-shaped spot; edge partly entire, partly serrated. Stipulae pointed, serrated. Fruit-stalks from the bosom of the leaves, hairy, with 5 flowers, but 2 or 3 of these generally abortive. Bloss. standard notched at the end, much larger than the other petals. Willich. Blossoms yellow.

M. polymorpha arabica. Linn. Heart Trefoil. Heart Clover. Snailsbll Medik. Dry sandy pastures, borders of fields especially on the sea shore. [Wells, in Norfolk. Mr. Crowe.—Meadows near the Hotwells, Bristol. Mr. Swayne.—West of Bridport, plentiful.] A. May, June.

Var. 2. hybrida. Fruit-stalks mostly 2-flowered: lower legumens spirally wreathed, thorny, the upper somewhat bowed. Huds.—Lower legumens with 5 turns, thorns diverging; seeds perfect. Upper ones strap-shaped, half an inch long, bowed or bent inwards, slightly protuberating; seeds imperfect. Huds.

It does not appear exactly how far this plant of Mr. Hudson's differs from the preceding.

Near Charlton in Kent. A. May.

min'ima. M. Legumens mostly 3 on a fruit-stalk: prickles hooked: stipulae entire.

H. ox. ii. 15. row 2. 15—f. B. ii. 386. b.—Rov. tetr. 88,

Cochleata, row 4. f. 4, ecb. min.—f. B. ii. 386. 2. a—

Park. 1115. 7. a—Fl. dan. 211.

Legumens several, scarcely larger than the seeds of Orobus the spirals rough with thorns, bowed back laterally. Stipulae entire. Linn. Root frequently enveloped at the top with the old shell as represented in f. B. ii. 386. 2. a; striking deep, white, tough, of the size of small twine, with a few stiff fibres. Whole plant, except the blossoms, covered with a white silky down. Stems somewhat angular, numerous, trailing, often tinged with purple. Stipulae spear-shaped, entire, ribbed. Leaves on leaf-stalks; leaflets 3 together, the lateral ones sitting, the middle one on a leaf-stalk, oblong-wedge-shaped, very entire at the base, serrated upwards, with strong ribs terminating in serratures, notched at the end with an intermediate projecting point. Fruit-stalks as long as the leaves. Flowers from 1 to 6, in a loose head, on short unequal pedicles. Cal. teeth 5, awl-shaped, as long as the body of the cup. Bloss. small, pale yellow. Legumens with stiff hooked prickles. Mr. Woodward.

Sandy places, but rather rare. Ray.—[Narborough, near Swaffham, Norfolk, in a very light sand. A. Mr. Woodward.]
M. Fruit-stalks many-flowered: legumens roundish, murica'ta. thorny, hoary: leaves woolly.

Pluk. 113, 6-H. ox. ii. 15. 11.

Thorns on the fruit not rigid. Pluk.

At Orford in Suffolk on the sea bank, close by the sea, plentifully. Ray.

A. May, June.

CLASS XVIII.

POLYADELPHIA.

POLYANDRIA.

HYPE'RICUM. Cal, with 5 divisions; beneath: Bloss.

5 petals: Styles 1, 3 or 5: Capsules 1, 3 to 5-celled.

HYPE'RICUM. Cal. with 5 divisions: petals 5: filaments numerous, united at the base into 3 or 5 seeds: capsule with 3 or 5 cells, and many seeds.

(1) Styles 3: Stems shrub-like.

H. Fruit like a berry: stem 2-edged.

Curt. 265-Dod. 78. 2-Lob. obs. 357. 3, and it. i. 632. 1-

Ger. em. 543. 1-Park. 576. 1-Blackw. 94-Ger. 435-

H. ox. v. 6. 12.

Leaves opposite, sitting, 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 approaching to spear-shaped. Cal. segments unequal. Berries black when ripe. Mr. Woodward. Flowers terminating, 4 together. Fruit-stalks cylindrical, smooth. Cal. the outer segments much larger. Petals yellow, concave, scored, unequal at the end from a hollow in the margin on one side.

Tutsan. Park-leaves. Woods and moist hedges. [Woods at Wick Cliffs. Mr. Swayne. Near Pengwarry, Cornwall, in

P. July—Sept.

(2) Styles 3: Stems herbaceous.

quadrangular. H. Leaves egg-shaped, with pellucid dots: stem 4-corr

nered.

Curt. 231—E. bot. 370—Fl. dan. 640—Trag. 73. 2—Matth. 937—Dod. 78. 1—Lob. obs. 216, and ic. 399. 1—Ger. em. 542—Park. 575—Ger. 434—H. ex. v. 6. 16—Pet. 60. 11.

Stem reddish, smooth. Branches opposite. Lower leaves sitting, opposite; the upper growing together, egg-shaped, with 7 or 9 ribs, with a net-work of veins, with transparent glands in the interstices, though not very numerous; discernible when viewed with glass in a strong light. Floral-leaves awl-shaped, in pairs. Mr. Woodw. Stem branched; edges membranaceous, marked with short dark purple glandular streaks. Leaves in pairs, sitting, 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. Petals yellow, ribbed, concave, generally marked with dark purple lines and dots, filled with a purple liquor, which stains paper with a muddy purple permanent stain. Anthers with a small black gland. Styles yellow, Summits purple.


perforatum. H. Stem 2-edged: leaves blunt; with pellucid dots.

Ludov. 11—Curt.—E. bot. 295—Mill. ill.—Blackw. 15—Woodw. p. 29—Fl. dan. 1043—Kuiph. 3—Dod. 76. 1—Lob. obs. 216. 1, and ic. i. 398. 1—Ger. em. 539. 1—Park. 573. 1—Pet. 60. 5—Matth. 936—Ger. 432. 1—Fuchs. 831—Trag. 72. 1—H. ex. v. 6. 1.

Whole plant quite free from hairs. Stems upright, 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 7, and sometimes 5, semi-transparent lines, with several black dots near the edges on the under side; the semi-transparent dots numerous. Fruit-stalks from the bosom of the upper leaves. Calyx, sep-
ments spear-shaped, ending in a taper point. *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. *Authors* with a globeral black gland at the top between the lobes. *Germ* egg-shaped. *Styles* thread-shaped, yellow. *Summits* sometimes crimson.


H. *Stem* imperfectly 4-edged: leaves blunt; without *pellucum.* *Lucid dots:* calyx leaves elliptical. *E. Bot.*

*E. Bot.* 296.

*Stems* several, 2 to 3 feet high; upright, imperfectly 4-cornered; sprinkled with black dots. *Leaves* large, embracing the stem, egg-shaped, very thin and skin like 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.* Mr. Bourne observes that the petals in the plants growing about Worcester have no mark at all upon the upper surface, nor have they any dots at the margin, but some dusky purple streaks on the under surface. In other respects the plants agree with the description of Leers.

*Imperforate St. John’s Wort.* Discovered first as an English plant by Dr. Seward of Worcester, growing plentifully about Sapey in that county. At Hafod, Cardiganshire, and in Mr. Knight’s woods at Downton Castle, near Ludlow, by Dr. SMITH. See E. Bot. In Mr. Digby’s plantation at Meriden, Warwicksh. P. July, Aug.


*Curt.* 162-Fl. Dan. 141-Clus. ii. 181. 3-Dod. 76. 2-Lob. ii. 400. i-Ger. em. 541. 4-Pet. 60. 8-Trag. 72. 2-f. B. iii. 386. 1-H. ex. v. 6. 3.

*This plant has long held a place in the materia medica, but its use is very much undetermined. The semi-transparent dots on the leaves, are the receptacles of an essential oil. The leaves given in substance, are said to destroy worms. The flowers tinge spirits and oils of a fine purple colour, which is probably derived from the little glands upon the anthers, and upon the edges of the petals. Cows, goats, and sheep eat it. Horses and swine refuse it. - On the Eve of St. John the Baptist, the people of North Wales fix sprigs of this plant over their doors, and sometimes over their windows, in order to purify their houses, and by that means drive away all fiends, and evil spirits, in the same manner as the Druids were accustomed to do with Vervain. BINGLEY’S TOUR.*
Stems numerous. Leaves opposite, sitting, egg-shaped, or bluntly oval, entire, with 7 veins, with semi-transparent dots not distinguishable but with a glass and a strong light. Fruit-stalks also terminating. Floral-leaves none. Mr. Woodward. Stems somewhat flarted. Leaves oblong, smooth, set with glands near the edges, scored with semi-transparent lines. Flowers sometimes in pairs. Calyx segments unequal, 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 3 sets, 5 or 6 in each. Anthers without glands. Summit sometimes tinged with red.


Var. 2. Leaves growing by threes.

clo'des. H. Stem cylindrical, creeping, woolly: leaves woolly, roundish.

Dicks, b. i.—E. bot. 100—Pet. 60. 12.

Stems trailing and creeping. Flowering branches ascending, 5 or 6 inches high. Leaves sitting, frequently slightly nicked at the end, with ribs, and with dots not visible but with a glass, and held against a strong light. Flowers few in a panicle. Panicle branched, leafless floral-leaves oval-spear-shaped, minute, reddish, edged with red glands, a pair beneath each division. Calyx reddish, about 1.4 times as long as the blossom, deeply divided; segments oval, edged with minute red glands. Blossom reddish yellow, usually closed, twisted spirally, sometimes merely folded up. Mr. Woodward. Stem 3 to 8 inches long. Leaves opposite. Fruit-stalks smooth, terminating. Petals yellow, with 8 greenish lines, and a small greenish gland on the inner side of the claw. Filaments in 5 sets, about 3 in one set, 4 in another, and 5 in the third.


E. bot. 374.—Fl. dan. 178—Col. ecphr. 74. 1—Trag. 73. 3—Pet. 60. 7—J. B. iii. 383. 2—H. ox. v. 6. 9—Fuchs. 74.

Floral-leaves at the top of the stem, small, and fringed with
glandular hairs, which is not the case with *H. hirsutum*. Stem upright, cylindrical, smooth. *Leaves* in pairs, sitting, egg-shaped, the upper egg-spear-shaped, smooth, with 7 ribs, and a net-work of veins, the edges set with black dots. *Flowers* in panicles. *Panicles* branched, terminating, 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.

Woodward. Upper-leaves with numerous, minute, circular, transparent dots, visible to the naked eye, in the lowermost pairs only dotted towards the base. *Bloss* yellow. 


P. July.

H. Calyx serrated with glands: stem cylindrical, upright: *hirsutum*. 

leaves egg-shaped, somewhat downy.

Curt. 182–Kniph. 8–Pet. 60. 10–H. ox. 6. 11–Fl. dan. 802–Fuchs. 76–J. B. iii. 382. 2.

The flowers close in the night, which those of the *H. perforatum* do not. Stem upright, nearly cylindrical, with a brownish short wool. *Leaves* in cross pairs, those of the stem egg-shaped, broader than those of *H. perforatum*, rough with short hair, with 7 or 9 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 12 glands on each. *Petals* yellow, entire, with 6 or 8 ribs, and a few black glands at the end. Stamens about 24. Germ. egg-shaped. *Styles* thread-shaped, yellow. *Summits* crimson. 

Hairy St. John's Wort. Thickets and hedges. [Wick Cliffs. Mr. Swayne. At the foot of Ingleborough, near to Hurtlepot, and many other places in Craven, Yorkshire. Mr. Cailey.]  

P. June, July.

H. Calyx serrated with glands: stem cylindrical: leaves pulchrum. 

embracing the stem, heart-shaped, smooth.

Curt.–Fl. dan. 75–Walc.–Trag. 74–Pet. 60. 6–Lonic. i. 130. 2–J. B. iii. 383. 1.

Stem upright, 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
bou of the upper leaves, slender, with 1 or more flowers at the end, and 1 or 2 small leaves. Floral-leaves none. Calyx very short, deeply divided; segments oval, blunt; glands black. Petals set at the edge with black glands. Woodward. Stem smooth. Leaves in opposite pairs. Calyx and petals, edges set with dark-coloured glands. Filaments shining, yellow, in 3 sets, about 1 in each set. Authors scarlet.


P. June, July.

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CLASS XIX.

SYNGENESIA.

AEQUALIS.

(1) All the Florets strap-shaped.

CICHOSTIUM ... Receptacle somewhat chaffy: Down chaff-like: Cal. double.

HYPOCHÆ'RIS ... Receptacle chaffy: Down somewhat feathered: Cal. tiled.

TRAGOPO'GON ... Receptacle naked: Down feathered; on a pedicle: Cal. simple.

PI'CRIS ... Receptacle naked: Down feathered; on a pedicle: Cal. double.

LEONTODON ... Receptacle naked: Down on a pedicle: Cal. tiled; scales flexible.

CRE'PIS ... Receptacle naked: Down hair-like: Cal. double, with scales of different shapes.

PRENANTHES ... Receptacle naked: Down hair-like: Cal. double; containing about 5 florets.
LACTU'CA. Receptacle naked: Down hair-like; on a pedicle: Cal. tiled; scales skinny at the edges.

HIERA'CIUM. Receptacle naked: Down hair-like; sitting: Cal. tiled; egg-shaped.

SON'CHUS. Receptacle naked: Down hair-like; sitting: Cal. tiled; bellying (at the base.)

LAP'SANA. Receptacle naked: Down none: Cal. double.

HYO'SERIS. Receptacle naked: Down hair-like; encompassed by awned chaff: Cal. equal.

(2) Flowers in globular heads.

CARLI'NA. Cal. radiate: Rays coloured.

ARC'TIUM. Cal. scales bent inwards at the points, and hooked.

CAR'DUUS. Cal. with thorny scales; bellying: Recept. hairy.

ONOPOR'DON. Cal. with thorny scales; bellying Recept. like a honey-comb.

SERRA'TULA. Cal. nearly cylindrical; tiled: scales rather acute but not thornlike.

[Centaurae nigra.]

(3) Florets all tubular.

EUPAT'O'RIUM. Recept. naked: Down feathered: Cal. tiled: Pistil very long.

SANTOLI'NA. Recept. chaffy: Down none: Cal. tiled; hemispherical.

BI'DENS. Recept. chaffy: Down awn-like: Cal. tiled.

[Senecio vulgaris. Tanacetum vulgare. Tussilago Petasites. Aster Tripolium]
SUPERFLUA.

(1) Florets all tubular.

**ARTEMIS'TA.**... *Recept. almost naked: Down none: Florets in the circumference without a petal.

**TENACETUM.**... *Recept. naked: Down only a sort of border: Bloss. of the circumference 3-cleft.

**CONY'ZA.**.... *Recept. naked: Down hair-like: Bloss. of the circumference 3-cleft.

**GNAPHA'LIUM.**... *Recept. naked: Down feathered, or hair-like: Cal. with skinny concave scales.


(2) Flowers radiate.

**BEL'LIS.**.... *Recept. naked: Down none: Cal. simple, with equal scales.

**MATRICARIA.**... *Recept. naked: Down none: Cal. tiled; scales acute.

**CHRYSANTHEMUM.** *Recept. naked: Down none: Cal. the inner scales membraneous.

**DORO'NICUM.**... *Recept. naked: Down hair-like: Strap-shaped florets, without down.

**INULA.**.... *Recept. naked: Down hair-like: Anthers with 2 bristles at the base.

**ERI'GERON.**.... *Recept. naked: Down hair-like: Bloss. in the circumference very slender.

**SOLIDA'GO.**.... *Recept. naked: Down hair-like: Bloss. of the circumference about 6; remote.
SYNGENESIA. ÆQUALIS. Tragopogon.

CINERA'RIA. . . . . Recept. naked: Down hair-like: Cal. equal; simple.

SEN'E'CIO. . . . . Recept. naked: Down hair-like: Cal. with the scales dead at the ends.

TUSSILA'GO. . . . . Recept. naked: Down hair-like: Cal. scales somewhat membranaceous.

AST'ER. . . . . . . Recept. naked: Down hair-like: Cal. scales the point standing out.

ANTHEMIS. . . . . Recept. chafy: Down none: Cal. hemispherical.


FRUSTRANEA.


NECESSARIA.

FILA'GO. . . . . . Recept. naked: Down none: Female florets among the scales of the calyx.


[Tussilago Farfara. (St.) Erigeron.]

ÆQUALIS.

TRAGOPO'GON. Receptacle naked: calyx simple: down feathered.

T. Calyx as long as the rays of the blossom: leaves entire, praten'se. quite straight: fruit-stalk cylindrical.
SYNGENESIA. AQUALIS. Picris.


Blossoms yellow, expanding about 3 in the morning, and closing between 9 and 10. Linn. Unless the sky is cloudy. Relhan. Calyx in specimens gathered in Huntingdonshire always exactly equal with the blossom, in Norfolk invariably exceeding it. The stems of the latter much shorter. Are they not distinct species? Woodward. Segments of the calyx in the Cornish plants always much longer than the blossom. Mr. Stackhouse. 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, there are glandular substances in the little hollows at the base of each floret, which, when the blossoms fall, turn brown, the receptacle remaining white.

Yellow Goat's-beard. Go to bed at Noon. Meadows and pastures.

B. June.*

porrifolium. T. Calyx longer than the rays of the blossom: leaves entire, stiff and straight: fruit-stalks thickening upwards: florets very narrow, lopped.

Jacq. ic. i.—E. bot. 638—Kniph. 7—Fl. dan. 797—Ger. 595. 1—Park. par. 511. 8—Matth. 538—Dodd. 256. 1—Lob. obs. 297. 1, and ic. i. 550. 1—Ger. em. 735. 1—Park. 412—Pet. 15. 7 and 8—H. ox. vii. 9. 5.

Stem-leaves shorter than in T. pratense, scarcely longer than the space between the joints. Calyx about 1-3d longer than the blossom. Blossom purple. Woodward.

Purple Goat's-beard. Salsify. Meadows and pastures. In Cornwall, and fields about Carlisle and Rose Castle, Cumberl. Marshes near Long-Reach, below Woolwich, and meadows near Edmondston. [In upland pastures not unfrequent. Woodward.] B. May.†


echoi'des. P. Outer calyx of 5 leaves, larger than the inner; the inner awned.

* 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. Goats are not fond of it.

† The roots are esculent, and when cultivated in gardens are called Salsafe.
SYNGENESIA. AQUALIS. Sonchus.

ic. i. 577. 2—Ger. em. 798. 2—H. ox. vii. 5. 38.

Root-leaves oval, scolloped, stiff with numerous warty protuberances, which, as also the ribs and edges, are set with short thorn-like hairs. Stem 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 single, 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 of the length of the inner calyx, on a foot-stalk 3 or 4 lines long. Seeds shining, very beautiful when viewed with a glass. Woodward. Bliss. Yellow, expanding at 4 or 5 in the morning, and never closing before noon; sometimes they remain open till 9 at night.


P. Calyx loose: leaves entire: fruit-stalks scaly up to the Hieracioides, calyx.

E. bot. 196—Ger. 234. 8—Ger. em. 298. 7—J. B. ii. 1029. 2.

Leaves spear-shaped. Fruit-stalks with scattered awl-shaped scales extending up to the calyx, till the calyx becomes nearly tiled. Down scarcely feathered. Linn. Stem firm, scored, rough with stiff hairs. Leaves rough, the lower on leaf-stalks, the upper sitting, spear-shaped, pointed, toothed; the uppermost strap-spear-shaped. Fruit-stalks branched, each branch bearing 1 flower. Cal. 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. Feather sitting, thinly downy. Seeds longitudinally and transversely furrowed. Woodward. Flowers yellow.


SONCHUS. Recept. naked: calyx tiled, bellying, 
down hair-like.

S. Fruit-stalks hispid: leaves notched: flowers in bunches. canaden sis.

* This is an agreeable pot-herb when young. The juice is milky, but not too acrid.
SYNGENESIA.ÆQUALIS. Sonchus.

Fl. dan. 182—Clus. ii. 147. 1—Ger. em. 294. 7—Park. 808. 1—Park. 807. 1—f. B. ii. 1006—Ger. 231. 6.

Terminating lobe of the leaves very large. Flowers blue, sometimes white.


Through a mistake of the Synonyms in Sp. Pl. this had always been supposed the S. alpinus, but the fruit-stalks in that are scaly, in this set with bristly hairs. See Smith's Icon. Fasc. 1. p. 21.

arvensis. S. Fruit-stalks and calyxes rough with hair, in a sort of umbel: leaves notched, heart-shaped at the base.


Flowers expand between 6 and 7, and close between 11 and 12 in the forenoon. Linn. Root creeping. Curt. Leaves embracing the stem; segments triangular, toothed; teeth sharper and more thorny than those of S. palustris; the upper spear-shaped, but not tapering out to so great a length. Seeds oval, compressed, longitudinally and transversely furrowed. Down sitting. Woodv. Stems rough with glandular bristly hairs. Leaves embracing the stem, perfectly smooth, except at the edges, which are almost thorny. Hairs of the calyx and fruit-stalks pale green, terminated by yellow globules.

Corn, or Tree Sow-thistle. Cornfields and ditch banks.

P. Aug.*

palustris. S. Fruit-stalks and calyxes rough with hair, in a sort of umbel: leaves notched, arrow-shaped at the base.

Curt. 298—Fl. dan. 1109, and 606—Pet. 14. 7—Clus. ii. 147. 3—Ger. em. 294. 9—Park. 808. 2—H. ax. vi. 9, row 3. 11.

In habit it is very distinct from S. arvensis, but its structure is so much the same, that one might suppose the S. palustris to have originated from arvensis. Flowers clustered, expand at 6 or 7, and close at 11 in the afternoon. Linn. Root not creeping. Stems several, 6 to 10 feet high. Curt. Root when old forming a large stool. Stems 4 to 8 feet high. Lower stem-leaves very large; upper arrow-shaped, and embracing the stem at the base.

* The flowers follow the course of the sun very regularly. Cows and goats eat it. Horses are very fond of it.
segments spear-shaped, variously curved, 2 or 3 pair, with a terminating one very long, smooth, finely toothed at the edge, the principal rib running near the inner edge; the upper leaves arrow-spear-shaped, lengthened out into a long point. Floral leaves awl-shaped. Woodward. Bloss. yellow.

Marib Sowthistle. Watery places and banks of rivers; on those of the Thames about Greenwich, Blackwall, and Poplar.

P. July, Aug.

S. Fruit-stalks cottony: calyxes smooth.

E. bot. 843.

Leaves closely embracing the stem. Fruit-stalks at length becoming smooth. Linn. Upper leaves frequently jagged and indented, like the lower, but not so deeply. Woodward. Flowers yellow.

Sowthistle. Hare's Lettuce. Milkweed.

Var. 1. levis. Leaves smooth, the lower with winged clefts, the lower segments long.

Curt. 123—Ger. 231. 5—Chn. ii. 146. 1—Dodd. 643. 1—Lob. obs. 119. 1, and loc. i. 235. 2—Ger. em. 292. 3—H. ox. vii.


Common Sowthistle. Cultivated ground, especially in a rich soil, dung-hills, and hedges. A. June—Aug.

Var. 2. Segments fewer, the terminating one triangular and very broad. Ray.


Var. 3. asper. Leaves prickly, jagged, shining on the upper surface, the edge waved and set with thorny teeth; the lower lobes rounded.


Stem 2 to 3 feet high, upright, thick, angular: the angles thin, skinny, tinged with purple. Leaves with winged clefts; 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 cotton. Cal. scales each with 2 or 3 little thorns on the back.

[Uncultivated ground, sides of roads and hedges.]

May, about the latter end. St.

Var. 4. Leaves prickly, entire. St.

Fuchs. 674—Dodd. 643. 3—Lob. obs. 118. 2, 3, and loc. i. 235.

1—Ger. em. 291. 2—F. B. ii. 1014. 2—Park. 805. 1—H. x x 2
SYNGENESIA. AQUALIS. Lactua.

2—Lob. ic. i. 234. 2—Ger. em. 291. 1—H. ox. vii. 2. 8.

Fields, and in woods where the underwood has been cleared.
July to Nov. 20. No other variety growing near it.

Var. 5. Leaves inversely egg-shaped, tapering below into leaf-stalks.

Pluk. 61. 5—Pet. 14. 1.

Cornfields about London.

Var. 6. Leaves strap-oblong, rounded at the end.

Pluk. 62. 4—Pet. 14. 3.

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. It had a yellow blossom, and the fruit-stalks and calyces smooth, as in the other varieties of the Sonchus oleraceus, but the flowers sat close upon the root. This circumstance may possibly be the effect of its maritime situation, but if not, it may prove to be a new species, as is not improbable, because I have observed some other varieties assume their usual habit, and their usual size, when growing near the sea, only sometimes the whole plant, except the blossom, in such situations, assumes a purplish red colour.*

LACTUCA. Receptacle naked: calyx tiled, cylindrical, the scales membranaceous at the edge: down hair-like, on a pedicle.

Scari'ola. L. Uppermost leaves upright, their mid-rib prickly on the back.


* The leaves are good amongst 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 Aphis Sonchi lives upon it.
L. All the leaves horizontal, toothed: their mid-rib prickly virg'na.
on the back.

Collin obi. vi. præf. p. ix.—Woodv. 250—J. B. ii. 100c—
Pet. 15. 2—H. ax. vii. 2. 16.

Stem prickly below. Leaves arrow-shaped, sitting, the edge,
and especially the keel, prickly. A variety of L. Scariola ac-
cording to M. Gerard and Haller. LINN. Leaves, the lower-
most entire, not wing-cleft. Ray. Stem 2 to 4 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, 1 at the
base of each flowering branch. Flowering-branches expanding.
Flowers sitting, or on short fruit-stalks. Floral-leaves similar
to the stem-leaves but smaller, 1 at the base of each fruit-stalk,
and others still smaller on the fruit-stalks. Calyx, scales un-
numerous, yellow, opening about 7, and closing about 10 in the
forenoon. Seeds black.

Wild Lettuce. Strong-scented Lettuce. Ditch banks. [Bor-
ders of fields. In a stone quarry at Thorp Arch, Yorkshire.
Mr. Wood. World's End, near Stepney, and banks of the
Thames between Blackwall and Woolwich. Mr. Jones. Old

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.

L. Scariola = Huds. Dr. Stokes.
With variety 1, but less frequent. RAY.

L. Leaves halberd-strap-shaped, sitting; mid-rib prickly sali-g'na.
on the back.

Jacq. austr. 250—E. bot. 707—Hall. jen. 4, at p. 207—C. B.
pr. 68. 1—Park. 783. 4—H. ax. vii. 6. 18—Pet. 15. 4.

Leaves perpendicular, nearly as in L. Scaliora. LINN. Leaves
arrow-shaped at the base; the lower with winged clefts; seg-
ments few, alternate, strap-shaped, finely toothed, with a sharp
point at the end, somewhat hooked, the terminating one long:
the upper entire, strap-shaped; the midrib not always prickly.

* The juice smells like opium. It is milky, acrid and bitter. Dr.
Collin relates 24 cases of dropsy, out of which 23 were cured by taking
the extract prepared from the expressed juice, in doses from 13 grains to
3 drams in the 24 hours. It commonly proves laxative, promotes urine
and gentle sweats, and removes the thirst. It must be prepared when
the plant is in flower.
SYNGENESIA. ΑEQUALIS. Prenanthes.

Floral-leaves arrow-shaped, broad at the base, tapering to a point. Flowers nearly sitting, small. Woodward. Bloss. yellow.

Narrow-leaved Lettuce. Ditch banks and pastures in a chalky soil. A. Aug.


muralis. P. Florets 5: leaves notched.

Curt.—E. bot. 457—Fl. dan. 509—Clus. ii. 146. 2—Lob. obs. 119. 2, and ie. i. 236. 1—Ger. em. 293. 5—Park. 805. 2—f. B. ii. 1004—Pet. 15. 5.

Down on a very short pedicle. Root-leaves on long leaf-stalks, deeply notched; lower segments few, small, somewhat oval, the terminating one large, somewhat triangular, with 5 lobes, resembling the leaves of Ivy in its creeping state. Flowering branches subdivided. Fruit-stalks slender, each with 1 flower. Woodward. Stem-leaves embracing the stem, deeply notched; segments opposite, toothed, the terminating one largest. Calyx, outer, scales 5, spear-shaped; inner strap-shaped, generally coloured. Seeds oblong, compressed, scored. Down on a flat circular substance, supported by a little pedicle.

Var. 2. Stem-leaves spear-arrow-shaped.

Stems smooth, purplish. Branches from the bosom of the leaves. Stem-leaves smooth, embracing the stem, the lower toothed, the upper very entire. Floral-leaves arrow-shaped, at the subdivisions of the fruit-stalks. Calyx purple; outer, scales rarely 4, spear-shaped. Bloss. yellow; florets with 5 teeth. Germin heart-shaped. Down nearly sitting, but the pedicle lengthens as the seed ripens.


LEON'TODON. Receptacle naked: calyx tiled; the inner scales parallel, equal: down hair-like.

(1) Down on a pedicle.

officinale. L. Outer scales of the calyx entire, reflected: leaves smooth, notched and acutely toothed.

Leaves varying from wing-cleft, in a very dry situation, to nearly entire in a very moist one. Calyx, scales perfectly smooth. Seeds furrowed longitudinally, sharply toothed upwards. Down on a long pedicle; rays simple, Woodward. The notches in the leaves hollowed out like the teeth in a large timber saw. Seeds flat, scored, prickly upwards. Bloss. yellow, expanding about 5 or 6 in the morning, and closing early in the afternoon.


Var. 2. Leaves narrower, fewer, more deeply cloven. Seeds reddish brown. Ray.

Grows along with var. 1. and flowers most of the summer.*

L. Outer scales of the calyx upright, close to the inner, Taraxacon. entire: leaves spear-shaped, very entire, or only toothed.

E. bot. 553—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 membranaceous at the edge; the inner strap-shaped. Lyons. Calyx, the lowermost scales at first upright, afterwards bent back. Huds. Mr. Relhan informs me that he has examined many plants lately, and has no doubt of its being a distinct species.


* Early in the spring, whilst the leaves are yet white, and hardly unfolded, they are an excellent ingredient in sallads. The French eat the roots, and the blanched leaves, with bread and butter. Children that eat it in the evening experience its diuretic effects, which is the reason that other European nations, as well as ourselves, vulgarly call it Piss-a-bed. 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 4 ounces, 3 or 4 times a day; and Boerhavve had a great opinion of the utility of this and other lactescent plants in visceral obstructions.—Goats eat it; swine devour it greedily; sheep and cows are not fond of it; horses refuse it; small birds are fond of the seeds. The Phalana Fatellina and the Thrips Physapus feed upon it. Linn.
autumnale. L. Stem branched: fruit-stalks scaly: leaves spear-shaped, toothed, very entire, smooth: down mostly sitting.


Root bitten off as in Scabiosa Succisa. Flowers opening at 7, and closing at 3 in the afternoon. It is difficult to say under what genus it should be placed. It differs from Scorzonera in its sitting down; from Crepis in its simple tiled calyx; and from Leontodon in its sitting feathered down. Linn. Down of the seeds of the circumference sitting, those of the centre sometimes on a short pedicle. Leers. Root in the 2d or 3d year dying at the end, appearing as if bitten off. Stems sometimes thrice as tall as the leaves. Leaves spear-shaped, quite smooth; teeth bluntest. 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 Hypochaeris radicata, which it very much resembles, and the others of the same tribe which flower in the meadows at the same time. St. Root thick, sending out lateral fibres. Leaves nearly strap-shaped, smooth; hairs simple. Stem and fruit-stalks slightly scored, smooth. Fruit-stalks mostly forked; the scales resembling the outer ones of the calyx. Calyx, the outer scales much shorter, upright, a little hairy at the ends; the inner with a row of longish black hairs along the back. 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, the feather-like fibres on the hairs extremely fine. Seeds compressed, scored.


Var. 2. Leaves hairy. Ray.

With variety 1, and with us the most common. St.

Var. 3. Leaves wing-cleft.


Hieracium præmersum laciniatum. R. Syn. 164.
SYNGENESIA. AQUALIS. Leontodon.


Hedges about London. 

Hieracium folio acuto minus. R. Syn. 164. (St.)

Var. 5. Dwarf. Leaves blunt, like those of L. Taraxacum.

With variety 4. 

L. All the scales of the calyx upright: leaves toothed, hispid: bristle-like hairs forked.

Curt. 314—E. bot. 554—Fl. dan. 862. (The figures of the older Botanists are not sufficiently exact to allow of our knowing whether they intended them for this or for the next species.)

A strap-shaped floral-leaf below the flower, which is not in L. birimum. Florets of the circumference greenish on the outside. Down sitting, feathered. A plant difficult to make out, from the different synonyms referred to by different authors. Flowers open at 4 in the morning, and close at 3 in the afternoon. Linn. 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 bitten off. Stalk 6 to 16 inches high. Leaves indented toothed. Hairs with 2 or 3 points, or simple. Calyx with simple hairs. Down white, with 11 large rays just longer than the seed, with as many intermediate ones. Dr. Stokes. The floral-leaf mentioned by Linnaeus is not always present.


P. May—Sept.

Var. 2. Leaves entire, with sometimes shallow teeth, spear-shaped, rough. Linn.

Clus. ii. 141. 2—Ger. em. 302. 3—Park. 799. 12—H. ii. 3—Pet. 11. 5—Ger. 238. 3. (These figures are cited on the authority of Ray.)

Dens leonis montanus augustifolius. R. Syn. 171. — Leontodon Taraxacum y Huds.—Hieracium incanum, according to Richard, St.

Near the top of Glyder mountain near Llanberris.

L. All the scales of the calyx upright: leaves toothed, hirtum, hairy; hairs undivided. Linn. Outer row of seeds downless. HALLER.
SYNGENESIA. AQUALIS. Hieracium.

Curt.-E. bot. 555—Fl. dan. 901.

Very much resembling L. hispidum, but distinct. Fruit-stalks and calyxes not so hairy, nearly smooth. Leaves stiffish, and as it were dry to the touch, and the central parts very much curled when dry; segments slanting; the hairs undivided at the point. Calyx nodding before flowering, channeled when the seeds are ripe; the outermost scales dilated on each side at the base, with a fold between. Bloss. the florets of the circumference yellow underneath, and not greenish. Linn. Stem 6 inches high. Seeds of the circumference crowned with a shallow leafy ornament, instead of down; those of the centre with a feathered down. Hall. A much smaller plant than the L. hispidum, and its calyx is smooth, but the leaves are hairy. In L. autumnale the calyx is hairy and the leaves smooth. M. Afflatus. The want of down to the outer row of seeds sufficiently distinguishes this plant from its congeners. Flowers yellow.


P. June—Aug.

HIERACTUM. Recept. generally naked: calyx tiled, egg-shaped: sometimes double: down mostly sitting, hair-like; rarely feathered.

(1) Stalk leafless, 1-flowered: Down simple.

Pilosella. H. Leaves very entire, egg-shaped, cottony underneath: suckers creeping.


Bloss. red on the outside, opening at 8 in the morning, and closing about 2 in the afternoon. Linn. Suckers covered with cotton, and beset with hairs, lying close to the ground, not throwing out flowering stems in the autumn, as H. dubium and H. auricula. Florets with a broad purple stripe on the under side. Woodw. Calyx hairs terminated by black globules. Bloss. pale yellow within.


* This differs from the other lactescent plants, being less bitter, and more astringent. It is esteemed hurtful to sheep. An insect of the Cochineal genus (Coccus polonicus) is often found at the roots. Act. Upsal 1752. Goats eat it. Sheep are not fond of it. Horses and cows refuse it.
H. Leaves oblong, entire, toothed; stalk almost naked; alpi'num. calyx hairy.

*Lightf.* 18. *at p. 434—Allioni 14. 2—Col. ecphr. ii. 30. 1—H. *ex. 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, for Mr. Ray tells us it then assumes such an appearance.)

*Leaves* egg-oblong, slightly toothed, sprinkled on both sides with white expanding hairs. *Stalk* thick, sprinkled with white hairs brown at the base. *Floral-leases* small, 1 or 2 on the upper part of the stalk. *Calyx* swoln, set with numerous white projecting hairs. *Bloss.* yellow. *Linn.* *Calyx* concealed as it were by its hairs. *Murr.* About 3 inches high. Whole plant set with long hairs, especially the fruit-stalk and the calyx. *Leaves* oblong egg-shaped, tapering downwards into long leaf-stalks. *Fruit-stalks* but little longer than the leaves.


H. Leaves spear-shaped, toothed, smooth; stalk almost naked: calyx hairy.

*Retz.* 4. 2—*Allion.* 31. 1.

Doubtful whether a hybrid plant, or a new species. The *leaves* are so much like those of *L. autumnale,* and the *stalk and flowers* so exactly like those of *Hieracium alpinum,* that if the stalk and flower of the latter were added to the leaves of the former, you would have a fair specimen of the plant in question. *Leaves,* teeth, some shorter, others longish, often bent forwards. *Stalk* with the minute rudiments of *Leaves,* hairy, thickening towards the flower, swelling at the end like the calyx, with brown hairs. Entirely different from *L. aureum,* *the calyx* being very much tiled which can hardly be said of *L. aureum or autumnale.* *Linn.* *Down sitting,* feathered, *Lightf.* on whose authority it principally stands as a British plant, but I have never seen it, and M. Afzelius doubts its being native with us.


(2) *Stalk naked,* many-flowered.

H. Leaves entire, egg-oblong: suckers creeping.
SYNGENESIA. AQUALIS. Hieracium.

Fl. dan. 1044.

Stem rough with hair. Leaves rough with hair, especially underneath. Larger than H. Auricula in all its parts. Occurs but rarely, possibly a mongrel production, or a variety of some species or other. Linn. Stalk smooth, from 6 to 9 inches high, with 3 to 6 flowers. Huds. Leaves longer and narrower than in H. Pilosella, very slightly concave, hairy on both sides, but more sparingly than in H. Pilosella, green above; greyish, but not cottony underneath. Stalks upright, nearly smooth below, with mostly 2 flowers, rarely 1. Pedicles equal, straddling, which, as also the calyxes, clothed with hairs terminated by black globules. Florets pale yellow on both sides. Seeds oval, scored; down sitting, as long as the calyx. Such were the appearances in June and July, but in autumn as follows: Suckers throwing out branches, and terminated by a flowering stem. Branches not rooting, with alternate leafy branches. Stem drooping at the base, with 5 and 6 flowers. Fruit-stalks alternate. Floral-leaves spear-shaped, 1 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 H. dubium. It approaches nearest to that species, and is, I apprehend, that plant, though somewhat varied. Mr. Woodward.


Auricula. H. Leaves very entire, spear-shaped: suckers creeping.

Fl. dan. 1111.

Leaves spear-shaped, rough with very small hairs. Stalk and calyx beset with black bristles. Being planted in a garden it rose the next year to 3 feet high, with flowers in a kind of umbel on long fruit-stalks. Linn. Root bitten off, with numerous simple fibres. Suckers leafy. Stalk upright, scarcely 6 inches high, somewhat hairy, hairs scattered. Leaves mostly very entire, pointed, naked. Flowers in a panicle, 3 to 6, yellow. Huds.


(3) Stem leafy. Down sitting.

sabaudum. H. Stem upright, many flowered: leaves egg-spear-shaped, toothed, half embracing the stem.


Receptacle in this and H. umbellatum naked, but rougher than in the other species. Linn. Stem sometimes branched from half or
two thirds of the way up; the uppermost branches often springing from one point in manner of an umbel; those below alternate. More distinguishable from *H. umbellatum* by the eye than by the specific differences. In branches where the top of the stem has been bitten off the leaves often assume the figure of those of *H. umbellatum*; add to this, that the fruit-stalks are often congregated in manner of an umbel, as in *Gmel. ii. 14. 1*, and *Fl. dan. 872*. See also variety 4. *St*. *Flowers* opening at 7 in the morning, and closing between 1 and 2. *Bloss. yellow.*

**Shrubby Hawkweed.** Woods and hedges. P. July, Aug.

Var. 2. Leaves covered with a short and just perceptible down. *Ray.*


Var. 3. Leaves longer, with fewer teeth, 1 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.*

*Pet. 13. 8.*

[Peery Wood, near Worcester. *St.*]

**H. Stem upright, panicle terminating:** leaves spear-shaped, embracing the stem; glaucous underneath.

*Allion. 27. 1 and 3.*

Whole plant more or less hairy. Leaves fringed with hairs, edged with a few minute distant teeth; dark green above, glaucous green underneath. Flowers numerous, bright yellow, forming a panicle.

*Hieracium spicatum.* Allion. pedem. i. p. 208; but no trivial name could be more improper than *spicatum*, applied to a plant with a large spreading panicle. The glaucous green of the leaves is alone sufficient to distinguish this from all our other species.

Found by Mr. Dickson in woods in the South of Scotland. Linn. *Tr. ii. 288.* P. June, July.

**H. Stem panicled:** leaves embracing the stem, toothed, smooth: calyxes hispid.

*Allioni 28. 2 and 31. 2–Fl. dan. 928–Ger. 226–Ger. em. 300–†. B. ii. 1093. 1–†. B. ii. 1026. 3–H. ex. viii. 5.*

47.
SYNGENESIA. ÆQUALIS. Hieracium.

Stem 1 to 2 feet high, hollow, in which it differs from 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 mid-ribs of the leaves sometimes purple, especially underneath. Fruit-stalks smooth. Flowers solitary, smaller than in H. murorum. Cal. scales strap-spear-shaped, with numerous black hairs on the back. Woodward. Leaves notched like those of Dandelion but not so deeply. Flowers bright yellow.

Marsh Hawkweed. Moist meadows and woods, and sides of rivulets in the mountainous parts of Craven, Yorkshire, and sides of rivers, both in the Lowlands and Highlands. [Hardrow Force in Wensley-dale, Yorkshire. Mr. Wood.—On the west side of the river just below the bridge at Kirkby Lonsdale, Westmoreland. Dr. J. F. Smith.—Near Rydal, Westmoreland. Mess. Crowe and Woodward.—At the Hermitage near Taymouth. St.—Marshy ground at the foot of Pentland hills. Dr. Hope.] B. July.


Root simple. Stem single, a foot high, of equal thickness, not very strong, beset with hairs, with a single branch, sometimes none. Root-leaves on leaf-stalks, somewhat toothed, beset with scattered hairs; stem-leaves 1 or 2, on the lower part of the stem, on leaf-stalks, pointed, toothed, reddish underneath. Flowers few, opening about 6 in the morning and closing about 2 in the afternoon. Linn. Root-leaves varying considerably in shape, mostly oval spear-shaped, narrowing towards the leaf-stalk, and with a few large teeth towards the base, very entire upwards, hairy on both sides, and especially the mid-rib and leaf-stalk; sometimes spotted with large reddish spots. Stem cylindrical, solid, firm, slightly scored, reddish towards the base, hairy, sometimes naked, or nearly so, sometimes cloathed with leaves, similar to but smaller than the root-leaves. Flowers in a branched panicle. Floral-leaves awl-shaped, 1 to each fruit-stalk. Calyx; scales strap-spear-shaped, the lower spreading. Bloss. yellow. Seeds nearly cylindrical, furrowed, smooth, dark purple, as long as the down, which has rays as long as the calyx. Woodward. It varies in the root-leaves being sometimes nearly circular, and very slightly and sparingly toothed; sometimes oblong-egg-shaped, or egg-spear-shaped and the teeth large. Edge of the leaves hairy. Sometimes the stem bears only a single flower.
SYNGENESIA. ÆQUALIS.  Hieracium.


P. July.


Allioni 28. 1—Lob. obs. 517. 2, and ic. i. 587. 1—Ger. em. 304. 2—Park. 801. 2—Tabern. 505. 1—J. B. ii. 1034. 3.

Differs from the H. murorum, in the root-leaves being spear-shaped and slightly toothed, not egg-shaped, never approaching to wing-cleft at the base; the leaf-stalks being longer, the stem-leaves more than 1, and the whole plant considerably larger. Flowers yellow.


P. Aug.


Jacq. austr. 87—Clus. 141—J. B. ii. 1027—H. ox. vii. 5. 58.

Stem scored, somewhat hairy; branches as high as the main stem. Root-leaves spear-shaped, broadish, somewhat hairy, teeth blunt. Stem-leaves heart-shaped, embracing the stem, approaching upwards at the base. Fruit-stalks 1-flowered. Floral-leaves rather distant from the calyx. Cal. but little tiled, expanding, leaflets unequal in length, set with hairs black at the base, and with a yellow gland at the point, as have all the hairs. Seeds black. Down sitting, hair-like, in large quantity. Linn. Root-leaves very variable in size, the small 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 4 feet. Flowers large, yellow.

Found by Mr. Dickson amongst wet rocks on Ben Nevis, Scotland. Linn. tr. ii. 286. [Clefts of rocks near Meer Gill, at the foot of Ingleborough, Yorkshire. Mr. Caley.]

P. Aug.

H. Leaves soft, spear-shaped, nearly entire; lower ones on leaf-stalks: flowers on fruit-stalks nearly forming a corymbus.

Dickis. b. s.—Jacq. austr. 119.

Stem upright, unbranched, 1 or 2 feet high, scored, purplish, molle.
SYNGENESIA. ÆQUALIS. Crepis.

Leafy, somewhat hairy. Fruit-st. terminating, few, 1 or 2-flowered, 1½ inch long. Leaves oval, blunt, hairy on both sides, soft, the upper sitting, the lower tapering into leaf-stalks. Calyx not tiled; leaves dark green, hairy, uniform. Flowers deep yellow. Seeds reddish, scored. It approaches to the 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. JACQUIN.

Found by Mr. Dickson in the south of Scotland. Linn. tr. ii. 286. B. July, Aug.


Curt.-Kniph. 9-Pet. 13. 10 and 11-Clus. ii. 140-Dod. 638. 2-Lob. obs. 120. 3, and ic. i. 240. 1-Ger. em. 298. 5-Park. 801. 4-J. B. ii. 1030. 1-Fl. dan. 680-Ger. 234. 6.

Leaves spear-strap-shaped, obscurely toothed. Flowers terminating. Calyx the outer segments with their points turned back. Linn. Stem 2 to 4 feet high, simple, cylindrical, scored, hollow, nearly smooth. Leaves numerous, without order, decreasing in size upwards, sitting, 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. Cal. scales strap-spear-shaped, the outer somewhat cottony, the inner smooth. Seeds cylindrical, smooth, furrowed. Down as long as the calyx. Mr. Woodward.

Busby Hawkweed. Hedges and dry shady places. [Ditchingham, Norfolk. Mr. Woodward. Ditch banks near Birmingham, St.]

Var. 2. Leaves, smooth, very entire, dark green. Dill. in R. Syn. truly strap-shaped. St.


About London, but not common. [Near Bungay, Suffolk, common. Mr. Woodward.]

July, Aug.

CRE'PIS. Recept. naked: calyx double, the outer one deciduous: down hair-like, sometimes standing on a pedicle.

