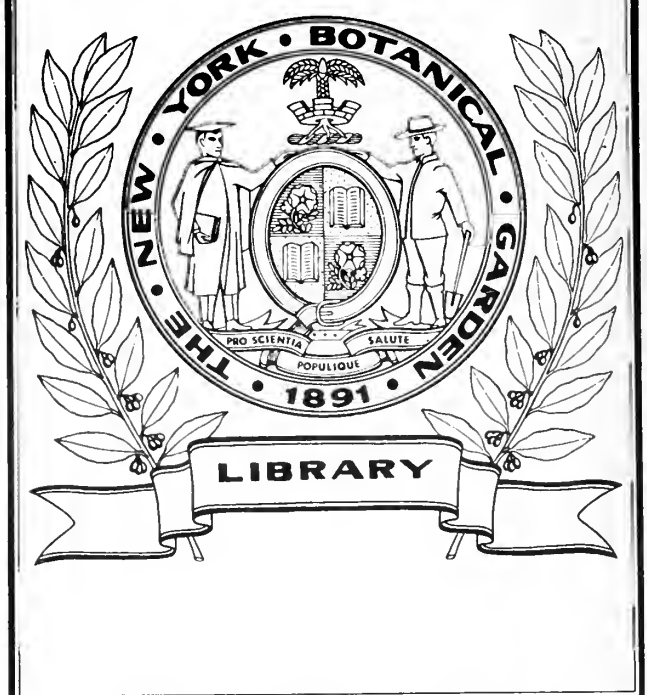
THE NEW YORK BOTANICAL GARDEN
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1891
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BRITISH

PHÆNOGAMOUS BOTANY,

OR,

FIGURES AND DESCRIPTIONS OF THE GENERA

OF

BRITISH FLOWERING PLANTS.

BY W. BAXTER, A. L. S. F. H. S. &c.

CORRESPONDING MEMBER OF THE BOTANICAL SOCIETY OF LONDON;
CURATOR OF THE BOTANIC GARDEN, OXFORD;
AND AUTHOR OF STIRPES CRYPTOGAMÆ OXONIENSES.

Look on these flowers!———

They are from lone wild places, forest-dingles,
Fresh banks of many a low-voiced hidden stream,
Where the sweet star of eve looks down, and mingles
Faint lustre with the water-lily's gleam.

MRS. HEMANS.

VOL. III.

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1837.

TO

THE REV. J. S. HENSLOW, M. A. F. L. S.

&c. &c. &c.

PROFESSOR OF BOTANY

IN THE UNIVERSITY OF CAMBRIDGE;

This Volume

OF

BRITISH PHÆNOGAMOUS BOTANY,

IS,

WITH HIS PERMISSION,

MOST RESPECTFULLY DEDICATED,

BY HIS FAITHFUL,

AND VERY OBEDIENT HUMBLE SERVANT,

WILLIAM BAXTER.

Botanic Garden, Oxford,
June 12, 1837.

FLOWERS.

The Flowers!
Oh they are glorious in the morning light,
Of a Spring morning—beautiful and bright,
As childhood's hours.

They seem
Radiant with promise of the blissful day—
The rainbow-tints that gild our childhood's way,
In Life's first dream.

They bring
All fond emotions to our hearts once more,
The faces, forms we loved so well, before
Hope first took wing.

They tell
Of love's first meeting, vows that now are broken,
The tears and sighs 'mid which all sad was spoken
The word—Farewell!

At eve,
Flowers, 'mid the Autumn have a witching charm,
Pouring a comfort, and a breath of balm,
O'er hearts that grieve.

For then,
When the gay glitter of life's day is gone,
When earthly Hope is like a primrose wan,
In the dark glen;

And Love,
E'en as a rose o'er which the storm hath passed,
Scattering its leaves on the relentless blast,
Seems borne above;

The Heart
Looks for the coming of that fadeless day,
When we shall meet the friends now passed away,
Never to part.

And where
Flowers of all glory, and all beauty, bloom,
Touched by no blight, and fearless of the tomb—
For ever fair!

AUTHOR OF "STRAY FLOWERS."

ALPHABETICAL INDEX TO VOL. III.

SYSTEMATICAL INDEX TO VOL. III.

ENGLISH INDEX TO VOL. III.

N. B. When *a* follows the number of the folio, it indicates a reference to the second page of that leaf.

Corrections and Additions.

Folio 163, line 2, *for* Poly'gamia *read* Polygámia.

Folio 191, line 9, *for* Ræadinæ, *read* Rhæadinæ.

Folio 192, a. line 10 from the bottom, *for* opposite *read* apposite.

Folio 211, a. line 29, *for* riged *read* rigid.

Orchis tephrosanthos, figured at plate 213, is *O. macra* of Dr. Lindley's *Synopsis of the British Flora*, 2nd edition, pp. 260 & 330; and of his *Genera and Species of Orchideous Plants*, part iv.—Dr. Lindley observes, "I have no doubt of this plant, which is the *O. tephrosanthos* of Bicheno, being altogether distinct from the species so called by Continental writers. It is very true that *O. militaris* and *tephrosanthos* are so variable in the form of their lip, that it is a matter of some doubt whether they are distinct from each other; but the characteristic marks of *O. macra* are quite of another kind. Independently of its far more slender habit, narrow few-flowered spikes and bluntish leaves, it is quite remarkable for the exceedingly large cells of the tissue of its lip, which project and have a watery appearance, as if the whole surface were covered with crystaline warts; the lip is, moreover, destitute of the hispid line which invariably runs through its centre in all the varieties of either *O. militaris* or *tephrosanthos* I have had an opportunity of examining. I have not met with this species among Continental collections." *Syn. of Brit. Fl.* 2nd edit. p. 330.—A living specimen, in flower, of *Orchis macra*, from the neighbourhood of Goring, Oxon., which is now (June 12, 1837) on the table before me, agrees precisely with the above description by Dr. Lindley. The lip of this species is remarkably beautiful when examined with a microscope.

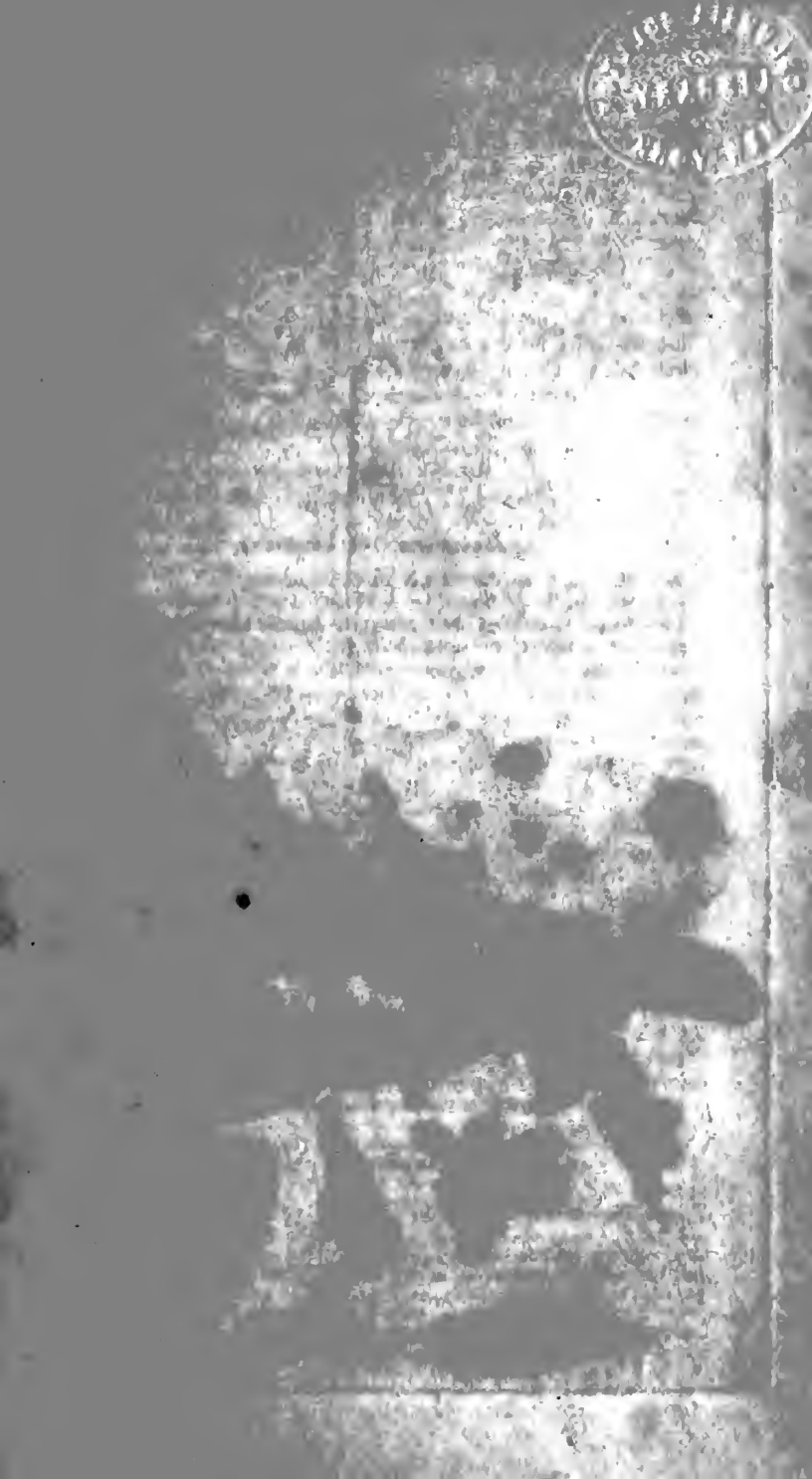
Folio 230, line 16 from the bottom, after 196, add—Curt. Brit. Entomol. v. ii. t. 80.; and v. iii. t. 114.

Folio 231, line 28, after 254, add—Curt. Brit. Entomol. v. vii. t. 310.

Folio 234, line 15 from the bottom, after 243, add—Curt. Brit. Entomol. v. xiii. t. 579.

Folio 235, line 18 from the bottom, after 98, add—Curt. Brit. Entomol. v. iv. t. 189.

W. KING, PRINTER, ST. CLEMENT'S, OXFORD.



VILLÁRSIA NYMPHÆ´CIDES. NYMPHAEA LIKE_VILLARSIA. 4.

Pub.d W.Baxter Botanic Garden, Oxford, 1833.

VILLA'RSIA *.

Linnean Class and Order. PENTA'NDRIA ‡; MONOGY'NIA.

Natural Order. GENTIA'NEÆ, *Dr. R. Brown.*—Lindl. Syn. p. 177.; Introd. to Nat. Syst. of Bot. p. 215.—Rich. by Macgilliv. p. 444.—Loud. Hort. Brit. p. 526.—LYSIMACHIÆ, *affinia*, Juss. Gen. Pl. pp. 95 & 97.—SYRINGALES; subord. PRIMULOSÆ; sect. GENTIANINÆ; Burn. Outl. of Bot. pp. 900, 958, and 1008.—PRECIÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, permanent, of 1 sepal, in 5 deep segments. *Corolla* of 1 petal, somewhat wheel-shaped, tube short; limb spreading, deeply 5-parted, smooth in the disk, bearded or scaly at the base, with an inflexed margin. *Filaments* (see fig. 2.) 5, alternate with the segments of the corolla. *Anthers* (fig. 2, a.) upright. *Germen* (see fig. 2, b.) conical. *Style* 1. *Stigma* 2-lobed, the lobes toothed. *Glands* 5, hypogynous, alternate with the stamens. *Capsule* (fig. 3.) 1-celled, 2-valved, and many-seeded, (in the floating species the capsule is indehiscent); the valves bearing the seeds in their axis (see figs. 4 to 7). *Leaves* simple. *Lindl. Syn.*

The wheel-shaped, 5-parted *corolla*, smooth in the disk, bearded at the base, with an inflexed margin; the 1-celled *capsule;* and parietal *seeds;* will distinguish this from other genera in the same class and order.

One species British.

VILLA'RSIA NYMPHÆOI'DES. Nymphæa-like Villarsia. Fringed Buckbean. Fringed Water-lily.

SPEC. CHAR. Leaves roundish-heart-shaped, floating. Peduncles aggregate, single flowered. Corollas ciliated. *Hooker.*

Hook. Fl. Lond. t. 168.—Brit. Fl. p. 92.—Lindl. Syn. p. 179.—Walk. Fl. of Oxf. p. 53.—Pamplin's Pl. of Battersea and Clapham, p. 5.—*Menyanthes nymphæoides*, Engl. Bot. t. 217.—Linn. Sp. Pl. p. 207.—Huds. Fl. Angl. (2nd ed.) p. 85.—Sm. Fl. Brit. v. i. p. 226. Engl. Fl. v. i. p. 275.—With. (7th ed.) v. ii. p. 292.—Sibth. Fl. Oxon. p. 73.—Relh. Fl. Cantab. (3rd ed.) p. 85.—Purt. Midl. Fl. v. iii. p. 18.—*Limnanthes peltata*, Gray's Nat. Arr. v. ii. p. 340.—*Nymphæa lutea minor, flore fimbriato*, Ray's Syn. p. 368.

LOCALITIES.—In ponds, slow streams, and the marginal recesses of large rivers. Rare.—*Oxfordsh.* Abundant in many places about Oxford, especially in the Isis, and watery ditches near it. At Hinksey Ferry. Near the third bridge from Botley Toll-gate. In a broad shallow piece of water opposite to Medley Lock; and in a branch of the Isis opposite the draw-bridge at the back of Jericho. Near Godstow Bridge. In the Cherwell at the further corner of Magdalen Water Walks; and in the Isis between Sandford and Nuncham: 1835, W. B. In ponds at Sarsden: H. WOOLCOMBE, Esq.—*Berks;* In the Thames

Fig. 1. Calyx and Germen.—Fig. 2. Stamens, Germen, Style, and Stigma.—Fig. 3. Capsule.—Fig. 4. Transverse section of the same.—Fig. 5. A vertical section of ditto, showing the situation of the seeds.—Fig. 6. A seed.—Fig. 7. The same magnified.—Fig. 8. A Seed divested of its skin or testa.

* A genus divided from *Menyanthes*, and named in compliment to M. DE VILLARS, a distinguished French Botanist, and Professor at Strasburg; he carefully examined the Alps which divide Italy from Switzerland, the Vosges, and the South of France, along with CHAIX, a clergyman at Gap, and CLAPIER, Physician at Grenoble. He was author of the classical *Histoire des Plantes de Dauphiné*, Grenoble, 1786—1789, in 3 vols. 8vo.; with 55 Copper-plates. He died in 1813. Eight exotic species of this genus are enumerated in LOUDON's *Hortus Britannicus.*

† See *Anchusa sempervirens*, folio 48.

at Ankerwick, near Windsor: Rev. Dr. Goodenough. In the Isis between Kennington and Radley, plentiful: 1835, W. B.—*Bucks;* On Datchet Common, plentiful: Mr. Gotobed. *Cambridgesh.* Rivers about Streatham Ferry: Mennet and Relhan. In the Cam below Cambridge. Fens near Ely. Littleport, and old Bedford River: Rev. R. Relhan.—*Cumberland;* At Keswick: Mr. Hutton.—*Essex;* In the river Rhodon almost opposite the eighth milestone in the road to Woodford Bridge, near the bridge; and between that and Luxborough House: Warner.—*Hampsh.* In a pond between Old Basing and Nately: Rev. R. Appleton.—*Huntingdonsh.* In the back water at Hemmingford: Rev. R. Relhan. *Middlesex;* In creeks of the river Thames near Sunbury, in vast plenty; and in most creeks of the Thames in that district: Sir J. Banks. Pond in London Fields, Hackney: Mr. J. Woods, jun.—*Norfolk;* Wisbech River, a little before you come to that town from Downham: Mr. Skrimshire.—*Northamptonsh.* In the Nyne at Peterborough, plentiful: Morton.—*Northumberland;* Naturalized in the ponds at Wallington: N. J. Winch, Esq.—*Surrey;* Above Kingston Bridge: Blackstone. In the Thames near Walton Bridge: Earl of Dartmouth. In the Thames at Kingston, Hampton, &c. and in the pond opposite the Five Houses, Wandsworth Common, abundantly, where it was placed not many years ago by Mr. W. Anderson, Curator of the Apothecaries' Garden at Chelsea; and is now become completely naturalized: Mr. W. Pamplin, jun. 1827.—*Sussex;* In ditches in Lewes Level: W. Borrer, Esq.—*Yorksh.* "In the lake of Castle Howard, abundantly, where I planted it. I believe it is not a native of that neighbourhood:" Mr. R. Teesdale, 1792.

Perennial.—Flowers from June to September.

Roots long, and stringy. *Stems* long, round, branching, leafy. *Leaves* roundish-heart-shaped, floating, very smooth, shining, and sometimes spotted above, purplish beneath, involute in the bud, their margins somewhat waved or repand-toothed; on petioles which vary in length according to the depth of water in which they grow. *Flowers* axillary, on simple stalks (peduncles), which grow several together in a kind of sessile umbel. *Corolla* about an inch and a half in diameter, of a light yellow colour, with a darker radiating disk; segments inversely egg-shaped, finely toothed or ciliated at the margin. *Germen* with 5 purplish glands at the base. *Stigmas* 5-cleft, notched, deciduous. *Capsule* (fig. 3.) egg-shaped, compressed. *Seeds* (figs. 6 & 7.) numerous, inversely egg-shaped, flattish, of a brownish colour, with a membranaceous ciliated margin. "When the fructification is completed, the stem, which rose many feet in order to support the flower above the surface of the water, sinks considerably beneath it, and there remains till the next season of flowering, when it again resumes its annual task." *Times Telesc.* for 1825, p. 198; & 1829, p. 275.

Villarsia nymphæoides is a handsome plant, and well adapted for ornamenting large pieces of water. It is of easy cultivation; and when it has once established itself it is difficult to eradicate it, as the stem sends out roots from every joint. It is a native of Denmark, Holland, Germany, Piedmont, and Siberia, as well as of England.

In Japan the leaves are salted, and become a very glutinous substance; it is used in soups, boiled in which it becomes tender. Kæmpfer.

Eryngium maritinum. Sea-Holly. ♃

C. Mathews Del. & Sc. Pub.d by W. Baxter. Botanic Garden. Oxford. 1833.

ERY'NGIUM *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLIFERÆ, Juss. Gen. Plant. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—UMBELLATÆ, *Linn.*—ROSALES; subord. ANGELICOSÆ; sect. ANGELICINÆ; type, ANGELICACEÆ; subtype, SANICULIDÆ; Burn. Outl. of Bot. pp. 614, 762, 770, 773, & 774.

GEN. CHAR. *Flowers* (fig. 2.) congregated into oblong or roundish dense heads. *Common Receptacle* conical, scaly, many-flowered; each flower with a rigid, simple or 3-cleft, pointed scale (see fig. 1.) at its base. *Calyx* (see fig. 1.) of each flower superior, in 5 upright, leafy, pointed segments. *Corolla* (fig. 2.) of 5 upright, equal, oblong, channelled, converging petals, which are bent in from the middle (see fig. 3.) by a segment as long as the limb of the petal, which consequently appears emarginate. *Filaments* (see figs. 2 & 4.) 5, hair-like, straight, longer than the corolla. *Anthers* roundish-oblong, incumbent. *Germen* (fig. 5.) inferior, simple, oblong-egg-shaped, clothed with upright bristles. *Styles* (see figs. 2 & 5.) 2, thread-shaped, straight, nearly upright, shorter than the stamens, permanent. *Stigmas* simple. *Fruit* (fig. 6.) inversely egg-shaped, slightly compressed transversely. *Carpels (seeds* of Linn.*)* (see figs. 6 & 7.) covered with chaffy scales, without *ridges* or *vittæ*. *Seeds* (fig. 9.) about half taper. *Umbels* simple. *Involucrum* of many leaves. *Flowers* usually blue.

The solid, inversely egg-shaped *fruit;* the *carpels* covered with chaffy scales, without *ridges* or *vittæ;* the pointed segments of the *calyx;* the upright, oblong, equal, undivided *petals*, with long inflexed points; the many-leaved *involucrum;* and the congregated *flowers* on a scaly *common receptacle;* will distinguish this from other genera in the same class and order.

Two species British.

ERY'NGIUM MARI'TIMUM. Sea-Eryngo. Sea-Holly. Sea-Hulver. Sea-Holme.

SPEC. CHAR. Radical leaves on long petioles, roundish, plaited, spiny-toothed; upper ones stem-clasping, palmately lobed. Leaves of the involucrum from 5 to 7, egg-shaped, spiny-toothed, longer than the head of flowers. Scales of the receptacle 3-cleft.

Engl. Bot. t. 718.—Woodv. Med. Bot. v. ii. p. 281. t. 102.—Steph. & Church. Med. Bot. v. iv. t: 143.—Linn. Sp. Pl. p. 337.—Huds. Fl. Angl. (2nd edit.) p. 109.—Sm. Fl. Brit v. i. p. 288. Engl. Fl. v. ii. p. 35.—With. (7th edit.) v. ii. p. 361.—Gray's Nat. Arr. v. ii. p. 527.—Lindl. Syn. p. 127.—Hook. Brit. Fl. p. 135.—Lightf. Fl. Scot. v. i. p. 153.—Hook. Fl. Scot. p. 87.—Grev. Fl.

Fig. 1. Germen and Calyx, accompanied by one of the 3-cleft scales of the receptacle.—Fig. 2. Corolla, Stamens, and Pistils.—Fig. 3. One of the Petals, showing the manner in which it is bent inwards.—Fig. 4. A Stamen.—Fig. 5. Germen and Pistils.—Fig. 6. Fruit.—Fig. 7. One of the Carpels.—Fig. 8. A Carpel cut transversely.—Fig. 9. A Seed.—*All magnified.*

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* From *ereugo*, Gr. *to belch.*—DIOSCORIDES declares that the plant is a specific for all complaints arising from flatulence. G. DON.

† See *Anchusa sempervirens*, fol. 48.

Edin. p. 61.—Thornton's Fam. Herb. p. 280.—Davies' Welsh. Bot. p. 26.—Fl. Devon. pp. 47 & 165.—Rev. G. E. Smith's Pl. of S. Kent, p. 16.—Curt. Brit. Entomol, v. ii. t. 53.—Mack. Catal. of Pl. of Ireland, p. 27.—*Eryngium marinum*, Ray's Syn. p. 222.—Johnson's Gerarde, p. 1162.

Localities.—On sandy sea-shores, frequent.—*Cornwall;* On the sands at Hoyle; Portowen; Portreath; and Penzance: Mr. Watt.—*Cumberland;* Allonby, and Maryport: Hutchinson.—*Devon;* Teignmouth, Dawlish, Slapton Sands, Sidmouth, Northam Burroughs, and near Appledore: Dr. Wavell. On the Den at Teignmouth, plentifully, (1835): H. Woollcombe, Esq.—*Durham;* On the beach near South Shields Law; and at Castle Eden: N. J. Winch, Esq. At Seaton: Mr. Backhouse.—*Essex;* Near Walton: Mag. of Nat. Hist. v. iv. p. 446.—*Hampshire;* Ryde, Isle of Wight: Dr. Bostock.—*Kent;* On the shores, plentifully.—*Lancashire;* North Shore, Liverpool: Mr. Caley. At Southport, and Crosby: G. Crosfield, Esq. Liverpool.—*Norfolk;* At Yarmouth: Mr. Woodward.—*Sussex;* On the coast at Little Hampton, (1832): Mr. W. Pamplin, sen.—WALES. Isle of Anglesey: Rev. H. Davies.—SCOTLAND. At Musselburgh; Dunbar; Largo in Fife; Mackrianish Bay in Cantire; Jona, &c.: Lightfoot. St. Andrew's, &c.: Mr. Arnott. Coast of Ayr: Mr. Murray. Bute, near Mount Steward: Mr. Maughan.—IRELAND. On the sea-coast in sandy places, frequent: Mr. J. T. Mackay.

Perennial.—Flowers in July and August.

Root very long, creeping, cylindrical, brownish on the outside, whitish within; somewhat pungent, with a mixture of mucilage. *Stem* a foot or 18 inches high, round, striated, stiff, branched, leafy. *Leaves* smooth, glaucous, variegated with whitish veins, and bordered with spinous teeth, somewhat resembling those of the Holly, whence one of its English names; those from the root and lower part of the stem stalked, and 3-lobed; upper ones sessile, and amplexicaul. *Flowers* small, light blue, in roundish dense heads at the summit of the stem and branches, having, at first sight, more the appearance of a species of *Teasel* than of an *umbelliferous plant. Common Receptacle* conical, with chaffy, 3-cleft, spinous scales, which are longer than the flowers, and intermixed with them. *Involucrum* similar to the leaves, and situated immediately under the head of flowers. Whole plant smooth, rigid, and remarkably glaucous, with an elegant blue tint. It is a native throughout Europe, among the sand along the sea shore; and on both sides of the Mediterranean Sea.

Linnæus informs us *(Flora Suecica*, p. 84.*)* that the young flowering shoots of this plant, eaten like Asparagus, are very nourishing. The leaves are sweetish, with a slight aromatic warm pungency. The roots are kept in the shops candid, and are still regarded by the Arabs as an excellent restorative. In *Morant's Colchester*, p. 92, we are told that Eryngo roots were first candid at Colchester, about the beginning of the 17th century, by Robert Buxton, apothecary; that his apprentice, Samuel Great, continued this business, and that it has ever since been carried on by the posterity of the latter. Mr. G. Don has described 93 species of *Eryngium* in his *General Syst. of Gardening and Botany*, most of which are very handsome, and well deserving a place in the flower garden. *E. campestre*, (our other English species,) dried and powdered, is said to form the principal ingredient of a remedy celebrated in Spain for the cure of the bites of vipers and mad dogs; particulars of which may be seen in the Monthly Magazine, vol. xxix. p. 414.

Gerarde (as long ago as 1597) says the roots of the Sea Holly are good for such as are bitten with any venomous beast.

Leóntodon Taráxacum. Common Dandelion. ♃

J.R. Del. Pub.d by W.m Baxter, Botanic Garden, Oxford, 1832. C. Mathews Sc.

LEO'NTODON*.

Linnean Class and Order. SYNGENESIA†, POLY'GAMIA ÆQUALIS‡.

Natural Order. COMPO'SITÆ§, *Linnæus* and *Adanson.*—Tribe, CICHORA'CEÆ, Lindl. Syn. pp. 140, 142, & 156.; Introd. to Nat. Syst. of Bot. pp. 197 & 201.—Loud. Hort. Brit. pp. 520 & 521.—CICHORACEÆ, Juss. Gen. Pl. p. 168.—Sm. Gram. of Bot. p. 120.—SYNANTHE'REÆ, Rich. by Macgilliv. p. 454.—SYRINGALES; subord. ASTEROSÆ; sect. ASTERINÆ; subsect. ASTERIANÆ; type, CICHORACEÆ; Burn. Outl. of Bot. pp. 900, 901, 920, 924, & 935.

GEN. CHAR. *Involucrum (common calyx)* (figs. 1 & 5.) oblong, double; innermost of several strap-shaped, equal, parallel scales; outer of fewer and shorter, lax and reflexed ones, at the base. *Corolla* compound, imbricated; *florets* (fig. 2.) very numerous, equal, perfect, strap-shaped, blunt, with 5 teeth. *Filaments* (see fig. 3.) 5, hair-like, short. *Anthers* (see figs. 2 & 3.) united into a cylindrical tube. *Germen* (see fig. 3.) inversely egg-shaped, furrowed. *Style* (see fig. 3.) cylindrical, prominent. *Stigmas* (see fig. 3.) 2, revolute. *Seed-vessel* none. *Involucrum* converging, finally altogether reflexed (see fig. 5). *Seed* (see fig. 4.) inversely egg-shaped, furrowed, rough. *Pappus (down)* (fig. 4.) hair-like, radiating, on a long cylindrical stalk. *Receptacle* (see fig. 5.) naked, convex, pitted.

Distinguished from other genera, with strap-shaped florets, in the same class and order, by the naked *receptacle;* stalked, simple *pappus*; and the imbricated, double *involucrum* with the outermost scales lax and reflexed.

Two species British.

LEO'NTODON TARA'XACUM. Common Dandelion||.

SPEC. CHAR. Outer scales of the involucrum (calyx) reflexed. Leaves runcinate, smooth, toothed.

Engl. Bot. t. 510.—Curt. Fl. Lond. t. 58.—Linn. Sp. Pl. p. 1122.—Huds. Fl. Angl. (2nd ed.) p. 339.—Sm. Fl. Brit. v. ii. p. 822. Engl. Fl. v. iii. p. 349.—With (7th ed.) v. iii. p. 887.—Lindl. Syn. p. 158.—Hook. Brit. Fl. p. 340.—Lightf. Fl. Scot. v. i. p. 432.—Woodv. Med. Bot. v. i. p. 7. t. 3.—Steph. and Church. Med. Bot. v. i. t. 5.—Abbot's Fl. Bedf. p. 169.—Purt. Midl. Fl. v. ii. p. 365.—Relh. Fl. Cant. (3rd ed.) p. 319.—Thorn. Fam. Herb. p. 676.—Hook. Fl. Scot. p. 227.—Grev. Fl. Edin. p. 166.—Fl. Devon. pp. 130 & 155.—Johns. Fl. of Berw. v. i. p. 174.—Walk. Fl. of Oxf. p. 223.—Bab. Fl. Bath. p. 28.—Mack. Catal. of Pl. of Irel. p. 69.—*Taraxacum officinale*, Gray's Nat. Arr. v. ii. p. 426.—Sibth. Fl. Oxon. p. 239.—*Dens leonis*, Ray's Syn. p. 170.—Johnson's Gerarde, p. 290.

LOCALITIES.—In meadows and pastures, and in waste and cultivated ground, every where.

Fig. 1. Involucrum.—Fig. 2. A Floret.—Fig. 3. Germen, Style, and Stamens.—Fig. 4. A Seed, with its stalked pappus.—Fig. 5. Receptacle, and reflexed Involucrum.

* From *leon*, Gr. *a lion;* and *odous*, Gr. *a tooth*, from the tooth-like margins of the leaves. HOOKER.

† See folio 91. ‡ See folio 147. § See folio 27, a.

|| From *Dent de lion*, Fr. From the supposed resemblance of the leaf to the tooth of the lion. WALKER.

Perennial.—Flowers from April to September.

Root spindle-shaped, very milky, of a dark brown colour on the outside. *Leaves* all radical, numerous, spreading, bright shining green, smooth, tapering downwards, more or less deeply wing-cleft (pinnatifid), with sharp, unequally toothed lobes, which point downwards, and constitute what, in botanical language, is called a *runcinate* or *lion-toothed* leaf. *Flower-stalks* upright, smooth, sometimes slightly cottony, cylindrical, hollow, brittle, from 3 to 10 inches high, 1-flowered. *Flowers* large and handsome, of a bright deep yellow, expanding in a morning and in fine weather only. Outer scales of the *involucrum* several, linear-oblong, loosely recurved and wavy; the inner becoming reflexed close to the stalk as the *seeds* ripen, leaving the light globe, nearly 2 inches in diameter, formed by their radiating *down* or *pappus*, quite exposed, till dispersed by the wind. *Seeds* a little crooked, flattish, scored, prickly upwards. *Pappus* on a long pedicel, radiate, simple, not feathery, shorter than the pedicel. *Receptacle* dotted.

I found a plant of this species with spotted leaves, like those of *Hieracium maculatum*, in Shotover Plantations, April 16, 1831. A variety with fewer, and narrower leaves, with their segments more deeply cloven, sometimes occurs on dry grassy banks, and on the tops of walls.

"There are few plants," observes Mr. Knapp, "which we look upon with more perfect contempt than that common product of every soil, the 'Dandelion.' Every child knows it, and the little village groups which perambulate the hedges for the first offspring of the year, amuse themselves by hanging circlets of its stalks linked like a chain round their necks; yet if we examine this in all the stages of its growth, we shall pronounce it a beautiful production; and its blossom, though often a solitary one, is perhaps the very first that enlivens the sunny bank of the hedge in the opening year, peeping out from withered leaves, dry stalks, and desolation, as a herald, telling us that nature is not dead, but reposing, and will awaken to life again. And some of us, perhaps, can remember the pleasure it afforded us in early days, when we first noticed its golden blossoms under the southern shelter of the cottage hedge, thinking that the 'winter was past,' and that 'the time of the singing of birds was come,' and yet, possibly, when seen, it may renew some of that childish delight, though the fervour of expectation is cooled by experience and time. The form of this flower, with its ligulate petals (florets) many times doubled, is elegant and perfect; the brightness and liveliness of the yellow, like the warm rays of an evening sun, are not exceeded in any blossom, native or foreign, that I know of; and this, having faded away, is succeeded by a head of down, which loosened from its receptacle, and floating in the breeze, comes sailing calmly along before us, freighted with a seed at its base; but so accurately adjusted is its bouyant power to the burden it bears, that steadily passing on its way, it rests at last in some cleft or cranny in the earth, preparatory to its period of germination, appearing more like a flight of animated creatures than the seed of a plant. This is a very beautiful appointment! but so common an event as hardly to be noticed by us; yet it accomplishes effectually the designs of nature, and plants the species at distances and in places that no other contrivance could so easily and fitly effect."—*Journal of a Naturalist.*

The *Dandelion* has sometimes, when blanched, been introduced on our tables in salad, but its bitterness is too powerful to allow it to be a pleasant food. When a swarm of locusts had destroyed the harvest in Minorca, many of the inhabitants subsisted on this plant; and at Gottingen the roots are roasted, and used to improve the flavour of coffee, instead of Cichory, which is in universal use on the Continent for the same purpose. It is in some repute as a medicine; and in the hepatic complaints of persons long resident in warm climates, it often affords very marked relief. It is tonic, and promotes the various secretions, forming likewise an excellent food for milch cows; and, from its influence over the excretions of the kidnies, probably arose its vulgar name, which is found identical in several languages.

Uredo Cichoracearum, Grev. Fl. Edin, p. 435, is common on both sides of the living leaves of this plant in Summer and Autumn.

Zannichellia Palustris. Horned-pondweed ⊙

C. Mathews Del & Sc Pub^d by W. Baxter Botanic Garden, Oxford 1833.

ZANNICHE'LLIA *.

Linnean Class and Order. MONŒ'CIA†, MONA'NDRIA.

Natural Order. FLUVIA'LES, *Vent.*—Lindl. Syn. p. 248.; Introd. to Nat. Syst. of Bot. p. 289.—Loud. Hort. Brit. p. 541.—NAIADES, Juss. Gen. Pl. p. 18.—Sm. Gram. of Bot. p. 66.—NAIADEÆ, Rich. by Macgilliv. p. 387.—JUNCALES; sect. NAYADINÆ; type, NAYADACEÆ; Burn. Outl. of Bot. pp. 403 & 413.—INUNDATÆ, *Linn.*

GEN. CHAR. *Barren Flower* (fig. 1.) without either *calyx* or *corolla*. *Filament* (fig. 1.) solitary, sessile, simple, upright, taller than the fertile flower. *Anthers* (see figs. 1 & 2.) egg-oblong, upright, of 2 or 4 parallel cells. *Fertile Flower* (fig. 3.) solitary, by the side of the barren one. *Calyx (Perianth)* inferior, of 1 small, tumid, cloven leaf. *Corolla* none. *Germens* 4 or 5, seldom more, nearly sessile, oblong, blunt, incurved. *Style* (see fig. 3.) 1 to each germen, terminal, simple, upright, shorter than the germen. *Stigma* (see fig. 3.) solitary, spreading, peltate, egg-shaped, dilated, entire or toothed. *Capsules* (figs. 4 & 5.) nearly sessile, oblong, incurved, somewhat compressed, of 1 cell and 1 valve, not bursting; tumid and rugged at the outer edge; tipped with the permanent style. *Seed* (fig. 7.) solitary, of the form of the cell (see fig. 5.), monocotyledonous, with a very thin, simple, membranous *skin*. *Embryo* (see fig. 7.) central, tapering, incurved. *Albumen* none.

The absence of an *involucrum;* the *barren flower* destitute of either *calyx* or *corolla;* the *fertile flower* with a *calyx* of 1 sepal, without a *corolla;* the 4 or more *germens;* and peltate *stigmas;* will distinguish this from other genera in the same class and order.

One species British.

ZANNICHE'LLIA PALU'STRIS. Common Horned-pondweed.

SPEC. CHAR. Anthers 4-celled. Stigmas entire. Pericarps toothed on the back. HOOKER.

Engl. Bot. t. 1844.—Linn. Sp. Pl. p. 1375.—Huds. Fl. Angl. (2nd ed.) p. 397.—Sm. Fl. Brit. v. iii. p. 955. Engl. Fl. v. iv. p. 70.—With. (7th ed.) v. ii. p. 8.—Gray's Nat. Arr. v. ii. p. 32.—Lindl. Syn. p. 251.—Hook. Brit. Fl. p. 385.—Lightf. Fl. Scot. v. ii. p. 534.—Sibth. Fl. Oxon. p. 3.—Purt. Midl. Fl. v. i. p. 434; and v. iii. p. 381.—Relh. Fl. Cantab. (3rd ed.) p. 373.—Hook. Fl. Scot. p. 258.—Grev. Fl. Edin. p. 187.—Fl. Devon. pp. 145 & 113.—Johnston's Fl. of Berw. v. i. p. 197.—Dav. Welsh Bot. p. 83.—Walk. Fl. of Oxf. p. 263.—Perry's Pl. Varvic. Selectæ, p. 74.—Rev. G. E. Smith's Pl. of S. Kent, p. 6.—Bab. Fl. Bath. p. 48.—Mack. Catal. of Pl. of Ireland, p. 77.—*Aponogeton aquaticum graminifolium staminibus singularibus,* Ray's Syn. p. 135.

Fig. 1. A Stamen, or Barren Flower.—Fig. 2. A transverse section of the Anther, showing the 4 cells.—Fig. 3. A Fertile Flower, showing its 4 germens, with their large flat stigmas.—Fig. 4. The Capsules.—Fig. 5. A vertical section of a Capsule.—Fig. 6. A transverse section of ditto.—Fig. 7. A Seed.—*All more or less magnified.*

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* So named by MICHELI, in honour of JOHN JEROME ZANNICHELLI, an eminent Venetian Apothecary and Botanist, who published a history of Plants, and flourished about 1702. He travelled with MICHELI along the shores of the Adriatic, and was particularly versed in marine plants and animals. MARTYN.

† See *Bryonia dioica,* folio 83.

Localities.—In ditches and ponds. Frequent.—*Oxfordsh.* Between Headington and the Wick: Dr. Sinthorp. In the stream of water that divides Cowley Marsh from Bullington Green; W. B.—*Cambridgesh.* At Hinton, &c.: Rev. R. Relhan.—*Devon;* In the Mill Pond at Lympstone.—*Durham;* In ditches near Gateshead; in ponds near Hilton Castle, at Hebburn Quay; and Monkwearmouth: N. J. Winch, Esq.- *Kent;* In ponds upon the green Sand: Rev. G. E. Smith.—*Lancash.* Between Formby landmark and the sea, ten miles N. of Liverpool: Dr. Bostock. In Tranmore pool, in the Mersey, opposite to Liverpool: Mr. Shepherd. Ditches in Birkdale, near Southport: G. Crosfield, Esq.—*Northumberland;* In ditches near St. Peter's Quay, and in ponds at St. Anthon's: Walker and Benwell. Ditches at the mouth of the Whiteadder. Pond at Scremmerston Lime-kilns; and in ditches near Windmill-hill: Dr. G. Johnston.—*Somersetsh.* In the Canal, between Sydeny Gardens and Bathampton: Mr. E. Simms.—*Suffolk;* Ditches near Bungay: Mr. Woodward.—*Warwicksh.* Near Kinwarton, and Oversley; and in the neighbourhood of Alcester: Mr. Purton. In a pond in a field at the end of the first lane on the right hand side of the Hillmorton upper street-road, going from Rugby, near Mr. Cleaver's Garden, 1831: W. B.—*Worcestersh.* On Feckenham Moors: Mr. Purton.—WALES. In the *Isle of Anglesey*: Rev. H. Davies.—*Flintsh.* Ditches adjoining Rhyd Marsh near Prestatyn: Mr. Griffith.—SCOTLAND. Lochend: Mr. Neill. In a small pool near Luffness: Dr. Greville.—IRELAND. Ditches at Sandymount, &c.: Mr. J. T. Mackay.

Annual.—Flowers from June to September.

Root of several very slender fibres. *Stems* long, thread-shaped, smooth, very much branched, leafy, floating. *Leaves* numerous, opposite, frequently somewhat whorled, growing 3 or 4 together from the same joint of the stem, very narrow, strap-shaped, acute, entire, beautifully reticulated. *Bracteas* axillary, tubular, membranaceous, including one barren *flower*, consisting of a simple *stamen;* and one fertile *flower* on a short stalk. *Anther* oblong, with 4 furrows and 4 cells (see figs. 1 & 2.) on a long white filament (fig. 1.). *Germens* about 4 or 5, almost sessile, oblong, somewhat compressed. *Styles* short, with very broad, peltate, spreading stigmas, which are either quite entire, or slightly indented at the margin. *Capsules* oblong, compressed, their outer edge tuberculated or toothed, the teeth sometimes becoming long, and resembling short transparent spines.

The whole plant is smooth, and has the habit of a *Potamogeton.* It is a native of most parts of Europe, and Virginia; and it is said to grow in the Thermal Mineral Waters of Albano, where the temperature of the water is at 95°. of Fahr.

Zannichellia dentata of Willdenow, which is distinguished from the above species by its 2-celled *anther*, and toothed *stigma*, is admitted as a British plant by Mr. Gray, but on what authority he does not mention. It was first separated from *Z. palustris* by Professor Willdenow, at the suggestion of Sir J. E. Smith, who observes, that it was long ago well distinguished by Micheli, in his *Nova Plantarum Genera*, t. 34. f. 2. and that if he be correct as to the 2 cells of its *anther*, and the toothed *stigmas*, nothing can be more distinct. It may, says Sir James, probably be found in England.

The Rev. J. Jacob, LL. D. author of a very excellent, and extremely interesting and instructive "Flora of West Devon and Cornwall," now publishing in monthly numbers, has very recently sent me a dried specimen of a *Zannichellia*, which a friend of his, who discovered it, is inclined to think is *Zannichellia dentata;* but the specimen is not in a sufficiently perfect state to enable me to determine with certainty to which species it belongs. *Z. palustris*, in the neighbourhood of Oxford, has the stigmas frequently somewhat indented.

[illegible] In ditches and ponds [illegible] taken [illegible] the Wash; Dr. Sowerby [illegible] Lindley Marsh from Hollington [illegible] R. V. [illegible] [illegible] — Devon; In the [illegible] [illegible] near Gateshead; in ponds near [illegible] Ainsworth; A. J. Wasch, Esq. [illegible] Rev. G. E. Smith. — Lancash. Between [illegible] miles N. of Liverpool; Dr. Bostock. In [illegible] posite to Liverpool; Mr. Shepherd. Ditches in [illegible] G. Cumberland, Esq. — Northumberland. In ditches [illegible] in ponds at St. Anthon's. Winch and Thornhill. [illegible] [illegible] Pool in [illegible] [illegible] Wimbush-hall; Dr. G. Johnston. — Somerset. [illegible] [illegible] sydeny [illegible] and [illegible] Mr. R. [illegible] — Suffolk. Bungay; Mr. Woodward. Warwicksh. Near Kenwith, and in the neighbourhood of Atherstone; Mr. E. Dean. In pond at the end of the first lane on the right hand side of the [illegible] road, going from [illegible], near Mr. [illegible] [illegible] [illegible] the [illegible] Moors; Mr. Purton. [illegible] [illegible] Rev. H. Davies. Pinnacle ditches [illegible] [illegible] Mr. Gasserea. — SCOTLAND. [illegible] [illegible] pool near Lufforth. Dr. Gasserea. — IRELAND. Ditches [illegible] &c.; Mr. J. T. Mackay.

Annual.—Flowers from June to September.

Root of several very slender fibres. *Stems* long, [illegible] smooth, very much branched, leafy, floating. *Leaves* opposite, frequently somewhat whorled, growing 3 or [illegible] from the same joint of the stem, very narrow, strap-sh[illegible] entire, beautifully reticulated. *Bracteas* axillary, [illegible] branaceous, including one barren *flower*, consisting [illegible] *stamen*; and one fertile *flower* on a short stalk. [illegible] with 4 furrows and 4 cells (see figs. 1 & 2.) on a [illegible] ment (fig. 1.). *Germens* about 4 or 5, almost [illegible] somewhat compressed. *Styles* short, with very [illegible] spreading *stigmas*, which are either quite entire, [illegible] dented at the margin. *Capsule* oblong, compressed, edges tuberculated or toothed, the teeth sometimes [illegible] and resembling short transparent spines.

The whole plant is [illegible], and has the habit [illegible] It is a native of most parts of Europe, and [illegible] to grow in the Thermal Mineral Waters of [illegible] temperature of the water is at 95°, of Fahr. [illegible]

Zannichellia dentata of Willdenow, which is distin[illegible] species by its 4-celled anther and toothed stigma, is [illegible] given by Mr Gray; but on what authority he does not [illegible] separated from *Z. palustris* by Professor Wittenberg [illegible] Sir J. E. Smith, who observes, that it was long ago well [illegible] [illegible] in the *Nova Plantarum Genera*, t. 34. f. 2, and [illegible] as to the 2-celled anther, and the toothed stigma [illegible] distinct. It [illegible] says Sir James, probably be found in [illegible]

[illegible] [illegible] the author of a [illegible] [illegible] [illegible] and interesting "Flora of West [illegible]" [illegible] to carefully examine this very [illegible] [illegible] [illegible] [illegible] the [illegible] which [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of Oxford, has the stigmas [illegible]

HIERACIUM UMBELLATUM. UMBELLED-HAWKWEED. ♃.

Pub.d by W. Baxter, Botanic Garden Oxford, 1805

HIERA'CIUM *.

Linnean Class and Order. SYNGENE'SIA †, POLYGA'MIA ÆQUALIS ‡.

Natural Order. COMPO'SITÆ §, *Linnæus* and *Adanson.*—Tribe, CICHORA'CEÆ, Lindl. Syn. pp. 140, 142, & 156.; Introd. to Nat. Syst. of Bot. pp. 197 & 201.—Loud. Hort. Brit. pp. 520 & 521.—CICHORACEÆ, Juss. Gen. Pl. p. 168.—Sm. Gram. of Bot. p. 120.—SYNANTHE'REÆ, Rich. by Macgilliv. p. 454.—SYRINGALES; subord. ASTEROSÆ; sect. ASTERINÆ; subsect. ASTERIANÆ; type, CICHORACEÆ; Burn. Outl. of Bot. pp. 900, 901, 920, 924, & 935.

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) egg-shaped, imbricated, of numerous strap-shaped, very unequal scales, which are moderately spreading when in seed, sometimes finally reflexed. *Corolla* (fig. 2.) compound; *florets* (fig. 3.) numerous, imbricated, uniform, perfect, strap-shaped, blunt, with 5 teeth. *Filaments* 5, hair-like, very short. *Anthers* (see fig. 3.) united into a cylindrical tube, much shorter than the floret. *Germen* (see fig. 3.) egg-shaped. *Style* (see fig. 3.) thread-shaped, a little prominent. *Stigmas* (see fig. 3.) 2, recurved. *Seed* (figs. 4 & 5.) egg-shaped or oblong, angular, various in length, not beaked. *Pappus* (see figs. 4, 5, & 6.) sessile, hair-like, uniform, simple, often minutely rough. *Receptacle* (fig. 7.) convex, nearly naked, dotted.

The egg-shaped, imbricated *involucrum;* nearly naked, dotted *receptacle;* and simple, sessile *pappus;* will distinguish this from other genera, with ligulate or strap-shaped *florets*, in the same class and order.

Nineteen species British.

HIERA'CIUM UMBELLA'TUM. Umbelled Hawkweed. Narrow-leaved Hawkweed. Endive Hawkweed.

SPEC. CHAR. Stem upright, simple, very leafy. Leaves strap-spear-shaped, scattered, nearly smooth, slightly toothed. Flowers somewhat umbellate. Involucrum smooth.

Engl. Bot. t. 1771.—Curt. Fl. Lond. t. .—Linn. Sp. Pl. p. 1131.—Huds. Fl. Angl. (2nd ed.) p. 346.—Sm. Fl. Brit. v. ii. p. 835.—Engl. Fl. v. iii. p. 369.—With. (7th ed.) v. iii. p. 899.—Gray's Nat. Arr. v. ii. p. 424.—Lindl. Syn. p. 161.—Hook. Brit. Fl. p. 346.—Lightf. Fl. Scot. p. 439.—Sibth. Fl. Oxon. p. 242.—Abbot's Fl. Bedf. p. 171.—Purt. Midl. Fl. v. ii. p. 369. and v. iii. p. 374.—Relh. Fl. Cantab. (3rd ed.) p. 323.—Hook. Fl. Scot. p. 233.—Fl. Devon. pp. 131 & 156.—Johnston's Fl. of Berw. v. i. p. 176.—Walk. Fl. of Oxf. p. 326.—Perry's Pl. Varvic. Selectæ, p. 66.—Mack. Catal. of Pl. of Irel. p. 70.—*Hierácium fruticosum angustifolium majus*, Ray's Syn. p. 168.—*Hierácium Intybaceum*, Johnson's Gerarde, p. 298.

Fig. 1. Involucrum or common Calyx.—Fig. 2. Corolla.—Fig. 3. A separate Floret, exhibiting the Germen, Pappus, Stamens, and Pistil.—Fig. 4. A Seed, crowned with the pappus or proper calyx.—Fig. 5. The same a little magnified.—Fig. 6. Part of one of the rays of the Pappus more highly magnified.

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* From *ierax*, Gr. *a hawk;* because birds of prey were supposed to employ the juice of this plant to strengthen their powers of vision; or rather, perhaps, from the mixture of black and yellow in some species resembling the colour of a hawk's eye; whence, possibly, the English name *Hawkweed.*

† See folio 91. ‡ See folio 147. § See folio 27, a.

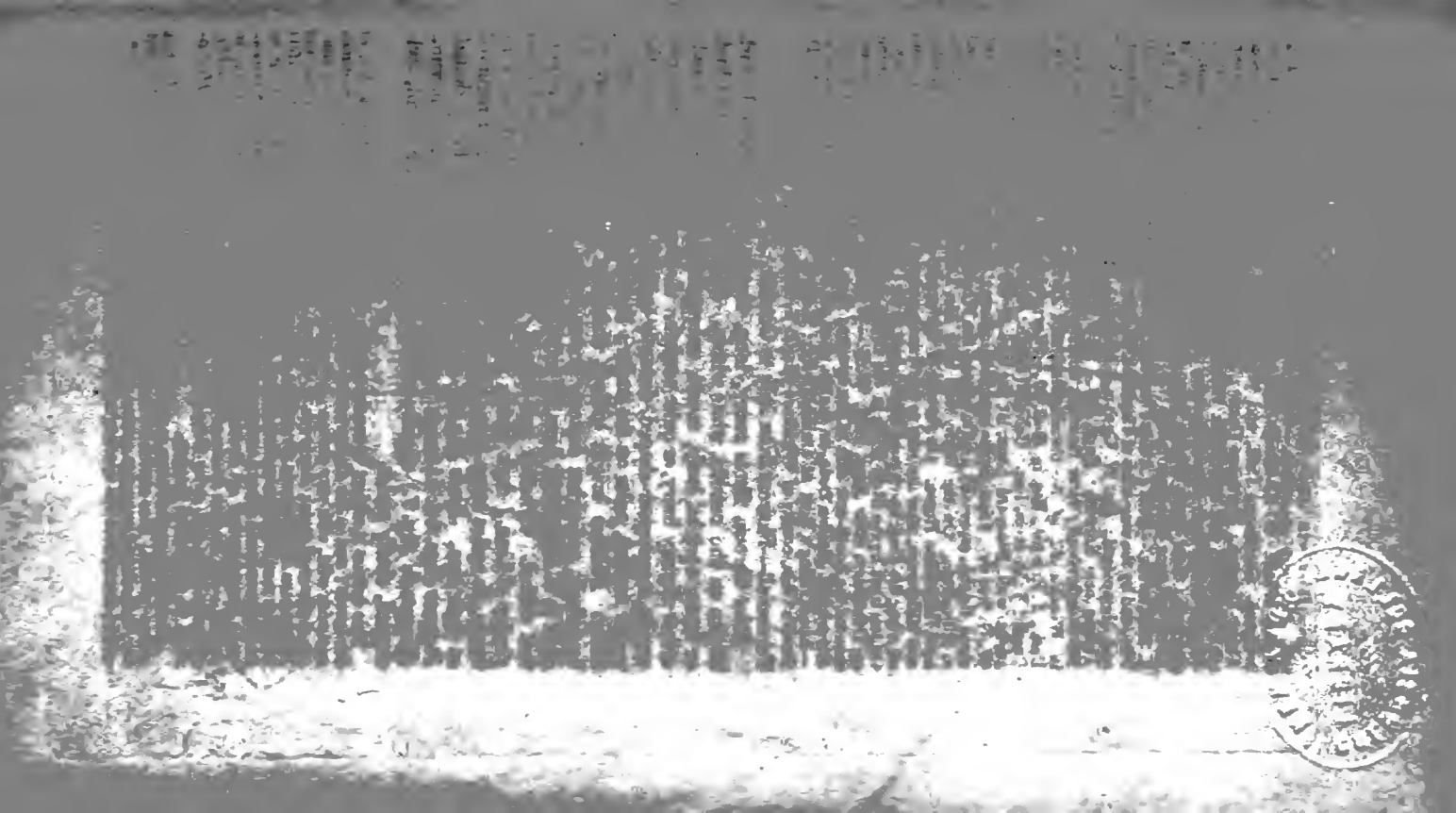
Localities.—In woods, thickets, and on heaths, on a dry, sandy, or gravelly soil. Not very uncommon.—*Oxfordshire;* Shotover Hill: W. B.—*Berksh.* Bagley Wood: W. B.—*Bedfordsh.* About Aspley: Rev. C. Abbot.—*Cambridgesh.* Gamlingay Park, and White Wood: Rev. R. Relhan.—*Devon.* About Tiverton; Dartmoor Castle; Holme Chase; Dean Burn near Ashburton; Buckland and Spitchwick Woods; Beckey Fall; Woods at Ilsington; Fringle Bridge near Drewsteignton; and in Bridford Woods: *Fl. Devon.*—*Durham;* Near South Shields Law, and on the banks forming the coast at Roecoe-gill near Monkwearmouth: N. J. Winch, Esq. In Schull Wood: Mr. J. Backhouse.—*Kent;* About Charlton: Mr. W. Curtis. In Ospringe Chalk Pits, and by the way-sides at Dunkirk: E. Jacob.—*Middlesex;* About Barnet, and Hampstead: Mr. W. Curtis.—*Norfolk;* Woody hills at the back of Thorpe near Norwich: *Engl. Bot.* Near Ditchingham: Mr. Woodward.—*Northumberland;* Near Henshaw and Bavington: Miss Emma Trevelyan, in *Winch's Fl. of Northumberland and Durham.*—*Shropsh.* At Hord's Park: T. Purton, Esq. in *Midl. Fl.*—*Warwicksh.* On the walls of Warwick Castle: T. Purton, Esq. Coleshill Heath: Rev. W. T. Bree.—On the Castle garden wall, Vineyard Lane, at the back of the green-house, Warwick: Mr. W. G. Perry. Ditch-banks near Birmingham: Dr. Withering. Abundant about Rugby, especially a little beyond the Workhouse on the lower street road to Hillmorton. On the Barby road near Mr. Ladbrook's Farm. Road-side near Hillmorton House. On the side of the upper street road between Rugby and Hillmorton, after the turn to the Handing-post. On Jarratt's Heath, and all along the Dunchurch road from thence to the Cock and Robin Public House. On the bank by the Meer Dyke in the Bridle-road on the left hand side going up Dunchurch Hill: June, 1831, W. B.—WALES. *Anglesey;* Not uncommon on the South-east side of the county: Rev. H. Davies.—SCOTLAND. *Berwicksh.* Haiden Dean, on the site of an old Roman station: Dr. Johnston.—About King's Seat at Dunkeld, &c.: Rev. J. Lightfoot.—IRELAND. Devil's Glen, county of Wicklow: Mr. J. T. Mackay.

Perennial.—Flowers from July to October.

Root fibrous, fibres many, long, simple, thread-shaped, dark brown on the outside, white within. *Stem* from 1 to 3 feet high or more, upright, leafy, round, unbranched, almost solid, scored; either slightly hairy, or quite smooth. *Leaves* numerous, scattered, sessile, strap-spear-shaped, distantly toothed, bright green on the upper surface, paler on the under; their margins and ribs slightly hairy. *Flowers* bright yellow, about an inch in diameter, on branched, somewhat cottony flower-stalks, which terminate the stem in a corymbose form, or more generally in a kind of imperfect umbel. *Bracteas* awl-shaped, few and small. *Involucrum (calyx* of Linn.*)* dark green, almost smooth, except at the very base; its scales strap-spear-shaped, a little spreading or recurved at their tips. *Seeds* (fig. 4.) angular, brown, and finely dotted. *Pappus* (figs. 4 & 5.) rough (see fig. 6.), as long as the involucrum. *Receptacle* (fig. 7.) slightly cellular, and rough with small, awl-shaped, chaffy scales.

This species is subject to much variation in size, shape, smoothness, &c. of the leaves; and in the disposition of the flowers. There is a variety sometimes met with wild, with very narrow, quite entire, strap-shaped leaves; and a simple, 1-flowered stem; this is var. γ. of Sir J. E. Smith's *Engl. Flora;* and the *Hieracium Pulmonaria Gromineа* of Dillenius, in Ray's *Synopsis*, p. 168; and Petiver's *Herbarii Britannici*, t. 13. f. 12. Dillenius mentions it as having been found about London; and Mr. Woodward informs us, in Withering's *Arrangement of British Plants*, that it is frequent near Bungay, in Suffolk.—An English specimen of this very marked variety, collected, probably, either by Sherard, or by Dillenius, is preserved in the *Sherardian Herbarium*, in the Oxford Garden.

Hieracium umbellatum is said to be used in Sweden to dye yarn of a fine yellow colour. It is one of the most decidedly marked of any individual in this very difficult and extensive genus; of which Mr. Loudon, in his *Hortus Britannicus*, enumerates 123 species, most of them natives of different parts of Europe.



Erigeron ácris. Blue. Flea-bane ♃

C. Mathews, Del & Sc. Pub.d by W. Baxter, Botanic Garden Oxford 1836

ERI'GERON *.

Linnean Class and Order. SYNGENE'SIA †, POLYGA'MIA, SUPE'RFLUA ‡,

Natural Order. COMPOSITÆ §; tribe, CORYMBI'FERÆ ||, *Juss.*—Lindl. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 & 199.—COMPOSITÆ; subord. ASTEREÆ; Lond. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CORYMBI'FERÆ; Rich. by Macgilliv. pp. 454 & 455.—CORYMBI'FERÆ, sect. 2. Juss. Gen. Pl. pp. 177 & 180.—Sm. Gram. of Bot. pp. 121 & 123. Engl. Fl. v. iii. p. 334.—SYRINGALES; subord. ASTEROSÆ; sect. ASTERINÆ; subsect. ASTERIANÆ; type, ASTERACEÆ; Burn. Outl. of Bot. pp. 900. 901, 920, 924, & 926.—COMPOSITÆ, *Linn.*

GEN. CHAR. *Involucrum (common Calyx)* (fig. 1.) oblong, imbricated; scales strap-shaped, pointed, upright, very numerous; the innermost longest, all nearly equal. *Corolla* compound, radiant; *florets* of the disk (see fig. 2.) numerous, perfect, funnel-shaped, regular, their limb in 5, sometimes said to be but 4, equal segments; *florets* of the ray (see fig. 3.) numerous, in a double row, tubular at the base, the limb very narrow, strap-shaped, tapering, nearly upright, either entire, or slightly toothed. *Filaments* (see fig. 4.) 5, in the florets of the disk only, hair-like, very short. *Anthers* (see figs. 2 & 4.) in a cylindrical tube, simple. *Germen* (see figs. 2, 3, and 4.) inversely egg-shaped, angular. *Style* (see figs. 3 & 4.) thread-shaped. *Stigmas* (see figs. 2, 3, & 4,) 2, oblong, a little prominent, slightly spreading. *Seed-vessel* none but the converging calyx. *Seed* (see figs. 5 & 6.) small, inversely egg-shaped. *Pappus* (see figs. 5 & 6.) sessile, simple, rough, as long as the florets. *Receptacle* (see fig. 5.) flat, naked, slightly cellular.

Distinguished from other genera in the same class and order by the imbricated *involucrum* of numerous strap-shaped, pointed scales; the naked *receptacle;* the numerous, strap-shaped, very narrow *florets* of the ray, in a double row; and the sessile, simple pappus.

Three species British.

ERI'GERON A'CRIS. Blue Flea-bane.

SPEC. CHAR. Stem racemose. Peduncles mostly single-flowered. Pappus as long as the florets of the ray. Leaves spear-shaped, blunt.

Sm. Eng. Fl. v. iii. p. 422.—Hook. Brit. Fl. p. 358.—Johnston's Fl. of Berw. v. i. p. 183.—Walk. Fl. of Oxf. p. 238.—Bab. Fl. Bath. p. 25.—*Erigeron acre*, Linn. Sp Pl. p. 1211.—Engl. Bot. t. 1158.—Curt. Fl. Lond. t. .—Huds. Fl. Angl. (2nd ed.) p. 363.—Sm. Fl. Brit. v. ii. p. 877.—With. (7th ed.) v. iii. p. 932.—Lindl. Syn. p. 144.—Lightf. Fl. Scot. v. i. p. 474.—Sibth. Fl. Oxon. p. 252.—Abbot's Fl. Bedf. p. 181.—Davies' Welsh Botanology, p. 78.—Purt. Mid. Fl. v. ii. p. 396; and v. iii. p. 376.—Relh. Fl. Cantab. (3rd ed.) p. 340.—Hook. Fl. Scot. p. 242.—Curt. Brit. Entomol. v. ix. t. 417.—Perry's Pl. Varvic. Selectæ,

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Fig. 1. Involucrum or common Calyx.—Fig. 2. A Floret of the Disk.—Fig. 3. A Floret of the Ray.—Fig. 4. The Stamens, Germen, Style, and Stigmas.—Fig. 5. Receptacle, and a Seed.—Fig. 6. A Seed.—Fig. 7. Root Leaves.—Figs. 2, 3, 4, & 6, *magnified.*—In the magnified figures the Pappus is represented too short.

* From *eri*, Gr. *early;* and *geron*, Gr. *an old man;* from the bald heads of the receptacle, after the flowers and fruit have fallen. Dr. HOOKER.

† See *Tussilago Farfara*, f. 91, n. †.

‡ See *Achillea Ptarmica*, f. 36, n. ‡.

§ See *Prenanthes muralis*, f. 27, a.

|| See *Achillea Ptarmica*, f. 36, a.

p. 70.—Mack. Catal. of Pl. of Ird. p. 73.—*Trimorpha acre*, Gray's Nat. Arr. v. ii. p. 466.—*Aster arvensis cæruleus acris*, Ray's Syn. p. 175.—*Conyza cærulea acris*, Johnson's Gerarde, p. 484.

Localities.—In dry, gravelly, or chalky pastures, banks, walls, &c. Not common.—*Oxfordsh.* Bullington Green, Shotover Hill, and Stanton Harcourt: Dr. Sibthorp. Road-side between the Asylum and Shotover Hill; between Stonesfield and Woodstock Park, July 30, 1831. By the side of the road going over Campsfield, between Begbrook and Woodstock, Oct. 18, 1831. Naturalized on the walls of the Botanic Garden: 1835, W. B.—*Bedfordsh.* Thurleigh, Ampthill, and Biddenham: Rev. C. Abbot.—*Cambridgesh.* In dry pastures and on walls: Rev. R. Relhan.—*Cheshire;* Amid the sand-hills, between Bidston and the Irish Sea: H. C. Watson, Esq. in New Bot. Guide. Walls of Beeston Castle: J. E. Bowerman, ibid.—*Durham;* In Castle Eden Dene; also at Fawdon-slate and Byers' Quarry near Whitburn, on the sand-hills at Hartlepool, and on Hebburn and Sunderland Ballast-hills: N. J. Winch, Esq. At Hesledon Dene, and pastures at Owton, near Grantham: J. Hogg, Esq. in Winch's Fl. of Northumb. and Durham.—*Gloucestersh.* On St. Vincent's Rocks: N. J. Winch, Esq. Spoonbed Hill: Mr. O. Roberts.—*Kent;* At Dumpton Gap, near Ramsgate: Rev. G. E. Smith.—*Lancash.* Near South port: G. Crofield, Esq.—*Leicestersh.* In the neighbourhood of Gracedieu Nunnery, at the northern extremity of Charnwood Forest: Rev. A. Bloxham, in Mag. of Nat. Hist. v. iii. p. 167.—*Norfolk;* Near Norwich: G. Cooper, Esq. in Watson's New Bot. Guide. "Sent to me from Burham:" Miss Bell, ibid.—*Northamptonsh.* Sandy dry pastures near Kettering and Cransley: Watson's Bot. Guide.—*Northumberland;* On Holy Island links, north of the Castle; and on St. Anthon's and Willington Ballast-hill: N. J. Winch, Esq.—*Shropsh.* On the walls of Ludlow, and on the carboniferous limestone near Wellington: E. Lees, in Wat. Bot. Guide. On a wall at Hords Park, and at the side of the turnpike-road, opposite to Faintreo House, near Bridgenorth: T. Purton, Esq.—*Somersetsh.* On Hampton Down; at Wyck; Swainswick; Combe-hay; Conkwell; near Cottage Crescent, &c.: Rev. C. C. Babington. Near Yeovil: Mag. Nat. Hist. v. iii. p. 174. On old stone walls at the Rookery, and other like situations, in the parish of Brislington near Bristol; and by the road-side, two or three miles from Clevedon, approaching from Bristol: Dr. Withering.—*Surrey;* Near Leatherhead: Miss A. Potter, in Wat. Bot. Gu. Reigate: N. J. Winch, Esq. Coulsdon: E. Wood. About Croydon: Mr. W. Pamplin, ibid. About Kingston: Rev. S. Palmer.—*Warwicksh.* At Allesley and Meridan: Rev. W. T. Bree.—*Westmoreland;* Foulshaw Moss: Nicholson.—*Worcestersh.* At Sheriff's Lench: Rev. W. S. Rufford.—*Wilts;* Near Great Bedwyn: W. Bartlett, Esq.—*Yorksh.* Near Rotherham: Mr. L. Langley, in Mag. Nat. Hist. v. ii. p. 270. Richmond: Mr. J. Ward, in Wat. Bot. Guide.—WALES. *Anglesey;* On Newborough Common; near Tan y Fron, in the parish of Penmon: Rev. H. Davies.—*Denbighsh.* Hope Mountain, near Wrexham: J. E. Bowman, in Wat. Bot. Gu.—SCOTLAND. In dry, mountainous pastures, frequent: Dr. Hooker.—IRELAND. Outer side of the north wall below the Custom-house, Dublin: Mr. J. T. Mackay.

Biennial.—Flowers from July to October.

Root branched, fibrous, fibres of a lightish brown colour. *Stem* from 6 inches to a foot or 18 inches high, upright, somewhat angular, leafy, hairy like the rest of the herbage, often of a purple colour, simple, or sometimes more or less branched. *Leaves* scattered, most hairy at the edges; those on the stem mostly sessile, oblong-spear-shaped, entire, often undulated; those from the root (fig. 7.) larger, inversely egg-shaped, or tongue-shaped, slightly toothed, tapering down into bordered *footstalks*. *Peduncles (flowerstalks)* from the axils of the leaves, and terminal. *Flowers* upright, never expanding like most other of the order Compositæ. *Scales* of the *involucrum* (fig. 1.) strap-spear-shaped, unequal, and hairy. *Florets* of the disk (fig. 2.) yellow; those of the ray (fig. 3) strap-shaped, very narrow, of a purplish colour, nearly upright. *Seed* (fig. 6.) oblong, pale brown, a little hairy. *Pappus* sessile, simple, very long, yellowish.

Lycopus europæus Gipsy-wort. ♃

J.N. Del. Pub.d by W. Baxter, Botanic Garden Oxford 1838. C. Mathews Sc.

LY'COPUS *.

Linnean Class and Order. DIA'NDRIA †, MONOGY'NIA.

Natural Order. LABIA'TÆ ‡, Juss. Gen Pl. p. 110.—Sm. Gr. of Bot. p. 99. Engl. Fl. v. iii. p 63.—Lindl. Syn. p. 196.; Introd. to Nat. Syst. of Bot. p. 239.—Bentham, in Bot. Regist. (1819).—Rich. by Macgilliv. p. 439.—Loud. Hort. Brit. p. 528.—VERTICILLATÆ of Linnæus.—SYRINGALES; subord. PRIMULOSÆ; sect. MENTHINÆ; type, MENTHACEÆ, or LABIATÆ: subtype, MENTHIDÆ; Burn. Outl. of Bot. v ii. pp 900, 958, 968, & 972.

GEN. CHAR. *Calyx* (fig. 1.) inferior, tubular, of 1 sepal, divided half way into 4 or 5 narrow, pointed segments, permanent. *Corolla* (figs. 2, 3, & 4) inferior, tubular, of 1 petal, in 4 nearly equal, blunt segments, the upper one rather the broadest, and notched. *Filaments* (see fig 4.) 2, simple, distant, and rather prominent, spreading upwards. *Anthers* (see fig. 4.) small, 2-lobed. *Germen* (see fig. 4.) 4-cleft. *Style* (see fig. 4.) thread-shaped, the length of the stamens. *Stigma* cloven. *Seeds* (see figs. 5, 6, & 7.) 4, roundish, blunt, in the bottom of the calyx (see fig. 5)—Herbaceous, perennial, inodorous, roughish *plants*, with a square *stem;* opposite, strongly serrated or pinnatified *leaves;* and axillary, whorled, small, pale *flowers;* comes nearest to *Mentha.*

The nearly equal *corolla;* distant, simple *stamens*; and blunt *seeds;* will distinguish this from other genera, with inferior, monopetalous, irregular *flowers*, and naked *seeds*, in the same class and order.

One species British.

LY'COPUS EUROPÆ'US. Common Gipsy-wort. Water Horehound.

SPEC. CHAR. Leaves egg-spear-shaped; deeply and irregularly serrated.

Engl. Bot. t. 1105.—Curt. Fl. Lond. t. 201.—Linn. Sp. Pl. p. 30.—Huds. Fl. Angl. (2nd ed) p. 9.—Sm. Fl. Brit. v. i. p. 29. Engl. Fl. v. i. p. 34.—With. (7th ed.) v. ii. p. 25.—Lindl. Syn. p. 197.—Hook. Brit. Fl. p. 10.—Lightf. Fl. Scot. v. i. p. 79.—Sibth. Fl. Oxon. p. 8.—Abbot's Fl. Bedf. p. 6.—Purt. Midl. Fl. v. i. p. 56.—Relh. Fl. Cantab. (3rd ed.) p. 12 —Davies' Welsh Bot. p. 4.—Hook. Fl. Scot p. 9.—Fl. Devon. pp. 100 & 143.—Walk. Fl. Oxf. p. 8.—Jacob's West Devon. and Cornw. Fl.—Bentham's Labiatarum, p. 186 §.—Curt. Brit. Entom. v. x. t. 461.—Bab. Fl. Bath. p. 37.—Mack. Catal. of Pl. of Irel. p. 9 —*Lycopus riparius*, Gray's Nat. Arr. v. ii. p. 359.—*Lycopus palustris glaber*, Ray's Syn. p. 236.—*Marubium aquaticum*, Johnson's Gerarde, p. 700.

Fig. 1. Calyx.—Fig. 2. Front view of the Corolla.—Fig. 3. Side view of ditto.—Fig. 4. Corolla opened vertically to show the Stamens, Germen, and Pistil.—Fig. 5. The Calyx containing the 4 seeds at its base.—Fig. 6. One of the Seeds.—Fig. 7. Ditto.—*All, except* figs. 1 & 7, *more or less magnified.*

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* From *lukos*. Gr. *a wolf;* and *pous*, Gr. *a foot;* the leaves being thought to resemble the foot of that animal. THORNTON.

† See *Veronica chamædrys*, f. 50. n. †. ‡ See *Ajuga reptans*, f. 94, a.

§ "Labiatarum Genera et Species; or, A Description of the Genera and Species of Plants of the order Labiatæ; with their general History, Characters, Affinities, and Geographical Distribution. By GEORGE BENTHAM, Esq. F. L. S. London: James Ridgway and Sons, Piccadilly, 1833."—The best work that has been published on this difficult and extensive *natural family* of plants.

Localities.—On the banks of rivers, canals, pools, and watery ditches, on a sandy or gravelly soil. Frequent in most counties in England; less frequent in Scotland and Wales.

Perennial.—Flowers in July, August, and September.

Root creeping. *Stem* from 1 to 3 feet high, upright, with 4 angles, and 4 channelled sides, much branched; *branches* opposite, from the axils of the leaves. *Leaves* opposite, nearly sessile, egg-spear-shaped, pointed, wrinkled, slightly hairy, very deeply, and coarsely serrated, the lower ones often deeply pinnatifid. *Flowers* small, in dense *whorls* in the axils of the upper leaves. *Calyx* (figs. 1 & 5.) hairy. *Corolla* (figs. 2, 3, & 4.) whitish, tinged with purple; somewhat hairy within; upper segment slightly notched at the end, and all of them, especially the lower one, dotted with purple. *Filaments* longer than the corolla, at first bent in, afterwards straight. *Germen* surrounded at bottom by a yellow glandular receptacle. *Seeds* brown, shining, somewhat triangular

The leaves vary, in being more or less hairy, and more or less divided. Dr. Withering has remarked, that between the two stamens it is not uncommon to find two other shorter filaments without anthers; and that he once found them with anthers. It has the square stems, opposite leaves, inflorescence, flowers, and seeds of the class *Didynámia*, order *Gynospérmia;* but in consequence of its having, usually, but two stamens, it is, by most Botanists, placed in the class *Diándria*. The root is astringent. The juice gives a permanent colour to linen, wool, and silk, which will not wash out; and it dyes a black with green vitriol. It is used by Gypsies to stain themselves of a dark colour, and hence its English name *Gypsy-wort*. According to the observations of Linnæus, goats and sheep eat this plant; cows and horses refuse it. *Cassida viridis* feeds upon it.

"This genus, *(Lycopus,)* though small in the number of species, is spread over the whole of Europe, Northern Asia, and North America; and one species *(L. europæus*, var. *γ. arguta*, Benth. Lab. p. 186.—*L. australis*, Br. Prod. Fl. Nov. Holl. 1. 500.) has been found in New Holland." Bentham.

"To me the wilderness of thorns and brambles,
Beneath whose weeds the muddy runnel scrambles,—
The bald, burnt moor—the marsh's sedgy shallows,
Where docks, bullrushes, waterflags, and mallows
Choke the rank waste, alike can yield delight.
A blade of silver hair-grass nodding slowly
In the soft wind;—the thistle's purple crown,
The ferns, the rushes tall, and mosses lowly,
A thorn, a weed, an insect, or a stone,
Can thrill me with sensations exquisite—
For all are exquisite, and every part
Points to the mighty hand that fashion'd it."

New Monthly Magazine.

Hydrocotyle vulgaris. Marsh Penny-wort. ♃

C. Mathews Lith. & Sc.

Publ.d by W. Baxter Botanic Garden Oxford 1836

HYDROCO'TYLE*.

Linnean Class and Order. PENTA'NDRIA†, DIGY'NIA.

Natural Order. UMBELLI'FERÆ, Juss. Gen. Plant. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—UMBELLATÆ, *Linn.*—ROSALES; subord. ANGELICOSÆ; sect. ANGELICINÆ; type, ANGELICACEÆ; subtype, SANICULIDÆ; Burn. Outl. of Bot. pp. 614, 762, 770, 773, & 774.

GEN. CHAR. *Umbels* simple or imperfect. *Flowers* (fig. 1.) all perfect, prolific, and regular. *Calyx* none. *Corolla* (fig. 1.) of 5, equal, egg-shaped, entire, acute, spreading petals, with a straight point. *Filaments* (see fig. 1.) 5, awl-shaped, spreading, shorter than the corolla. *Anthers* roundish. *Germen* nearly round, compressed, ribbed, smooth. *Styles* (see figs. 1 & 2.) 2, cylindrical, moderately spreading, tumid at the base, shorter than the stamens, permanent. *Stigmas* simple. *Fruit* (fig. 2.) nearly round, compressed at the side, so as to form 2 little shields. *Carpels (seeds* of SMITH,*)* (fig. 3.), with 5 filiform ridges, those of the keel and sides nearly obsolete, the intermediate arched, without *vittæ*. *Seed* (fig. 5.) compressed and keeled.

The simple *umbel;* equal, entire, flat *petals*, not inflexed at the point; and the solid, laterally compressed, striated *fruit;* will distinguish this from other genera in the same class and order.

One species British.

HYDROCO'TYLE VULGA'RIS. Common Water-cup. White-rot. Marsh Penny-wort.

SPEC. CHAR. Leaves peltate, orbicular, somewhat lobed and crenate. Umbels very small, of from 5 to 8, nearly sessile flowers.

Engl. Bot. t. 751.—Curt. Fl. Lond. t. —Ray's Syn. p. 222.—Linn. Sp. Pl. p. 338.—Huds. Fl. Angl. (2nd ed.) p. 110.—Sm. Fl. Brit. v. i. p. 290. Engl. Fl. v. ii. p. 96.—With. (7th ed.) v. ii. p. 362.—Lindl. Syn. p. 128.—Hook. Brit. Fl. p. 136.—Lightf. Fl. Scot. v. i. p. 153.—Sibth. Fl. Oxon. p. 91.—Abbot's Fl. Bed. p. 57.—Purt. Midl. Fl. v. i. p. 153.—Relh. Fl. Cantab. (3rd ed.) p. 109.—Davies' Welsh Bot. p. 27.—Hook. Fl. Scot. p. 87.—Grev. Fl. Edin. p. 61.—Fl. Devon. pp. 47 & 165.—Johnst. Fl. of Berw. v. i. p. 71.—Walk. Fl. of Oxf. p. 84.—Curt. Brit. Ent. v. iii. t. 142.—Perry's Plantæ Varvic. Selectæ, p. 25.—Mack. Catal. of Pl. of Irel. p. 27.—*Hydrocótyle vulgáre*, Gray's Nat. Arr. v. ii. p. 507.—*Cotylédon palústris*, Johnson's Gerarde, pp. 529 & 530.

LOCALITIES.—On moist heaths, boggy commons, and the margins of little clear rivulets, very frequent.

Fig. 1. A separate Flower, showing the Petals, Stamens, Germen, and Pistils.—Fig. 2. The Fruit, crowned with the permanent pistils.—Fig. 3. The Carpels.—Fig. 4. A Carpel divided horizontally.—Fig. 5. A Seed.—*All more or less magnified.*

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* From *udor*, Gr. *water;* and *cotule*, Gr. *a cup* or *vase*. The leaves are a little depressed, and stalked in the centre, and may thence somewhat resemble a cup or platter. HOOKER.

Seventeen exotic species of *Hydrocotyle* are enumerated in LOUDON's *Hortus Britannicus*.

† See *Anchusa sempervirens*, folio 48, note †.

Perennial.—Flowers from June to September.

Root fibrous. *Stems* creeping, thread-shaped, slender, smooth, quite prostrate, often subdivided, rooting at each joint, and producing from the same point a tuft of leaves and flowers. *Leaves* horizontal, nearly round, about an inch in diameter, doubly crenate, smooth, glossy, light green, the centre a little depressed, and marked with a whitish dot, from which the veins radiate, and form a kind of net-work on both surfaces. *Petioles (leaf-stalks)* solitary or aggregate, from 2 to 4 inches or more long, upright, cylindrical, slender, simple from the base. *Peduncles (flower-stalks)* axillary, one or more accompanying each group of leaves, shorter than the petioles, with a pair of broad *bracteas* at the base. *Umbel* very small, its *rays* so short as to be scarcely observable, usually about 5, with 3 or 4 thin spear-shaped *bracteas* at their base. *Flowers* small, reddish white, or rose-colour. *Fruit* of a pale brown colour, striated, and compressed laterally, that is, contrary to the *juncture*. The flowers being very small, and the flower-stalks shorter than the leaf-stalks, are easily overlooked, though they are abundant in their season; but the plant is easily known by the petiole being inserted into the centre of the under side of the leaf, a circumstance uncommon in European plants. It affords an excellent example of what Linnæus calls *folium peltatum*.

The whole plant is acrid, and probably, like others of the umbelliferous tribe growing in wet places, poisonous. This plant has received its English names of White-rot; Flowkwort; Sheep-killing Penny-grass; Sheep's-bane; and Penny-rot; from an old belief that feeding upon it caused the liver-rot in sheep. This opinion, which is altogether an error, arose from the Fluke or Flounder insect *(Fasciola hepatica,)* being found in marshy grounds where the *Hydrocotyle* and other similar plants abound; but sheep are well known never to eat this plant.

An account of the Rot in Sheep, with many useful and interesting remarks on the nature, symptoms, and treatment of that disease, may be seen in LOUDON'S *Encyclopædia of Agriculture*, a book which no Farmer should be without; LOUDON'S *Magazine of Natural History*, vols. 4 & 5; and BAXTER'S *Library of Agricultural and Horticultural Knowledge*, (2nd ed.) p. 552.

"The vegetable kingdom opens to the attentive observer a vast field, where he may contemplate the boundless power and omnipotent wisdom of the Creator; where he may discover, with admiration, the most wonderful order, and incomprehensibly beneficial designs."

"Soft roll your incence herbs, and fruits, and flow'rs,
In mingled clouds to HIM; whose sun exhales,
Whose breath perfumes you, and whose pencil paints."

THOMSON.

ANTIRRHINUM MAJUS. GREAT SNAPDRAGON. ♃.

Curtis del. et sc. Pub.d by W Baxter. Botanic Garden. Oxford. 1806. W Whitwell

ANTIRRHI'NUM*.

Linnean Class and Order. DIDYNA'MIA†, ANGIOSPE'RMIA‡.

Natural Order. SCROPHULARI'NEÆ§. *Dr. R. Brown.*—Lindl. Syn. p. 187. Introd. to Nat. Syst. p. 228.—SCROPHULA'RINÆ, Rich. by Macgilliv. p. 434.—Sm. Engl. Fl. v. iii. p. 115.—Loud. Hort. Brit. p. 528.—SCROPHULA'RIÆ, Juss. Gen. Pl. p. 117.—Sm. Gram. of Bot. p. 100.—SYRINGALES; subty. SCROPHULARIDÆ; Burn. Outl. of Bot. pp. 900 & 980.—PERSONATÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, permanent, of 1 sepal, in 5 deep, oblong segments; the two lower of which are most distant from each other. *Corolla* (fig. 2.) of 1 petal, personate; tube (fig. 2, a.) oblong, inflated, gibbous at the base (fig. 2, b.), without a spur; limb 2-lipped; upper lip (fig. 2, c.) cloven, reflexed at the sides; lower lip (fig. 2, d.) obtuse, 3-lobed, with a projecting palate, closing the mouth, and hollow underneath. *Filaments* (f. 3.) 4, 2 longer than the other 2, concealed under the upper lip of the corolla. *Anthers* (see fig. 4.) converging. *Germen* (fig. 6.) roundish, or egg-shaped. *Style* (see figs. 3—6.) thread-shaped. *Stigma* blunt. *Capsule* (fig. 7.) roundish, or oval, blunt, of 2 cells (see fig. 8.), oblique at the base, opening by 3 pores at the apex. *Seeds* numerous, attached to an oblong, cylindrical *receptacle (placenta)* in the middle of the *partition (dissepiment)*.

Distinguished from other genera, in the same class and order, by the 5-cleft *calyx;* the personate *corolla*, gibbous at the base in front, its mouth closed with a projecting palate; and the 2-celled, many-seeded *capsule*, unequal at the base, and opening by 3 small holes at the apex.—The want of a spur will distinguish this genus from that of *Linaria*, see folio 23.

Two species British.

ANTIRRHI'NUM MAJUS. Great Snapdragon. Toad-flax. Calves' Snout. Bull-dogs.

SPEC. CHAR. Leaves spear-shaped. Flowers in a dense cluster. Segments of the calyx egg-shaped, blunt.

Engl. Bot. t. 129.—Miller's Plates, t. 42.—Linn. Sp. Pl. p. 859.—Huds. Fl. Angl. (2nd ed.) p. 274.—Sm. Fl. Brit. v. ii. p. 661. Engl. Fl. v. iii p. 135.—With. (7th ed.) v. iii. p. 736.—Lindl. Syn. p. 192.—Hook. Brit. Fl. p. 286.—Sibth. Fl. Oxon. p. 196.—Abbot's Fl. Bed. p. 138.—Purl. Mid. Fl. v. i. p. 288.—Relh. Fl. Cantab. (3rd ed.) p. 255.—Davies' Welsh Bot. p. 60.—Hook. Fl. Scot. p. 189.—Fl. Devon. pp. 105 & 148.—Walk. Fl. of Oxf. p. 179.—Jacob's West Devon and Cornwall Fl.—Perry's Pl. Varvic. Selectæ, p. 52.—Bab. Fl. Bath. p. 34.—Mack. Catal. of Pl. of Irel. p. 58.—*Antirrhinum purpureum sive album*, Johnson's Gerarde, p. 549.—*Orontium majus*, Persoon's Syn. v. ii. p. 159.—Gray's Nat. Arr. v. ii. p. 324.

Fig. 1. Calyx.—Fig. 2. Corolla; *a*, Tube; *b*, Nectary; *c*, Upper lip; *d*, Lower Lip and Palate.—Fig. 3. Front view of the Stamens, and Pistil.—Fig. 5. Side view of the same.—Fig. 4. Tops of the Stamens, showing the 4 converging Anthers.—Fig. 6. Germen, Style, and Stigma.—Fig. 7. Capsule.—Fig. 8. Transverse section of the same.

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* From *anti*, Gr. *resembling;* and *rin*, Gr. *nose, muffler*, or *mask;* from the appearance of the flowers. HOOKER.

† See *Lamium album*, f. 31, n. †. ‡ See *Euphrasia officinalis*, f. 72, n. ‡.

§ See *Veronica chamædrys*, f. 50, a.

Localities.—On old walls, and chalk hills, frequent. Supposed to have escaped originally from gardens.—*Oxfordsh.* On Merton College walls: Dr. Sibthorp.—Jesus College walls: Rev. R. Walker. On the walls of St John's College garden; walls in New College lane; and in many other places in Oxford, plentiful: W. B.—*Berks;* On the ruins of Reading Abbey: Mr. Bicheno. —*Bedfordsh.* On walls about Elstow, and Bedford: Rev. C. Abbot.—*Cambridgesh.* Walls at Cambridge: Rev. R. Relhan.—*Devon;* Old walls about Exeter, Chudleigh, Tor Abbey, and Totness Castle: *Fl. Devon.*—Cat-down Quarries, near Plymouth: Rev. J. Jacob, LL. D —*Durham;* On the walls of Barnard Castle; and naturalized on old walls at Kibblesworth: N. J. Winch, Esq.—*Essex;* Old walls near Woodford; Warner.—*Gloucestersh.* On Berkley Castle and Church in rich profusion; also at Redland, Westbury, Henbury, &c. near Bristol: Withering.—*Kent;* Chalk Cliffs, and old walls near Dover, and between Northfleet and Gravesend: Hudson. On old walls about Feversham: E. Jacob, Esq.—*Norfolk;* Walls near Norwich: Mr. Woodward.—*Northumberland;* Near the Hermitage at Warkworth: N. J. Winch, Esq.—*Somersetsh.* Naturalized on old walls about Bath: Rev. C. C. Babington.—*Staffordsh.* On the walls of Rushall Castle near Walsall: Mr. Pitt.—*Warwicksh.* Salford: Mr. Purton. On an old wall at the bottom of the garden at Lawford Hall near Rugby: 1831, W. B.—*Wilts;* At Great Bedwyn: W. Bartlett, Esq.—*Worcestersh.* Littleton: Mr. Purton. Walls near the Cathedral, Worcester: Mr. W. G. Perry, in Mag. of N. Hist. v. iv. p. 451.—WALES. *Anglesey;* On the church and walls at Beaumares and Holyhead: Rev. H. Davies.—SCOTLAND. On old walls at Mugdoch Castle: Hopkirk.—IRELAND. Tops of old garden walls, near Dublin and elsewhere: Mr. J. T. Mackay.

Perennial.—Flowers from June to September.

Root somewhat woody, fibrous. *Stem* from 1 to 2 feet, or more, high; branched, nearly cylindrical, solid, leafy, smooth and shining at bottom, but more or less downy with short glandular hairs higher up, and slightly viscid, frequently of a purplish colour. *Leaves* opposite or alternate on the same plant, sometimes ternate (growing three together round the stem), somewhat stalked, spear-shaped, bluntish, recurved, entire, smooth, dark green on the upper surface; paler on the under, often purplish. *Flowers* in a kind of *spike* or dense *cluster*, each on a short downy peduncle, accompanied by an egg-shaped, pointed, concave *bractea*. *Calyx* downy and viscid, in 5 egg-shaped, concave, unequal, often coloured, segments. *Corolla* very large and handsome, nearly an inch and a half long, of a purplish-red, often varying to white, with a large, yellow, downy *palate* white in front; *tube* with a short, blunt pouch (nectary of *Linn.*) at the base in front. *Capsule* (fig. 7) egg-shaped, unequal at the base, of 2 oblique cells, the lower cell, which is largest and protuberant at the base, opening at the top by 2 large pores, the upper cell with a single orifice. *Seeds* black, wrinkled. The ripe capsule, when reversed, bears a strong resemblance to a skull.

Several handsome varieties of this plant are cultivated in gardens.

"The flowers are perfect insect traps; multitudes of small creatures seek an entrance into the corolla through the closed lips, which upon a slight pressure yield a passage, attracted by the sweet liquor that is found at the base of the germen; but when so admitted, there is no return, the lips are closed, and all advance to them is impeded by a dense thicket of woolly matter, which invests the mouth of the lower jaw.—But this Snapdragon is more merciful than most of our insect traps. The creature receives no injury when in confinement; but, having consumed the nectareous liquor, and finding no egress, breaks from its dungeon by gnawing a hole at the base of the tube, and returns to liberty and light." *Journal of a Naturalist*, (2nd edit.) p. 80.

Gmelin says, that in Persia an excellent oil, equal to that of the olive, is procured by expression of the seeds of this plant.

Pulicária dysentérica. Common Flea-bane. ♃

R Del. Pub.d by W. Baxter, Botanic Garden, Oxford 1836 C. Mathews Sc.

PULICA'RIA*.

Linnean Class and Order. SYNGENE'SIA†, POLYGA'MIA, SUPE'RFLUA‡.

Natural Order. COMPO'SITÆ§; tribe, CORYMBI'FERÆ||, *Juss.*—Lindl. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 & 199.—COMPO'SITÆ; subord. CARDUA'CEÆ; Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CORYMBI'FERÆ; Rich. by Macgilliv. pp. 454 & 455.—CORYMBI'FERÆ, sect. 2. Juss. Gen. Pl. pp. 177 & 180.—Sm. Gram. of Bot. pp. 121 & 123. Engl. Fl. v. iii. p. 334.—SYRINGA'LES; type, ASTERA'CEÆ; Burn. Outl. of Bot. pp. 900 & 926.—COMPO'SITÆ, *Linn.*

GEN. CHAR.—*Involucrum (common calyx)* (fig. 1.) hemispherical, closely imbricated; scales narrow, loosely spreading at the points. *Corolla* compound, radiant; *florets* of the disk (fig. 3.) numerous, perfect, tubular, their limb in 5 equal, upright or spreading segments; *florets* of the ray (fig. 4.) numerous, crowded, strap-shaped, 3-toothed. *Filaments* 5, in the tubular florets only, thread-shaped, short. *Anthers* united into a cylindrical tube, with 5 sharp teeth at the summit, and 10 straight bristles at the base, (2 from each anther, (fig. 2.) equal in length to the filaments. *Germen* (see figs. 3 & 4.) in all the florets fertile, oblong. *Style* (see figs. 3 & 4.) thread-shaped, cloven. *Stigmas* spreading, oblong, rather blunt. *Seed-vessel* none, but the unaltered calyx. *Seed* (see fig. 5, *a.*) linear, rounded, hairy. *Pappus* (see figs. 5, *b* & *c.*) sessile, double; *outer* one (*b*) short, cup-shaped, membranous, toothed; *inner* (*c.*) long, rough. *Receptacle* slightly cellular; cells fringed. *Flowers* yellow.

Distinguished from other genera, with radiant *flowers*, in the same class and order, by the narrow imbricated scales of the *involucrum;* the 2 bristles at the base of the *anthers;* and the double *pappus.* The last character will distinguish this from the genus *Inula.*

Two species British.

PULICA'RIA DYSENTE'RICA. Common Flea-bane. Herb Christopher.

SPEC. CHAR. Stem woolly, panicled. Leaves oblong, wrinkled, downy, clasping the stem by their heart-shaped or arrow-shaped base. Scales of the involucrum bristle-shaped, hairy.

Gray's Nat. Arr. v. ii. p. 463.—Lindl. Syn. p. 143.—Hook. Brit. Fl. p. 363.—Jacob's West Devon and Cornwall Flora.—Bab. Fl. Bath. p. 26.—*Inula dysentérica*, Linn. Sp. Pl. p. 1237.—Engl. Bot. t. 1115.—Curt. Fl. Lond. t. 164.—Huds. Fl. Angl. (2nd ed.) p. 368.—Sm. Fl. Brit. v. ii. p. 891. Engl. Fl. v. iii.

Fig. 1. Involucrum.—Fig. 2. A separate Stamen, showing the filament, and the anther with the two bristles at its base.—Fig. 3. A tubular Floret of the Disk, accompanied by its germen and pappus.—Fig. 4. A strap-shaped Floret of the Ray, ditto.—Fig. 5. A seed, crowned with the double pappus or proper calyx; *a*, the seed; *b*, the outer calyx; *c*, the inner ditto.

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* From *pulex, a flea;* an insect which this plant is supposed to drive away by its powerful smell. HOOKER.

† See f. 91, n. †. ‡ See f. 36, n. ‡. § See f. 27, a. || See f. 36, a.

p. 440.—With. (7th ed.) v. iii. p. 945.—Sibth. Fl. Oxon. p. 256—Abbot's Fl. Bedf. p. 184.—Purt. Midl. Fl. v. ii. p. 411.—Relh. Fl. Cantab. (3rd ed.) p. 345.—Davies' Welsh Bot. p. 79.—Hook. Fl. Scot. p. 245.—Fl. Devon. pp. 139 & 160. —Johnston's Fl. of Berw. v. i. p. 185.—Walk. Fl. of Oxf. p. 243.—Mack. Catal. of Pl. of Irel. p. 74.—*Conyza media*, Ray's Syn. p. 174.—Johnson's Gerarde, p. 482.

Localities.—In moist meadows and watery places; and by the sides of rivers, brooks, and ditches.—Not uncommon in most parts of England. It appears to be more rare in Scotland, as it is not noticed either in Lightfoot's *Flora Scotica*, or Dr. Greville's *Flora Edinensis;* and the only station given for it in Dr. Hooker's *Flora Scotica*, is, near the Mull-head of Galloway, where it was observed by Mr. Maughan.

Perennial.—Flowers from July to October.

Root creeping, whitish, about the thickness of a goose quill, with largish fibres. *Stem* upright, from 1 to 2 feet high, cylindrical, firm, solid, striated, cottony, leafy, more or less branched towards the top; branches nearly upright, and rising above the main stem. *Leaves* alternate, spreading, oblong or spear-shaped, pointed, veiny and wrinkled, obscurely toothed or serrated, sessile, clasping the stem by their heart-shaped, or arrow-shaped base, somewhat hairy, and of a dull green colour on the upper surface; cottony, and of a whitish colour on the under. *Flowers* yellow, terminating the stem and branches; solitary or two together, forming a kind of corymb. Scales of the *involucrum* or *common calyx* (fig. 1.) numerous, very narrow, awl-shaped, downy, frequently somewhat recurved at the point. *Bristles* at the base of the anthers very minute. *Seeds* (fig. 5.) inversely egg-shaped, bristly; crowned with a sessile, double *pappus* or *proper calyx*, (fig. 5, *b* & *c*.); the *outer* (*b*) very small, membranous, cup-shaped, and toothed; the *inner* (*c*) of a few simple, hair-like, rays, which are rough, and about the length of the tubular florets. *Receptacle* slightly cellular, unequally toothed, or scaly.

A variety with very short rays is noticed by Mr. Relhan, in *Flora Cantabrigiensis.*

"At the close of the year," says Mr. Curtis, "this plant contributes not a little to enliven and beautify the sides of our moist ditches; to the Farmer, it however affords no very pleasing spectacle when it overruns, as it frequently does, large tracts of land, and gives it a barren uncultivated appearance." *Fl. Lond.*

Ray observes, that the leaves, when bruised, smell like soap.—Rutty informs us, that the juice is saltish, and warms the mouth a little; that the decoction is somewhat acrid in the throat, at the same time astringent and turning green with vitriol of iron; that the infusion is somewhat astringent, very bitter in the throat, and turning black with vitriol of iron.

The Russian soldiers, in their expedition to Persia, under General Keit, were cured of the dysentery by the use of this plant; whence Linnæus gave it the specific name of *dysenterica;* see *Fl. Suecica*, p. 294. In this country it is seldom if ever employed. It is called by our old authors *Middle Flea-bane*, and was supposed by its smoke in burning to drive away fleas and gnats. Forskal says it is named in Arabic *Rara ejub*, or *Job's-tears*, from a notion that Job used a decoction of this herb to cure his ulcers. There are few, if any animals that will touch it.

M. Saussure kept a plant of *Pulicaria dysenterica* for six months in the vacuum of an air pump, without any sensible effect upon it. It was placed in the light, but not so as to receive the direct rays of the sun, to which, when it was exposed, it withered, even though the rays were feeble. It also grew equally well in an atmosphere of nitrogen gas, as in an atmosphere of common air, though the former entirely destroys life in most plants. See Keith's *Physiological Bot.* v. ii. pp. 51 & 62; and Jacob's *W. Dev. and Cornw. Fl.*

[illegible] (7th ed.) [illegible]
Bull. p. 164. Fuc. Mull. [illegible]
Hayes. Welsh Bot. p. 72.—Hook. [illegible]
[illegible] Engl. Bot. v. p. 180.—[illegible]
of Pl. of Irel. p. 74.—Conyers [illegible] Hay [illegible]
p. 482.

Localities.—In moist meadows [illegible]
rivers, brooks, and ditches.—Not [illegible]
pears to be more rare in Scotland, [illegible]
Flora Scotica, or in Dr. Greville's [illegible]
for it in the Hebrides. Society is [illegible] Gall [illegible]
where it was observed by [illegible]

Perennial.—Flowers from [illegible] October.

Root creeping, whitish, [illegible] the thickness [illegible] quill, with largish fibres. Stem upright, from 1 to 2 feet high, cylindrical, firm, solid, striated, [illegible] more or less branched towards the top; branch[illegible] rising above the main stem. Leaves al[illegible] or opposite, shaped pointed, very and wri[illegible] or secretion [illegible] clasping the stem by [illegible] or arrow-shaped, somewhat hairy, [illegible] colour on the upper [illegible] cotony, and of a [illegible] on the under. Flowers [illegible] terminating the stem and branches, solitary or two together, [illegible] ing a kind of verticil. Scales of the involucrum or [illegible] (fig. 1.) numerous, very narrow, awl-shaped, downy, [illegible] somewhat recurved at the point. Bristles at the base of the [illegible] very minute. Seeds (fig. 5.) inversely egg-shaped, [illegible] with a sessile, double pappus or proper calyx, (fig. 5, [illegible]) the outer (b) very small, membranous, cup-shaped, and [illegible] inner (c) of a few simple, hair-like, rays, which are [illegible] about the length of the tubular florets. Receptacle slightly [illegible] unequally notched, or scaly.

A variety with very [illegible] rays is noticed by Mr. [illegible] Flora Cantabrigiensis.

"At the [illegible]," says Mr. Curtis [illegible] a little [illegible] the sides of our [illegible] [illegible] speakable when [illegible] [illegible] given it a better [illegible]

"May observe, that the leaves, when bruised, smell [illegible] farina is that the juice is acrid, and warms the mouth [illegible] tion is somewhat acid in the throat, at the same time [illegible] green with vitriol of iron, that the infusion [illegible] in the throat, and turning black with vitriol of iron.

The Russian soldiers, in their campaign in Persia, [illegible] [illegible] cured of the dysentery by the use of this plant, [illegible] specific name of dysenterica, as Dr. Sims [illegible] seldom if ever employed. It is stated by [illegible] and was supposed by its smoke in burning to drive [illegible] [illegible] ear, as it is used in Arabic Africa, or [illegible] has used a decoction of the herb to cure the [illegible] [illegible] made that will touch it.

If, Surveying upon a plant of [illegible] [illegible] vacuum of an air pump, without any sensible [illegible] the light, but not so as to remove the other rays of [illegible] was completely withered, even though the reverse [illegible] well as an emplosion of a [illegible] gas, as in an [illegible] shows the Farmer merely destroys the [illegible] plants. [illegible] Rev. [illegible] "Gil. and Lawrie's N. Gen. and Compend.

Marrubium vulgáre. White Horehound. ♃

J.R. Del. Pub.d by W. Baxter Botanic Garden Oxford 1835 C. Mathews.

MARRU'BIUM*.

Linnean Class and Order. DIDYNA'MIA†, GYMNOSPE'RMIA‡.

Natural Order. LABIA'TÆ§, Juss. Gen. Pl. p. 110.—Sm. Gr. of Bot. p. 99. Engl. Fl. v. iii. p. 63.—Lindl. Syn. p. 196.; Introd. to Nat. Syst. of Bot. p. 239.—Bentham, in Bot. Regist. (1829).—Rich. by Macgill. p. 439.—Loud. Hort. Brit. p. 528.—VERTICILLATÆ of Linnæus.—SYRINGALES; subord. PRIMULOSÆ; sect. MENTHINÆ; type, MENTHACEÆ, or LABIATÆ; subtype, NEPETIDÆ; Burn. Outl of Bot. v. ii. p. 900, 958, 968, & 973.

GEN. CHAR. *Calyx* (figs. 1 & 2.) inferior, permanent, of 1 sepal, tubular, cylindrical, with 10 furrows; and 10, in some species only 5, narrow, spreading teeth; throat hairy. *Corolla* (figs. 3 & 4.) of 1 petal, ringent (gaping); tube cylindrical, a little longer than the calyx; limb spreading, 2-lipped; upper lip straight, narrow, and cloven; lower lip broadest, 3-lobed, middle lobe the largest and emarginate. *Filaments* (see fig. 3.) 4, 2 longer than the other 2, all much shorter than the corolla, and sheltered under the upper lip. *Anthers* small, oblong. *Germen* (fig. 5.) roundish, 4-lobed. *Style* (see fig. 3.) thread-shaped, as long as the stamens. *Stigma* (see fig. 3.) cloven, pointed. *Seeds* (fig. 6.) 4, elliptic-oblong, in the bottom of the hardened calyx, which is contracted at the orifice (see fig. 1).

Distinguished from other genera, in the same class and order, by the regular *calyx* with 10 furrows; and the straight, strap-shaped, cloven, upper lip of the *corolla*.

One species British.

MARRU'BIUM VULGA'RE. Common White Horehound||.

SPEC. CHAR. Stem upright. Leaves roundish egg-shaped, unequally toothed, wrinkled. Calyx with 10 bristle-shaped teeth, which are hooked backwards.

Engl. Bot. t. 410.—Woodv. Med. Bot. v. ii. p. 265. t. 97.—Stephenson and Churchill's Medical Botany, v. iii. t. 135.—Linn. Sp. Pl. p. 816.—Huds. Fl. Angl. (2nd ed.) p. 261.—Sm. Fl. Brit. v. ii. p. 636. Engl. Fl. v. iii. p. 103.—With. (7th ed.) v. iii. p. 717.—Gray's Nat. Arr. v. ii. p. 380.—Lindl. Syn. p. 201.—Hook. Brit. Fl. p. 279.—Lightf. Fl. Scot. v. i. p. 315.—Sibth. Fl. Oxon. p. 187.—Abbot's Fl. Bedf. p. 131.—Purt. Midl. Fl. v. i. p. 273.; and v. iii. p. 364.—Relh Fl. Cantab. (3rd ed.) p. 243.—Dav. Welsh Bot. p. 58.—Hook. Fl. Scot. p. 184.—Grev. Fl. Edin. p. 133.—Rev. G. E. Smith's Pl. of S. Kent, p. 32.—Fl. Devon. pp. 100 & 145.—Johnst. Fl. of Berw v. i. p. 133.—Walk. Fl. of Oxf. p. 169.—Thornton's Family Herbal, p. 573.—Perry's Pl. Varv. Selectæ, p. 50.—Mack. Catal. of Pl. of Irel. p. 56.—*Marrúbium album*, Ray's Syn. p. 239.

LOCALITIES.—In dry waste ground, on commons, and by road sides. Not common.—*Oxfordsh.* On Bullington Green: Dr. SIBTHORP. Marston-lane; and behind the Parks: Rev. R. WALKER. In Witney Churchyard; and at Handborough: Rev. Dr. MAVOR. On Oakley Common, scarce: G. WOODWARD, Esq. I have seen a few solitary plants in the neighbourhood of Oxford, by the side of the road going to Cowley; in the Gravel-pits at Yarnton; and on the side of the Abingdon road between Hinksey Toll-gate and the road to

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Figs. 1 & 2. The Calyx.—Fig. 4. Corolla.—Fig. 3. A vertical section of ditto, showing the stamens and pistil.—Fig. 5. Germen.—Fig. 6. A Seed.—*All, except* fig. 6, *magnified.*

* Name of doubtful origin; some say from a town so called in Italy. HOOKER.

† See *Lamium album*, folio 31, note †.

‡ See folio 31, note ‡, and also the 2nd page of the same folio.

§ See folio 86, a, and 94, a.

|| From the whiteness of the leaves; *hore* means in Saxon *white*. THORNTON.

Kennington, *Berks;* but they were, no doubt, escapes from gardens, and are, probably, not to be found in those places now: W. B.—*Berks;* About Appleton: Miss Hoskins. Near Sandhurst: Miss Delamotte.—*Beds.* Elstow, Cople, and Everton: Rev. C. Abbot.—*Cambridgesh.* Road sides, rubbish, &c.: Rev. R. Relhan.—*Devon;* Fields near Chudleigh; Ingsdon, near Ilsington; waste places at Marychurch: Rev. A. Neck, in Fl. Devon.—*Durham;* In the lane that leads from the Bearton to the Stanton road: John Hogg, Esq.—*Kent;* About Lydd, common: Rev. G. E. Smith. On Sheldwich Lees, near Feversham: E. Jacob, Esq.—*Lancash.* Near Southport: G. Crosfield, Esq.—*Northumberland;* On the Island at Hexham Bridge; on waste ground at Cullercoats; and on the rocks and links at Bamborough Castle: N. J. Winch, Esq.—*Notts;* "I found a few plants of it at the foot of Nottingham Castle Rock, facing Lenton, and about Basford, two miles from Nottingham; also in Colverton Lane, on the left hand coming from the Red Hill. This formerly grew very common about this town: but a certain Physician extolling its virtues to the skies, and recommending it almost in every case, especially to persons who had impaired their constitution by hard drinking, has set all the Ale Bibbers to work to root it out, insomuch that it is become very scarce." Dr. Deering.—*Warwicksh.* On the side of the turnpike road near Alcester Lodge; and near Bidford on the Alcester road, opposite Mr. Biddle's barn: T. Purton, Esq.—*Worcestersh.* Opposite to Crane's of Abberley, on the side of the road leading to Picket Rock, from Kidderminster: Mr. W. G. Perry, in Mag. of Nat. Hist. v. iv. p. 451.—*Yorksh.* Near Rotherham: Mr. L. Langley, ibid. v. ii. p. 270.—WALES. *Anglesey;* near Beaumares; at Penman; and near Newborough: Rev. H. Davies.—SCOTLAND. About Burnt-island, &c.: Lightfoot. Fisher-row and Guillon Links; and at Long Niddry, Edinburgh: Mr. Maughan. Inchcolm: Mr. Neill. Road-side near Warrender House: Dr. Greville.—IRELAND. In the *county of Wicklow:* Dr. Wade. Strand near Carrigaline: Mr. Drummond.

Perennial.—Flowers from June to September.

Root woody and fibrous. *Stem* bushy, from a foot to 18 inches high, branching from the bottom, square, leafy, clothed with fine down. *Leaves* opposite; lower ones roundish, on longish footstalks; upper ones nearly sessile, and somewhat egg-shaped, all of them wrinkled, veiny, crenate, and hoary. *Flowers* white, sessile, in dense convex whorls at the axillæ of the leaves. *Bracteas* small, bristle-shaped. *Calyx* (fig. 1.) tubular, cylindrical, furrowed, woolly, teeth rigid, spreading, recurved at the point; the 5 alternate ones rather the smallest; the inside at the bottom of the teeth fringed with soft hairs. Upper lip of the corolla (see f. 4.) straight, narrow, and deeply divided into 2 spear-shaped lobes; lower lip broader, reflexed, and 3-lobed, the middle lobe the largest, and slightly scolloped at the end. The 2 shorter filaments, according to Scopoli, are villose at top; but the 2 longer ones smooth. *Anthers* yellow, with a black substance in the middle.

The whole herb has a white or hoary appearance, a very bitter taste, and a not unpleasantly, aromatic smell. The active principles of this plant appear to be a bitter, extractive, volatile oil, and gallic acid. A tea prepared from it, sweetened with honey, is an excellent domestic medicine in coughs and obstructions of the lungs. It is seldom employed by medical men; but it is said, by Dr. Thomson, to have been of decided use in cases of consumption. "A drachm of the leaves in powder, or an ounce of the expressed juice, are commonly ordered for a dose. The infusion is made with one ounce of the dried leaves, and a pint of boiling water, and given in the quantity of a wine-glassful twice or thrice a day.—The nostrum sold as *Balsam of Horehound* consists, according to Paris, of infusion of horehound and liquorice root, with double the proportion of proof spirit or brandy; to which is added opium, camphor, benzoin, squills, oil of aniseed, and honey. A remedy for consumption forsooth!!" *Steph. & Church. Med. Bot.*

[illegible] Devon; but they were [illegible] probably, may to be found in these places now. H. B.—Brook [illegible] Devon.—Mere, Mere-sandhurst, Mere [illegible] and Wimbor; Rev. C. Anson.—Cambridge, Brook side, [illegible] Hawkes.—Dorset, Fields near Dorchester, Ingham [illegible] places at Milverchurch; Rev. A. Nicholson, M. Devon [illegible] that leads from the Barrow to the Sherborne road; John [illegible] About Lydd, common; Rev. G. E. Sayers. On Shadwell [illegible] ham; E. Jones, Esq.—Lancaster, near Southport; G. Cr[illegible] Northumberland; On the island of Holeham Bridge, on [illegible] Cullercoats; and on the rocks and bank at Hartlepool (Cullen [illegible] Esq.—Notts, "I found a few plants of it at the foot of Nottingham [illegible] nung Lenton, and about Bestord, two miles from Nottingham; [illegible] ton Lane, on the left hand coming from the Red Hill. This form [illegible] common about this town; but a certain Physician extolling it [illegible] elsewhere, and recommending it almost in every case, especially to [illegible] impaired their constitution by hard drinking, has set all the Ale [illegible] to not it out, insomuch that it is become very scarce." Dr. D[illegible] wrew. On the side of the turnpike road near Alcester Lodge; and [illegible] Alcester road, opposite Mr. Hitchman's barn; R. Pearson, [illegible] Opposite to Tunbridge Wells, on the side of Mr. H[illegible] road, from Kidderminster; Mr. W. O'Penny, in Stag, of Mr. H[illegible] Worcs.—Yorks, Near Hunderthwaite; Mr. L. Lawson, Dal. v. ii, p. 270 [illegible] Bingley; Rev. [illegible] at Tadmon; and near Newborough [illegible] Dam.—Scotland, [illegible] Inner-Island, &c. Inverness [illegible] and Cullion Inlet; [illegible] Ardlinglas; Mr. Brown [illegible] colm; Mr. Nicol, [illegible] Wrecker House; Dr. Dewar [illegible] EANIA. In the [illegible] Rocks; Dr. Wood; Strand near [illegible] Mr. Dunmore.

Perennial.—Flowers from June to September.

Root woody and fibrous. Stem bushy, from a foot to [illegible] high, branching from the bottom, square, leafy, clothed with down. Leaves opposite: lower ones rounded, on longish [illegible] upper ones nearly sessile, and somewhat egg-shaped, all [illegible] wrinkled, veiny, ovate, and hoary. Flowers whitish, [illegible] dense covers whorls at the axilla of the leaves. Flowers [illegible] bracts-shaped. Calyx (fig. 1) tubular, cylindrical, [illegible] woolly, teeth rigid, spreading, reversed, at the point; the [illegible] nate ones rather the smallest; the inside at the bottom of the [illegible] fringed with soft hairs. Upper lip of the corolla (see 2 [illegible] narrow, and deeply divided into 2 spear-shaped lobes; [illegible] broader, reflexed, and 3-lobed, the middle lobe the [illegible] slightly scollopped at the end. The 2 shorter filaments [illegible] to Scoteol, are villose at top; but the 2 longer [illegible] hairs yellow, with a black substance in the middle.

The whole herb has a white or hoary appearance, [illegible] taste, and a not unpleasantly aromatic smell. The [illegible] ple of this plant appear to be a bitter, extractive, volatile [illegible] gallic acid. A tea prepared from it, sweetened with honey, [illegible] excellent domestic medicine in coughs and obstructions [illegible] lungs. It is seldom employed by medical men; but it [illegible] Dr. Thomson, to have been of decided use in cases of [illegible] tion. A drachm of the leaves in powder, or an ounce of [illegible] pressed juice, are customarily ordered for a dose. The [illegible] made with one ounce of the dried leaves, and a pint [illegible] water, and given in the quantity of a wineglassful [illegible] a day.—The nosegum sold as Indian of Hor [illegible] consists of Parts, of infusion of ironbound and [illegible] [illegible] the [illegible] of [illegible] [illegible]

Pastinaca sativa Wild Parsnep. ♂

J. Reid

Pub.d by W. Baxter, Botanic Garden, Oxford 1836

C. Mathews Sc

PASTINA'CA*.

Linnean Class and Order. PENTA'NDRIA†, DIGY'NIA.

Natural Order. UMBELLI'FERÆ, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517. —UMBELLATÆ, *Linn.*—ROSALES; subtype, ANGELICIDÆ; Burn. Outl. of Bot. pp. 614 & 774.

GEN. CHAR. *Flowers* all regular, uniform, perfect, and generally prolific. *Calyx* nearly obsolete. *Corolla* (fig. 1.) of 5, roundish, entire, retuse pointed, involute petals. *Filaments* (see f. 1 & 2.) 5, thread-shaped, spreading, about the length of the petals. *Anthers* roundish. *Germen* (see fig. 2.) inferior, egg-shaped, compressed transversely, obscurely striated. *Styles* in the flower very short, upright; subsequently spreading, recurved, moderately elongated; greatly dilated, rather depressed at the base, and confluent with the broad, round, wavy, rather thin, *floral receptacle*. *Stigmas* capitate. *Fruit* (fig. 3.) much compressed at the back, with a broad flat border. *Carpels (seeds* of Linn.*)* (figs. 4 & 5.) with very slender *ridges*, the 3 dorsal ones equidistant, the 2 lateral ones remote, contiguous to the dilated border. *Interstices (channels)* with single *vittæ*. *Seed* flat. *Universal* and *partial Involucrums* none, or of few leaves. *Flowers* yellow.

The roundish, entire, equal, involute, retuse *petals;* the dorsally compressed *fruit* with a broad flat border; the *carpels* with 3 very slender *ridges*, the 3 dorsal ones equidistant, the 2 lateral ones remote, contiguous to the border; and the *channels* with single filiform *vittæ;* will distinguish this from other genera in the same class and order.

One species British.

PASTINA'CA SATIVA. Common Parsnep. Wild Parsnep.

SPEC. CHAR. Leaves simply pinnate; downy beneath; leaflets egg-shaped, cut and serrated, terminal one 3-lobed.

Engl. Bot. t. 556.—Mart. Fl. Rust. t. 83.—Linn. Sp. Pl. p 376.—Sm. Fl. Brit. v. i. p. 328. Engl. Fl. v. ii. p. 101.—With. (7th ed.) v. ii. p. 391.—Gray's Nat. Arr. v. ii p. 523.—Lind. Syn. p. 116.—Hook. Brit. Fl. p. 118.—Relh. Fl. Cant. (3rd ed.) p. 124.—Winch's Fl. of Northumb. and Durham, p. 20.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 338.—Walk. Fl. of Oxf. p. 84.—Bab. Fl. Bath. p. 20.—Curt. Brit. Entomol. vol. v. t. 221.—Mack. Catal. of Pl. of Irel. p. 30.—*Pastinâca sylvestris,* Huds. Fl. Angl. (2nd ed.) p. 125.—Sibth. Fl. Oxon. p. 101.—Abbot's Fl. Bedf. p. 67.—Purt. Midl. Fl. v. i. p. 156.—*Pastinâca sylvestris latifolia,* Ray's Syn. p. 206.—Johnson's Gerarde, p. 1025.

LOCALITIES.—On the borders of fields, hillocks, and dry banks, in a chalky or limestone soil. Not uncommon in some parts of England, rare in others.—*Oxfordsh.* Very plentiful by road-sides, and on the borders of fields, almost every where in the neighbourhood of Oxford; and about Upper Heyford: W. B.—*Bedfordsh.* Common: Rev. C. ABBOT.—*Cambridgesh.* About Cambridge: Rev. R. RELHAN.—*Devon;* Waste ground near Plymouth: H. WATSON, Esq.

Fig. 1. The Corolla.—Fig. 2. The Germen and Stamens.—Fig. 3. The unripe fruit.—Fig. 4. The 2 Carpels, which formed the fruit, separated, and suspended by the central, thread-shaped, 2-parted column or axis.—Fig. 5. A Carpel cut through transversely.—*All, except* figs. 3 & 4, *slightly magnified.*

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* From *pastus, food.* HOOKER. † See *Anchusa sempervirens,* f. 48, n. †.

in New Bot. Guide.—*Durham;* In the Magnesian Limestone district, abundant, especially near the coast: its most northern locality: N. J. Winch, Esq.—*Essex;* Abundant in this county: New Bot. Guide.—*Gloucestersh.* Near Bristol: Miss Worsley, in New Bot. Guide.—*Kent;* Longton Green: Fl. Tonb.—*South Kent*: Rev. G. E. Smith.—*Lancash.* Southport: G Crosfield, Esq.—*Leicestersh.*—About Glenfield, and Charnwood Forest: Rev. A. Bloxam.—*Norfolk;* Stow Bridge; abundant near the river: Miss Bell, in N. B. G.—*Northumberland;* In the Magnesian Limestone district, abundant, especially near the coast: N. J. Winch, Esq.—*Notts;* About Nottingham, but not common: Dr. Deering.—*Somersetsh.* Common about Bath: Rev. C. C. Babington.—*Suffolk;* Near Bungay: Mr. Stock, in N. B. G.—*Surrey;* Thames side, opposite to Hampton and Sunbury: H. Watson, Esq. in N. B. G.—In *Sussex;* Rev. G. E. Smith, in N. B. G.—*Warwicksh.* Common: T. Purton, Esq. Side of the road between Rugby and Newbold, near Mr. Walker's plantations. In Lawford Lane, beyond the brook. Very abundant by the side of the canal near the bridge going from Rugby to Barby: W. B.—*Wilts;* Near Great Bedwyn: W. Bartlett, Esq.—*Worcestersh.* Very abundant on the red marl: Mr. Lees, in N. B. G. Road-side near Stoughton; Battenhall; Cracombe, &c.: N. B. G.—*Yorksh.* Richmond: Mr. Ward, in N. B. G.—IRELAND. Fields at Beldrummond, near the Man of War: Mr. J. T. Mackay.