For' tida. C. Leaves between notched and winged, rough with hair: leaf-stalks toothed.

SYNGENESIA. AEQUALIS. Crepis.

Unopened flowers nodding. Leaves smelling like bitter almonds. LINN. rather like opium. RELHAN. Calyx whitish. Down longer than the calyx; on a pedicle. Receptacle somewhat hairy. LEERS. Flowers small, yellow.


B. June, July.

C. Leaves spear-shaped, notched; sitting, smooth; the tectorum, lower ones toothed.

Curt. 327—Walc.—Fl. dan. 501—Pet. 12, 6—Gmel. ii. 6—Lob. i. 239—Ger. em. 297. 4—Park. 794. 2.—H. ox. vii. 7. 29—J. B. ii. 1024. 1—Dod. 636. 3—Lob. obs. 115. 1, and ic. i. 229. 2—Ger. em. 284. 2—Park. 777. 2—J. B. ii. 1024. 2—Ger. 228. 2.

Plant of an ash-coloured green. Stem angular, furrowed. Branches as long as the stem. Root-leaves 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 the Lapsana Communis, never nodding. Cal. furrowed, sprinkled longitudinally with clammy hairs. Styles as soon as they have passed through the anthers, brown, a singular circumstance. The plant, in most other respects, liable to great variations, in point both of structure and appearance, when growing in a rich soil appearing as figured in Ger. 228. 2; when in a poor soil it is 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, with leaves jagged like those of Leontodon Taraxa- cum. LINN. Root very long and taper. Stems scored, purplish, often twisted, smooth. Leaves strap-shaped; stem-leaves with winged clefts embracing the stem. Cal. with black or brownish white hairs, terminating in small transparent globules; outer leaves 5 to 10, not deciduous; inner keeled towards the bottom. Florets yellow on both sides. Down sitting, rather longer than the seeds, and longer than the tube of the blossom.

Smooth Succory Hawkweed, or Hawkweed. Meadows, pastures, walls, roofs, road sides. A. June—Sept.

Var. 2. Leaves tapering to a fine point.

Pet. 12. 7.


Var. 3. Leaves entire, toothed, either spear-shaped or egg-shaped.

Vol. III.
SYNGENESIA. ÆQUALIS. Hyoseris.

_Pet._ 12. 5.

Pastures about London.

Sometimes the leaves are very entire, scarcely producing a single tooth.

Var. 4. Stems trailing, leaves strap-shaped, very narrow, apparently from the stem having been bitten off in the spring.

bien'nis. C. Leaves notched, with winged clefts, rough, toothed above the base: calyx bristly.

_E. bot._ 140—_Knip._ 6—_J._ B._ ii._ 1025._ 3—_C._ B._ pr._ 64—_Park._


_Stern_ angular, rough, 4 to 6 feet high, brittle. _Leaves_, all between lyre-shaped and winged, bristly underneath. _Calyx_ furrowed, beset lengthwise with soft prickles. _Flowers_ closing between 3 and 4 in the afternoon. _Linn._ _Calyx_ scales sometimes slightly cottony with only here and there a scattered, short, bristly hair. _Sr._ _Leaves_ at the base of the lowermost flowering branches similar to the leaves below, those at the base of the upper flowering branches strap-spear-shaped. _Flowering branches_ spreading, with several flowers. _Flowers_ on separate fruit-stalks. _Floral-leaves_ spear-shaped. _Bloss._ yellow. _Seeds_ furrowed. _Down_ sitting; hair-like, extending a little beyond the calyx. _Woodw._ Lower leaves in the larger plants widely notched; the notches hollowed out like the teeth of a large timber saw, or the leaves of the common Dandelion.

_Rough Succory Hawkwued_, or _Hawksbeard_. Meadows and pastures in a calcareous soil. Road from Sittingburn to Rochester, and about Northfleet and other places in Kent.

B. July, Aug.

HYO'SERIS. _Recept._ naked: _calyx_ nearly equal: _down_ sitting, like awned chaff, surrounded with hairs, or instead thereof a minute calyx including a very fine down.

min'ima. H. _Stem_ divided, naked: fruit-stalks thickening upwards.


_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_ 6 to 9 inches high, cylindrical, smooth, reddish and stiff at the bottom, green.
SYNGENESIA. ÆQUALIS. Hypochæris.

and hollow upwards, sometimes simple, oftener with 1, and sometimes 2 branches. Branches reddish, and wire-like at the base, hollow and thickening upwards, sometimes again branched. Flowers nodding before they open, afterwards upright. Cal. outer scales small, dry, and shrivelling; the inner very pointed. Bloss. yellow. Seeds oval, scored, crowned with the proper calyx. Woodward. In some situations much larger, the branches dividing and subdividing. Mr. Brown.


HYPOCHÆRIS. Recept. chaffy: calyx somewhat tiled: down on a pedicle: feathered.

H. Stem almost bare, with a solitary branch: leaves egg-macula'ta. oblong, entire, toothed.


Seeds wrinkled. Linn. 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. Stem naked, with 1 or 2 strap-shaped scales. Cal. outer scales blackish, fringed; the inner smooth, yellowish, half as long as the florets, hairy, composed of large scales. Woodward. Stalk generally simple, but sometimes with 1, 2, or 3 branches. Relm. Blossoms yellow; opening at 6 in the morning and closing at 4 in the afternoon.


* The leaves are boiled and eaten like cabbage. Horses are fond of this plant when green, but they do not like it 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. ÆQUALIS. Hypochaeris.


Differs from H. radicata in having minute blossoms, and the scales of the calyx being smooth, and the keel not fringed. Whole plant smooth. Stems nearly upright, with 1 or 2 branches, slender, hollow above, solid below. Leaves spear-shaped, indented, toothed. Fruit-stalks thickening upwards. Cal. like that of Leontodon autumnale. Bloss. yellow, close. Seeds of the circumference with the down sitting; those of the centre, down on a pedicle. 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. Leaves sometimes edged with white hairs. Calyx long, conical; scales smooth, blunt, purplish at the ends.


radicata. H. Stem branched, naked, even: leaves notched, blunt, rough: fruit-stalks scaly.

Curt. 152—E. bot. 831—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.

Fruit-stalks thickening upwards. Calyx, keel of the scales fringed. Bloss. large, closing at 3 in the afternoon. Linn. Root-leaves spread on the ground, oblong-wedge-shaped, waved or toothed, hairy. Stem smooth, naked. Branches 1 or more, thickest under the flower, each with 1 flower. Woodw. Scales spear-shaped, 1 at the base of each branch, with a few white bristly teeth at the base on each side. Cal. 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 yellow within, reddish green without.

Long-rooted Hawkweed, or Cats-ear. Meadows and pastures, common.

Var. 2. Smaller, Stem 5 or 6 inches high, simple, or with 1 flower, nearly sitting, on the side. Woodward.
LAP'SANA. *Recept.* naked: *calyx* double; all the inner scales channeled.

L. Calyces after flowering, angular: fruit-stalks slender, commuinis. very much branched.

_Dicks. b. s._-Curt._-E. bot._ 844—Knipb. 5—Fl. dan. 500—Lob._
_obs. 104. 1, and ic. i. 207. 1—Ger. em. 255—Park. 810._
_1—Jf. B. ii. 1028—Dod. 675. 2—H. ox. vii. 1, 9—Pet. 14._
_12—Ger. 231. 8._

_Seeds* all naked, none involved in the scales of the calyx._

_Linn._ _Stem* 2 to 4 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-leaflet, and 1 or 2 pair of wings, slightly hairy. _Flowering branches* long, naked, or with 1 or 2 awl-shaped scales, much branched at the top, each branch with 1 flower. _WOODWARD._ _Stem* nearly cylindrical, scored, hairy; the hairs terminated by minute glo-bules. _Branches* smooth. _Leaves* toothed, rough with hair, the lower egg-shaped, on long leaf-stalks, the upper spear-shaped, sitting. _Leaf-stalks* flat, with 2 or 3 pair of small unequal wings. _Cal._ rather cylindrical; the _outer*, scales spear-shaped, closely embracing the base of the inner. _Blos._ yellow; _florets* 15 to 18. _Styles* purplish. _Summit* dark purplish green.

_Common Nipplewort._ Dock Cresses. Hedges, shady places, and on rubbish.

A. June, July.*

CICHO'RIUM. *Recept.* somewhat chaffy; *calyx* double: _down* about 5 teeth, indistinctly hairy.

C. Flowers in pairs, sitting: leaves notched.

_In'tybus._

_E. bot._ 539—Fl. dan. 907—Woodw. 248—Curt. 241—Blackw._
_177—Walch._—_Dod._ 635—Lob._ _obs._ 114. 1, and ic. i. 228._
_2—Ger. em._ 284. 1—Park. 776, 2—H. ox. vii. 1, _row_ 2, 2._
—_Fuchs._ 679—_Jf. B. ii._ 1008—Trag. 272—Lonic. i. 94. 1—
_Ger._ 235. 10—Matth. 503._

_Flowers* open at 8, and close at 4. _Linn._ _Stem* angular. _Stem-leaves* spear-shaped, embracing the stem, toothed towards the base, fringed with bristly hairs terminating in globules. _Flowers* in the bosom of the upper leaves. _Cal. outer* scales 6, bent back, about half as long as those of the inner, set on the

* As a curative for sore breasts (from whence the old English name is derived,) it is now entirely in disuse. At Constantinople it is eaten raw, just before it comes into flower.
outside and edges with whitish hairs terminated by small globules; inner, scales skinny, set along the back with similar hairs, woolly at the ends. Bloss. of a fine blue; individual, with 5 or 6 semi-transparent lines, a little woolly on the outside. Cylinder of anthers striped blue and white. Germin edged with little teeth. Summits blue. Seeds oblong, with 4 corners, crowned with a small greenish cup edged with numerous white skinny teeth. Chaff short, spear-shaped.

Wild Succory, or Cicory, or Endive. Borders of cornfields. [Tamworth Castle.]

B. July, Aug.*

ARCTIUM. Calyx globular: scales with hooked points, bent inwards.

Lap'pa. A. Leaves heart-shaped, without thorns, on leaf-stalks.

Kniph. 3—Ludov. 106—Curt. 238—Woodw. 15—Mattb. 1154. —Lob. obs. 318. 2, and ic. i, 588. 1—Ger. 664. 1—Park. 1223. 1—Dodd. 38—Lob. obs. 318. 1, and ic. i. 587. 2—Ger. em. 809. 1—Pet. 23. 1—Fuchs. 72—F. B. iii. 570—Trag. 837—Blackw. 117. 1—H. ox. vii. 32. 1—Lonic. i. 64. 2.

Heads with a very slight woolliness, not so broad as those of var. 2, nor so round as the varieties with woolly heads. The most common of all. Ray. Leaves. the lower on long leaf-stalks, waved at the edges; the upper egg-spear-shaped. Mr. Woodw. Stems reddish. Stems and leaves with short white soft bristles. Fruit-stalks from the bosom of the leaves. Cal. scales green and fleshy at the base, purple towards the top, keeled, ending in long stiff awns, yellow at the hooked ends. Bloss. tube white; border red. Anthers bluish purple. Style white. Summits expanding, white. Seeds oblong, angular, somewhat flatted.


Road sides and rubbish.

Var. 3. Heads quite smooth, very large, an inch in diameter, green. Bloss. purplish.

* The leaves, when blanched, are eaten early in the spring in sallads. They lose their bitterness by cultivation. The roots, gathered before the stem shoots up, are eatable, and, when dried, will make bread. Sheep, goats, and swine eat it. Cows and horses refuse it.
SYNGENESIA. AQUALIS. Serratula.

New Cross, Kent. Ray.

Var. 4. Heads small, smooth, of the size of a hazel nut, broadish at the base, brown. Bloss. purple. Ray.

Pet. 23. 3.

Var. 5. Heads the size and colour of those of var. 4, rounder, brown or purplish, and with a considerable quantity of cotton. Ray.


Near Halifax, Yorkshire. Ray.


Pet. 23. 2.


SERRATULA. Calyx nearly cylindrical, tiled: scales not awned.

S. Leaves lyre-shaped and wing-cleft: the terminating tincto'ria, segment very large: florets all alike.

Fl. dan. 281–E. bot. 38–Ger. 577. 3–Matth. 945. 1–Clus.

ii. 8. 1–Dod. 42. 3–Lob. obs. 288. 2, and ic. i. 534–Ger.

em. 713. 1–Pet. 22. 6–f. B. iii. 23. 2–Park. 475. a.

Leaves fringed. Receptacle bristly. Linn. Stem 2 to 3 feet high, firm, 4-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 single or in clusters, terminating or on the branches. Cal. scales numerous, slightly cottony at the edges, the upper rather longer. Bloss. purple. Down yellowish, shining, hairy. Woodward.


Var. 2. Blossoms white.

[Alconbury, five miles from Huntingdon, on the north road. Mr. Woodward.]

Var. 3. All the leaves entire. Mr. Wood.

* Before the flowers appear, the stems, stripped of their rind, are boiled and eat like asparagus. When raw they are good with oil and vinegar.—A decoction of the roots is esteemed by some very sensible physicians, as equal, if not superior to that of sarsaparilla.—Boys catch bats, by throwing the prickly heads up into the air.—Cows and goats eat it. Sheep and horses refuse it. Swine are not fond of it.

The Phalaena Humuli feeds upon the roots, and the Mottled Orange Moth upon the stems. Linn.—A horse eat the leaves, and has been observed to eat the heads. Stokes.
SYNGENESIA. AÉQUALIS. Serratula.

Kniph. 2—Ger. 576. 1—Matth. 945. 2—Clus. ii. 8. 1—Dodd. 42.
3—Leb. obs. 288. 2, and ic. i. 534. 1—Ger. em. 713. 1—
Pet. 22. 5—Park. 475.

Var. 4. Lower leaves entire, the upper part cut. Hall.
Ger. 576. 2.

Var. 5. All the leaves jagged, Hall; wing-cleft, without the large terminating segment. Wings spear-shaped, serrated.*

Zanon. 94.


Root-leaves egg-spear-shaped, serrated, the serratures not ending in bristles but expanding, smooth above, woolly and whitish underneath. Stem-leaves 7 to 10, spear-shaped, very entire, nearly sitting. Stem undivided, a span high. Flowers 8 to 12, in a broad-topped spike terminating the stem. Cal. oblong, nearly cylindrical. Linn. About 5 inches high. Stem cottony. Leaves 6 or 7; cottony underneath. Flowers about 6; terminating, blue. Down stiff and strong; feathered.


Var. 2. cynoglossifolia. Leaves spear-shaped, narrow. Hall.

Lightf.

Fl. dan. 37—Dill. elth. 76—Gmel. ii. 32.

Near a rivulet on the rock Rhiw'r Glyder above the lake Lhyn y Cwn near Llanberys, Caernarvonshire. Ray.

arven'sis. S. Leaves toothed, thorny.

Kniph. 6—Fl. dan. 644—Col. ecphor. i. 46—Ger. em. 1173. 4—
59. 2.

It has the habit of a Carduus, Linn. Add to which, that the down of the seed is very long. Mr. Woodward; and hair-like. Bloss. pale purple.

* This plant is very much used by the dyers to give a yellow colour; but is inferior to the Reseda, therefore its use is confined to the coarser woolen cloths.—Goats eat it. Horses not fond of it. Sheep, swine, and cows refuse it.
SYNGENESIA. \textit{ÆQUALIS}. Carduus.

\textit{Cardus arvensis}. \textit{Curt.} cat. n. 533. \textit{Corynææ-ævort.}
\textit{Way Thistle.} Cornfields and road sides. \hspace{1cm} P. July.\textsuperscript{*}

\textbf{Var. 2.} Leaves much less thorny, not so deeply indented.

\textbf{RAY.}

\textit{Cer.} 1011. 5.

Amongst the corn in Battersea Fields, over against Chelsea.

\textbf{RAY.} [Found by Mr. Sole somewhere in Devonshire, and cultivated in both our gardens for some years past. Mr. \textit{Ballard}.]

\textbf{CARDUUS}. \textit{Calyx} belllying, tiled; scales thorny:
receptacle hairy.

(1) \textit{Leaves decurrent}.

\textbf{C.} Leaves toothed, thorny at the edge: flowers in bunches, \textit{palus'tris}, upright: fruit-stalks without thorns.


\textit{Fruit-stalks} without thorns. \textit{Calyx} closely tiled, smooth, the points of the scales being hardly discernible. \textit{Down} feathered. \textit{Linn.} \textit{Stem} 5 to 6 feet high and upwards, upper part and branches slender and with few leaves. \textit{Calyx}, scales woolly, green, tipped with deep purple, without a rib along the back, ending in a short expanding thorn not pungent; inner pointed, without thorns. \textit{Bloss.} segments even with the anthers, shorter than the pistil. \textit{Down} shorter than the blossom; rays fringed with long hairs. \textit{Woodward.} \textit{Bloss.} purple; sometimes white.

Marshy meadows and moist shady places, [and wet clayey pastures. \textit{Woodward}.] \hspace{1cm} P. July.

\textbf{Var. 2.} \textit{crisatus}. A monstrous variety, with a broad flat stem and head of flowers.

\textit{Stem} \(\frac{1}{2}\) of an inch broad. Cluster of flowers 2 inches and an half broad, the upper edge crowned with a continued line of florets, so as to give it the appearance of the Cockscomb \textit{Amaranthus} of the gardens. \textit{St}.

It grew in the middle of a pasture. The root produced the same for 2 years together.\textsuperscript{†}

\textbf{C.} Leaves indented, thorny at the edge: \textit{calyces} on fruit-\textit{Acanthoides}-
stalks, solitary, upright, woolly.

\textsuperscript{*} It is said to yield a very pure vegetable alkali when burnt. Goats eat it; neither cows, horses, sheep, or swine are fond of it. \textit{Linn.} Horses sometimes eat the young tops. \textit{St}.

\textsuperscript{†} This, and almost all the other species of this genus, may be eaten like the Burdock, before the flowers are formed. Swine eat it; horses are very fond of it; cows refuse it.
Stem with white elevated long lines. Leaves halberd-winged, and sprinkled underneath with white upright hairs, as in C. crispus. Fruit-stalks with a leafy thorny border, in which it differs from C. crispus. Flowers smaller than those of C. nutans, larger than those of C. crispus. Differs from C. nutans in its calyx being upright, from C. crispus in its calyx being solitary and woolly. Calyx inner scales expanding. Florets cloven half way down, the lowermost segments separated nearly to the base, so as to give the floret the appearance of having 2 lips, an upper one 4-cleft, and a lower one undivided, which is not the case in C. nutans or C. crispus. Styles as long again as the florets.

Linn. Stem solitary, 3 or 4 feet high; angular, the angles edged with a border running down from the leaves. Huds. Stem leafy, edged with a border set with numerous stiff yellow thorns of various lengths. Leaves, the lower wing-cleft; wings broad, blunt, somewhat 5-cornered, with 5 imperfect lobes, the terminating one very broad and blunt, cottony underneath, above smooth, excepting a few short hairs arising from glandular warts; ribs ending in sharp yellow thorns; those above pointed, wings triangular, confluent. Flowers sitting, crowded together, pointing upwards, sidewise, and downwards; sometimes in branched bunches, terminating the branches, on short fruit-stalks upright or open. Calyx, scales spear-shaped, yellowish green, the upper expanding, the innermost chaffy, all tipped with sharp thorns. Bloss. segments somewhat longer than the anthers, which are even with the pistil. Down nearly as long as the blossom, hair-like. Woodw. Scales of the calyx scarcely thorny, not close as in the C. palustris. Curt. Flowers purplish red, sometimes white.

Welted Thistle. C. crispus. Huds. C. polyacanthos. Curt. The C. crispus of Linnaeus I believe has not been found with us. Ditch banks, on rubbish, borders of cornfields. [Plentifully on banks and under walls near Yarmouth, and also in waste places far from the coast. I had it growing for some years without variation. Mr. Woodward. Road sides about London, St.]
in a yellow thorn as long as the florets. Curt. Flowers pale purplish red. C. acanthoides. Huds. There has been great confusion about this and the preceding species, chiefly caused by the synonyms given to the C. acanthoides in the Fl. suec. being misplaced, for, except the reference to It. scan. they really belong to this plant, reading Bauh. hist. iii. p. 56, instead of 59, and Moris. hist. iii. p. 153, instead of p. 15.

Slender-flowered Thistle. Hedges, ditch banks, and under walls; very common near London. P. July, Aug.


Calyx innermost scales without thorns, bristle-shaped, dry, Linn. Stem angular, cottony, frequently purple. Leaves half embracing the stem, cottony and sea-green underneath, hairy and deep green above; wings spear-shaped, the terminating one long, the side ones mostly divided to the base into 2 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. Bloss. purple. Down feathered, almost as long as the blossom. Woodward. It varies from 2 to 5 feet high, or more.


C. Leaves decurrent half way down towards the next be-nutans. low; thorny; fruit-stalks crooked: calyx, scales expanding upwards.

Fl. dan. 675—H. ox. vii. 31. row 1. 6—Pet. 21. 1—f. B. iii. 56. 3.

Fruit-stalks with 1 flower. Flowers sweet-scented in the night. Styles bent back towards the sides. Linn. Stems 2 to

* Few plants are more disregarded than this, and yet its use is very considerable. If a heap of clay is 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, or goats are fond of it. The Papilio Cordui and the Thistle Ermine Moth feed upon it. Linn.
3 feet high, scored, cottony. Branches alternate. Fruit-stalks terminating, cottony, particularly that which terminates the stem. Leaves with winged clefts; wings egg-shaped, with strong thorns. Cal. scales spear-shaped, cottony, with 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. Mr. Woodward. Stem, leaves, and calyces overspread with a cobweb kind of woolliness. Cal. globular, flattened; scales very strong, horizontal when the flower is expanded, purplish towards the end, terminating in a strong yellow thorn. Bloss. tube whitish, border purple. Filaments woolly. Pollen grey, globular, set with fine points.

Musk Thistle. Pastures in a calcareous soil. [Road sides in a sandy or gravelly soil. Strokes. Marlborough Downs.]

A. June, July.

(2) Leaves sitting.

marianus. C. Leaves embracing the stem, halberd-shaped and wing-cleft; thorny: calyx without any leaves near it: thorns channeled, and set with other little thorns.

Knipb. 1-Curt. 148-Blackew. 79-Ludew. 35-Fuchs. 56- J. B. iii. a. 52. 2-Tag. 850-Lonic. i. 70. 2-Ger. 989-
Pet. 21. 9-Dod. 722. 1-Lob. obs. 479. 1, and ic. ii. 7. 2
J. 4-Matth. 676.

The leaves are generally ornamented with broad and beautifully white veins, though they are sometimes entirely green. The large purple blossom and the strong thorns of the calyx, an inch or more in length, sufficiently distinguish this from our other species.

Milk Thistle. Ladies Thistle. Ditch banks and road sides, borders of cornfields, and on rubbish. A. Aug.*

eriophorae. C. Leaves with winged clefts pointing 2 ways, every other segment upright: calyxes globular, woolly.

Jacq. austr. 171-E. bot. 386-Clus. ii. 154-Dod. 723-Lob.
obs. 482. 1, and ic. ii. 9. 2-Ger. em. 1152-J. B. iii.
a. 57-Park. 978-Mill. ic. 293.

Stem 2 feet high, branched, flowering the second year. Cal. as large as an egg; points of the scales strap-shaped, horizontal,

* This is eaten when young as a sallad. The young stalks peeled and soaked in water to take off the bitterness, are excellent. The scales of the cup are as good as Artichokes. The root is good to eat early in the spring.
entire, with a cobweb-like wool interwoven. **Leaves**, every other segment pointing downwards. **Stem** 4 or 5 feet high, angular, scored, woolly, much branched. **Root-leaves**, 1 to 2 feet long, wings distant, with 2 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 terminating one long. **Fruit-stalks** slender, extremely cottony. **Calyxes** clustered, terminating the stem and branches; scales strap-spear-shaped, terminated by a long softish thorn, covered and interwoven with a thick cottony 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. **Woodward. CaL** scales ending in a yellow thorn. **Blossom** purple, or white.


C. **Leaves** spear-shaped, ragged and edged with unequal praten’sis. prickles; cottony underneath: stem cottony, generally with 1 flower and 2 leaves.

**E. bot.** 177–Pet. 22. 1–Clus. ii. 148. 1–Ger. em. 1183. 1–
Lob. obs. 314. 4, and ic. i. 583. 1–Park. 961. 3–J. B. iii. 45. 2.

**Root** fibrous and creeping. **Stem** 1½ to 2 feet high, soft, cobwebbed 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** 4 or 5, 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 2, sometimes only 1, half embracing the stem; 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. **Calyxes** scales thick and strong, cobwebbed or cottony at the edges, terminating in a soft thorn. **Blossom** red. **Anthers**
SYNGENESIA. ÄQUALIS. Carduus.

with 5 hornv, yellow, spear-shaped points. Summit cylindrical, blunt, not notched at the end. Dowvn feathered.

This plant was well known to Mr. Ray, nor was it unknown to Clusius, but there have been doubts to which of the Linnæan species it should be referred. If Linné was at all acquainted with it, it was probably this plant which he designed by his C. dissectus, the reference to Lobel agreeing with our plant. If this be the C. canus of Jacq. æstr. t. 42, it is very ill done, but the root, the shape and colour of the calyx, as well as the number of leaves on the stem, render Jacquin's figure very unlike our plant.


P. May, June.

helenioides. C. Leaves embracing the stem, spear-shaped, toothed, fringed with small unequal thorns; stem without thorns.

E. bot. 675—Hall. 7. at 1. p. 77—Mill. 94—Clus. ii. 148. 2—Ger. em. 1183. fig. 2d—Park. 961. 5—f. B. iii. 46. 2—Pet. 22. 2.

Differs from C. heterophyllus, which it very much resembles, in all the leaves being undivided, whitish, but not of a snowy whiteness underneath, the edge more unequally serrated and fringed; and the stem being twice as high; of the height of a man, more panicked, and beset with expanding hairs. LINN. hort. 1ps. Root hardly creeping. Stem furrowed, set with leaves all the way up. Leaves 40 to 50, half embracing the stem, toothed not jagged, fringed with soft thorns, the ears at the base round, bent back, and growing to the stem; flower-leaves awl-shaped.

LINN.

Great English soft, or Melancholy Thistle. Cirsium Britannicum Clusis repens. Ray Syn. 193. Mr. Ray thought this plant specifically different from the preceding, and our later botanists have entertained the same opinion, but it is not equally agreed whether Linnaeus intended the same plant by his C. helenioides. However this may be, the alpine plant we now speak of must not be confounded with the lowland meadow C. pratense, which it only resembles in its cottony leaves and single flowered stalk, but from which it differs in its great size, its thick hollow stalk, its stem being clothed with leaves, and its leaves being more re-
SYNGENESIA. ÆQUALIS. Carduus.

regularly serrated. Flowers large, purple. See Lightfoot's description taken from Linn. and Haller.


P. June, July.

Var. 2. heterophyllus. Leaves embracing the stem, spear-shaped, fringed, either entire or jagged: stem mostly supporting a single flower; calyx without thorns. Linn.

Stem somewhat branched, bearing from 1 to 6 flowers. Leaves white and cottony underneath; root-leaves toothed and wing-cleft; lower stem-leaves wing-cleft, middle ones toothed, upper entire. I have seen both varieties from the same root. Huds. Mr. Robson also thinks that this is merely a var. of the C. helenioides with divided root-leaves, which is frequently found in the mountainous parts of the counties of York and Durham, growing with that; and he moreover believes that both sorts of leaves sometimes spring from the same root. Mr. Griffith also confirms this opinion.

C. Stemless: calyx smooth.

E. bot. 161—Jacq. ic. iii. 579—Fl. dan. 1114—Clus. ii. 156.
1—Lob. obs. 480. 3, and ic. ii. 5. 1—Ger. em. 1158—Park. 969. 4—f. B. iii. a. 63. 1—H. ex. vii. 32. 12—Pet. 21. 6
—Barr. 493—Trag. 852—Lonic. i. 68. 1.

A dwarf plant, but spreading to the breadth of a foot. Linn. Root-leaves spreading in a circle close to the ground; on leaf-stalks; wing-cleft; wings irregularly lobed, and waved, angular, thorny at the edge, green on both sides, hairy towards the base. Flowering-heads 1 or more, rarely sitting. Fruit-stalks 1 to 2 inches high, hairy. Cal. 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. Woodward. Bloss. purple. Mr. Relhan informs me that he once found a plant on Gogmagog hills with a stem 5 inches high, bearing 3 flowers, and a leaf similar to the root-leaves under each flower. An appearance which it generally assumes when cultivated in a garden.

Dwarf Thistle. Mountainous and rocky dry pastures, especially in a calcareous soil. Blackheath, near London. [Dry heaths and commons in Norfolk, very frequent. Dr. J. E. Smith.
SYNGENESIA. AEQUALIS. Onopordon.

Mr. Woodw.—Dry heaths on the western side of the county of Durham. Mr. Robson.] P. July.*

ONOPORDON. Recept. like a honeycomb: calyx bellying: scales sharp-pointed.

Acan'thium. O. Calyx scales expanding, their points standing out: leaves egg-oblong, indented.

Curt. 334—Fl. dan. 909—Fuchs. 57—J. B. iii. a. 54. 2—Trag. 858—Dod. 727. 2—Ger. em. 1174. 5—Park. 979. 1—Pet. 21. 10—Lonice. i. 71. 2—Ger. 988. 1 and 2—Dod. 721. 1—Lob. obs. 476. 1, and ic. i. 1. 1—Ger. em. 1149. 1—H. ox. vii. 30. row 2. 1—Matth. 671—Lonice. i. 70. 3—H. ox. vii. 30. row 1. 1.

Plant of a hoary green. Stem with a straight leafy border running up to the calyx. Cal. scales expanding, awl-shaped. Bloss. sometimes white. LINN. Plant generally covered with a white cotton, giving it a whitish green colour. 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, being 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, terminating. Cal. scales ending in sharp thorns. Woodward.

Common Argentine. Cotton Thistle. On rubbish and road sides. [Road from Worcester to Droitwich, near Henlip. Mr. Baker.] B. July.†

CARLI'NA. Calyx radiated; the scales next the blossoms long, coloured.

vulgaris. C. Stem with many flowers in a corymbus: flowers terminating: rays of the calyx yellow white.

Fl. dan. 1174—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—Lonice. i. 68. 2—Ger. 997. 1.

* Cows refuse it. It kills all plants which grow beneath it, whence it is very injurious in meadows. LINN. The different species afford nourishment to the Cassida viridis and nebulosa; Papilio Cardui; Cicada cornuta; Cimex Cardui; Musca solstitialis; and Aphis Cardui.

† 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.
SYNGENESIA. ÆQUALIS. Bidens.

It continues, after it is dead, unchanged even for the whole of the second year, a mournful spectacle! LINN. Root long, spindle-shaped, with a few stiff fibres. Stem 12 to 15 inches high, swelling just above the root, cylindrical, ribbed, purple, slightly downy, dividing above like an umbel. Leaves very numerous, clothing the whole stem and decreasing in size upwards, the lower sitting, 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. Cal. 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. Bloss. segments spear-shaped, purple, straw-coloured below. Seed woolly; down sitting, rays 9 to 12, generally 11, either single, or with 2 or 3 clefts, fringed with long hairs. Recept. the chaff longer than the florets. WOODWARD. Bloss. tube white, border in the outer florets purple, in the inner whitish. Down pale brown, thrice as long as the seed; rays nearly equal, awl-shaped at the base, a little above it generally dividing into 3 and sometimes 4 bristle-shaped branches. The structure of the down and chaff indicates the clearest proofs of a natural generic difference. Stokes.

Wild Carline Thistle. Dry meadows and pastures. B. June.*

BI'DENS. Recept. chaffy: down rough with straight awns: calyx tiled.

B. Leaves spear-shaped, embracing the stem: flowers on cer'nu. crooked fruit-stalks: seeds upright.

Curt. 192-Fl. dan. 841-J. B. ii. 1074-Ger. 574-Pet. 20.
6-Lob. adv. 227, and it. i. 529.

Leaves with distant serratures. Flower-leaves very entire. Seeds with + awns, 2 of which are larger. WOODWARD. Stem a little hairy. Leaves opposite. Cal. segments egg-spear-shaped, with black lines. Blossom and summits yellow. Anthers brown. Germen pyramidal, with + corners; awns 4, with prickles pointing downwards.


* The flowers expand in dry, and close in moist weather. They retain this property a long time, and therefore are employed as hygrometers. It is said to be an excellent remedy in hysterical cases. Amm. Acad. III. p. 64. Goats eat it. Cows refuse it. LINN. Its presence indicates a very barren soil. Mr. WOODWARD.
SYNGENESIA. AQUALIS. Eupatorium.

Var. 2. Flowers with radiated florets in the circumference.
Fl. dan. 841—Barr. 1209—H. ox. vi. 5. 22.

If it should be proved by observation to be a Bidens, let it be referred to that genus, if it be constant, to remain as a species of Coreopsis. Linn. Frequently on the same plant with 1. Woodward, as in the lower part of the figure in the Flora Danica.


Var. 3. Dwarf.
Fl. dan. 312, (the left hand figure and the dissected floret.)
Ray 7. 2.

Seems to differ in no other respect than in its dwarfish growth, 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 is probably only an unusual degree of expansion from a very moist atmosphere.

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. Sr.] A. [Oct. Sr.]

triparti'a. B. Leaves 3-cleft: seeds upright.
Curz. 237—Blackw. 519—Pet. 20. 7—Dod. 595. 1—Ger. cm.
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 membranaceous edges. Seeds, awns sometimes 3. Mr. Woodward. Flowers terminating, yellow.


Var. 2. Dwarf.
Fl. dan. 312, (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.

EUPATO'RRIUM. Recept. naked: down feathered: calyx oblong, tiled: style long, cloven half way down.
cannabinum. E. Calyx 5-flowered: leaves with finger-like divisions.

E. bot. 428—Fl. dan. 745—Blackw. 110—Fuchs. 265—J. B.
ii. 1065. 2—Trag. 491—Lonic. i. 241. 2—Maith. 1015.
SYNGENESIA. EQUALIS. Santolina.

Dod. 28. 2—Lob. obs. 285. 1, and it. i. 528. 2—Ger. em. 463. 2—H. ox. vii. 13. 1—Park. 595.

Stem 3 or 4 feet high, branched. Leaves mostly 3, sometimes 5, spear-shaped, sharply serrated at the base, and towards the point very entire. Cal. scales few, strap-shaped. Seeds black, scored, smooth, little more than a line long. Down sitting, hair-like, when viewed with a glass finely toothed, not 3 lines long. Mr. Woodward. Stem reddish, rather cylindrical, slightly woolly. Leaves serrated, slightly woolly. Cal. skinny, coloured, a little hairy. Flores 5 and 6. Bloss. purplish red, sometimes white; clefts shallow. Styles and summits with a tinge of red. Germen with minute shining globules.


P. July, Aug.

Var. 2. Leaves single, egg-spear-shaped.
This is the seedling plant of early flowers the first year; the second year, as I have frequently observed, it has fingered leaves, Mr. Woodward.

Near Lee, in the road to Eltham. Dill. [Near Bungay, Suffolk. Mr. Woodward.]

SANTOLINA. Recept. chaffy: down none: calyx tiled, hemispherical.

S. Flowers forming a corymbus; leaves oblong, blunt, maritima. scolloped, very downy. E. bot.

Dicks. b. s.—E. bot. 141—Mill. 135—J. B. iii. a. 157. 2—Pet. 20. 8—Lob. adv. 201, and it. i. 480. 1—Ger. 516—Clus. i. 329. 3—Dod. 65—Ger. em. 640. 3—Matth. 860—H. ox. vi. 4. 47.

Whole plant cottony. Leaves spear-shaped, scolloped, blunt. Chaff as long as the calyx. Seeds 2-edged, down-less, whence it should seem to be rather a species of Santolina. LINN. Blossom bright yellow.


* An infusion of a handful of it vomits and purges smartly. An ounce of the root in decoction is a full dose. In smaller doses the Dutch peasants take it as an alterative, and as an antiscorbutic. Goats eat it. Cows, horses, sheep, and swine refuse it.
**SYNGENESIA. SUPERFLUA.** Tanacetum.

**SUPERFLUA.**


vulga're. T. Leaves doubly winged, cut, serrated.

Woodv. 115—Kniph. 2—Ludw. 22—Fl. dan. 871—Dod. 36.1 —Lob. obs. 432. 1, and ic. 749. 1—Ger. em. 650. 1—Park. 81. b.—H. ox. vi. 1. row 1. 1. f. 1—Pet. 20. 9—Blackw. 464—Fuchs. 46—J. B. iii. a. 131. 2—Ger. 525. 1—Trag. 158—Matth. 908—Lonic. i. 151. 3.


Var. 2. Leaves curled.

Ger. 525. 2—Dod. 36. 2—Lob. obs. 432. 3, and ic. 1. 749. 2 —Ger. em. 650. 2—Park. 81. a—J. B. iii. 132.

Ray tells us that this variety was first observed in England. [It grows by the Tees near Coniscliffe, Durham. Mr. Robinson.]*

**ARTEMISIA.** Receptacle either slightly hairy or naked: down none: calyx tilecl; the scales roundish, closing: florets radiate, none.

(1) Stems trailing before the time of flowering.

campes'tris.'A. Leaves many-cleft, strap-shaped: stems trailing, rod-like.

* This is a warm deob'trueent bitter, and its flavour not ungrateful.—The tender leaves are sometimes used to give a colour and flavour to puddings. — If a dead animal substance is 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 gives nourishment to the Aphids Tanacetii, and Chrysomela Tanacetii. Linn. The seeds are an excellent vermifuge.
SYNGENESIA. SUPERFLUA. Artemisia.

E. bot. 338—Fl. dan. 1175—Ger. 948. 5, Abrot. camp.—J. B. iii. a 194. 2—Pet. 20. 4—Dodd. 33. 2—Lob. obs. 442. 3. and ic. i. 767. 2—Ger. 1106. 5—Park. 94. 7—Matth. 852—Lonic. ii. 23. 2.

Branches simple, alternate, from the bosom of the leaves, somewhat drooping. Flowers solitary, pointing one way. The female florets mostly 9, the hermaphrodite 8. Summits orbicular, glass-shaped. Receptacle naked. Linn. Stems numerous, angular, declining, much branched. Leaves, the upper frequently simple, very narrow. Heads very small, scarcely more than a line broad, numerous, single, either sitting or in short branched spikes. Cal. scales few, bluntly egg-shaped, approaching, green, slightly downy at the back, the edges membranaceous, whitish, shining. Florets not longer than the calyx. Woodward. Leaves thread-shaped, from \( \frac{1}{2} \) to 1 inch or more in length. Flowers axillary. Bloss. reddish brown.

Field Southernwood. Bales of cornfields and road sides at Elden, Suffolk, and a mile from Barton Mills on the road to Lynn. [Near Thetford, on the side of the road to Norwich. Woodward.] P. July.

A. Leaves many-cleft, cottony: bunches on crooked maritima. fruit-stalks: female florets 3.

Ger. 940. 1—Pet. 20. 2 and 3—Lob. ic. i. 755. 1—Ger. em. 1099. 1—H. ox. vi. 2. 20—H. ox. vi. 2. 19.


Var. 2. Segments of the leaves very short.

J. B. iii. a 177—Barr. 460.


* This in its wild state smells like Marum or Camphor, but in our gardens it is less grateful, though still much more grateful than the next species. It is used as an ingredient in distilled waters, and beat with three its weight of fine sugar it 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 refuse it.
(2) Stems upright; herbaceous: Leaves compound.


Stems herbaceous: leaves compound.


Receptacle hairy. Linn. Leaves cottony on both sides, green above, white and shining underneath, the upper with 3 clefts, or simple, sitting, bluntly spear-shaped. Calyx, scales bluntly egg-shaped, green, and cottony at the back, the edges membranaceous. Receptacle, down as long as the florets. Woodward. Stems scored, whitish, with very short down. Leaves silky and very soft; segments blunt, and the lower on long flat leaf-stalks. Spikes upright. Flowers turned downwards. Leaves dark green on the upper, but white on the under surface. Blot brownish white.

Wormwood Southernwood. Wormwood. Road sides, rocky places, and on rubbish.

P. Aug.*


* The leaves and flowers are very bitter; the roots are warm and aromatic. A considerable quantity of essential oil rises from it in distillation. This oil is used both externally and internally to destroy worms. The leaves, put into sour beer, soon destroy the acescency. 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 dropitical cases. The ashes afford a more pure alkaline salt than most other vegetables, excepting Bean-stalks, Broom, and the larger trees. In the Amon. Acad. v. ii. p. 165, Linnaeus mentions two cases, wherein an essence prepared from this plant, and taken for a considerable time, prevented the formation of stones 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. 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 are not fond of it; cows and swine refuse it. Linn. Turkeys are fond of it. Mr. Holleyfar. A horse eat it. 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. St.
Receptacle naked. LINN. Stem angular, scored, often red, downy above. Leaves above green and slightly cottony; underneath white with thick cotton; wings oval-spear-shaped, deeply serrated, almost lobed, the terminating one large, with 3 lobes. Calyx, scales extremely woolly; edges not membranaceous. Florets longer than the calyx. Woodward. Stems ascending, branched, scored, reddish purple. Leaves dark green and smooth above, cottony and whitish underneath. Fruit-stalks alternate, from the bosom of the leaves. Bloss. purplish.


(3) Leaves simple, undivided.

A. Stem-leaves spear-shaped, entire; root-leaves many-côrèles'cens. cleft: female flowers 3.

H. ex. vi. 1. 5—Dod. 26. 2—Lob. obs. 441. 2, and ic. i. 765.
2—Ger. em. 1104. 3—Matth. 687—Ger. 946.

Leaves woolly on both sides. Flowers cylindrical, nodding. Florets of the circumference 3. Hence its very close affinity to A. maritima, from which, however, it differs totally in its leaves. LINN.


GNAPHALIUM. Receptacle naked: down hair-like, or feathered: calyx tiled: scales roundish: skinny, and coloured at the edge.

(1) Herbaceous; yellow-flowered.

G. Leaves sword-shaped, half embracing the stem, ser-luteo-album pentine at the edge, blunt, downy on both surfaces: flowers crowded close together.

* In some countries it is used as a culinary aromatic. A decoction of it is taken by the common people to cure the ague. The Chinese make use of it in healing wounds, applying the fresh plant bruised. OBERG 1. 394. A dram of the leaves powdered, was given four times a day, by Dr. Home, to a woman who had been affected with hysterical fits for many years. The fits ceased in a few days. In this patient Assafetida and Ether had been given to no purpose.—Sheep and swine refuse it; neither horses, cows, or 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 form a most delicate morsel. The Apis Abintibhi and the Phalaena Gamma live upon the several species.
SYNGENESIA. SUPERFLUA. Gnaphalium.

Dicks. b. i.-Kniph. 1-Pluk. 31. 6-Barr. 367.-J. B. iii. a.
160. 2-Pet. 18. 3-Ger. 529. 3-Clus. i. 329. 1-Ger. em.
643. 13-Park. 686. 6-H. ex. vii. 11. row 2. f. 3-Lob.
ic. i. 483. 2-Park. 688. 9.

Plant very woolly. Calyx yellowish, white, soft; scales egg-
spear-shaped. Female florets in the circumference numerous.
Linn. Florets of the circumference with only pistils; in the centre
a few with stamens and pistils. Hall.

Everlasting: Live-for-ever. Jersey Cudweed. Dry banks
and walls in the island of Jersey, very common. R. Syn. Sea

(2) Herbaceous; white-flowered.

margarita'- G. Leaves strap-spear-shaped, tapering, alternate: stem
ceum.

Munt. 614. 170-Clus. i. 327. 3-Ger. em. 641. 8-Pet. 18. 3
-Kniph. 12-J. B. iii. a. 162. 2-Park. par. 373. 3.

Female florets few. Haller. Stem extremely cottony, white.
Leaves numerous, strap-spear-shaped, long, sitting, growing
without order, very entire, dark green and naked above, under-
neath greenish white, with a thick cotton. Flowering branches
with numerous crowded heads at the end, on short branched
cottony fruit-stalk, with a middle one sitting. Calyx bluntly
egg-shaped, white, not cottony. Down simple, sitting, as long
as the calyx. Woodw.

American Cudweed. Meadows, pastures and banks of rivers.
In a meadow near Bocking, Essex, and on the banks of Rymny
river for the space of at least 12 miles. Such are the habitats
given by Ray and repeated by Hudson, but the former seemed to
doubt its being a native, and neither the latter nor any other
botanist that I have heard of has given us any further fact to
invalidate the suspicions of Mr. Ray. It is frequent in our
gardens. P. Aug.

dioicum. G. Runners trailing: stem undivided: flowers in a simple
corymbus: male and female flowers on distinct plants.

Male plant—E. bot. 267-Dod. 68, 1. 2-Lob. ic. i. 483. 1.
2-Ger. em. 640. 4 and 5-Female plant.—E. bot. 267-
Lightf. 20. 1. at p. 471-Ludov. 168-Kniph. 3-Clus. i.
330. 1-Dod. 68. 3-Lob. ic. i. 483. 3-Ger. em. 644. 6-
Park. 690. f. 5-Pet. 18. 4-Fuchs. 606-J. B. iii. a 162.
3-Lonic. i. 95. 2-H. ox. vii. 11. row 3. f. 2-Trag. 332
2, and ic. i. 482. 2.
In the barren plants the heads almost globular: in the fertile ones nearly cylindrical. Linn. I believe it is rarely that ripe seeds are produced, as is the case with many plants which creep 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, 3 to 7 inches high, white, cottony. Heads 3 to 8, on short fruit-stalks. Cal. 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 sitting, with simple rays, that of the female plants longer than the calyx, that of the male plants not exceeding the calyx. Woodward. Blossom white, purple, reddish.


P. May, June.

(3) Herbaceous: resembling the Filagos.

G. Stem undivided, upright: leaves spear-shaped, nar-
rowing at the base: flowers in a crowded terminat-
ing leafy spike.

Fl. dan. 254.

Differs from the 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 Gn. rectum. Dr. Smith.

G. Sylvat. var. Lightfoot. Woods on mountains in the High-
lands of Scotland.

G. Stem upright, terminating in a leafy compound-spike:
leaves strap-spear-shaped, almost naked on the upper side. E. bot.

E. bot. 124–Pet. 18. 6–Lob. adv. 202. 1, and ic. i. 482. 3.
G. angl.–J. B. iii. 160. 1–Matth. 828. 2–Ger. 515. 1–
Ger. em. 639. 1–H. ox. vii. 11. 1.