Biennial.—Flowers in June, July, and August.

Root simple, spindle-shaped, whitish, aromatic, mucilaginous, and sweet, with a degree of acrimony. *Stem* from 2 to 3 or 4 feet high, upright, angular, deeply furrowed, hollow, roughish, leafy. *Leaves* alternate, oblong, pinnate; *leaflets* from 3 or 5 to 9, opposite, egg-shaped, serrated and cut, bright green, downy on the under surface; sometimes on the upper also; the terminal leaflet 3-lobed. *Umbels* terminating the stem and branches, upright, of from 6 to 12 or more unequal, angular, downy rays; *partial umbels* of more numerous rays. There is occasionally a solitary, small, spear-shaped *bractea* under the *general*, as well as the *partial umbels*, but they are usually both naked. *Flowers* yellow, small; the innermost ones of the umbel frequently abortive. *Fruit* large, of a paleish brown colour when quite ripe.

It is a native of other parts of Europe as well as of Britain, even to Caucasus; and also of some parts of both N. and S. America.

The Garden Parsnep is a variety of this, which has been much improved by cultivation; it has smooth leaves, of a light yellowish-green colour, in which it differs from the wild plant, the leaves of which are downy and dark green; the roots also are thick and fleshy, and have a much milder taste. The Parsnep has long been an inmate of the garden, and was formerly much used. In Catholic times it was a famous Lent root, being eaten with salted fish. "In the North of Scotland," Mr. Neill observes, "Parsneps are often beat up with potatoes and a little butter; of this excellent mess the children of the peasantry are very fond, and they do not fail to thrive upon it. In the North of Ireland a pleasant beverage is prepared from the roots, brewed along with hops. Parsnep wine is also made in some places; (a receipt for making of which may be seen in Baxter's *Lib. of Agricul. & Horticul. Knowl,*) and they afford an excellent ardent spirit when distilled after a similar preparatory process to that bestowed on potatoes, destined for that purpose."—Gerarde says, that a very good bread was made from them in his time.—The Parsnep has been partially introduced of late years as a field plant, and is nearly equal to the carrot in its product of nutritive and saccharine matter. In the fattening of cattle it is found equal, if not superior, to the carrot, performing the business with as much expedition, and affording meat of exquisite flavour, and a highly juicy quality. Indeed, the result of experiment has shown, that not only in neat cattle, but in the fattening of hogs and poultry, the animals become fat much sooner, and are more bulky than when fed with any other root or vegetable. See Loudon's *Encycl. of Gard.* 1st ed. parag. 1324.; and Don's *Gen. Syst. of Gard. & Bot.* v. iii. p. 338.—The seeds of the Parsnep contain an essential oil, and will often cure intermittent fevers. Withering.

Vicia sylvatica. Wood Vetch. ♃

W. Bidwell Esq.r Del.t Pub.d by W. Baxter, Botanic Garden, Oxford 1836 C. Mathews Sc

VI'CIA*.

Linnean Class and Order. DIADE'LPHIA†, DECA'NDRIA.

Natural Order. LEGUMINO'SÆ, Juss. Gen. Pl. p. 345.—Sm. Gram. of Bot. p. 174.—Lindl. Syn. p. 75; Introd. to Nat. Syst. p. 87.—Rich. by Macgilliv. p. 532.—Sm. Engl. Fl. v. iii. p. 259.—Loud. Hort. Brit. p. 509.—PAPILIONA'CEÆ‡ of *Linn.*—ROSALES; subty. VICIDÆ, Burn. Outl. of Bot. v. ii. pp. 614 & 661.

GEN. CHAR. *Calyx* (fig. 1.) inferior, tubular, unequal, with 5 acute segments; the 2 uppermost shortest, approaching, all equal in breadth. *Corolla* (fig. 2.) butterfly-shaped, of 5 petals; standard (fig. 3.) largest, oval, ascending, with a broad claw, the sides deflexed, the back somewhat keeled; wings (fig. 4.) 2, oblong, converging, shorter than the standard, with narrow claws; keel (fig. 5.) rounded, compressed, of 2 united petals, with separate claws. *Filaments* (fig. 6.) 10, 9 united into a compressed tube, open at the upper edge; the tenth hair-like, quite distinct, closing the fissure. *Anthers* small, roundish. *Germen* (fig. 7.) strap-shaped, compressed. *Style* (see figs. 7 & 8.) short, cylindrical, bent upwards at a right angle. *Stigma* (see fig. 8.) blunt, with a tuft of hair below the summit. *Legume (pod)* (fig. 9.) oblong, more or less compressed, pointed, of 1 cell, and 2 coriaceous (leathery) rather rigid valves. *Seeds* (fig. 10.) several, roundish, or angular, with an oval or strap-shaped, lateral hilum.

Distinguished from other genera, in the same class and order, by the *style* being bent at right angles with the germen, and hairy on both sides below the *stigma.*

Ten species British.

VI'CIA SYLVA'TICA. Wood Vetch.

SPEC. CHAR. Plant smooth. Leaflets numerous, elliptic-oblong, mucronate. Stipulas binate, deeply toothed at the base. Peduncles longer than the leaves, many-flowered.

Engl. Bot. t. 79.—Linn. Sp. Pl. p. 1035.—Huds. Fl. Angl. (2nd ed.) p. 318.—Sm. Fl. Brit. v. ii. p. 768. Eng Fl. v. iii. p. 279.—With. (7th ed.) v. iii. p. 841.—Gray's Nat. Arr. v. ii. p. 614.—Lindl. Syn. p. 84.—Hook. Brit. Fl. p. 322.—Lightf. Fl. Scot. v. i. p. 393.—Sibth. Fl. Oxon. p. 223.—Abb. Fl. Bedf. p. 157.—Purt. Midl. Fl. v. ii. p. 742.; and v. iii. p. 371.—Relh. Fl. Cant. (3rd ed.) p. 293.—Dav. Welsh Bot. p. 70.—Hook. Fl. Scot. p. 214.—Grev. Fl. Edin. p. 157.—Fl. Devon. pp. 121 & 174.—Johnst. Fl. Berw. v. i. p. 160.—Rev. G. E. Smith's Pl. of S. Kent, p. 40.—Winch's Fl. of Northum. and Durham, p. 48.—Walk. Fl. of Oxf. p. 208.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 316.—Curt. Br. Ent. v. x. t 455!—Bab. Fl. Bath. p. 13.—Mack. Catal. of Pl. of Irel. p. 66.—*Vicia sylvatica multiflora maxima,* Ray's Syn. p. 322.

LOCALITIES.—In woods, thickets, and hedges; most frequent in the North and North-west of England, more rare in the South.—*Oxfordsh.* Medley Grove: Dr. SIBTHORP. Hedges by the road-side going from Burford to Wychwood Forest,

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Fig. 1. The Calyx.—Fig. 2. The Corolla.—Fig. 3. The Standard.—Fig. 4. The Wings.—Fig. 5. The Keel.—Fig. 6. Stamens and Pistil.—Fig. 7. Germen, Style, and Stigma.—Fig. 8. Style and Stigma, *magnified.*—Fig. 9. Legume.—Fig. 10. A Seed.—Fig. 11. Stipula.

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* Said to be from *vincio, to bind together;* because the species have tendrils, by which they bind other plants. DON.

† See *Spartium scoparium,* folio 77, note †.

‡ See *Lathyrus latifolius,* folio 117, note ‡.

between Fulbrook and the Hit or Miss public house: W. B. Lees Rest Wood; Wood at Coombe Mill: G. Coles, Esq.—*Berks;* Tubney Wood, and Appleton Common: Miss Hoskins. In Merley Wood, near Witham: Mr. J. Lyons.—*Bedfordsh.* Sheerhatch Wood; Eversholt: Rev. C. Abbot.—*Cambridgesh.* Hall Wood; Wood Ditton: Rev. Mr. Hemsted.—*Cumberland;* Culgaith Woods, by Eden; and Keswick: Hutchinson. At Gamblesby: Mr. P. Harrison. Isell Woods: R. J. Dodd.—*Derbysh.* Hedges behind Matlock Bath: Dr. Smith. Near Ashbourne: Rev. W. T. Bree.—*Devon.* Limestone Rocks near Kingsteignton; hedges at Watermouth, near Ilfracombe; Cockington Wood; and near Marychurch: Rev. A. Neck, in *Fl. Dev.*—*Dorsetsh.* In a hedge going down Stoke Hill, from Bull-barrow; and in several other places: Dr. Pulteney.—*Durham;* In woods near Barnard-castle and Whorlton; in Stotley Gill near Eglestone; in Castle Eden Dene; on rocks by the Tyne above Hebburn, and in the wood opposite St. Peter's Quay: N. J. Winch, Esq. In Cat Dene above Bill Quay, on the Tyne: Mr. J. Thornhill, jun. By Bolts Bourn near Stanhope-in-Weardale: W. C. Trevelyan, Esq. In Pella Wood, by the Wear, near Durham: Wilson's *Syn.* p. 203.—*Gloucestersh.* In the Park at Cirencester, not far from the Wood House; in a wood near Edgeworth, close to a rivulet in the valley between that village and Pinbury Park Bottom; also in Star Wood: July, 1835, W. B.—*Hampsh.* In a wood near the East Turnpike at Appleshaw: W. Borrer, Esq.—*Herefordsh.* In a wood near Ledbury: Mr. E. Lees.—*Kent;* Between Lyminge and Elham: Rev. R. Price. Near Dover: Rev. W. T. Bree.—*Lancash.* Woods on a limestone soil about Newton Cartmel: Mr. Robinson.—*Northumb.* In woods near Hexham; in Ramshaw and Tecket woods on North Tyne; and on the banks of Irthing near Wardrew Spaw: N. J. Winch, Esq. In Roddam Dene: W. C. Trevelyan, Esq. In the Rectory Wood by the brook at Simonburn: Wallis. On the banks of the Tweed beyond Ord Mill: Dr. Thompson. In the hedge of the wood between Hawk's Hill and the waggon-way near Alnwick: Mr. F. Manisty. In Callas Wood: Miss Pringle. In Cauldedge Park: Miss Forster.—*Shropsh.* Shelton Bank; and Berwick Wood: Dr. Evans. In a wood near Bridgenorth: H. Bidwell, Esq. Near Faintree: Miss Purton.—*Somerset;* Woods at Hampton, Warley, Inglishcombe, Wolley, &c.; also in Smallcombe Wood: Rev. C. C. Babington. Lanes about Brislington and Stockwood, near Bristol: Dr. Withering.—*Staffordsh.* Tatenhill: Mrs. Acland.—*Warwicksh.* Bentley Park: Rev. W. T. Bree.—*Westmorland;* Near Orton: Mr. Woodward. Foot of the bridge at Kirby Londsdale: D. Turner, Esq.—*Wilts;* About Devizes: E. Duke, Esq. Near Gr. Bedwyn: W. Bartlett, Esq.—*Worcestersh.* On Bredon Hill: Nash. In the Devil's Den, Clifton-on-Teme, and in a wood near the Spout, Malvern. At Lower Sapey: Mr. E. Lees. In Wassel Wood, near Bewdley: Mr. G. W. Perry.—*Yorksh.* Slingsby Wood; Coneysthorp Banks near Castle Howard; woods about Greta Bridge; Hovingham Woods; Scarborough: and near Hutton Moor: *Bot. Guide.*—In many parts of WALES, SCOTLAND, and IRELAND.

Perennial.—Flowers in July and August.

Root creeping. *Stems* numerous, very much branched, furrowed, angular, 5 or 6 feet high or more, climbing. *Leaves* smooth, very numerous; leaflets light green, sessile, alternate or opposite, from 5 to 8, or 10 pair; petiole ending in a branched tendril. *Stipulas* in pairs, small, fringed with numerous slender teeth. *Peduncles* longer than the leaves, 4-angled, scored, upright. *Flowers* numerous, racemous, on the upper part of the peduncle, pendulus, growing irregularly, mostly in twos or threes, with interruptions; *pedicels* short, hairy. *Calyx* somewhat bell-shaped, with unequal awl-shaped teeth. *Corolla* rather large, whitish, beautifully veined and streaked with blue. *Legume* about an inch long, bright brown, smooth, minutely dotted. *Seeds* about 4, roundish, with a strap-shaped hilum.

Some useful and very interesting remarks and observations relating to this plant, by the Rev. Mr. Bree, may be seen in the fifth vol. of Mr. Loudon's *Mag. of Nat. Hist.* p. 198.—I am indebted to H. Bidwell, Esq. of Albrighton, Salop, for the drawing from which the accompanying engraving was made.

SERRÁTULA TINCTÓRIA. COMMON SAW-WORT. ♃.

Purnell del.[t] Pub.[d] by W. Baxter Botanic Garden Oxford. 1836. W. sc.

SERRA'TULA*.

Linnean Class & Order. SYNGENE'SIA†, POLYGA'MIA, ÆQUALIS‡.

Natural Order. COMPO'SITÆ§; tribe, CYNAROCEPHALÆ, *Juss.* —Lindl. Syn. pp. 140 & 152; Introd. to Nat. Syst. of Bot. pp. 197 & 200.—COMPO'SITÆ; subord. CARDUA'CEÆ; Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CYNAROCEPHALÆ; Rich. by Macgilliv. pp. 454 & 455.—CINAROCEPHALÆ, sect. 2. Juss. Gen. Pl. pp. 171 & 173.—Sm. Gram. of Bot. pp. 121. Engl. Fl. v. iii. p. 334.—SYRINGA'LES; type, CYNARACEÆ; Burn. Outl. of Bot. pp. 900 & 931.—COMPO'SITÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) oblong, nearly cylindrical, imbricated, of numerous, spear-shaped, unarmed, permanent scales. *Corolla* compound, uniform; *florets* (see fig. 2.) numerous, perfect, equal, tubular, funnel-shaped, the limb divided into 5 deep, equal segments. *Filaments* 5, hair-like, very short. *Anthers* united into a cylindrical tube, as long as the florets. *Germen* (see fig. 2.) inversely egg-shaped. *Style* (see figs. 2 & 3.) thread-shaped, as long as the stamens. *Stigmas* oblong, reflexed. *Seed* (fig. 5.) inversely egg-shaped, somewhat angular. *Pappus* (fig. 5.) sessile, rough (see fig. 6.) or feathery, permanent. *Receptacle* (see fig. 4.) chaffy or hairy, flat.

Distinguished from other genera, with the florets all tubular, in the same class and order, by the oblong *involucrum* of numerous, imbricated, unarmed scales; the rough, nearly equal *pappus;* and the chaffy or hairy *receptacle.*

One species British.

SERRA'TULA TINCTO'RIA. Common Saw-wort.

SPEC. CHAR. Leaves pinnatifid, finely serrated. Outer scales of the involucrum egg-shaped, appressed; inner ones (fig. 4.) strap-shaped, coloured.

Engl. Bot. t. 38.—Linn. Sp. Pl. 1144.—Huds. Fl. Angl. (2nd ed.) p. 349.—Sm. Fl. Brit. v. ii. p. 845. Engl. Fl. v. iii. p. 382.—With. (7th ed.) v. iii. p 907. —Gray's Nat. Arr. v. ii. p. 435.—Lindl. Syn. p. 154.—Hook. Br. Fl. p. 349.—Lightf. Fl. Scot. v. i. p. 447.—Sibth. Fl. Oxon. p. 243.—Abbot's Fl. Bedf. p. 174.—Purt. Midl. Fl. v. ii. p. 383.—Relh. Fl. Cantab. (3rd ed.) p. 328.—Davies' Welsh Bot. p. 75.—Hook. Fl. Scot. p. 235.—Fl. Devon. pp. 132 & 156.—Walk. Fl. of Oxf. p. 229.—Winch's Fl. of North. and Durham, p. 52.—Curt. Br. Ent. v. iv. t. 183. Bab. Fl. Bath. p. 27.—Mack. Catal. of Pl. of Irel. p. 71.—*Serratula,* Ray's Syn. p. 196.—Johnson's Gerarde, p. 713.

LOCALITIES.—In woods and thickets, also on heaths, and in grassy pastures. Frequent in most counties in England; more rare in Scotland.—*Oxfordsh.* By the side of the foot-path between Bullington Green and Shotover Hill; in Headington Wick Copse; and in woods near Begbrook: W. B.—*Berks;* In Cumnor Meadow, in great abundance: W. B.—*Bedfordsh.* Common: Rev. C. ABBOT.—*Cambridgesh.* Madingley, Eversden, and Kingston Woods: Rev. R. RELHAN.

Fig. 1. Involucrum.—Fig. 2. A Floret.—Fig. 3. Ditto.—Fig. 4. The Involucrum and Receptacle after the seeds had escaped.—Fig. 5. A Seed, crowned with the sessile, simple, rough pappus.—Fig. 6. Part of one of the Rays of the Pappus.—Fig. 7. A separate scale of the Receptacle.—Figs. 2, 6, & 7, *more or less magnified.*

* From *serrula, a little saw,* which the margins of the leaves represent. HOOKER. † See *Tussilago farfara,* folio 91, note †.

‡ See *Sonchus oleraceus,* f. 147, n. ‡. § See *Prenanthes muralis,* f. 27, a.

—*Cornwall;* On the Goonhilly Downs, near Helstone: Rev. J. P. Jones, in Bot. Tour.—*Devon;* Chudleigh, Bovey, Heathfield, Ashburton, Holm Chase, Ilsington, Marychurch, &c.: Fl. Devon.—*Durham;* On Cleadon Hills; on the sea coast near Whitburn; on hedge banks near Hilton Ferry; at Hamsterley; and near Winch Bridge: Teesdale.—*Essex;* Near Woodford: Warner. —*Gloucestersh.* In Oakley Woods, near Cirencester; woods near Chedworth, and Withington: W. B.—*Kent;* Near the late Decoy Ponds at Graveney, near Feversham: E. Jacob, Esq.—*Lancash.* Dingle, near Liverpool: G. Crosfield, Esq.—*Leicestersh.* Woods near Grooby Pool: Rev. A. Bloxam, in Mag. of Nat. Hist. v. iii. p. 167.—*Northumberland;* Near Norton: J. Hogg, Esq. In fields near Walker; and at West Dipton near Hexham: Wallis.—*Notts;* Near Nottingham, in the hollow without the gate opening towards Radford Lings coming from Larkdale: Dr. Deering.—*Somersetsh.* Below Smallcombe Wood; at Conkwell, Warley, Combe Down, and between Wraxhall and the Horse and Jockey: Rev. C. C. Babington.—*Surrey:* In a wood near Dulwich: Mag. Nat. Hist.—*Warwicksh.* Woods and fields, common: Mr. Purton. Near Rugby: Rev. A. Bloxam.—*Wilts;* Near Great Bedwyn: W. Bartlett, Esq.—*Worcestersh.* Borders of Perry and Nunnery Woods, &c. Abundant on the bank at Rainbow Hill, previous to the alteration of the road: Mr. Edwin Lees, in *Illust. of the Nat. Hist. of Worcestershire.* ‖—*Yorksh.* Near Richmond: Loudon's Mag. Nat. Hist. v. iv. p. 72.—WALES. In the Isle of *Anglesey;* Rev. H. Davies.—SCOTLAND. Woods and wet pastures, but not common: Lightfoot.—Banks of the Clyde between Daldowie and Bothwell: Hopkirk. Sea-shore near the mouth of the Dee; Galloway; and between the Nunnery and Senwick, in the parish of Borgue: Dr. Walker.—IRELAND. Cliffs at Brandon, *county of Kerry,* 1834, J. T. Mackay.

Perennial.—Flowers from July to September.

Root somewhat woody. *Stem* upright, straight, from 2 to 3 feet high or more, leafy, angular, furrowed, smooth, solid, often reddish, not branched, except at the summit. *Leaves* alternate, half stem-clasping, lyrate or variously pinnatifid (wing-cleft), sometimes entire, always sharply toothed or serrated, usually smooth, but occasionally downy on the under side. *Flowers* corymbose, of a reddish purple colour, sometimes white. *Involucrum* (fig. 1.) nearly cylindrical, closely tiled, smooth; its scales somewhat coloured, and downy at the edges, inner ones gradually longer. *Seeds* striated. *Pappus* shorter than the florets, bristly, unequal, yellowish, rough with short pointed teeth, not feathery. *Receptacle* with long chaffy scales, which are twisted when dry, see fig. 7.

Whole plant firm, rigid, and hard to the touch, but not prickly. Linnæus says, it is much used in Sweden as a yellow dye for coarse woollen cloths; and Haller records, on the authority of some foreign writers, that the above colour, fixed by means of alum, is both beautiful and permanent, and with the addition of blue, makes a better green than either *Reseda luteola,* or *Genista tinctoria,* for dying wool or silk. Goats eat this plant; horses are not fond of it; sheep, swine, and cows refuse it.

A small, dark browo, fungus (*Puccinia compositarum,* Hook. Brit. Fl. v. ii. pt. ii. p. 365?) is parasitic on the leaves of this plant in the Oxford Bot. Garden.

The Rev. R. Bree, Mr. (now Dr.) Brown, and the late Mr. Smith, have observed the flowers of this species to be in effect diœcious, those on one plant having imperfect anthers; those on another abortive stigmas. Sm. Engl. Fl.—See also Tr. of Linn. Soc. v. xii. p. 123. and v. xiii. p. 593.

‖ "*Illustrations of the Nat. Hist. of Worcestershire,* with information on the Statistics, Zoology, and Geology of the County; including also a short account of its Mineral Waters; by Charles Hastings, M. D. Published at the request of the Council of the Worcestershire Natural History Society. London: published by Sherwood, Gilbert, and Piper; and Lees, Worcester; 1834." An excellent little work, abounding in useful and interesting information in every branch of Natural History. To such Botanical and Entomological Students, who may be residing in, or visiting Worcester and its neighbourhood, it will be found of very essential service, as it contains a perfect list of all "the most remarkable and interesting plants indigenous to Worcestershire, with their Habitats." Also a list of the more rare and beautiful Lepidopterous Insects of the county. These lists were contributed to the work by an excellent and indefatigable Entomologist and Botanist, Mr. Edwin Lees, F. L. S., &c.

Agrostémma Githágo. Corn Cockle. ☉

I.R. Del. Pub.d by W. Baxter Botanic Garden Oxford. 1835. C. Mathews. Sc.

AGROSTE'MMA*.

Linnean Class and Order. DECA'NDRIA†, PENTAGY'NIA.

Natural Order. CARYOPHY'LLEÆ‡, *Linn.*—Juss. Gen. Pl. p. 299.—Sm. Gram. of Bot. p. 159.—Lindl. Syn. p. 43. Introd. to Nat. Syst. of Bot. p. 156.—Rich. by Macgilliv. p. 507.—Loud. Hort. Br. p. 501.—ROSALES; subord. RHŒADOSÆ; sect. DIANTHINÆ; type, DIANTHACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 784, 805, and 807.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, tubular, coriaceous, strongly ribbed, with 5 teeth, permanent. *Corolla* (fig. 2.) of 5 petals, with a spreading, obtuse border, and narrow claws, as long as the tube of the calyx. *Filaments* (fig. 3.) 10, awl-shaped; 5 shorter than the rest, attached to the claws of the petals. *Anthers* simple, oblong, notched at each end. *Germen* (see fig. 4.) superior, egg-shaped. *Styles* (see fig. 4.) 5, thread-shaped, upright, as long as the stamens. *Stigmas* slender, downy. *Capsule* (figs. 5 and 6.) oblong-egg-shaped, of 1 cell, and 5 rigid valves, more or less combined below, covered by the hardened, permanent calyx. *Seeds* (see figs. 6 & 7.) numerous, kidney-shaped, granulated, stalked, attached to the unconnected central column. (GITHA'GO of *Don's Gen. Syst. of Gard. and Bot.*)

The 1-celled *capsule;* and tubular, coriaceous (leathery) *calyx*, with 5 long, leafy segments; will distinguish this from other genera in the same class and order.

One species British.

AGROSTE'MMA GITHA'GO§. Corn Cockle. Corn Campion. Wild Nigella.

SPEC. CHAR. Plant hairy. Stem upright, forked. Leaves strap-spear-shaped. Petals undivided, without teeth. Segments of the calyx rising above the corolla.

Engl. Bot. t. 741.—Curt. Fl. Lond. t. 209.—Linn. Sp. Pl. p 624.—Huds. Fl. Angl. (2nd ed.) p. 198.—Sm. Fl. Brit. v. ii. p. 493.—Engl. Fl. v. ii. p. 325.—With. (7th ed.) v. ii. p. 562.—Mart. Fl. Rust. t. 105.—Lindl. Syn. p. 47.—Hook. Brit. Fl. p. 212.—Lightf. Fl. Scot. v. i. p. 238.—Sibth Fl. Oxon. p. 145.—Abb. Fl. Bedf. p. 100.—Purt. Midl. Fl. v. i. p. 224.—Relh. Fl. Cant. (3rd ed.) p. 183.—Davies' Welsh Bot. p. 43.—Hook. Fl. Scot. p. 141.—Grev. Fl. Edin. p. 101.—Fl. Devon. pp. 77 & 182.—Johnst. Fl. of Berw. v. i. p. 101.—Winch's Fl. of Northumb. and Durham, p. 30.—Walk. Fl. of Oxf. p. 128.—Mack. Catal of Pl. of Irel. p. 45.—*Lychnis Githago*, Decand. Fl. Gall. p. 392 —Bab. Fl. Bath. p. 7.—*Ly'chnis ségetum*, Gray's Nat. Arr. v. ii. p. 650.—*Githágo ségetum*, Don's Gen. Syst. of Gard. and Bot. v. i. p. 417.—*Ly'chnis ségetum major*, Ray's Syn. p. 338.—*Pseudomelanthium*, Johnson's Gerarde, p. 1087.

LOCALITIES.—In corn-fields. Very commou.

Fig. 1. Calyx.—Fig. 2 Corolla.—Fig. 3. A Petal, and 2 of the Stamens.—Fig. 4. Germen and Pistils.—Fig. 5. Capsule.—Fig. 6. Capsule divided vertically, showing the seeds and their receptacle.—Fig. 7. A Seed.

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* From *agros*, Gr. *field*, and *stemma*, Gr. *ornament;* from the beauty of its flowers, which are (in the British species) a great ornament to the corn-fields.

† See *saponaria officinales*, f. 37, n. †. ‡ See *Buffonia annua*, f. 152, a.

§ From *gith* or *git*, a black aromatic seed, which was employed in the kitchens of the Romans. The seeds of the *Nigélla satíva*, which those of *Githágo* much resemble. *Ago*, in Botany, when it terminates a word, usually signifies resemblance with the word which precedes it, as *gith* and *ago*, resembling *gith*. DON.

Annual.—Flowers in June and July.

Root tapering. *Stem* 2 or 3 feet high, round, branched, leafy, and, like every other part of the plant, clothed with upright hoary hairs. *Leaves* sessile, opposite, joined at the base, strap-spear-shaped, keeled. *Flowers* large and handsome, on upright stalks. *Calyx* 10-ribbed, very hairy, with 5 long, strap-shaped, smoother teeth or segments. *Petals* (fig. 3.) large, undivided, destitute of a crown, inversely heart-shaped, light purple, with bluish streaks; the claw somewhat strap-shaped, and nearly as long as the limb. *Germen* smooth. *Styles* hairy. *Capsule* almost the size of an acorn, covered with its dried calyx, the mouth opening with 5 teeth. *Seeds* large, black, somewhat inversely egg-shaped, compressed, each on a pedicel or stalk, springing from a common receptacle, see fig. 6.

This is a very troublesome weed, and is too common in corn-fields; it should be eradicated by hand before it comes into flower. The seeds are large and heavy, and their black husks, when mixed with wheat, breaking so fine as to pass the boulters, renders the flour specky. They are, therefore, obnoxious to the millers, and depreciate the sample of corn.

GERARDE says, "What hurt it doth among corne, the spoyle vnto bread, as well in colour, taste, and vnwholesomnes, is better known than desired."

It is said sometimes to occur with a white flower.

The *Natural Order* CARYOPHY'LLEÆ (see the 2nd page of folio 152) is divided into two *Tribes*, namely, SILE'NEÆ and ALSI'NEÆ.

Tribe I. SILE'NEÆ (plants agreeing with *Silène*, in having a tubular calyx). This *tribe* comprehends all those CARYOPHY'LLEÆ which have their sepals united into a cylindriral or bell-shaped tube, with 4 or 5 teeth at the apex; to this belong the following British Genera.

1. DIA'NTHUS, t. 81.
2. SAPONA RIA, t. 37.
3. SILE'NE, t. 120.
4. LY'CHNIS, t. 71.
5. AGROSTE'MMA, t. 175.

Tribe II. ALSI'NEÆ (plants agreeing with *Alsine* in having the calyx cleft to the base). To this tribe belong all the CARYOPHY'LLEÆ which have the sepals distinct or very slightly cohering at the base; it contains the following British Genera.

6. BUFFO'NIA, t. 152.
7. CHERLE'RIA.
8. SPE'RGULA.
9. ELA'TINE.
10. SAGI'NA.
11. MŒ'NCHIA.
12. ARENA'RIA.
13. HOLO'STEUM.
14. CERA'STIUM.
15. STELLA'RIA, t. 154.

See *Don's Gen. Syst. of Gard. & Bot.*

[illegible] Flowers in [illegible]

[illegible]

[illegible] of [illegible] awns, intensely [illegible] the claw [illegible] Germen smooth. [illegible] acorn, covered with its [illegible] Seeds large, black, somewhat [illegible] each on a pedicel or stalk, [illegible] see fig. 6.

This is a very troublesome weed, and [illegible] fields it should be eradicated by hand [illegible] The seeds are large and heavy, and [illegible] with wheat, breaking so fine [illegible] flour specky. They are, therefore, [illegible] depreciate the sample [illegible]

GERARDE says, "[illegible] it [illegible] unto bread, as well in [illegible] taste, and [illegible] known than desired."

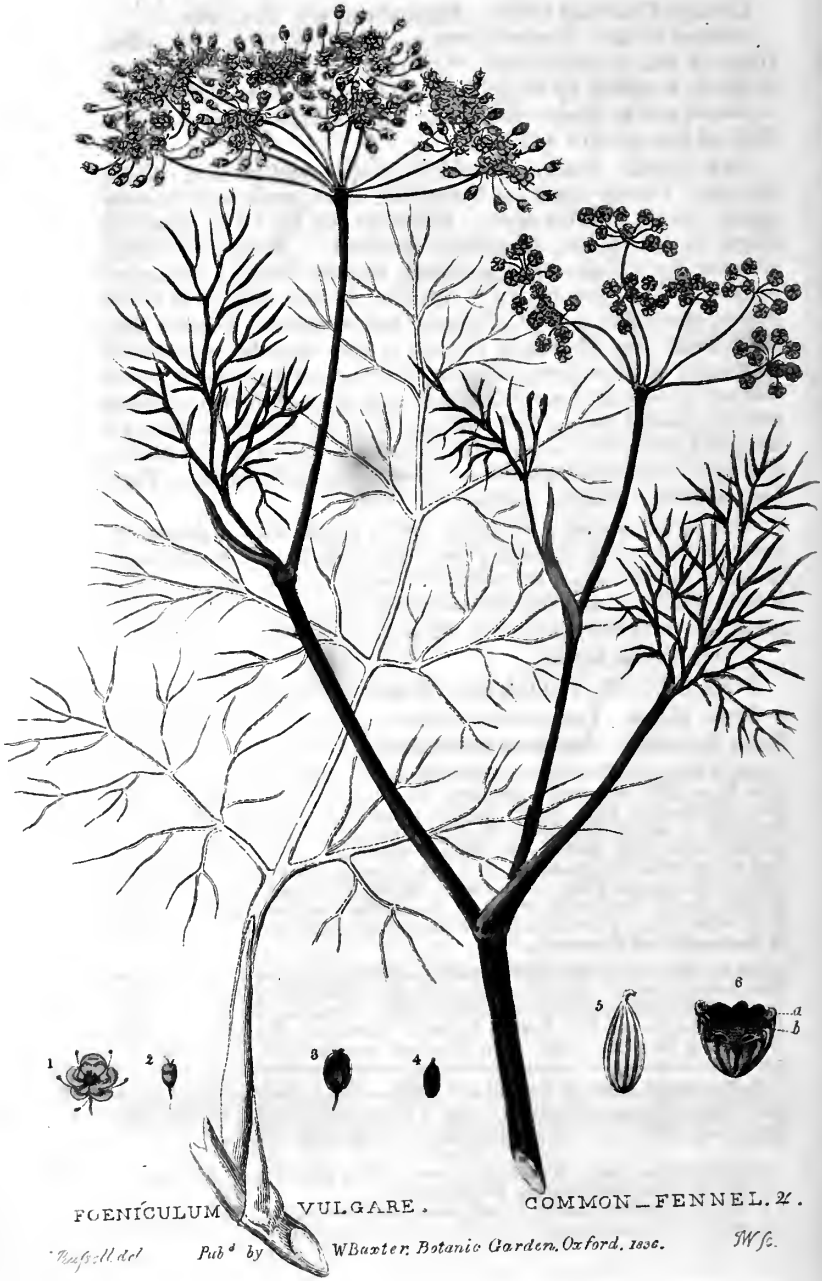
It is said sometimes to occur with a white flower.

The Natural Order CARYOPHYLLEÆ [illegible] 152, is divided into [illegible] namely, [illegible]

Tribe I. SILENEÆ [illegible] plants [illegible] tubular calyx). This tribe comprehends [illegible] which have their sepals united into a [illegible] tube, with 4 or 5 teeth at the apex [illegible] British Genera.

1. DIANTHUS, t. 64.
2. SAPONARIA, t. 37.
3. SILENE, t. 190.

Tribe II. ALSINEÆ [illegible] calyx cleft to the base [illegible] a [illegible] which [illegible] the [illegible] base. It contains the [illegible]



FOENICULUM VULGARE. COMMON FENNEL. ♃.

Pub^d by W Baxter, Botanic Garden, Oxford, 1836.

FŒNI'CULUM *.

Linnean Class and Order., PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLI'FERÆ, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517. —UMBELLATÆ, *Linn.*—ROSALES; subtype, ANGELICIDÆ; Burn. Outl. of Bot. pp. 614 & 774.

GEN. CHAR. *Flowers* all uniform, perfect, and prolific. *Calyx* obsolete. *Corolla* (fig. 1.) of 5 roundish, entire petals, with a nearly square, retuse, involute apex. *Filaments* (see fig. 1.) 5, about the length of the petals, spreading, incurved. *Anthers* roundish. *Germen* (fig. 2.) inferior, egg-shaped, striated, blunt, a little compressed. *Styles* (see fig. 2.) 2, tumid at the base, very short in the flower, afterwards a little elongated and recurved. *Stigmas* simple. *Fruit* (fig. 3.) nearly circular ‡, very slightly compressed, contracted at the summit, and crowned with the permanent styles. *Carpels (seeds* of Linn.*)* (see figs. 4, 5, & 6.) with 5 prominent, obtusely keeled *ridges*. (see fig. 6, a.) of which the lateral ones are marginal, and a little broader than the others. *Interstices (channels)* (see fig. 6, b.) with single *vittæ*. *Seed* nearly half-circular. *Involucrum* none. *Flowers* yellow.

The perfect *umbels;* roundish, entire *petals*, with a retuse, involute *apex;* nearly circular *fruit;* the *carpels* with 5 prominent, obtusely keeled *ridges*, (of which the lateral ones are marginal and a little broader); and the *interstices* with single *vittæ;* will distinguish this from other genera in the same class and order.

One species British.

FŒNI'CULUM VULGA'RE. Common Fennel. Finckle.

SPEC. CHAR. Leaves twice ternate; leaflets strap-shaped, filiform, pinnatifid. Segments awl-shaped. HOOKER.

Ray's Syn. p. 217.—Johnson's Gerarde, 1032.—Lindl. Syn. p. 119.—Hook. Brit. Fl. p. 122.—*Fœniculum vulgaris*, Gray's Nat. Arr. v. ii. p. 525.—*Anéthum fœniculum*, Linn. Sp. Pl. p. 377.—Engl. Bot. t. 1208.—Woodv. Med. Bot. v. iii. p. 441. t. 160.—Huds. Fl. Angl. (2nd ed.) p. 126.—Sm. Fl. Brit. v. i. p. 329.—Abbot's Fl. Bedf. p. 67.—Davies' Welsh Bot. p. 31.—Relh. Fl. Cant. (3rd ed.) p. 125.—Fl. Devon. pp. 53 & 165.—Loudon's Encyclop. of Gard. (ed. 1835) p. 868. parag. 4505.—Baxt. Lib. of Agricul. & Horticul. Knowl. (2nd ed.) p. 228.—Mack. Catal. of Pl. of Irel. p. 30.—*Méum Fœniculum*, Spreng. Prod. p. 32.—Sm. Engl. Fl. v. ii. p. 85.—With. (7th ed.) v. ii. p. 393.—Winch's Fl. of Northumb. and Durham, p. 20.

LOCALITIES.—On chalky cliffs, plentiful.—*Bedfordsh.* Evershold, in a deep ditch near the church: Rev. C. ABBOT.—*Berks;* Abundant on the banks of the river Loddon, near Sandhurst: Miss DELAMOTTE.—*Cambridgesh.* Foulmire Mill, Triplow, and Burwell Pit: Rev. R. RELHAN.—*Cornwall;* Near Penzance: Mr. WATSON, in New Bot. Guide. Near Marazion, plentiful: Mr. WATT.—*Devon;*

Fig. 1. Corolla.—Fig. 2. Germen and Pistils.—Fig. 3. Fruit.—Fig. 4. A Carpel.—Fig. 5. The same magnified.—Fig. 6. Transverse section of a Carpel more highly magnified.—a. One of the Ridges; b. One of the Vittæ.

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* From *fœnum, hay;* its smell being compared to that of hay. HOOKER.

† See *Anchusa sempervirens*, fol. 48, note †.

‡ That is, it presents nearly a circle, on a transverse section, see fig. 6, which represents a transverse section of a carpel, or half the fruit.

Chudleigh Rock, abundant; cliffs at Topsham; hedges near Sidmouth; Dawlish; Teignmouth; Knighton Beaumont, near Ingsdon; Livermead Sands, near Torquay; in the new turnpike-road near Tor Abbey; and Rocks at Ilfracombe: *Fl. Devon.*—Near Torbay: H. WOOLLCOMBE, Esq. Ch. Ch.—*Durham;* On the Ballast-hills at Ayre's Quay, near Sunderland: N. J. WINCH, Esq.—*Gloucestersh.* On St. Vincent's Rocks: N. J. WINCH, Esq. in N. B. G.—Abundant on the shores of the Teign, near Bitton, and extending thence by the road-side towards Newton Bushel: Dr. WITHERING.—*Kent;* South Kent: Rev. G. E. SMITH. Isle of Thanet: N. J. WINCH, Esq. Thames side towards Gravesend: Mr. W. PAMPLIN, jun. in N. B. G.—*Norfolk;* Burgh Castle, under the walls; Fritton church-yard, &c.; not uncommon. Near Norwich: *New Bot. Guide.*—*Northumberland;* Naturalized on the Ballast-hills at St. Anthon's and Willington: N. J. WINCH, Esq.—*Nottinghamsh.* On Nottingham Castle: Mr. WHATELY.—In *Somersetshire:* N. B. G.—*Suffolk;* Near Bungay: N. B. G.—In *Sussex;* W. BORRER, Esq. in N. B. G.—*Worcestersh.* Spetchley: Mr. PURTON.—WALES. *Anglesey;* Plentiful on the rocks between Borth and Llandysilio: Rev. H. DAVIES.—*Carnarvonsh.* Menai Strait: J. E. BOWMAN, in N. B. G. Road-side near Llandudno Rocks: N. J. WINCH, Esq. in M. N. H. v. ii. p. 279.—*Denbighsh.* About Denbigh Castle: G. CROSFIELD, Esq.—*Merionethsh.* Rocks north of Barmouth: J. E. BOWMAN, in N. B. G.—IRELAND. On dry gravelly banks; banks of the Dodder near Clouskeagh, and dry banks near Chapelizod: Mr. J. T. MACKAY.

Biennial.—Flowers from June to August.

Root white, tap-shaped, and fibrous. *Stem* upright, from 3 to 5 feet high, solid, round, striated, smooth, very much branched, leafy. *Leaves* triply pinnate, with long, thread-like, pointed, more or less drooping, *leaflets*, of a bluish-green colour. *Footstalks* with a broad, firm, sheathing base. *Umbels* terminal, broad, flat, with numerous, smooth, angular *rays*. *Rays* of the partial umbels more slender, short, and very unequal. Both *general* and *partial involucrum* entirely wanting. *Calyx* none. *Petals* dark yellow, inversely egg-shaped, with a broad, blunt, inflexed point. *Filaments* yellow, spreading, about as long as the petals. *Styles* very short, with a large egg-shaped, pale yellow base.

This is the true Fennel of the gardens, several varieties of which are in cultivation. "The tender stalks of the common Fennel are used in salads; the leaves, boiled, enter into many fish sauces; and, raw, are garnishes for several dishes. The blanched stalks of a dwarf variety, called *Finochio*, are eaten with oil, vinegar, and pepper, as a cold salad; and they are sometimes put into soups. This variety is characterized by a tendency in the stalk to swell to a considerable thickness. This thickened part is blanched by earthing up, and is then very tender. It is a good deal cultivated in Italy." See LOUDON'S *Encyclop. of Gardening*, new ed. parag. 4505; also parag. 227; and *Gard. Magazine*, vol. viii. pp. 267 and 271.

The seeds, which abound with an essential oil, are a common carminitive medicine for infants. An infusion of the bruised seeds is used, in Devonshire, as a diaphoretic for rheumatism. See LOUDON'S *Mag. Nat. Hist.* v. ii. p. 162.

CÁRDUUS NÚTANS. MUSK_THISTLE. ♂

Rufford del. Pub.d by W. Baxter, Botanic Garden, Oxford. 1834. J. Whefsell sc.

CA'RDUUS*.

Linnean Class & Order. SYNGENE'SIA†, POLYGA'MIA, ÆQUALIS‡.

Natural Order. COMPO'SITÆ§; tribe, CYNAROCEPHALÆ, *Juss.* —Lindl. Syn. pp. 140 & 152; Introd. to Nat. Syst. of Bot. pp. 197 & 200.—COMPO'SITÆ; subord. CARDUA'CEÆ; Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CYNAROCEPHALÆ; Rich. by Macgilliv. pp. 454 & 455.—CINAROCEPHALÆ, sect 1. Juss. Gen. Pl. pp. 171 & 172.—Sm. Gram. of Bot. p. 121. Engl. Fl. v. iii. p. 334.—SYRINGA'LES; type, CYNARACEÆ; Burn. Outl. of Bot. pp. 900 & 931.—COMPO'SITÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) tumid, imbricated, of numerous, spear-shaped, spinous-pointed scales, permanent. *Corolla* (fig. 2.) compound, nearly or quite uniform; *florets* (see figs. 3 & 4.) very numerous, perfect, equal, tubular, funnel-shaped; tube slender, recurved; limb egg-shaped at the base, with 5 strap-shaped segments, one of which is a little distant from the rest. *Filaments* 5, hair-like, very short. *Anthers* (see fig. 5.) united into a 5-toothed cylindrical tube, about as long as the florets. *Germen* (see fig. 3.) inversely egg-shaped. *Style* (see figs. 3, 4, & 5.) thread-shaped, prominent. *Stigma* simple, or cloven, oblong, naked. *Seed-vessel* none. *Seed* (see fig. 7.) inversely egg-shaped, with 4 slight unequal angles, and a slender, terminal, cylindrical point. *Pappus* (see figs. 7 & 8.) sessile, hair-like, rough, very long, annular at the base, deciduous. *Receptacle* (see fig. 6.) flat, hairy.

The tumid *involucrum*, of numerous, imbricated, spinous-pointed scales; the hairy *receptacle;* and the rough, deciduous *pappus;* will distinguish this from other genera, with tubular *florets*, in the same class and order.

Four species British.

CA'RDUUS NUTANS. Nodding Thistle. Musk Thistle.

SPEC. CHAR. Leaves interruptedly decurrent, spinous. Flowers solitary, drooping. Scales of the involucrum spear-shaped, cottony, outer ones spreading.

Engl. Bot. t. 1112.—Ray's Syn. p. 193.—Linn. Sp. Pl. p. 1150.—Huds. Fl. Angl. (2nd ed.) p. 350.—Sm. Fl. Brit. v. ii. p. 848. Engl. Fl. v. iii. p. 384.—With. (7th ed.) v. iii. p. 910.—Gray's Nat. Arr. v. ii. p. 436.—Lindl. Syn. p. 155.—Hook. Brit. Fl. p. 350.—Lightf. Fl. Scot. v. i. p. 450.—Sloth. Fl. Oxon. p. 244.—Abbot's Fl. Bedf. p. 175.—Purt. Midl. Fl. v. ii. p. 379.—Relh. Fl. Cant. (3rd ed.) p. 329.—Davies' Welsh Bot. p. 75.—Hook. Fl. Scot. p. 235.—Grev. Fl. Edin. p. 171.—Fl. Devon. pp. 133 & 156.—Johnst. Fl. of Berw. v. i. p. 178.—Winch's Fl. of Northumb. and Durham, p. 52.—Walk. Fl. of Oxf. p. 229.—Perry's Pl. Varv. Selectæ, p. 67.—Bab. Fl. Bath. p. 27.—Mack. Catal. of Pl. of Irel. p. 71.—*Cárduus muscatus*, Johnson's Gerarde, p. 1174.

Fig. 1. Involucrum.—Fig. 2. Corolla.—Figs. 3 & 4. Separate Florets.—Fig. 5. The five united Anthers, and the Germen crowned with the Pappus, Style, and Stigma.—Fig. 6. The Involucrum divided vertically, showing the hairy Receptacle, and the Seeds.—Fig. 7. A Seed, crowned with the Pappus.—Fig. 8. Part of a Ray of the Pappus.—Figs. 4 & 8. *more or less magnified.*

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* Supposed to be derived from *ard* in Celtic, *a point;* whence also *ardos* in Greek; *arduus*, in Latin; and *cardo;* in allusion to the numerous points with which it is beset.

† See f. 91, n. †. ‡ See f. 147, n. ‡. § See f. 27, a.

Localities.—In dry barren pastures, waste ground, fallow fields, and by road-sides, on a chalky or gravelly soil. Not uncommon in most parts of England and Scotland; more rare in Wales and Ireland.

Biennial.—Flowers in June, July, and August.

Root spindle-shaped. *Stem* from 2 to 3 feet high, upright, somewhat branched, solid, angular, cottony, leafy. *Leaves* alternate, narrow-oblong, pinnatifid, slightly hairy and cottony, toothed and spinous at the margin, decurrent and winging the stem interruptedly, the wings sinuated and spinous. *Peduncle* terminal, woolly, 1-flowered. *Flowers* large and handsome, drooping, of a crimson or purplish colour, with a sweet musky scent at all times of the day in warm weather. *Scales* of the *Involucrum* spear-shaped, spreading, often tinged with purple; outer ones sharply spinous, all somewhat leafy. *Filaments* woolly. *Pollen* grey, globular, set with fine points. *Styles* bent back towards the side. *Seeds* compressed, polished, marked with dotted lines. *Pappus* minutely rough.—This species is distinguished from other British Thistles by the nodding or drooping corolla.

I observed a white flowered variety of this in a pasture near the river Evenlode, between Ashford Mills and Stonesfield, Oxfordshire, July 30, 1831.

The dried flowers of this species of *Carduus*, and those of *Cnicus lanceolatus*, are used in some countries for a rennet to curdle milk. Many kinds of moths hover over the flowers at night. The *down* or *pappus* may be used as a material for making paper.

The seeds of most of the Thistles are a favourite food of small birds, particularly of the Goldfinch, (*Fringilla Carduelis*, Linn.); and flocks of these charming little creatures may be seen throughout the month of October, busy in picking out the seeds, and thus aiding the breeze of Autumn in scattering the down, which is, when thus divested of the seed,

> "By the faintest zephyr blown
> Through the shining skies."

This down, with the seed attached to it, bears a great resemblance to a shuttle-cock, and by this admirable mechanism the seeds are transported by the wind to a considerable distance from the parent-plant; a wonderful contrivance in Nature to disseminate her productions. Of these feathered seeds Sir J. E. Smith observes, (Introd. to Bot. ed. 5. p. 247.) "How little are children aware, as they blow away the seeds of Dandelion, or stick Burs in sport upon each other's clothes, that they are fulfilling one of the great ends of Nature!"

Botanists are undetermined as to the particular species of Thistle, which is the genuine emblem of Scotland. Some state, that the common Cotton Thistle, *Onopordum Acanthium*, is cultivated by the Scotch as their true badge; while others give the preference to the Spear-plume Thistle, *Cnicus lanceolatus*, as being the most common by their way-sides; but the usual heraldic figure seems most like the Musk Thistle, *Carduus nutans*, a plant frequent on limestone soils. The motto used by the Knights of the Thistle, or of St. Andrew, is peculiarly appropriate to their floral badge, *Nemo me impune lacessit;* "no one touches me with impunity;" or in plain Scotch, "Ye maun't meddle wi' me." See *The Nat. Poetical Companion*, pp. 64 & 272.

Few animals will eat the Thistle except the Ass, of which a curious anecdote is recorded. Le Brun, a famous painter, born at Paris in 1619, having painted a Thistle on the fore-ground of a picture, which he placed in a court to dry, an Ass passing through the court, tempted by the sight of the Thistle, began licking it till it was wholly effaced. It is said that Le Brun well deserved this high compliment from nature; a compliment infinitely more flattering than all the praises bestowed by human connoisseurs. He died in 1690. See *Reid's Historical and Literary Botany*, v. ii. p. 151.

[illegible]

Biennial.—Flowers in June.

Fruit [illegible] pendulous-shaped. Stem from 2 [illegible] somewhat branched, solid, [illegible] nate, narrow-oblong, pinnatifid, [illegible] and spinous at the margins, [illegible] ruptedly, the wings [illegible] woolly, 1-flowered. [illegible] crimson or purplish [illegible] of the day [illegible] shaped, spreading, [illegible] spinous, all somewhat [illegible] glutinous, set with fine [illegible] Seed, compressed, pendent, marked with [illegible] minutely rough.—This species is distinguished [illegible] Thistles by the nodding or drooping capitula.

I observed a white flowered variety [illegible] river Evenlode, between Ashford Bridge and [illegible] shire, July 30, 1831.

The dried flowers of this species of Carduus, and [illegible] lanceolatus, are used in some countries for a [illegible] Many kinds of moths hover over the flowers at [illegible] or twilight, may be used as a material for [illegible]

The seeds of most of the Thistles are a [illegible] birds, particularly of the Goldfinch, (Fringilla [illegible] and flocks of these charming little creatures may [illegible] out the month of October, busy in picking out the [illegible] ading the breeze of Autumn in scattering [illegible] when thus divested of the seed.

"By the [illegible] flower
Through the [illegible]

This down, with the seed attached [illegible] ment, and by this admirable mechanism [illegible] a considerable distance from the parent [illegible] ture to disseminate her productions. [illegible] observes, (Linnæ. in Hor. ed 6 p. 27) [illegible] have many the seeds of Dandelion [illegible] choice, that they are fulfilling [illegible]

Thistles are [illegible] the genuine emblem of [illegible] Corporation, Aberdeen, [illegible] others are the quarterings to the [illegible] being the most conspicuous by [illegible] near the Mitre Tavern. [illegible] pole. The motto used by the [illegible] publicly appropriate to their [illegible] emphatic motto with propriety, "[illegible] the Thistle, Personal Corporation [illegible]

[illegible] Thistles are [illegible] La Manna, a figure [illegible] a Thistle on the face-ground of a quarter, which [illegible] has passing through the court, [illegible] it is most wholly silvered. It is said [illegible] constituent from centre; a centre [illegible] pulses bestowed by human contrivance [illegible] Inverness, Journal, [illegible]

EUPATORIUM CANNABINUM. HEMP-AGRIMONY. ♃

J.K.W. Pub.d by W. Baxter Botanic Garden. Oxford. 1838. C. Mathews S.

EUPATO'RIUM*.

Linnean Class and Order. SYNGENE'SIA†, POLYGA'MIA, ÆQUA'LIS‡.

Natural Order. COMPO'SITÆ§; tribe, CORYMBIFERÆ, *Juss.*—Lindl. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 & 199.—COMPO'SITÆ; subord. EUPATO'REÆ; Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CORYMBI'FERÆ; Rich. by Macgilliv. pp. 454 & 455.—CORYMBI'FERÆ; sect. 1. Juss. Gen. Pl. p. 177.—Sm. Gram. of Bot. pp. 121 & 123.—SYRINGALES; type, ASTERACEÆ; Burn. Outl. of Bot. v. ii. pp. 900 & 926.—COMPO'SITÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (see fig. 1.) oblong, imbricated; its scales strap-spear-shaped, upright, unequal, and unarmed. *Corolla* (see fig. 1.) compound, uniform; florets (see f. 2.) few, parallel, level-topped, perfect, funnel-shaped, regular; their limb in 5 equal, spreading segments. *Filaments* 5, hair-like, very short. *Anthers* united into a cylindrical tube, not prominent. *Germen* (see fig. 2.) very small, oblong, angular. *Style* (see fig. 2.) thread-shaped, prominent, cloven as far as the top of the anthers. *Stigmas* spreading, slender, downy. *Seed-vessel* none, except the slightly spreading involucrum. *Seed* (see figs. 3 & 4.) oblong, angular. *Pappus* (see figs. 2, 3, & 4.) sessile, rough or feathery, permanent. *Receptacle* (see figs. 5 & 6.) small, naked.

The oblong, imbricated *involucrum;* the few parallel, crowded, level-topped *florets;* the deeply cloven, prominent *style;* the rough *pappus;* and the naked *receptacle;* will distinguish this from other genera in the same class and order.

One species British.

EUPATO'RIUM CANNABI'NUM. Common Hemp-agrimony. Water-agrimony. Common Dutch-agrimony.

SPEC. CHAR. Leaves opposite, somewhat petiolate, in 3 or 5, deeply serrated, spear-shaped segments; the middle one the longest.

Engl. Bot. t. 428.—Ray's Syn. p. 179.—Linn. Sp. Pl. 1173.—Huds. Fl. Angl. (2nd ed.) p. 356.—Sm. Fl. Brit. v. ii. p. 860. Engl. Fl. v. iii. p. 400.—With. (7th ed.) v. iii. p. 919.—Gray's Nat. Arr. v. ii. p. 474.—Lindl. Syn. p. 142.—Hook. Brit. Fl. p. 354.—Lightf. Fl. Scot. v. i. p. 464.—Sibth. Fl. Oxon. p. 249.—Abbot's Fl. Bedf. p. 178.—Purt. Midl. Fl. v. ii. p. 386.—Relh. Fl. Cant. (3rd ed.) p. 334.—Davies' Welsh Bot. p. 76.—Hook. Fl. Scot. p 238.—Grev. Fl. Edin. p. 174.—Fl. Devon. pp. 135 & 158.—Johnst. Fl. of Berw. v. i. p. 180.—Winch's Fl. of Northumb. and Durham, p. 53.—Walk. Fl. of Oxf. p. 234.—Perry's Pl. Varvic. Selectæ, p. 69.—Jacob's West Devon. and Cornw. Fl.—Bab. Fl. Bath. p. 25.—Mack. Catal. of Pl. of Irel. p. 72.—*Eupatórium cannabinum mas,* Johnson's Gerarde, p. 711.

LOCALITIES.—On the banks of rivers, wet ditches, and in watery places, frequent.

Fig. 1. Involucrum and Florets.—Fig. 2. A separate Floret, with the Germen and Pappus.—Fig. 3. A Seed, crowned with the Pappus or proper Calyx.—Fig. 4. The same, *magnified.*—Fig. 5. The Receptacle, and 3 of the outer permanent scales of the Involucrum.—Fig 6. The same, *magnified.*

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* From *Eupator*, the surname of MITHRIDATES, king of Pontus, who firs brought this plant into use. HOOKER.

† See *Tussilago farfara*, f. 91, n. †. ‡ See *Sonchus oleraceus*, f. 147, n. ‡.

§ See *Prenanthes muralis*, f. 27, a.

Perennial.—Flowers in July and August.

Root tufted, somewhat creeping, with many long fibres. *Stems* several, upright, from 2 to 4 feet high, branched, leafy, nearly cylindrical, rough with down, often of a brown or purplish colour, filled with pith. *Leaves* opposite, on short petioles; leaflets mostly 3, sometimes 5, spear-shaped, sharply serrated on the sides, very entire towards the point, deep green, downy and rather rough to the touch; sometimes the upper leaves are simple, but this seldom happens, except in seedling plants, the first year of flowering; this is var. β. of Sir J. E. SMITH. *Flowers* in crowded, pale purplish, convex, corymbose tufts, terminating the stem and upper branches. *Involucrum* (see fig. 1.) of few, unequal, imbricated, strap-spear-shaped scales, somewhat membranaceous and purplish at the edges, slightly hairy. *Florets* few, about 5 or 6, of a pinkish or purplish-red colour, sometimes white. *Germen* besprinkled with minute shining globules. *Styles* (see fig. 2.) longer than the florets, and deeply cleft. *Pappus* (see figs. 3 & 4.) rough with minute teeth. *Seed* oblong, angular, nearly black.

The plant has a slightly aromatic smell, and a bitter taste. A decoction of the root operates as a violent emetic and cathartic; it is sometimes taken by the lower classes in jaundice and dropsy, but it is a rough medicine, and must be used with caution. An ounce of the root in decoction is a full dose. In smaller doses the Dutch peasants take it as an alterative, and antiscorbutic. Scarcely any animal, except the goat, will eat this plant.—I have lately been informed, that ropy or string-mouldy bread may be cured by strewing the plant on the shelves, &c. where the bread is kept.

The variety above mentioned, with the upper leaves simple, is admirably figured in Mr. CURTIS's very elegant and beautiful work, "British Entomology," vol. ix. t. 400. This variety appears to have been found near Lee, on the road to Eltham, first by Mr. MARTYN, and afterwards by DILLENIUS; and it has been observed since near Bungay in Suffolk, by Mr. WOODWARD. There is no specimen of this preserved in the *Dillenian Herbarium* in the Oxford Garden; but in the *Sherardian Herbarium* there is a specimen of a variety of the same species, in which the lower leaves are simple, and the upper ones compound or trifid.

The species of *Eupatorium* are rather numerous; Mr. LOUDON enumerates 54 in his *Hortus Britannicus*, as having been introduced into England. In SPRENGEL'S *Systema Vegetabilium*, published in 1826, 145 species are described, nearly the whole of which are natives of America; very few species inhabit Asia; scarcely any Africa; and the only species at present found in Europe appears to be *cannabinum*.

"*E. aromaticum*, and *E. odoratum*, have very fragrant roots; and *E. cannabinum*, *perfoliatum*, *satureiæfolium*, and some other species, are so bitter that they have been employed as febrifuges. *E. Aya-pana* has been much extolled in Brazil as a diuretic and diaphoretic; *E perfoliatum* for renal diseases; and *E. rotundifolium* as useful in consumption; but none have enjoyed so high, and apparently so undeserved a reputation, as the *E.* (now *Mikania*) *Guaco*, which the South Americans affirm to be an antidote to the bite of poisonous serpents; and which it was once hoped might have proved serviceable in that formidable disease, *hydrophobia*." See BURNETT's *Outl. of Bot.* p. 931.

[illegible]

[illegible] roots with down, [illegible] filled with pith. [illegible] mostly 3, sometimes 5, [illegible] very much towards the [illegible] in the touch, [illegible] dew happens [illegible] this is var. β. [illegible] pilah, nonvar. [illegible] branches. Leaves [illegible] strap-spear-shaped scales, [illegible] at the edges, slightly hairy. Flowers [illegible] or purplish-red colour, sometimes [illegible] with minute shining globules, a style [illegible] florets, and deeply cleft. Pappus [illegible] minute teeth. Seed oblong, angular [illegible]

The plant has a slightly aromatic [illegible] decoction of the root operates as a vi[illegible] is sometimes taken by the [illegible] it is a rough medicine, and [illegible] of the root in decoction is a [illegible] persons take it as an alterative, [illegible] animal, except the goat, will not [illegible] horses, the roy or strangulation [illegible] the plant on the shelves, &c. where the [illegible]

The variety above mentioned, with [illegible] admirably figured in Mr. Curtis's [illegible] "Botanical Magazine," vol. [illegible] been found [illegible] and also [illegible] near Dublin, in Suffolk, by [illegible] man of this genus [illegible] Curtis; but the Sneezewort [illegible] a species of the same genus [illegible] and [illegible]

The [illegible] antennaria [illegible] in 1806. It [illegible] native of America; [illegible] plains; and the only [illegible] the [illegible]

KNAUTIA ARVENSIS. FIELD KNAUTIA. 4

J.R.Del. Pub.d by W. Baxter, Botanic Garden, Oxford 1836. C. Mathews Sc

KNA'UTIA*.

Linnean Class and Order. TETRA'NDRIA†, MONOGY'NIA.

Natural Order. DIPSA'CEÆ, Juss. Gen. Pl. p. 194.—Lindl. Syn. p. 139.; Introduct. to Nat. Syst. of Bot. p. 196.—Rich. by Macgilliv. p. 457.—Loud. Hort. Brit. p. 520.—SYRINGALES; sub-order, ASTEROSÆ; sect. VALERINÆ; type, DIPSACEÆ; Burn. Outl. of Bot. v. ii. pp. 900, 901, 916, & 918.—AGGREGATÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) of many spreading leaves, surrounding the *common receptacle*, to which they are attached; the innermost gradually smaller. *Proper Calyx* (see fig. 7.) double; the *outer (involucellum*, Lindl.*)* compressed, with 4 little excavations, closely surrounding the fruit, toothed at the apex, having 2 of the teeth larger than the other 2, placed on a short stalk; the *inner (calyx*, Lindl.*)* somewhat cup-shaped. *Corolla* (figs. 2, 3, 5, & 6.) of each flower monopetalous, tubular, dilated upwards; limb in 4 or 5 equal, or unequal, segments. *Filaments* (see figs. 2, 3, & 6.) 4, spreading, lax, from the mouth of the corolla, longer than its limb. *Anthers* oblong, incumbent. *Germen* inferior. *Style* (fig. 4.) thread-shaped. *Stigma* blunt, cloven. *Fruit* (see fig. 7.) compressed, with 4 pores on depressed points, upon a short stalk. *Common Receptacle* convex, hairy.

The many-leaved *involucrum;* the double *calyx;* the outer compressed, with 4 little excavations, closely surrounding the fruit, placed on a short stalk; and the *inner* with a somewhat cup-shaped limb; will distinguish this from other genera, with a monopetalous, superior *corolla*, in the same class and order.

One species British.

KNA'UTIA ARVENSIS. Field Knautia. Field Scabeous. Great Blue-caps.

SPEC. CHAR. Heads many-flowered. Outer calyx with very minute teeth; inner with 8 or 16 somewhat awned ciliæ. *Coulter.*

Lindl. Syn. p. 140.—Hook. Brit. Fl. p. 60.—Winch's Fl. of Northumb. and Durham, p. 9.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 687.—Bab. Fl. Bath. p. 24.—*Scabiosa arvensis*, Linn. Sp. Pl. p. 143.—Engl. Bot. t. 659.—Curt. Fl. Lond. t 288.—Huds. Fl. Angl. (2nd ed.) p. 62.—Sm. Fl. Brit. v. i. p. 170. Engl. Fl. v. i. p. 195.—With. (7th ed.) v ii. p. 218.—Gray's Nat. Arr. v. ii. p. 477.—Lightf. Fl. Scot. v. i. p. 114.—Sib. Fl. Oxon. p. 55.—Abbot's Fl. Bedf. p. 29.—Purt. Midl. Fl. v. i. p. 95.—Relh. Fl. Cant. (3rd ed.) p. 56.—Davies' Welsh Bot. p. 14.—Hook. Fl. Scot. p. 49.—Grev. Fl. Edin. p. 34.—Fl. Devon. pp. 25 & 162.—Johnst. Fl. of Berwick, v. i. p. 35.—Walk. Fl. of Oxf. p. 35.—Mack. Cat. of Pl. of Irel. p. 17.—*Scabiosa major communior, folio laciniato*, Ray's Syn. p. 191.—*S. major vulgaris*, Johnson's Gerarde, p. 719.

LOCALITIES.—In pastures, corn-fields, and waste places. Common.

Perennial.—Flowers in July and August.

Fig. 1. Involucrum.—Fig. 2. A Floret of the Circumference.—Fig. 3. The same opened virtically to shnw the situation of the Stamens.—Fig. 5. A Floret of the Disk.—Fig. 6. The same opened vertically.—Fig. 4. Germen, Style, and Stigma.—Fig. 7. The Involucellum, and the Calyx, or the *outer* and *inner Calyx* of LINNÆUS.—Fig. 8. The Fruit, crowned by the inner Calyx; *a little magnified.*

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* So named in honour of CHRISTOPHER KNAUT, physician at Halle, in Saxony, who died in 1694; author of a Catalogue of Plants growing in the neighbourhood of Halle. DON.

† See *Cornus sanguinea*, folio 114, note †.

Root long, spindle-shaped, mostly branched, running deep into the ground. *Stem* from 2 to 3 feet high, branched, upright, round, rough with hairs, spotted with dark purple towards the bottom. *Leaves* for the most part hairy; the radical ones spear-shaped, serrated, stalked; the rest pinnatifid, the upper ones most deeply so, and quite sessile. *Heads* of *Flowers* large and handsome, of a fine pale purple, on simple peduncles; *florets* of the disk palest, or reddish, nearly equal (see fig. 5.); those of the circumference much the largest (see fig. 2.), cleft into 4 unequal segments, with abortive *anthers*. *Germen* 4-cornered, hairy. *Style* longer than the florets. *Seed* (see fig. 8.) quandrangular, crowned by the cup-shaped bristly calyx. *Receptacle* bearded with hairs, shorter than the germens.

The flowers are said to change to a most beautiful green, if held for a few minutes over the smoke of tobacco.

The plant varies much in the divisions of its leaves, and in its hairiness; and it sometimes occurs with white flowers.

The variety mentioned by HALLER, with leaves entire and smooth, is reported to have been found in the Isle of Wight, on the 5th of August, 1835: see Mag. of Nat. Hist. v. i. p. 83.

Knautia arvensis may rather be considered a troublesome weed in corn-fields; but in grass-fields it may be considered rather useful, as it produces a large quantity of foliage, which is not refused by kine, sheep, or horses.

Dr. RUTTY, in his Materia Medica, remarks, that the leaves have sometimes been described as inodorous and insipid; but, on a more accurate examination, they are found to be bitterish, with some degree of acrimony and astringency. Medicinally, this species has been recommended internally in coughs, asthmas, malignant fevers, &c. taken in the way of infusion, or made into syrup. The juice, externally applied, is said to be good against foulness of the skin; but the present practice has little dependance on it; and Dr. MARTYN says, woe be to him who trusts on such broken reeds.

The *Natural Order* DIPSA'CEÆ (plants agreeing with the genus *Dipsacus* in several important characters) consists of dicotyledonous, *herbaceous* plants or *under-shrubs*, with opposite, rarely verticillate, *leaves*, which are very variable in form, even so in the same individual, the radical and cauline ones being very different. The *flowers* are collected into dense heads, surrounded by a many-leaved *involucrum* (fig. 1.). Each individual flower has a superior, membranous *calyx*, resembling pappus (see figs. 2, 3, 7, & 8.), surrounded by a scarious *involucellum (outer calyx* of Linn.) (see fig. 7.). The *Corolla* (see figs. 2, 3, 5, & 6.) is monopetalous, tubular, inserted on the calyx, rarely ringent, but usually cut into 4 or 5 unequal segments, which are imbricated in the bud. The *stamens* (see figs. 2, 3, & 6.) are inserted in the tube of the corolla, and are of the same number as its segments, and alternate with them, nearly always distinct and free; the *Anthers* are 2-celled; the *Ovarium* is inferior, 1-celled, with a single pendulous ovulum; and the *Style* (fig. 4.) is thread-shaped, with a simple *Stigma*. The *Fruit* (fig. 8.) is dry, indehiscent, 1-celled, and crowned by the pappus-like calyx. The *seed* is pendulous in the fruit; the *Albumen* fleshy; and the *Embryo* straight, with a superior radical.

The plants contained in this order have almost the habit of *Compósitæ* (see folio 27, a.); all have the flowers growing in heads. Many of the exotic species are elegant border-flowers, and are cultivated with great facility. The only British Genera in this order are, *Dipsacus*, *Scabiosa*, and *Knautia*. See LINDLEY's *Syn.*, and DON's *Gen. Syst. of Gard. and Bot.*

[illegible] tap-root, branched, creeping [illegible]. Stem from 2 to 3 feet high, branched, [illegible], round, rough with [illegible], spotted with dark purple towards the bottom. [illegible] for the most part hairy, the radical ones spear-shaped, serrated, the rest pinnatifid, the upper ones most deeply so, and quite simple. Heads of Flowers large and handsome, of a lilac purple, on simple peduncles; Florets of the disk palest, or reddish, nearly equal (see fig. 5); those of the circumference much the largest (see fig. 2), cleft into 4 unequal segments, with a short [illegible]. Germen 4-cornered, hairy. Style longer than the florets. Seed (see fig. [illegible]) quadrangular, crowned by the cup-shaped bristly calyx. Receptacle bearded with hairs, shorter than the germen.

The flowers are said to dye [illegible] to a most beautiful green, if [illegible].

The plant varies much in the divisions of its leaves, and in its hairiness; and is sometimes [illegible] with white flowers.

The variety mentioned by Hudson, with leaves entire and smooth, is reported to have been found in the Isle of Wight, on the 8th of August, 1835, see Mag. of Nat. Hist. [illegible] p. 83.

Knautia arvensis may rather be considered a troublesome weed in corn-fields, but in grass meadows it may be considered rather useful, as it produces a large quantity of herbage, which is not refused by kine, sheep, or horses.

[illegible] in his [illegible] Medical [illegible], remarks, that the leaves are sometimes [illegible] but on [illegible] examination, [illegible] of acrimony and astringency. [illegible], this species has been recommended internally in coughs, asthmas, [illegible] in the way of [illegible], or made into a syrup. The [illegible] externally applied, [illegible] to be good against [illegible] of the skin. [illegible] has [illegible] dependance on it; and Dr. [illegible] says, [illegible] earth-worm [illegible].

Natural Order DIPSACEÆ [illegible] agrees with the [illegible] in several important characters, [illegible] consists of [illegible] herbaceous plants or undershrubs, with opposite, rarely verticillate, leaves, which are very variable in form, even in the same plant, the radical and cauline ones being very different. The flowers are collected into dense heads, surrounded by a many-leaved involucre (fig. 1). Each individual flower has a superior, membranous calyx, resembling a pappus (see figs. 2, [illegible], 7, & 8), surrounded by a common involucellum (*outer calyx* of Linn.) (see fig. 7). The Corolla (see figs. 2, 3, 5, & 6) is monopetalous, tubular, inserted on the calyx, rarely regular, but usually cut into 4 or 5 unequal segments, which are imbricated in the bud. The [illegible] (see figs. 2, 3, & 6) are inserted in the tube of the corolla, [illegible] of the same number as its segments, and alternate with them, [illegible] distinct and free; the Anthers are 2-celled, the Germen is inferior, 1-celled, with a single pendulous ovulum; and the Style (fig. 4) is thread-shaped, with a simple Stigma. The Fruit (fig. [illegible]) is dry, indehiscent, [illegible] by the pappus-like calyx. The seed is pendulous, [illegible] the Albumen, [illegible], and the Embryo straight, with a superior radicle.

[illegible]

Daucus Carota. Wild Carrot. ♂

J.P.Del. Publ.d by W. Baxter Botanic Garden Oxford Rd. 1816.

DAU'CUS*.

Linnean Class and Order. PENTA'NDRIA†, DIGY'NIA.

Natural Order. UMBELLI'FERÆ, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517. —UMBELLATÆ, *Linn.*—ROSALES; subtype, DAUCIDÆ; Burn. Outl. of Bot. pp. 614 & 779.

GEN. CHAR. *Flowers* separated; the outermost irregular, barren; inner ones fertile; central mostly neuter, often coloured. *Calyx* 5-toothed, nearly obsolete. *Corolla* (fig. 2.) of 5 inversely heart-shaped petals, with an inflexed point, the outer often radiant and deeply bifid. *Filaments* (see fig. 2.) 5, hair-like, longer than the corolla, spreading. *Anthers* rather oblong. *Germen* (see fig. 3.) inferior, egg-shaped, bristly, imperfect in the outermost, as well as in the central flowers. *Styles* (see figs. 2 & 3.) 2, thread-shaped, spreading, permanent, dilated at the base, and forming a double permanent globe. *Stigmas* blunt. *Floral Receptacle* none. *Fruit* (fig. 4.) compressed from the back. *Carpels* (figs. 5 & 6.) with 5 primary *ridges* filiform and bristly, of which the 3 intermediate ones occupy the back, and the 2 lateral ones (fig. 6, a.) the inner face; the 4 secondary ridges (see fig. 5. and fig. 6, b.) are equal, more prominent, with one row of prickles, which are slightly connected at the base. *Interstices (channels)* under the secondary ridges with single *vittæ* (see fig. 7.) *Seed* flat in front. Involucrum *universal* (fig. 1.) *and partial, many-leaved.* Flowers *white or pink.*

The separated *flowers;* dorsally compressed *fruit;* the *carpella* with 5 primary ridges filiform and bristly, of which the 3 intermediate ones are dorsal, and the 2 lateral ones on the plane of the commissure; the 4 secondary ridges equal, more prominent, with the prickles in a single row. The *channels* under the secondary ridges with single *vittæ;* and the flat *seed;* will distinguish this from other genera in the same class and order.

Two species British.

DAU'CUS CARO'TA. Wild Carrot. Bird's-nest. Bee's-nest.

SPEC. CHAR. Bristles of the fruit slender. Leaves twice or thrice pinnate; leaflets pinnatifid, with strap-spear-shaped, acute segments. Fruit-bearing Umbels concave.

Engl. Bot. t. 1174.—Linn. Spec. Pl. p. 348.—Woodv. Med. Bot. v. iii. p. 443. t. 161.—Mart. Fl. Rust. t. 82.—Sm. Fl. Brit. v. i. p. 300. Engl. Fl. v. ii. p. 39.—With. (7th ed.) v. ii. p. 367.—Lindl. Syn. p. 113.—Hook. Brit. Fl. p. 114.—Lightf. Fl. Scot. v. i. p. 156.—Sibth. Fl. Oxon. p. 93.—Abbot's Fl. Bedf. p. 58.—

Fig. 1. The General Involucrum.—Fig. 2. A Flower, showing the Petals, Stamens, and Pistils.—Fig. 3. Germen, Styles, and Stigmas.—Fig. 4. A Fruit.—Fig. 5. Back view of a Carpel, showing 3 of the primary, and the 4 secondary and more prominent ridges.—Fig. 6. A front view of a Carpel, showing 2 of the primary ridges, *a.*; and 2 of the secondary ones, *b.*—Fig. 7. A transverse section of a Carpel, showing the 4 single vittæ, one under each secondary ridge.—Figs. 2, 5, 6, & 7, *more or less magnified.*

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* From *daio*, Gr. *to heat;* alluding to the warm, carminative quality of the seeds. WITHERING. † See *Anchusa sempervirens*, f. 48, n. †.

Purt. Midl. Fl. v. i. p. 140.—Relh. Fl. Cant. (3rd ed.) p. 113.—Thorn. Fam. Herb. p. 282.—Davies' Welsh Bot. p. 27.—Hook. Fl. Scot. p. 88.—Grev. Fl. Edin. p. 71.—Steph. and Church. Med. Bot. v. ii. t. 56.—Fl. Devon. pp. 48 and 165.—Johnst. Fl. of Berw. v. i. p. 67.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 354.—Winch's Fl. of Northumb. and Durham, p. 18.—Curt. Brit. Entom. v. xi. t. 491.—Walk. Fl. of Oxf. p. 74.—Loud. Encyclop. of Gard. (new ed.) p. 835. par. 4116.—Baxt. Lib. of Agricul. and Hort. Knowl. (2nd ed.) p. 96.—Bab. Fl. Bath. p. 19.—Mack. Catal. of Pl. of Irel. p. 27.—*Daucus vulgaris*, Ray's Syn. p. 218.—Gray's Nat. Arr. v. ii. p. 498.—*Caucalis carota*, Huds. Fl. Angl. (2nd ed.) p. 114.—*Pastinaca sylvestris tenuifolia*, John. Ger. p. 1028.

Localities.—In dry pastures, on the borders of fields, and by road-sides.—Common.

Biennial.—Flowers in June and July.

Root slender, dry, somewhat woody, of a yellowish colour, and aromatic, and sweetish taste. *Stem* from 1 to 3 feet high, upright, branched, leafy, hairy or bristly. *Leaves* alternate, twice or thrice pinnate, on broad, concave, ribbed petioles; leaflets pinnatifid, their segments narrow, pointed and hairy, especially beneath. *Umbels* many-rayed, terminating the long leafless branches, solitary, large, upright, flat when in flower; afterwards the external and longer rays become contracted and incurved, which renders the surface of the umbel concave like a bird's nest. *General Involucrum* (fig. 1.) pinnatifid, large, strap-shaped, slender, not so long as the umbel; *partial* ones undivided, or sometimes 3-cleft, membranous at the edges. *Flowers* white, except one central neutral one in each umbel, which is red; petals unequal, radiate, and inversely heart-shaped. *Fruit* (fig. 4.) very rough, with rigid bristles. Whole plant aromatic.

The seeds are aromatic, both in taste and odour. Water digested on them becomes impregnated with the latter quality, but it extracts but little of their taste. They yield a yellowish essential oil, and give out all their virtues to spirit. They have been sometimes used as diuretics and carminatives; and are highly recommended in calculous complaints. An infusion of them has been found to afford relief in sharp fits of the gravel; and Dr. Carey, in *Monthly Magazine*, vol. 27, adduces his own strongly marked case of the cure of the gravel by the infusion of Wild Carrot seeds, taken as tea morning and evening. His directions are very particular and satisfactory.

The cultivated Carrot is merely a variety of the wild; yet Miller informs us, that he endeavoured to improve the latter kind, by growing it in different soils, but was never able to effect his purpose: it is therefore probable that we are indebted for this delicious and useful vegetable to an accidental growth of seed, or to a foreign supply. Carrots are a grateful and nutritious food for all kinds of cattle, and well worthy of more general cultivation by the farmer. Carriage horses will work upon them nearly as well as upon oats; but if too long continued, or given too freely, cattle may be severely disordered by their diuretic effects. Hogs will fatten on them, but such food is in general too expensive. Crickets are very fond of them, and are easily destroyed by a paste of powdered arsenic, wheat meal, and scraped carrots, placed near their habitations. A poultice of the scraped roots has been found to mitigate the pain, and abate the virulence, of phagedenic and cancerous ulcers.

For an account of the different varieties of the Garden Carrot, their modes of culture, their uses, properties, &c. &c. see Mr. Loudon's valuable *Encyclopedia of Gardening*; and the volumes of his *Gardener's Magazine*. See also Baxter's *Lib. of Agricul. and Horticul. Knowledge*; and Don's *Gen. Syst. of Gard. and Bot.*

Russell del.ᵗ Pubᵈ 1830 by W. Baxter. NYMPHAEA ALBA. WHITE WATER-LILY, ♃. Botanic Garden, Oxford. Pl. 1.

NYMPHÆ'A*.

Linnean Class and Order. POLYA'NDRIA†, MONOGY'NIA.

Natural Order. NYMPHÆA'CEÆ, *De Candolle.*—Lind. Syn. p. 15.; Introd. to Nat. Syst. of Bot. p. 10.—Rich. by Macgilliv. p. 415.—Loud. Hort. Brit. p. 497.—NYMPHIA'CEÆ, Don's Gen. Syst. of Gard. and Bot. v. i. p. 122.—NYMPHÆ'EÆ, *R. A. Salisbury,* in Annals of Bot. v. ii. p. 69.—HYDROCHARIDES, Juss. Gen. Pl. p. 67.—Sm. Gr. of Bot. p. 84.—ROSALES; subord. RHŒADOSÆ; sect. RANUNCULINÆ; subsect. NELUMBIANÆ; type, NYMPHÆACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 784, 828, 844, & 845.

GEN. CHAR. *Calyx* (see pl. 1. f. 1. and f. 2, *a.*) inferior, of 4 large, coriaceous, oblong, permanent sepals, coloured on the inside. *Corolla* (see pl. 1. f. 2, *b.*) of numerous, oblong petals, inserted upon a fleshy disk or covering to the germen, so as at first sight to appear to arise from it, (see pl. 2. f. 1, *a* & *d*). *Nectary* (see pl. 2. f. 2, *a*) globose, in the centre of the stigma. *Filaments* (see pl. 2. f. 1, *b.*) numerous, flat, inserted upon the disk or torus above the petals; the outermost gradually dilated. *Anthers* (see pl. 2. f. 1, *c.*) strap-shaped, of 2 parallel cells, closely attached, in their whole length, to the inner surface of the upper part of each filament. *Germen* (see pl. 2. f. 2, *b.*) superior, sessile, globose. *Style* none. *Stigma* (see pl. 2. f. 2, *c.*) orbicular, sessile, of numerous rays, pointed and separate at the extremity, permanent. *Berry* (pl. 2. f. 3.) fleshy, scarred, with a bark-like coat, of as many cells as there are rays to the stigma; at length internally galatinous and pulpy. *Seeds* roundish, numerous in each cell, (see pl. 2. f. 4.)

The *calyx* of 4 sepals; the *corolla* of numerous petals, which, as well as the stamens, are inserted upon a fleshy disk or covering to the germen; and the many-celled, many-seeded, deliquescent, berry-like *fruit;* will distinguish this from other genera in the same class and order.

One species British.

NYMPHÆ'A A'LBA. Great White Water-lily. Water-rose. Water-can. Can-dock.

SPEC. CHAR. Leaves heart-shaped, quite entire; even beneath. Lobes imbricated, round. Calyx of 4 sepals.

Engl. Bot. t. 160.—Hook. Fl. Lond. t. 140.—Ray's Syn. p. 398.—Johnson's Gerarde, p. 819.—Linn. Sp. Pl. p. 729.—Huds. Fl. Anglica, (2nd ed.) p. 234.—Sm. Fl. Brit. v. ii. p. 570. Engl. Fl. v. iii. p. 14.—With. (7th ed.) v. iii. p. 652.—Gray's Nat. Arr. v. ii. p. 707.—Lindl. Syn. p. 15.—Hook. Brit. Fl. p. 259.—

Plate I. Fig. 1. A Flower-bud rising from the water, and shewing the tips of the Calyx.—Fig. 2. An expanded Flower; *a.* one of the Sepals of the Calyx; *b.* the Corolla.—Plate II. Fig. 1. A Flower, after the calyx and all the petals, but one, are taken off; *a.* a Petal to show its situation on the Germen; *b.* the Filaments; *c.* the Anthers; *d.* the Germen.—Fig. 2. The same divested of the Calyx, Corolla, and Stamens; *a.* the Nectary; *b.* the Germen; *c.* the radiated Stigma.—Fig. 3. A Fruit or Berry.—Fig. 4. A transverse section of the same, to show the Seeds.—*All of the natural size.*

* *Nymphaia* of the Greeks; so called from its inhabiting the waters, as the *Nymphs* or *Naiads* were wont to do. HOOKER.

† See *Anemone nemorosa,* folio 43, note †.

Lightf. Fl. Scot. v. i. p. 283.—Sibth. Fl. Oxon. p. 167.—Abbot's Fl. Bedf. p. 117.—Davies' Welsh Bot. p. 53.—Purt. Midl. Fl. v. i. p. 251.—Relh. Fl. Cant. (3rd ed.) p. 215.—Hook. Fl. Scot. p. 169.—Grev. Fl. Edin. p. 120.—Fl. Devon. pp. 90 & 192.—Rev. G. E. Smith's Pl. of South Kent, p. 29.—Winch's Fl. of Northumb. and Durham, p. 36.—Walk. Fl. of Oxf. p. 149.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 126.—Burnett's Outl. of Bot. v. ii. p. 846.—Perry's Pl. Varvic. Selectæ, p. 45.—Curt. Brit. Entom. v. xi. t. 485.—Bab. Fl. Bath. p. 3.—Mack. Catal. of Pl. of Irel. p. 51.—*Castalia speciosa*, Salisbury, in Annals of Botany, v. ii. p. 72.

Localities.—In lakes, ponds, and slow rivers.—*Oxfordsh.* Very common in the neighbourhood of Oxford; in the Isis, and the Cherwell, and also in most of the pools and deep watery ditches in their vicinity.—*Berks;* In ponds, and slow deep rivers, plentiful: Dr. Nothedfn. In the Isis, and in ponds and deep watery ditches near it: W. B.—*Bedfordsh.* In rivers, common: Rev. C. Abbot.—*Bucks;* In a small bay near Upper Hope, on the Thames near Eton: Mr. Manbyot.—*Cambridgesh.* In the water-course on the side of the road between Barnwell and Hinton: Teversham Moor; Triplow Heath, Anglesey Abbey, &c.: Rev. R. Relhan.—*Cornwall;* Marazion Marsh: Mr. Stackhouse.—*Devon;* In marshes and canals at Powderham, hardly wild: *Fl. Devon.*—*Dorset;* Between Blandford and Durweston; common in the rivers Stour and Avon: Dr. Pulteney.—*Kent;* In narrow dykes at Ham-ponds near the village; where this noble plant is banished from the wide and pure streams, to associate with the humble sparganium natans, Hydrocharis, and Lemnæ: Rev. G. E. Smith.—*Essex;* Near Luxborough House; and Pissingford Bridge: Mr. Warner.—*Lancash.* More frequent in ponds about Liverpool than Nuphar lutea: Dr. Bostock.—*Norfolk;* In rivers and lakes, common: Mr. Woodward.—*Northumberland;* In Greenley and Broomley Lakes, near Shewing Shields. In Grinden Lake: Wallis. Naturalized in the ponds at Wellington: N. J. Winch, Esq.—*Notts;* In the Great Cheney-pool, and in a ditch between Lenton and Beeston: Dr Deering.—*Shropsh.* In Snowdon Pool near Bridgnorth: H. Bidwell, Esq.—*Somersetsh.* Frequent in ponds, &c.: Dr. Bostock. In the basins of the canal near Bath: Drs. Henbage and Gibbes.—*Staffordsh.* In the large Pool at Patshull: Dr. Withering and H. Bidwell, Esq. In the River Sow, near Stafford: Dr. Withering.—*Suffolk;* In rivers and lakes, common: Mr. Woodward.—*Surrey;* In rivers and ponds: Mr. W. Pamplin, jun.—*Warwicksh.* In a pond at Ragley: T. Purton, Esq.—*Worcestersh.* In the Avon, under Littleton Bank, according to Mrs. George Perrott. Rare in a truly wild state in this county: Mr. Edwin Lees, in Illust. of the Nat. Hist. of Worcestersh. p. 166.—*Yorksh.* Near Sheriff Hutton, and in the River Foss: Teesdale. Mere, near Scarborough: Mr. Travis. Thirsk, near Richmond: Mag. Nat. Hist. v. iii. p. 169.—WALES. *Anglesey;* Both in pools and larger rivers, frequent: Rev. H. Davies.—JERSEY. Abundant: Miss Perry.—SCOTLAND. In lakes and ditches, very frequent. Seen to the greatest perfection in the little bays and inlets of pellucid alpine lakes; in Loch Lomond acres are densely covered with it: Dr. Hooker. Lochend, Edinburgh: Mr. Maughan. Near Glasgow: Mr. Hopkirk.—IRELAND. In lakes, not unfrequent. Lough Dan and Glandelough, county of Wicklow; lakes about Killarney, and in Cunnamara, plentiful.

Perennial.—Flowers in June, July, and August.

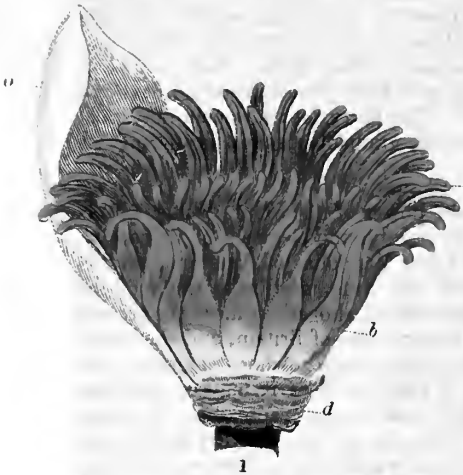
Trunk of the *Root* large and fleshy, horizontal, producing, from the under side, many long, stout radicles, which are fibrous at the extremity. *Leaves* on long, cylindrical petioles, floating, 8 or 10 inches wide, oval-heart-shaped, the lobes at the base roundish, nearly parallel, or close together, quite entire, smooth, bright green on the upper surface, paler on the under, with radiating veins which are not prominent. *Flower-stalks* cylindrical, smooth, their length depending on the depth of water in which they grow. *Flowers* large, white, and very handsome, being sometimes, when fully expanded, 5 or 6 inches in diameter. *Calyx* (see pl. 1. f. 2, *a.*) of 4 oblong, blunt, spreading, smooth sepals; of a yellowish-green colour on the outside, with a white edge; white within. *Corolla* (see pl. 1. f. 2, *b.*) of many oblong, somewhat inversely egg-shaped, white petals, (see pl. 2. f. 1, *a.*) which gradually diminish in size towards the centre. *Filaments* (see pl. 2. f. 1, *b.*) numerous, flat,

[illegible] Pl. Sort. v. i. p. 580.—Sibb. Pl. Oxon. p. [illegible].—Abbot's Pl. Bedf. p. 177.—Davies' Welsh Bot. p. 82.—Pur. Med. Bot. v. i. p. 250.—Hall. Pl. Cant. (Bot. Arch.) p. 215.—Hook. Fl. Scot. p. 180.—Grev. Fl. Edin. p. 191.—Fl. Devon. p. 139.—Rev. G. Smith's Fl. of South Kent, p. 191.—Woodcock's Fl. of Northumb. and Durham, p. 36.—Wale. Fl. of Cor. p. 149.—Forster. Syst. of Gard. and Bot. v. i. p. 290.—Burnett's Outl. of Bot. v. ii. p. 866.—Perry's Fl. Vernon. Selecta, p. 45.—Curt. Bot. Epitome, v. ii. p. 495.—Bab. Fl. Brit. p. 3.—Mack. Catal. of Fl. of Irel. p. 3.—Cumbria spiceosa, Salisbury in Annals of Botany, v. ii. p. 72.

Local habitat.—In lakes, ponds, and slow rivers.—Cambridge. Very common in the neighbourhood of Oxford: in the Isis, and the Cherwell, and also in most of the pools and deep watery ditches in their vicinity.—Berks: in ponds, and slow deep rivers, plentiful: Dr. Newbery. In the Isis, and in ponds and deep watery ditches near it: W. B.—Bedfordshire: in rivers, common: Rev. C. Abbot.—Bucks: in a small bay near Upper Hope, on the Thames near Eton: Mr. Harvey.—Cambridge: In the water course on the side of the road between Barnwell and Histon: Trumpington Moor: Impton Heath, Anglesey Abbey, &c.: Rev. R. Relhan.—Cornwall: Marazion Marsh: Mr. Stackhouse.—Devon: In marshes and meads at Powderham, hardly wild: R. Devon.—Dorset: Between Hinton and Throwston, common in the rivers Stour and Avon: Dr. Turner.—Kent: In marine dykes: in ponds near the village, where the marine plant is banished from the wide and pure streams, to associate with the humbler sporadic natives, Hydrocharis, and Lemna: Rev. G. Smith.—Essex: Near Lexdenough House; and Fressingford Bridge: Mr. Wansey.—Gloucester: More frequent in ponds about Liverpool than Napier later: Dr. Boott.—Herts: In rivers and lakes, common: Mr. Woodward.—Huntingdon: In Grewelay and Broomley lakes, near Chesterton Sheldrake: [illegible] lake: Water: Naturalized in the ponds at Wellington: N. J. [illegible].—Kent: In the Great (Heavy-pool), and a ditch between Leeson and Boston: Dr. Dyson.—Sussex: In somewhat Pool near Bridgeworth: H. [illegible].—Sussex: Frequent in ponds, &c.: Dr. Boreau. In the [illegible] of the canal near Bath: Dr. Hooker, and Greene.—Staffordshire: In the Trent, Mod. of Pirehill: Dr. Wrangham and H. Brewer, Esq. In the River Sow, near Stafford: Dr. Wrangham.—Suffolk: In rivers and lakes, common: Mr. Woodward.—Surrey: In rivers and ponds: Mr. W. Farmer, [illegible] Ash: In a pond at Ockley: T. Penney, Esq.—Warwick, in the Avon: under Lawton bank, according to Mr. Cowper Ferrers. Rare in a [illegible] in the county: Mr. Lewis Lees in Flint of the Nat. Hist. of Warwick: In Mr. Tomkins' New Sheriff Hutton, and in the Lower Foss: Yorkshire: Mr. Thorpe, per Dr. Lindley. Mr. Lewis, "Flint, near Flint mount Nay, Nat. Hist. v. iii. p. 169.—WALES: In Anglesey: Rich in ponds and a large [illegible]: Rev. H. Davies.—HIBERNIA: Abundant. Mr. Perry.—[illegible]: In lakes and ditches, very frequent. Grows in the western parts [illegible] in the lakes and ponds of Pleasant alpine lakes, in Loch Lomond [illegible] Mr. [illegible] Mr. [illegible] Mr. [illegible] (Ireland): In the [illegible] county of Wicklow: Mr. [illegible] Kilmacow, and in Connemara, plentiful.

Perennial.—Flowers in June, July, and August.

Stem in the Kent and Sussex, and Surrey, horizontal, prostrate, from the upper side, many long, stout radicles, which are thrown at the extremity. Leaves on long, cylindrical petioles, floating, 8 or 10 inches wide, oval-heart-shaped, the lobes at the base rounded, nearly flat, or close together, quite entire, smooth, bright green on the upper surface, pale on the under, with radiating veins [illegible] Flower-stalks cylindrical, smooth, thicker than the petioles, length depending on the depth of water in which they grow, [illegible] very hard and very hard some, being sometimes [illegible] or 6 inches in diameter. Calyx (sepals) 4, 5, or 6, [illegible] spreading, green, [illegible] a yellowish-green [illegible] with a white edge. Petals with [illegible] 4, 5, or 6 [illegible] which gradually diminish in size [illegible] Flowers [illegible] Fruit [illegible]



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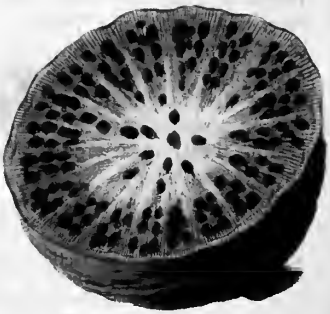

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NYMPHAEA ALBA. *WHITE WATER-LILY.♃.*

Whispell del. *Pub.d by W. Baxter, Botanic Garden, Oxford. 1836.* *Whispell f.* *Pl. 2.*

the inner ones yellow, and bent inwards; the outermost gradually wider, and resembling the inner petals. *Anthers* (see pl. 2. f. 1, *c.*) yellow, strap-shaped, 2-celled, attached, in their whole length, to the inner surface of the upper part of the filament. *Germen* (pl. 2. f. 2, *b.*) roundish, closely covered by a fleshy disk or torus, upon which the petals and stamens are inserted. *Style* none. *Stigma* (pl. 2. f. 2, c) rayed, rays ascending. *Berry* (pl. 2. f. 3.) when full grown nearly 2 inches in diameter, spherical, warted with the remains of the petals and filaments, and crowned by the permanent, radiated stigma, like the fruit of the poppy. *Seeds* (see pl. 2. f. 4.) numerous in each cell, roundish, smooth, shining, having a very blunt angle on one side. The Berry does not open, but, sinking to the bottom of the water, gradually decays, scattering its seeds in the mud.

Of all our native plants, the flower of the White Water Lily is the most magnificent; in size, beauty, and elegance of its corolla, it may vie with many of the finest Magnolias of America; and its delicate and pure white petals are little inferior to those of the Night-blowing Cereus. It has indeed, altogether, more the air and character of a native of the tropics, than of Britain, and the colder parts of Europe. This lovely plant is seen nowhere in greater perfection than in the vicinity of Oxford; here it may be observed, in the months of June, July, and August, spreading its broad leaves over the surface of the water in almost every pond, deep watery ditch, and slow river, and expanding its flowers to the sun with a lustre which "Solomon, in all his glory," never equalled. The Cherwell‡, in particular, is celebrated for its Lilies, and, during their season of flowering, they may be seen in great abundance, and beauty, in the upper stream of that river, just beyond King's Mill, in St. Clement's. But I never saw them in such profusion as I did last year (1835), about 8 or 9 miles higher up the river, a little beyond Thrup, on the left hand side of the towing-path going towards Shipton; and again, about a mile beyond Shipton, where the river winds off to the left from the canal§. There they may truly be said to be the "Delight of the Waters‖;" for, on a sunny day, thousands of expanded blossoms may be seen resting their "pearly cups" on the surface of the stream, as far as the eye can reach.

These elegant flowers, like those of the sacred Lotos of the Nile, (*Nymphæa Lotus*, Linn. and Curt. Bot. Mag. t. 797.), "arise and expand in the morning, as the sun gains its ascendency, close towards evening, and in that state either repose through the night reclining on the bosom of the water, or actually sunk beneath its surface, till revived by the return of day, when"

'Conscious of the earliest beam,
She rises from her humid rest,
And sees reflected in the stream
The virgin whiteness of her breast.'—Mrs. C. Smith.

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‡ This river runs close on the E. of Oxford, passes under Magdalen Bridge, and joins the Isis at the bottom of Christ Church Meadow.

§ It was from these parts of the Cherwell that Mr. W. Turner, of Oxford, made his two beautiful paintings of Water Lilies. One of these delightful pictures, taken from a view near Thrup, in a part of the river called Thrup Wide, is in the possession of Mrs. Pearce, of Beaumont-street, Oxford; the other, from a view higher up the river, is now (April 30, 1836,) in the Exhibition at the Gallery, Pall Mall East, London.

‖ The Indian name of the Water Lily is *Cumuda*, or *Delight of the Waters*.

This circumstance is noticed by MOORE, in his *Lalla Rookh.*

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

Sir J. E. SMITH observes, that the action of the stimulus of light in this instance is peculiarly obvious, expanding, and thereby raising the flower above the water that the pollen may reach the stigma uninjured; and when that stimulus ceases to act, they close again, drooping by their own weight to a certain depth. The still more ponderous fruit sinks to the bottom, where it gradually decomposes into a gelatinous mass, and deposits its seeds.

The roots have a bitter astringent taste; they are used in Ireland, in the Highlands of Scotland, and in the Island of Jura, &c. to dye a dark brown or chesnut colour. They were formerly employed medicinally as astringents, but their use is now become almost obsolete, being seldom resorted to as styptics, and only occasionally chewed by singers to relieve relaxation of the uvula and soft palate, give firmness to the vocal organs, and clear the voice. Swine and goats are said to eat the Water Lily; cows, horses, and sheep, to refuse it. Chinese carps *(Cyprinus auratus,* Linn.*)* are said to delight in the shade of its expansive foliage.

Oxygen gas is copiously evolved in bubbles from its leaves.

In Japan the White Water Lily is considered as an emblem of purity, and flowers of it, and of Motherwort, are borne in procession before the body in their funeral ceremonies; these are carried in pots: artificial Water Lilies of white paper are also borne on poles. STURM informs us, in his *Deutschland Flora,* that in Turkey and Greece an agreeable cordial beverage is prepared from the leaves and flowers.

The following lines, from MRS. HEMANS' *National Lyrics,* are so beautifully descriptive of the flowers of this noble plant, that any apology from me, for introducing them here, will, I trust, be unnecessary.

> "Come away, elves! while the dew is sweet,
> Come to the dingles where fairies meet;
> Know that the Lilies have spread their bells,
> O'er all the pools in our forest dells;
> Stilly and lightly their vases rest
> On the quivering sleep of the water's breast,
> Catching the sunshine thro' leaves that throw
> To their scented bosoms an emerald glow;
> And a star from the depth of each pearly cup,
> A golden star unto heaven looks up,
> As if seeking its kindred, where bright they lie,
> Set in the blue of the summer sky.
> Come away! under arching boughs we'll float,
> Making those urns each a fairy boat;
> We'll row them with reeds o'er the fountain free,
> And a tall flag-leaf shall our streamer be;
> And we'll send out wild music so sweet and low,
> It shall seem from the bright flower's heart to flow,
> As if 'twere a breeze with a flute's low sigh,
> Or water-drops trained into melody.
> Come away! for the Midsummer sun grows strong,
> And the life of the Lily may not be long."

Státice Limónium. Sea Lavender ♃

I.R. Del. Pub.d by W. Baxter, Botanic Garden, Oxford, 1836 C. Mathews Sc.

STA'TICE*.

Linnean Class and Order. PENTA'NDRIA†, PENTAGY'NIA.

Natural Order. PLUMBAGI'NEÆ, *Dr. R. Brown.*—Lindl. Syn. p. 170.; Introd. to Nat. Syst. of Bot. p. 195.—Rich. by Macgilliv. p. 430.—Loud. Hort. Brit. p. 530.—PLUMBAGINES, Juss. Gen. Pl. p. 92.—Sm. Gram. of Bot. p. 94.—SYRINGALES; subord. PRIMULOSÆ; section, PLANTAGINÆ; type, ARMERIACEÆ; subtype, STATICIDÆ; Burn. Outl. of Bot. pp. 900, 958, 1026, 1028, and 1029.—AGGREGATÆ, *Linnæus.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, funnel-shaped, plaited, membranaceous, dry and permanent. *Corolla* (figs. 2 & 3.) funnel-shaped, of 5 petals, tapering downwards, united at the base, dilated upwards, blunt, spreading. *Filaments* (see figs. 3 & 4.) 5, awl-shaped, shorter than the corolla, attached to the claws of the petals. *Anthers* incumbent. *Germen* roundish, very minute. *Styles* (see fig. 4.) 5, thread-shaped, spreading, permanent. *Stigmas* acute. *Capsule* oblong, somewhat cylindrical, membranous, of 1 cell, and 1 valve, with 5 points, (see fig. 5.); clothed with the permanent calyx, and surmounted by its filmy border. *Seed* solitary, elliptic-oblong, pendulous by a hair-like receptacle.

The monosepalous, dry, and membranaceous *calyx;* the *corolla* of 5 petals, united at the base; and the *capsule* of 1 cell, with 1 seed, clothed with the calyx; will distinguish this from other genera in the same class and order.

Four species British.

STA'TICE LIMO'NIUM. Spreading-spiked Thrift. Common Sea Lavender ‡.

SPEC. CHAR. Leaves elliptic-spear-shaped, stalked, single ribbed, with a nearly terminal bristle, (see fig. 6). Stalk angular, with a much-branched spreading corymb at the top. Calyx with deep, acute, plaited segments, and intermediate teeth.

Engl. Bot. t 102.—Linn. Sp. Pl. p. 394.—Huds. Fl Angl. (2nd ed.) p. 132. (excl. syn. γ.)—Sm. Fl. Brit. v. i. p. 341. (excl. syn. β.); Engl. Fl. v. ii. p. 116. (excl. syn. β.).—With. (7th ed.) v. ii. p. 405. (excl. var 1).—Lindl. Syn p. 170. —Hook. Brit. Fl. p. 145.—Relh. Fl. Cant. (3rd ed) p 131.—Davies' Welsh Bot. p. 31.—Hook. Fl. Scot. p. 97.—Rev. G. E. Smith's Pl. of South Kent, t. 2. figs. 1 & 3.—Curt. Brit. Entom. v. i. t. 47.—Fl. Devon. pp. 55 & 141.—Johnst. Fl. of Berw. v. i. p. 74.—Winch's Fl. of Northumb. and Durham, p. 21.—Mack. Catal. of Pl. of Del. p. 31.—*Limónium commúne*, Gray's Nat. Arr. v. ii. p. 296. (excl. syn. β & γ.).—*Limónium*, Ray's Syn. p. 201.—Johnson's Ger. p. 411.

LOCALITIES.—On salt marshes; rocks on the sea-coast; and about the mouths of large rivers; common.—*Cambridgesh.* Tydd Marsh, near Wisbeach: Mr. SKRIMSHIRE.—*Cheshire;* Shores and inlets of Wallasey Pool, in the Mersey: Mr. WATSON, in N. B. G.—*Devon;* Marshes at Topsham; Clyst; and Exminster; and rocks round Torbay: *Fl. Devon.* Braunton Burroughs: N. B. G. Cliffs near Paignton: H. WOOLLCOMBE, Esq. On the shore between Star-cross

Fig. 1. Calyx opened vertically.—Fig. 2. Corolla.—Fig. 3. The same opened vertically to show the 5 Stamens.—Fig. 4. The Stamens and Pistils.—Fig. 5. A Capsule.—Fig. 6. The extremity of a Leaf, showing the terminating bristle.

* From *statizo*, Gr. to *stop;* from its supposed qualities in checking dysentery. HOOKER.

† See *Anchusa sempervirens*, folio 48, note †.

‡ From the similarity of appearance in the blue blossoms of this plant to those of the Lavender.

and Powderham: Dr. WITHERING.—*Durham;* On the north shore of Wear at Hilton, near Sunderland; also near Tees mouth, and at Hartlepool: N. J. WINCH, Esq.—*Essex;* On Walton Marshes: Mag. Nat. Hist. v. iv. p. 446.—*Hampsh.* Brading Harbour, Isle of Wight: Dr. BOSTOCK.—*Kent;* Between Sandwich and Pegwell: Rev. G. E. SMITH. On the sea-coast: Mr. W. PAMPLIN, jun.—*Lancash.* Poulton near Lancaster: G CROSFIELD, Esq. Garston near Liverpool: Dr. BOSTOCK.—*Norfolk;* Salt Marshes, Burnham Overy: Miss BELL, in N. B. G.—*Northumberland:* On St. Cuthbert's, (A rock at Holy Island): N. J. WINCH, Esq.—*Westmoreland;* On the west side of Milnthorpe Sands: Mr. GOUGH.—WALES. *Anglesey;* On rocks on the south-west coast, not uncommon: Rev. H. DAVIES.—*Merionethsh.* Near Barmouth: Mag. Nat. Hist.—SCOTLAND. Coast of Galloway, near Kirkcudbright, common: Mr. MAUGHAN.—IRELAND. Strand near Passage: Mr. DRUMMOND. On the south side of Howth, on banks near the sea: Mr. T. MACKAY.

Perennial.—Flowers from July to September.

Root thick, tough, and somewhat woody. *Leaves* of a stiff leathery consistence, smooth, glaucous green, from 4 to 6 inches long, and 2 inches or more broad, with a single rib, lateral oblique nerves, and a terminal, recurved, channelled bristle, (see fig. 6). *Scape (stalk)* from 9 inches to a foot high, angular, often furrowed above, with a coarse uneven surface. *Panicle* corymbose, level-topped, with spreading, or sometimes, recurved branches, in which respect it differs remarkably from *Statice spathulata* of Hook. Brit. Fl. *Calyx* with deep, acute, plaited, spreading segments, reflexed in the margin, and with intermediate teeth. *Petals* of a fine blue; paler on the outside. ..*Anthers* yellow. *Pollen* with 3 pellucid dots, compressed. *Germen* granulated. *Stigmas* rough with prominent, but minute papillæ. See *Hook. Brit. Fl.*

We are informed by the Rev. G. E. SMITH, that it is sometimes found with white flowers on the north coast of Cornwall.

It was this excellent and indefatigable Botanist that first determined *Statice Limonium*, var. *β.* of the English Flora to be a distinct species, and published it, in his "Catalogue of Rare and Remarkable Phænogamous Plants collected in South Kent," as the *Statice cordata* of LINNÆUS; Dr. HOOKER, however, is of opinion, that it is not the plant intended by LINNÆUS under that name, but the *S. spathulata* of DESFONTAINES, figured in Curtis' Botanical Magazine, t. 1617, and mentioned as a native of Barbary. The discriminating characters of *S. Limonium* and *S. Spathulata* are well drawn up by Mr. W. WILSON, and published in Dr. HOOKER's *British Flora.*

Messrs. KIRBY and HOOKER discovered, on *S. Limonium*, in Norfolk, a nondescript insect, *Apion Limonii*, supposed to be the most splendid of its genus. See Tr. of Linn. Soc. v. ix. p. 78. t. 1. f. 20.

The PLUMBAGI'NEÆ are low *shrubs* or *herbaceous* plants, variable in appearance. Their *leaves* are alternate or clustered, undivided, and somewhat sheathing at the base. Their *flowers* are either loosely panicled, or contracted into heads, flowering irregularly. Their *calyx* is monosepalous, tubular, plaited, and permanent. Their *corolla* monopetalous or pentapetalous, and regular. Their *stamens*, which are generally 5 in number, are, in the monopetalous species, hypogynous; in the polypetalous they arise from the petals! The *ovarium (germen)* is superior, single, and 1-seeded; and the *ovulum (immature seed)* is inverted, and pendulous from the point of an umbilical cord, arising from the bottom of the cavity. The *styles* are 5 in number! seldom 3 or 4; and are terminated by an equal number of *stigmas.* The *fruit* is a nearly indehiscent utriculus. The *seed* is inverted; with a simple *testa;* a straight *embryo;* and a superior *radicle.* See *Lindl. Syn.* and *Introd. to Nat. Syst. of Bot.*

[illegible] Dr. [illegible]—[illegible]
[illegible], near Sandwich; also near [illegible]
[illegible], Rev. — Bower; On Walton [illegible]
[illegible] Rev. Hudson; [illegible] Wyatt [illegible]
[illegible] and Pewsell: Rev. C. Sayers. On [illegible]
[illegible]—Lancaster. Pontlow near Lancaster (Dr. [illegible]
near Liverpool: Dr. Bostock.—Norfolk: Salt [illegible]
[illegible], in N. R. C.—Northumberland: On the Cheviot, a rock of
[illegible] (island): N. J. Winch, Esq.—Westmoreland: On the [illegible] of Ulthorpe Sands: Mr. Gibson.—WALES: Anglesey: On rocks on the south-west coast, not uncommon: Rev. H. Davies.—Montgomery: [illegible] Mag. Nat. Hist.—SCOTLAND. Coast of Galloway; near Kirkcudbright, common: Mr. Maughan.—IRELAND. Strand near Rathdrum, Co. Dublin: On the south side of Howth, on banks near the sea: M. T. Mitchell.

Perennial.—Flowers from July to September.

Root thick, tough, and somewhat woody. Leaves of a firm leathery consistence, smooth, glaucous green, from 4 to 6 inches long, and 2 inches or more broad, with a single rib, lateral oblique nerves, and a terminal, recurved, channelled bristle (see Fig. 9). Scape (stalk) from 9 inches to a foot high, angular, often furrowed above, with a coarse uneven surface. Panicle corymbose, leafless, topped, with spreading, or sometimes, recurved branches. In much respect it differs remarkably from Statice paradoxa of Hook. Fl. Calyx with deep, acute, plaited, spreading segments, tinged in the margin, and with intermediate teeth. Petals of a fine blue; paler on the outside. Anthers yellow. Pollen with 3 pellucid ducts, compressed. Ovaries granulated. Stigmas rough, prominent, but minute papillæ. See Hook. Bri. Fl.

We are informed by the Rev. C. B. SMITH, that it is [illegible] found with white flowers on the north coast of Cornwall.

It was [illegible] excellent and indefatigable Botanist that [illegible] Lamarck, [illegible] of the English Flora to be a distinct species, [illegible] it, in his [illegible] Catalogue of Rare and Remarkable Phanerogamous Plants in South Kent," as the Statice cordata of Lamarck; Dr. [illegible] of opinion, that it is not the plant intended by Lamarck under [illegible] the V. vorticillata of DESFONTAINES, figured in Curtis' Botanical [illegible] t. 1017, and mentioned as a native of Barbary. The determination [illegible] of S. limonium and S. spathulata are well drawn up by Mr. W. [illegible] published in Dr. HOOKER's British Flora.

Diseases, Mites and Hoopers discovered on S. Limonium, [illegible] a monderment insect, Aphis Limonii, supposed to be the sugar [illegible] genus. See Tr. of Linn. Soc. v. ix. p. 78. t. 1. f. 20.

The PLUMBAGINEÆ are low shrubs or herbaceous plants, [illegible] in appearance. Their leaves are alternate or clustered, [illegible] and somewhat sheathing at the base. Their flowers are either [illegible] panicled, or contracted into heads, flowering irregular[illegible] calyx is monosepalous, tubular, plaited, and persistent. [illegible] corolla monopetalous or pentapetalous, and regular. [illegible] which are generally 5 in number, are, in the monopetal[illegible] hypogynous; in the polypetalous they arise from the [illegible] ovarium (pistil) is superior, single, and 1-celled; [illegible] lum (fruit or seed) is inverted, and pendulous from the [illegible] an umbilical cord, arising from the bottom of the [illegible] styles are 5 in [illegible] seldom 3 or 4; and are [illegible] equal number of stamens. The fruit is a nearly [illegible] rium. The seed is inverted; with a simple testa, [illegible] albumen, and a superior radicle. See Lindl. Syn. and [illegible]

Knáppia agrostidea. Early Knappia. ⊙

Pub.d by W. Baxter, Botanic Garden. Oxford 1836.

C. Mathews Del.t & Sc.

KNA'PPIA*.

Linnean Class and Order. TRIA'NDRIA†, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 68. Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—GRAMINA, *Linn.*—GRAMINA'LES; section, FESTUCINÆ; type, AGROSTIDACEÆ; Burn. Outl. of Bot. v. i. pp. 359, 369, & 371.

GEN. CHAR. *Raceme* simple. *Calyx* (see fig. 1) of 2, nearly equal, expanded, concave, keeled, egg-shaped, blunt, single-ribbed, awnless glumes (valves), containing a single floret. *Corolla* (see fig. 2.) of 2 unequal, inversely egg-shaped, membranous, ribbed, hairy, fringed, blunt, awnless paleæ (valves), which are rather shorter than the glumes, the larger embracing the inner one. *Filaments* (see figs. 1 & 3.) 3, hair-like, twice as long as the glumes. *Anthers* elliptic-oblong, cloven at each end, upright, with 2 minute terminal beaks (see fig. 3.) *Germen* (see figs. 2 & 4.) minute, roundish. *Styles* (see figs. 1 & 4.) 2, very short. *Stigmas* (see figs. 1, 2, & 4.) rather longer than the stamens, cylindrical, downy, pointed. *Seed* loose, covered by the corolla, inversely heart-shaped, copiously dotted in longitudinal lines. *Smith & Hooker.*

The single-flowered *calyx* of 2 nearly equal, blunt glumes; and the *corolla* of 2 unequal, hairy, blunt, awnless paleæ; will distinguish this from other genera, with a panicled inflorescence, in the same class and order.

Only one species known.

KNA'PPIA AGROSTI'DEA. Agrostis-like Knappia. Early Knappia.

SPEC. CHAR.

Engl. Bot. t. 1127.—Knapp's Gramina Britannica, t. 110.—Hook. Fl. Lond. t. 61.—Graves' Brit. Grasses, t. 28.—Sm. Fl. Brit. v. iii. p. 1387. Engl. Fl. v. i. p. 84.—With. (7th ed.) v. ii. p. 151.—Hook. Brit. Fl. p. 57.—Davies' Welsh Bot. p. 9.—*Agrostis minima*, Linn. Sp. Pl. p. 93.—Huds. Fl. Angl. (2nd ed.) p. 32.—Sm. Fl. Brit. v. i. p. 82.—Hort. Kewensis, (2nd ed.) v. i. p. 149.—*Chamagrostis minima*, Schrader's Fl. Germanica, v. i. p. 158.—Lindl. Syn. p. 301.—*Mibora verna*, Adanson.—Gray's Nat. Arr. v. ii. p. 155.—*Gramen minimum Anglo-Britannicum*, Ray's Syn. Ind. Pl. Dub. k. k. 7.

LOCALITIES.—In sandy pastures near the sea. Very rare.—*Essex;* A few miles from Lee, near the mouth of the Thames: LOBEL.—WALES. *Anglesey;* Frequent on the south-west coast: Rev. H. DAVIES.

Fig. 1. A Flower, with a small piece of the rachis, showing the Calyx and the Corolla, and the 3 Stamens, and 2 Pistils.—Fig. 2. The Paleæ, Germen, Styles, and Stigmas.—Fig. 3. A separate Stamen.—Fig. 4. Germen, Styles, and Stigmas.—*All more or less magnified.*

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* So named, by Sir JAMES EDWARD SMITH, in honour of JOHN LEONARD KNAPP, Esq. F. L. S., &c. an English Botanist, and author of a work on British Grasses, "entitled, "Gramina Britannica; or, Representations of the British Grasses. With remarks and occasional descriptions. London: published by White. 1804. This work is in 4to. and contains 119 coloured plates, with letterpress to each. I have been informed that Mr. Knapp is also the author of that very interesting and instructive work, "The Journal of a Naturalist."

† See *Phalaris canariénsis*, folio 56, note †.

Annual.—Flowers in March, April, and May.

Root fibrous, fibres long and slender. *Stems* from 1 to 3 inches high, upright, simple, slender, triangular, the base alone covered with the sheaths of the leaves, the rest naked. *Leaves* few, very short, from a quarter of an inch to half an inch long, strap-shaped, channelled, blunt, with elevated scattered dots. *Stipulæ (sheaths)* membranous, from a quarter of an inch to an inch long, somewhat inflated, striated, bluntish, cloven, but not deeply divided, pale brown, almost white. *Flowers* mostly sessile, alternate, sometimes subsecund, forming a loose, simple, upright spike of from 6 to 10 flowers, 2 or 3 of the lowermost of which are often more or less stalked. *Rachis (common stalk)* flexuose, slender, smooth, angular, but not excavated as in the truly spiked grasses. *Glumes* (see fig. 1.) nearly equal, smooth, shining, and, like the upper part of the stem, of a purplish-green colour. *Paleæ* (see fig. 2.) unequal, membranous, pellucid, white, hairy; the outer twice as large as, and embracing, the inner. *Stamens* (see fig. 1.) twice as long as the glumes, anthers oblong, yellow, 2-horned at the apex. *Seed* covered by the corolla (paleæ), inversely egg-shaped, brown, dotted, the dots disposed in longitudinal lines. See HOOKER'S *Flora Londinensis.*

There are specimens (whether British or Foreign is not stated) of this curious little grass in the *Sherardian Herbarium*, at the Botanic Garden, which vary from three quarters of an inch to more than 5 inches in height. The two outside figures in the annexed plate represent two varieties of this species, which came up from seed in the Oxford Botanic Garden.