Leaves green and hairy above, white and cottony under-
neath; root-leaves long, strap-spear-shaped, very narrow, in open ground forming a thick tuft; stem-leaves strap-shaped, em-
bracing the stem, numerous. Stem in woods frequently solitary, 12 to 18 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 from 1 to 5 or more flowers, the lowermost somewhat distant, the upper crowded. Flower-leaves similar to, but smaller than the stem-leaves. Heads very small. Cal. bluntly oval, greenish at the base, yellowish brown upwards, smooth, with shining edges; the outer short, the inner as long as the florets. Seed minute; down sitting, as long as the calyx; rays simple. Woodward. Stem sometimes only 3 inches high. Hermaphrodite florets 3. Down hair-like. St. Leaves narrow, sharp, downy underneath. Calyxes white, shining. Bloss. yellowish.


sup’num. G. Stem undivided, trailing: flowers scattered.

Dicks. b. s.—Lightf. 20. 2. at p. 471—Scop. 57. at ii. p. 152—Bocc. rar. 20. 1. at p. 41.

Flowers mostly female, but a few in the centre hermaphrodite. Lightf. Root-leaves strap-spear-shaped, slightly hairy above, underneath cottony, and greenish white, one half to 3 quarters of an inch long, in tufts; stem-leaves sitting, narrower and longer. Stem one and a half to three inches high. Heads 3 and 4, alternate, either sitting, or on short cottony fruit-stalks, from the bosom of the upper leaves, which are not longer than the heads. Cal. scales spear-shaped, with a green longitudinal line at the base; the tips and edges shining, of a brownish yellow. Seeds elliptical; down sitting, rays simple, as long as the florets and longer than the calyx. Specimen from Dr. Smith gathered on Ben Lomond. Mr. Woodward.


uliginosum. G. Stem branched, spreading: flowers crowded, terminating.

Dicks. b. s.—Fl. dan. 859—H. ox. vii. 11. 14. f. 4—Dodd. 66. 3—Lob. ic. i. 481. 1—Ger. em. 639. 2—Park. 686. 4—Pet. 18. 7—Ger. 515.
SYNGENESIA. SUPERFLUA. Gnaphalium.

Stem 3 to 9 inches high or more, upright, with a thick 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 sitting. Cal. scales spear-shaped, smooth, brown, shining, when in seed blackish, almost hid in the cotton. Down sitting, with simple rays, as long as the calyx. Woodward. Whole plant, particularly the base of the calyces and fruit-stalks, covered with a cottony substance. Leaves strap-shaped. Flowers globular. Cal. shining, yellowish-brown-green, turning black; scales skinny, inner ones oblong. Bloss. yellowish.

Black-headed Cudweed. In watery places, especially where stagnant water has stood during the winter. A. Aug.

G. Stem forked, upright: flowers awl-shaped, axillary: gallicum.

Leaves somewhat cottony, but smooth, not hairy. Linn. Whole plant cottony, but the cotton shorter than either that of the germanicum or montanum. Stem much branched. Leaves awl-shaped, half embracing the stem, about an inch long. Mr. Woodward.


G. Stem somewhat forked: flowers conical, axillary and montanum. terminating.

Pet. 18. 11—H. ox. vii. 11. 3. a.—Ger. 517. 8—Lob. ic. i. 481. 2—Ger. em. 641. 5—J. B. iii. a. 159—H. ox. vii. 11. 3. b.

Stem much branched, cottony. Leaves spear-shaped, sitting, pressed to the stem, cottony, 3 or 4 lines long. Mr. Woodward. Stems upright or spreading, 2 to 6 inches high. Leaves pressed to. Heads roundish, sometimes from the sides, with from 3 to 5 flowers. Flowers pyramidal, 5-cornered, sitting, or on very short fruit-stalks. Hermaphr. florets 4, in the very centre, fertile. Fem. florets about 15 in the disc, and 4 or 5 in the circumference, lying within the scales of the common calyx, all fertile. Anthers of the hermaphr. florets 4, with 2 bristles at the base. Bloss. 4-cleft. Seeds of all the florets of the centre sprinkled with very short glandular hairs, crowned with down; those of the florets of the circumference very smooth and downless. Down hair-like. Hence it appears that one species at
least of Linnaeus's Filago belongs to the Syngen. Superflua order, according in structure as well as habit with the Gnaphaliums. St.


arven'se. G. Stem supporting a panicle: flowers conical, lateral.

As there is no figure, it is difficult to say whether our small Gnaphalium belongs to this or the preceding species, but it is certain that what I have now before me for the Gn. montanum does not agree with either the character or figures of that species, for the stem bears a panicle of flowers. It is possible we may have both species, as Linnaeus says they grow together.

Filago arvensis. Linn.


Fil. dan. 997-Sheldr. 92-Park. 685. 3-Pet. 18. 10-Fuchs. 222-J. B. iii. a. 158-Lonic. i. 174. 3-Matth. 861-Dod. 60. 2-Lob. obs. 255. 1, and ic. i. 480. 2-Ger. em. 642. 10-H. ox. viii. 11. 10-Pet. 18. 9-Ger. 517. 9.

Cal. 5-cornered. Fem. florets not within the common calyx, but between its scales. Linn. Stems several, the central one thickest; leafy. Leaves strap-spear-shaped, sitting, waved, cottony. Woodward. Branches horizontal, mostly 2 and sometimes 3 from below the head terminating the stem, each terminated by similar heads, from the base of which other branches proceed, subdividing several times so as to appear forked. Florets of 3 kinds. Florets of the centre of the disc, 2 or 3, hermaphrodite tubular; border 4-cleft. Florets of the sides of the disc, numerous, female border 4-cleft, upright; seeds fertile. Florets between the outer scales of the calyx. Seeds oblong. Leers. Stems upright, branched at the top. Branches rising above the stem. Flowers conical, sitting, yellowish brown. Heads solitary, surrounded with scattered leaves. Stems 4. Anthers with 2 bristles at the base similar to those of Inula. St. Calyx outer scales very woolly; the inner skinny, spear-shaped ending in long tapering points. Blossom yellowish. Germeni in all the florets rough, and crowned with down.


* It is given to cattle that have the bloody flux; and hath been tried with success in similar complaints of the human body.—A horse eat it.
CONYZA. Recept. naked: down hair-like: _calyx_ tiled, roundish: _florets_ of the circumference 3-cleft.

C. Leaves spear-shaped, acute: stem herbaceous: flowers squarrosa. in a corymbus: scales of the calyx with their points turned outwards.

Blackw. 102–f. B. ii. 1051. 2–Matth. 870–Clus. ii. 21. 
2–Dad. 51. 2–Lob. obs. 308. 3, and _ib. i. 574. 1–Ger._
dan. 622.

Leaves bluntly-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, 1 on each fruit-stalk. Cal. scales strap-spear-shaped, numerous, the lower green, the upper yellowish, the points green and expanding. Seeds small, blackish, furrowed. _Down sitting_, as long as the calyx. Mr. Woodward. Stem 2 or 3 feet high; nearly cylindrical, reddish, rough with short woolly hairs. Leaves woolly underneath, and hairy above. Cal. scales purplish at the edge, with very short woolly hairs on the outside. Bloss. yellow; _florets without pistils_, in the circumference with petals; _individuals with only pistils_, slightly cloven into 3, have at first sight the appearance of a funnel-shaped floret, but are really more of the nature of a strap-shaped floret. Bloss. dusky purple, or yellowish.


ERIGERON. Recept. naked: down hair-like: _florets_ of the circumference strap-shaped, very narrow.

E. Stem and flowers panicked, rough with hair: leaves canaden'se, spear-shaped, fringed.

_Bocc._ var. 46, at _p. 86–H. ox. vii. 20. 29–Pet. 16. 12–
Zanon. 23. 1.

Stem firm, frequently crooked, much branched towards the top. Leaves, the lower oval, tapering into a leaf-stalk; those
SYNGENESIA. SUPERFLUA. Erigeron.

above spear-shaped, with distant serratures, slightly hairy above, more so underneath; those at the base of, and on the branches, strap-spear-shaped, very entire, sitting. Flowers numerous. Fruit-stalks slender, branched and simple. Cal. outer scales short, the inner longer, strap-shaped, with a green line along the back, whitish and membranaceous at the edge. Florets very small. Seeds minute. Down sitting, simple, as long as the florets. Mr. Woodw. Florets in the centre, yellow; those in the circumference white, with a tinge of red.

Canada Fleabane. Cultivated ground and on rubbish. About London, common. [St. Vincent's Rocks, Bristol.]

A. Aug. Sept.

alpînum. E. Leaves blunt, woolly underneath: stem with 1 or 2 flowers: calyx rather hairy.

E. bot. 464–Fl. dan. 292–Fl. lapp. 9. 3–F. B. ii. 104?, right hand figure.

Stems a finger's length, unbranched, supporting a single flower, scored, besprinkled with hairs. Leaves few, alternate, spear-shaped, green, nearly smooth above, set underneath with expanding hairs. Cal. 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. Linnaeus seems to consider the E. alpinum and E. uniflorum, as strictly forming but one species, observing that the former sometimes bears a panicle of white flowers, and the calyces smooth. On this account we have given his additional remarks on both species. Bloss. purple and yellow.

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.

acre. E. Fruit-stalks alternate, with 1, 2, or 3 flowers.


Stems 6 to 18 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. Cal. scales unequal, awl-shaped, hairy. Florets of the circumference purple, a little longer than those of the centre; florets of the centre yellow. Down sitting, simple, yellow, as
SYNGENESIA. SUPERFLUA. Tussilago.

long as the florets. Mr. Woodw. Stem undivided, near 2 feet high, hairy. Leaves spear-shaped, alternate, sitting, hairy. Fruit-stalks from 1 to 3 inches, supporting from 1 to 3 flowers.


B. July, Sept.

TUSSILA'GO. Recept. naked: down hair-like: calyx scales equal, as tall as the surface of the florets, somewhat membranaceous.

T. Stalk with 1 flower; tiled: leaves somewhat heart-shaped, angular, finely toothed.


Root creeping. 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, 3 to 5 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 expand becoming upright again. Cal. scales strap-shaped, reddish brown. Bloss. yellow. Florets of the circumference very narrow, in 2 or 3 rows, as long as the calyx, expanding. Florets of the centre tubular, swelling upwards; clefts 5, 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 sitting, longer than the calyx. Mr. Woodw.


* It is the first plant that vegetates in marl or limestone rubble. The downy substance on the under surface of the leaves, wrapped in a rag, dipped in a solution of Saltpetre, and dried in the sun, makes the best tender. The leaves are the basis of the British Herb Tobacco. They are somewhat austere, bitterish, and mucilaginous to the taste. They were formerly much used in coughs and consumptive complaints; and perhaps not without reason, for Dr. Cullen found them to do considerable service in scrophulous cases; he gave a decoction of the dried leaves, and found
SYNGENESIA. SUPERFLUA. Tussilago.

Petasis' tes. T. Panicle egg-shaped: female florets few. LINN.—entirely wanting in our plants. WOODWARD.


Leaves the largest of any of our native plants. The flowers appear before the leaves, as they do also in T. Farfara and most other spring plants. LINN. Fem. florets amongst the hermaphrodite, 2 or 3; scarcely to be said to have petals, strap-shaped, white. LINN. The Son. Seeds altogether barren. Style thread-shaped. Summit knobbed, spear-oblong, the point cloven. Seeds barren. The thick-headed club-like summit I believe may be depended upon as a certain mark of barrenness in the florets of the compound flowers of the Syngenesia class, and evinces the propriety of removing this genus to the order Polygama necessaria. How they are propagated, unless by lateral shoots, I do not know, but this will not account for its general diffusion over the island, unless we suppose that, in this country, as well as in Switzerland and Sweden, they sometimes produce a few female florets interspersed among the rest. St. Stalk 8 to 12 inches high, with numerous spear-shaped scales embracing the stalk. Florets all hermaphrodite, tubular; at the base narrow and greenish white; upwards swelling, reddish without, and white within, deeply divided into 5 spear-shaped expanding segments. Anthers as long as the blossom, purplish. Pollen yellow. Pistil white. Summit club-shaped, downy, shorter than the anthers before they have discharged their pollen, longer afterwards, Down sitting. Mr. WOODWARD.

Butterbur. Coltsfoot. Pestilent-wort. Moist meadows and pastures, and banks of rivers. [In a meadow on the west side of Wellington, Shropshire; and in Mottershall Brook near Stone, Staffordshire. On the sides of the Water of Leith, near St. Bernard's Well, Edinburgh.] P. March, April.*

found it succeed where sea-water failed. Cullen's Nat. Med. p. 458.—And FULLER relates a case of a girl, with twelve scrofulous 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. Goats 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 roots abound with a resinous matter. They have a strong smell and a bitterish acrid taste. Horses, cows, goats, and sheep eat it. Its large leaves afford shelter from showers to poultry and other small animals. LINN.
T. Panicle oblong: female flowers numerous, without hy'brida, blossoms.

E. bot. 430—Dill. elib. 230. 297.

Down sitting. Lees. Leaves exactly like those of T. Petasites. Stalk 1 to 2 feet high, with numerous scales like those of T. Petasites. Fruit-stalks branched, woolly, with several flowers. Flowers smaller than those of T. Petasites. Cal. bellying, slightly cottony; scales nearly equal, pale, green, purplish at the points and edges. Fem. florets numerous, white, slightly and irregularly cloven into 5 or 4 segments, closely embracing the style. Hermaphrodite florets usually 1, sometimes 2 in the centre, but frequently wanting; purplish without, white within; the tube narrow, swelling upwards, and divided into 5 equal, bluntly-shaped, expanding segments. Anthers purple, shorter than the blossom. Style longer. Summit slightly cloven, in the hermaphrodite club-shaped, in the females slender. Described from a growing plant, but not wild. Mr. Woodward. Panicle 6 inches long, tapering at the end. Seeds in what I have examined, but they have been only dried specimens, generally abortive, never having found more than 1 fertile seed. St. (T. hybrida, Retz. obs. i. 99, must, from the description of its leaves, be a different plant. Mr. Woodward.)

Long-stalked Coltsfoot. [Dishley Mill. Moist meadows Near Loughborough, Leicestershire. Dr. Arnold. Near Banbury, Oxfordshire. Dill. elib. p. 310. Mr. Woodward. Very common about Manchester, the banks of the Irwell are crowded with it. It will shoot up from 4 inches to 4 feet during the time of flowering. Mr. Caley.]

P. April.

SENÉCIO. Recept. naked: down hair-like, long: calyx conical, double; the scales as if dead at the ends.

(1) Florets all tubular. [S. viscosus.]

S. Leaves winged-indentéd, embracing the stem: flowers vulgâris scattered.


Cal. scales at the base spear-shaped, purplish black for about one third of their length. Florets all hermaphrodite. Blossoms yellow, terminating.

Vol. III. 3 A
Strap-shaped florets in the circumference rolled back.

viscous. S. Leaves wing-cleft, clammy: scales of the calyx loose, as long as the cup.

E. bot. 32—Dill. elib. 258. 356—f. B. ii. 1042.

In appearance and size resembling the S. vulgaris, but clammy all over from hairs which secrete a viscid liquor. Leaves in mountainous situations with a leprous scurf underneath. Fruit-stalks lateral, with 2 and 3 flowers. Cal. the scales at the base as long as the tube, as it were dead at the ends. Linna. Rays sometimes wanting. Hall. Stem taller and stronger; leaves more divided; flowers larger; fruit-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. Mr. Wood.

Bloss. yellow. The hairs on the cup and on every other part of the plant at once distinguish this from the S. vulgaris, even though the strap-shaped florets of the circumference should be wanting.

Clammy Groundsel. Sandy ground. Fen banks in the Isle of Ely. Waste ground near towns and villages, as the Leven on the coast of Fife, near the salt works, and at Dysart near the pier, and at Charles Town, the lime-works of Lord Elgin. [King’s Park, Edinburgh, Mr. Yalden, under the Salisbury Crags. St.] A. Aug—Dec.

Sylvaticus. S. Leaves wing-cleft, finely toothed: stem branching into a corymbus; upright.


Stem taller, and more firm, though slenderer than that of S. viscosus. Leaves narrower, and more finely divided, frequently clammy in a hot sunny situation, but not so much so as those of S. viscosus. Fruit-stalks much more branched. Flowers more numerous, much smaller. Seeds shorter and broader. Down shorter, Woodward, strong-scented. Stem 2 to 3 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. Cal. conical, somewhat woolly; scales at

* A strong infusion of the plant vomits. 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. Linna.—A horse eat it. Sr.
SYNGENESIA. SUPERFLUA. Senecio.

the base awl-shaped, 2 to 3, dead at the ends, thrice as small as those of the cup. *Bloss,* full yellow. *St.* *Leaves,* edges rolled back. *Cal.* scales at the base few, short, slender, scarce sensibly dead at the ends. *Florets of the circumference* rolled back, close up to the cup.

*Senecio viscosus* ‡ Huds. *Busby Groundsel.* Banks, and mounds of earth in dry upland soil, dry heaths, and sandy ditch banks. [Ruddy Hill, near Mangots Field, Gloucest. Mr. SWAYNE. Lanes about Birmingham.]

A. July.

(3) *Strap-shaped florets in the circumference expanding:* leaves wing-cleft.

S. Leaves winged; segments strap-shaped; lower leaves *tenuifolius,* on long leaf-stalks; flowers forming a *corymbus:* stem upright. *Jacq.*

*Jacq. austr.* 278-E. *bot.* 574.

*Stem* unbranched, 1 to 3 feet high, scored with ridges, firm, thick as a quill, entirely covered by the leaves; reddish, but cloathed with cobweb-like cotton. *Calyx* green, not dead at the ends. *Leaves* either smooth on both sides, or cloathed underneath with a cobweb-like cotton. *Lower leaves on long leaf-stalks; upper leaves nearly sitting, and upright.* *Segments* strap-shaped, pointed, mid-rib underneath protuberating; long, distant, very entire, rarely toothed; edges rolled back. *Jacquin.*

The figure of Jacquin is a very exact representation of it as it mostly appears in the north of England. It does occur with us in the state represented in the *Fl. Lond.* but it is but seldom, and seems to be a variety occasioned by a damper and more shady situation. Mr. Wood.

Var. 2. Plant but little cottony; lower leaves sitting; segments broader.

*Curts* 294—*Pet.* 17. 3—*Walc.*

*Stems* 3 to 4 feet high, firm, cottony. *Leaves* hoary, but sometimes dark green above, and not hoary; segments strap-shaped, parallel, sharply toothed, terminating in a point; the segments nearly equal in breadth to the mid-rib. *Flowering-branches* forming a kind of *corymbus.* *Fruit-stalks* with several awl-shaped flower-scales. *Florets of the circumference* strap-shaped, pale yellow. *Woodward.* *Stem* angular, furrowed. *Leaves* sitting, hairy, particularly underneath; the lower rough to the touch; the upper less hairy; segments strap-shaped, and toothed at the ends. *Calyx,* scales not dead at the ends, but yellow and woolly, the outer strap-shaped, fleshy, the inner the same, but edged with a broad membranaceous 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 ap-
pearanee 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 as distinct.

_Hoary Groundsel._ _Senecio erucaphilus._ Huds. Curt. but not of _Linn._ as I understand from M. Afzelius, though he observes that all the synonyms, except _H. scan._ attributed to that, really belong to our plant. Woods and hedges. [Bath Hills, near Bungay, Suffolk. Mr. Woodward. Baydales, Darlington. Mr. Robson. Both varieties found near Blymhill. Shropsh. by the Rev. S. Dickenson.]

_P. Aug._

_Jacobæa._ S. Leaves lyre-shaped, almost winged: segments finely jagged: stem upright.

_Kniph._ 6–Fl. _dan._ 944–_Matth._ 1133–_Clus._ ii. 22. 1–_Dod._ 642–_Lob._ obs. 113, 2, and _Linn._ 227. 1–_Ger._ em. 280. 1

–_Park._ 608. 1–_Pett._ 17. 1–_Fuchs._ 742–_J._ _B._ ii. 1057. 1–

_Tragn._ 287–_Lonic._ i. 96. 3–_H._ _ox._ vii. 18. 1–_Ger._ 218. 1

_Florets_ in the centre 60, in the circumference 13. _Relham._

_Step_ cylindrical, scored, generally smooth, often tinged with purple. _Leaves_ doubly wing-cleft; wings variously lobed, and toothed, and sometimes again wing-cleft. _Blossoms_ deep yellow. Mr. Woodward. _Step_ often thinly sprinkled with a fine cotton. _Leaves_ wing-cleft, almost winged; segments wing-cleft; lesser segments broader towards the end; with thin spread cotton here and there. _Cal._ scales 13, sometimes 15. _Florets_ of the circumference 13. _Filaments_ towards the end thickening into flat egg-shaped glands, disappearing as soon, or soon after the pollen is shed, rendering it probable that they are intended for the nourishment of the pollen. _St._

_Ragwort._ _Groundsel._ _Seggram._ _St._ _James's Wort._ Meadows, pastures, and road sides.

_P. July._

_Var. 2._ Flowers without rays. Is so exceedingly like the preceding, that it cannot be considered as a different species. It is very common on the sand hills of Holland. _Linn._

In great plenty in gravel on the sea shore, about 3 or 4 miles from Drogheda, scarcely one in a thousand being radiated. _Sherard_ in _R. Syn._ Perhaps this variety is only the effect of the sea air, as it is well known how destructive that is to the more tender parts of vegetables.

_Var. 3._ Flowers without rays: whole plant hoary with a dense cottony substance.

_Marazion Marsh, Cornwall._

_June.*_

* If this plant is 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
S. Leaves toothed, those at the root egg-shaped, those of the stem wing-cleft; the outer segment largest.

Huds.

J. B. ii. 1057. 3-Pet. 17. 2-Fl. dan. 784-Clus. ii. 23. 1-Ger. em. 280. 3.

Stem cottony, purplish. Root-leaves on long leaf-stalks; stem-leaves sitting; the uppermost wing-cleft; wings toothed. Corymbus of few flowers. Relhan. Leaves wing-cleft, with some small wings at the base, and a very large one egg-shaped, scoloped, terminating, smooth. Fruit-stalks irregularly branching, with numerous awl-shaped scales. Woodward. Stem quite smooth. Leaves quite smooth; root-leaves with the terminating leaflet oblong. Cal. scales 15 to 21, dead as it were and brown at the points. Florets of the circumference about 21. Filaments thickening towards the end into oblong glands. Sr.

This plant is 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 1 or 2 pair of wings on the leaf-stalk, and others again in which the upper and lower leaves have no wing-cleft segments; hence I am strongly induced to believe that this does not specifically differ from the S. Jacobaea, the latter growing in dry uplands, the former in moist meadows. Mr. 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 Jacobae.

Water Groundsel. Ditches and watery places, and moist meadows and pastures.

P. July, Aug.

(4) Strap-shaped florets in the circumference, expanding:

leaves undivided.

S. Leaves sword-shaped, acutely serrated, a little woolly paludosus underneath: stem quite straight.

16. 8-Thal. 3-J. B. ii. 1063. 3-Park. 1232-H. ex. vii.
19. 22.

Leaves sometimes cottony on both sides. Linn. Stem 2 to 5 feet high, simple. Leaves very long, strap or spear-shaped, losing their wooliness by age. Umbel flat topped. Flowers 2 inches broad. Cal. conglutinated. Hall. Blossom yellow.


cloth is boiled in alum-water, and then in a decoction of the flowers, it takes a beautiful deep yellow. Horses and sheep refuse it. Cows are not fond of it. Linn. Horses and cows eat it when young.
SYNGENESIA. SUPERFLUA. Aster.

Flowers in a corymbus: leaves spear-shaped, serrated, almost smooth.

Distinguishable by its appearance, broad leaves, size, and root which creeps very much. LINN. Leaves rather toothed than serrated. Floral-leaves very slender; as long or longer than the partial fruit-stalk. Strap-shaped florets about 7 or 8. Flowers yellow.

Broad-leaved Groundsel. Moist meadows and pastures, and ditch banks. Between Wells and Glastonbury, and near Shipston-mallet, and elsewhere in Somersetshire. Near Halifax, in the fields about Salkeld; R. SYN. and about Clapham and Ingleton, Yorkshire. HUDS. [In the hedges near Longtown, and on the side of the river below Carlisle. MR. JACKSON.]

P. July, Aug.*

ASTER. Recept. naked: down hair-like: radiant florets more than 10: calyx tiled; the lowermost scales open.

(3) Herbaceous. Leaves entire. Fruit-stalks naked.

Tripolium. A. Leaves strap-spear-shaped, fleshy, smooth, 3-fibred; calyx scales blunt, somewhat membranaceous.

E. bot. 87—Fl. dan. 615—Gmel. ii. 80. 2—f. B. ii. 1064. 2—Ger. 333—Dod. 379—Lob. obs. 157. 4, and ic. i. 296. 1—Ger. em. 413. 1—Park. 673—Pet. 17. 10—Lob. obs. 158. 1, and ic. i. 296. 2—Ger. em. 413. 2—Pet. 17. 11—H. em. vii. 22. 36.

Stems 1 to 3 feet high. Leaves fleshy. Flowering-branched from the bosom of the upper leaves. Fruit-stalks branched. Cal. scales in 2 or 3 unequal rows, short, egg-shaped, scored, green and brown, with reddish brown anthers. Flores of the circumference spear or strap-shaped, pointed, frequently cloven at the point, bright blue. Woodward. Flowers with somewhat of a sweetish scent. Flores of the circumference 21 to 23, of a bluish lilac. Flores of the centre fewer, about 18. Seeds of the female florets, but half the size of the others. ST.

Sea Starwort. Salt marshes on the sea coast, in a muddy soil, and in salt marshes in the inland parts of the kingdom, as in a salt marsh near Shirley Wich, Staffordshire; in a meadow be-

* The Péelana, fuliginea, Jacobea, and prunha, live upon the several species.
SYNGENESIA. SUPERFLUA. Solidago.

tween the Trent and the Canal, St. West side of Walney island.
Mr. Atkinson. Shore of the Avon, a little above the Hor-
well, Bristol, between the gravel walk and the river.]
P. Aug. Sept.*

Var. 2. All the florets tubular.

Pet. 17. 12.

About Bristol, frequent. Ray.

SOLIDAGO. Recept. naked: down hair-like:
florets of the circumference about 5: calyx
scales tiled, laid close.

S. Stem serpentine, branched: leaves mostly sitting: Virga-aurea,
flowers in crowded panicles.

Var. 1. Stem branched: leaves strongly serrated.

E. bot. 301—Ludw. 150—Sheilds. 63—Blackw. 169—Ger.
348. 2—Tabern. 1260—Pet. 16. 10—Dod. 142. 2—Lob. obs.
159. 2, and ic. i. 299. 1—Ger. em. 430. 2—H. ox. vii. 23.
row 1. 4.

Var. 2. Stem branched: leaves indistinctly serrated.

Fl. dan. 663—Knipf. 7—Matth. 1006—Dod. 142. 1—Lob. obs.
159. 1, and ic. i. 298. 2—Ger. em. 430. 1—Ger. 348. 1—

Root-leaves serrated. Stem-leaves sometimes serrated, but
mostly entire. Linn. From 1 to 4 feet high. Lower leaves
oval-spear-shaped, tapering into a leaf-stalk, distantly ser-
rated, but towards the point almost entire, rough, slightly
hairy, dark green above, sea green underneath, with a net-
work of numerous veins; the upper alternate, nearly sitting,
spear-shaped, entire, or nearly so. Flowering branches axil-
ary, the lower shorter, the upper longer than the leaves, with 6
to 8 flowers on branched fruit-stalks. Flower-scales 1 or 2 on
each fruit-stalk. Calyx, scales unequal, spear-shaped, with a
green line along the back, and whitish, shining, membranaceous
edges. Seeds brown, convex on one 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, seg-
ments bent back. Florets of the circumference 6 to 8, bent back,

* 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. Sr.
with 4 or 5 faint longitudinal scores, and 3 or 4 teeth at the end. 
Bloss. yellow.


Var. 3. Stem serpentine, unbranched: leaves spear-shaped: 
flowers in a spike-like terminating bunch.

Mountains near Kendal. Mr. Gough.

In all these varieties the degree of serrature on the leaves, as 
well as the length of the leaf-stalks, is very variable; but the 
stem in all is serpentine, ribbed, and cottony.

*Cambrica. S. Stem straight, unbranched: leaves, spear-shaped, the 
upper nearly sitting, the lower on leaf-stalks as long 
as themselves: flowers in a panicle.*

*Dill. elthb. 306. 398—Pet. 16. 11.*

From 3 to 7 inches high. Flowers sometimes forming a 
corymbus, sometimes a compact spike-like bunch, but I have not 
seen the secondary fruit-stalks, branched, as in the *S. Virga-aurea.* 
Cultivated it attains the height of 18 inches or more, but still 
preserves its straight unbranched stem and its great length of leaf-
stalks. Specimens from Professor Thunberg, called *Virga-aurea,* 
agree with our *Cambrica,* which confirms an observation Mr. 
Afzelius made to me, that Linnaeus in Hort. Cliffort., had erro-
neously placed this as a variety of the common *S. virga-aurea,* 
whereas it is the plant of the Flora Suecica, and really distinct 
from that of the Hort. Cliffort., which is our common species.

on the top of Glyder Mountain, in Wales. Lluyd. Mountains about Llanberys, and on those of Yorkshire and Westmoreland. 
Huds. Llyn y Cwyn, near Snowdon. Pen. Wales. [On the 
rocky precipice on the summit of Ingleborough, to the North-
west. Mr. Woodward. Near Kendal. Mr. Gough.]

*Lapponicus.* S. Stem straight, unbranched: root-leaves egg-shaped, on 
bordered leaf-stalks: stem-leaves spear-shaped, sitting: flowers in a spike-like terminating bunch and 
in the bosom of the upper leaves.

About 6 inches high. *Spike* containing about 10 flowers. 
Solidago, 306, Flor. Lapponica. I am indebted to Mr. Afzelius 
for the information that this Lapland plant had been found in 
Scotland, and I have now a specimen before me which I believe 
came from the mountains in Westmoreland.

*Cineraria.* Receptacle naked: *down* hair-like: 
calyx single, many-leaved, equal.

E. bot. 151—Fl. dan. 573—Gmel. ii. 72—Dad. 52. 2—Lob. i.e. i. 347—Ger. em. 483. 5—H. ox. vii. 19. 24—Pet. 16. 6—Park. 126. 3.

Leaves thick, cottony, and almost clammy, covering the stem quite up to the flowers; the lower cut and almost wing-cleft. Linn. Stem 1 to 3 feet high, thick, hollow, with a thick clammy long wool. Leaves varying extremely in form and manner of growth, clothed with the same wool as the stem, without order, sitting, or half embracing the stem, waved, sometimes barely toothed, those immediately beneath the corymbus entire. Fruit-stalks branching. Floral-leaves awl-shaped, one on each fruit-stalk. Calyx, scales nearly equal, spear-shaped, woolly, membranaceous at the-edge. Bloss. pale yellow. Florets of the circumference oval, veined, with 2 or 3 teeth at the end, or entire; 4 lines long, with a short narrow tube. Florets of the centre somewhat shorter. Anthers somewhat longer than the blossom. Style in the hermaphrodite longer than the stamens; in the female as long as the tube. Seeds small. Down as long as the tube of the blossom; rays few. Woodward.


Var. 2. Leaves not jagged. R. Syn. 174. n. 3. Woodw.

Lob. i.e. 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 18 inches high. Leaves strap-spear-shaped, toothed, the lower about 4 inches long, the upper 2 ½ to 1 ½, and not more than 1-4th wide, not so numerous as in var. 1. Flowers smaller. Fructification perfectly similar.

Near Ramsey, Huntingdonshire. Mr. Woodward.

C. Flowers in a terminating umbel, with an involucrum at integrifo'lia, its base; leaves inversely egg-shaped, woolly, indistinctly toothed.


Root fibrous. Root-leaves on leaf-stalks, spatula-shaped, obscurely toothed, cottony underneath; stem-leaves sitting, spear-shaped, cottony. Stem 3 to 6 inches high, simple, cottony, angular. Flowers 1 to 4; yellow. Florets of the circumference...
The root is esteemed a good pectoral. Dr. Hill says, he knows, 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 that have the scab. Horses and goats eat it; cows, sheep, and swine refuse it.
SYNGENESIA. SUPERFLUA. Inula.

I. Leaves embracing the stem, heart-oblong: stem woolly, dysenter'ica. forming a kind of panicle: scales of the calyx bristle-shaped.

Curt. 161-Kniph. 12-Fl. dana. 410-Walc.-Matth. 872-
Clus. ii. 21. 1-Dod. 52. 1-Lob. obs. 187. 1, and ic. i.
345. 2-Ger. em. 482. 3-Pet. 16. 2-H. ox. vii. 19. 7-
Fuchs. 436-T. B. ii. 1050. 1.


Middle Elecampane. Flea-bane. Moist meadows and pastures, watery places, sides of brooks and rivulets. P. Aug.—Oct.*


Dicks. b.s.-Curt. 156-Sheildr.-Fl. dana. 613-Blackw. 103-
Ger. 390. 2-Trag. 166-Lonic. i. 131. 3-Dod. 52. 3-
Lob. obs. 187. 2, and ic. i. 345. 1-Ger. em. 482. 4-H.
ox. vii. 20. 30-Pet. 16. 3.

Stem cylindrical, scored, smooth, crooked, often tinged with purple, much branched. Leaves, the lower sitting; 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. Bloss. yellow. Florets of the circumference with 3 teeth at the end; often wanting. Down shorter than the florets; rays few. Wood. Stem upright, not prostate. Flowers broad, short, cylindrical. Bristles on the anthers very minute, and much shorter than the filaments. Down shorter than the seed.

Small-flowered Elecampane. Small Fleabane. I. uliginosa. Fr. ox. I. Pulicaria. Huds. and other English authors, but not of Linnæus. Mr. Afzelius informs me that the Swedish plant is very trailing, not at all hairy; but our plant always grows

* It has a peculiar scent, compared by some to that of soap. The Russian soldiers, in the Persian expedition under General Keitel, were much troubled with the bloody flux, which was cured 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.
upright, and the upper part of the stem, the fruit-stalks, and the leaves, are woolly. The calyx in our plant is cylindrical, in the Swedish plant globular. It is probable that the reference to Dod. 52, given in the Fl. Suecica, misled the other European botanists, for that is undoubtedly our plant. Linnaeus marks a var. of his I. Pulicaria as a larger and more rigid plant than $e$, referring to Pluk. 384. 2; but this plant of Plukenet’s is much smaller than ours, though larger than the plant of Linnaeus.

Road sides, and where water has stagnated during the winter. [About Wishaw near Coleshill.]

erithmoides. I. Leaves strap-shaped, fleshy, generally 3-pointed.

E. bot. 68- J. B. ii. a. 106. 3-Dod. 706. 1-Lob. obs. 215. 1; and ic. i. 395. 2-Ger. em. 533. 3-Park. 1287-H. ox. vii. 21. 16-Pet. 17. 9-Matth. 491-Ger. 427. 3.


DORONICUM. Recept. naked: down hair-like: calyx scales in 2 rows; equal, longer than the blossoms: seeds of the circumference downless and naked.

Pardalian’-D. Leaves heart-shaped, blunt, finely toothed: root-leaves on leaf-stalks; stem-leaves embracing the stem.


Great Leopard’s-bane. Wolf’s-bane. About Hoddam Castle, Annandale, and several other places in the Lowlands. Lightly. Near the world’s end, Harrogate. Mr. Manby.—[Near Duplin House, St,—Banks of the Severn below Bridgnorth.]

P. May, June.
SYNGENESIA. SUPERFLUA. Bellis.

BEL'TIS. Recept. naked, conical: down none: calyx hemispherical, with equal scales: seed inversely egg-shaped.

B. Stalk naked.


Stalk with 1 flower. Linn. Stalk hairy, solid at the bottom, hollow at the end, sometimes with a few leaves. Relhan. Florets of the circumference notched at the end. Mr. Woodw. and tipt with a fine carmine. Leaves oblong, blunt, notched, spread upon the ground. Florets in the centre yellow, those in the circumference white above, pink beneath. Common Daisy. Meadows and pastures. P. March—Sept.*

Var. 2. Flower herbaceous, globular. In Mr. Selden's copse near his house in Worcestersh. Ray.

CHRYSANTHEMUM. Recept. naked: down none, but a kind of border: calyx hemispherical, tiled; scales membranaceous at the edge.

(1) Florets of the circumference white.

C. Leaves embracing the stem, oblong; serrated upwards, Leucan'the-mum.


Seeds black, with white scores, and crowned with a yellow cylindrical head. Linn. Root-leaves on leaf-stalks; stem-leaves sitting. Flower large. Florets of the centre yellow; of the circumference spear-shaped, with mostly 3 teeth. Relhan. Stem upright, scored, simple, or with few branches. Leaves, the up-

* The leaves are slightly acrid. The roots have a penetrating pungency. No attention is paid to it, except what it claims from the beauty of its flowers. The flowers close at night. Horses, sheep, and cows refuse it. Linn.
per sometimes embracing the stem, oblong-wedge-shaped or spear-shaped, serrated, sometimes toothed, and even wing-cleft at the base. _Flower_ 1, terminating the stem, and principal branch. _Cal._ scales spear-shaped, unequal. _Florets of the circumference_ sometimes entire. Mr. Woodw. _Cal._ outer scales green, edged with brown, the inner with the addition of a skinny membranaceous border.


*inod'orum._ C. Leaves winged, many-cleft: stem branched, spreading.

_E. bot._ 676—Fl. dan. 696—Pet. 19. 12—Fuchs. 144—J. B. iii. a. 120. 2.

Its calyx being skinny at the edge occasions it to be associated with the _Chrysanthema_. 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; membranaceous, and somewhat embracing the stem at the base, narrowing upwards. _Florets_ large, terminating. _Florets of the circumference_ nearly strap-shaped, 8 to 9 lines long; of the centre greenish at the base, yellow above; segments spear-shaped, expanding. _Receptacle_ conical. _Seeds_ brown, lopped at each end, with 4 whitish prominent angles. _Woodward_. _Seeds_ with a brownish red circular gland in each corner at the top, resembling the eyes of some insects; the _inner_ sides concave; the angles sharp, prominent, and whitish, crowned at the top with a very shallow, whitish membranaceous border. _St._ _Calyx_ the middle row of scales the largest, all more or less membranaceous and skinny. _Florets of the circumference_ bent back, 20 or more; those in the centre very numerous, yellow. _Chamomile Goldins._ _Matricaria inodora._ Fl. succ. and Huds. which see. Cornfields and road sides. A. July—Sept.

_Var._ 2. _maritimum._ Outer scales of the calyx with finger-like divisions; _inner_ ones fringed at the edge.

Only about 4 inches high, but in other respects agreeing with the preceding.

On the Beach at Weymouth. May, 1794.

* The young leaves may be eaten in salads. Horses, sheep, and goats eat it. Cows and swine refuse it.
C. Leaves embracing the stem, jagged upwards, toothed, setum, serrated towards the base.

Dicks. h. i.-E. bot. 540–Fl. dan. 995–Clus. i. 334. 2–Dod. 263. 1–Lob. obs. 298. 2, and ic. i. 552. 1–Ger. em. 743, 1–Park. 1370. 1–H. ox. vi. 4. row 2. 1–Pet. 19. 6–Trag. 144. 2–Lonic. i. 89. 1.

Stem upright, scored, smooth, branched. Leaves sea-green, varying in figure, as wedge-strap or spear-shaped, distantly serrated towards the base, usually deeply toothed or jagged, with frequently 3 clefts at the end. Flowers very large, terminating. Cal. scales oval, blunt, sea-green, with membranaceous edges. Florets of the circumference oval, about half an inch long. Seeds slightly serrated, whitish. Mr. Woodward. Whole plant smooth. Leaves, segments terminated by a little projecting point. Florets of the circumference egg-shaped. Summits in the female flowers frequently 3.


MATRICA'RIA. Recept. naked: down none: calyx hemispherical, tiled; scales rather pointed, not skinny at the edge.

M. Leaves compound, flat; leaflets egg-shaped, cut; fruit parthenium, stalks branched.


Stem 3 feet high, firm, scored, slightly hairy. Leaves alternate, slightly hairy; leaflets, 2 or 3 pair, oval, jagged, a large one terminating, wedge-shaped, with 3 lobes, the middle one of which

* 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 the farmers to root it up from their cornfields. It may be destroyed by dunging 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. Mr. Holleskar.—It is used by the Germans for dyeing yellow.
is 3-cleft, the side ones scoloped. Flowers solitary. Fruit-stalks thickest just beneath the flower, hairy, mostly branched. Cal. scales oval. Florets of the circumference wedge-shaped; white; those of the centre yellow. Seeds egg-shaped, lopped at the base, deeply furrowed, whitish. Woodward. Stems angular, scored. Leaves wing-cleft; leaflets oblong or egg-shaped, deeply divided into about 5 segments, and these again cut and jagged, when magnified appear as if sprinkled with minute spangles. Cal. inner scales skinny and ragged at the edges. Florets of the circumference egg-shaped; those of the centre crooked, sprinkled with minute shining particles; only yellow at the top. Flowers sometimes double.

*Common Feverfew.* Waste places, hedges, and walls. P. June, July.

**maritima.** M. Receptacles hemispherical; leaves doubly winged, somewhat fleshy; convex above, keeled underneath.

**Ray 7. 1. at p. 188.**

Root woody, running deep, apparently perennial. Stems re-clining, 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 several on a stem. Dill. in R. Syn. 180. Florets in the centre yellow; those of the circumference white.

*Matricaria inodora* Huds.—*Sea Feverfew.* Sea coast, in sandy soil. On the coast of Sussex, and very plentifully at Cockbush, 7 miles from Chichester. Dill.—Island of Bute, the Western side of Cantire, between Machrianish and Barr. Lichtf. —[Rocks at Down, near Bambff, in Scotland. Dr. Smith.—Isle of Walney. Mr. Atkinson.] P. July.

**Chamomilla.** M. Receptacles conical; rays expanding: calyx scales equal at the edge.


Stem scored, branched. Leaves doubly winged, the upper often simply winged; wings distant; little wings with 2 or 3 clefts; leaflets strap-shaped, of an equal breadth with the mid-rib. Flowers solitary, terminating. Cal. scales bluntly spear-shaped, hairy, membraneous at the edge, with a green line along the back. Florets of the circumference white, nearly strap-shaped, at

* The whole plant has a strong smell, and a bitter taste, and yields an essential oil by distillation. A horse refused it. Sr.

Chamomile Feverfew.

Var. 2. suaveolens. Receptacle conical, rays bent downwards: calyx scales equal at the edge.

Ger. 15. 1.


ANTHEMIS. Recept. chaffy: down none: calyx hemispherical, scales nearly equal: florets of the circumference more than 5.

(1) Rays white.

A. Receptacles conical: chaff bristle-like: seeds crowned arven'sis, with a border.

E. bot. 602-Fl. dan. 1178-Knib. 11-Tabern. 70. 1-Pet, 19. 8.

Plant hoary. Stems spreading. Chaff spear-shaped. Root biennial. It has the habit and size of the Anth. Cotula, but the stems spread more, the fruit-stalks are longer, less scored, the grooves being only 4 or 5, but in the A. Cotula about 8. The leaves are more of a grey green, and scentless. The inner scales of the calyx are broad and membranaceous at the end, not so in the Cotula. The chaff in this is spear-shaped, in the other slender as a bristle: the apex of the seed is crowned with a 4-sided border as in the Matricaria Chamomilla, but in the Anth. Cotula the seed has no such crown. Linn. Stem branched immediately above the root, scored, slightly hairy, pale green, with sometimes a tinge of red. Branches generally naked upwards. Leaves sitting, winged; mid-rib broad; wings either winged, or only jagged, sea-green. Flowers terminating. Fruit-stalks hairy, and somewhat thicker beneath the calyx. Cal. scales oval, with an awl-shaped green line along the back, somewhat hairy; edges membranaceous. Florets of the circumference white, somewhat elliptical, with 2 or 3 teeth, 4 or 5 lines long; those of the centre with a greenish tube, swelling upwards; border yellow, bent back. Chaff spear-shaped, very much pointed, somewhat keeled,

* Its properties resemble those of Anthemis nobilis. 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.

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as long as the florets. Seeds quadrangular, smooth, slightly furrowed, narrowest at the base, crowned with a blunt margin. Mr. Woodw. Whole plant slightly woolly. Stems numerous, ascending, cylindrical, slightly scored, branched towards the top. Leaves winged; leaflets wing-cleft, and these again cut into 2 or 3 narrow segments, terminated by semi-transparent, conical, sharp points.

*Cotula alba.* Cotula non fatid.a. Oculis bowisi. Euphotalmum


Var. 2. All the florets narrow.

*Cotula non fatid.a, flore pleno.* R. Syn. 186. St. James's field on the upper side near the highway, and at Great Strickland, Westmoreland. R. Syn.

*A. Receptacles conical: chaff bristle-shaped: seeds naked.

Curt. 329.—Fl. dan. 1179—Dod. 258—Lab. obs. 447. 1, and

* C. 1773. 2—Ger. em. 757. 1—Park. 87. 9—H. ox. vi. 12.

8—Fuchs. 583—J. B. iii. a. 121. 1—Blackw. 67—Gar.


Fruit-stalks with about 8 scores. Cal. scales by no means widening towards the point, and scarcely membranaceous. Chaff very minute, like a fine bristle. Seeds not crowned with the 4-cornered edge, but terminated by a simple pore. LINN. Plant palish green. Stem slightly downy. Leaflets often cloven towards the end. Petals hanging down, and continuing in that state till morning. CURT. Stem upright, branched upwards. Branches alternate. Leaves doubly or trebly winged, green. Flowers solitary, terminating. Cal. scales spear-shaped. Chaff shorter than the florets. Seeds with many warty angles. Mr. Woodward. Leaves smooth. Outer florets white, 3-toothed; central florets yellow.

*Stinking Chamomile, or Mayweed, or Mathen.* Cornfields, road sides, and borders of dunghills. A. May—Aug.*

Var. 2. double-flowered. All the florets narrow.
Cotula fistida flore plena. R. Syn. Sr. Fields between Hitchin and the Bald Oak, in the Isle of Thanet, and between Gillingham and Chatham. R. Syn.

A. Leaves winged compound, strap-shaped, acute, some- nob'illis, what woolly.


Stems trailing, hairy. Leaves doubly winged; wings rather distant; little wings sometimes with 2 or 3 clefts, pointed, hairy, greyish. Flowers solitary. Calyx hairy, with broad, shining, membranaceous edges. Florets of the circumference somewhat elliptical, either entire, or with 2 or 3 teeth; those of the centre yellow. Mr. Woodw. Summits in the female florets sometimes 3. Chaff oblong-egg-shaped, like the scales of the calyx, but more skinny and more hairy.