Knappia agrostidea is said to be a well known Grass on the coasts of France; it is also a native of Germany. It is quite a Spring plant, flowering very early, and ripening its seed about May, after which it soon disappears.

It is remarked by the Rev. HUGH DAVIES, in his *Welsh Botanology*, that "each calyx expands, and immediately dismisses the seed, as soon as it is ripe, the uppermost first, the rest in succession, each enveloped in its cottony vest, a property which seems peculiar to this grass; probably an empty calyx or two, at the upper end of the spike, when the lowermost had by no means ripened their contents, gave origin to an idea of its being a monœcious plant."

This minute Grass, though useless to the farmer, is, from its rarity and beauty, of considerable interest to the botanist.

The elegant and pleasing writer, whose name is commemorated in this humble plant, very justly observes, that "young minds cannot be too stroogly impressed with the simple wonders of creation by which they are surrounded; in the race of life they may be passed by, the occupation of existence may not admit attention to them, or the unceasing cares of the world may smother early attainments—but they can never be injurious—will give a bias to a reasoning mind, and tend, in some after thoughtful, sobered hour, to comfort and to soothe. The little insights that we have obtained into nature's works are many of them the offspring of scientific research; and partial and uncertain as our labours are, yet a brief gleam will occasionally lighten the darksome path of the humble inquirer, and give him a momentary glimpse of hidden truths: let not then the idle and the ignorant scoff at him who devotes an unemployed hour,—

'No calling left, no duty broke,'—

to investigate a moss, a fungus, a beetle, or a shell, in 'ways of pleasantness, and in paths of peace.' They are all the formation of Supreme intelligence, for a wise and a worthy end, and may lead us by gentle gradations to a faint conception of the powers of Infinite Wisdom. They have calmed and amused some of us worms and reptiles, and possibly bettered us for our change to a new and more perfect order of being." See *The Journal of a Naturalist*, (2nd ed.) p. 51.; and *Time's Telescope* for 1825, p. 346.

[illegible] a quarter of an [illegible] [illegible] silent, with [illegible] [illegible] from a quarter [illegible] [illegible] striated, bluntish, [illegible] brown, almost white. *Flowers* [illegible] subsecund, forming a loose, simple, upright [illegible] from 6 to 10 flowers, 2 or 3 of the lowermost of which [illegible] stalked. *Rachis* (common stalk) flexuose, [illegible] gular, but not excavated as in the truly spiked [illegible] (see fig. 1.) nearly equal, smooth, shining, and [illegible] of the stem, of a purplish-green colour. [illegible] equal, membranous, pellucid, white, hairy; [illegible] large as, and embracing, the inner. *Stamens* [illegible] long as the glumes, anthers oblong, yellow. [illegible] Seed covered by the corolla (paleæ), inversely [illegible] dotted, the dots disposed in longitudinal lines. [illegible] *Flora Londinensis.*

There are specimens (whether British or Foreign [illegible] of this curious little grass in the Sherardian [illegible] Botanic Garden, which vary from three quarters [illegible] than 5 inches in height. The two outside [illegible] plate represent two varieties of this species, which [illegible] seed in the Oxford Botanic Garden.

Knappia agrostidea is said to be a well [illegible] of France; it is also a native of Germany [illegible] plant, flowering very early, and ripening [illegible] seed [illegible] which it soon disappears.

It is remarked by the Rev. Hugh Davies, in his [illegible] each calyx expands, and immediately diminishes the [illegible] the uppermost first; the rest in succession, each [illegible] property which seems peculiar to this grass [illegible] the upper end of the spike, when the lowermost [illegible] gave origin to an idea of its being [illegible]

This minute Grass, though useless to the farmer [illegible] of considerable interest to the [illegible]

The elegant and pleasing writer [illegible] very justly observes, that [illegible] the simple wonders of [illegible] of life they may be [illegible] [illegible] them, or [illegible] [illegible]—but they [illegible] [illegible] in some [illegible] [illegible] that [illegible] [illegible] of [illegible]

[illegible] give him a [illegible] [illegible] to him who [illegible]

[illegible] Tuesday [illegible] for 1826 [illegible]

Gentiána Pneumonánthe. Marsh Gentian. U.

Pub^d by W. Baxter Botanic Garden Oxford 1836.

I. E. Del. C. Mathews Sc.

GENTIA'NA*.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. GENTIA'NEÆ, *Dr. R. Brown.*—Lindl. Syn. p. 177; Introd. to Nat. Syst. of Bot. p. 215.—Rich. by Macgilliv. p. 444.—Loud. Hort. Brit. p. 526.—GENTIA'NÆ, Juss. Gen. Pl. p. 141.—Sm. Gram. of Bot. p. 106.—SYRINGALES; subord. PRIMULOSÆ; sect. GENTIANINÆ; type, GENTIANACEÆ; Burn. Outl. of Bot. pp. 900, 958, & 1008.—ROTA'CEÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1, *a.*) inferior, of 1 sepal, in 4 or 5 oblong, pointed, permanent segments. *Corolla* (fig. 2.) of 1 petal; tubular in the lower part; limb more or less spreading, in 4 or 5 deep, equal segments, withering, destitute of nectariferous glands. *Filaments* (fig. 1, *b.*) 5, or as many as the divisions of the corolla, and alternate therewith, inserted into the tube, and not protruding beyond it. *Anthers* (fig. 1, *c.*) incumbent, oblong, sometimes united. *Germen* (fig. 3.) oblong, nearly cylindrical, pointed. *Styles* (fig. 3.) short, upright, sometimes united. *Stigmas* (fig. 1, *d.*) flat, ovate. *Capsule* (fig. 4.) oblong, or elliptical, nearly cylindrical, pointed, slightly cloven, of 1 cell, and 2 valves. *Seeds* numerous, small, compressed, not bordered, fixed to the inflexed margins of the valves.

The monopetalous, inferior *corolla*, tubular at the base, and destitute of nectariferous glands; and the *capsule* of 1 cell and 2 valves; will distinguish this from other genera in the same class and order.

Six species British.

GENTIA'NA PNEUMONA'NTHE. Calathian Violet. Marsh Gentian. Autum Bellflower. Harvest Bells. Common Lungflower.

SPEC. CHAR. Leaves strap-shaped. Flowers axillary and terminal, stalked. Corolla bell-shaped, 5-cleft.

Engl. Bot. t. 20.—Curt. Brit. Entomol. v. vi. t. 281.—Linn. Sp. Pl. p. 330.—Huds. Fl. Angl. (2nd ed.) p. 102.—Sm. Fl. Brit. v. i. p. 285. Engl. Fl. v. ii. p. 27.—With. (7th ed.) v. ii p 358.—Lindl. Syn. p. 178.—Hook. Brit. Fl. p. 111.—Davies' Welsh Bot. p. 26.—*Gentiana palustris angustifolia*, Ray's Syn. p. 274.—*Pneumonánthe*, Johnson's Gerarde, p. 438.—*Pneumonánthe vulgáris*, Gray's Nat. Arr. v. ii. p. 335.

LOCALITIES.—On moist turfy heaths in several parts of England.—*Cheshire;* In a marsh on a heath near Holmes Chapel: Mr. HUNTER, in B. G. Not uncommon about Park-Gate: Mr. GRIFFITH, ibid. Heaths above Tranmere: Miss BECK, in N. B. G. Heaths near Bidston: Mr. H. C. WATSON, in N. B. G. and G. CROSFIELD, Esq. Bagerley Moor: Mr. CHRISTY.—*Cumberland;* Field between Maryport and Flimby, 2 or 300 yards from the latter: Rev. J. HARRIMAN. Howgill Castle Woods: HUTCHINSON.—*Derbysh.* Eggington Heath: PILKINGTON.—*Dorset;* In Purbeck; and on the moist grounds on Heaths: Dr. PULTENEY.—*Hampsh.* Moor near Fleet Pond: E. HILL, Esq. Ch. Ch. Oxford.—*Kent.* On the sides of the bogs on Waterdown Forest, towards Eridge Park; and in abundance in a field on the right hand of the coach-road over the forest to the High Rocks: *Fl. Tonbrigensis.* On Longfield Downs near Gravesend; near Greenhithe, and Cobham; also at Lellingstone, and near Dartford:

Fig. 1. Calyx, Stamens, and Pistils; *a.* calyx; *b.* filaments; *c.* anthers; *d.* stigmas.—Fig. 2. Corolla.—Fig. 3. Germen, Styles, and Stigmas.—Fig. 4. Capsule.—Fig. 5. Transverse section of the same.

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* So named from GENTIUS, King of Illyrica, who, according to PLINY, first discovered the antidotal virtues of a certain species. WITHERING.

† See *Anchusa sempervirens*, folio 48, note †.

Mart. Mill. Dict.—Lancash. Salesmoor, near Manchester: N. J. Winch, Esq. Near Burnley: Merrett. Walney Isle: Ray. Newton Heath, near Manchester: Mr. Caley. Near Southport: G. Crosfield, Esq. Near Coniston: Miss Mary Beever. Near Bootle, and on Childwall Common, near Liverpool: Dr. Bostock and Mr. Shepherd.—*Lincolnsh.* On the heathy ground between Newark and Lincoln, a few miles from the latter on the right: Rev G. Crabb. Horncastle, near the Tower of Moor: Rev. R. Relhan.—*Middlesex;* On Hounslow Heath, sparingly: Rev. Dr. Goodenough —*Notts;* Observed in this county by Mr. T. H. Cooper: see N. B. G.—*Norfolk;* On Stratton Strawless Heath: Mr. Stillingfleet. Leziate Heath, abundantly: Mr. Crow. Rollesby Common, in abundance: *Hist. of Yar.—Suffolk;* Carlton Heath, near Lowestoft: Mr. Woonward. Hopton and Corton Heaths: Mr. Wigg.—*Surrey;* A quarter of a mile beyond Clapham, in the field going the middle way to Engleton: Newton.—*Sussex;* On Chailey Common: W. Borrer, Esq. On Waterdown Forest near Tunbridge Wells: Mr. J. Woods, jun. Barnett's Rough, near Woolavington; Duncton Heath; on the Forest, about a mile to the N. E. of Wood's Nursery, on a bank facing the S. E., plentifully: N. B. G.—*Westmoreland;* Milburn: Rev. Mr. Richardson. Near Milthorpe: Hudson. Foulshaw Moss: N. B. G.—*Yorksh.* Terrington Car; and Stockton Common: Teesdale. Pill Moor near Helperby, in plenty: Rev. J. Dalton. Near Hewby, on heathy ground: Rev. Archdeacon Pierson. Hatfield Common: Dr. Maton. Tilmire, three miles from York: Mr. Leyland. Potteric Car, near Doncaster: S. Appleby, in *Mag. Nat. Hist.* vol. v. p. 557. Moors South of York; Raskelp Common, near Easingwold: N. J. Winch, Esq.—WALES. *Anglesey;* Rough Heaths near Holyhead; Rhos y Meirch; Cae rhôs Lligwy, &c.: Rev. H. Davies.

Perennial.—Flowers in August and September.

Root of many long, simple, tapering fibres. *Stem* simple, from 4 to 8 or 10 inches high, square, ascending, leafy. *Leaves* opposite, sessile, of a dark green colour, single-ribbed, an inch or more in length, strap-shaped, or sometimes strap-spear-shaped, entire, smooth, more or less blunt. *Flowers* few, large and handsome, upright, terminal and axillary, slightly stalked, seldom more than 1 or 2 on each stem. *Calyx* (fig. 1, *a.*) cylindrical, or very slightly angular, divided about half way down into 5 strap-shaped, pointed segments, with a nearly transparent membrane between each at their base. *Corolla* (fig. 2.) bell-shaped, or funnel-shaped, of a deep and beautiful blue colour, with 5 prominent, pale greenish plaits; the limb in 5 pointed lobes, with 1 or 2 small, intermediate, unequal teeth. *Anthers* (fig. 1, *c.*) pale yellow, united into a tube, till the germen enlarges and separates them. *Styles* (f. 3.) recurved.

This is an elegant and beautiful little plant, but is not of easy culture in a garden; it succeeds best in a moist, loamy soil. The fine specimen from which the drawing was made for the accompanying plate, was gathered near Coniston, in Lancashire, by Miss Mary Beever, and kindly communicated to me by Joshua Satterfield, Esq. of Manchester.

The Gentians are remarkable for their exceeding bitterness, which renders them valuable tonic and stomachic medicines.

Gentiana Lutea (Yellow Gentian) has been made the emblem of ingratitude, because it so frequently dies under the culture of the gardener. It is this species which is most commonly employed in British medicine; but its place is suppl ed in Norway and Germany by *G. Purpurea;* in Russia by *G. Pneumonanthe* and *G. Amarella;* and in the United States of America by *G. Catesbæi.*—The base of the famous Portland Powder is said to be *Gentian.*

[illegible]

[illegible] Hurst. [illegible] Blanchester; Mr. Cooper. [illegible] nation. Mrs. Mary Beaven. [illegible] Harvey. Dr. Harvey and Mr. Harvey [illegible] Newark and Lincoln; a few [illegible] Cranes. Horncastle, near the Tower of Mary [illegible] On Hounslow Heath, sparingly: Rev. Dr. [illegible] this county by Mr. T. H. Cooper; see N. B. G. [illegible] ness Heath. Mr. Stutterer. Lower Heath [illegible] Rollesby Common, in abundance. Rev. of Yar. [illegible] near Lowestoft. Mr. Woodward. Hopton and Cotton [illegible] Surrey; A quarter of a mile beyond Chipham, in the [illegible] way to Bagshot. Newton-Sussex; On Chaley [illegible] Esq. On Waterdown Forest near Tadridge Wells [illegible] Barnett's Road, near Wolsingham; Durham Heath [illegible] similar to the N. E. of Wood's Survey, on a bank [illegible] A. B. G.—Hemel-Hempstead; Milburn Rev. Mr. Rice [illegible] Hopson. Footham Moss; N. B. G.—Yorks. Temple [illegible] ton Common. Tessard. Pill Moor near Helpsby, in [illegible] ton. New Heyby, on heathy ground: Rev. A. [illegible] bald Common; Dr. Marsh. Thirsk, three miles from [illegible] Potato Car, near Doncaster; S. Appleby, in Mr. [illegible] Moss South of York. Hesketh Common, near [illegible] ham.—WALES. Anglesey; Hough Heath near Holyhead [illegible] (as this Library, &c. Hugh H. Davies.

Perennial.—Flowers in August and September.

Root of many long, simple, tapering fibres. [illegible] 4 to 8 or 10 inches high, square, branching, [illegible] rite, sessile, of a dark green colour, single-ribbed [illegible] in length, ovate-shaped, or sometimes ovate-[illegible] smooth, more or less bluish. Flowers few, [illegible] purple, terminal and axillary, slightly stalked, [illegible] 1 or 2 on each stem. Calyx (fig. 1, a.) cylindrical [illegible] angular, divided about half way down into five [illegible] segments, with a nearly transparent [illegible] their base. Corolla (fig. 2.) bell-shaped [illegible] deep and beautiful blue colour, with [illegible] plate; the limb is 5 pointed lobes, [illegible] or 2 [illegible] unequal teeth. Anthers (fig. 1, c.) [illegible] fill the vermen analogus and separate [illegible]

This is an elegant and beautiful little plant, [illegible] culture in a garden; it succeeds best in a [illegible] the specimen from which the drawing was made [illegible] growing plate, was gathered near Cambridge, [illegible] Mary Burrell, and kindly communicated to me [illegible] Esq. of Marchmont.

The Genuine are rarely fertile for their [illegible] resides them, [illegible] and [illegible]

Gentiana Lutea (Yellow Gentian) [illegible] of importance because it is [illegible] medicine. It is this species which [illegible] which medicine. [illegible] Dr. C. Parkinson; in Thomas [illegible] and in the Flora [illegible] [illegible] Hudson [illegible]

Narthécium ossifragum. Lancashire Bog-Asphodel. ♃

Pub.d by W. Baxter, Botanic Garden, Oxford. 1836.

C. Mathews. Del. & Sc.

NARTHE'CIUM*.

Linnean Class and Order. HEXA'NDRIA†, MONOGY'NIA.

Natural Order. JUNCEÆ, *Dr. R. Brown.*—Lindl. Syn. p. 273; Introd. to Nat. Syst. of Bot. p. 270.—Rich. by Macgilliv. p. 397.—Loud. Hort. Brit. p. 541.—JUNCI, sect. 4, Juss. Gen. Pl. pp. 43 and 46.—Sm. Gram. of Bot. p. 72.—JUNCALES; sect. JUNCINÆ; type, JUNCACEÆ; Bur. Outl. of Bot. pp. 403 & 416.—CORONARIÆ, *Linn.*

GEN. CHAR. *Calyx* none. *Corolla (Perianthium‡)* (fig. 1.) inferior, of 6 strap-spear-shaped, spreading, ribbed, permanent petals, membranous at the edges; 3 of them interior; all finally hardened, and converging round the capsule. *Filaments* (see figs. 1 & 2.) 6, opposite to, and shorter than the petals, upright, awl-shaped, woolly all over, except a small space at the top and bottom, permanent. *Anthers* terminal, oblong, converging, smooth; finally twisted. *Germen* (fig. 3.) superior, oblong, triangular, tapering upwards into a short conical *style*. *Stigma* simple. *Capsule* (see fig 4) oblong, tapering, pointed, bluntly triangular, with 3 intermediate furrows, 3 pointed rigid valves, and 3 cells, bearing central partitions, which are joined at their base to the short central column. *Seeds* (fig. 5.) numerous, upright, chaff-like, oblong, smooth, each invested with a pale, membranous *tunic*, tapering, and greatly elongated, at each end, equalling the whole capsule in length.

The inferior *corolla*, of 6 strap-spear-shaped, spreading petals, without a calyx; the woolly *filaments;* and the tunicated *seeds*, tapering at each end; will distinguish this from other genera in the same class and order.

One species British.

NARTHE'CIUM OSSIFRAGUM. Lancashire Bog-asphodel.

SPEC. CHAR. Leaves strap-shaped, uniform. Pedicels (partial flower-stalks) with one bractea at the base, the other above the middle. Stamens much shorter than the corolla.

Engl. Bot. t 535.—Hook. Fl. Lond. t. 139.—Curt. Brit. Entomol. v. iii. t. 115.—Huds. Fl. Angl. (2nd ed.) p. 145.—Sm. Fl. Brit. v. i. p. 368. Engl. Fl. v. ii. p. 151.—With. (7th ed.) v. ii. p. 432.—Lindl. Syn. p. 277.—Hook. Brit. Fl. p. 158.—Davies' Welsh Bot. p. 33.—Purt. Midl. Fl. v. i. p. 172.—Relh. Fl. Cant. (3rd ed.) p. 140.—Hook. Fl. Scot. p. 103.—Grev. Fl. Edin. p. 77.—Fl. Devon. pp. 59 & 129.—Johnst. Fl. of Berw. v. i. p. 78.—Rev G. E. Smith's Pl. of S. Kent, p. 21.—Walk. Fl. of Oxf p. 94.—Winch's Fl. of Northumb. and Durham, p. 22.—Perry's Pl. Varvic. Selectæ, p. 30.—Mack. Catal. of Pl. of Irel. p. 33.—Trevelyan on the Vegetation and Temperature of the Faroe Islands, p. 6.—*Anthericum ossifragum,* Linn. Sp. Pl. p. 446.—With. (1st ed.) v. i. p. 205.—Lightf. Fl. Scot. v. i. p. 181.—Abbot's Fl. Bedf. p. 77.—*Abama ossifragum,* Gray's Nat. Arr. v. ii. p. 171.—*Phalangium Anglicum palustre Iridis folio,* Ray's Syn. p. 375.—*Asphodelus Lancastriæ,* John. Gerarde, p. 95.

Fig. 1. A separate Flower.—Fig 2. One of the Stamens.—Fig. 3. The Germen, Style, and Stigma.—Fig. 4. The Capsule, invested by the hardened, converging, permanent petals.—Fig. 5. A Seed.—Figs. 1, 2, & 3, *rather larger than nature.*

* From *narthex,* Gr *a rod;* probably from the elongated straight raceme of flowers. It is remarkable that this word is an anagram of *Anthericum,* a genus with which LINNÆUS united it. It is the same as the *Abama* of DE CANDOLLE. HOOKER.—Dr. WITHERING thinks the name is derived from *narthecion,* Gr. a *medical chest;* alluding to its once supposed virtues.

† See *Galanthus nivalis,* f. 33, n. †. ‡ See *Galanthus nivalis,* f. 33, n. ‡.

Localities.—In bogs, wet places on moors, and on mountains; frequent.—*Berks;* Bogs on Greenham Common, near Newbury: J. E. Bicheno, Esq. Windsor Great Park: Walk. *Fl. of Oxf.* On the Common at Burghfield: Rev. A. Bird.—*Bedfordsh.* Ampthill Bogs: Rev. C. Abbot.—*Cambridgesh.* Turfy Bogs at Gamlingay: Rev. R. Relhan.—*Cornwall;* Bogs near Pillaton: H. Woollcombe, Esq.—*Cumberland;* Ullock Bog near Keswick. Common in moist places throughout the Lake Country: E. Hill, Esq. Ch. Ch. Oxford.—*Devon;* Dartmor, Haldon, Woodbury Hill, &c.: *Fl. Devon.* Bogs near Ashbury: H. Woollcombe, Esq.—*Durham;* In bogs on moors and heaths, not rare: N. J. Winch, Esq.—*Kent;* Willesboro' Leas: Rev. G. E. Smith.—*Lancash.* Near Coniston: Miss Mary Beever. Halsall Moss; Parr Moss; and Chat Moss: G. Crosfield, Esq.—*Norfolk;* Dersingham Moor: Mr. Crowe.—*Northumberland;* In bogs on moors and heaths, not rare: N. J. Winch, Esq.—*Shropsh.* Moreton Moors, three miles from Blymhill: Rev. S. Dickenson,—*Staffordsh.* In Needwood Forest: Dr. Withering.—*Surrey;* Bogs on Putney Heath: Newton, in *Ray's Syn.*—*Warwicksh.* Bog below Coleshill Pool: Rev. W. T. Bree, in Mag. Nat. Hist. v. iii. p. 164.—*Worcestersh.* Near Rubry Hill, on the Lickey: T. Purton, Esq. A new road has been recently made here, which augurs ill for the continuance of the plant: Mr. E. Lees.—WALES. *Anglesey;* In turbaries, &c.: Rev. H. Davies—*Mongomerysh.* Bogs on the side of the Holyhead Road: Mr. H. Barrett.—SCOTLAND. Common in moorish ground. Murton Craigs, Moors west of Belford, Haiden Dean, &c.: *Fl. of Berwick.* Bog on the hill above North Queensferry: Mr. Neill. Pentland Hills, but not frequent: Dr. Greville.—IRELAND. Bog at Glengarriff; and near Bandon, county of Cork: E. Hill, Esq. In bogs, common: Mr. J. T. Mackay.

Perennial.—Flowers in July and August.

Root somewhat tuberous, creeping. *Leaves* all radical, uniform, equitant, sword-shaped, striated, pointed. *Scape* from 6 to 8 inches high, decumbent at the base, about twice as long as the leaves, clothed at intervals with spear-shaped scales, those at the base largest, gradually becoming smaller as they approach the top. *Flowers* bright yellow, in a terminal, upright, rather close raceme. *Pedicels* alternate, simple, angular, each with a spear-shaped bractea, about its own length at the base, and a smaller one more than half way up. *Stamens* (see fig. 1.) much shorter than the widely spreading, permanent petals. *Filaments* clothed with a thick wool of a bright saffron colour, which appears beaded when seen through a microscope. *Anthers* scarlet. Back or keel of each *petal* green. *Capsule* prismatic, pointed, brown, shining, half covered by the converging petals (see fig. 4). *Seeds* (fig. 5.) with a very long *arillus* or *tunic*, forming an appendage to each extremity, attached to a longitudinal receptacle on each valve; the *receptacles* form the dissepiments.

This is a very elegant, sweet scented, and beautiful plant; but being a native of boggy places, it cannot, without some difficulty, be preserved in gardens. It is believed in Sweden to be noxious to sheep, and has been supposed to soften the bones of animals that feed upon it, (whence the trivial name); but these old prejudices have been refuted by Linnæus, in his *Flora Lapponica.* Cows and horses eat it; sheep and swine refuse it.

I am indebted to Miss Mary Beever, for the specimen from which the drawing was made for the accompanying plate.

Saxifrago aizoides. Yellow Mountain Saxifrage. ♃.

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C. Mathews, Del. & Sc.

SAXI'FRAGA*.

Linnean Class and Order. DECA'NDRIA †, DIGY'NIA.

Natural Order. SAXIFRA'GEÆ, *De Cand.*—Lindl. Syn. p. 66; Introd. to Nat. Syst. of Bot. p. 49.—Rich. by Macgilliv. p 511.—Loud. Hort. Brit. p. 517.—SAXI'FRAGÆ, Juss. Gen. Pl. p. 308.—Sm. Gram. of Bot. p. 163.—SAXIFRAGA'CEÆ, Don's Gen. Syst. of Gard. & Bot. v. iii. p 204.—ROSALES; sect. CRASSULINÆ; type, SAXIFRAGACEÆ; subtype, SAXIFRAGIDÆ; Burn. Outl. of Bot. pp. 614, 730, 733, & 734.—SUCCULENTÆ, *Linn.*

GEN. CHAR. *Calyx* (see figs. 1 & 5.) inferior, half inferior, or almost perfectly superior, of 1 sepal, in 5 deep, permanent segments. *Corolla* (see figs. 2 & 3.) of 5 petals, attached to the calyx, spreading, contracted at the base, not always uniform, deciduous. *Filaments* (see figs. 2 & 4.) 10, attached to the calyx, awl-shaped, spreading, successively incumbent, permanent. *Anthers* of two round lobes. *Germen* superior, or more or less inferior, roundish or egg-shaped, terminating in 2 short spreading *styles*. *Stigmas* blunt, mostly downy. *Capsule* (see fig. 5.) nearly egg-shaped, with 2 beaks formed of the permanent styles, and opening between them, of 2 cells, (which are sometimes incomplete,) with a central receptacle. *Seeds* numerous, very small, roundish, compressed, covering the receptacle.

Distinguished from other genera, in the same class and order, by the *calyx* of 5 deep segments; the *corolla* of 5 entire, unguiculate petals: and the 2-celled, 2-valved, 2-beaked, many-seeded *capsule*.

Twenty-five species British, according to SM. *Engl. Fl.*
Twenty-one species do. according to HOOK. *Brit. Fl.*

SAXI'FRAGA AIZOI'DES. Aizoon-like Saxifrage. Yellow Mountain Saxifrage. Sengreen Saxifrage.

SPEC. CHAR. Stem decumbent at the base. Leaves alternate, strap-shaped, with fringe-like teeth, smooth. Segments of the calyx broadly egg-shaped. Petals oblong-spear-shaped, 3-nerved, nerves simple.

Engl. Bot. t. 39.—Curt. Brit. Entomol. v. iii. t. 103.—Linn. Sp. Pl. p. 576.—Sm. Fl. Brit. v. ii. p. 452. Engl. Fl. v. ii. p. 268.—With. (7th ed.) v. ii. p. 530.—Gray's Nat. Arr. v. ii. p. 532.—Hook. Brit. Fl. p. 194.—D. Don, in Tr. of Linn. Soc. v. xiii. p. 375.—Don's General Syst. of Gard. & Bot. v. iii. p. 212.—Hook. Fl. Scot. p. 129.—Winch's Fl. of Northumb. & Durham, p. 28.—Mack. Catal. of Pl. of Irel. p. 41.—*Saxifraga autumnalis*, Huds. Fl. Angl. (2nd ed.) p. 180.—Gray's Nat. Arr. v. ii. p. 532.—Lightf. Fl. Scot. v. i. p. 222.—*Saxifraga Alpina angusto folio, flore luteo guttato*, Ray's Syn. p. 353.—*Leiogyne aizoides*, Lindl. Syn. p. 67.—*Leptasea aizoides*, Haworth's Saxifragearum Enumeratio, p. 39.—*Sedum alpinum primum clusii*, John. Gerarde, p. 516.

LOCALITIES.—On the borders of mountain rills, in a black boggy soil; rare.—*Cheshire;* On Beeston Castle, and on a high hill in Wyrswall Town near Malpas, plentifully: BLACKSTONE, in Spec. Bot. The habitat for this on Beeston

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. A Petal.—Fig. 4. A Stamen.—Fig. 5. Capsule, and permanent Calyx.—Fig. 6. A Leaf.—*All more or less magnified.*

* From *saxum*, a *stone;* and *frango*, to *break:* in allusion to the supposed medicinal virtues of some of the species: or, perhaps, to their roots penetrating the crevices of rocks and stones, among which they generally grow. HOOKER.

† See *Saponaria officinalis*, folio 37, note †.

Castle Rock, I am satisfied is wrong, having several times searched there; nor is the spot at all favourable: J. E. Bowman, in N. B. G.—*Cumberland;* Patterdale; Gilsland near Spawell: Hutchinson. Ashness Gill, near Keswick: E. Hill, Esq. By streams on the hill-side above Barrow Wood; Barrowdale; the lower parts of Skiddaw; Vale of Newlands; Black Rocks of Great End, abundantly; and other hills and rocks: H. C. Watson, in N. B. G. By the cascade on the Irthing: N. B. G. Waterfall Gill Helvellyn: E. Hill, Esq.—*Derbysh.* I received a specimen of this and *S. cæspitosa* from Derbyshire: Mr. L. Howard.—*Durham;* Banks of the Whey Sike, Middleton Forest: Rev. J. Harriman. Cawsey Dean: R. Bowman, in N. B. G. Near Widdy Bank on Teesdale Forest: N. J. Winch, Esq.—*Lancash.* In Furness Fells, near the top of a mountain called the Old Man: Mr. Atkinson. On Coniston Fells: Mr. Jackson, and Miss Mary Beever.—*Northumberland;* On rocks by the river Irthing, above Wardrew: N. J. Winch, Esq.—*Westmoreland;* Patterdale; Over Kirkston: B. G. About the base of Helvellyn towards Patterdale: H. C. Watson, in N. B. G. By Buckbarrow Well, in Landsleddale: N. J. Winch, Esq. And on most of the mountains: *Engl. Fl.—Yorksh.* In Craven, and Wensleydale: Mr. Brunton On the North side of Ingleborough: N. J. Winch, Esq.—WALES. On mountains: *Hook. Brit. Fl.*—SCOTLAND. Abundant in alpine rills, and springy places: Dr. Hooker.—IRELAND. On calcareous mountains of Leitrim and Sligo: Mr. Murphy. On Ben Bulben near Sligo, and on Conner Cliffs near Dingle: Mr. J. T. Mackay.

Perennial.—Flowers in July and August.

Root fibrous. *Stems* tufted, decumbent at the base, with many short, leafy, trailing shoots; the flowering part ascending, 3 or 4 inches high, leafy, smooth or hairy, unbranched. *Leaves* most crowded towards the root, alternate, sessile, strap-shaped, spreading, smooth, shining, variously fringed with sharp, hair-like teeth, which are seldom wanting. *Panicle* leafy, mostly simple, of from 3 to 4 or 6 flowers; sometimes branched and many-flowered; the *stalks* short, glutinous, and densely hairy. Segments of the *calyx* broadly egg-shaped, spreading. *Petals* a little longer than the calyx, inversely egg-shaped, or tongue-shaped, with 3 simple nerves, bright yellow, beautifully spotted with orange. *Stigmas* blunt, concave, downy. *Capsule*, when ripe, almost perfectly superior.

This is a very pretty alpine species, well deserving a place in the garden, where it should be planted in a peat soil, and kept rather moist; it is best kept in a pot with other alpine plants.—The Drawing for the accompanying plate was made from a specimen kindly communicated to me by Miss Mary Beever, from the vicinity of Coniston.

The Saxifra'geæ are *herbaceous plants*, variable in habit. Their *leaves* are simple, either divided or entire, alternate, and without stipulæ. Their *flower-stems* are simple, and often naked. Their *calyx* is either superior or inferior, of 4 or 5 sepals, which are more or less united at their base. Their *petals* are either 5, or none, inserted between the lobes of the calyx. Their *stamens* are 5 or 10, and are inserted either into the calyx (perigynous), or beneath the ovarium (hypogynous). The *anthers* are 2-celled, and burst longitudinally. The *disk* is either hypogynous or perigynous, sometimes nearly obsolete, sometimes annular and notched, rarely consisting of 5 scales. The *ovarium* is inferior, or nearly superior, usually consisting of 2 or 5 carpels, or follicles, cohering more or less on the inner side, but distinct at the apex; sometimes it is 2-celled, with a central placenta; sometimes 1-celled, with parietal placentas, rarely 4- or 5-celled. *Styles* none; the *stigmas* being sessile on the tips of the lobes of the ovarium. The *fruit* is generally a membranous 1- or 2-celled capsule, with 2 bracteas, rarely a 4- or 5-celled, 4- or 5-valved capsule; sometimes it is a 4-celled berry. The *seeds* are numerous, and very minute, and usually have long hexagonal reticulations on the side of a transparent testa. The *embryo* is taper, in the axis of fleshy albumen, with the radical next the hylum. See *Lind. Syn*, and *Don's Gen. Syst. of Gard. & Bot.*

[illegible] [illegible] Newtonk, [illegible]
[illegible] at [illegible]table. J. E. Bowman, 1833.
[illegible]dale. [illegible]—Cromwell. Herefordshire. A dense [illegible]
[illegible] on the hill-side above [illegible]
the [illegible] [illegible]. Vale of Newlands. Wild [illegible]
abundantly, and other hills and rocks. Mr. [illegible]
[illegible] on the [illegible]. N. B. G. Westerdale [illegible]
[illegible]. I received a specimen of this and [illegible] Durham.
[illegible]—Banks of the Wiley, Middleton [illegible]
[illegible]. Cawsey Head. R. Bowman, in [illegible]. New [illegible]
or Teesdale Forest. N. J. Winch, Esq.—Lancash. In Furness Fells, near the
top of a mountain called the Old Man. Mr. Atkinson. On [illegible] hills
Mr. Jackson, and Miss [illegible]—Northumberland. On [illegible]
[illegible] stone, Wardlaw. N. J. Winch, Esq.—Westmoreland. [illegible]
dale. Over Kirkstone. [illegible]. About the base of Helvellyn towards [illegible]
H. C. Watson in N. B. G. By Buttermere Well, in [illegible]dale. N. J.
Winch, Esq. And in most of the mountains. Sect. IV.—Yorksh. [illegible]
and Wensleydale. Mr. Brunton. On the North side of Ingleborough.
Winch, Esq.—H. A. E. On mountainous Rock. Brit. Fl.—SCOTLAND.
Abundant in alpine rills and spongy places. Dr. Hooker in B. Fl.—IRELAND. On
calcareous mountains of Leitrim and Sligo. Mr. Mackay. On [illegible]
near Sligo, and on Connor Cliffs near Dingle. Mr. J. T. Mackay.

Perennial.—Flowers in July and August.

Root fibrous. *Stems* tufted, decumbent at the base, [illegible] short, leafy, trailing shoots; the flowering [illegible] inches high, leafy, smooth or hairy, [illegible]. *Leaves* crowded towards the top, alternate, sessile, [illegible] spreading, smooth, shining, variously fringed with [illegible] which are seldom wanting. *Panicle* leafy, [illegible] 3 to 10 flowers; sometimes branched [illegible] stalks short, glutinous, and densely hairy. *Segments* broadly [illegible], spreading. *Petals* a little [illegible] calyx, inversely egg-shaped, or tongue-shaped, with [illegible] nerves, bright yellow, beautifully spotted with [illegible] blunt, [illegible]. *Capsule*, when ripe, almost superior.

This is a very pretty alpine species, well deserving a place in [illegible] where it should be planted in a pot, and kept rather moist [illegible] in a pot with other alpine plants.—The Drawing for the accompanying [illegible] made from a specimen kindly communicated to me by Miss [illegible] from the vicinity of [illegible].

The Saxifrages are [illegible] herbaceous plants, [illegible] simple, either divided or entire, alternate, and without [illegible] stems are simple, and often naked. The calyx [illegible] of 4 or 5 sepals, which are more or less united at their base [illegible] either 5, or none, inserted between the lobes of the calyx [illegible] of 10, and are inserted either into the calyx (perigynous) or [illegible] (hypogynous). The anthers are 2-celled [illegible] disk either hypogynous or perigynous, sometimes [illegible] annular and notched, rarely consisting of 5 scales. [illegible] nearly superior, usually consisting of 2 or 3 carpels [illegible] united on the inner side but distinct at the apex; sometimes [illegible] a central placenta; sometimes 1-celled, with parietal placentas [illegible]. Styles none, the stigmas being sessile on the [illegible] ovarium. The fruit is generally a membranous capsule, 1- or 2- [illegible]; rarely a 4- or 5-celled, 4- or 5-valved [illegible] 2-celled berry. The seeds are numerous and very minute [illegible] longitudinal striations on the side of the [illegible] in the axis of fleshy albumen, with the radicle [illegible] and Juss. Gen. Syst. of Bot. [illegible]

Radiola millegrána. Thyme-leaved Flax-seed. ⊙

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C. Mathews Del.t Sc.

RADI'OLA *.

Linnean Class and Order. TETRA'NDRIA †, TETRAGY'NIA.

Natural Order. LI'NEÆ, *De Cand.*—Lindl. Syn. p. 53; Introd. to Nat. Syst. of Bot. p. 155.—Loud. Hort. Brit. p. 502.—Don's Gen. Syst. of Gard. & Bot. v. i. p. 449.—GERANIACEÆ; Rich. by Macgilliv. p. 474.—ROSALES; sect. GRUINE; type, LINACEÆ; Burn. Outl. of Bot. v. ii. pp. 614 & 808.—GRUINALES, *Linn.*—CARYOPHYLLEÆ, sect. 7. Juss. Gen. Pl. pp. 299 & 303.—Sm. Gram. of Bot. pp. 159 & 161.

GEN. CHAR. *Calyx* (see fig. 1.) inferior, of 1 sepal, in 4 principal segments, each of which is deeply and acutely 3-cleft, permanent. *Corolla* of 4, inversely egg-shaped, undivided, spreading petals, the length of the calyx, and alternate with its principal segments. *Filaments* (see figs. 1 & 3.) 4, awl-shaped, the length of the petals, without any intermediate imperfect filaments. *Anthers* roundish, of 2 lobes. *Germen* (see fig. 4.) superior, roundish, 4-lobed. *Styles* (see fig. 5.) terminal, hair-like, very short, permanent. *Stigmas* capitate, blunt. *Capsules* (see fig. 5.) roundish, somewhat pointed, with 8 furrows, 8 valves, with inflexed edges, cohering in pairs, and 8 cells. *Seeds* (fig. 6.) solitary in the cells, egg-shaped, compressed, polished.

Distinguished from other genera, in the same class and order, by the *calyx* of 1 sepal in 4 principal segments, each of which is 3-cleft; the *corolla* of 4 petals; and the *capsule* of 8 cells and 8 valves.

One species British.

RADI'OLA MILLEGRA'NA. Thousand-seeded Flax-seed. Thyme-leaved Flax-seed. All-seed. Dwarf All-seed. Least Rupture-wort.

SPEC. CHAR.

Engl. Bot. t. 893.—Curt. Brit. Entomol. v. viii. t. 358.—Sm. Fl. Brit. v. i. p. 202. Engl. Fl. v. ii. p. 243.—With. (7th ed.) v. ii. p. 263.—Hook. Brit. Fl. p. 79.—Davies' Welsh Bot. p. 19.—Hook. Fl. Scot. p. 60.—Rev. G. E. Smith's Pl. of S. Kent, p. 12.—Fl. Devon. pp. 32 & 181.—Johnst. Fl. of Berw. v. i. p. 43.—Winch's Fl. of Northumb. and Durham, p. 11.—Walk. Fl. of Oxf. p. 46.—Perry's Pl. Varv. Selectæ, p. 15.—Mack. Catal. of Pl. of Irel. p. 20.—*Radiola linoides*, Gmelin's Systema Naturæ, v. ii. p. 289.—Lindl. Syn. p. 54.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 458.—*Radiola vulgaris serpyllifolia*, DILL. in Ray's Syn. p. 345.—*Linum Radiola*, Linn. Sp. Pl. p. 402. Syst. Nat. (12th ed.) v. ii. p. 225.—Huds. Fl. Angl. (2nd ed.) p. 134.—Lightf. Fl. Scot. v. i. p. 174.—Purt. Midl. Fl. v. i. p. 165.—*Linum millegranum*, Gray's Nat. Arr. v. ii. p. 641.—*Millegrana minima*, Ray's Syn. (2nd ed.) p. 207.—Johns. Ger. 669.—*Chamælinum vulgare*, Vaillant's Bot. Parisiense, p. 34. t. 4. f. 6.

LOCALITIES.—In wet sandy ground, and on moist heaths.—In *Berks;* J. E. BICHENO, Esq.—*Bucks;* On Gerard's Cross Common near Bulstrode: Mr. GOTOBED.—In *Cheshire:* J. E. BOWMAN, in N. B. G.—*Cornwall;* Plentiful on moist and gravelly heaths about Penzance, &c.: H. C. WATSON, in N. B. G.—*Devon;* Bovey Heathfield; Haldon, Hightor Down; frequent: *Fl. Devon.*—*Essex;* In a boggy soil, a little way in the wood, opposite the Bald-faced Stag, near Woodford: R. WARNER.—*Kent;* On sandy banks between Ore and Luddenham, near Feversham; common: E. JACOB, Esq. Willesboro' and Bra-

Fig. 1. A Flower, showing the Calyx, Corolla, and Stamens.—Fig. 2. A separate Petal.—Fig. 3. A Stamen.—Fig. 4. The Germen.—Fig. 5. A Capsule, showing the valves separating in pairs.—Fig. 6. A Seed.

* From *radiolus*, a *little ray*, in allusion to the rayed capsules. G. DON.

† See *Asperula odorata*, folio 46, note †.

bourne Leas: Rev. G. E. Smith. Ashdown and Waterdown Forests, &c.: *Fl. Tonb.*—*Lancash.* Near Coniston: Miss Susan Beever. At Southport: G. Crosfield, Esq.—*Norfolk;* Rollesby, Belton, &c. not uncommon: *Hist. Yar.*—*Northumberland;* On Newcastle Town Moor, by the road leading to Benton: Rev. J. Birkett.—In *Nottinghamshire;* T. H. Cooper, in N. B. G.—*Surrey;* Near Battersea, and on the West side of Wandsworth Common: Mr. W. Pamplin, jun. Coulsdon: E. Wood, in N. B. G.—*Warwicksh.* Coleshill Pool: T. Purton, Esq. About a mile south of Rugby, on the side of the Barby road, opposite Mr. Richardson's Farm; July 2, 1831, very sparingly; W. B.—*Worcestersh.* Astwood Heath: T. Purton, Esq.—*Yorksh.* Hotton Moor; Copwold; Stockton Forest: N. J. Winch, Esq.—WALES. *Anglesey;* On wet commons: Rev. H. Davies.—*Merionethsh.* Low rocks, Barmouth: J. E. Bowman, in N. B. G.—SCOTLAND. *Berwicksh.* Ancroft Moor: Dr. G. Johnston. Icolmkill: Sir Joseph Banks. Langside: Dr. Brown. Roadside between Dumbarton and Helensburgh, plentiful: Hopkirk. Banks of the Sprey, between Fochabers and Orton: Mr. Maughan. *Kinross-shire* and *Angus-shire:* Mr. Arnott. Cluny: Rev. Mr. Ritchie. About Loch Ransa in Arran; and common in the North counties; *Perth, Inverness,* &c.: Mr. Murray.—IRELAND. Glangariff: Mr. Drummond. Marshy grounds near Brandon: Mr. J. T. Mackay. Rosses and Fanet, Donegal: E. Murphy, Esq. in Mag. Nat. Hist. v. i. p. 437.

Annual.—Flowers in July and August.

Root fibrous, small. *Stem* upright, from an inch to two inches and a half high, repeatedly forked, cylindrical, smooth, leafy, many-flowered, moderately spreading, and somewhat corymbose. *Leaves* opposite, small, sessile, egg-shaped, smooth, entire, 3-ribbed. *Flowers* white, very minute, on slender, thread-shaped flower-stalks, solitary, from the forks of the stem, as well as its ultimate branches. *Petals* 4, white, alternate with the principal segments of the calyx. *Capsule* of a light brown colour, rather depressed.

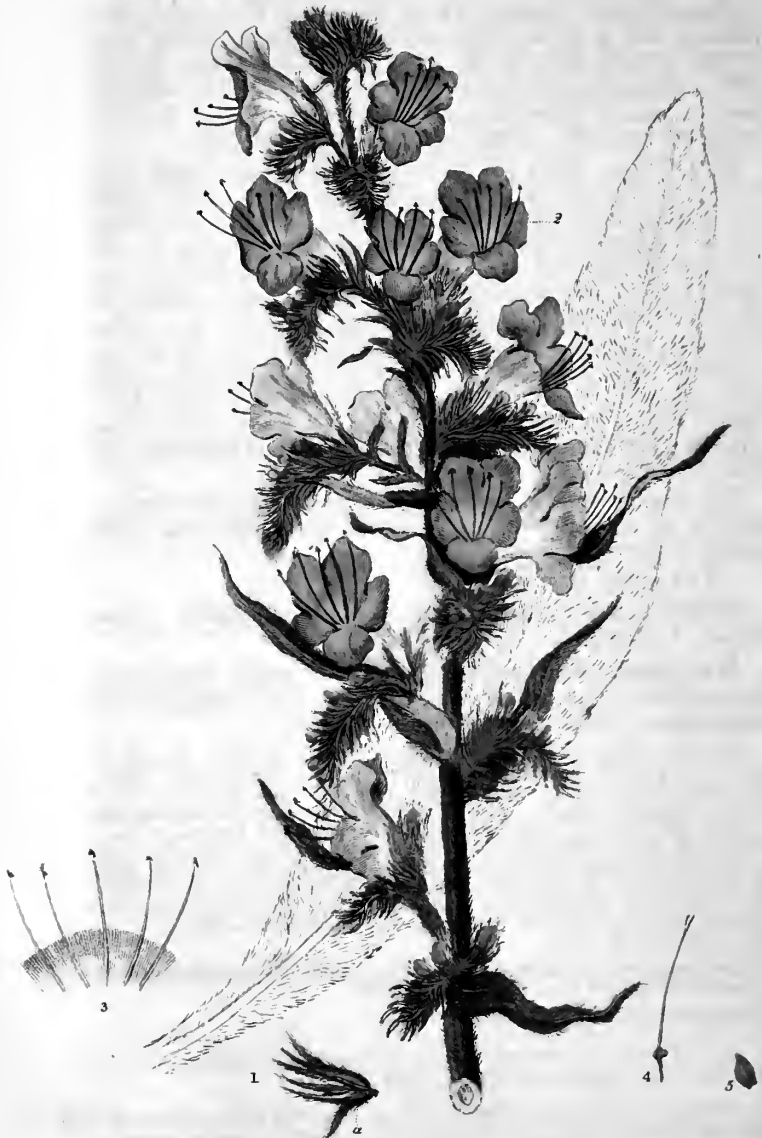
The specimen of this curious and interesting little plant, from which the drawing for the accompanying plate was made, was obligingly communicated to me by Miss Susan Beever, who gathered it in the vicinity of Coniston, Lancashire. To the kindness of this young lady, and that of her sister, Miss Mary Beever, I am indebted for the four plants figured in this Number.

There is no branch of Natural History so well adapted for the study and amusement of young ladies as that of Botany; it is, indeed, as Sir J. E. Smith has very justy observed, a science in which "all is elegance and delight, and in which no painful, disgusting, unhealthy experiments or inquiries are to be made;" but, on the contrary, "its pleasures spring up under our feet, and, as we pursue them, reward us with health and serene satisfaction."

It is recorded of the amiable and pious Mrs. E. Rowe, that there was scarcely a flower, a plant, an insect, or a bird, that grew, crept, or song in her garden, which did not administer to her happiness. In one of her letters to her sister, she says, "I have been just taking a solitary walk, and entertaining myself with all the innocent pleasures, that verdant shades, painted flowers, fragrant breezes, and warbling birds can yield. If I could communicate my pleasures by description, I would call the moses to assist me; but I am afraid it would be insipid to you, that are but moderately fond of the country. Yet I am sure you would relish any pleasure that heightened your devotion; and what can more effectually raise it, than viewing the beauties of nature? I have been pulling a thousand flowers in pieces, to view their elegance and variety, and have a thousand times with rapture repeated Milton's lines:

> These are thy glorious works, Parent of good,
> Almighty, thine this universal frame,
> Thus wondrous fair! thyself how wondrous then!
> Speak, ye, who best can tell, ye sons of light,
> Angels;—for ye behold him.—

They indeed behold the great original; but it is not denied me to trace his footsteps in the flowery fields, and hear some faint echoes of his voice in the harmony of birds, or meet his gentle whispers in the softness of the evening breezes; yet this only raises my impatience to be admitted to the blissful vision of uncreated beauty." *Lett.* xiv. p. 198.



Echium vulgáre. Common Viper's Bugloss. ♂.

H. sculp. Pub.d by W. Baxter, Botanic Garden Oxford. 1836. Russell x.ll

E'CHIUM*.

Linnean Class and Order. PENTA'NDRIA†, MONOGY'NIA.

Natural Order. BORAGI'NEÆ‡, Juss. Gen. Pl. p. 128.—Sm. Gram. of Bot. p. 102.—Lindl. Syn. p. 163.; Introd. to Nat. Syst. of Bot. p. 241.—Rich. by Macgilliv. p. 440.—Loud. Hort. Brit. p. 527.—ASPERIFO'LIÆ, *Linn.*—Sm. Engl. Fl. v. i. p. 247.—SYRINGALES; subord. PRIMULOSÆ; sect. SOLANINÆ; type, BORAGINA'CEÆ; Burn. Outl. of Bot. pp. 900, 958, 982, & 1005.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, in 5 deep, awl-shaped, upright segments, permanent. *Corolla* (fig. 2.) of 1 petal, bell-shaped; tube very short; limb upright, gradually dilated upwards, its margin in 5, more or less unequal, broad, rather spreading segments, of which the 2 uppermost are longest, the lower one smallest and most reflexed; mouth open and naked. *Filaments* (fig. 3.) 5, awl-shaped, unequal, declining, as long as the corolla, or longer, inserted into the tube. *Anthers* roundish, incumbent. *Germens* (fig. 4.) 4, rounded. *Style* (fig. 4.) declining, the length of the stamens, often hairy. *Stigma* deeply cloven, pointed. *Fruit* (fig. 5.) with 4 (or fewer by imperfection) apparently naked seeds, which are wrinkled or rough, obliquely pointed, and attached to the base of the hardened, slightly enlarged calyx.

The irregular *corolla*, with a dilated, open, and naked throat; and the deeply cloven *stigma;* will distinguish this from other genera in the same class and order.

Two species British§.

E'CHIUM VULGA'RE. Common Viper's-Bugloss‖. Viper Grass. Cat's-tail.

SPEC. CHAR. Stem herbaceous, bristly, and warty. Stem-leaves spear-shaped, bristly, single ribbed. Flowers in lateral, deflexed, hairy spikes. Stamens longer than the corolla.

Engl. Bot. t. 181.—Mart. Fl. Rust. t. 136.—Curt. Brit. Entom. v. xii. t. 563.—Ray's Syn. p 227.—Johns. Gerarde, p. 802.—Linn. Sp. Pl. v. i. p. 200.—Huds. Fl. Angl. (2nd ed.) p. 83.—Sm. Fl. Brit. v. i. p. 222. Engl. Fl. v. i. p. 268.—With. (7th ed.) v. ii. p. 286.—Gray's Nat. Arr. v. ii. p. 357.—Lindl. Syn. p. 163.—Hook. Brit. Fl. p. 79.—Lightf. Fl. Scot. v. i. p. 136.—Sibth. Fl. Oxon. p. 71.—Abbot's Fl. Bedf. p. 43.—Davies' Welsh. Bot. p. 20.—Purt. Midl. Fl. v. i. p. 109.—Relh. Fl. Cant. (3rd ed.) p. 83.—Hook. Fl. Scot. p. 70.—Grev. Fl. Edin. p. 47.—Fl. Devon. pp. 35 & 152.—Johnst. Fl. of Berwick, v. i. p. 54.—Winch's Fl. of Northumb. and Durham, p. 12.—Walk. Fl. of Oxf. p. 51.—Perry's Pl. Varvic. Selectæ, p. 16.—Bab. Fl. Bath. p. 32.—Mack. Catal. of Pl. of Ireland, p. 21.—Irish Flora, p. 44.

LOCALITIES.—On old walls, and on rubbish; also in fields and waste ground, especially on a sandy or gravelly soil. Frequent.

Biennial.—Flowers in June and July.

Fig. 1. Calyx; *a.* a Bractea.—Fig. 2. Corolla.—Fig. 3. Stamens.—Fig. 4. Germen, Style, and Stigma.—Fig. 5. A Seed.

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* From *Echio*, Gr. a *Viper;* because this, or some allied plant, was supposed to be an effectual remedy against the bite of that animal. Sir W. J. HOOKER.

† See *Anchusa sempervirens*, folio 48, note †.

‡ See *Pulmonaria officinalis*, folio 102, *a.* § See following page.

‖ *Bugloss* is from *bous*, Gr. *an ox*, and *glossos*, Gr. *a tongue;* from the roughness of the leaves resembling the rough tongue of that animal.—THORNTON.

Root somewhat spindle-shaped. *Stems* from 1 to 2 feet high, upright or spreading, thickish, firm, leafy. *Leaves* alternate, spear-shaped, single-ribbed, entire, dull green, tapering at the base, the lowest stalked; those from the root often nearly 2 feet long, strap-shaped, spreading. *Spikes* very numerous, from the axils of the stem-leaves, unilateral, recurved, but gradually becoming upright as the flowering proceeds; forming, altogether, one long, compound raceme. *Corolla* large and very beautiful, of a fine red before it expands, afterwards of a brilliant blue, occasionally white. *Filaments* red, longer than the corolla. *Anthers* grey. *Style* hairy. *Germens* embedded in a fleshy receptacle. Whole plant rough with prickly bristles, arising from callous points or bulbs, intermixed with smaller hairs. It is remarked in MARTYN'S edition of MILLER'S *Gardener's Dictionary*, that if the colour of the corolla be blue, the stems are blueish, the stamens purple, and the bulbs from which the bristles spring are blood-red; but if the corolla be pale red, then the other parts of the flower are of the same colour, and the bristle-bulbs are yellow; and if it be white, all the parts of the flower are of that colour, and the bristle-bulbs green.—It is one of the handsomest of our native plants, and not unworthy a place in the ornamental flower garden.

Dried and powdered it forms an ingredient of the celebrated Spanish remedy against the bites of vipers and mad dogs; particulars of which may be seen in the *Monthly Magazine*, v. xxix, p. 414.

The white-flowered variety has been found on the South-west point of Box Hill, in Surrey, by N. J. WINCH, Esq.; at Cobham, Kent, by the Rev. Professor HENSLOW; on the walls of Kenilworth Castle, Warwickshire, by the late Dr. LAMB, of Newbury, Berks; near Croydon, in Surrey, by Mr. W. PAMPLIN, jun.; and I have seen it, some years ago, on an old wall in Glocester Green, Oxford, but this locality is now destroyed, in consequence of the buildings that have been erected there. In Scotland it has been found at Duncansby, Caithness, by Sir W. J. HOOKER. This variety has been sometimes mistaken for *E. Italicum* of LINNÆUS, a species which has, probably, never been found wild in Britain; unless Mr. WINCH'S plant, found on Sunderland Ballast Hills, Durham, be this species, which he thinks was imported from the Continent. *Lycopsis* or *Wall Bugloss*, of Ray's Syn. p. 227, is *Echium violaceum*, specimens of which were gathered on the sandy grounds near St. Hilary, in the Isle of Jersey, (RAY'S locality,) in 1833, by W. C. TREVELYAN, Esq., who observes, that this is "the plant which should have been figured in English Botany, in the place of *E. italicum*."

Bees are fond of the flowers, but their wings are often torn by the strong bristly hairs, with which the plant is clothed.

THE PURPOSE OF FLOWERS.

Beautiful flowers, whose tender forms
  Survive the deadly lightning's glare,
And bend your bosoms to the storms
  That ride upon the midnight air!

Say, were ye only born to fade,
  Or were your tints and odours given,
To give the spirit in the shade
  Of this dull world some glimpse of heaven?—W. MARTIN.

Corydalis solida. Solid-rooted Corydalis ♃

J.R.Del. Pub.d by W. Baxter, Botanic Garden, Oxford 1838. C. Mathews Sc.

CORY'DALIS*.

Linnean Class and Order. DIADE'LPHIA†, HEXA'NDRIA.

Natural Order. FUMARIA'CEÆ, *De Cand.*—Lindl. Syn. p. 18.; Introd. to Nat. Syst. of Bot. p. 18.—Rich. by Macgilliv. p. 496.—Loud. Hort. Brit. p. 498.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 139.—PAPAVERA'CEÆ, sect. 2. Juss. Gen. Pl. p. 235.—Sm. Gram. of Bot. p. 137.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, FUMARIACEÆ; Burn. Outl. of Bot. pp. 614, 784, 847, & 852.—CORYDALES, *Linn.*

GEN. CHAR. *Calyx* (see fig. 1.) inferior, of 2 opposite, erect, small, deciduous sepals. *Corolla* (see figs. 1 & 2.) oblong, tubular, ringent, of 4 petals, the upper one of which has a spur at the base, sometimes they are all united at the base, sometimes the lower one is free, and the rest united, but when they begin to decay, they all become free and deciduous. *Filaments* (see fig. 3.) 2, awl-shaped, flat, shorter than the corolla, one within each lip. *Anthers* roundish, 3 terminating each filament. *Germen* (see f. 3.) superior, compressed, pointed. *Style* (see fig. 3.) terminal, thread-shaped. *Stigma* compressed, of 2 flat lobes. *Pod (capsule)* (figs. 4 & 5.) 2-valved, compressed, oval-oblong, or strap-shaped, many-seeded. *Seeds* (fig. 6.) roundish.

Distinguished from other genera, in the same class and order, by the *corolla* of 4 petals, one of which is spurred at the base; and by the 2-valved, compressed, many-seeded *pod.* The genus *Fumaria*, with which this has, till lately, been united, has an indehiscent, 1-seeded *capsule.*

Three species British.

CORY'DALIS SO'LIDA. Solid-rooted Corydalis. Solid Bulbus Fumitory.

SPEC. CHAR. Stem simple, upright, scaly under the lower leaf. Leaves 3 or 4, stalked, twice ternate, their leaflets wedge-shaped or oblong, cut. Bracteas palmate. Root solid.

Hook. Brit. Fl. p. 316.—*Cory'dalis bulbosa*, De Cand. Fl. Fr. v. iv. p. 637.—Lindl. Syn. p. 19.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 142 —*Cory'dalis digitata*, Pers. Syn. v. ii. p. 269.—Gray's Nat. Arr. v. ii. p 701.—*Fumária sólida*, Engl. Bot. t. 1471.—Curt. Bot. Mag. t. 231.—Linn. MS. in Sp. Pl. p. 983, according to Sir J. E. Smith.—Sm. Fl. Brit. v. ii. p. 748. Engl. Fl. v. iii. p. 253.—With. (7th ed.) v. iii. p. 823.—Ait. Hort. Kew. (2nd ed.) v. iv. p. 240.—Purt. Midl. Fl. v. iii. p. 58.—Walk. Fl. of Oxf. p. 202.—*Fumaria bulbosa*, var. β & γ. Linn. Sp. Pl. p. 983.—*Fumaria intermedia*, With. (3rd ed.) v. iii. p. 620.—*Fumaria Halleri*, Willd. Sp. Pl. v. iii. p. 853.—*Radix cava minor*, Johnson's Gerarde, p. 1091.