Common Chamomile. Sweet-scented Chamomile. Roman Chamomile. Boggy pastures. In Cornwall so plentifully that you may scent it all along as you ride. Ray. Sunny meadows and pastures. Huds. [On the green at Pengwary, Redruth, and other old common pastures in the western part of Cornwall, where it is much finer scented than in gardens. Mr. Watt. Park at Oatlands, Surry. Mr. Woodward. On the road from Hedgeford to Stafford, near the direction post, plentiful. Mr. Pitt.]


Var. 2. nudum. Florets of the circumference wanting.

Dodd. 260. 2—Lob. obs. 446. 1, and ic. 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 aphylo. R. Syn. 135. St.*

A. Leaves winged, finely toothed, fleshy, naked, dotted: marit'ima. stem prostrate: calyx somewhat cottony.

Kniph. 10—J. B. iii. a. 122. 1—Till. pis. 19. 3.

* The leaves and flowers have a strong, not ungrateful smell, and a bitter nauseous taste. They afford an essential oil. An infusion of the flowers is often used as a stomachic, and as an 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 antiseptic 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.
SYNGENESIA. SUPERFLUA. Anthemis.

*Stems* 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* terminating, solitary, somewhat scored, downy, thicker above. *Flowers* of the scent of *M. Parthenium*.

**LINN.** *Florets in the centre yellow.*


(2) *All the florets yellow.*

**tincto'ria.** A. *Leaves* doubly winged, serrated, cottony underneath: stem supporting a corymbus.


—Fuchs. 26—J. B. iii. a. 122. 2—Trag. 152—Garr. 419.

*Stem* scored, slightly hairy, much branched. *Leaves*, the lower winged; *wings* spear-shaped, toothed, slightly hairy and green above, sea-green underneath; the lower wings short, distant, toothed; the upper wings wing-cleft; mid-rib broader than the wings; the *upper-leaves* wing-cleft; mid-rib broad, toothed; wings irregular, strap-spear-shaped, toothed; the uppermost *leaves* sometimes simply toothed. *Fruit-stalks* long, naked, scored, slightly hairy, terminating the stem and branches, each with 1 flower. *Cal. 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 3 teeth. Mr. Woodward. *Stems* scored, woolly. *Leaves* winged; *leafs* with winged clefts; the segments tapering, finely pointed. *Cal. hollowed* on the under side round the fruit-stalk, woolly. *Bloss. yellow.*

**Oxe-eye.** *Chamomile.* Sunny pastures, but not common. On a bank near the river Tees, not far from Sockburn, Durham. R. Syn. But Mr. Robson informs me it is not now to be found there. P. July, Aug.*

**ACHILLE'A. Recept.** chaffy: *down* none: *calyx* egg-shaped, tiled: strap-shaped florets from 5 to 10.

**Ptar'mica.** A. *Leaves* strap-spear-shaped, embracing the stem, finely serrated.

* The flowers afford a remarkably clear and good yellow dye. The flowers of the *Chrysanthemum segetum* resemble them much in appearance; but experience proves they cannot be substituted in their place. Horses and goats eat it. Sheep are not fond of it. Cows and swine refuse it.
SYNGENESIA. SUPERFLUA. Achillea.


Stems 1 to 2 feet high, firm, somewhat angular, smooth, often reddish. Leaves upright, scattered, sitting, firm, smooth, strap-spear-shaped, dark green, serratures very minute. Fruit-stalks somewhat cottony, with or without a floral-leaf. Cal. scales spear-shaped, keeled, cottony, bright green; edges membranaceous and reddish brown. Florets of the circumference oval, broad, with 3 teeth, and a short tube; those of the centre very short, dirty yellow. Mr. Woodward. Stems angular, somewhat woolly. Leaves half embracing the stem; ends of the serratures white, and almost of a bony hardness. Cal. scales woolly without, brownish and skinny at the edges. Florets of the circumference rarely more than 12; those of the centre numerous. Chaff woolly.


P. July, Aug.

Var. 2. 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. Mr. Woodward. All the florets, except a few in the very centre, strap-shaped.

Small Holme Island in Winander-mere, and at Chilmark, Wiltshire. R. Syn. [At Ripton. Found by Mr. J. Whitelocke, nurseryman at Fulham. Mr. Woodward.]*

A. Leaves doubly winged, segments of the wings strap-Millefolium. shaped, toothed.

E. bot. 758—Kniph. 5. and 7—Ludw. 67—Fl. dan. 737—Woodw. 61—Anders—Blackw. 18—Clus. i. 331—Dod. 100. 2—Lob. obs. 431. 1, and ic. i. 747. 2—Ger. em. 1072. 2—H. ox. vi. 11. 14—Pet. 19. 4—Ger. 914. 2—Lonic. i. 240. 1—Gars. 388—Ger. 914. 1—Fuchs. 727—f. 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.

* The roots have a hot biting taste. The young tops are sharp and pleasant in spring salads. The powdered leaves excite sneezing. Horses, cows, sheep, goats, and swine eat it.
SYNGENESIA. FRUSTRANEA. Centaurea.

Stem angular, cottony. Fruit-stalks cottony. Mr. Woodward.

Leaves woolly, segments toothed. Flowers in a corymbus.

Blot. white, or reddish purple. Cal. scales woolly, skinny at the edges. Florets of the circumference, 5; border nearly circular, bent back, slightly cloven into 3; those of the centre 15 or more, but not more than 4 or 5 expanding at once. Linnaeus says the leaves are smooth, but in all that I have examined, they are either woolly or hairy.

Var. 2. Blossoms purplish red; sometimes nearly crimson.

Yarrow. Milfoil Yarrow, Meadows, pastures, and roadsides.

P. June—Aug.*

FRUSTRANEA.

CENTAURE'EA. Recept. bristly: down either feathered or hair-like; florets of the circumference funnel-shaped, irregular, longer than the others.

(1) Scales of the calyx serrated with fringe.

Cy'anus. C. Calyx scales serrated: leaves strap-shaped, very entire; the lower ones toothed.


Blossoms blue, sometimes white, rose-coloured or purple. Linn. Leaves, the lowermost sometimes very entire. Mr. Holleford. Stem 1 to 2 feet high, angular, firm, slightly cottony, branched upwards. Leaves numerous, whitish and cottony underneath, with 3 parallel ribs. Branches with 1 flower. Cal. scales spear-shaped, the outer green, tinged with purple, cottony, sharply serrated; serratures smooth, skinny, 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. Pistil in the florets of the circumference none. Summit, in the hermaphrodites triangular, purplish, rather shorter than the anthers. Down short, hair-like. Mr. Woodward. Stem angular, with

* The flowers yield an essential oil. The leaves are celebrated by the Materia Medica writers for a variety of purposes, but they are little attended to at present. Sheep and swine eat it. Horses, cows, and goats are not fond of it.
SYNGENESIA. FRUSTRANEA. Centaurea.


C. Calyx scales egg-shaped, fringe hair-like, upright: *ni‘gra.* lower leaves lyre-shaped, angular; upper ones egg-strap-spear-shaped, and nearly entire.

**Var. 1. Flowers without rays.*

*Fl. dau. 996—E. bot. 278—Walc.—Reich. fl.—Clus. ii. 7. 2 —Dod. 124. 2—Lob. obs. 292. 3, and cit. i. 541. 1—Ger. em. 727. 1—Park. 468. 1—H. ox. vii. 28. row 2. 1—Pet. 22. 8—7. B. iii. a. 27.*

Diffsers from *C. phrygia* in the fringed little scales being egg-shaped, between upright and open, and not bowed back and awl-shaped. Like to *C. Jacea*, but without neutral florets in the circumference. *Linn.* *Stem* angular, scored, slightly cottony, often tinged with purple. *Branches* alternate, the upper ones rising above the stem, thickest towards the top, with 1 flower. *Leaves* wing-cleft, or toothed, sometimes entire, spear-shaped, sitting, more or less cottony. *Cal. outer scales* 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. *Woodward.* Upper leaves either egg or strap-shaped, and sometimes entire.


**Var. 2. Flowers radiated.*

This variety is common in Wiltshire, as I learn from Mr. Norris, and Mr. Stackhouse informs me that it is more frequent:

*The expressed juice of the petals is 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.*
in Cornwall, and the west of England, than the sort without rays. It has sometimes been mistaken for the C. Jacae, but in that the scales of the calyx are thin, membranaceous or skinny 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 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 summits purple. *Stem* fluted, cottony. *Lower leaves* spear-shaped, toothed, somewhat hairy; *upper leaves* strap-shaped, very entire. It may possibly prove a distinct species.

Scabio’s, C. *Calyx* scales fringed: leaves wing-cleft; segments spear-shaped.

_E. bot._ 56—Matth. 959—J. B. iii. a. 32, 2—Ger. 588. 2, and 583. 5.

*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 terminating one very large, confluent with the next pair, *stem-leaves* with winged clefts: segments spear-shaped, mostly entire. *Flowers* single, terminating. *Cal. bellying*; scales closely tiled, in several rows, egg-shaped, green, nearly smooth, fringed, tipt and edged with black. *Florets* tubular; _those of the circumference_ without stamens or pistils, reddish purple, scored; segments 4, sometimes 5. *Anthers* whitish. *Style*; pale below, purplish upwards, with a downy ring beneath the summit. *Summit cloven.* *Seeds* oval, brown, compressed, shining; viewed with a glass slightly hairy. *Down* yellowish, bristly, as long as the seed. Mr. Woodw. *Stem* nearly cylindrical, scored. *Leaves* roughish, and a little hairy. *Cal. globular*; scales black, green at the base, fringed with light brown hair. *Florets of the centre* marked on the outside with 5 dark purple lines, the tube and distended border filled with a honey-like juice. *Filaments* a little woolly. *Anthers* shining, dark purple. *Summit cloven.* *Fruit-stalks* long, naked. *Blossoms* purple, sometimes white.

**Greater Knapweed.** Borders of cornfields. P. July.

(2) *Calyx* thorny; thorns compound.

Calci’trapa. C. *Calyx* sitting, almost doubly thorned: leaves wing-cleft, segments strap-shaped, toothed: stem hairy.

_E. bot._ 125—KniJph, 11—Ger. 1003, 1—Col. phyt. 24—Clus. ii. 7. 3—Dod. 733—Lob. obs. 482. 2, and ic. ii. 11. 2—Ger. em. 1166. 1—J. B. iii. a. 89—Park. 988, 1—Pet. 21, 11—Ger. 1003, 2—Lonic. i. 72, 2.
SYNGENESIA. NECESSARIA. Calendula.


Root fibrous. Stem 2 feet high, branched, open. Root-leaves lyre-shaped, tapering; lateral segments spear-shaped, toothed, the terminating one winged, triangular, halberd-shaped; stem and branch-leaves very entire, short, waved, sprinkled with a white cobweb-like wool. Flowers terminating, solitary. Fruit-stalks very long, leafy. Cal. 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.

St. Barnaby's Thistle, or Knapweed. Cornfields and hedges. Not far from Cirencester, Gloucestershire, and Northfleet, Kent. In a field at Arminghall near Norwich. Mr. Crowe. Linn. Tr. ii. 236.

NECESSARIA.

CALENDULA. Recept. naked: down none: calyx of many, nearly equal leaves: seeds of the centre, mostly membranaceous.

C. Seeds boat-shaped, prickly, turned inwards; the inner- arven'sis, most crowded together, the outermost upright, furnished with a tail.

H. ox. vi. 4. 6-Tabern. 713-Ger. 603-7. B. iii. 103.

Nearly allied to the C. officinalis. Leaves somewhat toothed, but heart-spear-shaped; not spatula-shaped. Linn. Leaves, the upper ones heart-shaped, lower ones strap-egg-shaped, all of
them embracing the stem. *Flowers* yellow, but not near so large, nor of so deep a yellow as the cultivated *C. officinalis.*

*Marigold.* [On Ballast hill, Sunderland, Durham. Mr. ROBSON. On the shores of the harbour at Falmouth.]

**FILAGO.** *Recept.* naked: *down* short, simple, sometimes none: *calyx* tiled: *female florets* partly without petals, within the scales of the calyx.

**arven'sis.** F. Stem supporting a panicle: flowers conical, lateral. [See Gnaphalium arvense.]

**germa'nica.** F. Panicle forked: flowers roundish, axillary, rough with hair: leaves acute. [See Gnaphalium germanicum.]

**gallia'ca.** F. Stem forked, upright: flowers awl-shaped, axillary: leaves thread-shaped. [See Gnaphalium gallicum.]

**monta'na.** F. Stem somewhat forked, upright: flowers conical, terminating and axillary. [See Gnaphalium montanum.]

* This is a very common plant in the cornfields and in the vineyards in 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 kept up between Portugal and Falmouth, it is not improbable that the seeds of the plants I found might have been imported from thence: and in a similar manner have several other exotics probably been introduced, and in time become naturalized; and this conjecture is particularly illustrated by the various other foreign plants now to be found on Ballast hills, near Sunderland, Durham; and in other like situations.
CRYPTOGAMIA.

CLASS XX.

CRYPTOGAMIA.

MISCELLANEÆ.

EQUISETUM. ..... Fructifications forming an egg-oblong, terminating spike.

LYCOPO'DIUM. ..... Capsules axillary, solitary, naked, kidney-shaped, with 1 cell, and elastic valves.

PILULA'RIA. ..... Capsules 4-celled, globular, sitting in the bosom of the leaves at each joint.

ISOETES. ..... Male flowers solitary, within the base of the inner leaves.

Fem. solitary, within the base of the outer leaf; capsules 2-celled.

FILICES.

(1) Capsules without an elastic ring; in Spikes.

OPHIOGLOS'SUM. ..... Capsules united by an enveloping membrane, so as to form a 2-rowed, jointed spike.

OSMUN'DA. ..... Capsules distinct, 2-valved, forming a bunch-like spike.

(2) Capsules roundish, on pedicles, encompassed by a jointed elastic ring; and opening irregularly into 2 parts.

ACROSTICHUM. ..... Capsules covering the whole under surface of the leaf.

POLYPO'DIUM. ..... Capsules forming distinct roundish spots on the under surface of the leaf.
CRYPTOGAMIA.

ASPLE'NIUM. . . . Capsules forming straight scattered lines on the under surface of the leaf.

BLECH'NUM. . . . . Capsules forming lines adjoining and parallel to the ribs of the leaves.

PTE'RIS. . . . . . . Capsules forming a line at the edge of the leaf.

ADIANTUM. . . . . Capsules forming oval spots under the reflected points of the leaves.

TRICHO'MANES . . Capsules solitary inserted on the very edge of the leaf.

MUS'CI.

SPHAG'NUM. . . . Capsules mouth not fringed, covered with a lid; without a veil.

SPLACH'NUM. . . . Capsule on a large fleshy receptacle; Veil very large.

POLY'TRICUM. . . 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 a lid which does not fall off.

BRY'UM. . . . . . . Capsule with a lid; Veil smooth;* Fruit-stalk terminating, issuing out of a fleshy tubercle.

HYP'NUM. . . . . . Capsule with a lid; Veil smooth; Fruit-stalk lateral, issuing from a tubercle surrounded with scales.

* In BRYUM sessile, tectorum, & striatum the veil is hairy.
CRYPTOGAMIA.

**FONTINALIS.** Capsule veiled, sitting, enveloped by the scales of the receptacle.

**BUXBAUMIA.** Capsule on a fruitstalk, membranaceous on one side.

HEPATICÆ.

**MARCHANTIA.** Male, Calyx salver-shaped, with numerous anthers imbedded in its disc.

Fem. Calyx target-shaped, flowering underneath: Capsules bursting at their tops: Seeds attached to elastic fibres. (E. bot.)

**JUNGERMAN'NIA.** Capsules on fruit-stalks, naked, 4-valved.

**TARGIO'NIA.** Calyx 2-valved: Seeds very numerous, collected into a globe. (E. bot.)

**ANTHO'CEROS.** Caps. awl-shaped, 2-valved: Seeds connected with the valves.

**BLA'SIA.** Sheath cylindrical, protruding globular buds from its bottom.

**RIC'CIA.** Fructifications granules buried in the leaf. (Gmelin.) Anthers cylindrical, sitting on the germen: perforated by the style: Caps. globular, crowned by the withered anthers: Seeds hemispherical, on pedicles. (E. bot.)

AL'GÆ.

**LI'CHEN.** Male, scattered warts.

Fem. smooth saucers or tubercles in which the seeds are imbedded. (E. bot.)
CRYPTOGAMIA.

TREMEL/LA. Seeds dispersed through a jelly-like substance.

UL'VA. Seeds dispersed through a jelly-like membranaceous substance, (growing in water.)

BYS'SUS. Sub stance, wool-like fibres.

CONFER'VA. Fibres hair-like, simple or branched, often jointed; (growing in water.)

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.

AGA'RICUS. Pileus with Gills underneath, of a different substance from the rest of the plant.

FISTULI'NA. Pileus with separate tubes underneath: Seeds in the tubes.

BOLE'TUS. Pileus with united tubes underneath: Seeds in the tubes.

HYD'NUM. Pileus with solid cylinders underneath: Seeds on the cylinders.

HELVEL'LA. Pileus on a stem, smooth underneath: Seeds on the under surface.

AURICULA'RIA. Flat, membranaceous, fixed when young by the whole under surface: Seeds on the upper surface which becomes reversed as it attains maturity.
CRYPTOGAMIA.

(2) Seeds on the upper surface.

PEZI'ZA. . . . . . . Cup-shaped or concave: Seeds discharged by jerks from the upper surface only.

NIDULA'RIA. . . . Leathery; sitting; bell-shaped. Capsules large, flat, fixed 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.

(4) Seeds in the substance of the plant.

TU'BER. . . . . . . Fleshy, solid, not becoming powdery; not 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 membranaceous cases.

SPHÆRIA. . . . . . Fruit spherical, filled with black powder, mostly concealed by an outer coat; opening at the top.

TRI'CHIA. . . . . . Capsule globular, egg-shaped or cylindrical, composed of interwoven fibres. Stem fixed to a membranaceous base.

MU'COR. . . . . . . Stem very slender. Seeds naked or in capsules at the ends of the stem.
CRYPTOGAMIA. MISCELLANEÆ. Equisetum.

MISCELLANEÆ.


sylvaticum. E. Stem bearing a spike: leaves compound.


The entire plant very much resembling in figure a fir-tree, its leaves being all in whirls. Linn. Stem from 7 to 15 inches high, smooth, slightly scored, pale yellowish brown. Sheaths of the same colour, but deeper. Leaves 8, 10, or 15 in a whirl, bursting out from the upper knot of the stem. Fructifications about 15 in a whirl towards the bottom of the spike. Anthers fixed to filaments, which, on being breathed upon, coil up, but in a moment becoming dry, they expand again. After several expansions and contractions they detach themselves, still contracting when moistened, gradually bending from a straight line into a circle. If a drop of water be pushed towards them, they contract before it touches them. These contractions are often so sudden as to throw the object out of the field of view.

Wood Horsetail. 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.

I believe this change in the habit occasionally takes place in both species, and indeed more or less so in almost every plant in similar situations.

arven'se. E. Fertile stalk leafless: barren stem leafy, lying down: leaves in whirls.

Curc. 235–Bolt. fil. 34–Kniph. 1–Dod. 73. 2–Lob. ic. i. 795. 2–C. B. th. 247, the right hand part of the figure–Blackw. 217. 3 and 4–Fuchs. 322–F. B. iii. 780. 1–Trag. 692. 2–Lonic. i. 176. 2–Matth. 1027–Cam. epit. 771–Dod. 73. 4–Lob. obs. 461. 3. ic. i. 794. 2–Ger. em. 1114. 5–Park. 1202. 11–Fuchs. 322–F. B. iii. 729. 2–Ger. 956. 3.
E. Stem angular: leaves unbranched.

Corn horsetail. Moist cornfields.

Fertile stems appearing before the other; soon decaying. Barren stems continuing a long time. Link. Barren stems rough, slender. Leaves 12 to 15 in a whirl, somewhat branched. Leers. Stalk from a hand's breadth to a foot high, cylindrical, smooth, jointed, the upper knots farther distant, the lower approaching nearer to each other; each joint terminating in a sheath. Sheaths furrowed, wider than the stalk, many-cleft; segments spear-shaped, tapering to a point. Spike yellowish white, nearly an inch long, the base encircled with a membranaceous yellowish border. Fructifications in whirs, yellowish. Pollich. Stem when fresh roughish, in moist shady situations smooth and somewhat shining. Sheaths in such situations scored with green. Sheaths with 4 teeth corresponding to the angles of the leaves, of the same colour with the leaves. Woodward. Root cylindrical, with threads from the joints, stiffish, woolly, dark brown. Stalk fleshy, with several cylindrical tubes within, a central one, with 9 others 3 or 4 times smaller, disposed in a circle round it; and another 9 exceedingly minute between them and the central one; yellowish brown, semitransparent, obscurely marked with 9 scores. Sheaths somewhat bulging, of a silvery brown, with 9 furrows; segments 9, pointed, somewhat approaching. Stalks, sheaths furrowed as the stem, cloven one third of the way down; teeth blackish brown at the ends, with very shallow white membranaceous edges. Leaves, the joints of the upper branches frequently 3-square, and the joints terminating in 3 teeth; teeth open. St. The fertile stems not to be distinguished from those of the E. sylvaticum before the leaves appear, but by observing that the sheaths in the E. sylvaticum are divided into 12 segments, but in this species only into 3 or 4.

Stem smooth. Leaves 6 to 10, furrowed, smooth, with black scales at the base. Leers. Root black. Stem with fewer and deeper scores than that of E. arvense, some of the lower joints black, sometimes lengthened out for a considerable way beyond the going off of branches; knots blackish from the sheaths of leaves which rise from the joints. Leaves shorter and thicker than those of E. arvense, with mostly 5 and rarely 4 or 6 angles. Sheaths larger and more lax than those of E. arvense, teeth very short, tipped with black, which distinguishes it from the E. arvense. Woodward. Barren-leaves resemble those of E. arvense.
but the second leaves in the *E. arvense* are 4-sided, and the sheaths have 4 teeth, whilst in this species they are 5-sided, and the sheaths have 5 teeth. Bolt.

*Paddock Pipe* in Scotland. *Marsh Horsetail.* Marshy and watery places.

Var. 2. *many-spiked.* Spikes terminating the upper leaves as well as the stem.

Ray 5. 3. at p. 160.

This variety generally arises when the primary stem has been bitten off. Bolt.

**fluviat'ile. E. Stem scored: leaves generally unbranched.**

*Bolt. fil. 36. 37-Fl. dan. 1184-Matth. 1026-Dod. 73. 1-

*Leb. obs. 461. 1. ic. i. 793-Ger. em. 1113. 1-Park.

1200. 1-Ger. 955. 1-C. B. th. 241-Blackw. 217, 1

and 2-Cam. epit. 770. B. C.-Gars. 258. A.*

Sheaths cloven into as many pointed teeth as there are leaves. Leaves 30 to 40 in a whirl, deeply furrowed, 4-cornered, consisting of frequent longish joints. Hall. 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 3 to 15 inches long, very closely set. This species may be readily known at first sight by its great size, numerous leaves, and whitish stem. Woodward. Fertile stems sometimes leafy, so that Haller is mistaken in his assertion that they are leafless.

*River Horsetail.* Marshy and watery places, sides of rivers, ditches, pools, and lakes. [Not very frequent—cold springs at Barnby near Lowestoft; between Bungay and Halesworth, St. Faiths Newton Bogs near Norwich. Mr. Woodward.] P. May, June.

**limo'sum. E. Stem frequently naked, smooth.**

*Bolt. fil. 38-Ray 5. 2. at p. 160-f. B. iii. 729. 3.*

Closely allied to *E. fluviatile;* sometimes throwing out a few leaves. Linn. A variety of *E. palustre.* Stems thicker and taller, those of younger flowering plants leafless, furrows much more numerous than those of *E. palustre;* teeth of the sheaths finely pointed, brown. Hall. n. 1077. β. It differs also as follows: Whole plant smoother. Root yellowish. Stem brown below, scored; not furrowed. 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 whirls 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 *E. palustre*. Woodward. *Stems* exactly cylindrical, those which bear fructifications after flowering becoming leafy, and sometimes throwing out lateral branches; those which are barren tapering gradually to the end, and mostly continuing bare of leaves. The shoots of next year upwards of an inch long, from the side of the stem at the knots, which throw out fibrous roots. St.

We are favoured with the following curious description, and the very accurate drawing, engraved on Plate XXX, p. 621, by James Norris, Esq. “In the month of March 1794, being on a boggy spot of ground near Bromham, where a small stream, by a continued action on the loose soil beneath, had formed a deep channel, my attention was soon directed to the roots of an Equisetum, growing abundantly on the brink of both its perpendicular sides; which presented them laid bare to view, and cleansed by the passage of the water. The roots which, as in all the species of this genus are jointed like the stem, were surrounded at their joints by a series of 6, 7, or 8 bulbs, arranged verticillately, sessile, and about the size of a nutmeg, but shaped like a fig, with a prominent umbilicus at the larger end; when young of a tawny brown colour and downy, when old black and smooth: the pulp within white, and similar in consistence to apple or potatoe. In the succeeding month of April, I had the pleasure to observe 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 at the great end, 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. In the lower figure of the drawing is represented a transverse section of the root, encircled by a whirl of bulbs, which in number generally correspond with the radial partitions of 6, 7, 8, &c. The upper figure exhibits a portion of the root with only two bulbs, to avoid confusion, in a state of vegetation:”—These bulbs differ much in dimensions from the size of peas to $\frac{1}{2}$ 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.

*Smooth Horsetail*. Common in the beds of rivers near the banks; also shallow ponds, and ditches in marshes.

P. May, June.
LYCOPO'DIUM. Capsules axillary, kidney-shap-
ed, 2-valved, elastic; many-seeded.

clava'tum. L. Leaves scattered, terminating in threads: spikes cylin-
drical, on fruit-stalks, in pairs.

Dicks. b.s.-E. bot. 224-Dill. 58. 1-Fl. dan. 126-H. ox. xv.
5. row 1. 2-Gen. i. tabula picta, f. 2-Blackw. 533-
Pluk. 47. 8-Trag. 555-Lon. i. 179. 1-Ger. 1374. 11-
Matth. a. C. B.-Lob. obs. 645. 1. 4. i. 244. 2-Ger. em.
1562. 11-Matth. 63-Park. 1307. 4-7. B. iii. 706.

Stem creeping. Leaves open. Linn. Shoots from one to several feet in length, firmly attached to the earth by woody fibres.

* The turners and cabinet-makers use it to smooth their work. It is wholesome to horses, hurtful to cows, and disagreeable to sheep.
Branches expanding, distant, trailing; the lower ones again sub-dividing 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 2 to 4 inches high, dividing at the top into 2 (or 3) cylindrical, flowering spikes. Spikes closely tiled with scales or husks, egg-spear-shaped, pointed, hairy at the end, ragged at the edges. Each of these scales incloses a kidney-shaped yellow capsule, exploding when ripe a yellow powder, which resembles sulphur, and burns with an explosion. Weis. Fruit-stalk generally with 2 equal spikes, frequently with 1, and sometimes with 3, which are unequal. Mr. Gough.


P. July, Aug.*

L. Leaves scattered, fringed, spear-shaped: spikes solid-Selaginoides.

Dill. 68, Selaginoides-Fl. dan. 70-Schuecb. it. i. 6. 1, at p. 43-Hall. enum. 3. 1. at p. 109, and hist. 46. 1, at iii. 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 apparently in threes, but really in fours, one pair above and the other pair below; at length gaping, and disclosing as many large solid seeds; those at the base of the upper leaves yellow, of a looser texture, entirely simple, round, not containing seeds, but pollen. Linn. Plant from 1 to 3 inches high.


P. June—Sept.

L. Leaves scattered, very entire: spikes terminating leafy. inundatum.

Dicks. b. 5-E. bot. 239-Fl. dan. 336-Dill. 61. 7-Vaill. 16. 11-H. ox. xv. 5. row 2. 11, the middle and upper branches, the rest belonging to L. Selaginoides. *In Sweden they form it into mats or basse{s, which lie at their doors to clean shoes upon. It restores rosy 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 you may dip your hand to the bottom of the basin without wetting it.
CRYPTOOGAMIA. MISCELLANEA. Lycopodium.

Stem creeping. Spikes solitary, sitting, smooth. LINN.
Branched; the length of a finger or more; cylindrical. Spikes sitting, upright. Leaves awl-shaped, pointed, smooth, on the creeping shoots pointing one way, two lines long, and one broad at the base. POLLICH. Shoots creeping, pointing one way, those bearing spikes an inch long, upright, cylindrical. Leaves strap-shaped, crowded, without terminating hairs. Spikes leafy, not different from the shoots except in being thicker. Capsules compressed, roundish, not kidney-shaped. WEBER.


Sela'go. L. Leaves scattered; pointing 8 ways: stem forked; upright: branches all of the same height: flowers scattered.

E. bot. 233—Dill. 56. 1—Fl. dan. 104—H. ox. xv. 5, row 2; 9—Schwech. it. i. 6. 2.

Leaves obliquely disposed in 8 rows, which may be best observed by looking at them, holding the ends of the branches perpendicular to the eye. LINN. Stems upright, branched, from 3 to 7 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. Root dividing into forks like the stem. Dill. This powder, when sown by Mr. Fox, produced young plants; a complete demonstration that it is the seeds, and not as Linneaus thought, the pollen. Linn. Tr. ii. 315. The whole plant very firm and stiff; from 2 to 5 inches high.


anno'tinum. L. Leaves scattered, pointing 5 ways; somewhat serrated: stem jointed at each year's shoot: spikes terminating, smooth, upright.

Dill. 63. 9—H. ox. xv. 5, row 1. 3—Fl. dan. 127—Pluk. 205. 5.

* It purges, vomits, and destroys worms. A decoction of it is a cure for lice in swine and cattle. LINN. Its properties seem to challenge further inquiry.
**CRYPTOGAMIA. MISCELLANÆ.** Pilularia.

*Branches* contracted at the last year’s shoots, as in the female of the *Polytrichum commune*. *Leaves* whirled, in fives, expanding, decurrent. *Linn.* *Root* branched. Trailling stem very long. Upright shoots from 1 to 2½ inches high, generally branched, supporting the spikes of fructification.


L. *Leaves* pointing 4 ways; tiled, acute: stems upright; alpi’num. cloven: spikes sitting; cylindrical.

*E. bot. 234—Dill. 58. 2—Fl. lapp. 11. 6—Fl. dan. 79—f. 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* bundled, from 20 to 30 together, exactly four-cornered, the angles blunt. *Leaves* thickish. *Frut-stalks* terminating a branch here and there, scarcely 2 or 3 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 1½ to 3 inches long; thinner than the spikes which they support.


**PILULARIA.** Calyx common woolly, globular, 4-celled; opening in 4 directions: *anthers* many; sitting: *pistils* many: *style* none.

P.

*E. bot. 521—Dill. 79—Fl. dan. 223—Bull. 375—Bolt. 40—Pet. 9. 8—Vaill. 15. 6—Plak. 48. 1—H. ox. xv. 7. 49.*

*Stem* slender, trailing, striking root at the joints, and sending out delicate slender leaves, 2 or 3 inches long, generally 3 from a joint. *Fructifications* globular, like pepper corns, on very short pedicles at the base of the leaves.

*Pilwort, Pepper-grass. Pepper-moss*. In grounds that have been overflowed, especially in a sandy soil. Near Streatham Wells; Petersfield; and on Hounslow Heath. [Hainford and Stratton heaths, Norfolk. Mr. Crowe. St. Faith’s Newton

*globulifera.*
Cryptogamia. Miscellaneae. Isoetes.

Bogs. Mr. Pitchford. About 2 miles from Mold, on the north side of the Chester road, near Clawdd Offa, or Offa’s Dyke, Mr. Griffith. Various bogs in Angus and Perthshires. Mr. Brown. P. June—Sept.

Isoetes. Male. Anthers sitting within the base of a leaf.

Fem. Capsule 2-celled, within the base of a leaf.

Lacus'tris. 1. Leaves awl-shaped, semi-cylindrical, bowed back.

Bolt. 41—Fl. dan. 191—Dill. 80. 2—Ray ed. i. 2, at p. 1.

Root fibrous; fibres numerous, simple, slender, striking deep into the mud. Leaves growing in thick tufts, 6 or 7 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 it to be filled with numerous minute whitish seeds, which examined in the microscope appear spherical, roughish, somewhat transparent, and having 3 ribs meeting in a centre. Mr. Woodward. Leaves so brittle that they break on the least attempt to bend them. The transverse diaphragms very visible. I have often found it in seed. Mr. Griffith.


Var. 2. Huds.—Dill. 80. 1; I have often found a plant resembling this, but never could find it in seed. Mr. Griffith.

Leaves not so stiff, from the base of which rises 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.

[1 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 variety 1. ib. 307.
CRYPTOGAMIA. FILICES. Osmunda.

FILICES.

OPHIOGLOS'SUM. Capsules numerous, nearly globular, without an elastic ring; united by a membrane into a 2-rowed spike; opening crosswise when ripe: seeds numerous, minute.

O. Leaf egg-shaped, veinless, bearing the spike. E. bot. vulgatum.

Dicks. b. s.-E. bot. 108—Sheldr. 28—Fl. dan. 147—Fuchs. 577—Lonic. i. 103—F. B. iii. 708. 2—Trag. 323—Knipf. 6—Cam. epit. 364—Park. 506—Garr. 425—Tourn. 325. 1—Bolt. 3—Blackw. 416. 1 and 2—H. ox. xiv. 5, row 3. 1—Barr. 252. 1—Matth. 594—Ger. 327—Dod. 139. 1—Lob. obs. 471. 1; ic. i. 808. 2—Ger. em. 404. 1—Fructification, Hedwig. 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. Mr. Woodward. Leaf sometimes slightly lobed with small appendages on one or both sides. Bolt.


Var. 2, many-spiked. Fruit-stalk divided at the top, each branch supporting a spike; Bolt. and the spike itself sometimes dividing into 2 or 3.

Blackw. 416. 3—Bolt. 1. 1—Lob. ic. i. 809. 1—Ger. em. 404. 2—H. ox. xiv. 5, row 3. f. 2—H. ox. ib. f. 3, 4, 5, 6—Cam. epit. 364—Park. 506, the lesser figures.

OSMUNDA. Spike branched: Capsules distinct, sitting, globular, 2-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. Stalk solitary; bunch lateral: leaf winged, solitary. Luna'ria.
Within the base of the stem, early in the spring, may be found a complete rudiment of the next year's plant. LINN. *Wings* of the leaf fleshy, crescent-shaped, semi-circular, and harelip-shaped. It so exactly resembles Ophioglossum vulgatum in habit and structure, that they ought by no means to be separated. Mr. Woodw. About 5 inches high. *Leaflets* irregularly scalloped. *Spikes*, or rather panicle, from 1 to 2 inches long.

**Common Moonwort.** Mountainous meadows and pastures in Westmoreland; near Settle, Yorkshire; Scadbury Park, Kent; and Chisselhurst Common. Mear Bank, by Sykes Wood, Ingleton, Yorkshire. CURT. North side of Bredon Hill, Worcestershire. NASH. [Near Bury. Mr. Woodw. Stratton Heath, Norfolk. Mr. CROWE. On coalpit banks near Stourbridge. Mr. WALDRON. Hill.]

P. May—July. *

**Var. 2—Linn.** Leaves and stalks several. CAM.

**Cam. epix. 644—Matth. a. C. B. 647. 2.**

Found in England. CAM. *ib.*

Leaves in pairs, doubly winged, wings cut. *Wild. n. 875.*

**Var. 3.** Leaves cloven into segments.

**Breyn. cent. 93—H. ex. xiv. 5. row 2. 3—Fl. dan. 18. 3.**

**Osmunda Lunaria G Huds. Bolt. p. 5.**

Westmoreland, and the northern counties. R. Syn.

(2) The leaf itself bearing the fructifications.

**regalis.**

O. Leaf doubly winged: bunches terminating, more than doubly compound.

**Kniph. 2—E. bot. 209—Pluk. 181. 4—Trag. 543—Blackw. 324—Tourn. 324—Fl. dan. 217—Bolt. 5—J. B. iii. 736—Dod.**

*Obs. Osmunda Struthiopteris, Spicant, and I believe crispa, do not belong to this genus; but *virginica*, regalis, and *cinnamonum* correspond in structure with *O. Lunaria*. These latter, with the genus Ophioglossum, and perhaps *Onoclea*, which I have never seen in fructification, form a natural family of the tribe of Filices, distinguishable by the want of the annular elastic ring, which is common to Osmunda Struthiopteris, and Spicant, and to all the Ferns properly so called, and which unites them and the genera *Acrantochium*, *Polyodium*, *Hemionitis*, *Asplenium*, *Blechnum*, *Loncbitis*, *Pteris*, *Adiantum*, and *Trichomanes*, into another distinct natural assemblage.*
**ACROS'TICHUM.**

Capsules opening vertically. Mr. Stackhouse. From 2 to 4 feet high, of a pleasant transparent green. *Leaves* doubly winged. *Leaves* 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. *Fruct.* when ripe, red brown.

Osmund Royal. Flowering Fern. Royal Moonwort. Watery places and boggy marshes. [About Cosgarne and Marazion in the mouths of old mines. Mr. Watt. Bogs near Yarmouth. M. Woodw. St. Faith's, Newton Bogs, near Norwich. Mr. Crowe. Chartley Moss, Staffordsh. Hon. Mr. Bagott. Moist hedges, New Forest, Hants. This plant, though before not to be found for many miles around Birmingham, lately appeared on a butt on Mosely Common, artificially made with mud from a deep pit, in which the seeds had probably lain for a great 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 many apparent errors in the loci natales of plants often be accounted for.] July, Aug.*

(3) *Leaves*, some bearing fructifications.

O. *Leaves* spear-shaped, wing-cleft; very entire, parallel, *Spicanthus*, running into each other. *See* Blechnum Spicant.

O. *Leaves* more than doubly compound; leaflets alternate, *crispa*, roundish, cut. *See* Pteris crispa.

**ACROS'TICHUM.** *Capsules* entirely covering the under surface of the leaf.

(1) *Leaf* simply divided.

A. *Leaves* naked, strap-shaped, jagged. *Fl. dan. 60-Lob. adv. 17. 2. ic. i. 47. 1-Ger. em. 1561. 8- Bolt. fil. 8-Trag. 537-Lon. i. 224. 5-Ger. 343. 4- Park. 1045. 8- f. B. iii. 7 55. 2.*

* Impressions of the leaves are frequent in the nodules of iron stone found in Coalbrook Dale iron works. It is the only species of an indigenous vegetable which I have ever seen 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 is very slimy, and is used in the North of Europe to stiffen linen instead of starch.
CRYPTOGAMIA. FILICES. Pteris.

Fructifications, whilst immature, in short indistinct lines or dots. It is therefore, whilst young, an Asplenium. Bolt. p. 7. and 12. From 2 to 3 inches high. Leaves mostly in pairs; strap-spear-shaped, on long leaf-stalks rising from the root.

Clefts of rocks and old walls. Tops of mountains in Wales, on Ingleborough, Yorkshire, and above Ambleside, Westmoreland. [Rocks on the south side of Blackford Hill, plentiful. Mr. Brown. Rocks in Edinburgh Park. Dr. Hope.]

(2) Leaves wing-cleft.

ilven'se. A. Wings opposite, united, and very entire at the base; blunt, hairy underneath. See Polypodium ilvensc.

PTE'ERIS. Capsules disposed in a line under the reflected edge of the leaf.

cris'pa. P. Leaves more than doubly compound: leaflets alternate, roundish, cut.

Bolt. 7—Fl. dan. 496—H. ox. xiv. 4, 4, and 27—Pluk. 3. 2, and 3—J. B. iii. 743—H. ox. 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 Pteris aquilina; after the discharge of the seeds increasing in breadth so as to cover the whole disk, except the mid-rib. Bolt. Leaf-stalks from 2 to 7 inches long. Leaf from 1 1/2 to 3 inches long. Leaflets of the barren leaves wedge-shaped and snip at the edge; those of the fertile leaves much narrower, strap or strap-spear-shaped, and entire. Capsules surrounded with an elastic ring; but Osmunda and Ophioglossum have no such ring.

Stone Fern. Crisped Fern. Parsley Fern. Stone Brakes. [Rocks, heaths, old walls in the northern counties, common. Wooln.—In Rutland. Mr. Jackson.—Shap, very common, also Tenterfell, near Kendal. Mr. Gough.—Cader Idris. Fructifications ripe in September. Mr. Griffith.]

Var. 2. Leaves curled.

Mr. Jackson has observed 2 varieties with curled leaves, the one curled like Parsley, the other like the flowering part of Osmunda regalis.

aquili'na. P. Leaves more than doubly compound: leaflets winged: wings spear-shaped; the lowermost wing-cleft; the upper ones smaller.

Ger. 969. 2—Bull. 207—Bolt. 16—Pluk. 182. 1—Blackw. 325—Fuchs. 596, misprinted 569—Dodd. 462. 2—Trag. 542—Matth. 1291—Gars. 272—Lob. obs. 473. 2. ic. i. 312. 2—
The Root cut obliquely presents a kind of representation of the Imperial Eagle. Linn. Where Linnaeus has named it the P. aquilina or eagle brakes.


BLECHNUM. Capsules forming 2 parallel lines near the rib of the leaf.

B. Barren leaves wing-cleft: fruitful leaves winged, nar-

Flowering-leaves much narrower than the barren ones. Linn.

Fructifications covered at first with a thin membrane. Capsule of 1 cell and 2 valves, connected by an annular elastic cord, containing many minute seeds. Hedwig. 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. Woodward. Fertile leaves 12 to 18 inches high, and near 2 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.

Rough Spleenwort. Osmunda Spicant. Linn. Acrostichum Spicant. Bot. Arr. ed. ii. It is now introduced as a Blechnum in compliance with the opinion of Dr Smith and Mr. Robson, though 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 that genus, or is disposed along the edge of the leaf.

* A tolerably pure alkaly is obtained from the ashes. The common people in many parts of England mix the ashes with water, and form them into balls: these balls are afterwards made hot in the fire, and then 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, they use it to heat ovens and to burn limestone; for it affords a very violent heat. In the more inhospitable climates, bread is made of the roots. The Fern Moth feeds upon it.
CRYPTOGAMIA. FILICES. Asplenium.

which would refer it to the 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 determined it to belong to the genus Acrostichum. See Pl. XIII. fig. 9, 10, 11.


ASPLE'NIUM. Capsules disposed in straight and nearly parallel lines on the under surface of the leaf.

(1) _Leaf simple._

A. Leaves heart-tongue-shaped; very entire: stalks hairy.

_Curt._-Tourn. 319-Blackw. 138-Bull. 167-Bolt. 11-Gart. 346-Trag. 549-Fuchs. 294-7. B. iii. 756-Chris. ii. 213. 2-Dod. 467. 1-Cam. epit. 579-Walc.-Lob. obs. 468. 3-

Ger. em. 1138. 1-Park. 1046. 1. f. 2-H. ex. xiv. 1. 1-

_Lon._ i. 224. 3-Matth. 831.

Leaf-stalks rising from the root, about 2 inches long. _Leaf_ strap-shaped but rounded and hollowed at the base, from 8 to 12 inches long, or more; 1 1/2 to 2 1/2 inches broad, the shortest leaves the broadest. _Fructifications_ in lines, slanting upwards from the mid-rib, but not in contact with it.

_Spleenwort_ or _Harts-tongue_. Moist shady rocks, mouths of wells, old walls, and in the fissures of rocks. On the tops of most of the high mountains in Yorkshire. CURT. P. Aug. Sept.

Var. 2. Leaves curled and jagged at the edge.

_B. _iii. 757. 3._

[Near a petrifying spring, by the side of a rivulet at the bottom of Garn Dingle, 3 miles from Denbigh. Mr. Griffith.]

Var. 3. Leaves with many clefts at the end.

_Chr._ ii. 213. 2-Dod. 467. 2-Lob. obs. 469. 1; _et._ ii. 805. 2


_Phylitis multifida._ R. Syn. 117. In a lane near Swaneling, not many miles from Southampton. _Ger. em._ [Near Bromham, growing in the mouth of a well very much shaded. Mr. Norris.]

Var. 4. Leaves with clefts at the edges.

_Tourn._ 451.

Var. 5. Stalk branched, with 3 or more leaves.

H. ox. xiv. 8.

Mr. Gough sent me a specimen of this variety in which the stalk divides into 5 branches, but it is entire at the base for about 2½ inches, 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 crenated at each edge, spear-shaped, (sometimes heart-tongue-shaped,) nearly as large as the common variety.

Found in woods at Stoutshill, Gloucestersh., by the Rev. Mr. Baker.

(2) Leaf wing-cleft.

A. Leaves wing-cleft; lobes alternate, confluent, blunt. Ce'terach.

Bull. 333—Walc.—Gars. 212—Barr. 1051, 1052, 1043, 1044
—Tourn. 318—Tragg. 551—Dod. 468—Lob. obs. 470. 1;
—i. i. 807. 1—Ger. em. 1140. 1—Park. 1046. f. 1—Ger.
978. 1—Matth. a. C. B. 646. 1—H. ox. xiv. 2. row 3. f.
4—Blackw. 216—J. B. iii. 749—Bolt. 12—Matth. 899—
Cam. epit. 640.

Leaves so covered underneath with scales as to conceal the fructifications. Linn. Leaves many from a root, 3 to 6 inches long, the hollows between the lobes of the same size and shape as the lobes, edges somewhat bent back when the fructifications ripen. Mr. Woodw. Segments of the leaves very entire, semi-oval, green above, thickly covered with brown scales underneath. Mr. Gough.


(3) Leaves winged.

A. Leaflets nearly circular, scoloped. Tricho'manes

CRYPTOGAMIA. FILICES. Asplenium.

1. 212. 1—Cam. epil. 925—Park. 1051—Matth. 1202—Dod. 471. 1—Lob. obris. 471. 2; ic. i. 809. 2—Ger. em: 1046—H. ox. xiv. 3. row 1. 10—Fuchs. 796—Ger. 985—Hedwig. Tb. 7. 37, a leaflet magnified.

Plant from 3 to 7 inches high, consisting of a leaf, several of which rise singly from a black fibrous root; from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch broad. Leaflets either circular or oblong; sometimes rather cut into lobes; capsules when ripe covering the whole under surface.


*alternifolium* A. Leaflets wedge-shaped, alternate, cut towards the end.

*Jacq. misc. 5. 2—Breyn. cent. 97.*

From 3 to 5 inches high. First found in Britain by Mr. Dickson, on rocks in the South of Scotland. Linn. Tr. ii. p. 290. P.

*viride.* A. Leaves spear-shaped: leaflets circular, but with 3 or 4 angles.

*Dicks. h. s.—Bolt. 14.*

Leafstalk of a pale green, sometimes brownish towards the root, and in some specimens brown and glossy as in *A. Trichomanes.* Wings rhomboidal, fixed to the leafstalk 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 *A. Trichomanes.* Mr. Wood. In the *A. Trichomanes* the wings or leaflets are less regular in their edges, and less distinctly scolloped; but in the *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.


Var. 2. Wings lobed and cut.


Var. 3. Leaf branched. Bolt.

*Bolt. 2, 3—H. ox. xiv. 3, 11—Ger. 985. 2—B. iii. 755, 1.*
CRYPTOGAMIA. FILICES. Asplenium.

A. Trichomanes ramosum. Linn.—A. Trichomanes \( \beta \) (Huds.)
On all the high rocks of Caernarvonshire. 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. Leaflets egg-shaped; serrated; the upper edges expand-
ed at the base, the lower hollowed out.

E. bot. 392—Pet. gaz. 91. 1—Bolt. 15—H. ox. xiv. 3. 25—
Pluk. 253. 5—Walc.—Lob. obs. 474. 3; ic. i. 814—Ger.
em. 1143. 4—Park. 1045. 7.

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. Mr.
Woodw. Plant 5 inches high. Stalk crooked at the base.
On rocks generally on the sea shore, about Prestholm island,
near Beaumaris, at Llandwyn in Anglesea, about the Castle of
Hastings, Sussex, and in Devonshire, Cornwall, and Cumber-
land. In a stone quarry close to the road from Warrington to
Winvick, Lancashire. Bolt. [On the coast of Angus between

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 Weems in Scotland. Lightf. Adiantum trapeziforme.
Huds.

(4) Leaves doubly compound: divisions alternate.

A. Leaflets wedge-shaped, finely scolloped. ru'ta mur'aria.

Knib. 6—E. bot. 150—Sheldr. 68—Bull. 195—Walc.—Cam.
epit. 785—Flü. dan. 190—Tourn. 317. 1—Bolt. 16—Blackw.
219—Gars. 128. a—Fuchs. 730—J. B. iii. 733—Lom. i.
221. 1, and 2—Trag. 530. 2—Dod. 470—Lob. obs. 472. 1;
ic. i. 811. 1—Ger. em. 1144. 3—Park. 1050. 4—H. ox.
xiv. 5. 22—Ger. 983—Matth. 1041.

Stem bare for near half its length. Fructifications in 2 or 3
rows, on each side the rib of the leaf. Bolt. The foliage at
first sight has something of a Trefoil appearance. Dr. 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 ad-
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joining vein or nerve, never towards the edge of the leaf, unless when a vein is found on that side. See E. bot. p. 150.


*Adiantum* ni'grum. A. Leaves almost triply winged: wings alternate: leaflets spear-shaped, cut-serrated.

*Kniph. 7—Fl. dan. 250—Gars. 126—Blackw. 220—Bolt. 17. 1, and 3—Dod. 466—Ger. em. 1137—Ger. 975. 1—H. ex. xiv. 4. 16—Lob. ic. i. 810. 2—Park. 1049. 2.

*Seeds* saffron-coloured. *Linn. Lobes,* the extreme serratures so acute as almost to appear fringed. Mr. *Woodw.* Stalks black or deep red brown; glossy. *Fructifications* 3 to 7 on each segment.


*Var. 2. Wings* long, divided into very fine and longish segments. *Sheppard* in R. *Syn. Pluk.* 282. 3. *Wings* with hair-like segments. *Pluk. Fructifications* none discovered. Possibly a variety of *A. Adiantum* ni'grum, owing to a very shady situation, but if a variety it is a very extraordinary and beautiful one. *Dill.*

*Felix non ramosa,* &c. *Pluk. alm.* p. 150. par. the last but one, as corrected according to mant. p. 78. par. 4. *Mountains of* Mourn 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. *Caps.* in an advanced state, forming roundish, as well as oblong patches. *E. bot.*


**POLYPO'DIUM.** *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 prevalence of a general resemblance in habit, partly to the different appearances observable in them at different ages, and partly 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 description.

The following tabular view of the different British species is offered as a means of facilitating their investigation; the student, therefore, is advised first to compare the plant in question with these characters, and then to look forward for the characters and descriptions given more at large.

(1) Leaves wing-cleft.

P. vulgaris. Lobes oblong, somewhat serrated, blunt.

(2) Leaves winged.

P. Lonchitis. Wings crescent-shaped; finely and sharply serrated: stems with chaff-like scales.

P. Ilven'se. 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.

P. Oreopteris. Wings strap-spear-shaped, wing-cleft; lobes bluntish: clusters of capsules at the edges.

(3) Leaves winged; wings deeply wing-cleft.

P. F. mas. Wings strap-spear-shaped; lobes blunt, finely serrated: stem chaffy.

P. Thelypteris. Wings spear-shaped, acute; lobes very entire.

P. denta'tum. Wings egg-spear-shaped, opposite; lobes egg-shaped, blunt, sparingly cut at the sides, finely toothed at the end.
P. *fonta'num*. Wings egg-spear-shaped, alternate; lobes deeply scolloped.

(4) Leaves doubly winged.

P. *aculea'tum*. Primary wings crescent-shaped: leaves serrated with prickles: stem chaffy.

P. *spinulo'sum*. Primary wings spear-shaped: leaves strap-egg-shaped, wing-cleft, and serrated with fine prickles.

P. *fa'mina*. Primary wings strap-spear-shaped: leaves slender, acute, wing-cleft, or serrated: stems smooth upwards.

P. *crista'tum*. The lowermost secondary wings much longer than those nearest opposed to them.

P. *fra'gile*. Primary wings spear-shaped; leaves wedge, egg, or strap-shaped: segments bluntly or sharply lobed; stem very slender.

P. *trifidi'um*. Primary wings spear-shaped, blunt, leaves of the lower wings mostly 3-cleft: stem bordered.

P. *rhoe'ticum*. Primary wings spear-shaped; leaves egg-spear-shaped, sharply serrated; lower pairs unequal.

(5) Leaves triply winged.

P. *Dryop'teris*. Leaves 3 on a stem; doubly winged.

(1) Leaves wing-cleft; lobes united at the base.

vulga're. P. Lobes oblong, somewhat serrated, blunt: root scaly.


Lobes slightly serrated at the edge. *Fructifications yellowish brown, in rows, parallel to the rib of the lobes.*

Common Polypody. On old walls, shady places, and at the roots of trees, very common. P. June—Oct.*

Var. 2. Lobes doubly serrated.

Barr. 38.

Walls of Windsor Castle. R. Syn. [Worcestershire. St.]

Var. 3. Lobes sometimes cloven at the end, sometimes enlarged by an appendage growing out of one side.

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. 8—Pluk. 30. 1—Bolt. 2. 5. (a) a portion of the leaf.

In this state it never produces fructifications. The same is observable of the waved variety of Asplenium Scleopendrium. Lightf.

On a rock in a wood near Dennys Powys Castle, not far from Cardiff, Glamorganshire. R. Syn. [Near Kidderminster.] P. June—Oct.

Var. 5. acutum. Lobes very long, distantly serrated; tapering to an acute point.

Specimen sent by J. W. Griffith, Esq. [On rocks in North Wales. Crevices of rocks on the South side of the King’s Park, Edinburgh. Mr. Brown.]

(2) Leaves winged.

P. Wings crescent-shaped, the convex side downwards; Lonchitis. fringe-serrated: stems with chaff-like scales.

F. bot. 797—Fl. dan. 497—Tourn. 314—Bolt. 19—Mathb. 922—Ger. 979—Ger. em. 1140. 3—Pluk. 89. 6—H. ox. xiv. 2. row 3. 1—Cam. epit. 664—Park. 1042. 1—J. B. iii. 744—Lou. ii. 34. 1.

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. Leaves 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 leaf parallel to the general stalk. Stalk furrowed above. Fructifications in

* The root is sweetish: by long boiling it becomes bitter. When fresh it is a gentle purgative. An infusion of 6 drams of it in half a pint of boiling water may be taken at twice.
CRYPTOGAMIA. FILICES. Polypodium.

dots, disposed in two parallel lines on each leaflet. Mr. Woodward. Plant from 4 to 14 inches long, and from 1 to 2 inches broad; generally curved. Leaflets, the larger serratures ending in semi-transparent thorns.

Royal Polypody. Great Spleenwort. Spleenwort Polypody. Clefs of rocks. On the highest mountains of Caernarvonshire; on Glydar near Llanberris. [On all the mountains of Breadalbane and Glen lochal, sometimes 2 feet high or more, but quite distinct from the Polyp. aculeatum. Mr. Brown.]

P. May—Sept.

Ilven'se. P. Leaflets opposite, united, blunt; hairy underneath; very entire at the base.

Dicks. b. i.—Bolt. 42—H. ox. xiv. 3, 23—Pluk. 179, 4.

Scarcely more than a finger’s length. Stem greenish, not blackish purple. Linn. Leaflets 6 or 7 on each side the stem; the lower ones opposite, the upper alternate; thick and opaque; generally cloven into 5 or 7 segments, rounded at the ends.


P. July—Sept.

arvo'niem. P. Leaflets spear-shaped, wing-cleft; hairy underneath; stem hairy.

Pluk. 89. 5—Fl. dan. 391. (Mr. Bolton believes his tab. 9, to be the same plant.)

From 3 to 5 inches high. Leaflets 7 to 15 pairs, cloven on each side into 5 or 6 segments; spear-shaped, hairy underneath. Bolt. It is a very rare plant, even on Snowdon. Mr. Llwyd, in Ray Syn. p. 119. On a moist black rock almost at the top of Clogwyn y Garnedd, facing the North-west, directly above the lower lake. Dr. Richardson, ib.


This seems sufficiently distinct from the P. ilvense found on the Scottish Alps by Mr. Dickson. Mr. Griffith thinks that Bolt. t. 9, is only a very small and stiff plant of Polyp, fragile gathered in a high and exposed situation; and that it is not the plant found by Mr. Lloyd in Ray’s Syn.

Phegopteris. P. Lowermost leaflets bent back, each pair united at the base by a 4-cornered little appendage.

Bolt. 20*—H. ox. xiv. 4, 17, f. 3, the quadrangular appendage not expressed.

* The lowermost pair of leaflets touch the pair above, and their bending back to back not expressed. Mr. Woodward.
Leaflets spear-shaped, wing-cleft. Linn. Plant sometimes 19, and stalk 12 inches high. Leaflets, the lowermost pair not confluent as all the rest, and placed 1½ inch 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. Woodward. Whole plant hairy.


P. Leaflets strap-spear-shaped; segments very entire, Oreop'teris. bluntnish: clusters of capsules at the edges.

Fl. dan. 1121—Bolt. 22.

Stem smooth, with 2 furrows; 10 to 15 inches high or more. Wings, the upper and lower ones alternate; segments strap-spear-shaped, blunt, either entire, or finely serrated. The 2 or 3 lower pair of wings gradually shorter, and the lowest pair often pointing downwards. Mr. Dickson observes, that the fructifications are always at the edge of the lobes, both in the young and in the more advanced state, and that they never become confluent.


(3) Leaves winged; wings deeply wing-cleft.

P. Leaves almost doubly winged: leaflets strap-spear- Filix-mas, shaped: lobes blunt, finely serrated: stem and mid-ribs chaffy.

CRYPTOGAMIA. FILICES. Polypodium.

From 1½ to 4 feet high. Lobes of the wings strap-shaped, the ends rounded. Fructifications from 3 to 8 on each lobe, placed in 2 rows near to its base and distant from its edges; none at the end.


Thelypteris. P. Leaves wing-cleft; lobes very entire, the under surface entirely covered by clusters of capsules.

Hedw. theor. 6—Schmid. 11. 1. 2—Bolt. 43—Fl. dan. 760—Mapp. 7. a, at p. 106—J. B. iii. 739. 1—Ger. 981. 3—Ger. em. 1135. 1—Park. 1041. 1.

Its habit that of P. Filix-mas. Stem smooth. Old leaves covered with capsules. Barren leaves broader and blunter. Linn. Root small, creeping. Dickson. 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 Polypodium fragrans of Huds. adopted by Linnaeus is supposed to be only a dwarf plant of this species, but it merits further attention from such botanists as live near Keswick, where Hudson mentions finding it in moist clefts of rocks.

denta'tum. P. Leaves opposite, wing-cleft; lobes sparingly cut at the sides, finely toothed at the ends: stem very slender.

Dick's b. s.—Dick's fasc. iii. 7. 1.

Nearly resembles the Polyp. fragile in size and in 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. Leaves egg-shaped, blunt, cut, unequally toothed; teeth distant, blunt, pale brown. Clusters of capsules near the incisions, towards the edge. Dickson.

* The Siberians boil it in their ale, and are fond of the flavour which it imparts to it. The powder of the root is Madame Nollier's celebrated remedy to expel the tape-worm. She gives the patient a liquid lubricating supper, and, if costive, a common clyster. Early next morning 2 or 3 drains of the root in powder are exhibited mixed with water. If thrown up it must be repeated. The patient must fast two hours, and then take a drastic purge. See Dr. Simmon's Account of the Taenia. I have frequently used it, and seldom without the desired effect.
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. The Polyp. dentatum of Forsk. in Gmelin's Syst. Nat. is a different plant.

P. Leaves alternate, triangular, blunt, deeply wing-cleft; fonta'num, lobes sharply toothed at the end: stem very slender.

Lob. adw. 361. 2, and ic. 1. 810. 1—Bolt. 21—Barr. 432. 1—Pluk. 89. 2, and 3—Ger. 980. 2.

Its habit that of P. fragile, but the leaves 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 3 or 4 inches high. Stem, pale green, thread-like. Leaves alternate. Bolt.

Old walls and rocks. Rocky places near Wybourne, Westmoreland.—Also in Buckinghamshire. Bolt. P. June—Sept.

(4) Leaves doubly winged.

P. Primary wings crescent-shaped: leaves rhomboidal, with aculea'tum, prickle-like teeth: stem chaffy.

Mill. ill.—Bolt. 26. 1 and 3—H. ex. 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.

Sometimes ½ 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.


Var. 2. Leaves sprinkled with a moss-like down. Pluk.

P. Primary wings spear-shaped: leaves strap-egg-shaped, spinulo'sum, wing-cleft, and serrated with sharp-pointed teeth.

Fl. dan. 707.

This has been taken for the Polypod. 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 leaflets on the wings not unequal in size, and the mid-rib of the leaflets serpentine. It agrees with it in the disposition of the fructifications, and in the serratures ending in short awns.

[Bogs on Birmingham Heath. Holloways in Devonshire.]

P. July—Sept.

**Felix-fae**

P. Leaflets strap-spear-shaped, wing-cleft, acute: stems smooth upwards.

*Pluk.* 180. 4—*H.* xx. xiv. 3. *Bolt.* 25—*Munt.* 288. 84—*J.*

Fructifications egg-shaped, somewhat fringed, solitary. Linn. Leaflets deeply cut with one or two divisions: the teeth often ending in a short awn. Woodward. The most elegant of all our Ferns. One cluster of capsules on each lobe of the leaflet. Bolt. So that in a ripening state the whole of the leaflet seems covered by them, whilst in the P. Filix-mas the upper end 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 upwards and downwards. 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.

**Female Polypody.** Moist and shady marshy places. Moist rocky woods; about rivulets, and on heaths. [Lewesdon Hill. Mr. Baker.]

P. June—Sept.

**Crista'tum.** P. Leaflets deeply wing-cleft; segments oblong, blunt, serrated, fringed: clusters of capsules in a double row.

*Mull. frid.* 2. 4—*Pluk.* 181. 2—*Bolt.* 23.

Fructifications on the upper, but not on the lower leaflets. Linn. But with us on all the leaflets when the plant is come to maturity. Mr. Dickenson. In moist rich soil 3 or 4 feet high, and trebly winged; on dry rocks and 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. Woodward. Stem scaly all the way up. Lower leaves of the lower wings larger and longer than those opposite to them.

**Crested Polypody.** Moist woods and shady places in a gravelly soil. In chinks of moist rocks, and old walls; and in marshy places at the root of decaying oaks. [On Ben Bourde, a mountain 7 miles N. W. from Invercauld, Aberdeenshire. Mr. Brown.]

P. June—Sept.

**Fra'gile.** P. 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.

Bolt. 46–Fl. dan. 401–Pluk. 180. 5.

From 4 to 7 inches high. Stem red, bare for about 2 inches at the base; smooth, slender, brittle. Leaflets more than twice as long as they are broad. In habit approaches nearly to the P. rheticum, 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–f. B. iii. 741. 2–Seguier. 1. 1.

From 2 to 6 inches high. Stem red, bare for ½ to 1½ inch from the base; smooth, brittle, but less slender than in the preceding. Leaflets not equal in length to twice the breadth.

Mountains in North Wales. Yorkshire and the other Northern counties. [Near Snowdon on the rocks of Clogwyn du yr Arddû. Mr. Griffith.]

Var. 3. Primary wings spear-shaped, blunt.

About 3 or 4 inches high. Stem red, bare for ½ to 1 inch from the base; smooth, brittle, slender.

This has a general resemblance to the 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 favoured me with specimens of all these 3 varieties gathered from the same root, and I have seen a single specimen uniting the characters of the 2 former.

P. Primary wings spear-shaped, blunt; leaflets of the trilidium.

lower pair of wings mostly 3-cleft: stem bordered.

E. bot. 163.

Three or 4 inches high. Stem brown green, slender, bare for 1 inch or more at the base; edged with a narrow border on each side. Wings nearly triangular; leaflets 3-cleft, the middle segments sometimes notched.

I am indebted to the liberality of J. Wynne Griffith, Esq. of Garn, near Denbigh, for a beautiful specimen of this plant. It is sufficiently distinct from the Polypodium fragile, though in habit much resembling our 3d variety of that species. Both this and the P. fragile have their capsules in a globular bag, which seems attached to the foliage in one point only, and readily separates from it. Not having yet adopted the new genus Cyathrea, we lament that we could not use the trivial name given to this.
CRYPTOGAMIA. FILICES. Polypodium.

Plant by Dr. Smith in E. bot. because there is already a Polypod. incisum in Gmel. syst. veg.

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 the P. fragile. Mr. Griffith found it on Cwm Idwel.

rhæ'ticum. P. Primary wings spear-shaped, distant; leaflets deeply lobed; lobes pretty regularly toothed at the edges.

Dicks. h. s.-Bolt. 45 and 2. 6-H. ex. xiv. 4. 8.

Seven or 8 inches high. Stem red, smooth, slender, convex on one side, bare for 2 or 3 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 the P. fragile. The regular serratures on the sides of the lobes also afford a good distinction, the lobes in the P. fragilis being only serrated towards the end, and that very irregularly.

Shaded rocks, Scotland. Mr. Dickson. Mountains in Westmoreland. Top of Glyder mountains, on the side which hangs over Llyn Ogwan Lake; and near Frymon felon. [On walls near Ambleside, Westmoreland. Woodward. On the Leek road \(\frac{3}{4}\) of a mile from Buxton.]

P. June—Sept.

(5) Plant triply winged.

Dryopteris. P. Stem supporting 3-winged or doubly winged leaves.

E. bot. 616.—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, midlemost figure—H. ex. xiv. 4. 19.

Fructifications near the rib of the 2dary wings. Bolt. Plant from 5 to 8 inches high. The 3 leaves placed near the end of the stem, one terminating and one on each side. The Rev. Mr. Baker observes that, "at the point where the lower pair of pinnæ 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."

Dry stony places in Yorkshire, Lancashire, Westmoreland, and Scotland. [Amongst the rocks at the fall of Lodore on the side of Derwent-water, Cumberland. Barrowfield Wood near Kendal, and other rocky woods in the North. Mr. Woodward. In woods North-east of the road up Frocester-hill, Glocestersh. Mr. Baker. Needwood Forest, Mr. Bagot. In abundance near


Var. 2. Leaves larger. The largest lobes lobed or divided half way down to the mid-rib. Stalk taller, firmer, white, opaque. Bolt.

Bolt. 1, 1.

In White-scars near Ingleton, Yorkshire, and in the Peak of Derbyshire. Bolt.

Adiantum. Capsules forming oval spots, under the ends of the leaves, which are folded back.


About 5 or 6 inches high. Leaflets fan-shaped, with 4 or 5 nicks at the end. Bolt. of a very delicate semi-transparent green, which it retains in a dry state. True Maidenhair. Rocks and moist walls. Barry Island and Port Kirig, Glamorganshire.—Isle of Arran, near Galloway. P. May—Sept.

Trichomanes. Fructifications on the edge of the leaf, solitary, urn-shaped, ending in a thread-shaped style.


Linnaeus also refers to Ray Syn. t. 3. f. 3 and 4, but if the opinion be well founded, as I believe it is, that the real Tr. pyxidiferum is not a native of this island, those figures only represent a var. of the Tr. Tunbridgense.

Tr. Leaves winged; wings oblong, forked, decurrent, toothed. Fl. dan. 954—E. bot. 162—Pluk. 3. 5—Bolt. 2. 7—H. cx. xv. 7. 50.
CRYPTOGAMIA. FILICES. Trichomanes.

Wings sometimes not always, serrated or scolloped. Bolt. Wings elliptical, narrow; teeth sharp. Mr. Woodw. Leaves, all producing fructifications 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. Perhaps in the latter state, it is the plant supposed by the English botanists to be T. pyxidiferum. Mr. Griffith. Capsules 2 valved, furnished with an elastic ring, and placed round the style-like column within the 2-leaved involucrum. Dr. Smith.

Tunbridge Goldilocks. Hymenophyllum Tunbrigense. E. bot. Moist clefts of rocks and stony places. Near Tunbridge. Amongst the pebbles at Cockbush, on the coast of Sussex. On Dartmore, Devonshire, and on the mountains of Westmoreland, Cumberland, Yorkshire, Wales, and Scotland. [High mountains at the Head of Windermere, Westmoreland. Dr. Smith. — On rocks in a shady dell, very near to Llanberis. Mr. Aikin.]

Var. 2. Fructifications on naked fruit-stalks.

Bolt. 31.

Botanists who can examine this and the preceding in a recent state must decide whether they be not distinct species. Its habit, as represented by Mr. Bolton is considerably different from that in E. bot. and though the latter has indeed frustalks springing from the mid-rib, they are not naked, but pass within the substance to the edge of the leaf.

Rocks under Dolbadon Castle near the lake of Llanberis, and on the rock called Foal foot on Ingleborough, Yorkshire. Bolton.

Var. 3. Leaves large, not bearing capsules.

Ray Syn. 3. 3. at p. 128, and 2 a young plant.—Bolt. 30.

Root woolly and hairy. Stems winged, brownish black below, green above. Leaves thin pellucid, shining, deep green. Fructifications none observable. Dill. in R. Syn. 127. n. 14. Leaves indistinctly waved or scolloped on their edges. Our plant probably only a luxuriant variety of T. tunbrigense, their figure, texture, and whole habit being the same, and differing only in size. In cavities excluded from the sun. I have found specimens partaking equally of T. pyxidatum and tunbrigense, which are figured in t. 2. f. 7. Bolton. I have seen specimens according exactly with Mr. Bolton’s figure, from a root which produced other smaller leaves which bore fructifications. Mr. Griffith.

In the foreign specimens which I have seen of the true T. pyxidiferum the substance of the leaf is strong and opaque, not at all like the silky transparency of our plants, and the fructifications are large, urn-shaped, sessile, and brown orange.
CRYPTOGAMIA. MUSCI. Sphagnum.

Trichomanes pyxidiferum. Huds. and Bolt, but not of Linn. Cup Goldilocks. On dripping rocks. At Belbank, half a mile from Bingley, at the head of a remarkable spring, R. Syn.—in a little dark cavern under a dripping rock, a little below the spring of Elm Cragg Well. Bolt.

P. Aug.

MUSCI.

Sphagnum. Male flower; club-shaped: anthers flat: caps. on the same plant, sitting; mouth smooth, covered with a lid, without any entire veil.

S. Branches bent downwards.

Hedw. Theor. 12. 42 to 45, and 13. 46, 47, hist. i. 1. 1, ib. ii. 3. 9-Vaill. 23. 3-Dill. 32. 1-Fl. dan. 474-Schmid. 58. 5-Plak. 101. 1-Besch. it. i. 5, 4, at p. 38-Lob. ic. ii. 242. 2-Dod. 472. 1-Ger. em. 1539. 1-Park. 1306. n. 1.

The Capsules burst with a crackling noise. Linn. Stems growing many together, from 3 to 12 inches high, upright, sometimes divided. Branches at short distances, 2, 3 or 4 from the same part, heavy and hanging down from abundance of moisture. Leaves white, egg-shaped, concave, soft, tiling the branches. Capsules at first sitting, but afterwards they attain short fruitstalks. Dill. Involucr. 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.

Schmid. 58. 6-Dill. 32. 2-Hedw. hist. i. 3. 3-Mapp. at p. 200. C.

Var. 3. Whole plant of a beautiful peach colour.

On Bogs in the New Forest, Hants.

In variety 1 the leaflets are concave, oblong, blunt; in 2 flat, awl-shaped, sharp. Are they not distinct species, the first growing in running, the latter in stagnant water? Willdenow.

S. Somewhat branched; upright.

Dill. 32. 3.

Schreber conjectures it to be a Bryum. Linn. Of a beautiful green. Capsules egg-shaped. Leaves strap-spear-shaped, pointing 3 ways. Neck. In a dense compact tuft, about a finger's length, sometimes dividing in the middle into 2 or 3
CRYPTOGAMIA. MUSC. Phascum.

branches. Leaves a splendid intense green, long, narrow pointed, straight, stiff. Capsules on short fruit-stalks, colour of pale wax, egg-shaped. Dill.

Bogs on Cader Idris, and Snowdon. Dill. —[But I have never found it there in fructification. Mr. Griffith.] See Bryum flexuosum, var. 3.

arbo'reum. S. 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 sitting.

acea'lum. Ph. Stemless: leaves egg-shaped, pointed, approaching.

Schreb. phasc. 1. 1 and 2—Gurt. 276—Dill. 32. 11—Fl. dan. 249. 3—Happ. ii. Phasc. 1, a—Neck. mut. 1. 1, at p. 273, a veil magnified.—Pet. i. 95. 14.

A few lines in length, growing in clusters, assuming rather a globular shape from the convergency of the leaves, which are rather broad, mem braceous, concave, soft, nerveless, green, delicate, ending in a short hair which is more conspicuous in the dry plant. Caps, little larger than 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 veil leans to one side.

Phascum cuspidatum. Gmelin. Common Earth-moss. Heaths, and ditch banks, garden walks, especially in a sandy soil not uncommon, but on account of its minuteness and the leaves secreting the capsules it is very generally overlooked.

A. March.

mu'ticum. Ph. Stemless: leaves egg-shaped, concave, converging, not ending in hairs.

Schreb. phasc. 1. 11 and 12—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.


subula'tum, Ph. Stem short: leaves spear-strap-shaped, upper ones bristle-shaped, but 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 2 to 3 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 2 or 3 branches towards the top. Barren flower in the bosom of the leaves. Lid none. Hedw. Only 3 or 4 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.


Ph. Shoots creeping: capsules lateral.

Dill. 85. 16.

Stems creeping, adhering to the bark of trees. Branches short, cylindrical, mostly in pairs. Leaves short, concave, broad at the base, spit-pointed, clothing the shoot on every side. Capsules extremely small; in the bosom of the leaves. Dill.


Ph. Shoots thread-like, jointed, branched: leafs of the serra'tum, involucrum spear-shaped, serrated. Dicks.

Dicks. 1. 1—Schreb. p. 8. t. 2—E. bot. 460.

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 the Phascum and the Conferva. It consists of numerous green filaments, which through a glass appear creeping, cylindrical, branched, jointed like a Conferva, the interstices pellucid, the joints a darker green. Branches alternate, forked, awl-shaped at the end. Capsules egg-shaped, pointed, sitting irregularly on the sides of the shoot near its base: tawny when ripe. I have not found the veil. It has no lid which separates. The involucrum consists of 3 or 4 spear-shaped leaves, pointed and serrated. Schreber and Weber seem not to have been aware that the jointed shoots belong to the plant. Dicks.

On the north side of Muswell Hill, near Highgate. Dicks. April.


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CRYPTOGAMIA. MUSCI. Phascum.

Dicks. 7. 2.

It has the habit of the Ph. serratum, but is rather larger, the shoots longer; the space betwixt the joints longer, and the leaflets bluntly toothed and reticulated. Dicks.

Discovered by Mr. E. Forster, junior, growing on clay near Walthamstow.


Dicks. 1. 2.

Barren and fertile stems growing intermixed, and forming small green tufts. 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, 1-8th of an inch high. Leaves awl-bristle-shaped, as long again as the capsule. Capsule, one at the end of each shoot, single, sitting, buried in the leaves, inversely egg-shaped, pale yellow. Dicks.


(2) Capsule on a fruit-stalk.


Dicks. 1. 3—Hedw. stirp. i. 11.

Plant extremely minute, hardly visible to the naked eye, unless growing in clusters and bearing its swollen capsules. Involutum, 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 argenteum. Ripens in May. Hedwig. Leaves mid-ribbed, as long as the fruit-stalk.

In barren grassy places, near Croydon. Dicks.

piliferum. Ph. With a stem: leaves oblong, upright, hair-pointed.

Schreb. phasc. 1. 6 to 10.

Stem upright, unbranched. Leaves spear-shaped, ending in long hairs, tiled upwards, upright but expanding. Fruit-stalk extremely short. Wulfen.

nitidum. Ph. With a stem: capsules not taller than the leaves: leaves awl-shaped, keeled, somewhat bundled.

Hedw. stirp. i. 34—Dicks. 1. 3.
CRYPTOGAMIA. MUSCI. Fontinalis.

Exceedingly small; about 1/8th 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 terminating, solitary, or in pairs, naked or distinct, though the leaves extend beyond them; when ripe brownish. Dicks.


Ph. Stemless: fruit-stalk thrice the length of the leaves: rectum. leaves spear-shaped, mid-ribbed, fine pointed.

Plate XVIII. f. 1.

Fruit-stalk and capsule a rich chestnut red. Fruit-stalks straight, sometimes two from the same root. Leaves 5 or 6. Whole plant the twentieth of an inch in height. Capsule not wrinkled.

Specimens from J. W. Griffith, Esq. who found it amongst trees in the front of Garn House, very near the road leading to Henllan.

FONTINALIS. Capsule nearly sitting, furnished with a veil, and surrounded by a tiled involucrum.

Male, bud-like, axillary; on the same plant.

Obs. Differing from Hypnum in nothing but the Capsule not being supported on a fruit-stalk. Web.

F. Capsules lateral: leaves acute, keeled, doubled toge- antipyre'tica. ther, disposed in 3 rows.

Dill. 33. 1-E. bot. 359-Vaill. 33. 5-H. ox. xv. 6. 32-

Kniph. 12-Buxb. iii. 69. 2-Mich. 59. 9-Schmid. 58. 4-

Hedew. 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 terminating ones, and these branch out again. Neck. Floating in the 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 involucrum. Veil conical. Lid conical, blunt, starting with a spring from the ripe capsule. Fringe surrounding a central point. Seeds green. Dill.
Greater Water-moss. Upon rocks and roots of trees, in brooks, rivulets, slow streams and ponds. P. June—Sept.*

**mi'nor.** F. Capsules terminating: leaves egg-shaped, acute, concave: pointing three ways; always in pairs.

*Dill. 33. 2—E. bot. 557.*

Leaves doubled together and keeled, on the thicker branches in pairs. Linn. Shoots 4 inches long, in rapid streams half a yard or more, very much branched. Branches 3-sided, ending in a sharp point. Capsules egg-shaped, on short fruit-stalks. Weber. Shoots shorter, more branched, and leaves smaller, thicker and blunter than in the F. antipyretica. Dill.


squamosa. F. Capsules lateral: leaves tiled; awl-spear-shaped.

*Dill. 33. 2—E. bot. 557.*

Leaves sometimes spear-shaped, pointed. Very nearly allied to F. antipyretica. Huds. Capsules egg-shaped, sitting. Neck. Long and slender; fertile stem generally forked; barren stem more branched; 4 to 6 inches long. Leaves long spear-shaped, partly embracing the stem, so slender as to appear awl-shaped to the naked eye. Hedwig. Shoot 4 to 12 inches long, branched, floating in the direction of the stream, slender, black, bare near the root. Leaves dark green, smooth, shining, black when dry. Branches 3-sided. Capsules on the side of the branches sitting, egg-shaped, immersed in a leafy involucrum. Dill. The lower parts of the stems losing their leaves resemble horse-hairs matted together. Mr. Stackhouse. The capsules are usually produced on the shoots of the preceding year, or on the still older branches; never on the young shoots. Mr. Griffith.

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.]*

penna'ta. F. Capsules lateral: leaves pointing 2 ways; expanding.

Hedwig. *strip. iii. 19—Vaill. 27. 4—Hall. enum. 3. 2, at p. 109; hist. 46. 2, at iii. p. 56—Dill. 32. 9—Schmid. 58. 2.

* The Scandinavians line the inside of their chimneys with this to defend them against the fire, for, contrary to the nature of all other moss, this is hardly capable of burning.
Leaves with wavy wrinkles. Capsules sitting; 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. Involucr. composed of spear-shaped, pointed, shining leaflets, taller than the capsule and closely embracing it. Pollich. Stem thread-shaped, rigid; branches in opposite directions, decumbent with age. Leaves without veins.


F. Capsules axillary: leaves strap-bristle-shaped, pointing capillacea, one way; those of the receptacle very long, convoluted, awl-shaped. Dicks. ii. 1.

Dill. 33. 5.

Shoots 5 to 7 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. Capsules lateral: leaves mostly pointing one way, el-alpina, liptical, 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. Mr. Brown. Fruit-stalk nearly as long as the capsule. Foliage black when dried.

Alpine Water-moss. On rocks and stones in the alpine rivulets of Scotland. [On stones in Bala-lake, and rivulets about Llanberris, also in many small rivulets about Garn, Denbighshire. River Clwyde not 10 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.

F. Branched, creeping: capsules lateral, pointing one secundae way: leaves egg-shaped, taper-pointed.

Hedw. Stirp. 3. 15-Dill. 32. 6-Vaill. 27. 17.
CRYPTOGRAMIA. MUSCI. Buxbaumia,

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 involucre of narrow leaves, ending in hairs, very numerous. Lid spat-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 16 teeth; inner membranaceous, plaited.

Male, bud circular.

folio'sa.

B. Stemless: capsules nearly sitting, surrounded with leaves.

Dicks. b. 1. Schmede. buxb. 2, lower part of the plate, consisting of the figures distinguished by Roman numerals:—

Hall. enum. 3. 3, at p. 109; hist. 46. 3, at iii. p. 56—Dill. 32. 13—Fl. dan. 249. 1-Happ. ii. Phascum 1, the central plant—Hall. it. belv. 2. 3, in opusc. at p. 308.

Leaves of the involucrum awned. Willdenow. Leaves, the lowermost open, oblong, the uppermost upright, spear-shaped, taper-pointed. Capsule sitting. Huds. 466.

Phascum montanum. Huds. Phascum maximum. Lightf. On earth upon rocks near Llanberris in Caernarvonshire. Dill. 253, and on Hartfell mountain near Moffat. Sheffield in Huds. [Cwn Cennog Rocks, also about Craig du, by the road side near Llanberris. Mr. Griffith.]


SPLACH'NUM. Capsule cylindrical, veil and receptacle very large; fringe with 8 teeth.

Male, a bud on a different Plant; circular terminating.

sph'ricum. Spl. Receptacle globular: leaves spoon-shaped but tapering to a slender point.

Hedwig. stirp. ii. 16—E. bot. 785.

Fruit-stalk very long, greenish and reddish brown. Capsule very small. Lid blunt. Receptacle green. Linne. the son. Stem upright, hardly one inch high, seldom branched. Leaves distant, alternate, spoon-shaped but tapering to a point. Fruit-stalk very long, (3 or 4 inches,) upright, terminating, tawny at bot.
tom, green above. **Receptacle** large, globular, green. Capsule cylindrical, blunt. Lid blunt. Fringe 8 pair of teeth, yellowish. **Hedwig.** Fruit-stalks sometimes 4 or 5 inches high.

Mountains near Stirling. Dr. Buchanan in Dicks. p. 3. [Growing on cow-dung near the old castle at Llanberris; also about Llyn Aled, Denbighshire. Mr. Griffith.]

**Spl.** Receptacle nearly globular: leaves battledore-shaped, vasculo'sum-distant.

**Hedw. strip. ii.** 15.

Like *S. ampullaceum*, but in that species the receptacle is more top-shaped and yellower; in this nearly globular and blood-coloured. Leaves egg-shaped, pointed. Linn. Barren stems 2 inches, fertile ones one inch long, upright, unbranched. Leaves spatula-shaped, blunting, alternate, distant. Fruit-stalk one and a half inch, upright, red. **Receptacle** large, pear-shaped, blood red. Capsule cylindrical, upright, brownish yellow. Fringe simple, composed of 8 teeth, in pairs. **Hedwig.**

**Phascum pedunculatum.** Huds. ed. 1. adopted by Linnæus. Upon bogs and cow-dung, and on the points of rocks on the tops of the Highland mountains, as Ben Lomond, and in the Isle of Sky and elsewhere. **Lightf.** 697.—On Scarbrae Moss in the parish of Kirkmichael. Dr. Burgess. On mountainous moist heaths in Yorkshire, Westmoreland, and Wales.


**Spl.** Receptacle cruetshaped: leaves arrow-spear-shaped, sagittifolium acute.

**Plate XVIII.** f. 2.

Leaves bordered, arrow-shaped but slender; mid-rib coloured. Caps. with 8 single teeth. Mr. Griffith. About 1 inch high. Stem thickly clothed with leaves. Fruit-stalks from the last year’s shoots, about \( \frac{1}{2} \) inch long; not much taller than the shoots of the present year. Capsules nearly cylindrical.

[This plant was first discovered, and specimens communicated to me by J. Wynne Griffith, Esq. who gathered it about Llyn Idwel; also on the bog by the old castle near Llanberris.]

**Spl.** Receptacle inversely bottle-shaped: leaves spear-ampulla'ceum shaped, acute, generally serrated.


Receptacle empty, transparent, an extension of the fruit-stalk. Linn. 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

Purple Bottle-moss. Turfy bogs, but only where the dung of animals has fallen. Linn. Bogs and marshes, and often upon cow-dung. Lightf. Bogs about Hitchin Ferry near Southampton, and by W. Wickham, and Addington near Croydon. R. Syn. Flowers in May, ripens its capsules in July. P. Hedw. [Geldestone Fen near Bungay, Suffolk. Mr. Stone.]

A. March—May.


Hedw. stirp. ii. 12.

Upright, not branched, near 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 lopped, leaning a little. Mouth fringed with 8 pairs of teeth. Veil oblique. Hedwig.

In moist alpine situations in Scotland. Dicks. ii. 3.


Hedw. stirp. ii. 38.


Dill. 44. 4—Ray 3. 2, at p. 128.

Leaves broad, shining. Fruit-stalks golden yellow. Dill. A different plant from the Splachnum vasculosum. Linn. to which Huds. improperly referred it. Dicks. II. 2.

Rotten spongy ground, as in the pastures called Emott Moor, Lancashire. Also in Montgomeryshire. Dill. On Ben Nevis. Dicks.

mnioi'des. Spl. 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, terminating, about half an inch long. Capsule upright, egg-shaped. Receptacle an inverted cone. Lid flat, bluntly pointed. Fringe eight pairs of teeth, broad, united. Veil slender. Hedwig. In the star-bearing shoots the edges of the leaves are sometimes set with hairs. Mr. Griffith. The capsule is larger than the inversely conical receptacle, but in Spl. 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 the Spl. Breweri the leaves are narrower and the points longer.

Mountainous places. Dicks. I. 2. [Near Llyn Idwell, Caernarvonshire. It frequently occurs upon the dung of foxes and badgers, which are very numerous about Snowdon. Mr. Griffith.]


Plate XVIII. f. 3—Dicks. 4. 2.

Fertile shoots ½ inch high. Leaves concave, inversely egg-shaped, entire, bordered, reticulated, the meshes confluent, keel curved, serrated, ending abruptly in a serrated awn-like point. Fruit-stalks 1 to 1½ 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 16, in pairs. Veil extinguisher-shaped, but blunt, as if lopped. Barren shoots, terminated by rosaceous cups; all the leaves spear-shaped, serrated, ending in fine points; the sides approaching. Mr. Griffith. Approaches very near to S. urceolatum, from which it differs in the habit of its leaves, its slender and almost cylindrical receptacle. Dicks. S. purpureum of Bot. Arr. ed. 3.

On Ben Lawers in the Highlands. [On cow-dung about Llyn Idwell. Mr. Griffith.]

P. June, July.


Hedwig. stirp. ii. 13.


Highlands of Scotland. On Ben High.
Capsule a club-shaped termination of the fruit-stalk; leaves battledore-shaped.

*Hedw. stř. iii. 40.*

*Leaves* folded when dry; with much moisture they lose their colour at the edges, thence attaining a membranaceous appearance. The nerve or keel does not extend to the extremity of the leaves. *Fruits* pale upwards, of a fine pink colour near the base. *Caps* a continuation of the fruit-stalk, inversely egg-shaped. I have not observed any teeth. Mr. *GRIFFITH*. Plant about an inch high. *Leaves* of a beautiful green, broadest at the end; mid-rib indistinct, hardly discernible in the lower leaves. *Fruits* ½ inch long. *Receptacle* very short, and only to be distinguished from the fruitst, and caps. when the latter is ripe. *Hedwig* says the mouth of the capsule has 8 pair of teeth, which always stand upright and never expand, as in the other species. Specimens sent me by J. W. *GRIFFITH*, Esq. who first discovered it, growing on the eastern side of Snowdon, about 150 yards from the summit.  P. Autumn.

**POLYTRICHUM.** *Capsule* with a veil: outer fringe with 32 teeth.

Male, a circular bud, on a different plant; terminating.


Great golden *Maidenhair*, or *Goldilocks*. Woods and moors in wet boggy places.  P. May, June.*
CRYPTOGAMIA. MUSCI. Polytrichum.

Var. 2. Leaves shorter and less flexible. **Dill.**

**Dill.** 54. 2-Vaill. 23. 6-Fl. dan. 295-H. ox. xv. 7. 6 and

**Shoots** much shorter than in var. 1, and mostly branched. **Weis.** **Veil** double, the outer one hairy, the inner one much smaller, white, smooth, membranaceous. **Leers.** **Leaves** sharp-pointed, very entire. **Fruit-stalks** two inches long. **Pollich.** 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.** Female plant with one single tuft of leaves at the top of the stem, the lower part of which is naked. **Recept.** orbicular. **Veil** single. **Lid** acutely conical, hanging over the capsule. **Male,** 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 male organs. Mr. **Stackhouse.** Mr. **Griffith** thinks this distinct from the preceding, the capsule having 64 teeth, whilst in that it has only 32; but such as I have examined have 64.

On hills, dry or wet. P. May, June.

Var. 3. **Linn.** Leaves terminating in hairs.

**Happ.** i. **Polytr.** 2-Vaill. 54. 3-Vaill. 23. 7-Buxb. 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-stalk** terminating, about one inch long. **Weis.** **Fruit-stalks** half an inch high, or a little more. **Capsule** with its veil, two lines long, and one broad. **Pollich.** **Leaves** bent inwards a little, not serrated, terminating suddenly 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.

**Pol.** **Shoots** simple: leaves strap-spear-shaped; in- **subrotun-** distinctly serrated upwards: capsules roundish, **dum.**

**Hedew. stirp.** i. 13-Curt. 102-Dill. 55. 6-H. ox. xv. 7. row 2. 7-Pet. mus. f. 22-Vaill. 26. 15, vei3 wanting.

**Veil** open, larger than the capsule. **Linn.** **Leaves** obscurely serrated. **Capsules** roundish, nodding. **Hedwig.** **Leaves** sometimes slightly serrated towards the point. **Capsules** nearly as broad as they are long.

**Minium polystichoides.** **Linn.**—*Polytrichum polystichoides.* **Huds.** 470. **Pol. nanum.** **Hedwig.** Heaths. Muddy soil. [Spink's

*When the Laplanders sleep all night in the woods, they make themselves beds of this moss; and the bears collect it for the same purpose. Squirrels and birds use it in making their nests.*
CRYPTOGAMIA. MUSCI. Polytrichum.

Grove in a dry ditch. Mr. Stone. Commons about Kinver in large patches.] P. May.

**alo'ides.**


_Hedw. stig. i._ 14—_ Dil. 55._ 7—_ Buxb. 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. Caps. cylindrical, upright, but leaning as it becomes older. Veil larger than the capsule. Wris. Shoots proliferous when old. Leaves serrated. Caps. cylindrical when ripe. Receptacle none. Leers. Leaves awl-shaped, serrated, opaque, reddish near the point, with an appendage somewhat broader than themselves. Caps. contracted beneath the rim, tapering at the base. Mr. Griffith. Leaves serrated at the ends and also on the back of the mid-rib. Capsules twice as long as they are broad.


P. March—July.

Var. 3. Leaves strap-shaped, serrated, pellucid, with an appendage of the same width: capsules roundish, not tapering at the bottom. Fem. plants grey green. Male darker coloured; they grow in distinct patches. Leaves hair-pointed. Fruit-stalk and veil orange coloured. Male flowers tilled, cup-shaped, sitting, terminating, red. Mr. Stackhouse.

[Ditch banks and road sides about Henllan, Denbighshire. Mr. Griffith. Hills in Cornwall, common. Mr. Stackhouse.] Spring.

**Lercyni-cum.**


_Hedw. stig. i._ 15.

Stem upright, undivided, 1 inch long. Leaves strap-shaped, keeled, very entire, bowed in, alternate, nearly upright, pointed, naked. Fruit-stalk terminating, 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. Mouth fringed with 32 short teeth, connected at the base. Hedwig. Stari or male buds formed of 5 spoon-shaped pointed leaves. Mr. Griffith. Caps. urn-cylindrical, rather narrower in the middle.

_Bryum incurvum._ Huds. Pastures and rocks about Llanberris. Mr. Davies. In the Highland mountains. Dicks.