LOCALITIES.—In groves and thickets, rare. A doubtful native.—*Cumberland;* Farm-yard, Walton House: HUTCHINSON. Catsteads, near Brampton: Rev. J. DODD.—*Hants;* In a wood at Wickham, near Fareham: Rev. T. GARNER.—*Lancashire;* Near Ulverstone; also between Cartmel and Kendal:

Fig. 1. Calyx and Corolla.—Fig. 2. A front view of the Corolla, the 4 petals being separated and spread open at their apex.—Fig. 3. The 2 sets of Stamens, and the Germen, Style, and Stigma.—Fig. 4. A Pod.—Fig. 5. The same, with one of the valves removed, to show the situation of the seeds.—Fig. 6. A Seed *a little magnified.*

* *Korydalis*, one of the Greek names of *Fumitory;* it is derived from *korydalos*, Gr. a *lark*, because the spur of the flower resembles the spur of a lark. G. DON.

† See *Spartium scoparium;* f. 77, n. †.

Mr. Robson.—In *Nottinghamshire;* T. H. Cooper.—*Staffordshire;* At Blithfield: Hon. Mr. Bagot.—*Warwicksh.* At Perry Hall, near Birmingham, in a meadow between the house and the river: Mr. Pitt. Woods near Studley; and abundant in the orchard at Studley Castle: T. Purton, Esq.—*Westmoreland;* In Levans Park, five miles from Kendal; and at Watsfield half a mile from Kendal among a clump of tall trees, plentiful: Mr. Gough.—*Worcestersh.* In Abberley Woods: Mr. Hickman.

Perennial.—Flowers in March and April.

Root a roundish, solid bulb, yellowish brown on the outside, white within. *Stem* from the centre of the bulb, solitary, from 6 to 8 or 10 inches high, upright, somewhat zigzag, leafy, smooth, almost always simple, with 1 or more spear-shaped sheaths near the bottom. *Leaves* 2 or 3, alternate, on channelled foot-stalks (petioles), twice ternate, notched, glaucous. *Cluster* solitary, terminal, simple, upright, of from 10 to 15 flowers, each on a partial stalk with a solitary, wedge-shaped, palmate, 5-cleft, glaucous bractea at its base. *Calyx* very small, sepals strap-shaped. *Corolla* variegated with purplish red, and pale yellow; with a long, ascending, bluntish spur, and a slight pale prominence at the opposite side. *Stamens* united into 2 parcels, the upper elongated at the base within the spur (see fig. 3). *Pod* (see figs. 4 & 5.) short, bursting at the base. *Seeds* several.

This is a pretty species, and merits a place in the flower garden. It will grow in almost any soil or situation, and will thrive even under the shade of trees, provided the ground be not too dry. It is a native of most parts of Europe; and also of Tauria and Siberia, under hedges and in woods in rather humid places. The roots abound in fecula, and are resorted to by the Kalmucs in winter as food.

Fumaria'ceæ, (plants agreeing with *Fumaria* in many important characters.) The *plants* which compose this natural order are dicotyledonous *herbs*, with brittle stems and a watery juice. Their *leaves* are usually alternate, multifid, often cirrhose, and destitute of stipulas. The *flowers* are purple, white, or yellow. The *calyx* consists of 2 small deciduous membranous sepals; and the *corolla* of 4 irregular petals, which are set crosswise, and are usually connected at the base, sometimes they are all free, sometimes only the lower one is free, and the rest united, the two outer ones alternating with the sepals, sometimes both are equally drawn out at the base into a hollow spur, or gibbosity, sometimes with the lower one flat, and the upper one with a spur, or gibbosity, at the base; the two inner ones callous and coloured at the apex, where they cohere and enclose the anthers and stigma. The *stamens*, which are 6 in number, are united in two parcels, opposite the outer petals, very seldom all separate; the *anthers* are membranous, the outer of each parcel 1-celled, the middle one 2-celled. The *ovary* is superior, 1-celled; the *ovules* horizontal; the *style* thread-shaped; and the *stigma* with 2 or more lobes. The *fruit* is various; either an indehiscent 1- or 2-seeded nut, or a 2-valved, many-seeded pod. The *seeds* are horizontal, and fixed to the lateral placentas, globular, shining, black, and furnished with an arillus or a caruncle. The *albumen* is fleshy. The *embryo* in the seeds of indehiscent fruits small and straight; in those of dehiscent ones longer and slightly arched. The *cotyledons* are flat, oblong, entire, and foliaceous in germination.

The plants of this order are bitter and scentless; they are reckoned slightly diaphoretic and aperient; and their watery juices were formerly administered in cutaneous diseases and obstructions of the liver.

This order differs from *Papaveráceæ*, (see folio 54, *a.*), to which it is very closely allied, in abounding in watery juice, instead of a milky juice; and in the petals being irregular, and usually connected, as well as in the stamens being diadelphous. It differs from *Cruciferæ* (see folio 38, *a.*) in the calyx being of 2 sepals, as well as in the structure of the petals and seeds, and disposition of the stamens. See *Lind. Intr. to the Nat. Syst.* & *Don's Gen. Syst. of Gar.* & *Bot.*

Capsella Bursa Pastoris. Common Shepherd's Purse. ⊙

C. Mathews Del & Sc. Pub.d by W. Baxter Botanic Garden Oxford 1836.

CAPSE'LLA *.

Linnean Class and Order. TETRADYNA'MIA †. SILICULO'SA ‡.

Natural Order. CRUCI'FERÆ §, Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; subord. NOTORHIZEÆ; Lindl. Syn. pp. 20 & 29. Introd. to Nat. Syst. p. 14.—Loud. Hort. Brit. pp. 498 & 499. Mag. Nat. Hist. v. i. pp. 143 & 240.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 & 201.—ROSALES; suborder, RHŒADOSÆ; sect. RÆADINÆ; type, BRASSICACEÆ; Burn. Outl, of Bot. p. 614, 784, 847, & 853.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (see figs. 1 & 2.) inferior, equal at the base, of 4 egg-shaped, concave, moderately spreading, deciduous sepals. *Corolla* (see fig. 2.) of 4 inversely egg-shaped, equal, entire petals, (fig. 3.) their claws short and broad. *Filaments* (fig. 4.) 6, 2 of which are shorter than the other 4 (tetradynamous), simple, slender. *Anthers* heart-shaped. *Germen* roundish, compressed. *Style* short. *Stigma* blunt. *Pouch* or *Silicle* (fig. 5.) laterally compressed, triangular, wedge-shaped at the base; with sharply keeled, wingless valves; cells many-seeded. *Partition (dissepiment)* (see fig. 6.) elliptic-spear-shaped, crossing the greater diameter of the pouch. *Seeds* (see fig. 6.) several, fixed to both sides of the placenta by an umbilical thread, pendulous. *Cotyledons* flat, incumbent, (o||).

The triangular *pouch*, wedge-shaped at the base; the sharply keeled, wingless *valves;* and the many-seeded *cells;* will distinguish this from other genera, with incumbent cotyledons, in the same class and order.—It differs from *Thlaspi* in the *valves* not being winged at the back; and in the *cotyledons* being incumbent, not accumbent.

Only one species known.

CAPSE'LLA BU'RSA-PASTO'RIS. Common Shepherd's Purse. Pick-purse. Case-weed. Poor Man's Spermaceti. Toy-wort.

SPEC. CHAR.

De Cand. Syst. Veg. v. ii. p. 383.—Lindl. Syn. p. 31.—Hook. Brit. Fl. p. 295.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 216.—Bab. Fl. Bath. p. 5.—*Thláspi Búrsa-Pastóris*, Engl. Bot. t. 1485.—Curt. Fl. Lond. t. —.—Linn. Sp. Pl. p. 903.—Huds. Fl. Angl. (2nd ed.) p. 283.—Sm. Fl. Brit. v. ii. p. 687. Engl. Fl. v. iii. p. 173.—With. (7th ed.) v. iii. p. 760.—Lightf. Fl. Scot. v. i. p. 342.—Sibth. Fl. Oxon. p. 200.—Abbot's Fl. Bedf. p. 141.—Davies' Welsh Bot. p. 62.—Purt. Midl. Fl. v. i. p. 297.—Relh. Fl. Cant. (3rd ed.) p. 262.—Hook. Fl. Scot. p. 194.—Grev. Fl. Edin. p. 140.—Fl. Devon. pp. 108 & 168.—Johnst. Fl. of Berw. v. i. p. 141.—Winch's Fl. of Northumb. & Durham. p. 43.—Walk. Fl. of Oxf. p. 185.—Mack. Catal. of Pl. of Irel. p. 60.—The Irish Flora, p. 129.—*Thlaspi cuneatum*, Gray's Nat. Arr. v. ii. p. 692.—*Bursa pastoris*, Ray's Syn. p. 366.—Johnson's Gerarde, p. 276.

LOCALITIES.—In waste, as well as cultivated ground, and by way-sides, and on walls, everywhere.

Annual.—Flowers from March to November.

Fig. 1. Calyx.—Fig. 2. A separate Flower, exhibiting the Calyx, Corolla, and Stamens.—Fig. 3. A separate Petal.—Fig. 4. The Stamens, and Germen.—Fig. 5. A Capsule or Pouch.—Fig. 6. The Dissepiment, and Seeds, after the valves are removed.—Fig. 7. The incumbent Cotyledons.—*All, more or less, magnified.*

* The diminutive of *capsula;* a *little capsule.* HOOKER.

† See *Draba verna*, f. 38, n. †. ‡ See *Crambe maritima*, f. 107, n. ‡.

§ See *Draba verna*, f. 38, *a*.

Root tapering, fibrous, whitish, with a peculiar scent somewhat like that of smoke. *Stem* from 6 to 18 inches or more high, branched, leafy, upright or spreading, nearly cylindrical, somewhat striated, rough, especially in the lower part, with prominent hairs. *Root-leaves* several, more or less deeply pinnatifid, toothed or notched, the segments varying much in form, the terminal lobe usually triangular and acute; *stem-leaves* oblong or strap-spear-shaped, pointed, toothed, clasping the stem with their arrow-shaped base; all more or less hairy. *Flowers* small, in corymbs, lengthening out into racemes. *Sepals* membranous at the margin, sometimes smooth, sometimes with long scattered hairs. *Petals* entire, white, a little longer than the sepals. *Germen* roundish, compressed. *Style* very short. *Stigma* somewhat downy. *Pouch* triangular or inversely heart-shaped, smooth, a little tumid, blunt with a broad shallow sinus at the extremity, in which the short, permanent style is situated. *Partition* narrow. *Seeds* several, from 5 to 10 or 12 in each cell, of a yellowish colour, each on a little stalk (umbilical thread), which connects it with the placenta.

This plant is a native of almost every part of the world. Dr. Withering remarks, that it begins to flower long before it has attained its full size; the flowers at first forming a corymb, which afterwards becomes a long spike-like raceme. The stem also, at first simple, in time becomes branched; the first branches issuing from its upper part.

March and April are the months in which it is most generally found in flower; yet, like the *Groundsel (Senecio vulgaris)*, and *Poa annua*, it may be found in this state at almost any time of the year. The radical leaves, as Mr. Curtis observes, differ so exceedingly in their appearance, that the most expert Botanist is often obliged to have recourse to its most striking character, the shape of its seed-vessels, before he can with certainty distinguish it. When it grows on walls, and in dry situations, the root-leaves are more deeply divided, and the segments become much narrower: in cultivated ground they are broader and less jagged; and in a dry barren chalk the leaves are all entire. It is a strong instance of the influence of soil and situation; sometimes not being more than 2 or 3 inches high when it flowers and perfects its seeds, whilst in other situations it attains the height of as many feet.

The young radical leaves are brought to market, in Philadelphia, and sold for greens in the spring of the year. Small birds are fond of the seeds.

It is a bad weed in gardens, but is easily kept under by hoeing the ground in dry hot weather, at or before it comes into flower; for if suffered to seed it will become very troublesome.

A small, white, parasitic fungus, *Uredo Thlaspi*, Sow. Brit. Fungi. t. 340.; *U. cándida*, Grev. Scot. Crypt. Fl. t. 251.; Baxt. St. Crypt. Oxon. N. 88.; and Hook. Br. Fl. v. ii. Pt. II. p. 384.; is very common on this plant about Oxford, often causing the stems to become very much distorted. Another minute white fungus, *Botrytis parasitica*, Hook. Br. Fl. v. ii. Pt. II. p. 343, is also common on this plant, being parasitic on those parts of it which are attacked by the *Uredo*.

Sesleria Cœrulea Blue Moor-Grass

Pub.d by W. Baxter Botanic Garden Oxford 1830.

C. Mathews Del. & Sc.

SESLE'RIA *.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 68. Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293. Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—GRAMINA, *Linn.*—GRAMINA'LES; sect. PANICINÆ; Burn. Outl. of Bot. pp. 359, & 366.

GEN. CHAR. *Panicle* spiked. *Spikelets* many-flowered, with a sheathing or glume-like bractea. *Calyx* (fig. 1.) of 2, nearly equal, keeled, pointed, somewhat awned glumes (valves), containing 2 or 3 perfect *florets*. *Corolla* (see fig. 2.) of 2 paleæ (valves), the outer (*a.*) toothed and awned beneath the apex; the inner (*b.*) cloven. *Filaments* (see fig. 2.) 3, hair-like, rather longer than the corolla. *Anthers* prominent, strap-shaped, notched at each end. *Germen* (see fig. 3.) small, egg-shaped. *Styles* (see fig. 3.) 2, more or less combined. *Stigma* long, strap-shaped, downy. *Seed* loose, covered with the permanently membranous corolla.

The spike-like *panicle;* the *calyx* of 2, nearly equal, slightly awned glumes, containing 2 or 3 florets; the *corolla* of 2 *paleæ*, the outer toothed and awned, the inner cloven; the loose *seed;* and combined *styles;* will distinguish this from other genera, with a panicled inflorescence, and many-flowered spikelets, in the same class and order.

One species British.

SESLE'RIA CÆRU'LEA. Blue Moor-grass.

SPEC. CHAR. Spikes egg-oblong, imbricated. Bracteas alternate; outer palea with 3 teeth.

Engl. Bot. t. 1613.—Knapp. Gram. Brit. t. 43.—Host. Gram. Austr. v. ii. p. 69. t. 98.—Scopoli's Flora Carniolica, (2nd ed.) v. i. p. 63.—Sm. Fl. Brit. v. i. p. 94. Engl. Fl. v. i. p. 114.—With. (7th ed.) v. ii. p. 164.—Sincl. Hort. Gram. Woburn. p. 303.—Gray's Nat. Arr. v. ii. p. 127.—Lindl. Syn. p. 309.—Hook. Brit. Fl. p. 39. Fl. Scot. p. 31.—Winch's Fl. of Northumb. & Durham, p. 6.—Mack. Catal. of Pl. of Irel. p. 13.—The Irish Flora, p. 18.—*Cynosurus cæruleus,* Linn. Sp. Pl. p. 106.—Mart. Fl. Rust. t. 20.—Jacq. Ic. Rar. t. 21.—Huds. Fl. Angl. (2nd ed.) p. 59.—Lightf. Fl. Scot. v. i. p. 100.—*Gramen parvum montanum spica crassiore purpuro-cærulea brevi,* Ray's Syn. p. 399.—*Gramen glumis variis,* Scheuchzero's Agrostographia, p. 83. t. 2. f. 9. A, B.

LOCALITIES.—On moist alpine limestone rocks; and in dry pastures, in the North of England and Scotland.—*Cumberland;* Bankrigg, Stoopband, on Cross Fell; Mr. Salkeld's Fell Pasture, Kirkland; Tarn House, Brampton: HUTCHINSON. Alston Moor: N. J. WINCH, Esq.—*Durham;* On limestone rocks and in dry pastures, on both sides of the Wear, above Sunderland, and on the banks of Tees, from Eglestone to the Cauldron Snout: N. J. WINCH, Esq.

Fig. 1. Calyx.—Fig. 2. Two Florets, showing the Paleæ, the Stamens, and the Pistils; *a*, an outer palea; *b*, an inner one.—Fig. 3. Germen, Styles, and Stigmas.—*All, more or less, magnified.*

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* So named by SCOPOLI, in honour of his learned friend LEONARD SESLER, a Physician and Botanist, who contributed to VITALIANO DONATI's *Natural History of the Adriatic Sea;* published in 1750. The species, eight of which are enumerated in LOUDON's *Hortus Britannicus,* p. 29, were formerly part of the genus *Cynosurus.* See LOUD. *Encycl. of Plants.*

† See *Phalaris canariensis,* folio 56, note †.

—*Westmoreland;* On limestone rocks about Conzick Scar near Kendal: Mr. Gough. At the top of Barrowfield Wood near Kendal: Mr. Woodward. Scout Scar: Nicholson, in New Bot. Guide.—*Yorkshire;* About Settle: Curtis. Limestone rocks at Ingleborough, and Ingleton: Teesdale. Mackershaw Wood by Ripon: Mr. Brunton. Near Bolton Abbey: Rev. W. Wood. Wensleydale: Mr. James Ward, in N. B. G. By the Ebbing and Flowing Well, Settle; Kilsoe; Malham; and other limestone rocks: N. J. Winch, Esq. On most of the lime rocks in Craven: Mr. Caley.—SCOTLAND. On the Highland mountains, common. Plentiful on Ben Lomond: Sir W. J. Hooker.—IRELAND. On Ben Bulben, and other limestone mountains near Sligo: Mr. Mackay.

Perennial.—Flowers in April and May.

Root forming dense tufts, fibres strong and wirey. *Culm (stem)* about a span high, in gardens often much higher, simple, somewhat decumbent at the base, afterwards ascending, smooth, the upper part usually naked, the lower invested by a long sheath, ending in a short leaf. *Leaves* rather firm, strap-shaped, striated, single-ribbed, keeled, bluntish; the edges very rough, as is the keel also near the apex. *Sheath* short. *Stipula* very small, sometimes scarcely perceptable. *Panicle* resembling a spike, upright, from half an inch to an inch long, somewhat oblong-egg-shaped, of a greyish or lead colour, sometimes purplish. *Spikelets* generally in pairs, oblong-egg-shaped, the lower ones with an egg-shaped, fringed, and toothed bractea (floral-leaf) at the base. *Glumes (calyx-valves)* (fig. 1.) egg-spear-shaped, fringed on the margins and the keel, and ending in an awn-like point. *Paleæ (valves of the corolla)* (see fig. 2.) egg-oblong; the outer valve ribbed, slightly downy, fringed or jagged, with 3 or 5 teeth, the middle tooth lengthened into a short awn (see fig. 2, *a.*); the inner valve (see fig. 2, *b.*) flat, cloven, with inflexed margins, downy at the outer edges. *Anthers* large, yellow, tipped with purple.

This very elegant Grass is a native of several parts of Europe, flourishing, according to Dr. Walker, to the height of two or three thousand feet among its native mountains. It was first noticed as British by Mr. Ray, who received it from Mr. Petiver, to whom it was sent, out of the North, by Mr. Fitz-Roberts.—"The light spiked head of this plant," says Mr. Knapp, "placed at the end of a long flexile stalk, fits it for constant motion, and in its alpine station it seems the sport of every wind that blows."—"The epithet 'cærŭlea,'" observes the same author, "is but a poor appellation for this Grass, viewed as a native of Britain; in continental specimens it is more opposite; the leaves have no shading of blue on them, and the little azure hue of the corolla cannot well deserve to characterize a species*"—According to Mr. Sinclair's experiments and observations on this plant, it is the best of the alpine grasses; yet he considers it unworthy of cultivation.—It is said to be particularly liked by sheep, and that it may be used for the fattening of mutton, but it makes the wool coarse.

* Sir James Edward Smith observes, in *English Botany*, that "the spike varies in colour, but that some of our native specimens are as blue as any from abroad."

Alnus glutinosa. Common Alder. ♄.

Tuffell del. *Pub.d by W Baxter Botanic Garden Oxford. 1836.* *J W Jr.*

A'LNUS*.

Linnean Class and Order. MONŒCIA†, TETRA'NDRIA.

Natural Order. BETULI'NEÆ, Rich. by Macgilliv. p. 544.—Lindl. Introd. to Nat. Syst. of Bot. p. 98.—AMENTA'CEÆ, *Linn* — Juss. Gen. Pl. p. 407.—Sm. Gram. of Bot. p. 189.—Lindl. Syn. p. 228.—Loud. Hort. Brit. p. 534.—QUERNEALES; type, BETULACEÆ; Burn. Outl. of Bot. v. ii. pp. 523 & 529.

GEN. CHAR. *Barren Flowers* (fig. 2.) numerous, collected into a loose, cylindrical *catkin* (fig. 1.) imbricated all round. *Calyx* (see fig. 2.) a permanent, wedge-shaped *scale*, 3-flowered, with 2 very minute lateral scales. *Corolla* (see fig. 2.) composed of 3 equal *florets*, attached to the inner side of every scale, each of 1 *petal*, in 4 deep, equal, egg-shaped, blunt segments. *Filaments* (see fig. 2.) 4, arising from the tube of the floret, shorter than its segments, and opposite to them. *Anthers* roundish, 2-lobed.

Fertile Flowers (figs. 4 & 5.) fewer, collected into an egg-shaped, firm *catkin* (fig. 3.) imbricated all round. *Calyx* (see figs. 4 to 8.) a permanent, wedge-shaped, 2-flowered scale. *Corolla* none. *Germen* compressed, 2-celled. *Styles* (see fig. 5.) 2, parallel, tapering, a little prominent, deciduous. *Stigma* simple. *Nut* (see figs. 9 to 12.) egg-shaped, hard, compressed, angular, without wings, 2-celled. *Kernels* (see fig. 11.) one in each cell, egg-shaped, pointed.

Distinguished from other genera, in the same class and order, by the permanent, 3-flowered *scale (calyx)*; and the deeply 4-cleft *corolla (floret)* of the *barren-flowered catkin*; and by the permanent, 2-flowered *scale (calyx)* without a *corolla*; the 2 *styles* and compressed *nut*, destitute of wings; of the *fertile-flowered catkin*.

One species British.

A'LNUS GLUTINO'SA. Common Alder. Glutinous-leaved Alder. Black Alder. Owler.

SPEC. CHAR. Leaves roundish-wedge-shaped, wavy, serrated, somewhat glutinous, blunt; downy at the branching of the nerves beneath.

Hook. Fl. Lond. t. 59.—Loud. Arbor. Brit. t. 229.—Willd. Sp. Pl. v. iv. p. 334.—Sm. Engl. Fl. v. iv. p 131.—With. (7th ed.) v. ii. p. 245.—Gray's Nat. Arr. v. ii. p. 244.—Lindl. Syn. p. 229.—Hook. Brit. Fl. p. 402. Fl. Scot. p. 271.—Grev. Fl. Edin. p. 201.—Fl. Devon. pp. 153 & 135.—Johnst. Fl. of Berw. v. ii. p. 204.—Winch's Fl. of Northumb. and Durham, p. 61.—Baxt. Lib. of Agricul. and Hort. Knowl. (2nd ed.) p. 9.—Loud. Encyclop. of Gard. (new ed.) p. 1161. parag. 6664.—Walk. Fl. of Oxf. p. 277.—Bab. Fl. Bath. p. 46.—Mack. Catal. of Pl. of Irel. p. 81.—The Irish Fl. p. 185.—*Alnus*, Ray's Syn. p. 442.—

Fig. 1. The barren or stameniferous Catkins.—Fig. 2. A separate Flower of ditto, showing the Calyx, the 3 Florets, and the Stamens.—Fig. 3. The fertile or pistilliferous Catkins.—Figs. 4 & 5. Two separate Flowers of ditto, showing the Calyx, the 2 Florets, and the Pistils.—Fig. 6. The hardened, permanent, cone-like Catkin, after the seeds are discharged.—Figs. 7 & 8. Separate Scales of ditto.—Figs. 9 & 10. Two of the Nuts or Seeds.—Fig. 11. A vertical section of one of the Nuts.—Fig. 12. A transverse section of ditto.—Figs. 2, 4, 5, 8, 10, 11, and 12, *more or less magnified.*

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* From the Celtic *al*, *near*; and *lan*, the *river-bank*. Sir W. J. HOOKER.

† See *Bryonia dioica*, folio 83, note †.

Johns. Gerarde, p. 1477.—Evelyn's Sylva, (2nd ed.) p. 83.—*Betula Alnus* Eng Bot. t. 1508.—Linn. Sp. Pl. v. ii. p. 1394, *a*.—Huds. Fl. Angl. (2nd ed.) p. 416.—Sm. Fl. Brit. v. iii. p. 1013.—Lightf. Fl. Scot. v. ii. p. 576.—Sibth. Fl. Oxon. p. 64.—Abb. Fl. Bedf. p. 207.—Davies' Welsh Bot. p. 89.—Purt. Midl. Fl. v. ii. p. 454.—Relh. Fl. Cant. (3rd ed.) p. 390.—Hunt. Evel. Silva, p. 240, with a plate.

Localities.—In wet meadows, moist grounds, and on the banks of rivers, lakes, and pools; frequent.

A Tree.—Flowers in March and April.

From 30 to 40 feet high. *Trunk* frequently crooked, with a dark brown, or blackish bark, which in old trees is often full of clefts. *Branches* crooked, spreading, round, smooth, glutinous when young. *Leaves* alternate, on channelled leaf-stalks (petioles), roundish, very much resembling those of the Hasel-nut, blunt, or lopped at the end, wavy, serrated, plaited, somewhat glutinous, smooth, of a dark shining green above, paler underneath, with one rib, and many transverse parallel veins which are downy at their origin. *Stipulas* oblong, entire, soon falling off. *Flowers* in catkins (aments), on branched peduncles. *Stameniferous catkins* (fig. 1.) long, cylindrical, drooping, each floret with a calyx and corolla, the latter deeply 4-cleft (see fig. 2). *Stamens* (see fig. 2.) 4, on very short filaments. *Pistilliferous catkins* (fig. 3.) short, egg-shaped, red, each floret with a simple perianth (a calyx only); scales (see f. 4.) red, permanent, forming a short, egg-shaped cone, something like that of a Pinus or Fir-tree.

The following varieties of this tree are enumerated in Mr. Loudon's *Hortus Britannicus*, p. 378, as being cultivated in the gardens of Britain. 1. The fringed-leaved (laciniata): Loud. Arbor. Brit. t. 230. 2. The variegated-leaved (foliis variegatis). 3. The Oak-leaved (quercifolia). 4. The cut-leaved (incisa). 5. The emarginate (emarginata).

The common Alder is recommended for making hedges by the sides of streams and in low damp situations, where the thorn or quick (*Cratæ'gus oxyacántha*, folio and plate 118.) will make little or no progress. The wood of this tree is valued for works exposed to the action of water, especially such as are constantly submerged. It is said that the celebrated and ancient bridge, called the Rialto, at Venice, is built on Alder-piles; as are also many large edifices at Amsterdam. Before the iron manufacture was so much improved, Alder was in great request for water-pipes, on account of the ease with which it can be perforated when green; it is also valuable as affording one of the best charcoals, said by some persons to be superior to willow, for the manufacture of gunpowder; and no other wood forms carbon that answers so well for galvanic experiments, Alder-charcoal being always preferred for the points that connect the poles of Voltaic batteries, and other similar apparatus. The wood is also useful for making clogs, pattens, and other articles; and with it the Highlanders are said to make chairs, which are very handsome, and have the colour of mahogany. The bark and leaves are employed in dying, in tanning leather, and for staining fishermen's nets, their astringent quality adapting them for these uses. The bark is employed in decoction as a gargle in relaxations of the mucous membrane of the fauces; and in double the dose of cinchona it has been administered with success in cases of ague. The fresh gathered leaves, which are covered with a glutinous liquor, are, by some people, strewed upon their floors to destroy fleas; the fleas are said to be entangled in that tenaceous liquor, as birds are in bird-lime.—The Alder is not only a native of Europe, but also of Asia from the White Sea to Mount Caucasus; in boggy grounds, and on the banks of rivers.

The following parasitic fungi are frequent on the leaves of this tree in the vicinity of Oxford.

1. *Erineum alneum*, Grev. Scot. Cryp. Fl. t. 157. f. 2.—Baxt. St. Crypt. Oxon. N°. 93. This is a beautiful species, sometimes occupying nearly the whole of the under side of the leaf. I have observed it only in Christ Church Meadow, and in Magdalen College Water-walks. Summer and Autumn.

2. *Dothidea alnea*, Gr. Scot. Cr. Fl. t. 146. f. 2.—Hook. Br. Fl. v. ii. pt. 2. p. 288.

3. *Ery'siphe penicillàta*, var. *Alni*. Link, in Willd. Sp. Pl. v. vi. pt. 1. p. 113.

Galeobdolon luteum. Yellow Weasel-snout. ♃

C. Mathews, Del. & c. Pub.d by W. Baxter, Botanic Garden, Oxford 1836.

GALEO'BDOLON*.

Linnean Class and Order. DIDYNA'MIA †, GYMNOSPE'RMIA ‡.

Natural Order. LABIA'TÆ §, Juss. Gen. Pl. p. 110.—Sm. Gram. of Bot. p. 99. Engl. Fl. v. iii. p. 63.—Bentham, in Bot. Regist. (1829).—Lindl. Syn. p. 196.; Introd. to Nat. Syst. of Bot. p. 239.—Rich. by Macgilliv. p. 439.—Loud. Hort. Brit. p. 528.—VERTICILLATÆ of *Linnæus*.—SYRINGALES; suborder, PRIMULOSÆ; sect. MENTHINÆ; type, MENTHACEÆ or LABIATÆ; subty. NEPETIDÆ; Burn Outl. of Bot. v. ii. pp. 900, 958, 968, & 973.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of one sepal, tubular, bell-shaped, permanent, with 5 spreading, unequal, spinous-pointed teeth, shorter than the tube; the upper one upright, at some distance from the rest. *Corolla* (fig. 2.) of one petal, ringent; tube cylindrical, the length of the calyx; upper lip oval, incurved, arched, entire; lower lip shorter, in 3 oblong, pointed, rather unequal, undivided segments, the middle one longest. *Filaments* (fig. 3, *d.*) 4, 2 longer than the other 2 (didynamous), awl-shaped, covered by the upper lip of the corolla. *Anthers* (fig. 4.) of 2 roundish lobes. *Germen* (fig. 3, *a.*) superior, 4-lobed. *Style* (fig. 3, *b.*) thread-shaped, the length of the stamens. *Stigmas* (fig. 3, *c.*) in 2 acute, spreading segments. *Seeds* (figs. 6 & 7.) 4, short, triangular, blunt, in the bottom of the open-mouthed calyx, (see fig. 5).

The lower lip of the corolla in 3 acute, undivided, nearly equal segments, will distinguish this from other genera, with a nearly regular, 5-cleft calyx, in the same class and order.

Only one species known.

GALEO'BDOLON LUTEUM. Yellow Weasel-snout. Yellow Dead-nettle. Yellow Archangel.

SPEC. CHAR.

Engl. Bot. t. 787.—Curt. Brit. Entom. v. iv. t. 178.—Huds. Fl. Angl. (2nd ed.) p. 258.—Sm. Fl. Brit. v. ii. p 631. Engl. Fl. v. iii. p. 96.—With. (7th edit.) v. iii. p. 713.—Gray's Nat Arr. v. ii. p 376.—Lindl. Syn. p. 202.—Hook. Brit. Fl. p 275.—Abbot's Fl. Bedf. p. 129.—Purt. Midl. Fl. v. i. p. 278.—Relh. Fl. Cantab. (3rd ed.) p. 240.—De Cand. and Spreng. Phil. of Pl. p. 395.—Hook. Fl. Scot. p. 183.—Rev. G. E. Smith's Pl. of S. Kent, p. 31.—Fl. Devon. pp. 99 and 145.—Walk. Fl. of Oxf. p. 167.—Perry's Pl. Varvic. Selectæ, p. 50.—Bab. Fl. Bath. p. 39.—Mack. Catal. of Pl. of Irel. p. 55.—The Irish Flora, 118.—*Galeóbdolon galeópsis*, Curt. Fl. Lond. t. 223.—Sibth. Fl. Oxon. p. 185.—*Galeóbdolon vulgáre*, Pers. Syn. v. ii. p. 122.—*Galeópsis galeóbdolon*, Linn. Sp. Pl. p. 810.—Lighf. Fl. Scot. v. i. p. 310.—*Leonurus galeobdolon*, Willd. Sp. p. v. iii. p. 115.—*Lamium galeobdolon*, Cranz Stir. Austr. p. 262.—Benth. Labiatarum, p. 516.—*Lamium luteum*, Ray's Syn. p. 240.—Johns. Gerarde, p. 702.—*Cardiaca sylvatica*, Lam. Fl. Fr. v. ii. p. 384.—*Pollichia galeobdolon*, Roth. Fl. Germ. v. i. p. 254.

LOCALITIES.—In woods, thickets, hedge-bottoms, &c. in rather moist situations; not uncommon.

Figs. 1 & 5. The Calyx.—Fig. 2. The Corolla.—Fig. 3. The lower part of the Corolla opened longitudinally, showing the 4 stamens, *d.*; the Germen, *a.*; the Style, *b.*; and the Stigma, *c.*—Fig. 4. An Anther.—Fig. 5. The Calyx when the seeds are ripe.—Figs. 6 & 7. The Seed.—Figs. 4 & 7 *magnified.*

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* From *gale*, Gr. *a weasel;* and *bdolos*, Gr. *a fetid scent;* descriptive of its strong smell.

† See *Lamium album*, folio 31, note †. ‡ Ibid. note ‡.

§ See *Ajuga reptans*, folio 94, *a.*

Perennial.—Flowers from April to June.

Root somewhat tuberous, moderately creeping, and sending down several largish fibres. *Stems* several, quadrangular, those producing flowers nearly upright, from 1 to 2 feet high, nearly smooth, or slightly hairy; those destitute of flowers, after the flowering is over, are extended to a great length, and creep on the ground, these are covered with close hairs, which point backwards. *Leaves* opposite, petiolate (stalked), more or less hairy, unevenly serrated, veiny, the lower ones heart-shaped, the upper ones egg-shaped, pointed, and nearly sessile. *Whorls* numerous, each composed of from 5 to 15 inodorous flowers. *Bracteas* small, strap-shaped, pointed, one at the base of each calyx. *Calyx* (fig. 1.) bell-shaped, slightly hairy, with 5 teeth, 5 rather prominent ribs, and, frequently, a small strap-shaped pointed leaf or bractea on the outside of the tube above the base. *Corolla* (fig. 2.) large and handsome, yellow, tube a little longer than the calyx, purple and hairy within; upper lip upright, long, arched, villous, and edged with woolly hairs; entire, or nearly so; lower lip shorter than the upper, beautifully spotted with tawny or deep orange, in 3 unequal segments, the middle one the longest, and marked with 3 lines (see fig. 2). *Filaments* (fig. 3, *d.*) tapering, hairy towards the base, of a yellowish colour. *Anthers* (fig. 4) 2-lobed, fleshy or glandular on the back part. *Seeds* (figs. 6 & 7.) oblong, convex on the outer side, triangular on the inner.

Much diversity of opinion has prevailed amongst authors with respect to this plant, as may be seen by the number of synonyms given above; GERARDE, as long ago as 1597, considered it as belonging to the same genus as the common White Dead-nettle, (*Lamium*, t. 31.); and Mr. BENTHAM, in his very elaborate work on the *Labiatæ*, has followed CRANTZ in restoring it to that genus again.

It is a native of Sweden, Germany, Switzerland, Austria, Carniola, and Italy, as well as of Britain. It is remarked in DE CANDOLLE'S and SPRENGEL'S "Elements of the Philosophy of Plants," (Engl. edit.) p. 398, that "its most northern limits, as far as is yet known, are Wasa in Finland, Jamteland in Sweden, and Drontheim in Norway, (63°.) Its most southern limit is Hæmus in Rumilia, (41°.) Only thus far, too, the plant grows towards the east; but in Lithuania it grows as far as the Wolga Heights, (33°. E. lat.). Westward it extends as far as the Pyrenees."

It is a slight astringent, and is said also to act as a diuretic.

There is a variety of it with variegated leaves; and Sir T. G. CULLUM mentions, in *The Botanist's Guide*, v. ii. p. 554, a curious and elegant variety with the blossom, or at least the terminal flower, flat, and 6-cleft, growing for many years in a lane near the Grove at Hardwick, Suffolk, one mile and a half from Bury.

[illegible]

[illegible] Stems [illegible]

[illegible] more or [illegible] heart-shaped, [illegible] and nearly sessile. Whorls [illegible] from 3 to 15 ingodorous flowers. [illegible] pointed, one at the base of each calyx. [illegible] highly hairy, with 3 teeth; 1 tooth [illegible] a small strap-shaped pointed leaf [illegible] the tube above the base. Corolla (fig. 2) large and yellow, tube a little longer than the calyx, purple and [illegible] upper lip purple, lower [illegible] villous, and [illegible] hairs; outline of the lower lip shorter than [illegible] thickly spotted with large deep orange, in 2 [illegible] the middle of the lower, and marked with 3 [illegible] filaments (fig. 3), hairy, hairy towards the base, [illegible] colour [illegible] 2-lobed, fleshy or [illegible] dark purple [illegible] oblong, convex on [illegible] triangular on the inner [illegible]

Much [illegible] of opinion has prevailed [illegible] to [illegible] be seen by the [illegible] even above [illegible] Gerarde, as long ago as 1597, [illegible] looking up to [illegible] as the common [illegible] [illegible] BERTRAM, in his [illegible] in the Lichens, has [illegible] CLAUSA in reporting [illegible] spots.

[illegible] of Sweden, Germany, Switzerland, [illegible] "Flora" of the Philosophy [illegible] 1808, that [illegible] in Finland, [illegible] in [illegible] (fig. 1). In most [illegible] only then are, too, the [illegible] it grows as far as the [illegible] and it [illegible] under [illegible]

[illegible] slight [illegible] and [illegible]

[illegible] is a variety of [illegible] [illegible] in the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Smyrnium Olusatrum Common Alexanders ♂

C. Mathews, Del. & Sc. Publ^d by W. Hawker, Botanic Garden, Oxford 1836.

SMY'RNIUM*.

Linnean Class and Order. PENTA'NDRIA†, DIGY'NIA.

Natural Order. UMBELLI'FERÆ, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, SMYRNIACEÆ; subt. SCANDICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 780, & 781.

GEN. CHAR. *Flowers* (see fig. 1.) uniform, and regular; the innermost barren, or abortive. *Calyx* of 5 very minute, acute, permanent sepals. *Corolla* (see fig. 1.) of 5, equal, spear-shaped, entire, pointed, incurved, petals. *Filaments* (see fig. 1.) 5, hair-like, as long as the petals. *Anthers* roundish. *Germen* (see fig. 2.) inferior, egg-shaped, angular, and furrowed. *Styles* (see fig. 2.) 2, thread-shaped, widely spreading, tumid, and somewhat depressed, at the base. *Stigmas* simple. *Fruit* (fig. 3.) somewhat orbicular, broader than long, much hollowed out at each side, crowned with the styles, or their small pyramidal bases. *Carpels (mericarps‡)* (see figs. 4 & 5.) reniformly globose, with the 3 dorsal *ridges* prominent and sharp; the 2 lateral and marginal ones nearly obsolete. *Channels (interstices)* with many *vittæ* (see f. 6). *Seeds* involute. *General* and *partial Involucrum* various in different species.

The nearly obsolete *calyx;* the spear-shaped or elliptical, entire *petals*, with a long inflexed point; the laterally contracted *fruit;* the roundish, kidney-shaped *carpels*, each with 3 prominent and sharp dorsal ridges, and 2 nearly obsolete marginal ones; the *channels* with many *vittæ;* and the involute *seed;* will distinguish this from other genera in the same class and order.

One species British.

SMY'RNIUM OLUSA'TRUM§. Common Alexanders. Alisander.

SPEC. CHAR. Stem round. Stem-leaves ternate, stalked; leaflets egg-shaped, serrated.

Engl. Bot. t. 230.—Curt. Brit. Entom. v. ix. t. 415.—Linn. Sp. Pl. p. 376.—Huds. Fl. Angl. (2nd ed.) p. 126.—Sm. Fl. Br. v. i. p. 328. Eng. Fl. v. ii. p. 74.—With. (7th ed.) v. ii. p. 392.—Lind. Syn. p. 126.—Hook. Br. Fl. p. 132.—Lightf. Fl. Scot. v. i. p. 168.—Sibth. Fl. Oxon. p. 101.—Abb. Fl. Bed. p. 76.—Davies' Welsh Bot. p. 29.—Purt. Mid. Fl. v. i. p. 160.—Relh. Fl Cant (3rd ed.) p. 125.—Hook. Fl. Scot. p. 94.—Grev. Fl. Edin. p. 70.—Fl. Dev. pp. 53 & 168.—John. Fl. Berw. v. i. p. 70.—Winch's Fl. of North. & Durh. p. 19.—Walk. Fl. of Oxf. p. 81.—Don's Gen. Syst. of Gard. & Bot. v. iii. p. 380.—Loud. Ency. of Gard. (new ed.) p. 855. par. 4354. fig. 737.—Burn. Out. of Bot. v. ii. p. 782.—Pamplin's Pl. of Battersea, p. 7.—Mack. Cat. of Pl. of Irel. p. 30.—The Irish Fl. p. 61.—E. Lees, in Illus. Nat. Hist. of Worcestersh. p. 158.—*Smyrnium vulgare*, Gray's Nat. Arr. v. ii. p 525.—*Smyrnium*, Ray's Syn. p. 208.—*Hipposelinum*, Johns. Gerarde, p. 1019.

Fig. 1. A Flower.—Fig. 2. Germen, Styles, and Stigmas.—Fig. 3. The Fruit.—Fig. 4. A Carpel.—Fig. 5. The same when ripe.—Fig. 6. A transverse section of ditto, showing the Vittæ.—Fig. 1 *magnified.*

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* From *smyrna*, Gr. synonymous with *myrra*, Gr. *myrrh*, from the scent of the juice. Sir W. J. HOOKER.

† See *Anchusa sempervirens*, folio 48, note †.

‡ So called because they adhere to the calyx the half of their length, and therefore cannot be *carpella* or *achenia* in the strict sense of those terms. DON.

§ From *olus*, a *potherb;* and *ater*, *black;* in allusion, apparently, to the black colour of the ripe fruit; or perhaps from the black external coat of the root.

Localities.—In waste ground, about ancient ruins; often on rocks and cliffs near the sea. *Oxfordsh.* Near Bensington: Dr. Sibthorp.—*Beds.* Elstow, Ravensden, and Oakley: Rev. C. Abbot.—*Cambridgesh.* Chesterton, in a close near the river, below the Sluice; Hinton, Hasenfield, Great Wilbraham, &c.: Rev. R. Relhan.—*Cheshire;* Shore of the Mersey, opposite Liverpool, sparingly: Mr. Watson, in New Bot. Guide.—*Cornwall;* Sea cliffs at Penzance: Mr. Watson, in N. B. G.—*Devon.* Chudleigh Rock, cliffs at Lympstone, Ashburton: Rev. J. P. Jones. Dawlish: Rev. R. P. Welland. Between Tor Abbey and Livermead: Rev. A. Neck, *Fl. Devon.* Ilfracombe and Barnstable: Mr. Watson, in N. B. G.—*Dorset;* About Pool; and nn the ramparts going into Wareham: Dr. Martyn.—*Durham;* In Hurworth churchyard: N. J. Winch, Esq.—*Kent;* About Reculver, Isle of Thanet, and Rochester, plentifully, about old buildings: Mr. W. Pamplin, in N. B. G. In a hedge as you enter Graveney Marsh, near Faversham: E. Jacob, Esq. (1777).—*Middlesex;* About Cowley: Dr. Martyn.—*Norfolk;* Hedges, Belton, &c. but rare: *Hist. of Yarm.* Road-side between Harleston and Scole: Rev. A. Bloxam. About Mackerell's Tower, Norwich: Dr. Martyn.—*Northumberland;* Banks of the Tyne, near Newcastle: R. Bowman, in N. B. G. On the banks near Tynemouth Castle, plentiful. Behind the Town Walls above the Close Gate, Newcastle; and on the ruins of Dunstanborough Castle: N. J. Winch, Esq.—*Notts;* Upon most rocks about Nottingham, especially abnut the Castle: Dr. Deering, (1738.)—*Shropsh.* Ruins of Ludlow Castle: Rev. A. Bloxam.—*Somersetsh.* Near Bristol: Miss Worsley, in N. B. Guide.—*Suffolk;* Bungay: Mr. D. Stock, in N. B. G. Castle Mount at Eye: Rev. A. Bloxam.—*Surrey;* Waste ground about old houses near Battersea; and in dry situations in Letchmere: Mr. W. Pamplin, jun.—*Worcestersh.* Ditches about Badsey near Evesham: T. Purton, Esq. In great abundance at Hill Croome, and about Pershore: Mr. E. Lees, in *Illust. of Worcest.* Between Great Comberton and Wollershill, under hedges near the Avon: Nash.—*Yorksh.* Castle Cliffe, Scarborough: Rev. A. Bloxam. Scarborough Castle: E. F. Witts, Esq.—WALES. *Anglesey;* Beaumares, Aberffraw, &c. but most abundantly on Priestholm Island.—*Caernarvonsh.* Shore near Bangor, and on a wooded bank just above the Cathedral: Mr. Watson, in N. B. G. Great Ormeshead, near Gogarth Ruins: N. J. Winch, Esq.—*Denbighsh.* Field near Bryn yr Owen, Wrexham: J. E. Bowman, in N. B. G.—SCOTLAND. *Berwicksh.* Upon the sea-coast at Dunglass, on the edge of Berwickshire: Dr. Parsons. Sea-shore below the old Castle of Ravensheugh, between Dysart and Kirkcaldy: Dr. Walker. By the side of a rivulet at Kinghorn; and Dirleton Castle, *E. Lothian:* Mr Maughan. Near Colzeen Castle, *Ayrshire:* Mr. Murray.—IRELAND. Under hedges and on ditch banks near Dublin, abundant: Mr. J. T. Mackay. Old ditches about Glasnevin, Clontarp, Santry, Ballymum, Cardiff's-bridge, and City Basin; James'-street: *Irish Flora.*

Biennial.—Flowers in May and June.

Root large, fleshy, branched, nearly black on the outside, yellowish-white within. *Stem* from 2 to 4 feet high, upright, branched, leafy, solid, smooth, cylindrical and striated on the lower part, the upper part and the branches more or less deeply furrowed and somewhat angular. *Lower Leaves* very large, twice ternate, stalked; *upper ones* ternate, with a short, broad, concave, somewhat lacerated or fringed, membranous base; the leaflets in all large, shining, broadly egg-shaped, cut and serrated. *Umbels* large, terminal, roundish, with many general and partial *rays*, without *bracteas*. *Flowers* small, numerous, greenish-yellow; petals nearly equal, inflexed. *Fruit* (fig. 3.) from the flowers of the circumference, almost black when ripe, large, roundish, tumid, with sharp, prominent ribs.

The whole herb is of a pale bright green, in flavour something like celery, by which vegetable it has been almost entirely supplanted.

Mr. Pennant says that it is boiled and greedily eaten by sailors returning from long voyages, who happen to land at the S. W. corner of Anglesey; and Dr. Withering informs us, that it is a principal produce of the Steep Holmes Island, in the Severn; and that it is worthy the attention of Mariners.

Móntia fontána. Water Blinks. ⊙

C. Mathews, Del. & Sc. Pub.d by W. Baxter, Botanic Garden, Oxford, 1836.

MO'NTIA *.

Linnean Class and Order. TRIA'NDRIA †, TRIGY'NIA.

Natural Order. PORTULA'CEÆ, Juss. Gen. Pl. p. 312.—Sm. Gram. of Bot. p. 164.—Lindl. Syn. p. 62.; Introd. to Nat. Syst. of Bot. p. 159.—Rich. by Macgilliv. p. 510.—Loud. Hort. Brit. p. 516. —Don's Gen. Syst. of Gard. and Bot. v. iii. p. 71.—ROSALES; section, CRASSULINÆ; type, PORTULA'CEÆ; Burn. Outl. of Bot. pp. 614, 730, & 739.—SUCCULENTÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 2, sometimes of 3, egg-shaped, blunt, concave, upright, permanent sepals. *Corolla* (figs. 2 & 3.) of 1 petal, in 5 deep spreading segments, 3 of which are rather smaller than the other 2. *Filaments* (see fig. 2.) 3, sometimes 5, as in fig. 3, inserted into the tube of the corolla, and, when 3 only, opposite to its 3 smaller segments. *Anthers* of two round lobes. *Germen* (fig. 4.) superior, top-shaped (turbinate), 3-lobed. *Style* (see fig. 4.) very short. *Stigmas* 3, oblong, spreading, downy on their upper side. *Capsule* turbinate, of 1 cell, with 3 valves (fig. 6.), and 3 seeds. *Seeds* (fig. 7.) roundish-kidney-shaped, dotted.

The 2- or 3-sepaled *calyx;* the monopetalous, deeply 5-cleft *corolla;* and the 3-valved, 3-seeded *capsule;* will distinguish this from other genera in the same class and order.

One species British.

MO'NTIA FONTANA. Fountain Chickweed. Water Blinks. Water Purslane.

SPEC. CHAR. Plant creeping, much branched, fleshy. Leaves subspathulate, entire. Peduncle 1-flowered. (*M. minor* et *rivularis*, Gmel.) SPRENGEL.

Engl. Bot. t. 1206.—Curt. Fl. Lond. t. 188. Curt. Br. Entomol. v. x. t. 456.—Linn. Sp. Pl. p. 129.—Huds. Fl. Angl. (2nd ed.) p. 60.—Sm. Fl. Brit. v. i. p. 161. Engl. Fl. v. i. p. 187.—With. (7th ed.) v. ii. p. 208.—Gray's Nat. Arr. v. ii. p. 543.—Lindl. Syn. p. 63.—Hook. Br. Fl. p. 58.—Lightf. Fl. Scot. v. i. p. 110. —Sibth. Fl. Oxon. p. 53.—Abbot's Fl. Bedf. p. 28.—Davies' Welsh. Bot. p. 14.—Purt. Midl. Fl. v. i. p. 91.—Relh. Fl. Cant. (3rd ed.) p. 52.—Hook. Fl. Scot. p. 47.—Grev. Fl. Edin. p. 33.—Spreng. Linn. Syst. Veg. v. i. p. 363.—Fl. Devon. pp. 24 & 185.—Johnst. Fl. of Berw. v. i. p. 32.—Rev. G. E. Smith's Pl. of S. Kent, p. 8.—Winch's Fl. of North. and Durham, p. 9.—Walk. Fl. of Oxf. p. 34.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 82.—Perry's Pl. Varvic. Selectæ, p. 10.—Illust. of Worcest. p. 152.—Mack. Catal. of Pl. of Irel. p. 17.—The Irish Fl. p. 27.—*Montia minor*, Gmel. Fl. Badensis-Alsatica. v. i. p. 301. —*Montia aquatica minor*, Mich. Gen. p. 18. t. 13. f. 2.—*Alsine parva palustris tricoccos, portulacæ aquaticæ similis*, Ray's Syn. p. 352.—*Cameraria arvensis et minor*, Dill. Giss. p. 46. Append. p. 114. t. 6.

LOCALITIES.—By the sides of little clear rills, and in watery places, especially on a sandy or gravelly soil; frequent.

Annual.—Flowers in April, May, and June.

Fig. 1. The Calyx.—Fig. 2. The Corolla opened virtically to show the Stamens.—Fig. 3. A flower with 5 stamens.—Fig. 4. The Germen, Style, and Stigmas.—Fig. 5. The Capsule, invested by the permanent Calyx.—Fig. 6. The 3 valves of the Capsule after the seeds are discharged.—Fig. 7. A Seed.—*All more or less magnified.*

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* So named by MICHELI, in honour of Joseph MONTI, Doctor of Philosophy, Professor of Botany, and Perfect of the Medical Garden at Bologna. Author of *Agri Bononiensis Stirpium Catalogi Prodromus*, 1719, 4to.; and other works on Medicine and Botany.

† *Montia canariensis*, folio 56, note †.

Root fibrous. *Stem* from 1 to 4 inches long, much branched, somewhat angular, leafy, spreading on the ground, and sending out radical fibres from the lower part, the upper part often upright. *Leaves* small, opposite, sessile or on very short stalks, elliptic-spear-shaped, entire, rather fleshy, smooth, and of a pale green colour. *Peduncles (flower-stalks)* generally growing three together, each supporting one flower, proceeding from a little scale in the bosom of the leaves, at first drooping, but afterwards becoming upright and longer than the leaves. *Corolla* very small, white, of 1 petal, which is deeply cut into 5 segments, the 3 alternate ones the smallest, having the stamens attached to them (see fig. 2). *Capsule* roundish, invested by the enlarged, permanent, truncated calyx (see fig. 5). *Seeds* (fig. 7.) 3, kidney-shaped, black, dotted. The valves of the capsule are involute at the margins, and, after the seeds are discharged, they become thread-shaped, and a little longer than the calyx (see figs. 5 & 6).

Whole plant smooth and somewhat succulent. Sometimes the calyx consists of 3 sepals, and then the corolla has 5 stamens instead of 3, as was the case with some of the flowers in the specimen figured, (see fig 3). The flowers usually appear in a half-opened state, whence one of the English names *Blinks*, but when the sun shines on them they expand.

A large variety of this plant is figured by Micheli, t. 13. f. 1. This is *Montia fantana*, var. *β. major* of Willd. Spec. Pl. v. i. p. 415.—*Montia repens*, of Gmelin's Fl. Badensis-Alsatica, v. i. p. 302.—and *M. rivularis* of Loud. Hort. Br. p. 37. Sir W. J. Hooker informs us, in his *Br. Fl.* that this variety is not uncommon in Scotland, and that it has been found in Anglesey by Mr. Wilson.

Portula'ceæ (plants agreeing in important characters with *Portuláca*). The plants which compose this *natural order* are dicotyledonous succulent *herbs* or *shrubs*, whose *leaves* are alternate, rarely opposite, entire, usually thick and fleshy, without stipulæ, or sometimes with membranous ones on each side at the base. Their *flowers* are axillary or terminal, expanding only in bright sunshine, and usually of short duration. The *calyx* (fig. 1.) is generally formed of 2, seldom of 3 or 5, sepals, which are more or less connected at the base. The *corolla* (figs. 2 & 3.) is usually composed of 5, but occasionally of 3, 4, or 6 petals, which are either distinct, or connected at the base into a short tube, so as to form a monopetalous corolla, sometimes the petals are wanting. The *stamens* are inserted along with the petals into the base of the calyx, and are variable in number, all fertile; their *filaments* distinct, inserted at the base of the petals, and generally opposite to them when the number is equal; their *anthers* are versatile, of 2 cells, which open lengthwise. The *ovarium (germen)* (fig. 4.) is superior, usually roundish, and 1-celled. The *style* is sometimes single, thread-shaped, and cleft into several stigmas at the apex; sometimes it is wanting, or nearly so; when this is the case the stigmas are distinct, and rise in numbers from the top of the ovarium. The *capsule* is 1-celled, opening either transversely or by the 3 valves from the base to the apex (see fig. 6); but it is also occasionally 1-seeded and indehiscent. The *seeds* are numerous when the fruit is dehiscent, and are attached to the central placenta; the *albumen* is farinaceous; and the *embryo* is curved round the circumference of the albumen, with a long radicle, and oblong cotyledons. See *Lindl. Syn.* and *Don's Gen. Syst. of Gard. & Bot.*

Montia is the only British example of this order.

[illegible]

[illegible] simply one [illegible] 3 [illegible] smaller, having the [illegible] rounded, invested by the [illegible] (see fig. 5). Seeds (fig. 7.) 3, [illegible] valves of the capsule are involute at [illegible] seeds are discharged, they become [illegible] larger than the calyx (see figs. 5 & 6).

Whole plant smooth and somewhat succulent. [illegible] of 3 sepals, and then the [illegible] some of the flowers in the [illegible] appear in a half-spread state, [illegible] when the sun shines on them [illegible]

A large variety of this plant is [illegible] *Portulaca*, var. β, major of Willd. Spec. Pl. [illegible] Gmelin's Fl. Badensis-Alsatica, v. i. p. [illegible] Hr. p. 37. Sin N. J. flowers inclose [illegible] measurement in Scotland, and that is [illegible]

PORTULACEÆ (plants approaching in [illegible] *Portulaceæ*). The plants which [illegible] dicotyledonous succulent herbs or [illegible] rarely opposite, [illegible] or sometimes with [illegible] Their flowers are solitary or [illegible] umbelliform, and usually at about [illegible] generally formed of 2, [illegible] or less connected at the [illegible] composed of 5, but [illegible] either distinct, or [illegible] short a monopetalous [illegible] The stamens are [illegible] [illegible] and are [illegible] in [illegible] [illegible] inserted in the [illegible] [illegible] when the [illegible] [illegible] which [illegible] [illegible]

Comarum palustre. Purple marsh Cinque-foil. ♃.

Pub.d by W Baxter, Botanic Garden Oxford. 1836. Whitelock fc.

CO'MARUM*.

Linnean Class and Order. ICOSA'NDRIA †, POLYGY'NIA.

Natural Order. ROSA'CEÆ, Juss. Gen. Pl. p. 334.—Sm. Gram. of Bot. p. 171.—Lindl. Syn. p. 88.; Introd. to Nat. Syst. of Bot. p. 81.—Rich. by Macgilliv. p. 528.—Loud. Hort. Brit. p. 512.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 523.—ROSALES; sect. ROSINÆ; subsect. ROSIANÆ; type, ROSACEÆ; subtype, FRAGARIDÆ; Burn. Out. of Bot. v. ii. pp. 614, 683, 699, & 700.—SENTICOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1, *a.*) inferior, of 1 concave, coloured, permanent sepal, deeply divided into 10 spreading, pointed segments, 5 alternate ones (fig. 2, *b.*) exterior, much smaller than the other (fig. 2, *a*). *Corolla* (see fig. 1, *b.*) of 5 spear-shaped, pointed petals, attached to the rim of the calyx, opposite to, and less than, its smaller segments. *Filaments* (see fig. 1, *c.* & fig. 3.) numerous, from the rim of the calyx, awl-shaped, upright, nearly as long as the corolla. *Anthers* roundish, incumbent, deciduous. *Germens* (figs. 4 & 5.) numerous, small, egg-shaped, smooth, collected into a head (fig. 4). *Styles* (see figs. 5 & 6.) lateral. *Stigmas* simple. *Seeds (carpels* of DON, *pericarps* of HOOKER,*)* (figs. 5 & 6.) numerous, egg-shaped, even, seated on a large, dry, spongy, hairy, hemispherical, permanent receptacle.

Distinguished from other genera, in the same class and order, by the 10-cleft *calyx*, the segments of which are alternately smaller; the *corolla* of 5 small, spear-shaped petals, less than the calyx; and by the seeds being inserted on a large, spongy, hairy, permanent receptacle.

Only one species known.

CO'MARUM PALU'STRE. Purple Marsh Cinque-foil. Purple Marshlocks. Cowberry.

SPEC. CHAR.