P. June—Oct.

Dill. 55. A—Hall. enum. 3. 6. at p. 109; hist. 46. 6. at iii. p. 56—Fl. dan. 296.

Shoots from $\frac{1}{2}$ to 2 inches long; very much branched. Leaves slightly toothed. Capsules egg-shaped, leaning when ripe. Lid conical, beaked. Mouth with a ring; fringe fine, short, upright, white. Weber. Caps. unequally distended, green, blackish when old. Lid saffron-colour, its point white. Dill. From 2 to 3 inches high.


\$\beta$ Huds. P. urnigerum, which see.


Dill. 55, 5—Vaill. 28. 13—Fl. dan. 297.

Capsules when ripe nodding. Linn. Two or 3 inches high; with lateral branches, somewhat forked, rising to nearly an equal height. Fruit-stalks lateral, two or three inches high. Involuter. red. Capsule cylinrdirical 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, 2 inches high, stellated at the ends. Leers. Beak of the lid very slender. Mr. Griffith.

At the foot of Cader Idris. Dill. [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. Near the road side between Denbigh and Voylas, by the rivulet before you arrive at a place called Pensylvania; and on Cader Idris with the shoots hardly $\frac{1}{2}$ inch high, though the fruit-stalks as tall as usual. Mr. Griffith.] P. June—Aug.

MNI'UM. Capsule with a veil: fringe with 16 teeth; sometimes though rarely with 4.

Male. Bud circular, rarely knob-like, mostly on a separate plant.

(1) Capsules upright, cylinrdirical.

Mn. Capsules slender; lid needle-like: leaves spear- acicula're. shaped, upright, mostly pointing one way.

Dicks. b. s.—Hedw. stirp. iii. 33—Dill. 46. 25.

One or 1$\frac{1}{2}$ inch 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.


Var. 2. Stems trailing; leaves somewhat open. Huds.

Fl. dan. 1001. 1—Dill. 46. 26—Hall. it. herc. in opusc. p. 152. f. 1 and 2, Bryum, &c.—Vaill. 27. 16—Pet. mus. cent. 1. t. 1, f. 74—H. ex. xv. 5, row 4. 29.


On large stones that lie in the rivulets in the moors of the Peak of Derbyshire. Fet. and in the mountain torrents near Llanberris, Caernarvonshire. Dill. [In the first brook after crossing Pont y Alwen, between Denbigh and Cerrig y druidion. Mr. Griffith.]

Var. 3. Shoots slenderer, upright; leaves pointing one way.

Like var. 2, but shorter, less branched, more upright, and of a yellower green. Mr. Griffith. Grows with var. 1.

pellucidum, Mn. Stem simple: leaves egg-shaped.

Schmid. 3—Fl. dan. 300—Dill. 31. 2—Hall. enum. 4. 8. at p. 118; hist. 45. 8. at iii. p. 41—Vaill. 24. 7.


Var. 2. Leaves exceedingly narrow, and pellucid.

R. Syn. p. 78. n. 5—Dill. 31. 2. E. F.


Dick. b. i.—E. bot. 354—Dill. 46. 16—Curt.—Vaill. 28. 12—Kniplh. 6—Buxb. ii. 4. 1—Fl. dan. 824. 1—H. ox. xv. 7. 11 and 13.

Grows in dense patches, branched, nearly upright, 1 to 3


(2) *Capsules* leaning, roundish.

*MN*. *Capsules* roundish; *lid* blunt; *shoot* sometimes *fonta'num* branched, upright: *leaves* spear-shaped, slender, bent inwards at the points.

Dill. 44. 2—E. bot. 390—VailL. 24. 10—Fl. dan. 298—Happ. iii. 7—H. ex. xv. 6—row 3. 8—Mich. 59. 4—Pluk. 47. 2.

The old shoots covered with brown knap, and buried 3 inches deep. From these proceed slender cylindrical shoots, some of which end in stars. *Fruit-stalks* 2 inches long; proceeding from the shoots of the preceding year. *Neck.* Readily known by its stiff habit. *Shoots* 2 to 4 inches long. *Weis*. *Leaves* serrated, open, in the young shoots mostly pointing one way. In this species, and also in the *Mnium palustre*, the fertile and barren shoots adhere so closely at bottom as to appear but one plant. *Leers*.

*Br. fontanum*. Huds. [Low wet meadows, turf bogs, and springs, Earsham. Near Bungay, Suffolk. Mr. Stone. Cold clear streams in Westmoreland on the sides of hills. The veil falls off in May. Mr. Gough.]

P. May—Aug.

*MN*. *Capsules* pear-shaped; *lid* blunt; *shoots* rarely *uligino'sum*, branched: *leaves* oblong-spear-shaped, blunt.

Dicks. b. s.—Hedwig. stirp. 1. 1 and 2—Dill. 49. 58.—Schmid. 57. 4.

*Shoots* very short. *Fruit-stalks* 3 inches long, terminating. *Capsules* dull yellow, inversely egg-shaped. *Lid* blunt. Growing in patches. *Leaves* scattered, 2 lines or more in length. *Fruit-stalks* terminating. *Capsules* upright, afterwards bending a little; 1 line long. *Lid* short, pointed, white. *Veil* smooth, reaching but half way down. *Pollich*. 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 terminating fruit-stalks. *Stamens* and *pistils* in the same or in separate flowers. *Ring* none. *Fringe* double, 16 teeth in each. The roots are so closely attached together, that without great care it breaks off, and the plant appears without a stem.
CRYPTOGAMIA. MUSCI. Mnium.

**Hedwig.** Short, sitting, sometimes undivided, sometimes with 1 or 2 branches. Leaves green, narrow. Fruit-stalks about 2 inches high, of a shining gold colour. *Dill.*


(3) *Capsules leaning, oblong.*

**Mn.** Capsules egg-oblong; fruit-stalks lateral; leaves awl-shaped.

*Hedw. stfrp. ii. 34—Dill. 50. 59—H. ox. xv. 7. row 2. 19—Buxb. iv. 65. 2.*


A. Mar.—May. P. Hedwig.

**heteromal**—**Mn.** Capsules egg-shaped; lid taper-pointed, bent; shoot seldom branched; leaves bristle-shaped.

*Hedw. stfrp. i. 26—Vaill. 27—Dill. 47. 37—Fl. den. 479—H. ox. xv. 6. row 3. 5, and in 7 the leaves straight—Buxb. ii. 2. 8.*


A. Mar.—May.

Var. 2. Leaves shorter, lower ones pointing 2 ways.

*Dill. 47. 38.*

Leaves yellow green, suddenly narrowing from the base, upwards 1-rowed, downwards 2-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.—Specimen from Mr. Griffith, who gathered it on the rocks of Clogwy Du y r Arddu p. Snowdon.

Mn. Capsule egg-oblong: lid taper-pointed, bent; shoots glau'cum, branched; leaves egg-shaped, acute, tiled.

Dill. 46. 20—Vaill. 26. 13—H. ox. xv. 6. row the last, 22.

Stem with the appearance of Sphagnum palustre. Leaves whitish. Lid awl-shaped. Linn. Leaves 3 lines or more in length, very entire. Lid awl-shaped, very sharp pointed. Mouth fringed. Pollin. Whole plant brittle, greyish when growing, or pale glaucous green; whitish when dry. Veil slender, white. Dill. One to 3 inches high; branches thick. Fruit-stalk 1 inch, but only ½ inch higher than the shoots.

Br. glaucum. Linn. Dicranum. Hedwig. Mountainous heaths. [Near the copper-works at Llanberris; but very rarely bears fruit. Mr. Griffith.]

P. Aug.—Nov.


Hedw. theor. 8. 1 to 4—Dill. 46. 23, 24—Pluk. 44. 7—Pluk. 49. 1, several shoots rising from the top of that of last year.

Shoots from 1 to 3 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.


Mn. Capsules egg-oblong; lids conical: shoots branched, palus'tre, forked: leaves awl-shaped, acute.

E. bot. 391—Dill. 31. 3—Vaill. 24. 1—H. ox. xv. 6. row 3. 9—Schmid. 56. 2.

Capsules crooked after shedding their seeds. Fruit-stalks slightly waved. Mr. Griffith. Fruit-stalks yellow. Reyg. often 2 inches long, RELH. from the forks of the stem. Neck crowded. Stems upright, 2 to 5 inches high; mostly 2, sometimes with 3 divisions. Leaves slender, soft, pellucid, keeled, yellow green, yellow when dry. Dill. Stems 2 or 3 inches high, branching towards the top into 2, 3, or 4 shoots. Leaves, lower ones downy. Summit-leaves flat, large, forming stars, in which are the barren flowers. Fruit-stalks from the tops of the Vol. III.
last year's shoots, which now likewise support new shoots. Capsules leaning.
 Turf bogs and wet heaths, marshes and moors. [Near Bungay, Suffolk. Mr. Stone.]

Var. 2. Stem branched, upright. Fruit-stalks from the bosom of the leaves. Huds.

Dill. 31. 4.
Stem sometimes simple. Dill. 236. Fertile flowers not discovered. Dill. in R. Syu. 78. n. 3.—Smaller than the preceding. Fruit-stalks axillary, numerous, not terminating in capsules, but in small globular heads containing a powder. Seems to be the male plant.

M. ramosum. Huds. ed. 1. 403, and Gmelin Syst. veg.


Dill. 49. 51-H. ox. xv. 6. row 4. 4, some of the fruit-stalks terminating.
Grows in very dense patches. Stem upright, mostly forked, and these shoots sometimes dividing again. Leaves spear-awl-shaped, in some shoots forming terminating stars. Fruit-stalks an inch high, at first upright, afterwards a little leaning. Lid conical, pointed, scarlet. Veil upright, afterwards oblique. Weis.

Var. 2. Leaves less rigid; spear-shaped.

Dill. 49. 52.

Leaves ending in hair-like points. Capsule finely pointed. Dill.
On Emott Moor on the borders of Lancashire and Shobdon Marsh, Herefordshire. [Near Llyn Aled Lake, Mr. Griffith.]

June.

(4) Capsules drooping.


Dicks. b. s. and fasc. iii. 7. 3-Dill. 39. 36.

The fuscous woolly matter which surrounds the shoot is a con-
CRYPTOGAMIA. MUSCI. (Mnium.)

stant attendant. Fruit-stalks at the base of the branches, golden red, hardly 1 inch long, crooked. Capsule golden yellow, globular. Mr. BRADBURY. Leaves serrulated chiefly towards the end.

Hypnum chrysocomum. Bot. arr. ed. ii. In bogs in the northern parts of Yorkshire, and in moist places on Glyder Mountain. DILL. Boggy places in Scotland. DICKS. [On bogs with the Mnium palustre in Greenfield, Saddleworth, Yorkshire, and Stayley, Cheshire. Mr. BRADBURY. By the side of Avon las, near Pistyll, in Llanberris parish. Mr. GRIFFITH. Foot of Pentland hills, near Edinburgh. Mr. BROWN.]

Mn. Capsule spear-shaped; lid blunt; shoots somewhat mutans, branched; leaves egg-shaped, acute.

Hedw. stirp. iii. 8—DILL. 51. 74.

Shorter than the preceding. Capsules pear-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.


Mn. Capsules pear-shaped, lids flat; shoots rarely branched; leaves oblong, taper-pointed.

E. bot. 342—DILL. 52. 75—Vaill. 26. 16—H. ex. xv. 7. 17—

Happ. i. Mnium. 2—Fuchs. 629. 2—Trag. 528. 2—J. B. —iii. 760. 2—Louv. i. 222. 4—Dod. 475. 1—Ger. em. 1359. 4, the middle one of the 3 lower figures.—Park. 1052, left hand upper fig.—Fl. dan. 648—Ger. 1371. 4.

Grows in large patches. Stem 1 to 2 inches high, but mostly buried in the earth. Fruit-stalk a full inch long. Caps, pear-shaped, golden yellow. Weiß. 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 4-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.


A. Mar.—May.

If the fruit-stalks be moistened at the bottom, the head makes 3 or 4 revolutions; if the upper part is moistened, it turns the contrary way. LINN.

Dill. 53. 79-Vaill. 26. 18—Happ. ii. 6.

Shoots ½ 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-stalk ½ to 1 inch long, when old saffron-coloured, issuing out of a purple tubercle encompassed by slender leaves. Capsules egg-shaped. Dill. Fruit-stalk either solitary or several together. Wildenow.

Br. serpyllifolium cuspidatum. Huds. and Bot. arr. ed. ii. Woods, moist heaths, shady places, and in bogs on heaths and meadows.


Dill. 51. 71—Mich. 59. 2—Curt.—Vaill. 24. 4 and 5—H. ox. xv. 6. row the last, 3 and 4, as it sometimes appears before it produces capsules.

From ½ to 1 inch high, but larger in moister situations, mid-rib red, stiff. Leaves green, pellucid, finely crenated. Fruit-stalk saffron red, shining, 1 to 2 inches long, bent like a swan's neck. Capr. oblong, nodding, swollen, dark green. Lid brown. Leaves at the base of the fruit-stalk slender. Dill. Male shoot simple; female branched at the base. Leaves sharply serrated and ending in a sharp point.


P. Feb.—May.


Dill. 50. 67—Fl. dan. 1122. 2—H. ox. xv. 6. row 5. 19—Vaill. 24. 6.

Shoots, at the ends of some a very small brown star. Very nearly allied to Bryum caspiticum. Linn. Leaves short, broad, ending in a short hair. Fruit-stalk 1 inch long, issuing from the last year's shoots. Capsules swollen, reflected. Lid hemispherical, shining. Ray. Capsules less pendent when ripe. Dill. From ½ to 1 inch high. Its sitting shoots, and expanding upper leaves, distinguish it from the B. caspiticium, though it should not be in fruit. Neck. Differs from Bryum caspiticum in its greater size, the lids of its capsules being sharp pointed, and its leaves not shining. Weib.

Bryum capillare. Linn. Huds. Mud walls, heaths, roofs.

P. Feb. March.
MN. Capsules oblong-egg-shaped: fruit-stalks from near anno'tinum the root: leaves pellucid, egg-shaped, taper-pointed.

Dill. 50. 68.

Leaves spear-shaped, pointed, not twisting when dry, turning brown when soaked in water. Fruit-stalk 1 inch long. Capsule oblong, pendent. Lid pointed; blunter when old. Dill. Stem ½ to 1 inch high, simple, or branched almost from the bottom. Leaves very entire, those on the stellated shoots broader.

Bryum annotinum. Huds. Woods and moist shady places.

[Crrib y Ddeseil. Mr. Griffith.]

P. March, April. Huds.—Summer. Dill.

MN. Capsules oblong-egg-shaped: stem unbranched: punctatum fruit-stalks often several together: leaves inversely egg-shaped, very entire, blunt, dotted.

Dill. 53. 81—Happ. ii. 4—Vaill. 26. 5—Pluk. 45. 7—H. ox. xiv. 6. 39, and 40.

It varies in the fruit-stalks being solitary or incorporated, and also in the fertile shoots being upright, and the barren shoots creeping. Willdenow. Grows in large patches. Stems simple. Leaves with a scarlet rib, cartilaginous and purple at the edges. Fruit-stalks terminating, generally single, sometimes 3 or 4 together; one to two inches high; thicker downwards. Capsules nodding, egg-shaped. Seeds greenish. Shoots without capsules, ending in roses. Weis. Leaves pellucid, smooth, pale green. Fruit-stalks one to three on a plant. Dill.


Var. 2. punctatum. Bot. arr. ed. ii. Leaves longer, more pellucid.

Dill. 53. 80.

Leaves longer and blunter than β of Linnaeus. Capsules not so pendulous. Lid spuit-pointed. Fruit-stalks three to five on a plant. Dill.

In bogs in the West Riding of Yorkshire.

Capsules half ripe in spring. Dill.

MN. Capsules oblong-egg-shaped: fruit-stalks several to- undulatum. gether: leaves oblong, waved, serrulated.

Dill. 52. 76—Vaill. 24. 3—Mich. 59. 5—Tourn. 326. E.—Pet. gaz. 95. 16—H. ox. xv. 6, row the last, 1—Neck meth. f; 6, at p. 273, a star-like head.

Root strong, creeping. Shoots 3 or 4, to 5 or 6 inches long, branched or unbranched. Leaves thin, pellucid, strap-spear-shaped, waved and serrated. Caps. pendent; lid blunt. Veil


*Mn.* Capsules oblong-egg-shaped; shoots proliferous; leaves spear-shaped, pointed, forming terminating roses.

Dill. 52. 77—Buxb. 11. 1. 3.

*Stems* straight, naked. Leaves terminating, 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-stalk 1 inch long, thick. Dill. Very elegant in form; shrub-like. Stems naked at 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.

*Bryum serpyllifolium proliferum.* Huds. and Bot. art. ed. ii. Wet places in woods and heaths near Bishop's Castle. Dill.—[Bungay, Suffolk. Mr. Stone.]

Var. 2. Capsules and fruit-stalks very long.

Dill. 52. 78.


Wet places in woods and heaths.


*Hedw. stirp. i. 37—Dill. 51. 70—Vaill. 26. 12.*

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 plants not so tall. A powdery brown substance in the centre of the star. Leers. Fertile stem ½ an inch; Barren stem an inch high, or more. Leaves, the upper ones a little toothed towards the ends. Capsule bent horizontally. Mouth, outer fringe of 16 teeth. Hedwig. Fruit-stalks from the ends of the young shoots; pale red. Dill. The whole plant has a silky

P. March—June.


Curt. 166—Dill. 50. 66—H. ox. xv. 6. row 5. 15—Vail. 29. 7.

Fruit-stalks red at bottom, yellow green at top. Reyc. 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 2) 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, nipple-shaped. 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 16 teeth.


Hedw. stirp. iii. 7—Dill. 51. 72—Vail. 24. 2 and 2—H. ox. xv. 6, row 5. 20.

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 2 inches long, purple. Capsules bent downwards, bellying, green. Lid small, shining, white. Veil short, brown, red. Dill.

Bryum ventricosum. Dicks. and Gmelin. Bryum triquetrum. Huds. Mnium triquetrum according to Lightf. 713, Huds. and Relh. n. 786, but in the specimens of Mnium triquetrum in the Linnean herbarium and Ehrhart's phytophyllacium the capsules are upright slanting. Dicks.

Leaves pointing 3 ways; not pressed to when dry. Mr. Griffith; who limits the reference to Dill. to the figures marked D. E. Leaves mid-ribbed, bordered, bristle-pointed; upper ones spear-egg-shaped, lower ones egg-shaped.

Turf bogs and marshy places. turf pits, Ellingham Fens, Norfolk. Mr. Stone. On mud or gravel by the sides of rivulets
and springs, in the ascent to Snowdon and Glyder. Mr. Griffith.] March—May.

Var. 2. Larger in all its parts.

Dill. 51,73—Fl. dan. 1122. 1.

Leaves spear-shaped, alternate. Fruit-stalks red, sometimes branched. Leave 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.


BRY'UM. Fruit-stalk terminating, issuing out of a tubercle: capsule with a veil.

Male, a bud either on the same or on a different plant; often axillary.

SUBDIVISIONS OF THE BRYUMS.

A. Capsules sitting, or nearly so.

B. Capsules on fruit-stalks, UPRIGHT.

1. Stemless.
2. Stem very short, rarely branched.
3. Stems trailing.
4. Stems upright.
   a. Capsules roundish.
   b. Capsules egg-shaped.
   c. Capsules oblong.

C. Capsules on fruit-stalks, LEANING.

1. Stem none, or very short and unbranched.
2. Stems upright.

D. Capsules on fruit-stalks, DROOPING.

1. Stem none, or very short and unbranched.
2. Stems upright.

A. Capsules sitting, or nearly so.

apocarpum. Br. Capsules sitting, terminating; beak bent; veil very small.
CRYTOGAMIA. MUSCI. Bryum. (A)

Schmid. 57. 1—Vaill. 27. 15—Hedw. strp. 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 a 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. Weiss.

Grimmia apocarpa. Hedwig. Rocks, stones, and trees. [Walls and roofs of houses, in Bungay, Suffolk. Mr. Stone.]

Nov.—April.

Var. 2. Shoots longer and more branched, leaflets ending in hairs.

Hedw. strp. i. 40—Dill. 32. 5, B dry, A moistened—Vaill. 27. 18.

In spreading tufts like the preceding, but the stems are longer, more branched, more leafy. Leaves broader, terminating 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.


Nov.—Jan.

Br. Capsules sitting; beak straight: leaves straight, sessile.

Dill. 55. 10.

Grows in tufts. Stem about an inch high, somewhat branch-ed. Leaves numerous, straight, keeled, pellucid when wet, opake and darker green when dry. Fruit-stalks very short, thick at the bottom. Veil brown, hairy, striated. Dill.

Bryum striatum. var. y, Bot. arr. ed. ii. Rocks near Bangor. Dill. [On stones on the side of a river which are washed by the water in high floods. Mr. Griffith.]

Autumn.

Br. Capsules sitting; axillary: veils hairy, conical.

Hedw. strp. 11. 37—Dill. 55. 9—Vaill. 27. 10—H. ox. xv. 6. row the last, 13.

Plant smaller than the Br. striatum, leaves smaller, darker green: veil paler and more distinctly toothed at the base. Dill.
CRYPTOGAMIA. MUSCI. Bryum. (B. 1)

Differs also from it in wanting the inner fringe, and having the edge of the veil scolloped. Hedwic.
Orthotrichum anomalum. Hedw. On stones, walls, and the ground.


On stones, walls, and the ground. Feb.—April. Dill.


On stones, walls, and the ground. Feb.—April. Dill.


On stones, walls, and the ground. Feb.—April. Dill.


On stones, walls, and the ground. Feb.—April. Dill.


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On stones, walls, and the ground. Feb.—April. Dill.


On stones, walls, and the ground. Feb.—April. Dill.


CRYPTOGAMIA, MUSCI. Bryum. (B. 1)

Leaves opaque, approaching, rigid, fine green when wet, dull green when dry. Dill.

The lower leaves generally lose their terminating hairs. When the lid is carefully removed from the capsule, the mouth of the latter is seen adorned with a conical pencil of rich saffron coloured hairs twisted spirally and projecting so as to fill up the lid.

Walls, roofs, tiles, stones, rocks and sandy places, everywhere.

P. Nov.—March.


leaves spear-egg-shaped, taper-pointed. Dicks.

Dicks. 4. 7. a. b.


Stones and rocks on Ben Crechan, Scotland.


hair-pointed. Dicks. ii. 4.

Dicks. b. 5—Hedw. strip. i. 6—H. ox. xvi. 7. 18.

Very minute, unbranched, with scarcely any stem. Flowers terminating. 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.


April, May.


shaped. Dicks. ii. 6.

Hedw. strip. i. 28.

Stem unbranched, upright, very minute, not more than 2 or 3 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, terminating, thrice as long as the stem, nearly upright. Fringe single, of 16 teeth, deeply divided, red.

Trichostomum pusillum. Hedwig. In sandy places.


Br. Capsules pear-shaped: leaves flat, oblong, acute. pyrifor'me.

Dicks. 6. 3—E. hort. 413—Dill. 44. 6—Fl. dan. 537. 1—Vail.

29. 3—H. ox. xv. 7. nvo 2. 16. p. 631—Buxb. i. 64. 1.

Fruit-stalks ½ to 1 inch long. Relh. n. 1015. Leaves 1 line
CRYPTOGAMIA, MUSCI. Bryum. (B. 1.)

broad, 1½ long. *Involucrum* none. *Fruit-stalk* about 3 lines long. *Capsule* mouth without fringe. *Pollich*. *Veil* before the capsule swells, 4-sided; afterwards it tears into 2, 3, or 4 segments. *Leaves* tender, pellucid, pale green. *Capsules* large for the size of the plant, which rises but little above the ground.

*Dill.*

Heaths, hedges and ditch banks. [Near Bungay, Suffolk. Mr. Stone.]

A. Feb. March, and April.


*Dill.* 49. 56.

On ditch banks and brinks of rivulets, Scotland.


*Dicks.* b. s.-E. bot. 191-Dicks. 4. 3.

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.* *Caps.* with 16 teeth; not with 12 as in Mr. Dickson's figure.

On limestone rocks near Newmarket Heath.

**cervicula’tum. Br.** Capsules egg-shaped, unequal, toothed: leaves very slender.

*Hedw.* stirp. iii. 37. A.

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.


**paludo’sum. Br.** Capsule very blunt, mouth wide: leaves bristle-shaped.

*Dill.* 49. 53.

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* terminating, 2 or 3 lines long. *Capsules* egg-shaped. *Mouth* wide, minutely fringed. *Veil* slender, upright. Differs from the B. *virens* in the darker green of its leaves, their being slenderer, not curling when dry, and in having smaller capsules. *Weis.* *Leaves* very slender,
CeFsii.

**CRYPTOGAMIA. MUSCI. Bryum. (B. 1)**

scarce sensibly broad, soft, dull green. *Capsules, lid deciduous,* leaving a large open for the size of the capsule. **Dill.** Differs from Br. *oviridulum* 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. **Mr. GRIFFITH.**

In sandy marshes and turfy ground in Yorkshire. **RICHARDSON in Dill. 387.** Moist rocks, and sometimes decayed wood in damp shady places. **LIGHT.]** [On stones and roots of trees in damp situations in Garn Dingle, Denbighshire, particularly on sand stones by the petrifying spring. **Mr. GRIFFITH.**]

**A. March—May.**

Br. Stemless; capsules nearly upright: fruit-stalks very long: leaves like bristles. **Dill. 49. 54.**

Sent from Sweden to Dillenius, but now found in Scotland by **Mr. DICKSON.** Shoot very minute. **Fruit-stalk** ⅛ of an inch high. Lid pointed.

On rocks on the Highland mountains. **Dicks.**

Br. Capsules oblong: shoot very short: edges of the *rigidum,* leaves turned in. **Hedw. stirp. i. 25—E. bot. 180—Dill. 49. 55.**

**Stems** very short. **Leaves** very entire, bluntish, flat above, convex underneath, naked. **Fruit-stalk** terminating solitary, upright, ½ 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 32 long slender filaments, spirally twisted together when moist. **HEDWIG.** **Leaves** stiff, like those of heath. **Dill.**

**Barbula rigidula.** Hedwig. Moist rocks near Wigmore, Herefordshire. **Brown in Dill.** On Ingleborough, Yorkshire. **Huds.** [Thorpe, near Norwich. **Dr. J. E. SMITH.**]

**P. Nov.—July.**


**Dicks. h. s.—Dicks. 1. 5.**

Whole *plant* scarcely more than the 8th of an inch high, the smallest of this Genus which I have hitherto seen. **Leaves** 3 or 4, when viewed through a magnifying glass strap-spear-shaped, ribbed underneath. **Fruit-stalk** yellowish, sometimes 2 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*.

*Wiesia controversa*. Hedwig. *Br. viridulum*. Dicks. fasc. i. p. 3; who believes it, on the authority of the Linn. herbarium to be the *Br. viridulum* of Linkæus, whose synonym. he thinks are erroneous, and have misled our botanists. I am far from doubting the well known accuracy of Mr. Dickson, but it is as easy to suppose a mistake existing in the Herbarium as in the Sp. Pl. and I the rather believe this to be the case, because the specific char. of the *Br. viridulum* with "tiled leaves," does not at all apply to Mr. Dickson's plant with only 3 or 4 leaves placed regularly at the top of the root, though truly descriptive of the plant Linn. refers to in his synonym. Under the existing circumstances it seems necessary to give it a new trivial name, the *Br. Dicksonii*, and I expect *Br. viridulum* being allotted to other species. Fortunately the circumstance of its having only 4 or 5 leaves, allows us to adopt a name unobjectionable, and expressive. Boggy ground, on Enfield Chace. June.

**B. Capsules on fruit-stalks, UPRIGHT.**

(2) *Stem very short; rarely branched.*

*Heimii*. *Br. Capsules oblong; shoot upright; leaves spatula-shaped, taper-pointed, toothed upwards.*

*Hedw. stipr. i. 30.*

*Stem near ½ inch high, unbranched, upright. Fruit-stalks terminating, near an inch high. Veil opening at the side. Capsule long-egg-shaped. Lid, beak bent to one side. Fringe none.*

*Gymnostomum Heimii*. Hedwig. Sandy places; in northern exposures. Feb.—June. P:

*Forsterr*. *Br. Capsules toothed; fruit-stalks slanting; shoots nearly stemless; leaves egg-shaped. Dicks.*

*Dicks. iii. 7. 8.*


*fasciculare*. *Br. Capsules roundish pear-shaped, mouth naked; shoots leafless below; leaves in bundles; egg-spear-shaped, taper-pointed. Dicks.*
Dicks. b. s, and fasc. iii. 7. 5.

Roots strong, brown. Shoots nearly upright. Leaves toothed, twisted at the end; with a midrib. Lid very blunt. Veil bellying, contracted at the base. Dicks.

Barren sandy places.

Br. Capsules egg-cylindrical, mouth with a membranaceous fringe: shoots nearly stemless; leaves waved, spear-shaped, serrated. Dicks.

Dicks. fasc. iii. 7. 9.

From 2 to 4 lines high. Leaves crowded, upright, but expanding, acute, keeled, serrated upwards, yellow green, twisted when dry. Fruit-stalk terminating, near \( \frac{1}{2} \) inch high, pale, yellow. Capsule cylindrical, but a little swollen at the base. Lid conical, blunt, rather thicker at the top. Veil awl-shaped.

On barren sloping ground near Croydon. Dickson.

Br. Capsules cylindrical: involucrem leaves blunt, rolled convoluted up so as to form a cylinder: leaves spear-shaped.

Dicks. b. s.-Hedw, stirp. i. 32—Dill. 48. 44—Schmid. 57. 5.

Grows in dense tufts, \( \frac{1}{2} \) 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, 1 inch long, encompassed at the base by an involucrem of awl-shaped hairy leaves. Wills. Sometimes with forked branches. Leaves very slender, hardly \( \frac{1}{2} \) of a line broad at the base, very entire. Involucrem terminating, embracing closely the base of the fruit-stalk. Capsule cylindrical, a line long, hardly \( \frac{1}{2} \) as broad. Mouth without a ring; fringe red. Lid slender, upright, awl-shaped. Veil pointed, smooth, thread-shaped, reaching but half way. Polich. Inner involucrem-leaves heart-shaped, blunt.

B. setaceum. Huds. 481, Lightf. 729. (=Mnium setaceum of Linn. is a different species which has rigid bristle-shaped leaves.) Dicks. Barbula convoluta. Hedwig; in the plate named setacea. Heaths, hedge banks, and walls, very common. A. March.


Dicks. 5. 3. a. b. c.

Habit that of Br. trichodes, 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.

Mountains in Scotland; on Ben Lawers.

Dicks. b. s.—E. bot. 558—Hedw. stirp. i. 18—Fl. dan. 1001—Dill. 45. 8—Vaill. 26. 1.

Fruit-stalks terminating. Capsule, mouth not fringed. Neck. Grows thick together in patches, ¼ inch to 1 inch high; sometimes a little branched towards the top; very leafy, ending in rosettes. Fruit-stalks not ½ 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.


Var. 2. Veil cut at the base.

Hedw. stirp. 1. 19; theor. 9. 10 to 14, the fructification; hist. ii. 5. 24. a, the seeds—Fl. dan. 1001—Dill. 45. 9.

Whole plant larger and more branched. Capsule, mouth fringed. Veil cut at the base into 6 segments; grey, bent inwards. Link. succ. n. 990. Leaves retaining their green colour when dry.

Leersia ciliata. Hedwig. Rocks about Ludlow Castle. Ripens its capsules in summer, the preceding variety in winter. DILL.

Early in the spring to July. P.


Hedw. stirp. i. 23.

Leaves expanded when moist, twisted when dry. Barren and fertile flowers on separate shoots, terminating. Sheathing incurved conical. Fruit-stalks 1 or 2 together, about ½ inch long, upright. Ring none. Fringe spreading when dry, spirally twisted together when wet. Barbula unguiculata. Hedwig, who cites Dill. 48. 47, as a synonym, believing his plant to be the same as Mr. Hudson's Br. unguiculatum, but Mr. Dickson thinks they are different. From a comparison of the two, it appears to me that the leaves in Hedwig's plant are less crowded than in that of Dill, longer and more properly strap-spear-shaped, than spear-shaped, but I cannot perceive any good grounds for a specific difference. If they are distinct, Mr. Hudson's character rather applies to the plant of Hedwig, and Dickson's to that of Dillenius.

On sandy commons. Mar. Apr. P.

Dicks. b. s.—Curt. 132. 1—Hedw. stirp. iii. 5—Dill. 48. 43—Vaill. 29. 5.

So small as hardly to be discernible if it did not grow in large patches. Stems 1 to 3 lines long, upright, seldom branched. Leaves very slender, sharp at the ends. Fruit-stalks terminating the last year’s shoots, 1 or 2 on 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. Caps. red at the base and at the mouth, which is small and contracted. Leaves strap-awl-shaped, the mid-rib extending the whole length. Mr. Griffith.


Curt. 132—Hedw. stirp. i. 5—Dill. 45. 7—Vaill. 26. 2—Buxb. ii. 2. 2—Fl. dan. 537.

Capsules, when the lid is fallen off, appearing quite lopped, inversely egg-shaped, and yellowish red, therefore evidently distinct from the B. viridulum. Linn. Fruit-stalks 3 or 4 lines long. Capsule without a ring. Neck. One of the least of the Mosses; grows in patches. Stem 3 or 4 lines long, unbranched, ending in roses. Lid with a long slender point. Veil with a long taper point. Weis. Sheathing involucrum conical, lopped.


Hasselquist observing this plant growing in great abundance upon the walls of Jerusalem, conjectures it may be the Hyssop of the Scripture, wherein Solomon is said to have known all plants, from the Cedar of Lebanon even unto the Hyssop, that groweth upon the wall.


Dicks. iii. 8. 1.

Shoots nearly upright, unbranched. Leaves toothed. Fruit-stalk terminating. Fringe red. Lid conical, a little bent.

Banks of muddy rivulets in Scotland. Dickson.

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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 \( \frac{1}{8} \) the length of the capsule; upright but approaching, flattish, red orange. Lid conical. Veil not observed.

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 1 to 1½ inch high, pale green or reddish. Caps. upright. Veil reaching but half way round, deciduous. Lid bluntly conical, somewhat bent.

Specimens from J. W. Griffith, Esq. of Garn, who first found it in our island, growing on the sides of turbaries (peat holes) near Lyn Aled, Denbighshire.

B. Capsules on fruit-stalks, UPRIGHT.

(3) Stems trailing.


Var. 1. lanuginosum. Shoot branched, lying down: leaves oblong, hair-pointed; capsules oblong; veins entire.

Hedw. stirp. iii. 2—Dill. 47. 32—H. ex. xv. 5, row 2.7—Hall. hist. 46. 4. at iii. p. 56.

Leaves a little toothed at the sides, but this most conspicuous in the dried plant. Capsule upright. Mouth fringed with 16 teeth, hair-like, separate quite down to the base. Hedwig. Shoots rigid, from 3 to 12 inches long; prostrate. Branches numerous, short, thicker than the main stem. Leaves slender, pale green, ending in a long grey hair. Fruit-stalks terminating, or nearly so; short, yellow. Capsules small, egg-shaped. Lid red, sharp pointed. Dill. Lid regularly conical, but very taper, and about 1-3d the length of the capsule.


Autumn.
Var. 2. Leaves in bundles, not closely set, spear-awl-shaped, mid-ribbed, doubled together, ending in a short whitish hair; curled when dry.

Dill. 47. 28. A. something resembles it, but that is described as hairless.

Branched upwards. Fruit-stalk from \( \frac{1}{4} \) to \( \frac{3}{4} \) of an inch long, varying greatly in different specimens.

_D. hypnoides_ B. Linn. and Huds. On Snowdon. Dill. and Mr. 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. Specimens from Mr. Griffith.

Var. 3. Leaves in bundles, egg-awl-shaped, mid-ribbed, keeled, pointed with a white hair.

From 2 to 3 inches long, trailing, branches and fruit-stalks longer than in var. 1. None of the figures exactly resemble it.

Var. 4. Leaves in bundles, spear-awl-shaped, mid-ribbed, doubled together, hair-pointed, curled when dry.

Near 2 inches long. Less trailing than the preceding, but chiefly differing in the shape of the leaves, and being of a bright yellow green.

Var. 5. Leaves in bundles, 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 the _D. hypnoides_ and its reputed varieties from the _D. canescens_, whilst the presence or absence of that hoariness which is caused by the hairs at the points of the leaves, will at once distinguish the 4 first varieties of the hypnoides from the subsequent ones.


Leaves crowded, very small, yellowish or brownish green. Fruit-stalk from the upper branches, \( \frac{1}{4} \) inch long. Dill. It forms a cushion on the rocks. Linn. In the specimens before me some plants are distinctly male, and others female. _D. hypnoides_ B. Huds.

On Snowdon. Dill. 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.
CRYPTOGAMIA. MUSCI. Bryum. (B. 4. a)

There is not any figure of this. The plant is brown green 4 or 5 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.


Dicks. 4. 6. a. b.

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. Caps. teeth bent in. Dicks.

On Ben High in the Highlands.


Hedew. str. 1. 29—Dicks. 1. 4.

Plant ½ 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 2 opposite lines. Fruit-stalks very slender, green, 1-8th of an inch long, rising out of an invol. resembling that of the barren flower. Caps. upright, very small, green, roundish, but lopped when the lid has fallen off. Veil none observed. Lid very blunt, reddish. Fringe naked. Dick. Veil falling off entire. Hedwig.

Mnium Osmundaceum. Dicks. fasc. i. Gymnostomum pennatum. Hedwig. Hollows in old hedge banks, in a rich soil on the road from Zele to S. Tawton, 4 miles from Okehampton, Devon. Mr. Newberry. B. April—June.


Dicks. b. s.—Dill. 47. 33.

Grows in dense tufts. Stems slender, adhering closely together, about an inch high; branched. Leaves hair-like, fine pale green, towards the bottom of the plant whitish. Fruit-stalks numerous, short, pale, terminating. Capsules small, roundish,
greenish. Lid very small, red, pointed. Dill. Haller unites it with the B. atriovum. Linn.


Dicks. b. s.—Dill. 44, 1—Fl. dan. 478—Vail. 24, 9, and 12—Buxb. v. app. n. 4—H. ox. xv. 6. row 4. 6.

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 ½ 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. Hedwig seems disposed to refer this to his new genus Bartramia.

Heaths, rocks, and banks. A. Feb. —April.


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. Caps. brown, beak very small. Dill. Fruit-stalk but little higher than the tops of the shoots. Caps. very small. Lid red, with a very slender needle-shaped point.

Br. hypnoides. 7 Huds. On Snowdon. Mr. Griffith.

Br. Capsules egg-oblong; fringed: fruit-stalks very short: pa'tens, shoots nearly upright: branches expanding, rising nearly to the same height: leaves strap-spear-shaped.

Dicks. 4, 8. a. b.

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, channeled. Fruit-stalks from the sides of the uppermost branches, few, solitary, very short, often zigzag. Capsules rather pear-shaped, small. Fringe fringed. Dicks. Caps. egg-oblong, as expressed in the figure.
On rocks in mountainous rivulets. On Ben Nevis, Scotland.

Rocks above the chapel at Gwydir, Caernarvonshire, Mr. Griffith.

**stelligerum.** Br. Capsules semi-globular, naked: leaves strap-shaped, in star-like whirls. Dicks, ii. 3.

**Dicks.** 4, 4, a, b.

Shoots branched, star-like at the end. Leaves expanding, a little bowed back at the ends; somewhat whirled. Fringe naked. Lid flattish, the beak somewhat oblique; as long as the capsule. Dicks.

Woods in the Highlands.

**acutum.** Br. Capsules roundish: shoots branched, pointed: leaves bristle-shaped, upright.

**Dill.** 47, 34.

Slender, 1 inch high, branches 2 or 3, sometimes more. Leaves dark green, hairy, sharp-pointed. Fruit-stalks short, when young terminating. Veil brownish. Capsules short, roundish. Dill. In moist situations the capsules are rather longer, and sometimes the fruit-stalks are bent like those of Br. fragile. Mr. Griffith.

Snowdon, and mountains about Llanberris. Dill. On Ben Lomond, and sides of Highland mountains. Lightf. [Crib y Ddesiil. Mr. Griffith.]

Aug.—May, Dill.—Oct.—June. Lightf.

**laterale.** Br. Capsules nearly globular, lateral: leaves bristle-shaped, pointing one way. Lightf.

Hedew. stirp. ii, 40—Hall. enum. 3. 8. at p. 109, hist. 46. 8,
at iii, p. 56—Hall. it. belv. ii. 1, 2, in opusc. p. 300—Fl. dau. 823. 1; and 338, 3.

Stems forming tufts, from 1 to 3 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. Hurs. Male and female flowers in the same involucrem. 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 16 teeth. Bartramia Halleriana. Hedwig. In the B. pomiforme, the leaves are more equally tapering, and the fruit-stalks are longer,
CRYPTOGAMIA. MUSCI. Bryum. (B. 4, B)

[On the banks of the river Isla, Angus-shire, Mr. Brown; who assures me that it was first discovered in Scotland by Dr. Walker on Hartfell mountain near Moffat. Boggy ground on the ascent to Crib y Ddeseil, from Llanberris. About Llyn Idwell, in the ascent to Twll du, in great abundance. June. Mr. Griffith.]

P. May—Sept.

B. Capsules on fruit-stalks, UPRIGHT.

(4) Stems upright.

b. Capsules egg-shaped.


Vaill. 24. 8—Ft. dan. 538, 4.

Grows in large dense patches. Fruit-stalks from one half to one inch, the young ones terminating, the older from the forks of the branches. Lid reddish, pointed, very slender, readily falling off. Mouth with a short fringe. Weis.

Mnium cirrhatum. Bot. Arr. ed. ii. and Gmelin doubts whether it ought not still to be considered as a Mnium, arranging with the Dicranums of Hedwig. Mr. Griffith thinks this is not distinct from the Br. viridulum, and observes that the Br. viridulum at the foot of the hill gradually changed in the course of the ascent until it became Br. cirrhatum. Woods, mountainous heaths, walls, and hedge banks. P. March—July.


Hedew. stirp. ii. 23.

Stem upright, 3 or 4 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.


Pastures in Scotland. Dicks.
polyphyllum. Br. Capsules egg-oblong, toothed; shoots very much branched; leaves crowded, spear-shaped; curled when dry.

*Hedw. stirp. ii.* 31—*Dill. 48. 41.*

Resembles the Br. cirrhatum 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.*


Ray mentions a var. with much smaller leaves, it is the Br. cirrhatum & Huds.

canes'cens. Br. Capsules egg-oblong; leaves crowded, spear-shaped, bent back, white haired at the ends.

*Hedw. stirp. iii.* 3—*Vaill. 26. 14—Dill. 47. 27. D. E. F.*


*Bryum hypnoides* & Fl. Suec. *Trichostomum canescens.* Hedw. *stirp. iii.* p. 5. Differs from the B. hypnoides in its upright stem, its leaves being very slightly serrated only at the ends, and in its longer fruitstalk. *Hedwig.*—When moist and growing, yellowish green, when dry woolly, from the number of hairs which terminate the leaves. *Dill.*


Var. 2. Shoots simple, or but little branched.

*Dill. 47. 27. A. B. C.*


Specimen from Mr. Griffith, accompanied by others of a stunted growth, on bleak rocks, not ½ inch high, and very much crowded with leaves.

Var. 3. *Leaves* spear-awl-shaped, mid-ribbed; shoots branched.

*Dill. 47. 29.*

This was considered by Mr. Hudson as a var. of the hypnoides, but though the shortness of the fruit-stalks favours that
opinion, the leaves being equally distributed, not bundled, and
the want of trailing shoots, induce me for the present to place it
here, not however without a disposition to believe that it is a
distinct species.

*Br. hypnoides.* L. Huds. On some stones forming a circular
wall upon the summit of Snowdon.

August.

**Br.** Capsules egg-cylindrical, with a fringed ring: leaves ericeto'rum.
strap-spear-shaped, twisted when dry. DICKS. ii. 5.

*Dill.* 45. 13.

*Leaves* pellucid, not hair-pointed, keeled, standing out,
dull green. *Capsules* slender, nearly cylindrical. *Fruit-stalks*
pale brown, ½ an inch long. *Veil and lid* deciduous. *DILL.* *Shoots*
terminated by stars.

Turfy heaths, Scotland.

**Br.** Capsules urn-shaped: fruit-stalks axillary: leaves æstivum,
strap-awl-shaped, without a mid-rib, doubled to-
gether.

*Dill.* 47. 36.

This Moss adheres together when dry, as it doubtless does
when wet, like a Conferva; and when dry preserves its beau-
tiful 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 be-
fore me the fine bluish green colour like that of a Cantharid is
very striking. *Capsules* urn-shaped. *Fruit-stalks* about ½ inch
long. Plant 1½ inch high. *Leaves* not crowded, spear-shaped,
but very slender without a mid-rib, doubled together.

*Br. æstivum* of Huds. is *Br. capillaceum,* [excluding the
synon. of *Dill.* 47. 39, which is *Br. brevifolium.* Marshy places.

RICHARDSON in *Dill.* 375.

**Br.** Capsules egg-oblong, fringed: shoots branched: Dickso'ni.
leaves strap-shaped, keeled, rather curled when
dry. DICKS.

*Dick's.* 7. 7.

*Shoots* branched, branches expanding, nearly of 1 height.
*Leaves* upright, scattered, strap-shaped, keeled, dark green,
those at the end forming a star; curled when dry. *Caps.* yel-
lowish. *Mouth* red, ring slender, teeth short, upright, red. *Lid*
with a long slanting beak. *Veil* slender. *Dicks.* *Leaves* very
slender, strap-spear-shaped, with a mid-rib the whole length.

*Fruit-stalk* hardly ½ inch high.

On rotten wood and decayed trunks of trees. *On a moist
rock by the petrifying spring in Garn Dingle near Denbigh. Wet rocks of Crib y Ddesil. Mr. Griffith.]


Hedw. stirp. ii. 28.

Scarcely \( \frac{1}{2} \) inch high, unbranched, upright. Lower leaves smaller, colourless; upper ones larger, broad at the base and keeled, awl-shaped at the end, pointing 3 ways. Survetzia trifaria. Hedwig. Caps. egg-cylindrical. Lid conical, bent.

Barren hills. Dicks.


In dense tufts, so close, that the under parts decay. About 1 inch high, branched. Barren flowers in the bosom of the leaves. Sheath scarlet. Fruit-stalks terminating, 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, 16 teeth in each. Veil pyramidal, hairy, Hedwig. Caps. when old with 8 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 8 white hairs, the points of which unite in the centre. Outer fringe 8 teeth, each of which at length splits into two. This discovery may help to account for the variable number of teeth assigned to the different species of Splachnums. Mr. Griffith.

Bryum striatum. d Linn. Syst. pl.


Hedw. stirp. ii. 33.

Near \( \frac{1}{2} \) inch high, rather waved, upright. Leaves serpentine, mostly pointing one way. Beak slender, straight. Dicranum crispum. Hedwig. Capsules urn-shaped.

Bogs in Scotland. Dicks.
Br. Capsules egg-oblong, with a ring, fringed: leaves pointing one way, strap-awl-shaped, stiff. Dicks.

Hedw. stirp. 1. 8.

Stem upright. Leaves awl-shaped, but broad and sheathing at the base, rigid, not curling up when dry. Involucrum sheathing. Fruit-stalk terminating, always longer than the stem, nearly upright. Veil slender, upright. Lid a blunt cone. Fringe single, of 16 teeth.


May, June.


Fl. dan. 538. 2.

Leaves numerous, upright, open, some bowed back. Recept. small, hunched, beneath the capsule. Dicks.

On rocks on Ben Nevis, Scotland.


Fl. dan. 538. 1.

Full ½ inch high. Capsules but little raised above the foliage.

Beak conical, slanting.

Rocks on Ben Nevis. Dicks.


Hedw. stirp. ii. 24.


Gymnostomum curvirostrum. Hedwig. On rocks on High-

land mountains, Scotland. Dicks.

P.

B. Capsules on fruit-stalks, UPRIGHT.

(4) Stems upright.

c. Capsules oblong.


Dill. 48. 49.

At first slender and not branched, fruit-stalks terminating; when older becoming branched, and fruit-stalks from the forks
of the branches; reddish, short, slender. Leaves few, narrow.

**Dill. Br. purpureum** & Huds. **Mn. purpur.** Bot. arr. ed. ii. Different from the Bryum purpureum. **Dicks.**

Heaths; loose sandy and gravelly soil. **March.**


**Hedw.** str. 1 - **Dill.** 48. 45.

Stem upright, not branched, about \( \frac{1}{2} \) inch high. Fruit-stalks: Veil conical, crooked. **Lid** convex, beak straight whilst under the veil, afterwards crooked, but in a direction opposite to the bend of the veil. **Hedwic.** Stem sometimes branched. (see fig. **Dill.**.) Leaves very slender, keeled, upper ones the longest. Fruit-stalks: Capsules and lid red. **Dill.**

**Wetsia recurvirosstr.** Hedwig. *Bryum recurvirosstrum.* Dicks. and Bot. arr. ed. ii. Woods in dryish places. Sandy stony places, interwoven with the grass. **P. Aug.**

**barbatum'** - Br. Capsules oblong, slender: lid taper-pointed, slanting; fruit-stalks lateral: leaves spear-shaped, acute, the upper ones expanding.

**Curt.** 274 - **Dill.** 48. 48.

Grows in tufts, \( \frac{1}{2} \) an inch high, somewhat branched. Leaves spear-shaped, pointed. Fruit-stalks: Veil long. Lid long, slender, conical. Capsules slender. Fruit-stalks: Fringe orange-coloured or scarlet, twisted like a screw. **Curtis.** (The 45th pl. of **Dill.** 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.**

On walls. **P. Dec.** - **Feb.**

**imber'be.** - Br. Capsules oblong; beak slanting: leaves slender spear-shaped, keeled, bent outwards.

**Dill.** 48. 46.

Fruit-stalks: Veil long, solitary, terminating and lateral, \( \frac{1}{2} \) inch long. Capsules cylindrical, 1 line long, deep saffron coloured, blackish at the base. **Web.** Fringe long. **Haller.** 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 terminating. **Hedwic.** Grows in dense tufts. Stems slender, \( \frac{1}{2} \) to 1 inch high, dividing into branches. Leaves very slender, pale green, upper leaves bent back. **Dill.**

Sandy heaths, ditch banks, and walls. [Bungay, Suffolk. **Mr.**]
STONE. By the rivulet in Garn Dingle. Mr. Griffith.] Winter. Dill. A. March, April. Huds.


Dicks. b. s.—Dill. 48. 47—Buxb. ii. 2. 9.

Shoots forming patches about \( \frac{1}{2} \) an inch high; sometimes branched. Leaves open, near a line in length and \( \frac{1}{2} \) in breadth. Fruit-stalks terminating. Veil smooth, reaching but half way down the capsule. Pollich. Leaves green, keeled, opake. Capsules oblong, thickest at the base, green, changing to brown. Dill.


Dill. 48. 40—Hall. enum. 4. 2, at p. 118, hist. 45. 2, at ii. p. 41—Fl. dan. 880.1.—Scheuch. it. ii. 19. 5—Pet. gaz. 65. 8.

Grows in dense crisp patches. Shoots upright, adhering together. Leaves a line or \( 1\frac{1}{2} \) line long. Fruit-stalks from the forks of the branches, straight, 3 to 7 lines long, closely clasped at the base by the involucrem. Capsules cylindrical, smooth. Ring none. Mouth fringed. Lid awl-shaped, straight. Veil smooth, extending but half way down. Pollich. One to 1\( \frac{1}{2} \) 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.

Heaths, rocks on mountains, and woods. [On a bushy hill, half a mile from Garn, called Coed Mowr. Mr. Griffith.] P. Aug.—Nov.


Dicks. 4. 5. a. b—Scop. 62. 1305. at ii. p. 321.

Shoots nearly upright. Leaves between upright and open, yellowish, the points when dry twisted. Dicks. Grows in broad patches. Leaves 2 lines long, 1-3d of a line broad. Fruit-stalks 1 inch long, saffron-coloured. Capsule slender, long. Veil red at the top, near 2 lines long. Scop.

Bogs in the Highlands.

Dill. 47. 39.

Slender, but little branched. Leaves dark green, very narrow and short. Fruit-stalks terminating the new shoots, short. Capsules oblong, small, dark brown. Dill.

Bogs in Yorkshire and in Scotland.


Hedw. stirp. iii. 1.


Hedw. stirp. ii. 26—Fl. dan. 1000. 1—Dicks. 1. 6—Hull. enum. 4. 1, at p. 118, bist. 45. 1, at iii. p. 41.

Capsules oblong. Leaves expanding, bristle-shaped. Huds. Differs from B. heteromallum in its open leaves, and the shape of its capsules; and from B. flexuosum in its fruit-stalks slender, quite straight, and not zigzag, and in the smallness of its capsules. Dicks. Stem undivided, upright, \( \frac{1}{2} \) an inch high. Leaves in 2 rows, alternate. Barren and fertile flowers together, terminating. Fruit-stalks \( \frac{1}{2} \) to 1 inch long. Veil opening at the side. Capsules cylindrical. Lid short, conical. Mouth, fringe single, teeth in pairs. Hedw. Stalks compressed, jointed. Mr. Griffith.


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. Mr. Griffith: 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 Cwm Ffynnon Felen, near Llanberris abundantly. Mr. Griffith.] P. Apr.—June.

C. Capsules on fruit-stalks, LEANING.

(1) Stems none, or very short and unbranched.

Br. Capsules cylindrical; lid conical, acute: shoot very subulate, short, unbranched: leaves egg-shaped, bluntish.

Curt. 214—Fl. dan. 1000. 2—Vaill. 25. 8—Dill. 45, 10—Buxb. i. 63. 2; ii. 2. 3 and 4.

Grows crowded together; but little branched, terminating in roses. Capsules cylindrical, slender, 3 or 4 lines long, becoming crooked when dry, ripe in summer. Leaves pellucid, pale green, with or without hairs. Weis and Dill. Plant from 3 to 5 lines high. Fruit-stalks sometimes in pairs. Veil permanent, Scor. nearly as long as the capsule. Fruit-stalks terminating, from \( \frac{1}{2} \) to 1 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.

Moist banks, woods, roofs, and walls. P. Jan.—May.

Br. Capsule long and tapering at the base: shoot upright: elongate.

leaves strap-spear-shaped.

Hedw. stirp. i. 36.

Hardly \( \frac{1}{2} \) an inch high, upright. Barren and fertile flowers terminating, 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, 10 teeth in each.


Hedw. stirp. ii. 29. B.


B. Capsules on fruit-stalks, LEANING.

(2) Stems upright.
CRYPTOGAMIA. MUSCI. Bryum. (C. 2)


\[Hedw. \text{str} \text{p. ii. 32.}\]

Caps. scored at the mouth, pear-shaped, but crooked, with an irregular knob at the base. Beak bent, fine red at the base.

\[Fissidens \text{strumifer.} \text{Hedwig.} \text{Hypn. strumosum. Gmel. syst. veg. Boggy meadows in Scotland. Dicks.}\]


\[Hedw. \text{str} \text{p. i. 24.}\]

Different from the Br. imberbe, which has the leaves strap-awl-shaped and straight, and the beak of the lid conical. \[Barbula \text{fallox.} \text{Hedwig. but not his synonyms. Dicks. Full } \frac{1}{2}\text{ inch high. Leaves curled when dry. Lid slender, nearly cylindrical, not quite straight. In Scotland, and in Yorkshire.}\]


\[Dicks. 7. 4.\]

The size of Br. virens. Shoots upright. Leaves upright, twisted, curled, a little toothed. \[Cal. \text{slightly contracted in the middle, scored when dry. Dickson. Capsules fringed; fringe very long for the size of the plant. Lid depressed; beak long, slanting. Leaves pellucid, decurrent. Mr. Griffith.}\]

Bogs in Scotland. [On the rocks of Crib y Ddesell, Cwm Idwel, and Clogwyn y Garregog, near Llanberris. Mr. Griffith.]


\[Hedw. \text{str} \text{p. iii. 9.}\]

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. \[Caps. \text{oblong, rather swollen on one side. Lid awl-shaped, slanting, reddish. Veil delicate, pale.}\]

\[Dicranum \text{longifolium.} \text{Hedwig. Banks of rivulets in the Highlands of Scotland. Dicks.}\]

_Dicki]. b.s.—_Dill. 47. 33. A. B. C. D. E.

From 1½ to 3 inches high. Leaves strap-awl-shaped; in bundles. Fruit-stalk twisted like a corkscrew. Caps. upright. Lid conical, pale red. This larger growing plant seldom bears fruit, and when dry assumes a darker colour than the following variety, but I see no reason for believing them distinct species. Ireland. Rocks about Llanberrius. _Dill._ P. April—June.

Var. 2. Smaller and shorter.

_Dill._ 47. 33. F. G.

About an inch high, but little branched, slender, thicker upwards. Leaves hair-like, yellow green. Fruit-stalks green, turning, yellowish, variously bent and twisted. Capsules oblong, slender. Lid pointed, red. Veil whitish. Sometimes 2 or 3 fruit-stalks arise from one branch. _Dill._ From ½ to 1 inch high. _Br._ fragile. _Dickson._ I see no reason for making it distinct from _Br._ flexuosum, with which it agrees in habit, in the shape of its leaves, and in its waved fruit-stalks. I have not observed it particularly brittle in its dried state. Mr. _Griffith._

[About Llyn Aled, Denbighshire. Mr. _Griffith._]

Var. 3. Very tall, not bearing capsules.

_Dill._ 32. 3.

_[Cwm Idwell, near Twill ddu, Caernarvonshire. Mr. Griffith._]

_Sphagnum alpinum._ _Linn._

In the autumn of 1788, some plants of the Sphagnum alpinum which I brought from Snowden were placed in a shady corner under a water spout; the result was a conviction that the Sphagnum alpinum is only a variety of the _Br._ flexuosum. Its luxuriant growth in bogs accounts for its want of capsule. Thus the Polytrich commune, on the quaking bogs of Delamere Forest, often grows to the length of ¼ of a yard, but in that state it never bears fruit. Mr. _Griffith._

Obs. When the _Br._ flexuosum is moist, the capsules lie concealed amongst the leaves by a singular hygrometric quality in the fruit-stalk; but as the moisture exhalés, they become nearly upright by several spiral revolutions from the right to the left. In _Min._ heteromallum the revolutions of the fruit-stalk are from the left to the right. Mr. _Griffith._

Br. Capsules nearly upright, somewhat globular: shoots tetragōnum. 4-cornered, the younger tendril-like: leaves pressed to, strap-awl-shaped. _Dicks._ ii. 9.

_Dicks._ 4. 9. a. b.

Vol. III.
Full grown shoots upright, with leaves disposed in 4 rows, blackish, yellowish green above, sometimes sending out young shoots from the ends; young shoots zigzag like a climbing plant, reddish. Leaves of the full grown shoots very closely tiled, pressed to, upright, strap-shaped, awl-shaped towards the ends; those of the young 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 Mr. 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. Mr. Brown.

Ben Lomond, Scotland. [Also on Malghyrly Bentsekerney, Ben-Lawers, Lochain y Gar, and in great abundance on Craig Cailléach; on the bare ground; never found but at alpine heights. Mr. Brown.]


Dicks. 7. 6.


Discovered by Mr. Davies on the mountains of Wales.


Hedw. stipr. ii. 27.

About 1 inch high, unbranched, upright. Leaves alternate, pointing 2 ways.


P. June—Aug.


Dill. 49, 50.

Hedges in gardens, walls and ditch banks, common.

Feb. March.

Br. Capsules cylindrical; lids conical, acute; shoot rurale; branched; leaves reflected, inversely egg-shaped, blunt, hair-pointed.

Hedw. hist. i. 6. 28 to 32—Dill. 45. 12—Vaill. 25. 3—H. ox. xv. 6. row 3. 1, and row 4. 2—Buxb. v. 44. 1.

Branched, 1 or 2 inches high, stellated at the ends. Leaves numerous, broad-spear-shaped, pointed. Fruit-stalks an inch high, surrounded by an involucrem at the base. Capsules cylindrical; mouth with a long fringe. Lid a long cone. Weiis.

Grows in dense and elevated tufts. Stems upright, branched, 1 to 2 inches high. Leaves crowded, standing open, fine yellowish green when wet, but dull greyish and brownish in dry seasons. Dill.

Roofs both thatched and tiled, walls and trunks of trees.

P. Dec.—April.*

Br. Capsules cylindrical; lids taper-pointed; fruit-stalks terminating; shoot branched, upright; leaves spear-shaped, rather expanding.


Grows in dense patches; better than half an inch high. Involucrem none. Pollich. Barren flowers terminating, globular, on fruit-stalks only half the length of those bearing capsules. From one half to near 2 inches high, generally branched, nearly upright. Leaves not crowded, short, very narrow, pale green, pointed. Dill.


Br. Capsules nearly upright; oblong: fruit-stalks mostly solitary: leaves spear-shaped; keeled; waved; expanding; serrated.

* When this takes to grow upon thatched buildings so as to cover undulatum the thatch, instead of lasting but about ten years it will endure for an age. Linn.
GRYPTOGAMIA. MUSCI. Bryum. (D. 1)

Dicks. b. 2.—Curt.—Hedw. stırp. 1. 16—Dill. 46. 18—Vaill. 26. 17—H. ox. xv. 7, row 1st, 9.

Stem 1 to 3 inches, upright, unbranched. Leaves, the upper ones largest, viz. 2 or 3 lines long, and 1 broad. Fruit-stalks terminating, upright, 1 to 2 inches high; sometimes 2 together. Capsules oblong, leaning, bent. Lid sharp pointed, marked with a scarlet circle. Weis. Sheathing involucrum pyramidal, its top closely embracing the fruit-stalk. Veil cylindrical, splitting on one side. Capsules cylindrical. Lid convex; beak very long. Fringe of 32 teeth; single. Hedwig. 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 midribbed, serrated and waved at the edge. It has much of the habit of a Polytrichum.


D. Capsules on fruit-stalks, DROOPING.

(1) Stem none, or very short and unbranched.

car'neum. Br. Capsules somewhat globular; leaves alternate, acute. Hedw. stırp. 1. 20—E. bot. 360—Dill. 50. 69—Buxb. ii. 2. 5, and 6—Kall. enum. 4. 6. at p. 118. hist. 45. 6, at iii. p. 41.

Shoots upright, single, or in tufts, dividing into several branches 4 or 5 lines long. Leaves ½ or 1 line long, ½ a line broad, not hairy at the end, very entire. Fruitst. terminating the shoots and the branches, 3 or 4 lines long. Capsules roundish, egg-shaped. Ring none. Lid short, bluntish. Veil smooth, reaching but half way down. Pollich. Bryum delicatulum. Hedwig. Moist watery places and pastures. [Wet drains near the bath, Ditchingham, Norfolk. Mr. Stone.] Summer. Dill. — March, April. Huds. Var. 2. Capsules green. Branches and fruit-stalks longer. R. Syn. p. 102. n. 52. Dill. 50. 69. G.

Yorkshire. Mr. Richardson.


Original stem hardly ¼ a line in height; very brittle when dry. Leaves expanding, lower ones spear-shaped. Barren flowers in the bosom of the leaves. Fruit-stalks terminating, at first straight, then arching downwards, becoming straighter again when old and dry. Capsule pear-shaped. Lid convex, beak slender, crooked. Fringe single, with 16 teeth. Veil splitting at the side, bent like the beak of the lid.


Spring—Autumn.


E. bot. 389—Dill. 50. 60—Hedw. stirp. 1. 3—Hall. enum. 4. 7, at p. 118, hist. 45. 7. at iii. p. 41.

In this and in the Mn. cridum, 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 involucrem. Stellated shoots with longer leaves. Weis. Fruit-stalks serpentine, pale red to golden yellow. Capsules pear-shaped, green, changing to yellow red. Dill.


P. March—June, [and July. Mr. Wood.]

Var. 2. Capsules egg-cylindrical.

H. ox. xv. 6. f. 20.

This plant has the foliage of the Br. hypnoides, and the capsules of the Br. sericeum. The structure, however, of the fringe, accords with the former. It varies much in size, the shoots from ½ to 1 inch, and the fruit-stalks from 1 to two inches.

Specimens from Mr. Griffith, who found it on turbaries about Llyn Aled, Denbighshire; also about Llanberris. Dillen. in Hist. Musc. inadvertently refers the above figure to his own 51. 72, but it is very different from that, and possibly may prove a distinct species.

Br. Capsules egg-shaped: shoots cylindrical, tiled, smooth; argenteum leaves egg-spear-shaped, hair-pointed.

Dill. 50. 62—Curt. 166—Fl. dan. 880. 2—Vaill. 26. 3—H. ox. xv. 6. row the last, 17.
CRYPTOGAMIA. MUSCI. Bryum. (D. 1)

Grows in patches, about \( \frac{1}{2} \) an inch high, dividing into cylindrical shoots 2 or 3 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 \( \frac{1}{2} \) an inch high. Capsules egg-shaped, upright when green, pendant 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.

Sunny banks, walls, roofs, and rocks. P. Oct.—Feb.

Var. 2. Shoots greener. Leaves not hairy.

Dill. 50. 63.

Pale or darker green, sometimes shining. Leaves more crowded than in (1.) not hairy. Capsule, mouth not fringed.

Dill.


Jan.—March.


Dicks. ii. 8.

Dicks. 4. 10.

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.

Moist banks in the Highlands. Near Aberfeldy. [Crib y Ddesiel, Caernarvonshire. October. Mr. Griffith.]
CRIPTOGAMIA. MUSCI. Bryum. (D. 2)

arr. ed. ii. Woolwich Heath, and Snowdon, about Llanberis, on Ingleborough, and other places in Yorkshire. [Clugwdn y Garnedd, and Crib y Ddesi, Caernarvonshire. Mr. Griffith.]

P. March—July.

D. Capsules on fruit-stalks, drooping.

(2) Stems upright.


Hedw. stirp. iii. 39.

Plant black green. Fruit-stalk black red. Capt. shining, black, brittle. Lid convex, with a small point.


Br. Capsules roundish; veils minute: shoot branched: pulvinatum. leaves oblong, mid-ribbed, hair-pointed.

Dill. 50. 65—Happ. iii. Bryum 1—Vaill. 29. 2—Pet. gaz. 93.

Grows in a tuft or round cushion. Fruit-stalks green, short, bowed down, so that the capsule presses upon the leaves. Caps. egg-shaped. Veil very thin, very short, barely covering the lid. Lid taper-pointed. Linn. β succ. n. 993, under B. murale. Fruit-stalks bending down so that the capsules are buried in the foliage; but in some stages of growth they are upright. Neck. In circular convex dense patches, about ⅜ inch high. Leaves, the lower ones brown and without hairs. Fruit-stalks terminating, very short, at first upright, but as the capsule ripens bending down. Mouth toothed. Veil deciduous. Lid short, pointed.

Weis.

Walls and roofs; the most common of all the Mosses.

March, April.

Var. 2. Capsules shorter and rounder: plant white with hoary hairs.

Specimens sent by Mr. Griffith. The uppermost leaves ending in very white hairs, as long or longer than themselves.


Dicks. ii. 9.

Dicks. 5. 2.

The largest of all the Bryums. Shoots somewhat branched, rather recumbent at the base. Leaves expanding, taper-pointed, with a thick mid-rib and reddish edge. Fruit-stalk terminating,
very long, a little above the base with an elbow-like bend, of a gold coloured reddish brown, brightly glittering. Capsule depressed and pendent, club-shaped, very long. Fringe, teeth numerous, upright. Dicks. Stems trailing near the root, often 3 inches long. Fruit. 2 to 3 inches long. Mr. Griffith. 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.

On the 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 the Br. alpinum.]

alpinum. Br. Capsules egg-cylindrical; fruit-stalk axillary; shoots branched; leaves tilled, spear-shaped, mid-ribbed, pointed, keeled.

Dill. 50. 64.

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. Leaves pressed to when dry. Griffith. The younger ones pellucid.

Rocks covered with a thin layer of earth in the ruins of an old castle near Llanberris. Dill. [Also by the side of Llyn Ogwen, generally growing in tufts, detached from all other kinds of moss. As figured by Dill. 50. 64, C; on the small dripping rocks by Hendre dwyfan bridge near Cerig y Druidon; Denbigh. Mr. Griffith.] P. Apr.—June.


Dicks. ii, 9.

Dicks. 5. 1. a. b.


Pastures, Scotland.

HYP'NUM. Fruit-stalk from a lateral tubercle, fenced with scales: capsule outer fringe with 16 teeth.

MALE a bud, generally on a different plant.
SUBDIVISIONS OF THE HYPNUMS.

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 tilting: capsules upright.
   (2) Shoots winged with branches; branch leaves tilting: capsules leaning.
   (3) Shoots winged with branches; branch leaves tilting: capsules drooping.

D. (1) Leaves bent back: capsules upright.
   (2) Leaves bent back: capsules leaning.

E. Plant shrub-like: branches in bundles.

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.


H. Fruit-stalks terminating; capsules oblong, lid acute: bryo'ides. leaflets spear-shaped, acute.

*Hedw. stirp.* iii. 29—E. bot. 625.—Dill.34. 1—Vaill. 24. 13
   —Pl. dan. 473. 1—H. ox. xv. 6. row 4. 11—Buxb. i. 64. 3.

Very small, but distinguished by its *capsules*, edged at the mouth with a deep red fringe. *Linn.* The smallest of the ge-
nus. Shoots 2 or 3 lines long. Leaflets 7 or 8 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 plant has its separate rate, though sometimes 2 or 3 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. Mr. Stackhouse.

Fissident bryoides. Hedw. Shady places, woods, and ditch banks. A. Feb.—May.

A. (2) Unbranched, winged with leaves. Capsules leaning.


Dill. 34. 5—H. ox. xv. 6. row 1. 36—Vaill. 29. 8.

Leaflets triangularly egg-shaped, hooked. WEBBER. Shoots several, lying on the ground, $\frac{1}{4}$ to $\frac{1}{2}$ 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.

Woods, and moist shady places on the ground, and on trunks of trees. P. March, April.


Dicks. b. s. and fasc. 5. 5.

Habit that of H. adiantoides, but smaller, and the fruit-stalk always terminating. Leaves tiled at the base, almost embracing the stem, spear-shaped, bluntest, somewhat keeled, the midrib reddish, sometimes rolled in at the ends. Beak slanting, white, as long as the capsule. Dicks.

Bogs in the Highlands, near Ben Lomond.

A. (3) Branched; winged with leaves: capsules leaning.

trichoma-

noi'des. H. Leaves oblong, blunt, hollowed on the under edge: capsules nearly cylindrical: beak bent.

Dill. 34. 8.
CRYPTOGAMIA. MUSCI. Hypnum. (A. 3)

Leaves convex above, the ends reflected. 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.


Dicks. b. s.—Hedw. stryp. iii. 26—E. bot. 264—Dill. 34, 3—Vaill. 28. 5—Buxb. ii. 1. 4.


Mr. Griffith.

Fissidens adiantoides. Hedw. Bogs; moist heaths. [Crib y Ddesel, and Clogwyn y Garnedd. Mr. Griffith.]

P. March, April.

H. Plant branched, trailing: fruit-stalks from the side: sylvaticum, leaves acute.

Dill. 34. 6.


Woods at the roots of trees. [Rivelston Wood near Edinburgh. Dr. J. E. Smith.—Near Bungay, Suffolk. Mr. Stone.]

P. April, May.


Dill. 34. 7—Vaill. 23. 4; and 21. 17—H. ex. xv. 5. row 2.
5, and row 3. 15.

Forming broad leafy strata on the trunks of trees. Plant from 1 to 3 or 4 inches long, creeping. Leaves alternate, in 2 rows, in the young shoots very closely crowded. Fruit-stalks ½ an inch high, numerous on the mid-rib, or from the fork of the branches. Fence large, hairy. Capsules egg-shaped. Lid conical, beaked. Weis. Two or three inches long. Branches opposite, or alternate. Leaves soft, pellucid, yellow green, shining. Fence scaly. Veil slender, whitish, crooked. Dill.

Trunks of trees.

P. March, April.
A. (4) Branched, winged with leaves: capsules drooping.

**taxifolium.** H. Unbranched: fruit-stalks from the base: capsules oblong; lid taper-pointed: leaflets oblong, acute.

_E. bot. 426—Dill. 34. 2—Vaill. 24. 11—Fl. dan. 473. 2._

Leaflets about 12 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. _Wells._ _Leaves_ spear-shaped, with a point at the end. _Webber._ _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._

Woods, hedges, and shady banks, Feb.—May.

**rotundifolium.**

H. Branched: fruit-stalks lateral: capsules egg-shaped.

_Scop. 62. 1333, at ii. p. 321._

_Shoots_ slender, hardly 1 inch long, not numerous. _Leaves_ thinly set. _Capsules_ reddish; mouth with 2 rows of fringe. _Lid_ with a slender beak. _Veil_ white, chaffy. _Scop._

Woods at the roots of trees, Scotland, [and on walls. _Scop_.]

**luccens.**

H. Shoots branched; branches winged with leaflets: fruit-stalks lateral: capsules drooping: leaflets egg-shaped, dotted.

_Dicks. b. s.—Dill. 34. 10—Schmid. 57. 2._

_Trailing._ Branches brittle, blunt. _Leaves_ egg-shaped, pointed, flat, shining as if wet with dew. _Fruit-stalks_ 1½ inch long, lateral. _Capsules_ nodding. _Scop._ _Shoots_ about 2 inches long, sometimes branched. _Leaves_ large, thin, soft, pellucid, pale green, placed alternately in 2 or 3 rows. _Capsules_ small for the size of the plant, egg-shaped, more or less nodding, dark brown. _Lid_ spit-pointed. _Veil_ straight, sharp, whitish. _Dill._

Woods, wet ditches, wet shady marshy places.

P. April—June.

B. (1) Branches irregular: leaves irregular; capsules upright.

**stella'tum.** H. Shoots upright: leaves egg-shaped, ending in long points, rather expanding, coloured.

_Dicks. b. s.—Dicks. 1. 7—Dill. 39. 35—Vaill. 28. 10._

_Shoots_ somewhat branched, somewhat tawney 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.
Cryptogamia. Musci. Hypnum. (B. 1)

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.

Turfy bogs. Relh. n. 1018. [Low wet meadows in Earsham, near Bungay, Suffolk. Mr. Stone.]

H. Shoot upright, somewhat branched, bent; leaves tiled, sciuroidez. egg–spear-shaped, hair-pointed: capsules oblong; lid conical.

Dill. 41. 54–Vaill. 27. 12–Kniph. 6–H. ox. xv. 5, row the last, 27.


Trunks of old trees. [Bungay, Suffolk. Mr. Stone.]

P. Feb.—April.

H. Branches compressed: leaves hair-pointed, shining: refus'cens, capsuler upright; lid conical. Dicks.

Dicks. 8. 4.

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. Haller. Has been confounded with the Hypn. nitens, but differs from that in having upright capsules, a very short involucrum, and few, but long branches. Dicks. Fasc. iii. p. 9.

[Cryb y Ddescei, though rarely with capsules. Mr. Griffith.]

H. Shoots ascending: fruit-stalks lateral: capsules ob–crispum long; beak of the lid bent: leaves oblong, blunt, wrinkled, in 2 rows.

Dicks. b. s.–E. bot. 617–Dill. 36. 12–Hall. enum. 3. 5, at p. 109, hist. 46. 5, at iii. p. 56–Happ. ii.–Hypn. 5–H. ox. xv. 5, row 3. 10, p. 625.
The most elegant of the genus. Grows in dense broad strata. Shoots a span long, flat, a little raised. Leaves closely tiled, alternate, in 2 rows, spear-shaped, blunt, shining, wrinkled. Fruits-stalks \(\frac{1}{2}\) inch long, lateral. Involucrum, leaves paler. Capsules nearly upright, egg-shaped. Lid with a long beak. Veil long. Weis. From 2 to 12 inches long, crowded and lying one upon another, branches compressed, blunt, undivided, alternate or in pairs. Leaves crisp, transversely waved. The whole plant is pale green in winter, yellowish in summer. Dill.


me’dium. H. Shoots creeping: leaves broad, spear-shaped, pointed, tiled but open: capsules cylindrical, fringed.

Dill. 42. 65.

Crowded together. Leaves pressed when dry. Fruits-stalks less than \(\frac{1}{2}\) inch in length. Dill.

The foot of trees in woods in Scotland.


Dicks. b. s. and fac. 5, 6.


Dicks. b. s.—Dill. 39. 43—H. ox. xv. 5, row 1. 7—Vaill. 23. 1—Pluk. 47. 4.

Covering the 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 fringed when magnified, smooth to the naked eye. Weis.
Fruit-stalks and capsules upright. Appears crisp when dry. Leaves triangular, keeled, pointed but not hairy. Dill.

On trunks of trees, and sometimes on the ground on the chalk hills between Northfleet and Gravesend. Dill. 307.—[By the north west corner of the bridge at Kirkby Lonsdale; and in Armingdale Wood, near Norwich. Dr. J. E. Smith.—Earsham, Suffolk. Mr. Stone.]

P. March, April.

B. (2) Branches irregular; leaves irregular; capsules leaning.

H. Stem elongated, somewhat branched; leaves heart-ruscifolium-shaped, concave, finely serrulata, diverging; lid convex, beaked.

Hedw. sttrp. iv. 4—Dill, 38. 31.

Adhering to stones under water, in broad patches, 1 or 2 inches or more in length, according to the rapidity of the stream. Branches upright, cylindrical below, flat above. Leaves egg-spear-shaped, closely tiled, 2-rowed, and less compacted upwards. Fruit-stalks on the stem 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 ½ an inch high. Dill.


The shoots are often incrusted with calcareous earth, which in time it accumulates so as to form stones of 20 or 30 pounds weight. Weis.

H. Shoots trailing; fruit-stalks lateral; leaves egg-spear-lutes'cens-shaped, scored.

Dicks. b. s.—Hedw. sttrp. IV. 16—Dill. 42. 60.

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.


P. Jan.—April.

H. Leaves spear-shaped, scored, hair-pointed; capsules cassubicum, cylindrical, leaning. Dicks.

Faill. 27. 1.
Nerves on the leaves more than three. *Carp.* never upright.

On trees, in moist shady places.

**intrica'cum.** *H.* Shoots creeping; branches short: fruit-stalks lateral: capsules urn-shaped, beak bent: leaves spreading, spear-shaped, taper-pointed.


First found by Mr. Teesdale, and since by Dr. Smith, in woods on the south east side the river at Matlock Bath.

**undula'cum.** *H.* Shoots branched; branches somewhat winged: leaves waved and folded: fruit-stalks lateral and axillary.

*Dicks.* 9. s.—*Dill.* 36. 11—*H. ex.* xv. 6. 33.


Woods, shady places, and moist rocks. On the top of Snowdon. [Rivelston Wood, near Edinburgh. Dr. J. E. Smith.]

P. March—April.

**al'bicans.** *H.* Shoot branched, ascending: fruit-stalks lateral: capsules oblong, lid conical, blunt: leaves oblong-spear-shaped, bristle-pointed.

*Dicks.* 9. s.—*Hedav.* stirp. iv. 5—*Vaill.* 26. 9—*Dill.* 42. 63.

Shoots about 2 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, ½ inch upright, red; but rarely found. *Capsules* small, oval, oblique, rather nodding; yellow red. *Lid* short. *Month* fringed. *Dicks.* Scarcely upright, not crowded together, a little branched, shoots slender, yellowish pale green. *Leaves* slender, pressed to, soft, shining. *Involucrum* hairy. *Dill.*

In loose sandy soil on heaths, and places thinly clothed with
Cryptogamia. Musci. Hypnum. (B. 2)

grass; but seldom with capsules. Dill. 329.—[Bungay Common, Suffolk. Mr. Crowe, Mr. Stone.]

May.

H. Branches crooked: leaves egg-shaped, scored, acute, striatum, expanding in every direction; lid pointed.


Leaves scored. Fruit-stalks often twisted, untwisting when moistened and turning the capsule from the right to the left.


H. Branches bowed back; leaves egg-shaped, spreading: triquetrum. Fruit-stalks axillary.

Dill. 38, 28—Vaill. 28, 9—Buxb. iv. 63. 1.

Branches unequal. Leaves triangular, pointed. Linn. 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 reflected scales, sometimes 2 or 3 together. Fruit-stalks seldom more than an inch high. Capsules upright, thin; when ripe thicker, leaning, crooked. Dill.

Woods about the roots of trees, and in dry barren pastures. P. Sept.—Jan.

Used to pack glass and earthen ware. Weis.


Dill. 38, 33—Vaill. 33, 6.

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.

Stagnant waters. Marshy places in Ireland, in a ditch near the road from Oxford to Marston, ditches near Hackney, and elsewhere about London, and in a small pond in a pasture opposite Great Founder's Close, Cambridge.
CRYPTOGAMIA. MUSCI. Hypnum. (C. 1)


Hedw. stirp. iv. 12—Buxb. iv. 62. 2—Fl. dan. 824. 2—H. ox. xv. 6. row 5, 18—Vaill. 27. 8—Dill. 38, 29. capsules the best, but the shoots, as Haller remarks, are too round.


Grows much crowded, in patches, and full of fructifications. Mr. Stackhouse. Woods and hedges, on the roots and trunks of trees and shrubs: on the ground in barren places.

P. Sept.—Jan.

Var. 2. Upright, short. Leaves slender.

Marshy places. Dill. in R. Syn. p. 83. n. 18.

C. (1) Shoots winged with branches: capsules upright.

Smithii. H. Leaves nearly circular, somewhat concave; capsules egg-cylindrical: veil hairy upwards. Dicks. ii. 10.

Dicks. 5. 4.

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. Involucrum 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.

Trunks of trees near Barham Downs, Kent. Dr. J. E. Smith.

pennatum. H. Leaves egg-spear-shaped, tiled, pointed, in 2 rows, compressed, waved: involucrum as long as the fruit-stalk.

Dicks. b. s.—Hedw. stirp. iii. 20—Dicks. fasc. i. 8.

Differs from H. complanatum in the leaves being transversely waved, and the fruit-stalk not being longer than the involucrum; and from the Fontinalis pennata in the capsule standing out of the involucrum. Dicks.

H. Branches very short: leaves spear-awl-shaped, shining, ni’tens.

Fl. dan. 1123. 2–Dill. 39. 37.


H. Shoots very long, rather leafless below: capsules egg-prolix‘um, shaped, fringed: fruit-stalks lateral, ascending, short.

Dill. 38. 32; and 85. 20.

Shoots 12 inches or more in length, upright in stagnant, floating in running water, closely crowded, sending out a few short branches towards the ends. Leaves numerous, small, tiled; under ones the largest. Involucrum a small bulb, composed of a few short scales. Fruit-stalks short. Capsules small. Dill.


Dicks. b. s.–Hedw. stirp. iv. 15–Dill. 35. 16.

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. Shoots proflerosus; nearly flat, not shining: fruit- proflifer’um

stalks several together: involucrum bristle.


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 1 to 3 (4 or 5) 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. *Caps.* reddish, at first straight, then crooked. The leaves smaller, not shining, the shoots more serpentine, and the bristly involucrum distinguish this from the Hypn. parietinum. Dill. Hypn. parietinum, and Hypn. proliferum of Gmel. syst. veg. are both the same plant.


Covers the surface of the earth in the thickest woods through which the sun never shines, and where no other plant can grow. Linn.

parietinum H. Shoots proliferous, nearly flat, shining: fruit-stalks several together: involucrum scaly.

*Vaill.* 29. 1—Dill. 35. 18—Buxb. ii. 1. 2, and ii. 2. 1—Happ. 1—Hypn. 3—*Vaill.* 29. 1—Schmid. 58. 3.

Fruit-stalks 4, 5, or more together, at the base of the branches; about 15 lines long. Shoot bent at the places where the branches issue out, so as to be zigzag. Very like the *H. proliferum* in its mode of growth, and in 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 3 or 4 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; is very densely clothed with leaves, and after a time sends out branches. Fence scales reflected. Dill. Both in this and in the Hypn. proliferum, the shoots resemble the winged leaves of Ferns.


It is used in Sweden to fill up the chinks in the walls of timber houses.


*Fl. dan.* 1123. 1—*Vaill.* 29. 9—Dill. 36. 19.

Fertile shoots trailing, the barren ones upright. Fruit-stalks 1 or 2 inches long; from the bosom of the branches. Neck. Shoots from 3 to 6 inches, undivided, winged. Wings leafy. Fruit-stalks from the middle of the shoots, one or more in a place. Fence hairy. Capsules leaning. 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.

CRIPTOGAMIA. MUSCI. Hypnum. (C. 3) 837

H. Branches near together; bowed back.

Dick. b. s.—Vaill. 27. 14—Dill. 36. 20.

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. Fruit-stalks ½ inch to 1 inch long; from the base of the branches. Neck. Grows in broad patches, reclining, flat, one plant over another. Leaves hooked, very sharp. Branches triangular, the ends bent back. Weis. Branches crowded, ends reflected. Leaves numerous, bent back, yellowish green; downy, crisp. Dill.

Chalk hills, rocks, about the roots of trees in dry woods and stony soils. [Bungay, Suffolk. Mr. Stone.] P. March, April.

C. (3) Shoots winged with branches: capsules drooping.

H. Shoots taper-pointed: leaves upright but expanding; du'bbium. capsules oblong, crooked. Dicks.

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 hair-pointed. Dill.

Wet heaths and marshy places. Febr.

H. Branches somewhat cylindical, distant, unequal: abie'tinum. leaves egg-spear-shaped, closely tiled.

Dill. 35. 17—Vaill. 29. 12—H, ox. xv. row 4. 22. p. 626.

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 2 to 4 inches long, elastic when fresh, brittle when dry. Wings limber, alternate below, opposite and shorter above. Leaves egg-spear-shaped, scored, ending in hairs, closely tiled. Weis. Branches straight. Leaves straight, which distinguishes it from the H. flicinum. Scop. Grows matted together, half upright, sometimes branched, 3 to 5 inches long. Side shoots awl-shaped, numerous, opposite, surrounded on every side by small dull yellow green leaves. No fructification yet found. Dill.

Mountainous places. On hills near Hinksey, Oxfordshire. Dill.—In shady places, and on Chalk hills about Northfleet. P. March.
Cryptogamia. Musci. Hypnum. (D. 1)

praelongum. H. Shoots somewhat winged; trailing; fibrous; branches remote: leaves egg-shaped.

Hedw. stirp. iv. 29—Dill. 35. 15—Vaill. 23. 9—Buxb. iv. 63. 3.

Leafitsserrated. At first sight distinguishable from all the other Hypnums 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. Leafitis 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.

Trunks of trees, rotten wood, and wet ground. [Bungay, Suffolk. Mr. Stone.]

P. Oct.—Feb.

D. (1) Leaves bent back: capsules upright.

fugo'sum. H. Shoots scattered, rather upright; leaves pointing one way, wrinkled at the base; fruit-stalks axillary.

Dicks. b. s.—Dill. 37. 24.

Leaves spear-shaped, narrow, sharply pointed, closely tiled. Pollych. Shoots seldom more than 3 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 ¼ of an inch high. Capsules cylindrical, straight, slender, red when ripe. Dill.


flagella're. H. Shoots creeping; branches upright, rarely divided; leaves spear-shaped, taper-pointed, the ends reflected.

Dill. 39. 42.

Leaves small, smooth, not much pellucid, produces its capsules, in September. Dill.

On stones near rivulets in the Highlands of Scotland.

D. (2) Leaves bent back: capsules leaning.

scorpio'ides. H. Branches waved, trailing, hooked; leaves pointing one way, tapering to a point.
Dicks, h.s. Dill. 37. 25.

Branches brown, hooked, and yellow at the ends. Linn.

Shoots trailing, cylindrical, 1 to 3 inches long. Branches rising upwards, thick, bent and thicker at the ends, about 1 inch long. Leaves spear-shaped, often ending in hairs, wrinkled at the base. Fruit-stalks $\frac{1}{2}$ to 1 inch high. Capsules cylindrical, slender, leaning. Lid pointed. Mouth with a white fringe. Weber.

The barren plants are longer and thicker than the fertile plants, colour dark red, the ends purple and green. The fertile plants are entirely green, except here and there a little purple. Dill.


P. Nov.—April.

H. Branches straggling: leaves spear-shaped, acute, bent squarro’sum, back in 5 different directions.

Fl. dan. 535. 1—Dill. 39. 38—H. ox. xv. 5, row 2. 2—Fl. dan. 648. 3.

Often 6 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 1 inch to 1½ 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. Mr. Stackhouse.

Moist meadows and pastures. P. Feb.—May.

Var. 2. Smaller. Leaves triangular, open, reflected. Dill.


Not much different from (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. Shoots creeping: branches crowded; upright, on one palus’tre. side the shoot: leaves egg-shaped; pointing one way: capsules nearly upright.

Hedw. stirp. iv. 1—Dill. 37. 27.

Branches upright, compressed, from $\frac{1}{4}$ to 1 inch high, numerous. Leaves in a double or triple series, sharp, hooked. Weber.

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. Caps. oblong, a little inclining, brown when ripe. Lid larger in diameter than the capsule. Veil straight, pale. Dill.

Leskea palustris. Hedw. In wet places. On the banks of the Thames near Battersea. Dill. At the roots of trees and in wet stony places. Huds. [Water fall at Roslin near Edinburgh. Dr. J. E. SMITH. By the rivulet, Gart dingle. Mr. GRIFFITH.]

P. Jan.—April.


Dick. b. v.—Dill. 39, 40—Vaill. 23, 2—H. ex. xv. 5, row the last, 24. p. 626—Buxb. iv. 64. 1—Ger. 1370. 1.

Fruit-stalks from the base of the branches. Neck. Nearly allied to the H. squarrosum. Ends of the branches thickest, bent back. Weis. Fruit-stalks more than an inch high, from the stem between the branches upright. Capsules egg-shaped, leaning. Shoot near a foot long or more, the rib rigid, brittle, surrounded by pale green leaves, those towards the end bent back. Dill.


adun'cum. H. Shoots nearly upright; somewhat branched: leaves pointing one way; spear-awl-shaped; curled: branches hooked.


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 2 inches long, rising out of a slender, short, scaly involucrum. Caps. egg-shaped, distended, leaning. Lid conical, short, blunt. Weis. Plant yellowish or tawny when growing out of the water. Ray. Involu'crum oblong, slender, scaly. Veil straight. Lower leaves less hooked than the upper ones. Dill.

Marshy and watery places, bogs, and wet pastures. [Turf pits on Ellingham and Geldestone fens. Mr. STONE.]

P. April—Aug.

cupressi'- H. Shoots somewhat winged: leaves pointing one way; hooked; awl-shaped at the end.

for'me.
Cryptogamia. Musci. Hypnum. (D. 2)

Dick. b. s.—Hedw. stirp. iv. 23—Pl. dan. 585—Dill. 37, 23—Vaill. 27. 2 Plank. 447. 6—H. ox. xv. 5, row 2. 8.

Fruit-stalks from the base of the branches, and often twice their length. Neck. Stems 2 to 4 inches long, creeping, irregular. Branches irregular, very leafy. Leaves very densely tiled, hooked and hairy at the end. Fruit-stalks from the principal stem, an inch long. Capsules cylindrical, at first upright, leaning and bent when ripe. Lid short, conical, pointed. Veil, whilst young, straight, oblong. Weis. Stems stratified, forming large and dense patches; 2 or 3 inches long, irregularly branched. Leaves small, crowded, soft, ending in hooked points, pleasant green, smooth. Upper branches thick, bent at the ends; lower ones thinner and straighter. The plant has the appearance of crispness, but is not really so. Dill.

Woods at the roots of trees, and on thatch. R. Syn. Sr.

P. Feb.—March.


Hedw. stirp. iv. 22—Dill. 36. 22.

Resembles the H. filicinum in the crisp appearance of its leaves, its winged shoots and greenish yellow colour, but it is much shorter, less branched, its branches more creeping and forming a more acute angle with the stem. Leaves hooked, ending in hairs. Capsules thick, egg-shaped. Weis. Two or three inches long, tender, compressed. Leaves narrow, in two rows, sharp, points bent backwards, pale green, soft, shining. Fruit-stalks 1 inch long, reddish. Capsules oblong egg-shaped, green, upright, yellow red, and inclining when ripe. Dill.


March, April. In Summer; Weis.

E. Plant shrub-like: branches in bundles.


Readily distinguished by its stems closely compacted together, its shrub-like appearance, from 2 to 4 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,
CRYPTOGAMIA.  MUSCI.  Hypnum. (E)

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.**

Moist woods and shady places about the roots of trees, and in moist pastures. P. Feb. March.