Engl. Bot. t. 172.—Curt. Brit. Entom. v. xii. t. 558.—Linn. Sp. Pl. p. 718.—Huds. Fl. Angl. (2nd ed.) p. 227.—Sm. Fl. Brit. v. ii. p. 557. Engl. Fl. v. ii. p. 433.—With. (7th ed.) v. iii. p. 639.—Hook. Br. Fl. p. 251.—Lightf. Fl. Scot. v. i. p. 276.—Abb. Fl. Bedf. p. 115.—Davies' Welsh Bot. p. 52.—Purt. Midl. Fl. v. i. p. 248. and v. iii. p. 362.—Relh. Fl. Cant. (3rd ed.) p. 207.—Hook. Fl. Scot. p. 165.—Grev. Fl. Edin. p. 113.—Johnst. Fl. of Berw. v. i. p. 117.—Winch's Fl. of Northumb. and Durham, p. 35.—Walk. Fl. of Oxf. p. 147.—Don's Gen. Syst. of Gard. and Bot. v ii. p. 562.—Perry's Pl. Varvic. Select. p. 45.—Mack. Catal. of Pl. of Irel. p. 50.—Irish Fl. p. 104.—*Potentilla Comarum*, Nest. Potent. p 36.—De Cand. Prod. v. ii. p. 533. Bot. Gall. v. i. p. 171.—Lindl. Syn. p. 97.—*Potentilla palustris*, Scopoli Fl. Carn. (2nd ed.) v. i. p. 359.—Spring. Syst. Veg. v. ii. p. 536.—*P. palustre*, Gray's Nat. Arr. v. ii. p. 580.—*Pentaphylloides palustre rubrum*, Ray's Syn. p. 256.—*Pentaphyllum rubrum palustre*, Johnson's Gerarde, p. 987.

Fig. 1. A Flower; *a.* the calyx; *b.* the corolla; *c.* the stamens; *d.* the pistils.—Fig. 2. One-fifth of the Calyx and Corolla, showing the situation of the Stamens; *a.* one of the large segments of the calyx; *b.* one of the small ones; *c.* a petal.—Fig. 3. Two of the Stamens.—Fig. 4. A Fruit.—Figs. 5 & 6. Separate Seeds, with their Styles.—Fig. 7. A transverse section of a Seed.—Fig. 8. The Embryo.—Figs. 6, 7, & 8, *more or less magnified.*

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* From *Komaros*, Gr. an ancient name given by THEOPHRASTUS to an evergreen tree, and not now rightly understood. Dr. WITHERING.

† See *Prúnus cérasus*, folio 100, note †.

Localities.—In marshes, peat bogs, and ditches; frequent.—*Beds.* In marshes, but rare.—*Cambridgesh.* Gamlingay; in the bogs within the Park, by the Park pales; in the ditches near the Quaking-bogs; and in a small adjoining wood.—*Cheshire;* Congleton Moss.—*Cornwall;* At Swan Pool, near Falmouth.—*Cumberland;* Swampy ground in the Lake District—*Durham;* Birch Car near Darlington: N. B. G.—*Hants;* In the bogs of Bin's Pond, near Selborne: Rev. G. White. Cranberry Common: Winch. By the Moore's River; *Curt Br. Ent.*—*Lancash.* White Otter, a Morass near Southport, in great profusion: G. Crosfield, Esq. Bootle Marsh, near Liverpool.—*Norfolk;* Common.—*Northumb.* In bogs, frequent.—*Nottinghamshire;* N. B. G.—*Shropsh.* Ellesmere Mere: Rev. A. Bloxam. Mountainous bogs about Sellatyn: Mr. H. Barrett. Bomere Pool.—In *Somersetshire:* N. B. G.—*Suffolk;* Near Bungay: D. Stock.—In *Sussex:* W. Borrer, Esq.—*Warwicksh.* Coleshill bog, and near Allesley: Bree. Mosely Common, and Sutton Park: G. W. Sandys, Esq. South-west side of Edgbaston Pool, near Birmingham. North side of Bannersley Pool.—*Worcestersh.* Bromsgrove Lickey; and about Stourbridge, common. Hartlebury Common. Stone Pool: *Mid. Fl.* Oldfield, near Ombersley: Mr Perry.—*Yorksh.* Mere at Scarborough: Rev. A. Bloxam. Lakeby Car, near Richmond: M. N. H. Potteric Car, near Doncaster: S. Appleby. Leeds: N. B. G. Giggleswick Tarn, and Helwith Moss: E. F. Witts, Esq. Gordale Scar: July, 1836, Mr. E B. Hewlett.—WALES. *Anglesey;* not uncommon: Rev. H. Davies.—*Denbighsh.* Near Wrexham: N. B. G.—*Merionethsh.* Near Barmouth: M. N. H.—SCOTLAND. In peat bogs and marshes, frequent: Lightfoot.—*Berwicksh.* Below Murton Craigs; Haiden Dean; below Shoreswood-hall; Longridge Dean, &c.: *Fl. of Berw.*—Duddington Lock; Braid-hill Marshes; Pentland Hills, &c.: Dr. Greville.—IRELAND. In bogs, common: Mr. J. T. Mackay.

Perennial.—Flowers in June and July.

Root somewhat woody, creeping extensively, and sending out many blackish fibres, which penetrate deep into the boggy soil. *Stems* many, cylindrical, reddish, branched, leafy, smooth in the lower part, more or less downy in the upper, from 6 inches to 2 feet or more long, and generally inclining to the ground. *Leaves* compound; *lower* ones stalked, pinnate, of 5 or 7 elliptic-oblong, acute, sharply and simply serrated *leaflets*, yellowish-green on the upper surface, glaucous and somewhat downy on the under; the midrib in each leaflet, except the terminal one, is generally nearer the upper than the lower margin, thus dividing it into two unequal parts: *upper leaves* ternate, nearly sessile, and often more downy than the lower ones. *Stipulas* oblong, entire, or cut, attached in pairs to each footstalk, and embracing the stem by their base. *Peduncles (flower-stalks)* several, terminal and axillary, single-flowered, forming a sort of panicle, clothed, more or less, with soft white hairs, with a few stalked, reddish glands interspersed. *Calyx* large, spreading, with alternate large and small segments (see fig. 2, *a* & *b*). *Petals* (see fig. 2, *c*.) very small, pointed, and, like the calyx, of a dark purplish blood colour. *Stamens*, *Styles*, and *Fruit* of a dark red purple, approaching to blackness. *Anthers* heart-shaped, with yellow pollen (see fig. 1, *c*). *Fruit* cone-shaped, spongy, somewhat woolly, pitted, permanent, the seeds partly embedded as in *Fragaria* (the *strawberry*). *Seeds (pericarps)* somewhat egg-shaped, smooth, light brown, shining.

There is a variety with thicker and more hairy leaves, said to be common in the bogs in Ireland, (see Ray's Syn. 3rd ed. p. 256.); this variety is also occasionally met with in England and Scotland.

Comarum palustre is a native of most parts of Europe; it is found also in Siberia and North America. Planted in a pot in peat soil, and plunged up to its rim in water on the margin of the Aquarium in the Oxford Botanic Garden, this plant has produced stems more than 3 feet long. The roots dye wool of a dirty red colour, and have astrigency enough with other plants of the same order to tan leather. The Irish rub their milking pails with it, to make the milk appear thicker and richer.

[illegible] extensively, and sending out [illegible] soil. [illegible] in the [illegible] to [illegible] Lawns [illegible] the [illegible] the [illegible] equal [illegible] dowry [illegible] in [illegible] Lawn. [illegible] soil [illegible] (Cobaea scandens) [illegible] upon in the [illegible] and Scotland. [illegible] this variety is also occasionally met with in England and Scotland.

Convolvulus pubescens is a native of most parts of Europe; it is found also in [illegible] Lawns [illegible] in good soil, and planted [illegible] the [illegible] Cobaea scandens. The [illegible] dye [illegible] and blue, and have [illegible] covered with outer plants and the [illegible] The [illegible] rich blue [illegible] with it, to make the [illegible] appear it is not such.

Staphylea pinnata. Common Bladder-nut. ♄

G. Mathews, Del. & Sc. Pub.d by W. Baxter Botanic Garden Oxford 1836

STAPHYLE'A *.

Linnean Class and Order. PENTA'NDRIA †, TRIGY'NIA.

Natural Order. STAPHYLEA'CEÆ, Lindl. Syn. p. 75.; Introd to Nat. Syst. of Bot. p. 114.—CELASTRI'NEÆ; tribe, STAPHYLEA'CEÆ, *De Cand.*—Loud. Hort. Brit. p. 508.—Don's Gen. Syst. o Gard. & Bot. v. ii. pp. 1 & 2.—CELASTRI'NEÆ, *Dr. R. Brown.*—Rich. by Macgilliv. p. 537.—RHAMNI, Juss. Gen. Pl. p. 376.—Sm. Gram. of Bot. p 182.—ROSALES; suborder, MYRTOSÆ; section, ILICINÆ; type, CELASTRACEÆ; subtype, STAPHYLIDÆ; Burn. Outl of Bot. v. ii. pp. 614, 617, & 621.—TRIHILATÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, in 5 deep, oblong, concave, coloured segments, with an urceolate (pitcher-shaped) disk at the base. *Corolla* (see fig. 2.) of 5 oblong, blunt, upright petals, similar to the calyx. *Nectary (disk)* cup-shaped, central. *Filaments* (see fig. 3.) 5, thread-shaped, upright, the length of the petals. *Anthers* roundish. *Germen* superior, rather tumid, in 2 or 3 deep divisions. *Styles* (fig. 4.) 2 or 3, simple, upright, a little longer than the stamens. *Stigmas* blunt, near together. *Capsule* (fig. 5.) inflated, bladdery, of 2 or 3 cells; cells membranous (see fig. 6.), opening on the inside, few-seeded, sometimes connected together at the base, sometimes their whole length. *Seeds* (fig. 7.) bony, roundish, truncate at the hilum.

Distinguished from other genera, in the same class and order, by the inferior, 5-parted *calyx*, with coloured segments, and urceolate disk; the *corolla* of 5 petals; and the bladdery, 2- or 3-celled, few-seeded *capsule*.

One species British.

STAPHYLE'A PINNA'TA. Common Bladder-nut. Pinnated-leaved Bladder-nut. St. Antony's Nut. Wild Pistacia.

SPEC. CHAR. Leaves pinnate; petioles without glands; leaflets 5 or 7, oblong-spear-shaped, smooth, serrated. Flowers racemose. Styles 2. Capsules membranous, bladdery.

Engl. Bot. t. 1560.—Linn. Sp. Pl. p. 386.—Huds. Fl. Angl. (2nd ed.) p. 131.—Sm. Fl. Brit. v. i. p. 337. Engl. Fl. v. ii. p. 110.—With. (7th ed.) v. ii. p. 402.—Gray's Nat. Arr. v. ii. p. 619.—Lind. Syn. p. 75.—Hook. Br. Fl. p. 143.—Light. Fl. Scot. v. ii. p. 1134.—Miss Kent's Sylvan Sketches, p. 54.—Rev. G. E. Smith's Pl. of S. Kent, p. 17.—Don's Gen. Syst. of Gard. & Bot. v. ii. p. 3. f. 1.—Loud. Arbor. et Fruct. Brit. p. 494. fig. 163.—*Staphylodendron*, Ray's Syn. p. 468.—*Nux vesicaria*, Johnson's Gerarde, p. 1437.

LOCALITIES.—In hedges and thickets; very rare.—*Kent;* About Ashford: PARKINSON.—*Yorksh.* Hedges near Pontefract, scarcely in sufficient plenty to be deemed certainly wild: RAY. Woods in the farther part of the county: MERRETT. Truly indeginous in Yorkshire: Mr. HAILSTONE, in *Engl. Fl.*—SCOTLAND. Found sometimes in Breadalbane, near houses and gardens. We suspect it to be an outcast: Rev. J. LIGHTFOOT.

Fig. 1. Calyx.—Fig. 2. A Flower, showing the Calyx, the Petals, and the Stamens.—Fig. 3. The Stamens and Pistils.—Fig. 4. The Germen, Styles, and Stigmas.—Fig. 5. A Capsule.—Fig. 6. A transverse section of ditto, showing a seed in one of the cells, the other cell being abortive.—Fig. 7. A Seed.—Fig. 8. A vertical section of ditto.—Fig. 9. The Kernel.—Fig. 10. The two Cotyledons.

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* Abridged from *Staphylodéndron*, its name before the days of LINNÆUS; derived from *staphyle*, Gr. a *bunch* or *cluster;* and *dendron*, Gr. a *tree;* the flowers and fruits being disposed in clusters, and the plant being ligneous. LOUD.

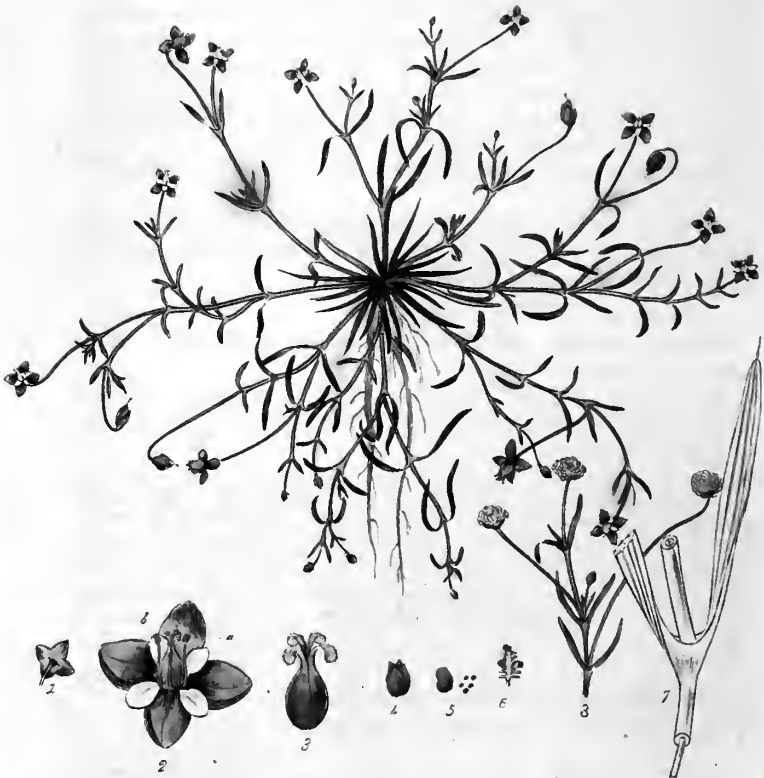
† See *Anchusa sempervirens*, folio 48, note †.

A Shrub.—Flowers in June.

A smooth, branching *shrub*, from 6 to 12 feet high, with foliage resembling some kind of Ash, and throwing up many suckers. *Leaves* deciduous, opposite, pinnate (winged), composed of 2 or 3 pairs of egg-shaped, pointed, finely serrated leaflets, with an odd one at the extremity; these frequently vary very much in size, even on the same plant, some being only one inch long, and a quarter of an inch wide, others seven inches long, and two inches and a half wide. *Stipulas* awl-shaped, membranous, deciduous, two at the base of each general leafstalk, and two smaller at the base of each pair of leaflets. *Racemes (clusters)* from the summit of the young branches, drooping, interrupted, and partly compound, many-flowered. *Bracteas* strap-shaped, membranous, coloured, deciduous. *Flowers* bell-shaped, drooping, of a white or a pale yellowish colour, without scent. *Petals* oblong, blunt, narrower than the segments of the calyx. *Styles* 2, rarely 3. *Capsules* 2, seldom 3, so joined together as to appear but one membranous, inflated, obliquely pointed, rather large, 2- or 3-celled fruit, one cell of which is generally abortive, the other with one seed. *Seed* large, somewhat globose, bony, very smooth, pale brown, appearing as if varnished, contracted towards the base, and ending in an oblique point; but there truncate as it were, and marked with a wide umbilical scar.

The *Bladder-nut* is a native of several parts of Europe, and is common in the shrubberies of most gardens in England, where it is cultivated more for the sake of its peculiar and bladder-like fruit, than for its beauty. The wood is hard, of a yellowish-white, and close grained; but it is seldom found of a sufficient size to be applied to any useful purpose. The flowers contain a great deal of honey, and are very attractive to bees. The bony, polished seeds, are strung as beads by the Roman Catholics in some countries.—HALLER says, that the kernels taste like those of the *Pistacia*, and are eaten by children in Germany. When chewed, as GERARDE observes, they at first taste sweet, but the sweetness is succeeded by nausea.

The small *order* STAPHYLEA'CEÆ, of which the present plant is the only British example, is composed of dicotyledonous *shrubs*, whose *leaves* are opposite, pinnate, and furnished with both common and partial stipulæ. The *flowers* are produced in terminal, stalked racemes. The *calyx* (fig. 1.) consists of 5 coloured sepals, which are connected at the base. The *corolla* (see fig. 2.) is composed of 5 petals, which are alternate with the sepals, and, like them, imbricated previous to their expansion. The *stamens* (see fig. 3.) are 5 in number; they are alternate with the petals, and situated either on the edge of the disk, or upon its upper surface (perigynous). The *disk* is large and urceolate. The *ovary (germen)* (see fig. 4.) is superior, 2- or 3-celled; the ovules upright; and the *styles*, which are 2 or 3 in number (see fig. 4), cohere at the base. The *fruit* (fig. 5.) is membranous or fleshy, either indehiscent or opening internally, and often deformed by the abortion of some of its parts. The *seeds* (fig. 7.) are ascending, roundish, with a bony *testa;* a large, truncate *hilum;* no *albumen;* and thick, fleshy *cotyledons* (fig. 10). See *Lindl. Syn.* and *Introd. to Nat. Syst.*



Sagina procumbens. Procumbent Pearl-wort. V.

C. Mathews Del. & Sc. Pub.d by W. Baxter Botanic Garden, Oxford 1836.

SAGI'NA*.

Linnean Class and Order. TETRA'NDRIA† TETRAGY'NIA.

Natural Order. CARYOPHY'LLEÆ‡, *Linn.*—Juss. Gen. Pl. p. 299.—Sm. Gram. of Bot. p. 159.—Lindl. Syn. p. 43.; Introd. to Nat. Syst. of Bot. p. 156.—Rich. by Macgill. p. 507.—Loud. Hort. Brit. p. 501.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 379.—ROSALES; subord. RHŒADOSÆ; sect. DIANTHINÆ; type, DIANTHACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 784, 805, & 807.

GEN. CHAR. *Calyx* (fig. 1 & fig. 2, *a.*) inferior, of 4 egg-shaped, concave, equal, widely-spreading, bluntish, permanent sepals (fig. 2, *a*). *Corolla* of 4 egg-shaped, blunt, entire, spreading petals (fig. 2, *b.*), shorter than the calyx, and alternate with its sepals; sometimes wanting. *Filaments* (see fig. 2.) 4, thread-shaped, ascending, shorter than the sepals, and opposite to them. *Anthers* of 2 roundish lobes. *Germen* (fig. 3.) superior, egg-shaped. *Styles* (see fig. 3.) 4, terminal, short, rather spreading. *Stigmas* blunt, downy. *Capsules* (fig. 4.) egg-shaped, of 1 cell, and 4 egg-shaped, separate, equal valves. *Seeds* (fig. 5.) numerous, minute, rough, attached, each on its own stalk, to a central cylindrical *receptacle* (see fig. 6).

Distinguished from other genera, in the same class and order, by the *calyx* of 4 sepals; the 4-petaled *corolla*, shorter than the calyx; and the 1-celled, 4-valved *capsule*.

Three species British.

SAGI'NA PROCU'MBENS. Procumbent Pearl-wort§. Scalwort. Chickweed Breakstone.

SPEC. CHAR. Plant smooth; branches procumbent. Leaves strap-shaped, minutely pointed (see fig. 7). Petals about half the length of the calyx.

Engl. Bot. t. 880.—Curt. Fl. Lond. i. 158.—Linn. Sp. Pl. p. 185.—Huds. Fl. Angl. (2nd ed.) p. 73.—Sm. Fl. Brit. v. i. p. 199. Engl. Fl. v. i. p. 238.—With. (7th ed.) v. ii. p. 261.—Gray's Nat. Arr. v. ii. p. 651.—Lind. Syn. p. 49.—Hook. Brit. Fl. p. 77.—Lighf. Fl. Scot. v. i. p. 125.—Sibth. Fl. Oxon. p. 66.—Abbot's Fl. Bedf. p. 39.—Davies' Welsh Bot. p. 19.—Purt. Midl. Fl. v. i. p. 103.—Relh. Fl. Cant. (3rd ed.) p. 70.—Hook. Fl. Scot. p. 59.—Grev. Fl. Edin. p. 42.—Fl. Devon. pp. 31 & 182.—Johnst. Fl. Berw. v. i. p. 42.—Winch's Fl. of Northumb. and Durham, p. 11.—Walk. Fl. of Oxf. p. 45.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 419.—Bab. Fl. Bath. p. 7.—Mack. Catal. of Plants of Irel. p 20.—Irish Fl. p. 34.—*Alsinella muscoso flore repens*, Ray's Syn. p. 345.

LOCALITIES.—On sandy ground, or the walks, grass plots, and beds of neglected gardens, as well as on shady walls and gravelly banks, everywhere.

Perennial.—Flowers from May to September.

Fig. 1. Calyx.—Fig. 2. A Flower, showing the calyx, *a*; the corolla, *b*; and the Stamens, Germen, and Pistils.—Fig. 3. Germen and Pistils.—Fig. 4. Capsule.—Fig. 5. Seeds.—Fig. 6. Receptacle.—Fig. 7. A joint of the Stem, with 2 of the Leaves.—Fig. 8. A small portion of a Plant of the full-flowered variety.—*All, except fig.* 8, *more or less magnified.*

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* From *sagina*, nutriment, it being supposed fattening to sheep; though, perhaps, originally designating some nutritious kind of grain. Dr. WITHERING.

† See *Asperula odorata*, f. 46, n. †. ‡ See *Buffonia annua*, f. 152, *a.*

§ Probably from its delicate small white petals looking like *pearls*.

Root fibrous. *Stems* numerous, from 2 to 6 or 8 inches long, spreading on the ground in every direction, round, smooth, jointed, leafy, branched and proliferous, taking root at the joints as it creeps along; in dry situations it is more upright. *Leaves* from a quarter of an inch to half an inch long, opposite, combined by their membranous bases (see fig. 7), somewhat fleshy, 3-nerved, strap-shaped, blunt, with a very minute bristly point, usually quite smooth, but occasionally the margins, especially of the lower leaves, are fringed with very minute, short, distant, bristly hairs. *Peduncles (flower-stalks)* solitary, axillary, slender, smooth, longer than the leaves, single-flowered. *Flowers* very small, drooping before they expand. *Calyx* spreading, with egg-shaped, concave, blunt sepals. *Petals* white, very small, entire, spreading, scarcely half the length of the sepals; sometimes entirely wanting. *Capsule* egg-shaped, longer than the calyx, thin, 1-celled, 4-valved, the valves, when open, have so much the appearance of petals, that it is possible to mistake them. *Seeds* very minute.

It sometimes occurs with 5 sepals, 5 petals, and 5 stamens.

VILLARS says, that he has often seen this plant without any petals, with a 5-sepaled calyx, 10 stamens, and 5 pistils, thus approaching to *spergula*. The calyx and other parts of the flower appear in this case to increase at the expense of the corolla; the latter, however, is often wanting without an augmentation of the other parts.

Mr. W. CURTIS remarks, that few plants assume a greater variety of appearance than this, but that in all situations the singular appearance of the seed-vessels, placed on the calyx, like a cup on a saucer, will easily distinguish it.

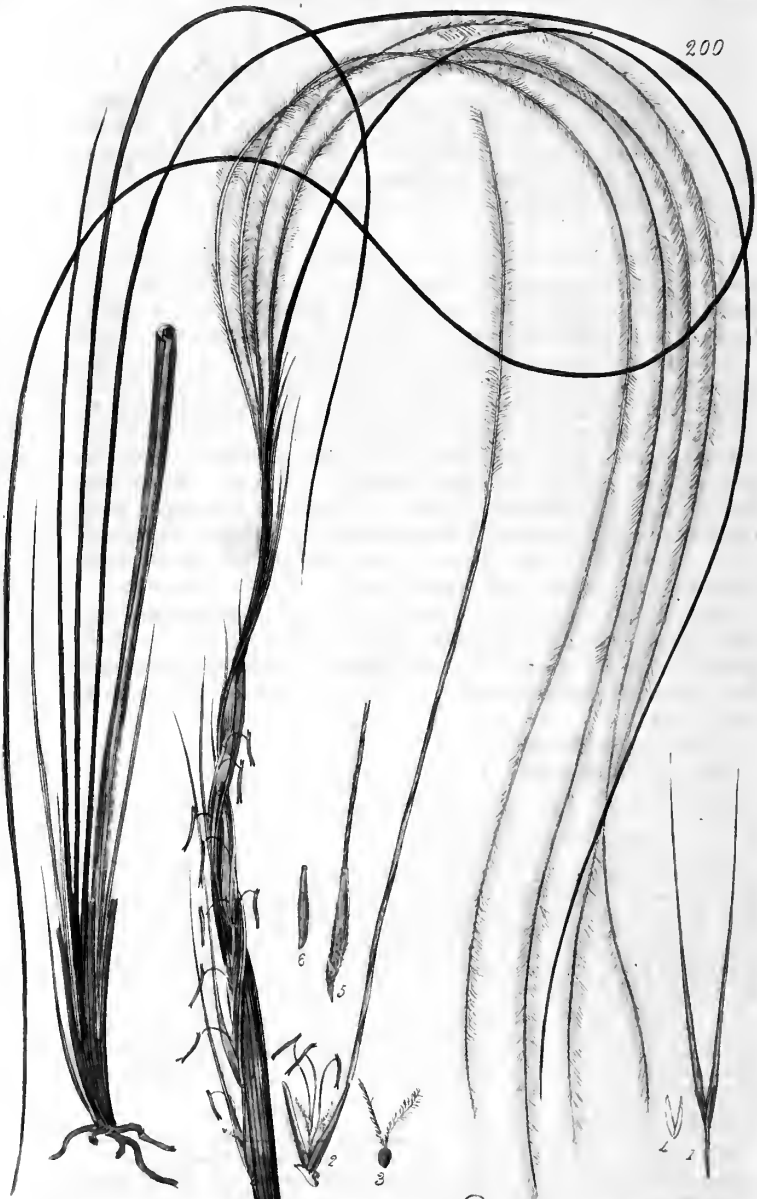
It is a native every where throughout Europe; on the North-west coast of America, and on the banks of the Columbia.

Being fond of a sandy and gravelly soil, it is a troublesome little weed in garden-walks and paved courts, where it flowers and seeds during the whole Summer.

There is a curious and very pretty variety of this species of *sagina* sometimes cultivated in gardens, but, I believe, it is rather rare; it has a very full flower, and resembles a double white rose in miniature.—In a flower of a plant of this variety, which is now (Aug. 22, 1836) in flower in the Oxford Botanic Garden, I counted no less than 44 perfectly-formed petals, all of which, in a fully expanded state, occupied a circle of only one-tenth part of an inch in diameter.—This delicate little Fairy-flower was first found by the late Rev. H. DAVIES, author of "Welsh Botanology," on a green near Beaumaris, in the Isle of Anglesey, in July, 1817. A small specimen of this variety is represented at fig. 8 of the annexed plate.

No one can contemplate the beauty and delicacy of this extraordinary little flower, without being captivated by the wisdom manifested by that beneficent Creator, who

——————————— "has displayed
In it such power and skill with beauty's charms array'd."



Stipa pennata. Common Feather grass. ♃

C. Mathews, Del. & Sc. Pub.d by W. Baxter. Botanic Garden. Oxford. 1836.

STI'PA*.

Linnean Class and Order. TRIA'NDRIA†, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 68.—Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—GRAMINA, *Linn.*—GRAMINALES; sect. FESTUCINÆ; type, STIPACEÆ; Burn. Outl. of Bot. v. i. pp. 359, 369, & 371.

GEN. CHAR. *Panicle* upright, compact. *Calyx* (fig. 1.) of 2 nearly equal, spear-shaped, concave, lax, pointed glumes (valves), longer than the paleæ, and containing a solitary floret. *Corolla* (fig. 2.) of 2 paleæ (valves), nearly equal in length; the outer elliptic-spear-shaped, involute, slightly keeled, with a very long, terminal, twisting *awn*, jointed, and finally separable, at the base; inner much narrower, strap-shaped, awnless, inflexed at the edges, smooth. *Nectary* (fig. 4.) of 2 strap-spear-shaped, membranous, pointed scales. *Filaments* (see fig. 2.) 3, thread-shaped. *Anthers* strap-shaped, upright. *Germen* (see fig. 3.) oblong. *Styles* (see fig. 3.) 2, short, distinct. *Stigmas* cylindrical, feathery. *Seed* (fig. 6.) cylindrical, pointed, loose, closely enveloped in the hardened outer palea (see fig. 5.), which is very sharp, and barbed with bristles at the base, so as to penetrate and fix itself in the earth.

Distinguished from other *Gramineæ*, with a panicled inflorescence, and 1-flowered spikelets, by the *calyx* of 2 lax, pointed, awnless glumes; and the *corolla* of 2 cartilaginous (gristly) paleæ, the lower involute, and terminated by a very long, twisted awn, jointed at its base.

One species British.

STI'PA PENNA'TA. Common Feather-grass.

SPEC. CHAR. Leaves rigid, setaceous, grooved. Awns exceedingly long, feathery to the point.

Engl. Bot. t. 1356.—Knapp's Gram. Brit. t. 88.—Host's Gram. Austr. v. iv. p. 19. t. 33.—Linn. Sp. Pl. p. 115.—Huds. Fl. Angl. (2nd ed.) p. 29.—Sm. Fl. Brit. v. i. p. 138. Engl. Fl. v. i. p. 161.—With. (7th ed.) v. ii. p. 192.—Gray's Nat. Arr. v. ii. p. 154.—Lindl. Syn. p. 302.—Hook. Brit. Fl. p. 31.—Sincl. Hort. Gram. Woburn. p. 24. f. 19. and p. 282.—Schrader's Fl. Germ. v. i. p. 229.—Host's Fl. Austr. v. i. p. 67.—*Gramen sparteum pennatum*, Dill. in Ray's Syn. p. 393.—*Gramen spicatum, aristis pennatis*, Scheuchz. Agrost. p. 153. t. 3. f. 13. B.—*Spartum Austriacum*, Johnson's Gerarde, p. 42.

LOCALITIES.—On dry mountainous rocks; a doubtful native.—*Westmoreland;* Found by Dr. RICHARDSON, in company with THOMAS LAWSON, on the lime-stone rocks hanging over a little valley, called Long Sleadale, about six miles north of Kendall: DILLENIUS, in Ray's Synopsis (1724).—Nobody has been able to meet with it since.

Perennial.—Flowers in June.

Fig. 1. The 2 Glumes or Calyx.—Fig. 2. The 2 Paleæ or Corolla, with the Stamens and Pistils.—Fig. 3. Germen, Styles, and Stigmas.—Fig. 4. The Scales or Nectary.—Fig. 5. A Seed invested by the lower palea, which is tipped with the long twisted, jointed awn (see fig. 2).—Fig. 6. A Seed divested of the palea.

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* From *stype*, a *silky* or *feathery* substance; such as the awns of this plant exhibit. Dr. WITHERING.

† See *Phalaris canariensis*, folio 56, note †.

Root fibrous, tufted. *Culms (stems)* several, about a foot high, upright, slender, with 2 or 3 knots, or joints, round, rough with very minute bristly hairs, slightly striated, and clothed with the sheaths of the leaves. *Leaves* numerous, upright, long, very narrow, bristle-shaped, sharp pointed, dark green, rough with minute bristly hairs, which point towards the apex. *Sheaths* striated, smooth, very long, especially the uppermost, which is also considerably dilated, and envelopes the young *panicle*, rising above it when in flower: the leaf being recurved, pendulous, involute and striated. *Stipula* oblong, blunt. *Panicle* simple, upright, of 6 or 7 rather large flowers. *Glumes* (fig. 1.) nearly equal, spear-shaped, concave, nerved, smooth, tapering at the point into a membranous very tender awn. *Paleæ* (see fig. 2.) nearly equal, the outer terminated by an awn about a foot long, the lower part of which, for about 2 inches and a half, or 3 inches up, is smooth and twisted, the other part clothed with very fine, white, soft, pellucid, silky, diverging hairs. *Seed* (fig. 6.) oblong, nearly cylindrical, smooth, invested by the permanent, hardened outer palea, with which, by means of its long feathery awn, which serves as a sail, it is wafted about, till at length penetrating the soil by means of the barbed bristles at its base, the seed is buried in the earth, and the awn, separating at the joint, is carried away by the wind.

Mr. SINCLAIR says he never could obtain plants from seed of this grass when sown in the ordinary way on soils in open situations; but that in pots, and in favourable situations, the seeds vegetated very well, and he thinks it may probably be owing to some peculiarity of this kind in the seed, that the plant is not now to be found in a wild state in this country.

Though, so far as Mr. SINCLAIR'S experiments prove, it cannot be propagated by seed on a large scale, yet by parting the roots, he says, it may soon be propagated to any extent; but its agricultural merits appear to be so inconsiderable, as to rank it with the inferior grasses.

The exceedingly beautiful feather-like awns of this grass bear such a great resemblance to the plumes of the Bird of Paradise, as frequently to be substituted by ladies for that elegant ornament, and have procured it a place in the flower-gardens of the curious.

This interesting plant is a native of Austria, Hungary, Germany, France, Italy, Spain, Barbary, and Siberia; growing on alpine or dry sandy places, that are much exposed to the warmth of the sun. In the DILLENIAN *Herbarium*, in the Library of the Oxford Botanic Garden, there are specimens of this grass, which appear to have been sent to DILLENIUS from Dr. RICHARDSON, with this note, probably in the handwriting of Dr. RICHARDSON, attached: "Found upon the rocks of Long Sleadale nigh Kendale in Westmoreland, from whence I brought it into my garden." As it has never since been found wild there, or in any other part of Britain, it can scarcely now be considered a native of this country*.

* Said to grow on hills between Ullswater and Hawswater, Cumberland; but sought unsuccessfully. WATSON'S *New Botanist's Guide*, p. 319.

Drósera rotundifólia. Round-leaved Sun-dew. ♃

C. Mathews. Del. & Sc.

Pub.d by W. Baxter Botanic Garden Oxford. 1836

DRO'SERA*.

Linnean Class and Order. PENTA'NDRIA †, HEXAGY'NIA.

Natural Order. DROSERA'CEÆ, *De Cand.*—Lindl. Syn. p. 38; Introd. to Nat. Syst. p. 153.—Rich. by Macgilliv. p. 504.—Loud. Hort. Brit. p. 501.—Don's Gen. Syst. of Gard. & Bot. v. i. p. 343.—ROSALES; suborder, RHŒADOSÆ; type, DROSERACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 784, & 800.—GRUINALES, *Linn.*—Allied to CAPPARIDES, Juss. Gen. Pl. p. 244.—Sm. Gram. of Bot. p. 140.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, with 5 deep, pointed, upright, permanent segments. *Corolla* (fig. 2.) of 5 petals, without appendages, rather longer than the calyx. *Filaments* (see figs. 2 & 3.) 5 to 8, awl-shaped, as long as the calyx. *Anthers* small, roundish. *Germen* (see fig. 4.) roundish. *Styles* (see fig. 4.) 6 to 8, simple. *Stigmas* club-shaped. *Capsule* (see figs. 5 & 6.) egg-shaped, of 1 cell, with from 3 to 5 valves. *Seeds* (fig. 8.) numerous, minute, inversely egg-shaped, rough, attached to the inside of each valve, chiefly in the middle.

(Herbaceous plants, with leaves clothed with beautiful glandular hairs.)

The 5-cleft *calyx;* the *corolla* of 5 petals; and the 1-celled, 3- (sometimes 4- or 5-) valved, many-seeded *capsule;* will distinguish this from other genera in the same class and order.

Three species British.

DRO'SERA ROTUNDIFO'LIA. Round-leaved Sun-dew. Red-rot. Youth-wort. Moor-grass. Ros Solis.

SPEC. CHAR. Leaves radical, nearly orbicular; footstalks hairy, longer than the limb. Scapes naked, upright, 4 or 5 times higher than the leaves. Seeds chaffy.

Engl. Bot. t. 868. (text to 867.)—Linn. Sp. Pl. p. 402.—Huds. Fl. Angl. (2nd edit.) p. 135.—Sm Fl. Brit. v. i. p. 346. Engl. Fl. v. ii. p. 122.—With. (7th ed.) v. ii. p. 410.—Gray's Nat. Arr. v. ii. p. 664. -Lindl. Syn. p. 38.--Hook. Br. Fl. p. 148.—Lightf. Fl. Scot. v. i. p. 175.—Sibth. Fl. Oxon. p. 106.—Abbot's Fl. Bedf. p. 71.—Davies' Welsh Bot. p. 32.—Purt. Midl. Fl. v. i. p. 166.—Relh. Fl. Cant. (3rd ed.) p. 133.—Hook. Fl. Scot. p. 98.—Grev. Fl. Edin. p. 74.—Fl. Devon. pp. 56 & 186.—Johnst. Fl. of Berw. v. i. p. 74.—Winch's Fl. of North. and Durham, p. 21.—Rev. G. E. Smith's Pl. of S. Kent, p. 20.—Don's Gen. Syst. of Gard. & Bot. v. i. p. 345.—Walk. Fl. of Oxf. p. 89.—Perry's Pl. Varv. Select. p. 28.—Mack. Cat. of Pl. of Irel. p. 32; Flora Hibernica, p. 34.—Irish Fl. p. 66.—*Rorella rotundifolia perennis,* Ray's Syn. p. 356.—*Ros solis folio rotundo,* Ray's Syn. p. 356.—Johnson's Gerarde, p. 1556.

LOCALITIES.—In mossy turfy bogs, generally among *sphagnum;* frequent.

Perennial.—Flowers in July and August.

Root fibrous. *Stem* almost always entirely wanting. *Leaves* numerous, on long hairy footstalks, depressed, nearly circular, purplish,

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Fig. 1. Calyx.—Fig. 2. A separate Flower.—Fig. 3. The Stamens, Germen, and Pistils.—Fig. 4. Germen and Pistils.—Fig. 5. A Capsule.—Fig. 6. A transverse section of the same.—Fig. 7. A Seed.—Fig. 8. One of the glandular viscid Hairs, with a globule of pellucid liquor-like dew at its summit.

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* From *droseros,* Gr. *dewy;* because the plants appear as if covered with dew, in consequence of being covered with glandular hairs. DON.

† See *Anchusa sempervirens,* folio 48, note †.

the whole disk, but especially its margin, beset with red inflexed hairs, which discharge from their ends a drop of viscid acrid fluid (see fig. 8). These hairs have been thought irritable, so as to contract when touched, imprisoning insects somewhat in the manner of the American *Dionæa Muscipula*, (Curt. Bot. Mag. t. 785). *Scape (stalk)* from 2 to 5 inches high, upright, naked, round, smooth; terminated by a simple (sometimes a bifid) cluster of flowers, which is drooping or revolute while young. *Bracteas* awl-shaped, deciduous, one under each partial stalk. *Flowers* white, with 5 *petals*, 5 *stamens*, and 6 *pistils*. The *Pistils* are said to be always double the number of the valves of the *Capsule*, in every known *Drosera*.

Whole plant, except the red hairs of the leaves, turns black in drying. This, and *Drosera longifolia*, sometimes acquire a stem, as has been observed by Dr. Withering, and the late Dr. Williams, Professor of Botany at Oxford.

Dr. Withering gives a long account of the peculiar power possessed by the *Droseras* to entrap flies and other insects which chance to alight on the leaves; and there are many observations upon it in Loudon's *Magazine of Natural History*—Mr. Curtis, in his very beautiful work, *British Entomology*, vol. x. fol. 473, *a*, says that he has always imagined, "that the glands at the apex of the hairs emitted a glutinous secretion which first held the insect, and, as it struggled, more hairs were attached, until the end of the leaf was bent down;" and thus "insects settling upon the inside of the leaves are caught and retained."

The flowers are seldom seen in an expanded state. Linnæus says, that they open at nine o'clock in the morning, and close at noon.—Mr. Curtis says, "those who wish to see the flower *expand* should gather plants with buds that promise to open the following day, and by putting the roots in water, and placing the plant in the sun, they will accomplish their object." *Brit. Ent.*—Many interesting remarks and observations relating to the opening of the flowers of this plant may be seen in the volumes of the *Mag. of Nat. History;* especially some by the Rev. Mr. Brie, of Allesley, in vol. vii. p. 273.

The whole plant is acrid, and sufficiently caustic to erode the skin; but judiciously managed the juice may be mixed with milk, so as to make an innocent and safe cosmetic. The juice itself will destroy warts and corns. The plant has the same effect upon milk as *Pinguicula vulgaris;* and, like that too, is supposed to occasion the rot in sheep; hence one of its English names, *Red-rot*.

The *Droseras* once constituted the sole ingredient from which was distilled the celebrated *aqua roseæ-solis*, also called rosala, or spirit of sun-dew; highly extolled, in some old dispensatories, as good for convulsions, and the plague. In Mr. Loudon's *Gardner's Magazine*, vol. viii. p. 684, there is a paper "On the Cultivation of the *Droseras* and *Pinguiculas*, by Robert Mallet, Esq." in which is described a successful method adopted by Mr. Mallet, for the cultivation of these genera.—Another successful and ingenious mode of cultivating these, and most other species of bog or marsh plants, on a small scale, as practiced by Mr. Jewett, is recorded in Loud. *Ency. of Gard.* (new ed.) p. 1068.

The *Natural Order* Droseraceæ consists of dicotyledonous, delicate *herbaceous plants*, often covered with glands. Their *leaves* are alternate, with *stipulary* ciliæ, and, as well as the young *peduncles*, have a circinate vernation. The *calyx* is monosepalous, with 5 deep divisions, or with 5 distinct sepals; permanent, and imbricate in the bud. The *corolla* is composed of 5 *petals*, which are hypogynous, and alternate with the sepals. The *stamens* are distinct, withering, either equal in number to the petals, and alternate with them, or 2, 3, or 4 times as many. The *ovary (germen)* is single, with 3 or 5 (sometimes 6) *styles*, which are either wholly distinct, or slightly connected at the base, bifid or branched. The *capsule* is of 1 or 3 cells, and 3 or 5 valves, bearing the seeds along the middle, or at the base of the valves. The *seeds* are either naked or furnished with an arillus. The *embryo* is straight, in the centre of a fleshy or cartilaginous albumen; and the *radical* is directed to the hilum. See *Lindl. Syn.*

Trichonéma Bulbocodium. Channel-leaved Trichonema. 4.

Russell. del.^t Pub.^d by W. Baxter, Botanic Garden, Oxford, 1836. Whispell sc.

TRICHONE'MA*.

Linnean Class and Order. TRIA'NDRIA†, MONOGY'NIA.

Natural Order. IRI'DEÆ‡, *Dr. R. Brown.*—Lindl. Syn. p. 254; Introd. to Nat. Syst. of Bot. p. 260.—Rich. by Macgilliv. p. 408.—Loud. Hort. Brit. p. 537.—IRIDES, Juss. Gen. Pl. p. 57.—Sm. Gram. of Bot p. 76.—ENSATÆ, *Linn.*—Ker, in Annals of Botany, vol. i. p. 219.—MUSALES; sect. NARCISSINÆ; type, IRIDACEÆ; subty. CROCIDÆ; Burn. Outl of Bot. v. i. pp. 437, 441, 450, & 451.

GEN. CHAR. *Calyx* (fig. 1. *a* & *b*.) an inferior *spatha* or *sheath*§, more than half the length of the corolla, of 2 spear-shaped, entire, permanent valves. *Corolla (Perianthium*‖*)* (fig. 2.) superior, tube very short, funnel-shaped; limb regular, in 6, deep, equal segments, somewhat spreading. *Filaments* (figs. 3 & 4, *a. a.*) 3, from the mouth of the tube, upright, much shorter than the limb, minutely hairy. *Anthers* (figs. 3 & 4, *b. b.*) large, oblong, converging. *Style* (fig. 3, *c.*) longer than the stamens. *Stigmas* (fig. 3, *d.*) 3, equal, spreading, very slender, deeply cloven. *Capsule* (fig. 5.) roundish, 3-celled, and 3-valved. *Seeds* (fig. 6.) globose.

The *coralla* of 6, deep, equal segments, the tube shorter than the limb; the downy *filaments;* and the very slender, deeply divided *stigmas;* will distinguish this from other genera in the same class and order.

One species British.

TRICHONE'MA BULBOCO'DIUM. Channel-leaved Trichonema. Small Wild-saffron.

SPEC. CHAR. Leaves linear-filiform, longer than the scapes. Spatha longer than the tube, segments of the limb acute, striated.

Ker, in Annals of Botany, v. i. p. 223.—Aiton's Hortus Kewensis, (2nd ed.) v. i. p. 82.—Sm. Eng. Fl. v. i. p. 48.—Spreng. Syst. Veg. v. i. p. 149.—Lindl. Syn. p. 255.—Hook. Brit. Fl. p. 18.—*Trichonéma parviflórum*, Gray's Nat. Arr. v. ii. p. 195.—*Ixia Bulbocódium*, Linn. Sp. Pl. p. 51.—Engl. Bot. t. 2549.—Jacq. Icon. Rar. v. ii. t. 271.—Redout. Liliac. t. 88.—Sibth. Fl. Græca, v. i. p. 26. t. 36.—*Crocus vernus*, Johnson's Gerarde, p. 152. f. 1, 2.

LOCALITIES.—In dry hilly situations; very rare.—"It grows wild, in great abundance, among turf, in a dry sandy soil, on the warren (a sandy tract) between Dawlish and Exmouth, Devonshire. The exact spot is on the left of the old road from Exeter to Dawlish, before you ascend the hill to Mount Pleasant, and almost in front of the small cottages there; it extends, at intervals, to the ferry. My friend, W. C. TREVELYAN, Esq. of Wallington, Northumberland, and myself, found it there, on March 24, 1834, in full flower; its ribbed corolla, of a purplish blue colour, is strikingly beautiful. It has never before been found wild in England:" JOHN MITFORD, Esq. in Loudon's Mag. of Nat. Hist. v. vii. p. 272.—H. BARRETT, Esq has observed it in the same place since.—On grassy hillocks in the island of Guernsey: Mr. GOSSELIN, in Engl. Botany.

Perennial.—Flowers in March and April.

Root solid, somewhat egg-shaped, small, with torn membranous coats. *Leaves* several, from 3 to 6 inches long, thread-shaped,

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Fig. 1. The Spatha, *a.* the outer valve; *b.* the inner ditto.—Fig. 2. The Corolla.—Fig. 3. The Stamens and Pistil; *a.* the filaments; *b.* the anther; *c.* the style; and *d.* the stigmas.—Fig. 4. A separate Stamen; *a.* the filament; *b.* the anther.—Fig. 5. The opened Capsule.—Fig. 6. A Seed.

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* From *thrix*, Gr. *a hair;* and *nema*, Gr. a *filament*.

† See f. 56, n. †. ‡ See f. 82, *a*. § See f. 82, n. ‡. ‖ See f. 33, n. ‡.

pointed, striated, and slightly furrowed on the upper side, sheathing at the base. *Flower-stalks* curved, shorter than the leaves, simple or branched, sometimes leafy. *Sphatha* of 2 valves, the outer one (fig. 1, *a.*) upright, green, and longer than the tube of the corolla; inner one (fig. 1, *b.*) rather shorter, of a lightish brown colour, membranous. *Corolla* of a purplish blue colour, ribbed, yellowish at the base, varying to white or yellow. *Stamens* (fig. 3.) yellow. *Germen* green. *Style* and *Stigma* (fig. 3, *c.* & *d.*) pale yellow. *Capsule* (fig. 5.) smooth and ash-coloured. *Seeds* (fig. 6.) shining, brownish.

This very pretty little plant is subject to much variation in its size, as well as in the colour of its blossom. Sir J. E. SMITH informs us, in his *Tour on the Continent*, v. ii. p. 283, that the little green hillocks around the famous fountain of Egeria, near Rome, are studded with endless varieties of the *Ixia (Trichonéma) Bulbocodium,* with purple, yellow, or small white flowers. There are several specimens of it preserved in the SHERARDIAN *Herbarium*, in the Oxford Garden, some of which are only 2 inches high, measuring from the base of the bulb; and there are others which measure as much as 9 inches. Specimens of the same *Trichonéma*, collected many years ago in Asia by Dr. W. SHERARD; and others, more recently collected in the same country, by Dr. J. SIBTHORP, are preserved in DU BOIS', and in the SIBTHORPIAN *Herbariums*, both in the Library of the Oxford Botanic Garden. There is also, in the SHERARDIAN *Herbarium*, a specimen, of what is there considered a variety of *Trichonema Bulbocodium*, with a much larger flower, but there is no notice from whence it was obtained; it is probably the same variety to that figured in CURTIS'S *Botanical Magazine*, t. 265, and which is there said to be a native of Spain and Italy. This is considered by Mr. KER (*Annals of Botany*, v. ii. p. 223) specifically distinct.

The plants from which the drawing for the accompanying plate was made, were kindly communicated to the Oxford Garden by the Rev. A. BLOXAM, in 1835.

"The greatest pleasure the mind is capable of in this life," says FELTHAM, "is in the CONTEMPLATION OF GOD AND NATURE, the sweetness of Philosophy, and the discourse of Reason." And it is justly observed by Mr. EDWIN LEES, that "Man seeks his truest happiness in directing his attention to the works of GOD. The objects of ambition," says this pleasing writer, "a breath may destroy; but the pleasures of the Naturalist are ever pure and bright as the source from which they emanate, and incapable of decay. His are unalloyed pleasures, where no care intrudes, which no revolution can endanger, and no reverse of fortune destroy:—

'The storm that wrecks the winter sky,
No more disturbs his calm repose,
Than summer evening's latest sigh
That shuts the rose.'

The turmoil of the world may lose its power to please, and the aërial castles formed by ardent hope may vanish away; but the beauties of vegetation, and the varied face of Nature, will still impart a perennial charm, of which none can deprive us*".

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* See "The Affinities of Plants with Man and Animals, their analogies and associations; A Lecture, delivered before the Worcestershire Natural History Society, Nov. 26, 1833, by EDWIN LEES, Member of the Entom. Soc. of London, &c. 8vo. pp. 122. London: published by W. EDWARDS. 1834."

I have derived much pleasure and satisfaction from the perusal of this very delightful little work; it is, indeed, impossible to open a single page without meeting with something to amuse, and something to instruct.

Spartina Stricta. Twin-spiked Cord grass V

C. Mathews Del. & Sc. Pub.d by W. Baxter Botanic Garden, Oxford 1836.

SPARTI'NA *.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ. Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p 68.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—GRAMINA, *Linn.*—GRAMINALES; sect. TRITICINÆ; type, SPARTINACEÆ; Burn. Outl. of Bot. v. i. pp. 359, 362, & 366.

GEN. CHAR. *Spike* compound. *Spikelets* 1-flowered, 1-sided, in 2 rows, pressed close to the rachis. *Calyx* (fig. 1.) single-flowered, of 2 opposite, unequal, compressed, spear-shaped, keeled, clasping glumes (valves), the outer one sometimes smallest, narrow and pointless; sometimes largest, with a rough, straight, terminal awn; inner cloven at the summit, with more or less of an intermediate tooth, or point. *Corolla* (fig. 2.) about the length and shape of the calyx, of 2 compressed, spear-shaped, rather unequal, bluntish, clasping, awnless paleæ (valves). *Nectary* none. *Filaments* (fig. 2, *a.*) 3, hair-like. *Anthers* (fig. 2, *b.*) upright, strap-shaped, entire at the top, cloven at the base. *Germen* (see fig. 3.) elliptic-spear-shaped. *Styles* (see fig. 3.) combined at the base, separate at the top. *Stigmas* (fig. 2, *c.*) feathery, slender, various in length. *Seed* oblong, compressed, clothed with the unaltered corolla, but quite loose.

The compound *spike;* the unilateral (1-sided), 1-flowered *spikelets*, in 2 rows, pressed close to the rachis; the *calyx* of 2 opposite, spear-shaped, compressed, unequal, pointed *glumes;* the *corolla* of 2, compressed, rather unequal, spear-shaped *paleæ;* and the *styles* united half way up; will distinguish this from other genera in the same class and order.

The 1-flowered spikelets will distinguish it from *Dactylis* (see t. 108), a genus under which it was included by LINNÆUS, and most Botanists.

One species British.

SPARTI'NA STRI'CTA. Twin-spiked Cord-grass. Smooth Sea-grass. Sea Cock's-foot-grass.

SPEC. CHAR. Spikes 2 or 3, erect, with very smooth stalks. Outer glumes of the calyx smallest.

Annals of Bot. v. i. p. 297.—Sm. Engl. Fl. v. i. p. 135.—With. (7th ed.) v. ii. p. 176. Pl. 27.—Gray's Nat. Arr. v. ii. p. 144.—Lindl. Syn. p. 298.—Hook. Brit. Fl. p. 57.—*Dactylis stricta*, Engl. Bot. t. 380.—Knapp's Gram. Brit. t. 63.—Ait. Hort. Kew. (1st ed.) v. i. p. 104.—Willd. Sp. Pl. v. i. p. 407.—Ait. Hort. Kew. (2nd ed.) v. i. p. 160.—Sm. Fl. Brit. v. i. p. 110.—With (5th ed.) v. ii. p. 197. Pl. 27.—*Dactylis cynosuroides*, Huds. Fl. Angl. (2nd ed.) p. 43.—With. (2nd ed.) v. i. p. 93. not of *Linnæus.—Limnetis pungens*, Pers. Syn. v. i. p. 72.—Host's Gram. Austriac. v. iv. p. 38. t. 66.—*Spartum Essexianum, spica gemina clausa*, Dill. in Ray's Syn. p. 393.

Fig. 1. Calyx.—Fig. 2. Corolla; *a.* Filament; *b.* an Anther; *c.* a Stigma.—Fig. 3. Germen and Pistils.—Fig. 4. Top of a Sheath, showing the fringed stipula.—*All a little magnified.*

* From *Spartum*, a kind of broom or hard-grass, used by the ancients for economical purposes. WITHERING. Or, from the Spanish *Esparto*, some of the species, with various other tough grasses, being used by the Spaniards for making ropes. BURNETT. † See *Phalaris canariensis*, f. 56, n. †.

Localities.—In muddy salt-marshes, on the East and South-east coasts of England.—*Essex;* At Crixey Ferry: Merrett. In marshes on the river Wallfleet, near Fambridge Ferry in Dengey Hundred: Mr. Buddle.—*Hants;* Between Southampton and Millbrook: N. J. Winch, Esq. On the banks of the Southampton river by high water mark, in great plenty: Sir J. Banks. Near Southampton: 1836, Mr. T. W. Weaver.—*Kent;* About the mouths of rivers, and plentiful in Sheppy Isle: *Engl. Fl.* Near the mouth of Faversham Creek: J. Sherard, Esq. and Col. Velley.—*Suffolk;* At Aldborough, abundantly, about the Quay, and along the river-side and salt ditches, also about the Light-houses, and more sparingly N. of the town in the mere: Rev. G. Crabbe. It covers acres, and forms the whole crop about Aldborough, and Orford: Mr. Woodward.—*Sussex;* Local in West Sussex: Rev. G. E. Smith, in New Bot. Guide.

Perennial.—Flowers from July to September.

Root creeping, with strong fibres. *Culms (stems)* from 6 inches to a foot or more high, upright, round, smooth, jointed, simple, leafy. *Leaves* several, straight, spreading, smooth, striated, stiff, taper-pointed, of a dull green, their edges rolled in when dry. *Sheaths* striated, smooth, very long, investing each other far above their respective knots, and concealing the culm to within an inch or two of the top. *Stipula (ligula)* (see fig. 4.) short and jagged. *Spikes* 2, sometimes 3, as in the specimen now before me, 3 or 4 inches long, and rising just above the short uppermost leaf, upright, straight, close together. *Common-stalk (rachis)* simple, angular, a little zigzag, with a linear hollow to receive each *spikelet*, but not jointed. *Spikelets* 1-flowered, imbricated, in 2 rows, lateral, spear-shaped. *Glumes* unequal, more or less downy or silky, outer narrow, and pointed; inner much broader and longer; somewhat membranous, with a slightly hispid keel, cloven at the top, with a short intermediate point. *Paleæ (valves of the corolla)* less downy than the glumes of the calyx, pointed, entire, and finely striated. *Nectary* none. *Anthers* projecting. *Germen* spear-shaped. *Styles* united at the bottom. *Stigmas* feathery, slender, prominent. *Seed* oblong, compressed.

The whole plant is hard, tough and rigid, and often of a dark reddish, or blackish hue, by which patches of it may frequently be distinguished at a considerable distance. Its rariety makes it an interesting plant to the Botanist; but to the Agriculturist it is of no estimation. It appears that Linnæus confounded this species with his *Dactylis (Spartina) cynosuroides*, a native of America, and a very different grass from this, growing to a much greater size, and, in a cultivated state, attaining to the height of five feet, or more; and bearing a large panicle of numerous spikes, whose flowers are much more crowded than in *Spartina stricta*.

I am indebted to the kindness of Mr. T. W. Weaver, gardener to the Rev. the Warden of Winchester College, for the specimen from which the drawing for the annexed plate was made; and also for plants of *Salicórnia herbácea; Poa procúmbens; Poa marítima; Chenopódium marítimum; Státice limónium*, (t. 183); and *Aster tripólium;* all, I believe, collected by him in the vicinity of Southampton, about July last.

Myosurus minimus. Common Mouse-tail ⊙

H Graud, Esqr del. Pub^d by W. Baxter, Botanic Garden Oxford 1834. C. Mathews Sc.

MYOSU'RUS*.

Linnean Class and Order. PENTA'NDRIA†, POLYGY'NIA.

Natural Order. RANUNCULA'CEÆ‡, Juss. Gen. Pl. p. 231.—Sm. Gram. of Bot. 136.—Lindl. Syn. p. 7.; Introd. to Nat. Syst. of Bot. p. 6.—Rich. by Macgilliv. p. 465.—Loud. Hort. Brit. p. 495.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 2.—ROSALES; sect. RANUNCULINÆ; subsect. RANUNCULIANÆ; type, RANUNCULACEÆ; subtype, RANUNCULEÆ; Burn. Outl. of Bot. pp. 614, 828, 832, 837, & 839.—MULTISILIQUÆ, *Linn.*

GEN. CHAR. *Calyx* (see fig. 1, *a.* & fig. 2.) of 5, spear-shaped, concave, coloured, spreading, deciduous sepals, spurred at the base below their point of insertion (fig. 2). *Corolla* of 5 very small petals (fig. 1, *b.* & fig. 3.), shorter than the calyx, with a filiform tubular claw, bearing honey at the base. *Filaments* (fig. 4.) 5, or more, strap-shaped, as long as the calyx. *Anthers* terminal, upright, of 2 strap-shaped, parallel cells. *Germens* (fig. 1, *d.*) very numerous, egg-shaped, seated on a long, tapering, upright *receptacle.* *Style* none. *Stigmas* solitary, minute. *Capsules (seeds* of most authors*)* (figs. 6, 7, & 8.) indehiscent, triquetrous, 1-seeded, very much crowded, on a very long, columnar, pointed *receptacle.*

The *calyx* of 5 sepals, prolonged at the base; the *corolla* of 5 petals, with tubular, honey-bearing claws; and the 1-seeded, indehiscent *capsules*, collected upon a very long columnar receptacle; will distinguish this from other genera in the same class and order.

One species British.

MYOSU'RUS MI'NIMUS. Least Mouse-tail.

SPEC. CHAR. Scape nearly equal in length with the leaves, or longer; appendages of the calyx somewhat leafy.

Engl. Bot. t. 435.—Curt. Fl. Lond. t. 251. Curt. Brit. Entom. t. 437.—Linn. Spec. Pl. p. 407.—Huds. Fl. Angl. (2nd ed.) p. 136.—Sm. Fl. Brit. v. i. p. 348. Engl. Fl. v. ii. p. 125.—With. (7th ed.) v. ii. p. 413.—Lindl. Syn. p. 10.—Hook. Brit. Fl. p. 149.—Lightf. Fl. Scot. v. i. p. 176.—Sibth. Fl. Oxon. p. 107.—Abb. Fl. Bedf. p. 72.—Purt. Mid. Fl. v. i. p. 167.—Relh. Fl. Cant. (3rd ed.) p. 134.—Hook. Fl. Scot. p. 98.—Fl. Devon. pp. 57 & 194.—Rev. G. E. Smith's Pl. of S. Kent, p. 20.—Winch's Fl. of Northumb. and Durham, p. 21.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 25.—Walk. Fl. of Oxf. p. 90.—Perry's Pl. Varv. Selectæ, p. 28.—*Myosúrus Europæ'a*, Gray's Nat. Arr. v. ii. p. 723.—*Myosúros*, Ray's Syn. p. 251.—*Holosteo affinis, Cauda muris*, Sibbald's Scotia Illustrata, p. 30.—*Cauda muris*, Johnson's Gerarde, p. 426.