**alopecu'rum.** H. Shoot upright: branches in bundles; terminating; subdivided: capsules rather drooping.

**DILL. 41. 49—Vaill. 23. 2, and 5—H. ox. xv. 5. row the last.**

**Leaves of the stem open. Linn.** In its tree-like mode of growth it resembles the *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 bend back at the points, but in the *H. dendroides* they lie close pressed to. **Wcis Stem 4 or 5 inches high, covered with whitish pointed scales. Leaves serrated. Fruit-stalks shorter than the branches, bent. Capsules egg-shaped. Lid, beak bent. Leers. Stems light red, rising from a trailing root. Leaves broad at the base, tapering to a point, alternate. Involucrum scales ending in hairs, compact. DILL.**

Moist and shady places at the roots of trees, and by the sides of rivers. P. March, April.

**F. (1) Shoots nearly cylindrical : capsules upright.**

**gra'cile.** H. Shoots creeping: branches cylindrical; nearly upright: capsules egg-shaped.

**Hedw. stirp. iv. 6—DILL. 41. 55—Fl. dan. 649. 2.**


**attenua'tum.** H. Shoots branched: branches bowed in, sometimes tapering, sometimes thickening: leaves egg-shaped, pointing one way: capsules upright, tooth fringed. **Dicks. ii. 13.**

**Hedw. stirp. i. 12—DILL. 42. 66.**

CRYPTOGAMIA. MUSCI. Hypnum. (F. 2)

Hedwig. Rather thick, much branched, yellow green, tawny when dry. In large patches on the trunks of beeches, particularly on the Northern side. Dill.

Woods on trunks of trees, Scotland.

H. Shoots upright, thread-shaped, somewhat branched: stramin'eum.


Dicks. b. s. and fasc. i. 9.

Shoots nearly upright, strap-shaped, slender, when dry very brittle, 2 inches and more in length, straw-coloured, sometimes simple, or with 1 or 2 branches. Leaves convex and concave, glittering, pressed to. Fruit-stalks lateral, upright, red, 1 and sometimes 2 inches long, solitary or 2 together. Capsules egg-shaped, upright, bulging on one side. Lid short, somewhat pointed. Dicks.

In a marshy place on the West side of Hampstead Heath, near London.

H. Shoots creeping: branches and capsules cylindrical: cylin'dricum.

Leaves closely tiled, egg-shaped, pointed. Dicks. ii. 12.

Dill. 41. 57.

Shoots (on the ground) sometimes branched, soft, shining, pale green or yellowish. Leaves narrow, not hairy, pressed to. Fruit-stalks reddish, 1-3d of an inch long. Capsules upright, slender, cylindrical. Lids pointed. Dill.

Woods on the trunks of trees, Scotland.

F. (2) Shoots nearly cylindrical: capsules leaning.

H. Shoots branched: leaves pointed, open, distant.

Dill. 40. 44-Hedw. stip. iv. 3-Fl. dan. 649. 1-Schm. 57. 3-Buxb. ii. 3. 3.

Stem 4 to 6 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. Involuturum 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 it is always immersed in water they are longer, more pointed, and wing the stems. Dill.

On walls, and moist stony places on the banks of rivers, on
planks and stones about water mills, and in rivers. [Bungay, Suffolk. Mr. Stone.]

mural. H. Shoots creeping; branches mostly upright; in one direction: leaves egg-shaped, concave. Dicks.

Hedw. stipr. iv. 30–Dill. 41. 52.


On walls.


molle. H. Shoots pendent, slender, very much branched: leaves tailed, egg-shaped, acute: capsules roundish. Dicks, ii. 11.

Dicks. 5. 8.

Whole plant soft, flaccid, and flexile. 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.

Banks of rivulets in the Highlands of Scotland.

cuspida'tum. H. Shoots spreading, winged with branches, ending in a long point: leaves oblong, taper-pointed: capsules cylindrical; lid conical.

Dicks. h. s.–Dill. 39. 34–Buxb. ii. 3. 1 and 2.

The sharp rigid points at the ends of the middle and terminating shoots, afford a ready mark of distinction. From 1 to 4 inches high. Fruit-stalks 2 or 3 inches long, upright, lateral. Involuturum scaly, long. Capsules egg-shaped, thick, a little bent; leaning. Lid blunt, short, scarlet. Mouth fringed. Wells. Pale green, yellowish or reddish when in fruit. Leaves alternate, thin, pellucid, shining. Dill.

Bogs, marshes, wet pastures and moist woods.

P. Mar.—May.

filifo'lium. H. Shoots spreading; branches numerous, very short: leaves awl-shaped, acute: capsules oblong; lid conical, blunt.

Dill. 42. 62.

Forming a compact interwoven tuft. Much branched; branches slender. Leaves very narrow, smooth, resplendent
green, when dry pressed, standing out when fresh. Fruit-stalks \frac{1}{2} inch high, very slender, reddish. Capsules slender, at first upright, afterwards leaning a little, and again upright when ripe. Involucrum slender, hairy. Dill.


H. Shoots and branches diverging, nearly upright, blunt. illec'ebrum. Dill. 40. 46—Vaill. 25. 7—Fl. dan. 706. 1.


Heaths, shady places, and moistish pastures. Huds.


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. Involucrum oblong, large, composed of unequal scales. Dill.

Woods in Scotland. [Crib y Ddeseil. Mr. GRIFFITH.]

F. (3) Shoots nearly cylindrical: capsules drooping.


Curt. 207—Fl. dan. 706. 2—Dill. 40. 45—Vaill. 28. 3.


Pastures, meadows, banks, and woods. P. Nov.
Fishermen make use of it to scour their worms.

Var. 2. More slender. Mid-rib of the leaves red.

Dill, 40, 47—Vaill. 29. 10—N eck. meib. 1. 10—Buxb, iv.
64. 1, the right hand of the upper figures; and 3.

Longer and more slender than the preceding, branches and leaves more pointed, more shining when dry, more thinly set, and exposing more distinctly the red mid-rib. Dill.

ekurtipen'-dulum. H. Shoots upright, branched, leafy: leaves oblong-egg-shaped, acute, tiled: capsules egg-shaped; lid tapering to a point.

Dick. h. s.—Dill. 43, 69.

From 2 to 4 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 ½ inch long, mostly 2 together, upright. Capsules cylindrical at first, and upright; when ripe egg-shaped and pendent. Lid short, beaked. Involutecrum rising nearly up a third of the fruit-stalk. Weis. Decumbent, matted together. Shoots thick, rigid, irregularly branched. Leaves green, numerous. Involutecrum long, pointed. Capsules yellowish. Dill.

On the trunks of beeches, in woods. On stumps in Enfield Forest, near Southgate, and in Yorkshire. On large stones on the Marlborough Downs, Wiltshire; and on the rocks of Snowdon. Dill.

P. Feb.—April.


Dill. 43, 67.

Slender, irregularly branched. Leaves very small, loosely disposed, dull green and pellucid when wet, opaque and blackish when dry. Involutecrum pale, slender, fixed near to the origin of the branches. Fruit-stalks blackish. Capsules small, black. Lids deciduous. Dill.

Woods at the roots of trees, Scotland.

G. (1) Shoots crowded: capsules upright.

sere'eum. H. Shoots branched, creeping: leaves oblong, hair-pointed, tiled, capsules cylindrical; lid taper-pointed, bent.

Hedw. stirp. iv. 17—Dill. 42. 59—Carr. 126—H, ex. xv. 5, row 4, 25—Vaill. 27. 3. a. b.—Gars. 639.

Grows so firmly to the trunks of trees that it can scarcely be
CRYPTOGAMIA. MUSCI. Hypnum. (G. 1)

H. Shoots very much branched, awl-shaped, crooked, tapering upwards and downwards.

Hedw. stirp. iv. 8—Dill. 41. 50—H. ox. xv. 5. 27—Vaill. 28. 4.

Stem 2 to 4 inches long; branched towards the end. Leaves closely tiled, egg-spear-shaped, hair-pointed. Involucrum short, slender, scaly. Capsules upright or leaning. Wei. Shoots thin, creeping, sending out 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, \( \frac{1}{2} \) or \( \frac{3}{4} \) of an inch long. Capsules cylindrical, upright, tawny when ripe. Dill.

Hypn. myosuroides, Hedw. H. myosuroides. \( \beta \) Huds. and Bot. arr. ed. ii. At the roots of trees, and on large stones in woods. Jan.—March.

G. (2) Shoots crowded: capsules leaning.


Dill. 41. 51—H. ox. xv. 6. row 3. 3—Vaill. 27. 6.

Pale green. Stem-leaves almost 3-cornered. Dill.

Woods at the roots of trees, and on stones and rocks. [Bungay, Suffolk. Mr. Stone.] 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 reflected when the plant is dry. Dill.

On old walls, as of Westham Abbey, near Stratford, Essex; and on rocks on Emott pastures, Yorkshire. Dill.


On the ground under hedges, on the trunks of trees, especially young ones, on wood, stones, and sometimes on old bones. Dill. On rotten wood, and in wells. Light.

P. March, April.

velutinum. H. Shoot creeping; branches crowded; upright: leaves awl-shaped.

Dill. 42. 64—Vaill. 28. 2, 6, 7, 8—H. ex. xv. 5, row the last... 21, p. 625—Buxb. iv. 63. 2.

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.

At the roots of trees, in woods, and hedges, in shady places and barren pastures. P. 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 3 or 4 lines long. Leaves egg-shaped. Neck.

slavellatum. H. Creeping: branches upright, greatly crowded: capsules bowed; beak bent.

Dill. 85. 17.

Fruit-stalks twice as long as the branches. Neck. Shoots 5 to 7 inches long, stiff, growing in dense patches filed one upon another. Branches upright, or trailing, on opposite sides of the shoot, short, rigid, 2 or 3 lines long, and nearly 1 broad; those in the middle the longest. Leaves hairless, very entire. Fruit-stalks lateral, 4 or 5 lines long, inclosed at the base by an involucrum. Capsules a line in length. Lid very sharp. Veil smooth, a line long, reaching half way. Pollich. Fixed by slender rust-coloured roots to the bark of trees. Leaves small, crowded.
CRYPTOGAMIA. HEPATICÆ. Jungermannia. (A)

Capsules roundish. Lid, beak crooked. Veil brownish, broad at the base, suddenly tapering to a point. Dill.

On the dead branches and trunks of trees. P. Dec.—Feb.

HEPATICÆ.

JUNGERMAN'NIA. Fruit-stalk naked: capsule 4-valved: seeds roundish.

Obs. Many of the species are beautiful microscopic objects. For a fuller account of the parts of fructification, see Vol. I, p. 364, and 389.

SUBDIVISIONS OF JUNGERMANNIA.

A. Plant unbranched, and without a mid-rib.
B. 1. Leaves winged: fruit-stalks terminating.
   2. Leaves winged: fruit-stalks lateral, or at the base.
C. 1. Leaves winged; leaflets with appendages: fruit-stalks terminating.
   2. Leaves winged; leaflets with appendages: fruit-stalks lateral, or at the base.
D. Shoots tiled with leaflets.

A. Plant simple, without a mid-rib.

J. A little leaf growing upon a large one.

Dicks. h. s.—Hedw. theor. 21. and 22, and 23—E. bot. 771—Schmid. jung. f. 1 to 6—Dill. 74. 41—Fl. dan. 359—Happ. i. jung. 1—Mich. 4. Marsilea. 1—Col. ecphr. i. 331. 3—Park. 1314. 5—Mull. frid. 2, 6 and 5.

Leaf variously scolloped and curled at the edge, pale green, firmly fixed to the mud by fibres from its under side. Webb. Fruit-stalks hollow, 2 inches high. Scor. 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 1 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. Mr. 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 4 shallow segments. Out of this the
fruit-st. rises, growing rapidly to the height of 1½ or 2 inches,
white, pellucid, supporting a dark green globe which opens into
4 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.

[Ellingham Fen, near Bungay, Suffolk, near the direction
post. Mr. Stone.]
P. March, April.

pusilla. J. Shoot mostly divided into winged clefts; lobes tiled:
involutcrum plaited.

Dill. 74. 46.

Leaf simple, very short, slightly divided into winged clefts.
Lobes tiled. Involutcrum bell-shaped, plaited on one side. Head
before it expands black. Linn. Leaf deeply divided into strap-
shaped lobes, which again are sometimes forked. Lobes blunt,
round, flat, ascending. Fruit-stalks often in pairs. Liers. About
½ an inch long. Poll. Caps, round, black, shining; valves
roundish, finely toothed. Dill.

Grows in patches; of a most beautiful light pellucid green.
Fruit-st. 1½ inch high. Mr. Stackhouse. Shady lanes and banks,
and wet places on heaths near Woolwich. Dill.—Wray Wood
near Castle Howard, Yorkshire. Huds.
P. March to June—Oct.

furcata. J. Shoots strap-shaped; branched; the ends forked and
bluntish.

Hedew. theor. 19, and 20—Dill. 74. 45—Vaill. 23. 11—
Mich. 4. 4.

Plant hardly 1 inch long. Scholl. Leaves flat, greenish.
Fruit-st. seldom more than 2 or 3 lines long. Involutcrum glo-
bular. Caps, nearly globular, reddish brown. In a young state
it is often found amongst Mosses on trees, of a pale yellow. It is
then very brittle, and on handling falls into a yellow powder,
greasy to the touch. Weis. Fringed at the edge. Involurem
and Caps, hairy. Both on fruit-bearing and barren plants on the
mid rib underneath the leaves, are found hemispherical or kidney-
shaped bodies, a little hairy, becoming powdery. Liers. 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.

On the ground, on rocks, and in woods on the trunks of
trees. Dill.—and wet shady places. Huds.—[Bungay, Suffolk.
Mr. Stone.]
P. April.
CRYPTOGAMIA. HEPATICÆ. Jungermannia. (A)

J. Shoot doubly wing-cleft, flat, indented, open, ending in two unequal lobes. Dicks. ii. 16.

Dill. 74. 44—Mich. 4. 3.

Leaves permanent deep green, thin, pellucid, flat, cut into winged segments. Dill. Seems to be prolificous. Leaves lying one upon another, in which way it appears to increase till it has covered a large patch of rock. When first taken from the water it has a strong and to me an agreeable scent. I have never found fructifications, though I have examined it at different times of the year. I suspect they have never yet been found in England. Mr. Wood.

At the head of Elm Cragg Well, under Bell Bank, near Bingley, Yorkshire. Dill.—[Mr. Wood.—Pretty plentifully at the head of a spring in Middleton Wood, 2 miles from Leeds, on rocks and stones entirely under water. Mr. Wood.]

J. Leaf oblong, indented, slippery.


Fertile plant smaller and more jagged, the others growing close together, and supporting each other become upright. Dill. in R. Syn. 110. Fruit-st. with a sheathing involucrem, white, pellucid, from 1 to 3 inches high. Caps. egg-shaped, black, shining, opening with 4 valves. Other leaves of a longer form not bearing caps, are set with green warty substances about the middle. Weis. Involucrem at first inconspicuous, afterwards long, tubular, entire, pale green. Fruit-st. white, 1 to 2 inches long. Dill. from the hollow indentures of the leaf. Involucrem long, cylindrical.

Marshy places and Bogs. [Bungay, Suffolk. Mr. Stone.] April.

J. Shoots with doubly winged clefts.

—Schmid. 55—E. bot. 186—Dill. 74. 43.

Leaves pale green; clefts blunt. Involucrem 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. Leaves flat, pellucid, succulent, greasy to the touch, pale yellow green; those without fruit-st. the most deeply divided. Seldom exceeding ½ an inch in length it would with difficulty be found, being mostly covered by other Mosses, did it not grow in quantities together. Weis. Fruit-st. white. Caps. dark green, shining. Dill.

CRYPTOGAMIA. HEPATICÆ. Jungermannia. (B. 1)

B. (1) Leaves winged; fruit-stalk terminating,

asplenoïdes. J. Leaves egg-shaped; somewhat fringed.

Fl. dan. 1061—Hedw. theor. 16. 17. 81. to 88—Dill. 69. 5—
Mich. 5. 3. cc.

Shoots 3 or 4 inches long; pale green. Leaves, upper edge
fringed with little teeth, alternate. Fruit-stalks terminating,
an inch long, rising out of a sheathing involucrum. Capsules
egg-shaped, purplish black, shining. Weis. Trailing, some-
times branched. Leaves pellucid, pale green, without veins. I
have never observed any roots. Dill.

Road sides and on trees, in woods and wet shady places; also
near springs and rivulets, when it is sweet scented. [Earsham
and Sexton Woods, near Bungay, Suffolk. Mr. Stone.]

P. Feb.—April.

Var. 2. Leaves 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 1338,
at ii. 7. 321.

Plant from 1 to 2 inches long. Fruit-stalks 12 lines long,
terminating. Neck. Shoots more branched than in 1, and shorter.
Leaves smaller and more crowded. Weis.

In the same situations with var. 1.

Var. 3. Leaves not fringed.

This particular variety was found by Mr. Stackhouse grow-
ing under the water of the celebrated spring called Holywell.

scala'ris. J. Leaves very entire, egg-shaped, pointing 2 ways: male
fruit-stalk terminating.

Dicks. 8. 5—Dill. 31. 5—Schmid. jung. f. 17. and 18.

Shoots creeping and striking root; terminating in powdery
globular substances. Scop. Branched or unbranched, forming
compact patches of a beautiful shining brownish green, one shoot
lying on another. Leaves in 2 rows, minute, roundish, blunt,
very entire, ¾ of a line in diameter. Globules terminating, sit-
ting. Pollich. Creeping on the ground, 1 or 1½ inch long.
Leaves tender, pellucid, pale green, in pairs. Fruit-bearing
branches short, the leaves alternate. Capsules or globules small,
green, of short duration. Dill. Shoots creeping, tapering each
way, with appendages underneath; leaves roundish egg-shaped,
sometimes slightly notched at the end: sheathing involucrum
below the shoot, cylindrical, hairy, fixed in the earth. Fruit-
stalk near ½ inch high. Dicks.

J. trichomanes, Lightf. Mnium trichomanes, Linn. J.
J. Shoots spear-shaped: leaflets very entire.

E. bot. 605—Dill. 70. 10—Mich. 5. 6 and 7—Happ. i. jung. 2.

Grows in large patches. Shoots hardly 1 inch long, simple, or divided into 2 or 3 branches. Leaflets alternate, crowded at the ends of the branches. Fruit-stalk near \(\frac{1}{2}\) an inch long, white. Caps. greenish brown or blackish. Weis. Shoots sometimes branched. Involutecrum slender, pallid, cloven into segments. Dill.


J. Shoots trailing, branched: leaflets egg-shaped, with 2 teeth: stipule spear-shaped, with 4 teeth.


Var. 2. Smaller.

Schmid. 64. 1—Dill. 70. 12—Mich. 5. 13.

Leaflets shorter, blunter, and less deeply cut than in the preceding.


J. Shoots branched: leaflets with 5 teeth.

Dill. 71. 23—Mich. 6. 2, larger than our plants.

Involutecrum with 5 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 4-sided, teeth or scollops from 1 to 6. Shoots crowded, 1 to 1\(\frac{1}{2}\) inch long, in general branching into forks. Weber. Creeping, crowded, sometimes branched. Leaves pellucid, numerous, broadest at the base, pleasant green, lower ones ending in 3 sharp teeth, upper ones in 4 or 5. Fruit-stalk terminating. Involutecrum toothed, angular. Caps. black. Dill.

Woods in wet shady places. About Tunbridge, and in the
CRYPTOGAMIA, HEPATICÆ. Jungermannia. (B. 2)

West of Yorkshire. [In the ascent to Ffynnon freck. p. Llanberris, Mr. Griffith.]

macrorhiza. J. Shoots upright, branched; leaflets alternate, slightly notched; open. Dicks. ii. 16.

Leaves, the uppermost purplish. Root large, branched. Dicks.

Higher mountains of Scotland. [Crib y Ddeseil. Mr. Griffith.]

sphæroceph'ala. J. Leaflets with 2 teeth; fruit-stalks terminating or lateral, supporting a barren globular flower.

Dill. 31. 6.

Small, whitish, creeping, leaves pointing 2 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, terminating 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.


B. (2) Leaves winged: fruit-stalks lateral, or at the base.

sphag'ni. J. Shoots taking root, fruit-stalks lateral: leaflets roundish, very entire, tiled, pointing one way. Dicks. 6.

Dicks. 1. 10.

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 2 rows, alternately lying on each other. Caps. 1 or 2, issuing from the same side of the shoot near the top or the bottom. Fruit-stalk pellucid, white, ½ inch high. Sheath whitish, oblong, brownish at the top. Caps. small, roundish, brown; but rarely seen. Differs from the J. poyanthos. Linn. in the leaves being of a brownish yellow, pointing one way, and also in the fibrous roots. Dicks.

Marshy places, frequently adhering to Sphagnum palustre, near Croydon, Surrey.

Dick. b. s.—Schmid. 22—Hedw. theor. 18, 89 to 92—Mich. 5. 10—Dill. 71. 22. C. D. E.

Shoots simple or branched. Leaves flat, green, pellucid, ending in 3 blunt teeth. Distinct from J. trilobata, the pinnules of which are eared and the leaflets smaller. DICKS.

Moist shady places. In Wales. DILL.}

J. Leaflets flat, naked, strap-shaped.

Dill. 69. 7—Vaill. a. b. between f. 7 and f. 2—Mich. 5. 4.

Shoots 3 inches long; branches 1 or 2 inches. Leaflets egg-shaped, the edges fringed and bent back, so that they appear convex. Fruit-stalks on the mid-rib, mostly towards the lower part of the shoot, and at the origin of the branches; an inch long, or more. Involucrum cut into segments. Caps. roundish, black, shining. WEIS. DILL.

Shady ditch banks, and woods in wet places. About Slingford, Sussex. DILL. P. March, April.

J. Leaflets very entire; tiled; convex.

Dill. 70. 9—Mich. 5. 5.

Shoots about 1 inch long, winged. Leaflets alternate, egg-shaped, with a blunt point. Fruit-stalk ½ inch high, from the mid-rib and the origin of the branches. Caps. brown red; egg-shaped. WEIS. Short, branched, stiff. Leaflets roundish, short, thin, pellucid, tiled. Involucrum white, short, 4-cleft. In the fig. of Micheli the leaves are ill done, and roots are erroneously added to the flower. DILL.


J. Fruit-stalks lateral: leaflets with 2 teeth.


Fruit-stalks 6 to 8 lines long. Capsules oblong, brown. DILL. Shoots less branched than in the J. bidentata, and more limber, from ½ to 1 inch long. Involucrum 2 lines long, at the origin of the branches. WEIS. Leaflets with 2 teeth at the end, forming an acute angle. SCHOLL.

Shady places and moist woods. P. March, April.

J. Shoots upright, branched: leaflets with appendages un-minu'ta. derneath: leaves roundish. DICKS. ii. 13.

Dill. 69. 2.
CRYPTOGAMIA. HEPATICÆ. Jungermannia. (C. 1)

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.

Amongst moss in the Highlands of Scotland. [Summit of Carnedd Llewelyn. Mr. Griffith.]


*Mich. 5. 15—Dill. 70. 14.*

Leaves more deeply cloven than represented by Micheli. Dicks.

Woods.


*Dill. 70. 15.*

Fructifications not hitherto discovered. Dicks. Shoots upright, or reclining, but not creeping; branches numerous. Leave alternate, not closely set, dull green, pellucid, the upper ones smaller, with 2 or 3 teeth at the end; lower ones with more teeth. Dill. Teeth acute, mostly on one side the leaflet.


pauciflora. J. Shoots creeping, very much branched, thread-shaped: fruit-stalks lateral: leaves bowed in, deeply divided: sheaths conical, remote. Dicks. ii. 15.

*Dicks. 3. 9.*

Leaves alternate, remote, cloven down to the base; segments equal, strap-awl-shaped, bluntish, concave, transparent, the interstices opaque. Fructifications solitary, remote. Sheaths conical. Fruit stalks as long again as the involucrum. Nearly allied to the J. multiflora, and at first sight greatly resembling it, but differs from it in the number of its fruit-stalks, &c. Dicks.

Near Croydon, growing on Sphagnum palustre. Dicks.

Yorkshire. Mr. Teesdale.

C. (1) Leaves winged: leaflets with appendages: fruit-stalks terminating.

undulata. J. Shoots doubly winged above: leaflets roundish, very entire, waved.

*Vaill. 19. 6—Dill. 71. 17.*
CRYPTOGAMIA. HEPATICÆ. Jungermannia. (C. 1)

My specimen accords with Vaillant, but not entirely so with Dillenius's. Leaves pointing from opposite lines, expanding, near, not at all tiled, but disposed in a double row on each side, alternate, distinct, equal, those underneath not being smaller or united with those above, all slightly waved. Linn. Leaflets roundish, convex above, concave underneath, connected by a small appendage near the rib, with the leaflet above it. Involutarium terminating, oblong, green. Fruit-stalk white, 1 inch long. Caps. roundish. Weis. Dill.

Shady places.

P. March, April.

J. Shoots doubly winged above; leaflets fringed.

Hedw. theor. 15—E. bot. 607—Dill. 71. 18—Mich. 5. 8.

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 1½ inch long, branched or unbranched. Leaflets oblong, numerous, green, pellucid. Involutarium terminating, broad; at first leaning. Dill.

Woods and moist shady places in Westmoreland.

P. March, April.

J. Shoots doubly winged above; leaflets finely scollop ed; resupinata, tiled; circular.

Dill. 71. 19.

Very rarely flowers. Underneath resembling a step-ladder. Plant 2 inches long. Leaflets (if magnified) appear edged with a double fringe, with appendages on the upper side. Neck. Stems forked, or imperfectly winged, lying on another, rigid, brittle. Leaves in 2 rows; entire at the sides, but with 3 or more minute teeth at the end. Pollrich. Grows crowded together; reclinig. Barren plants longer than the fertile ones. Leaflets roundish, appendages standing out, so that the plant has a crisped or curled appearance. Involutarium short, distended, toothed. Fruit-stalks near an inch high, white, on short shoots near the base of the plant. Dill.

In clefts of rocks, and on turfy heaths.

P. April.

J. Doubly winged above; leaflets strap-shaped; bowed albicans, back.

Dill. 71. 20—Vaill. 19. 5.

Shoots 1 to 2 inches long, not creeping, but reclinig. Weis. Forming dense patches, one shoot lying on another. Leaflets 2-rowed, ¼ a line long, and ½ broad, very entire; ending in a blunt point. Besides these larger leaves, there is another set only half the size on the upper side of the mid-rib, 1 at the
CRYPTOGAMIA.  HEPATICAE.  Jungermannia.  (C. 1)

base of each larger leaf.  *Involutarium* cylindrical, white, terminating.  Barren stems reddish at the ends, and containing minute greenish globules filled with a powder.  **Pollich.**  Crowded together, simple or branched; whitish when dry.  **Dill.**  

Woods and wet shady places.  P. March, April.

### Cochleariiformis.

J.  Somewhat cylindrical, rather upright: leaflets concave, roundish.

**Dill.**  69.  **Mich.**  5.  16, *but more evidently fringed than in our plants.*

Leaflets pointing from 2 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 male plants.  **Linn.**  Stems hollow, reddish.  **Scop.**  

*Shoots* creeping, strap-shaped, the ends rising upwards.  **Leaflets** about a line in diameter, flat.  **Pollich.**  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 larger, 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 1 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 invcloped 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 rains 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.


**Var.**  *V.*  Leaflets very entire.

Smaller than the preceding, upright, green, not purple.  Seems to be the variety mentioned by Dill, as growing in bogs.  Specimens from J.  W.  **Griffith,** Esq.
CRYPTOGAMIA.  HEPATICÆ.  Jungermannia.  (C. 2)  859

C.  (2)  Leaves winged:  leaflets with appendages:  fruit-stalks lateral, or at the base.

J.  Shoots creeping, branched:  leaflets egg-shaped, alternate, with appendages underneath:  sheathing involucre inversely egg-shaped.  Dicks, iii. 11.

Dicks. 8. 6.

Fruit-stalks terminating and lateral.  Involucrem ragged at the top.  Dicks.

On barren heaths.

J.  Shoots doubly winged underneath;  leaflets squarish, triloba'nta.  slightly 3-lobed.

Dill, 71. 22.  A. B.

About 1 inch long, trailing, branches distant.  Leaflets with 3 to 5 shallow clefts at the end.  Involucrem about 2 lines long, terminating.  Fruit-stalks very short.  Weis.  Sometimes branched, creeping.  Leaves flat, green, pellucid, with three blunt teeth at the end.  I have not found it in flower.  Dill.


P.  March, April.

J.  Shoots doubly compound:  fruit-stalks lateral:  leaflets rep'tans, 4-cornered, snipped towards the end:  stipulae 4-cleft.


Fruit-stalk from the base.  Caps.  blackish, shining.  Dill.


Moist shady places.

P.  Dec.  April.


Dill, 69. 4.

Shoots thread-shaped, ½ to 1 inch long.  Leaflets short.  We.

Bcr.  Involucrem central, numerous, crowded, white, 4-cleft.  Fruit-stalk slender, white, long.  Caps. large, reddish brown.  Dill.

D. Shoots tiled with leaflets.

complan'ata. J. Shoots creeping: leaflets doubly tiled; with little scales underneath: branches of an equal breadth throughout.

Fl. dat. 1062-Curt.-Dill. 72. 26—Mich. 5. 21.

Leaflets circular. Fruit-stalks terminating: very short. Neck. From 1 to 2 inches long, flat, irregularly branched, adhering close to the bark of trees in broad patches; soft to the touch and flaccid when wet. Fruit-stalk 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. Caps, small, black, of short duration Weis. Dill. Without visible roots. Plant pale or yellowish green, tender, but hardly pellucid. Fruit-stalks solitary or in pairs. Dill.

Trunks of trees, in hedges and thickets, flourishing most in a wet situation. P. Jan.—April.

dilata'ta. J. Shoots creeping: leaflets doubly tiled; with little scales underneath: branches broader towards the end.


Trunks of trees, closely adhering to the bark. P. Mar.—Apr.


Schmid. 67—Dill. 72. 31—Mich. 6. 5—Vaill. 23. 10.

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. Caps, brown


J. Shoots creeping, branched; fruit-stalks terminating: excisae. leaves tiled, concave, notched at the end; sheathing involucrum inversely egg-shaped. Dicks. iii. 11.

Dicks. 8. 7.

Shoots cylindrical, closely tiled with leaves. Involucrum toothed at the top. Dicks.

Moist shady woods.

J. Shoots trailing; tiled underneath: leaves heart-shaped, platyphylla. acute.


On trunks of trees, and on walls. [Old walls, Bungay. Suffolk. Mr. Stone.]

P. March, April.

Var. 2. Leaves shorter and rounder. HALL. n. 1872. Lightf. 785. 

Dill. 72. 33—Mich. 6. 1.

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.

Trunks of trees. Dill.


Dill. 73. 35.

Primary branches alternate, secondary ones alternate likewise, but so closely set as to appear nearly opposite; larger and more numerous in the barren than in the fertile plants. Leaves pale green, woolly, extremely crowded, and very minute. Involucrum in the angles of the branches, long, woolly, straw-coloured. Fruit-stalk white, pellucid. Caps. oblong, black. Dill.
CRYPTOGAMIA. HEPATICÆ. Jungermannia. (D)

Jung. Tomentella. Dicks. Moist woods and heaths, and wet mossy places near rivulets in Yorkshire, Cumberland, and Westmoreland; in a small current of water which runs through Oldfall Wood between Highgate and Muzzle Hill, about Chichester, Sussex, and Dorking, Surry. R. Syn. and Dill. In the Highland mountains near Aberfeldy. Dicks. [On a dry sandy bank on Brome Heath near Bungay, Suffolk. Mr. Stone.]

P. March, April.

J. Shoots nearly upright; tiled; pointing 2 ways; leaflets deeply divided.

Dill. 73. 36–Mich. 5. 0.

Shoots short, stiff, brittle; frequently with green or yellowish globules at the end. Fruit-stalk white, shining, 5 lines long, terminating. Involucrum egg-shaped, with 4 teeth. Caps. globular, black and shining. Pollitch. At first creeping, undivided, winged with leaves; when older, rising up, somewhat branched, the leaves surrounding the branches. Dill.

Woods and heaths in moist shady places. P. March, Apr.

pulcher'rima. J. Shoots creeping; leaflets doubly tiled; appendages underneath, fringed.

Dill. 69. 3.

Branches alternate, convex above, tiled with a double row of scales, and tiled with appendages underneath. Leaflets and appendages fringed, with the fringe bent back, whence its rough appearance; upper leaves often cloven. Lins. Shoots the length of a finger, winged and branched, the branches alternate. Leaflets very hairy. Fruit-stalk from the forks of the branches, thick, white, pellucid, 1 to 2 inches long. Involucrum hairy, long, straw-coloured. Caps. dark purple. Weis. Leaves sometimes entire, sometimes cloven at the end, alternate, elegantly fringed with hairs at the edges and at the ends, pellucid when plunged in water. It grows in tufts, upright; the ends crooked; seldom found in flower. Dill.


adun'ca. J. Shoots thread-shaped, bent at the ends; leaves expanding, pointing one way; fruit-stalks terminating, short. Dicks. iii. 12.

Dicks. 8. 8.

Leaves nerveless, cloven, points acute; 3 together, or rather pointing in 3 directions. Mr. Griffith. Shoots trailing, branched. Leaves tiled, but standing open; spear-strap-shaped, chan-
neled, the point a little turned back. Fruit-stalk short, crooked. Sheathing involucrum short, roundish.
On shaded banks in the Highlands of Scotland. Dicks.

J. Shoots cylindrical, upright: leaflets tiled on every side: flowers on fruit-stalks.

Fl. dan. 1002. 2—Dill. 78. 38.

Brittle. Fruit-stalk terminating. Neck. Shoots slender, cylindrical, silky, from \( \frac{1}{2} \) to 1 inch high; sometimes forked. Leaves so closely compressed as hardly to be observable, which distinguishes it from every other species. Weber. Grows in very dense tufts; shoots and branches cylindrical, and silky when fresh. Dull greyish green, and brittle when dry. Fructifications rare. Capsules small, red brown. Fruit-stalk short, white, rising out of a toothed involucrum. Dill. Scales of the involucrum cloven, membranaceous. Leaves when magnified cloven, not unlike those of Jungermannia curvifolia. Mr. Griffith.

Wet rocks and by the side of rivulets on Cadair Idris, Glyder and Snowdon, and the Highland mountains. [On rocks on the sides and tops of hills in Dartmoor, Devonshire. Mr. Newberry]


Dill. 73. 38, J. jula'cea is spoken of by Lightf. as the best representation of it.

Grows matted in tufts, reddish brown above, pale green below. Stalks \( \frac{1}{2} \) of an inch high, very slender, brittle when dry, closely tiled with leaves, thickest at the ends. Leaves undistinguishable by the naked eye, smooth, membranaceous at the edge, always pressed to. Fruit-stalks terminating, short. Capsules brown. Lightf. Shoots compressed, but obscurely 4-cornered. Scales of the involucrum, entire, rounded, which distinguishes it from J. jula'cea. Mr. Griffith.

Is it not a variety of J. jula'cea? Huds. 651.

Rocks on the Highland mountains frequent. [On Snowdon. Mr. Griffith.]
Sept.—Oct.

J. Shoots cylindrical: leaflets awl-shaped, pointing one way.

Dicks. h. s.—Dill. 73. 40.

The whole plant very short, being about one third of the length of a pin, blackish, upright, seldom branched. Linn. Shoots branched, dark green. Leaflets bent back. Involutucrum cylindrical, not tiled as in the J. alpina. Weber. Grows densely
CRYPTOGRAMIA. HEPATICÆ. Jungermannia. (D)

crowded together, short, naked below. Leaves very slender, reflected, dark green, blackish when dry, pointing one way. Involucrum very minute, terminating, reddish, not scaly. Fruit-stalk very short. Caps. very small. Dill.


tricophylla. J. Shoots cylindrical: leaves hair-like, equal.

Schmid. 42. 1 to 23—Dill. 73. 37.

Shoots only a few lines in length, closely surrounded by very slender leaves, of a pale yellow green. Fruit-stalk terminating. Involucrum long, cylindrical, cloven. Weis. When magnified the leaves appear divided quite down to the base into 3 or 4 awl-shaped segments, composed of globular joints. Fruit-stalk ½ inch long. Caps. black. Leers. Leaves pale green, extremely slender. Branches numerous, irregular. Dill.

Turfy heaths near North Brierly, Yorkshire. Richardson in Fl. Ang. 516. P. April.


Dicks. 2. 5.—Fl. dan. 1002. 1—Dill. 73. 39.

Shoots ½ to 1 inch high, crowded together in tufts, branching into short forks. Involucrum terminating. Fruit-stalk seldom found; very short. Weber. One to 2 inches long; cylindrical, not brittle. Involucrum scaly, light red, resembling the bud of the beech tree. Caps. dark red. Dill.


curvifolia. J. Shoots creeping, branched, cylindrical: leaves tiled, roundish, taper-pointed, cloven, the segments hooked. Dicks. ii. 15.

Dicks. 5. 7.

The points of the leaves next to the involucrum upright. Dicks.

Highlands of Scotland. [Many places in the ascent to Crib y Ddeseil from Llanberris. On the summit of Carnedd Llewny also near Llyn Llumbren, Denbighshire. Mr. Griffeth.]
CRYPTOGAMIA. HEPATICÆ. Jungermannia. (D.)

J. 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. Shoot short. Leaves round, grey, very small, tiled. If immersed in water and magnified, other secondary leaflets may be found underneath these. Dill.


J. Shoot very short, unbranched: leaves tiled, circular, nearly opposite: fruit-stalk very long.

PLATE XVIII. f. 4.

Grows matted together. Shoot simple, about 1-8th of an inch high. Leaflets 6 to 8 circular, entire, tiled, nearly opposite. Sheath toothed. Fruit-stalk terminating, ⅓ of an inch long, or more.

Sent by J. Wynne Griffith, Esq. who first discovered it on Cwm Idwel.

TARGIONIA. Calyx 2 valves, compressed, containing at bottom a capsule, nearly globular, many-seeded. See vol. I. p. 390.

T. Fructifications solitary: calyx open. Dicks.

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 under side, 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. Column. ecphr.

Heaths and sides of ditches near Dawlish, Devonshire.

P. March—May.

T. Fructifications crowded together: calyces perforated at sphærocarpus.


Calyx reticulated like the leaf of a Jungermannia. Capsule sitting; brownish when ripe. Dicks. 8. 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

Vol. III.
have a glaucous hue which instantly announces them to the eye accustomed to observe them. Mr. Woodward.

Sphaero-carpos terrestris. E. bot. [Cloverfields, Heyden and Norwich. Mr. Bryant. Very common on our cloverfields in autumn, on sandy loams along with Riccia glauca, the first year of the clover. Mr. Woodward.]

MARCHANTIA. Male: Calyx salver-shaped; anthers numerous, imbedded in its disk.

Fem. Calyx target-shaped, flowering on the under side: capsules opening at the top: seeds fixed to elastic fibres.

Obs. For a more particular account of the parts of fructification, see vol. I. p. 366, and 388.


A yellowish substance resembling a lock of wool proceeds from the capsules, appearing to move within them whilst the seed is falling out. Link. From 3 to 5 inches long, 1 broad, and irregularly lobed; dark green, shining. Fruit-stalks in the angles of the lobes, 1 to 3 inches high. Caps. greenish, dividing into 8 or 10 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 4 little bodies, very finely serrated at the edges. Pollen. In figure somewhat resembling an oak leaf; surface reticulated. Dill.

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. 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.

On the north side of walls, and stones, and in shady areas behind houses. Dill.

July, Aug.
CRYPTOGAMIA. HEPATICÆ, Marchantia.

Var. 2. Calyx with 8 clefts.

Marchantia, Vnr. 2, Calyx with 8 clefts.

M. Female calyx with 4 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 ½ to 1 inch long, pleasant green, not pellucid, not veined. Calyx with 4, and sometimes 5 divisions. Dill. Fruit-stalk white, tender, brittle; 1 to 2 inches high. Mr. Stackhouse.

Shady courts and garden walks.

P. June—Oct.

M. Leaf scolloped; female calyx 5-cleft; hemispherical. E. bot. 503—Schmid. 34—Dill. 75, 2—Mich. 2, 2—Fl. dan. 762—Buxb. ii. 5. 1.

Head hemispherical, with 5 globules underneath. Globules bursting, and pouring out seeds. Linn. Leaf from ½ to 1½ inch long, concave, edge waved and scolloped; at first simple, cloven when older, and a young one issuing from the end. Fruit-stalks an inch high, brownish, naked. Dill.

Sides of rivers and wet ditches, and wet rocks.

P. April, May.

M. Leaf forked, indented: female calyx somewhat egg-shaped, with about 5 cells underneath.

E. bot. 504—Schmid. 31—Hedw. theor. 25, 134 to 136—Mich. 2, 1—Dill. 75, 1—Vaill. 33, 8—Fl. dan. 274—Col. ecphr. 331, 1—Park. 1314, 4.

Leaves pleasant pale green, slippery to the touch, creeping on the ground, dotted on the surface, producing new leaves from the ends of the old ones. Dill. Male flowers on the leaf, resembling warts. Linn. Fruit-stalks 3 or 4 inches high, transparent, very tender. Common calyx, 5 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 the Lycopordons. Mr. Woonw. Leaves in large clusters, indented, blunt, green, with several white tubercles.

On the ground on the banks of brooks in shady places, and sometimes on rocks. Dill. [Very common, but I have only found it in fruit in one place on the shady banks of a ditch at Ditchingham, Norfolk, where I have observed it for some years. Mr. Woodw. In a wet ditch near Belsey Bridge, Ditchingham. Mr. Stone. Road from Kingshill to Cam, Gloucestershire, in fruit, Mr. Baker.] P. March, April.
androg'yna. M. Leaf forked, segments strap-shaped: female calyx entire, hemispherical.

Dec. b. s.-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. Weber. Fruit-stalk terminating, \( \frac{1}{2} \) to 1 inch high. Plant green, strap-shaped, smooth, flat, in forked divisions. Dill.

Under wet rocks on the mountains of Scotland, Dicks. ii. 17.

BLASIA. Male: solitary, imbedded in the substance of the leaf.

Fem. Capsule egg-shaped, 1-celled, crowned with a tube through which the seeds escape.

Obs. For further particulars of the fructification, see Vol. I. p. 368, and 390.

pusilla. B.

Schmid. Blas.-Hedw. theor. 27. 156 to 164-Dill. 31. 7-Mich. 7, Blasia-Fl. dan. 45.

Seeds when ripe flowing out of a cup-like cylindrical vessel, so small that their figure is not discernible to the naked eye. Linn. succ. n. 1053. Leaves in a circle, from 1 to 2 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 1-8th of an inch high, several rising in succession from near the ends of the leaves. Dill.


P. Aug.—Nov.

RICCIA. Capsules sitting, globular, 1-celled, growing at the apex of the leaf, and containing from 20 to 30 brown or white seeds.

See vol. I. p. 368, and 391.

na'tans. R. Leaves inversely heart-shaped; fringed.

E. bot. 252-Dill. 78. 18.

The edges of the leaves are not really fringed, but assume that appearance in consequence of their sending out fibrous roots. Weber. About \( \frac{1}{2} \) an inch long. Fringe sometimes white. Scholl. Leaves sometimes only inversely egg-shaped, and
CRYPTOGAMIA. HEPATICÆ. Riccia.

without any notch at the end; entire at the edge, bright green. Weber. Very nearly allied to Targionia hypophylla. Huds.

Pools about Hadley, Suffolk. Buddle in Dill. 537. [Sawston Moor, Cambridgeshire. Mr. Relhan.] A. Aug.—Oct.

R. Leaves smooth; deeply divided: acute.

Dill. 78. 11—Mich. 57. 6, magnified—Schmid. 45. 5, 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. Weber.

On Black Heath near Greenwich. Dill. In places that have been overflowed. Huds. A. Nov. Dec.

R. Leaves smooth, channelled, 2-lobed, blunt.

Schmid. 44. 1—Hedw. theor. 29. 165 to 174—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. Mr. Woodward. Leaves small, the under side firmly fixed to the ground, adhering at the base to each other, deeply divided, Pollich. whitish green, thick, slippery, very smooth, broadish, furrowed on the upper side, frequently forked; segments blunt. Weber. 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. hist. I have never seen it on the water, but in roads and wet cornfields both in spring and autumn. Dill.

Sandy moist heaths. [In the same situations, and usually growing with Targionia Sphaerocarpos, and at the same time. Mr. Woodward. In clover stubbles near Bungay, Suffolk, frequent. Mr. Stone.] A. Oct.—April.

R. Leaves forked; strap-thread-shaped.


Not having myself 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.

Ditches and sides of pools. P. Jan.—Dec.
CRYPTOGAMIA. HEPATICÆ. Anthoceros.

fruticulosa. R. Leaves upright, compressed, variously branched: branches upright, forked, awl-shaped.

*Fl. dan. 898. 3.*

Its habit that of *Jungermannia furcata*. Colour verdigris, or greenish blue. Dicks. It produces viviparous germs towards the ends of the branches. The verdigris colour is not constant. I suspect it will be found to be a *Jungermannia*. Mr. Brown.

On the bottom of the trunks of trees among moss. [At Colington, near Edinburgh. Mr. Brown.]

ANTHOCEROS. Capsule awl-shaped, 2-valved: seeds fixed to the partition or to the valves.

Obs. For more particulars of the fructification see vol. I. p. 367, and 390.

punctatus. A. Leaf curled, indented, jagged, dotted.

*Schmid. 47—Dill. 68. 1—Mich. 7. 2—Fl. dan. 396.*


On heaths in moistish shady places. [Ellingham fen, Bungay, Suffolk, near the direction post. Mr. Stone. Brome, Norfolk, on the borders between the high and boggy ground. Woodward.] P. August—April.

laevis. A. Leaf undivided, indented, smooth. laevis.

*Dill. 68. 2.*

When recent it is of a rich velvety green colour: the texture most beautiful when held to the light, but without spots, says Mr. Stackhouse, who thinks this and *A. punctatus* may probably be one and the same species; *laevis* the plant when barren, punctatus when fruiting, for the spots when highly magnified exhibit clusters of seeds or male flowers; and Dillenius figures 68. 1, and 2, seem to countenance this hypothesis.

First discovered in Britain by Mr. Stackhouse, who found it growing in a shady over-hanging cavity in Fowey Harbour, Cornwall.
A. Leaf with doubly winged clefts; segments strap-shaped. *multifidus.*

*Dill. 68. 4.*

Dillenius had not discovered this plant, but figured it from specimens sent by Haller. I am indebted to Mr. Dickson for it. Somewhat resembles the *Riccia fluitans,* but the segments are pointed, not lopped at the end.

END OF THE THIRD VOLUME.
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TO THE

SECOND AND THIRD VOLUMES.

Generic names in small capitals.
Specific names in roman print.

Synonyms and English names in italic.

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