LOCALITIES.—In corn-fields, on a sandy or gravelly soil. Not common.—*Oxfordsh.* Magdalen Water Walks, near the meadow gate. Southleigh, and North Aston: Dr. SIBTHORP. In a field on the left hand side of the road going from Bayswater to Stanton St. John: W. B.—*Berkshire.* In gravelly soils, common: Dr. NOEHEDEN. Cookham: W. HURST, in New Bot. Guide. Cornfields near Windsor: Rev. H. DAVIES.—*Beds;* Biddenham, Fenlake, and Caldwell.—*Bucks;* Near Slough: Mr. GOTOBED.—*Cambridgesh.* Stourbridge Fair Green; Oakington, in a lane leading from the village to the Huntingdon

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Fig. 1. A Flower, *a.* one of the 5 sepals; *b.* one of the petals; *c.* a stamen; *d.* the germens and receptacle.—Fig. 2. A Sepal.—Fig. 3. A Petal.—Fig. 4. A Stamen.—Fig. 5. The elongated Receptacle, bearing the ripe Capsules.—Fig. 6. A separate Capsule.—Figs. 7 & 8. Ditto.—*All, except* figs. 5 & 6, *more or less magnified.*

* From *mus, muos,* Gr. *a mouse;* and *oura,* Gr. *a tail;* from the elongated receptacle of germens or seed-vessels. HOOKER.

† See *Anchusa sempervirens*, f. 48, n. †. ‡ See *Clématis vitálba*, f. 129, a.

Road; Hasenfield, in the road leading to Cambridge, near the village, plentifully; Eversden: Rev. R. Reiman.—*Cheshire;* Lane near Poulton: N. B. G. —*Derbysh.* Cornfields near Derby: Mr. Whately.—*Devon;* Cliffs near Exmouth: Rev. J. Jervis.—*Dorset;* On thatched houses; in old gravel pits; and among the corn, but not very common; Langton fields near Blandford: Dr. Pulteney.—*Durham;* In fields near Darlington: Mr. Brunton.—*Essex;* About Walthamstow: Mr. E. Forster, jun. Near Chelmsford: J. G. in Mag. Nat. Hist. v. iv p. 446. In the road between Woodford and Chingford Hatch: Warner. On Warley Common: *Fl. Metrop.—Hants;* About Stubbington: Rev. S. Palmer, in M. N. H. v. ii. p. 276.—*Herefordsh.* In the Northern parts: Duncumb.—*Herts;* Plentiful on the Hyde near Edmonton fields by the Rib near Hertford: Mr. J. Woods, jun.—*Kent;* Cornfields on the green sand; Cheriton; Coolinge, &c.: Rev. G. E. Smith. Plentiful in fields about Wingham and Canterbury: L. W. Dillwyn, Esq. Cliffs between Northfleet and Gravesend: *Fl. Metrop.—Leicestersh.* Fishpool Close, and Tuthill Field, near Loughborough: Dr. Pulteney.—*Middlesex;* Meadows behind the chapel, and in a lane that goes from Copenhagen House to Kentish Town; Mary Bone Park: Martyn. About Islington: Blackstone. Paddington and Pancras: Curtis. At Edmonton: Mr. J. Woods, jun.—*Norfolk;* Fields at Ormesby: Mr. Stone. Lakenham: Mr. Cnowe. Earsham: Mr. Woodward. A weed in gardens about Yarmouth: Mr. Wigg. Fields at Boughton near Stoke: D. Turner, Esq. Plentiful in one field, and road-side adjoining in Wimbotsham, towards Bexwell and Crimplesham: cornfields at Runcton Holme: Miss Bell, in N. B. G.—*Northamptonsh.* Gardens and fields at Thorp Malsor: Morton.—*Northumberland;* On St. Anthon's Ballast Hills: N. J. Winch, Esq. On the Cowhill, Newcastle Town Moor: Mr. R. B. Bowmann.—*Notts;* Between Radford and Woollaton Park: Dr. Medley.—*Suffolk;* Fields at Blundeston: Mr. Wigg. Parham, in a wet meadow under trees: Rev. G. Crabbe.—*Surrey;* On Weston Green, a little on this side Eltham, abundantly: Mr. J. Sherard. Among the corn on Epsom Downs: Mr. T. F. Forster, jun. Fields about Dulwich, especially on the right hand of Lordship-lane near Dulwich Wood: Curtis. On Wimbleton, and Streatham Common: *Fl. Metrop.—Sussex;* Cornfields on the coast, from Portsladc to the western extremity of the county: W. Borrer, Esq. At Hurstpierpoint: N. B. G.—*Warwicksh.* Chelmsley Wood near Coleshill: B. G. Coleshill: Rev. W. T. Bree. Alne Hills, and at Studley in a field by the church: T. Purton, Esq. In a field near the Cross, between Norton Lindsey and Warwick: Mr. W. G. Perry.—*Worcestersh.* Malvern Chace: Mr. E. Lees, in *Illust.—Yorksh.* Fields south-east of Welburn: Teesdale. Near York: Dr. White.—SCOTLAND. In cornfields, of a gravelly soil: Sibbald.

Annual.—Flowers in May and June.

Root small, fibrous. *Leaves* numerous, all radical, nearly upright, from 1 to 3 inches long, strap-shaped, narrow, entire, single-ribbed, broadest at the top, blunt, rather fleshy, smooth, (sometimes hairy, *Huds.*) tapering at the base into *footstalks* nearly of their own length. *Scapes (flowerstalks)* several, shorter or longer than the leaves, and rising from the same root, round, each bearing a small upright flower. *Sepals* (fig. 2.) oblong, concave, herbaceous, spreading, their claws lengthened out below their point of insertion, pressed to the flowerstalk, and tapering to a point. *Petals* (fig. 3.) very small, shorter than the sepals, of a pale yellowish colour. *Stamens* usually 5, but sometimes more, about as long as the sepals. *Capsules (seeds,* Linn.*)* (fig. 7 & 8.) numerous, Sir J. E. Smith says 2 or 3 hundred, 3-sided, very much crowded; these are seated on a receptacle, which, at first, is short and oblong, as at fig. 1, *d*; but, as the seed becomes ripe, it gradually lengthens out, till it forms, with the ripe capsules, a cylindrical spike, from 1 to 3 inches long, as at fig 5, and which then bears a very great resemblance to the tail of a mouse. Plant acrid.

The tubular elongated claws of the petals keep it distinct from *Ranunculus*, a genus to which it is very closely allied.

I am indebted to the kindness of Herbert Giraud, Esq. of Faversham, Kent, for an excellent drawing of this curious little plant, from which the accompanying plate has been engraved.

Phyteuma orbiculáre Round headed Rampion ♃

I.K. Del. Pub.d by W. Baxter, Botanic Garden Oxford 1835 C. Mathews Sc.

PHYTEU'MA *.

Linnean Class and Order. PENTA'NDRIA †, MONOGY'NIA.

Natural Order. CAMPANULA'CEÆ, Juss. Gen. Pl. p. 163.—Sm. Gram. of Bot. p. 117.—Lindl. Syn. p. 135.; Introd. to Nat. Syst. of Bot. p. 185.—Rich. by Macgilliv. p. 453.—Loud. Hort. Brit. p. 522.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 731.—CAMPANA'CEÆ, *Linn.*—SYRINGALES; subord. ERICOSÆ; sect. CAMPANULINÆ; type, CAMPANULACEÆ; subtype, CAMPANULIDÆ, Burn. Outl. of Bot. v. ii. pp. 900, 937, 938, 941, & 942.

GEN. CHAR. *Calyx* (see fig. 1.) superior, of 1 sepal, in 5 deep, rather spreading, permanent segments. *Corolla* (see fig. 3.) of 1 petal, wheel-shaped, with a very short tube, and 5 long, strap-shaped, recurved segments (see fig. 3, *b.* and fig. 4). *Filaments* (see figs. 5 & 6.) 5, thread-shaped, dilated at the base (see fig. 6.), scarcely attached to the corolla, and shorter than its segments, with which they are alternate. *Anthers* oblong, free; pollen violaceous or reddish. *Germen* inferior, angular. *Style* (see figs. 3 & 5) cylindrical, curved, longer than the stamens. *Stigma* in 2 or 3 spreading segments. *Capsule* (figs. 8 & 9.) roundish, of 2 or 3 cells, with strong ribs; opening laterally by 2 or 3 valves at the base or middle part. *Seeds* (figs. 10 & 11.) numerous, small, roundish, sometimes a little compressed, usually shining.

Distinguished from other genera, in the same class and order, by the wheel-shaped corolla, with 5 long strap-shaped segments; the 2- or 3-parted stigma; and the 2- or 3-celled capsule, opening at the sides.

Two species British.

PHYTEU'MA ORBICULA'RE. Round-headed Rampion. Horned Rampion.

SPEC. CHAR. Head of flowers roundish. Radical leaves petiolate, somewhat heart-shaped, or elliptic-spear-shaped, crenated. Stem leaves sessile, strap-spear-shaped. Bracteas egg-shaped, acute, entire.

Engl. Bot. t. 142.—Jacq. Fl. Austr. t. 437.—Loddiges' Botanical Cabinet, t. 122.—Hook. Fl. Lond. t. 55.—Linn. Sp. Pl. p. 242.—Huds. Fl. Angl. (2nd ed.) p. 97.—Sm. Fl. Brit. v. i. p. 240. Engl. Fl. v. i. p. 295.—With. (7th ed.) v. ii. p. 306.—Gray's Nat. Ar. v. ii. p. 411.—Lind. Syn. p. 135.—Hook. Br. Fl. p. 100. —Aiton's Hort. Kew. (1st ed.) v. i. p. 226. Ait. Hort. Kew. (2nd ed.) v. i. p. 354. —Don's Gen. Syst. of Gard. and Bot. v. iii. p. 747.—*Phyteúma cordata*, Sims. Bot. Mag. t. 1466.—*Rapunculus orbicularis*, Scop. Fl. Carniol. (2nd ed.) v. i, p. 150.—*Rapunculus corniculatus montanus*, Ray's Syn. p. 278.—Johnson's Gerarde, p. 455.—*Rapunculus folio oblongo, spica orbiculari*, Blackst. Spec. Bot. p. 80.

LOCALITIES.—In pastures, and by road-sides, in a chalky soil, but very rare.—*Hampshire;* On the Downs in many places: RAY, 1690; and Mr. W. PAMPLIN, jun. 1833. On the chalky hills by Maple Durham: MERRETT, 1666.

Fig. 1. Calyx and Bractea.—Fig. 2. Bractea, Calyx, and unexpanded Corolla.—Fig. 3. A separate Flower; *a.* the calyx; *b.* the corolla; *c.* the stamens; *d*, the pistil.—Fig. 4. A Petal.—Fig. 5. The Stamens and Pistil.—Fig. 6. A single Stamen.—Fig. 7. The Head of Capsules.—Figs. 8 & 9. Separate Capsules.—Figs. 10 & 11. Seeds.—Figs. 9 & 11 *magnified*.

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* A name adopted by DIOSCORIDES.

† See *Anchusa sempervirens*, folio 48, note †.

Meonstoke: Dr. Pulteney. With white flowers about Burlton.: Dr. Pulteney.—*Kent;* Bacon Hill: Blackstone.—*Middlesex;* Between Kingsbury and Harrow; and between Harrow and Pinner: Dr. Martyn.—*Surrey;* Chalky pastures near Leatherhead, Croydon, and other parts of the county, plentifully: Hudson, 1778. Near Leatherhead: Mr. W. Pamplin, jun. 1833. About chalk-pits near Dorking, and in fields near Leatherhead: N. J. Winch, Esq. On a high bank just before you reach Mickleham, on the left. About Coulsdon; Box Hill: *Fl. Metrop.*—On Epsom Downs; and near Chipstead: Mr. E. Forster, jun. Towards Hedley; and near Cheam: Mr. T. F. Forster, jun. Old chalk-pits near Ashstead: Mr. W. Pamplin, jun.—Mr. Pamplin informs me, that it has become scarce in this locality; that when he botanized that place in 1833, he could find but a single specimen.—*Sussex;* On the Downs: Ray, 1690. Near Eastbourne: W. C. Trevelyan, Esq. in *New Bot. Guide.*—About Brighton: Sir T. G. Cullum.

Perennial.—Flowers in July and August.

Root long and woody, branching near the crown into several divisions, each bearing a tuft of petiolated, smooth, veiny, crenated leaves; the earliest heart-shaped; the next egg-spear-shaped. *Stems* solitary, upright, from 6 inches to a foot or more high, simple, somewhat angular, smooth, leafy. *Leaves* on the lower part of the stem egg-spear-shaped, crenated, and, like the radical ones, on long petioles; those on the upper part egg-shaped or spear-shaped, sessile and fringed at the base. *Flowers* of a most beautiful brilliant blue, numerous, inodorous, sessile, forming a round head, accompanied by several close, egg-spear-shaped, leafy *bracteas* (see figs. 1 & 2). *Corolla* divided to the base into 5 strap-shaped, spreading segments (see fig. 3), which, in the bud, cohere together, forming a curved horn, and separating first at their lower part (see fig. 2). As the *capsules* ripen, the head (fig. 7.) becomes oval, and the parts of the *flower*, after lasting long in a faded state, are finally deciduous, except the fringed *calyx*, which is permanent; and, when the seed is ripe, spreads in a stellated manner.—The whole *herb* is milky, but not acrid.

The drawing for the accompanying plate was made from a plant kindly presented to me by my much esteemed friend, Mr. John Smith, Tailor, of Beaumont Buildings, Oxford. Mr. Smith is an ardent lover of flowers, and his garden, which is only a few yards square, contains a great number of rare and curious hardy plants, chiefly those of small growth, all in an excellent state of cultivation.

The Campanula'ceæ are dicotyledonous *herbaceous* plants or *under shrubs*, yielding a white milky juice. Their *leaves* are without *stipulæ*, and are almost always alternate, simple, usually toothed or crenated; the radical ones often different from the cauline ones. Their *flowers* are single, racemose, panicled, spicate or glomerate, usually blue or white, very rarely yellow. The *calyx* is superior, and permanent; usually of 5, but sometimes of from 3 to 8, lobes. The *corolla* is monopetalous, regular, deciduous, or permanent, 5, or sometimes 3- to 8-lobed, rarely of 5 petals with broad connivent claws. The *stamens* are definite, and, like the corolla, inserted in the margin of the disc of the ovary, and combined with it, distinct from the corolla, but equal in number to its segments, and alternating with them. The *anthers* are 2-celled, distinct, with round *pollen*. The *ovary* is inferior, with 2 or more many-seeded cells; a simple *style;* and a *stigma* which is either simple, or of as many lobes as there are cells to the ovary. The *fruit* is a dry, many-seeded capsule, crowned by the withered calyx and corolla, and opening by lateral irregular apertures, or by valves at the apex, always loculicidal. The *seeds* are numerous, small, and attached to a placenta in the axis. The *albumen* is fleshy; the *embryo* slender, and straight, with opposite, egg-shaped or roundish, small, foliaceous cotyledons.

All the plants of this family are pretty, and some of them are highly ornamental. The roots of *Campanula Rapunculus* are used as a vegetable, under the name of *Rampion.*

Cineraria campestris. Field Flea-wort. 4.

Caswell, del.[t] Pub.[d] W. Baxter Botanic Garden, Oxford. 1836. J. W. sc.

CINERA'RIA*.

Linnean Class and Order. SYNGENE'SIA†, POLYGA'MIA, SUPE'RFLUA‡.

Natural Order. COMPO'SITÆ§, *Linn.*—COMPO'SITÆ; tribe, CORYMBI'FERÆ||, Lindl. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 & 199.—COMPO'SITÆ; subord. JACOBE'Æ, Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CORYMBI'FERÆ, Rich. by Macgill. pp. 454 & 455.—CORYMBI'FERÆ, sect. 2. Juss. Gen. Pl. pp. 177 & 180.—Sm. Gram. of Bot. pp. 121 & 123. Engl Fl. v. iii. p. 334.—SYRINGA'LES; type, ASTERA'CEÆ, Burn. Outl. of Bot. v. ii. pp. 900 & 926.

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) simple, cylindrical, of many equal, upright, parallel, permanent scales. *Corolla* compound, radiant; *florets* of the disk (fig. 2.) numerous, perfect, tubular, with 5 equal upright segments; those of the ray (fig. 3.) equal in number to the scales of the involucrum, strap-shaped, elliptic-oblong, toothed at the end. *Filaments* 5, in the tubular florets only, thread-shaped, short. *Anthers* united into a cylindrical tube, with 5 notches at the summit. *Germen* (see figs. 2 & 3.) in all the florets fertile, oblong. *Style* thread-shaped, as long as the stamens. *Stigmas* 2, spreading, oblong, bluntish. *Seed-vessel* none, but the unchanged calyx. *Seed* (fig. 5.) quadrangular, striated. *Pappus (down)* (see fig. 5.) copious, sessile, simple, hair-like, roughish, longer than the seed. *Receptacle* (fig. 4. *b.*) naked, pitted, slightly convex.

The simple, cylindrical *involucrum*, of many equal, upright scales; the naked *receptacle;* quadrangular *fruit;* and simple, sessile *pappus;* will distinguish this from other genera in the same class and order.

Two species British.

CINERA'RIA CAMPE'STRIS. Field Flea-wort. Mountain Flea-wort. Cambridge Rag-wort.

SPEC. CHAR. Plant woolly. Stem unbranched. Root-leaves elliptical, nearly entire; those of the stem spear-shaped, small. Flowers simply and imperfectly umbellate, with several spear-shaped bracteas.

Hook. Fl. Lond. t. 75.—Retz's Prodromus Floræ Scandinaviæ, (2nd edit.) n. 1027.—Willd. Sp. Pl. v. iii. pt. III. p. 2081.—Pers. Syn. Pl. v. ii. p. 440.—Ait. Hort. Kew. (2nd ed.) vol. v. p. 74.—Lindl. Syn. p. 147.—Hook Brit. Fl. p. 364.—*Cineraria integrifolia*, Eng. Bot. t. 152.—Curt. Brit. Ent. v. iii. t. 101.—With. (1st ed.) v. ii. p. 519.—Sm. Fl. Br. v. ii. p. 895. Engl. Fl. v. iii. p. 444.—With. (7th ed.) v. iii. p. 943.—Gray's Nat. Arr. v. ii. p. 468.—Sibth. Fl. Oxon. p. 255.—Purt. Midl. Fl. v. iii. p. 65.—Relh. Fl. Cant. (3rd ed.) p. 347. t. 4.—Walk. Fl. of Oxf. p. 244.—*Cineraria integrifolia β. pratensis*, Linn. Syst. Veg. (14th ed.) p. 764.—Jacq. Fl. Aust. v. ii. p. 48. t. 180.—*Cineraria alpina γ, integrifolia*, Linn. Sp. Pl. p. 1243.—Huds. Fl. Angl. (2nd ed.) p. 370.—*Cine-*

Fig. 1. Involucrum.—Fig. 2. A Floret of the Disk.—Fig. 3. A Floret of the Ray.—Fig. 4. The Involucrum, the scales of which, fig. *a*, are reflexed when the seed is ripe; fig. *b*, the receptacle; and fig. *c*, the seed.—Fig. 5. A Seed with its Pappus, a little magnified.

* From *cineres*, Lat. *ashes;* from the grey or ashen colour of the downy or woolly leaves and stem in some species.

† See f. 91, n. †. ‡ See f. 36, n. ‡. § See f. 27, *a*. || See f. 36, *a*.

raria alpina, Relh. Fl. Cant. (1st ed.) p. 320. t. 4.—Ait. Hort. Kew. (1st ed.) v. iii. p. 222.—*Jacobæa Pannonica folio non laciniato*, Ray's Syn. p. 178.—*Jacobæa angustifolia*, Johnson's Gerarde, p. 280.

Localities.—On chalky downs, or limestone cliffs, rare.—*Oxfordshire;* Mungewell, on Grime's Dike; Burford Downs: Dr. Sibthorp. Stokenchurch Hill: 1836, E. F. Witts, Esq.—*Berks;* On the Downs near Streatley: May 13, 1819, W. B. In the same place: 1836, W. Borrer, Esq.—*Cambridgeshire;* Gog-magog Hills; Newmarket Heath: Rev. R. Relhan. Devil's Ditch, Newmarket: Rev. Professor Henslow.—*Dorset;* Top of Hod and Hambledon Hills: Dr. Pulteney.—*Gloucestersh* Beaumont's Hay, near Slaughter: E. F. Witts, Esq.—*Hants;* Near Basingstoke, and Andover: Hunson. Belhan, Isle of Wight; and Flower Down near Winton: Dr. Pulteney.—*Herts;* Near Tring: Dickson.—*Northamptonsh.* Wittering Heath: Morton.—*Sussex;* In several places on the Downs: W. Borrer, Esq.

Perennial.—Flowers in May and June.

Root fibrous. *Stem* upright, from 3 to 8 inches or a foot high, simple, woolly, somewhat angular, or furrowed. *Root-leaves* several, close to the ground, egg-shaped, inversely egg- or elliptic-oblong, tapering at the base, sometimes stalked, obscurely toothed, often entire, somewhat revolute, loosely cottony on the upper surface, more copiously so on the under. *Stem-leaves* scattered, sessile, or half-stem-clasping, upright, spear-shaped, revolute, entire, woolly. *Flowers* 3 or 4, (seldom only 1 or 2.) bright yellow, terminating the stem in an imperfect umbel; their partial stalks with several strap-spear-shaped, pointed, woolly *bracteas* at their base. *Involucrum (calyx)* rather woolly; the upper half of its scales pale and somewhat membranous. *Florets of the Disk* (fig. 2.) numerous, prominent; those of the Ray (fig. 3.) from 10 to 15, about twice as long as the involucrum, nearly oval, blunt, with 3 teeth at the summit. *Seeds* (fig. 5.) silky. *Pappus* rough. The whole *herb* is clothed, more or less, with a shaggy, deciduous, cottony web, which is most dense and permanent on the backs of the leaves; the plant is also subject to much variation in size, and also in the number of flowers. There are specimens in the Sherardian *Herbarium* with 1, 2, 3, and 6 flowers on each, and varying in height from 3 to 7 or 8 inches.

Cineraria alpina of Allioni's Flora Pedemontana, v. i. p. 203, t. 38. f. 2; *C. maritima, integrifolia* of Davies'. Welsh Botanology, p. 79; is a variety of this, and was found by the Rev. H. Davies, on cliffs near Holyhead, Anglesea. It is said to be thrice the size of the above, growing from 1 to 2 feet high or more, and producing from 4 to 6 flowers in the umbel. Its radical leaves are sometimes widely toothed.—Ch. C. Babington, Esq. of St. John's College, Cambridge, found this variety in the greatest plenty on the Gog-magog Hills, on the 8th of June, 1829, growing in the very same place in which the first variety is commonly found. Mr. Babington thinks it probable that the moisture of the weather during the Spring of that year had the same effect there which the vicinity of the sea has at Holyhead, namely, that of converting this species from the small state in which it is usually found into the large and dissimilar plant, called by Mr. Davies *Cineraria maritima integrifolia*. See Loudon's *Magazine of Natural History*, vol. v. p. 88, where both varieties are figured. There are specimens, in the Sherardian *Herbarium*, of what I think is a variety of *Cineraria Campestris*, with a stem above 15 inches long, terminated by an umbel of 10 or 12 flowers, and agreeing pretty well with the description of Mr. Davies' plant, except that it is more woolly than the common one, and not smoother, as Dr. Withering describes it.

Cineraria integrifolia of Willdenow is a distinct species, and is said to be a native of Germany and Switzerland.

The drawing for the annexed plate was made from a plant which flowered in the Botanic Garden in June last. It was taken up from the Downs at Streatley, in the Spring of the present year (1836), and kindly presented to me by W. Borrer, Esq.

[illegible] Plate III. Cent. (Dianthus [illegible]). — Not [illegible]
[illegible] 202. — [illegible] Pentandria Digynia [illegible]. Nat. [illegible]
[illegible] Gard. [illegible] Johnson's Gerarde, p. 980.

[illegible] On a table down the [illegible] table, [illegible]
[illegible] on a table; flowered flowers; Dr. Stratford [illegible]
[illegible] 1837, J. W. [illegible], Esq. — Gardener's Chronicle. On the [illegible]
[illegible] 1838, W. Bowman, Esq. — [illegible]
[illegible]; Newmarket Heath; Rev. H. Harman. [illegible]
[illegible] Rev. Professor Henslow. — Dwarf; Tordalfod and [illegible]
Dr. [illegible]. — Gardener's Chronicle. Beaumont's Hay, near Stoughton; [illegible]
Esq. — Flowers; Near Huntingdon, and Andover; Hippon. [illegible]
Wight, and Flower Town near Winton; Dr. Lindley. — [illegible]
Tiling. — [illegible]. — Newmarket Heath; Winning Heath; Blowers. —
[illegible] grows on the Downs; W. Bowman, Esq.

Recential. — Flowers in May and June.

Root fibrous. — Stem upright, from 3 to 8 inches or a foot [illegible]
simple, nearly semicircular, or furrowed. Root-leaves [illegible]
close to the ground, egg-shaped, inversely egg- or ellipto[illegible]
tapering at the base, sometimes stalked, obscurely-toothed, [illegible]
green, sometimes revolute, loosely cottony on the upper [illegible]
more copiously so on the under. Stem-leaves scattered, [illegible]
half stem-clasping, upright, spear-shaped, revolute, entire, [illegible]
(from 3 or 4, (seldom only 1 or 2,) bright yellow, terminal [illegible]
the stem in an imperfect umbel; their partials stalks with [illegible]
strap-spear-shaped, pointed, woolly bracts at their base. [illegible]
inverse (calyx) rather woolly; the upper half of its teeth [illegible]
and somewhat membranous. Flower of the Disk (fig. 2) [illegible]
our, prominent, thick of the Ray (fig. 3.) from 10 to 16, [illegible]
twice as long as the involucrum, nearly oval, blunt, with 3 [illegible]
the summit. Seeds (fig. 5) shiny. Pappus rough. The [illegible]
bracts [illegible] more or less, with a shagey, deciduous [illegible]
web, and [illegible] and permanent on the backs of the [illegible]
the plant [illegible] direct to much variation in size, and also in [illegible]
number [illegible]. There are specimens in the Sherardian [illegible]
H. [illegible], 2, 3, and 6 flowers on each, and varying [illegible]
length from [illegible] inches.

Common [illegible] Alpine Hedgemustard, v. i. p. 300, [illegible] 88.
C. [illegible], [illegible] Davies' Welsh Botanology, p. 79, [illegible]
of this, and [illegible] found by H. Davies, on cliffs near Holyhead, [illegible]
sea. It [illegible] to be [illegible] the size of the above, growing from 1 to [illegible]
or more, and producing from 4 to 6 flowers in the umbel. It [illegible]
sometimes [illegible] Gen. C. Hardinge, Esq. of Stoughton, [illegible]
Cambridge, [illegible] this variety in the greatest plenty on the Gog [illegible]
on the 8th of June, 1839, growing in the very same place in which [illegible]
many in succession; and Mr. Hardinge thinks it probable that [illegible]
of the weather during the Spring of that year had the same effect [illegible]
the scarcity of the sea bee at Holyhead, namely, that of [illegible]
from the small state in which it usually found into the large [illegible]
plant called by Mr. Davies Cheiranthus [illegible]
Alpinus of Natural History, and [illegible]
There are specimens in the Sherardian Herbarium, [illegible]
Herb. of Cambridge Gardeners, with a stem above 16 inches [illegible]
by an umbel of 10 or 12 flowers, and agreeing pretty well with [illegible]
of Mr. Davies' plant, except that it is more woody than the [illegible]
not smooth. — D. Wither, from Gogmagog.

Generally naturalized of Wimpole in a distinct species, [illegible]
a native of [illegible] and Switzerland.

The drawing for the engraved plate was made from a [illegible]
flowered in the Botanic Garden in June last. — It was [illegible]
the Flowers at Strawberry, in the Spring of the present [illegible]
and kindly presented to me by W. Bowman, Esq.

Plantago major. Greater Plantain. ♃

C. Mathews Del. & Sc.

Publ.d by W. Baxter, Botanic Garden Oxford 1.2.1836.

PLANTA'GO*.

Linnean Class and Order. TETRA'NDRIA†, MONOGY'NIA.

Natural Order. PLANTAGI'NEÆ, *Dr. R. Brown.*—Lindl. Syn. p. 169.; Introd. to Nat. Syst. of Bot. p. 194.—Rich. by Macgilliv. p. 428.—Loud. Hort. Brit. p. 530.—PLANTAGINES, Juss. Gen. Pl. p. 89.—Sm. Gram. of Bot. p. 93.—SYRINGALES; subord. PRIMULOSÆ; sect. PLANTAGINÆ; type, PLANTAGINACEÆ; Burn. Outl. of Bot. v. ii. pp. 900, 958, 1026, & 1027.

GEN. CHAR. *Calyx* (fig. 1. & fig. 2, *a.*) inferior, of 1 sepal, in 4 deep, upright, equal or unequal segments, permanent. *Corolla* (fig. 2, *a.* and fig. 3.) of 1 petal, tubular, permanent, finally membranous; tube swelling; limb in 4 deep, reflexed, egg-shaped, acute segments. *Filaments* (see fig. 2, *c.*) 4, inserted into the tube of the corolla, alternate with its segments, hair-like, very long and prominent, at first folded inward, then upright, finally flaccid. *Anthers* oblong, compressed, of 2 cells, bursting lengthwise. *Germen* (fig. 4.) superior, egg-shaped, of 2, rarely 4, cells. *Style* (see fig. 4.) vertical, thread-shaped, half as long as the stamens. *Stigma* hairy, simple. *Capsule* (fig. 5.) egg-shaped, thin, bursting all round, of 2, rarely 4, cells, with a longitudinal, finally separate receptacle (placenta), bearing the seeds on each side. *Seeds* either solitary, in pairs, or numerous, oblong, sessile.

The monopetalous, inferior *corolla*, with 4 reflexed segments; the very long *stamens;* and the 2- or 4-celled *capsule*, bursting all round, will distinguish this from other genera in the same class and order.

Five species British.

PLANTA'GO MA'JOR. Greater Plantain. Way-bred ‡.

SPEC. CHAR. Leaves broadly egg-shaped, smoothish, mostly on longish footstalks. Scape rounded. Spikes long, cylindrical. Dissepiment of the Capsule plane, each cell many-seeded

Engl. Bot. t. 1558.—Curt. Fl. Lond. t. .—Linn Sp. Pl. p. 163.—Huds. Fl. Angl. (2nd ed.) p. 63.—Sm. Fl. Brit. v. i. p. 182. Engl. Fl. v. i. p. 213.—With. (7th ed.) v. ii. p. 230.—Gray's Nat. Arr. v. ii. p. 292.—Lindl. Syn. p. 169.—Hook. Brit. Fl. p. 67.—Lightf. Fl. Scot. v. i. p. 117.—Woodv. Med. Bot. v. i. p. 39. t. 14.—Sibth. Fl. Oxon. p. 56.—Abbot's Fl. Bedf. p. 30.—Thorn. Family Herbal, p. 86.—Davies' Welsh Bot. p. 15.—Purt. Midl. Fl. v. i. p. 92.—Relh. Fl. Cant. (3rd ed.) p. 62.—Hook. Fl. Scot. p. 53.—Grev. Fl. Edin. p. 37.—Fl. Devon. pp. 28 & 141.—Johnst. Fl. Berw. v. i. p. 37.—Winch's Fl. of Northumb. and Durham, p. 10.—Walk. Fl. of Oxf. p. 40.—Bab. Fl. Bath. p. 42.—Mack. Catal. of Pl. of Irel. p. 18. Fl. Hibernica, pt. i. p. 175.—*Plantago latifolia vulgaris*, Ray's Syn. p. 314.—*Platago latifolia*, Johnson's Gerarde, p. 419.

LOCALITIES.—In meadows and pastures; on waste ground and by way sides. Common.

Perennial.—Flowers from May to August.

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* Fig. 1. Calyx.—Fig. 2. A separate Flower; *a.* calyx; *b.* corolla, *c.* stamens; *d.* Pistil.—Fig. 4. A Corolla.—Fig. 5. Germen, Style, and Stigma.—Fig. 5. A Capsule.—Fig. 6. A Seed.—*All, more or less, magnified.*—Fig. 7. Var. η.

* From the flatted appearance and form of its leaves, somewhat resembling the sole of the foot. WITHERING.

† See *Asperula odorata.* fol. 46, note †.

‡ So called from its prevalence on the wayside, seeming as if bred on the road. Prof. BURNETT.

Root of many long, stout, whitish fibres. *Stem* none. *Leaves* numerous, on long, channelled, ribbed stalks (petioles), broadly egg-shaped or oval, with 5, 7, or 9 ribs, and wavy, or variously toothed margins, smooth, somewhat hairy when young. *Scapes* upright, simple, longer than the leaves, round, more or less hairy, terminated by a very long cylindrical spike of numerous, small flowers, which are imbricated in the bud, but which afterwards become more distant, each accompanied by an oblong bractea, which is pressed close to the calyx. *Calyx* (fig. 1.) cut almost to the very base into four, inversely egg-shaped, concave, nearly equal segments, with a broad membranous margin. *Corolla* (fig. 3.) small, whitish, of one petal, with a 4-parted limb, the segments of which are oval, pointed, reflexed, and soon becoming withered. *Stamens* (see fig. 2, *c*.) much longer than the corolla. *Anthers* purplish. *Capsule* (fig. 5.) membranous, small, oval, pointed, 2-celled, with about 5 seeds in each cell. *Seeds* (fig. 6.) small, brownish, angular.

"This plant has a peculiar tendency to follow the migrations of man, as if domesticated or sympathetically attached to the human race. Thus, although not purposely conveyed, it has followed our colonists to every part of the world, and has amongst the natives in some of our settlements been emphatically named 'The Englishman's Foot;' for, with a strange degree of certainty, wherever it is found there our countrymen have trod." Prof. Bunnett.

"Sheep, goats, and swine eat it; cows and horses refuse it. If the temperate ass, who is contented with the most ordinary weeds, and makes his humble repast on what the horse and other animals refuse, has a preference for any vegetable, it is the Plantain; for which he is often seen to neglect every other herb in the pasture.

The green leaves are astringent, and are frequently applied to cuts. Bruised and rubbed on the part affected they will reduce the swelling, pain, and inflammation occasioned by the bite or sting of insects. The seed is a favourite food of birds." Withering.

Some curious varieties of this species are occasionally met with, namely, Var. β. *P. latifolia minor*, Bauh. Hist. v. iii. p. 505. f. 3.—Dill. in Ray's Syn. p. 314.—This is much smaller than the common sort. The *leaves* are 3-ribbed; the *scape* not more than an inch and a half high; with a *spike* small in proportion. Common in corn-fields in Norfolk and Suffolk: Mr. Woodward. About Shirehampton and Kingsweston, near Bristol: Dr. Withering.

Var. γ. *P. latifolia glabra dentata*, Petiv. Brit. t. 4. f. 2. Leaves with large teeth towards the base.

Var. δ. *P. pyramidalis*, With. (7th ed.) v. ii. p. 231. Johns. Ger. p. 420. f. 4. Spike leafy. Flower-leaves disposed in a pyramidal form.

Var. ε. *P. Rosea*, Johns. Ger. p. 420. f. 4. Spike abortive or composed of leaves which are disposed in a rose-like form. Near Ripton, Huntingdonshire: Mr. Woodward. On Dudley Lime Rocks: Dr. Withering.—Near Oxford: T. Crapper.—Near Rugby, Warwickshire, on the road to Brownsover, between the Mill and the Wharf; June 28, 1831: W. H. Baxter.—This and Var. δ. often rise from the same root.

Var. ζ. *P. major panicula sparsa*, Ray's Syn. p. 314.—Johnson's Gerarde, p. 420. f. 6.—Loud. Mag. Nat. Hist. v. iii. p. 482. f. 118.—Spike abortive, leafy, branched into a panicle. Near Ripton, Huntingdonshire: Mr. Woodward.—Bedingham, near Bungay, Suffolk: Mr. Stone.

Var. η. Scape bearing, in the place of a spike of flowers, a vast number of minute bracteas, disposed in many small, peduncled, compound spikes, each of which arises from the axil of a bractea. The peduncles of the lowest spikes about a quarter of an inch long, the rest gradually shorter as they approach the top, forming, altogether, a kind of pyramidal panicle. See the annexed plate, f. 7; and Loudon's Mag. of Nat. Hist. v. ix. p. 204.

This curious variety was found by my daughter Ruth, in a lane about half a mile from Oxford, going from Longmeadow to Iffley, July 26, 1835.

A minute parasitical fungus, *Erysiphe lamprocarpa*, Link, in Willd. Sp. Pl. v. vi. pt. i. p. 108, is found on the leaves of this species about Oxford.

Root of many long, stout, [illegible] stems, [illegible] purpurea, as long, clamoured, ribbed stalks [illegible] [illegible]-shaped or oval, with 5, 7, or 9 ribs, and wavy, or [illegible] ed margins, smooth, somewhat hairy when young. [illegible] ning, 4, larger than the leaves, round, more or less hairy, [illegible] by a very long cylindrical spike of numerous, small flow[illegible] are numerous in the bud, but which afterwards become more [illegible] each accompanied by an oblong bracts, which is pressed [illegible] the calyx. Calyx (fig. 1.) cut almost to the very base into [illegible] varacity egg-shaped, concave, nearly equal segments, with a [illegible] membranous margin. Corolla (fig. 3.) small, whitish, of one [illegible] with a 4-parted limb, the segments of which are oval, [illegible] flexed, and soon becoming withered. Stamens (see fig. 2, [illegible]) longer than the corolla. Anthers purplish. Capsule (fig. 4.) [illegible] branous, small, oval, pointed, 2-celled, with about 2 seeds [illegible] cell. Seeds (fig. 5.) small, brownish, angular.

"This plant has a peculiar tendency to follow the migrations of [illegible] domesticated or sympathetically attached to the human race. This [illegible] not purposely conveyed, it has followed our colonists to every part of the [illegible] and has amongst the natives in some of our settlements become [illegible]

"The Scandinavian Fox; for, with a strange degree of [illegible] it found there our country men have trod." (Prof. Henslow.)

"Sheep, goats, and swine eat it; cows and horses refuse it. [illegible] sea, who is contented with the most ordinary weeds, and [illegible] pens on which the horse and other animals refuse, has a preference for [illegible] in the Plantain; for which, but other been to neglect every [illegible] the pasture."

The green leaves are astringent, and are frequently applied to [illegible] and fomented on the part; afterwards they will reduce the swelling, [illegible] [illegible] assumed by the bite or sting of insects. The seed is a [illegible] of birds. (Hanbury.)

Some curious varieties of this species are occasionally met with [illegible]

Var. 1. P. lanceolata minor. Hanb. Plant 6 in. p. 608. t. 3.—Differ [illegible] [illegible] There is much smaller than the common sort. The leaves [illegible] the scape not more than an inch and a half high; with a spike [illegible] [illegible] Common in cow-pastures in Norfolk and Suffolk: Mr. Woodward [illegible] Sheringham near Kingswesting, near Bawsey: Dr. Wright [illegible]

Var. 2. P. lanceolata glabrata. Pers. Syn. 1. p. 1. [illegible] leaves towards the base.

Var. 3. P. pyramidalis. With. (7th ed.) v. ii. p. 231.—Linn. [illegible] t. 4. Spike lengthy. Flower-leaves disposed in a pyramidal form.

Var. 4. P. Rivini. Jacq. Oec. p. 450. t. 4. Spike shorter [illegible] leaves which are disposed in a rose-like form. Near Hipton, [illegible] Mr. Woodward. On Dudley Lime Works: Dr. Wright [illegible] 1.) Chartres.—Near Ruby, Warwickshire, on the road to [illegible] tween the Mill and the Wheel; June 26, 1811: W. H. Davenport [illegible]

Var. 5. often rise from the same root.

Var. 6. P. major pyramidalis aurea. Ray's Syn. p. 314.—Tournef. [illegible] p. 450. t. 6.—Lond. Mag. Nat. Hist. ii. p. 433. t. 112.—[illegible] transformed into a panicle. Near Epping, Hunningdonshire: Mr. [illegible] Bellingham near Bungay, Suffolk: Mr. Sewell.

Var. 9. Scape bearing, in the place of a spike of flowers, a rose [illegible] rate bracteas, disposed in many small, pedunculed, corymbs [illegible] which arises from the axil of a bracteas. The peduncules [illegible] about a quarter of an inch long, the rest gradually shorter [illegible] top, forming, altogether, a kind of pyramidal panicle. [illegible] t. 7, and Lonicer's Hay. of Nat. Hist. v. ii. p. 300.

This curious variety was found by my daughter Mary, in a [illegible] rate lane (Oxford) going from Longmeadow to Iffley. [illegible]

A remarkable pyramidal tuberous, Syrmanthe longiscapa [illegible] [illegible] pl. 1. p. 108. is found on the leaves of this species [illegible]

Polypogon monspeliensis. Annual Beard-grass. ⊙

C. Mathews del. & Sc. Pub.d by W. Baxter, Botanic Garden Oxford 1836.

POLYPO'GON *.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 68.; Engl. Fl. v. i. p. 71.—Lndl. Syn. p. 293.; Introd. to Nat. Syst of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—GRAMINA, *Linn.*—GRAMINA'LES; sect. FESTUCINÆ; type, AGROSTIDA'CEÆ; Burn. Outl. of Bot. pp. 359, 369, and 371.

GEN. CHAR. *Panicle* compact, somewhat spiked. *Calyx* (fig. 1.) single flowered, of 2 nearly equal, folded, keeled glumes (valves), cloven at the summit (see fig. 1, *a.*); each with a terminal, straight, rough *awn* (see fig. 1, *b.*) proceeding from the keel. *Corolla* (f. 3.) of 2 somewhat unequal, egg-shaped, concave paleæ, much shorter than the glumes, and inclosed within them; the outer keeled, obtuse, and awned at the very extremity; the inner smallest, awnless, with 2 ribs, cloven at the summit. *Filaments* (see fig. 3.) 3, hair-like, about the length of the corolla. *Anthers* terminal, oblong, cloven at each end. *Germen* (see fig. 4.) oval. *Styles* (see fig. 4.) short, distinct. *Stigmas* (see fig. 4.) feathery. *Seeds* loose, egg-shaped, polished, covered by the corolla.

The contracted *panicle;* the single-flowered *calyx* of 2 nearly equal glumes, larger than the corolla, and awned at the extremity; and the *corolla* of 2 unequal paleæ, the outer terminated by a rough awn; will distinguish this from other genera in the same class and order.

Two species British.

POLYPO'GON MONSPELIE'NSIS. Annual Beard-grass.

SPEC. CHAR. Awns thrice as long as the rather blunt, rough glumes of the calyx. Root annual.

Defontains Fl. Atlantica, v. i. p. 67.—Schrader's Fl. Germ. v. i. p. 192.—Sm. Engl. Fl. v. i. p. 85.—With. (7th ed.) v. ii. p. 152.—Gray's Nat. Arr. v. ii. p. 152.—Lindl. Syn. p. 302.—Hook. Brit. Fl. p. 31.—Winch's Fl. of Northumb. and Durham, p. 5.—*Alopecurus monspeliensis,* Linn. Sp. Pl. p. 89.—With. (5th edit.) v. ii. p. 164.—*Alopecurus aristatus,* Huds. Fl. Angl. (2nd edit.) p. 28.—*Alopecuros maxima anglica,* Ray's Syn. p. 396.—*Phleum crinitum,* Shreb. Gram. v. i. p. 151. t. 20. f. 3.—Sm. Fl. Brit. v. i. p. 71.—Sibth. Fl. Græc. v. i. p. 46. t. 62.—*Agrostis panicea,* Host's Gram. Austr. v. iii. p 32. t. 46.—Engl. Bot. t. 1704.—Ait. Hort. Kew. 1st. ed. v. i. p. 94.; 2nd ed. v. i. p. 148.—Willd. Sp. Pl. v. i. p. 363.—*Agrostis tri-aristata,* Knapp's Gram. Brit. t. 23.

LOCALITIES.—In moist pastures, near the sea; rare.—*Durham;* On Sunderland Ballast Hills: N. J. WINCH, Esq.—*Essex;* Ditches on the coast; at Purfleet, over against the Mill towards Rainham on the other side the great ditch: RAY.—*Gloucestersh.* Near Bristol: Miss WORSLEY, in *New Bot. Guide.*—*Hants;* Old Salt Pans at Drayton, about two miles from Portsmouth: Dr. PULTENEY.—*Kent;* In a salt marsh by Erith: MERRETT.—*Norfolk;* At Cley, south of the town, among the short grass near the sea: Mr. HUMPHREY.

Fig. 1. The two Glumes of the Calyx, with their long rough awns; *a.* the glumes; *b.* the awns.—Fig. 2. Two of the Flowers.—Fig. 3. The two Paleæ of the Corolla, with the Stamens and Pistils.—Fig. 4. The Germen, Styles, and long feathery Stigmas.—*All magnified.*

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* From *poly,* Gr. *many;* and *pogon,* Gr. *a beard;* from the bearded appearance of the panicle. HOOKER.

† See *Phalaris canariensis,* folio 56, note †.

Annual.—Flowers in July, August, and September.

Root of many slender, branched fibres. *Culms (stems)* generally numerous, from 5 inches to a foot or more high, simple, or sometimes branched towards the bottom, smooth, upright, frequently more or less zigzag, occasionally somewhat decumbent at the base, and knee-jointed (geniculated). *Leaves* spreading, sharp pointed, striated, flat, rough on the ribs and margin; their sheaths long, striated and rough. *Stipula (ligula)* oblong, membranous, rough at the back, and often somewhat jagged. *Panicle* upright, spike-like, dense, from 1 to 5 inches long, pale, the long rough awns of the glumes giving it a silky appearance. *Flowers* small, very numerous. *Glumes* (fig. 1, *a.*) equal, strap-spear-shaped, compressed, hispid, each with a green keel, a white membranous margin, and a rough terminal awn (fig. 1, *b.*) three times its own length. *Paleæ* (fig. 3.) shorter than the glumes, unequal, the outer largest, keeled, and terminated by a short rough awn; the inner awnless, with 2 teeth. *Anthers* (see fig. 3.) short. *Styles* (see fig. 4.) scarcely any. *Stigmas* (see fig. 4.) long and feathery. *Seed* egg-shaped, polished, covered by the paleæ.

Alopecurus paniceus, of LINNÆUS, Sp. Pl. p. 90; and of WITHERING, Bot. Arr. 1st edit. v. i. p. 38; is considered by Sir J. E. SMITH, and other recent authors, as a trifling variety of this species, diminished by want of nourishment, as is usual with annual grasses.

This very pretty grass, which Sir W. J. HOOKER says is undoubtedly a native of this country, is very rare in a wild state, and it is not often met with in a cultivated one, except in Botanic Gardens. In the warmer parts of Europe it is more abundant.

" A blade of grass—a simple flower—
  Cull'd from the dewy lea,
These, these shall speak with touching power
  Of ' change and death to me.'

For if ' stars teach as well as shine,'
  Not less these gems of earth,
In budding bloom and pale decline,
  May pour instruction forth.

Come, then, and ever when I stray,
  Breath still the solemn cry,
' Man and his glory, what are they ?
Fragile as grass or flow'ret gay,
  Which blossoms but to die.' "

Moral of Flowers, p. 142.

Anguicula vulgaris, Common Butterwort. ♃.

Kufsell del.ᵗ Pub.ᵈ W. Baxter, Botanic Garden, Oxford. M. Sc

1830

PINGUI'CULA *.

Linnean Class and Order. DIA'NDRIA †, MONOGY'NIA.

Natural Order. LENTIBULA'RIÆ, *Richard.*—Sm. Engl. Fl. v. i. p. 27.—Lindl. Syn. p. 186.; Introd. to Nat. Syst. of Bot. p. 226.—Rich. by Macgilliv. p. 432.—Loud. Hort. Brit. p. 529.—SYRINGALES; subord. PRIMULOSÆ; sect. MENTHINÆ; type, UTRICULARIA'CEÆ; Burn. Outl. of Bot. v. ii. pp. 900, 958, & 976.—LYSIMACHIÆ, sect. 3. Juss. Gen. Pl. pp. 95 & 97.—Sm. Gram. of Bot. pp. 95 & 96.—CORYDALES, *Linn.*

GEN. CHAR. *Calyx* (fig. 2.) inferior, small, ringent, permanent; upper lip upright, 3-cleft; lower reflexed, cloven. *Corolla* (fig. 1.) of 1 petal, ringent, more or less equally 5-cleft in the border, with a spur from the base behind. *Filaments* (see fig. 3.) 2, cylindrical, crooked *Anthers* clasping close to the *stigma*. *Germen* (see fig. 2.) globose. *Style* very short. *Stigma* unequally 2-lipped. *Capsule* (fig. 4, to 7.) of 1 cell, opening at the top. *Seeds* (see figs. 6 & 9.) numerous, cylindrical, attached to a central unconnected *receptacle* (see figs. 7 & 8).

The 5-cleft *calyx;* the inferior, monopetalous, ringent, spurred *corolla;* the 2-lipped *stigma;* and the 1-celled *capsule;* will distinguish this from other genera in the same class and order.

Three species British.

PINGUI'CULA VULGA'RIS. Common Butterwort. Yorkshire Sanicle. Butter-root. White-rot.

SPEC. CHAR. Spur cylindrical, sharp-pointed, as long as the veinless limb of the corolla, whose segments are very unequal, rounded, even, and all entire. Capsule egg-shaped.

Engl. Bot. t. 70.—Hook. Fl. Lond. t. 104.—Curt. Brit. Entom. v. ii. t. 90.—Linn. Sp. Pl. p. 25.—Huds. Fl. Angl. (2nd ed.) p. 8.—Sm. Fl. Brit. v. i. p. 27; Engl. Fl. v. i. p. 28.—With. (7th ed.) v. ii. p. 22.—Gray's Nat. Arr. v. ii. p. 317.—Lindl. Syn. p. 186.—Hook. Brit. Fl. p. 8.—Lightf. Fl. Scot. v. i. p. 76.—Sibth. Fl. Oxon. p. 7.—Abb. Fl. Bedf. p. 5.—Davies' Welsh Bot. p. 4.—Purt. Midl. Fl. v. i. p. 55. and vol. iii. p. 336.—Relh. Fl. Cantab. (3rd edit.) p. 11.—Hook. Fl. Scot. p. 8.—Grev. Fl. Edin. p. 5.—Johnst. Fl. of Berw. v. i. p. 8.—Winch's Fl. of North. and Durham, p. 2.—Walk. Fl. of Oxf. p. 6.—Perry's Pl. Varv. Selectæ, p. 3.—Mack. Catal. of Pl. of Irel. p. 9.; Fl. Hibernica, pt. 1. p. 196.—*Pinguicula Gesneri,* Ray's Syn. p. *281.—*Pinguicula sive sanicula Eboracensis,* Johnson's Gerarde, p. 788.

LOCALITIES.—In bogs, and moist heaths; not uncommon, especially in the North.

Perennial.—Flowers in May and June.

Root of several, somewhat fleshy fibres. *Stem* none. *Leaves* radical, of a very light, yellowish-green colour, undivided, entire,

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Fig. 1. Corolla.—Fig. 2. Calyx, Germen, and Pistil.—Fig. 3. A vertical section of the Corolla, showing the two stamens, with their curved filaments, their anthers clasping the style just beneath the lobe of the stigma.—Fig. 4. A Capsule.—Fig. 5. A transverse section of the same.—Fig. 6. A vertical section of ditto, showing the central placenta with the seeds attached.—Fig. 7. The same with the seeds removed.—Fig. 8. The Placenta with the valve of the capsule removed.—Fig. 9. A Seed.

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* From *pinguis, fat;* the leaves being thick and greasy to the touch. HOOK.
† See *Veronica Chamæ'drys,* folio 50, note †.

egg-shaped, fleshy, not veined, covered with minute, raised, crystalline points, their margins involute (rolled in). *Scapes (flower-salks)* from 3 to 5 inches high, single-flowered. *Flowers* drooping, rather handsome. *Tube* and *spur* of the *Corolla* pale purple; *palate* covered with white compactly jointed hairs; *limb* deep blue, its 5 segments very unequal, all entire. *Stamens* 2, (see fig. 3.), short, white, thick, curved; one on each side the rounded germen. *Anthers* 1-celled, vertical, placed just beneath the large horizontal plate or lobe of the stigma, which is spurred behind. *Capsule* (fig. 4.) egg-shaped, of 1 cell, bursting half way into two valves. *Seeds* (fig. 9.) numerous, small, oblong, rough, fixed to a free central column or *receptacle (placenta)*, see figs. 6, 7, & 8.

This singular and pretty plant is a native of other parts of Europe as well as of Britain. In Lapland it is called *Tätgrass*, and the leaves are used by the inhabitants of that country to make their *Tätmiolk*, a preparation of milk in common use amongst them. "Some fresh leaves are laid upon a filter, and milk, yet warm from the rein-deer, is poured over them. After passing quickly through the filter, this is allowed to rest for one or two days, until it becomes ascescent, when it is found not to have separated from the whey, and yet to have attained much greater tenacity and consistence than otherwise it would have done." *Fl. of Berwick.* p. 8.

The Laplanders and the Swedes are said to be extremely fond of this milk, which when once made, it is not necessary to repeat the use of the leaves as above, for, we are told, that a spoonful, or less of it, will turn another quantity of warm milk, and make it like the first, and so on as often as they please to renew their food.

The juice of the leaves is used, in some places, as an ointment for chops and scalds; and it is reputed to be good for the sore dugs of cows.

This, like other marsh plants, has been accused of occasioning the *Rot* in sheep that feed upon it. This is, however, rather to be attributed to the larvæ of a flat insect called a fluke, *(Fasciola hepatica,)* which abound in marshy districts, adhering to the leaves of the plant, and thus being conveyed into the alimentary canal, than to the immediate agency of the *Pinguicula.*

"From experiments made on purpose, and conducted with accuracy, it appears, that neither *sheep*, cows, horses, goats, nor swine, feed upon this plant." Withering.

Parkinson says that the Welsh prepare a cathartic syrup from this herb.—Dr. Johnston, (the author of a very excellent *Flora of Berw. upon Tweed*, in 2 volumes), in an address delivered by him to the Members of the Berwickshire Naturalist's Club, at its first Anniversary Meeting, held at Coldstream, Sept. 19, 1832, remarks, that during their excursion to Cheviot, "it was accidentally observed, that, when specimens of this plant were somewhat rudely pulled up, the flower-stalk, previously erect, almost immediately began to bend itself backwards, and formed a more or less perfect segment of a circle; and so, also, if a specimen is placed in the botanic box, you will in a short time find that the leaves have curled themselves backwards, and now conceal the root by their revolution."—I have myself, several years ago, observed this curious faculty in specimens of the same species gathered in the bogs under Bullington Green near Oxford; but I believe Dr. Johnston is the first who has recorded it. The old leaves in this species, like those of *Pinguicula grandiflora*, die away in the Winter, and buds or hypernacula are formed, which expand into perfect individuals in the Spring. Some interesting observations, by Mr. John Denson, jun. on the nature of these buds, may be seen in Mr. Loudon's *Gardener's Magazine*, vol. viii. p. 685, in a foot note, accompanying Mr. Mallet's paper on the cultivation of the *Droseras* and *Pinguiculas.* Those who have a desire to cultivate these two curious and interesting genera, will do well to consult Mr. Mallet's paper. See the second page of folio 201 of this work, Article *Drosera rotundifolia.*

Isatis tinctoria. Dyer's Wood. ♂

Pub.d by W. Baxter, Botanic Garden Oxford 1836.

F.R. Del.

C.MS.

I'SATIS*.

Linnean Class and Order. TETRADYDA'MIA†, SILICULO'SA‡.
Natural Order. CRUCI'FERÆ§. Juss. Gen. Pl. p. 237.—Sm. Gr. of Bot. p. 138. Engl. Fl. v. iii, p. 153.—Rich. by Macgilliv. p. 498.—CRUCI'FERÆ; subord. NOTORHI'ZEÆ; tribe, ISATI'DEÆ; Lindl. Syn. pp. 20 & 31.; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit pp. 498 & 499.; and Mag. of Nat. Hist. v. i. pp. 143 & 240.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146, 149, 150, & 223.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subtype, SISYMBRIDÆ; district, ISATIDEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 784, 847, 854, 858, and 860.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (figs. 1 & 2.) inferior, coloured; of 4 egg-shaped, concave, spreading, deciduous sepals, equal at the base. *Corolla* (figs. 3 & 4.) cruciform, of 4, inversely egg-shaped, entire, equal petals, tapering at the base into short claws. *Filaments* (see fig. 4, *c.*) 6, thread-shaped, spreading, simple, as long as the sepals, 4 longer than the other 2 (tetradydamous). *Anthers* roundish. *Germen* (fig. 4, *d.*) roundish, compressed. *Style* none. *Stigma* capitate, sessile. *Pouch (silicle)* (fig. 7.) oblong, blunt, flat, 1-celled, 1-seeded; valves (fig. 8.) keeled, eventually separating. *Seed* (fig. 9.) solitary, oblong, pendulous at the top of the cell. *Cotyledons* (see fig. 10.) flattish, incumbent (o||).

The 1-celled, 1-seeded, entire, deciduous, bordered, transversely compressed *pouch*, of 2 valves, will distinguish this from other genera, with incumbent cotyledons, in the same class and order.

One species British.

I'SATIS TINCTO'RIA. Dyer's Woad.

SPEC. CHAR. Pouch wedge-shaped, acuminated at the base, somewhat spatulate at the end, very blunt, smooth, thrice as long as broad. Radical-leaves crenate; those of the stem entire, arrow-shaped at the base.

Engl. Bot. t. 97.—Mart. Fl. Rust. t. 41.—Linn. Spec. Pl. p. 936.—Huds. Fl. Angl. (2nd edit.) p. 299.—Sm. Fl. Brit. v. ii. p. 693. Engl. Fl. v. iii. p. 182.—With. (7th edit.) v. iii. p. 752.—Gray's Nat. Arr. v. ii. p. 690.—Lindl. Syn. p. 32.—Hook. Brit. Fl. p. 294.—Relh. Fl. Cant. (3rd ed.) p. 264.—Winch's Fl. of Northumb. and Durh. p. 43.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 224.—Mack. Cat. of Pl. of Irel. p. 61. Fl. Hibern. pt. i. p. 27.—*Glastum sativum*, Ray's Syn. p. 307.—*Glastum sylvestre*, Johnson's Gerarde, p. 491.

LOCALITIES.—In cornfields, and about their borders; also about old stone-pits; rare.—*Cambridgesh.* New Barnes near Ely; Isle of Ely: Rev. R. RELHAN. Near Wisbech: Mr. WOODWARD.—*Cheshire;* Near Broken Brow, Stockport: Mr. G. HOLME.—*Devon;* Cornfields, and borders of cornfields, rare:

Fig. 1. Calyx.—Fig. 2. The same.—Fig. 3. A separate flower.—Fig. 4. The same; *a.* one of the 4 sepals; *b.* one of the 4 petals; *c.* one of the 6 stamens; *d.* The germen.—Fig. 5. A separate Petal.—Fig. 6. A young Pouch.—Fig. 7. A full grown ripe one.—Fig. 8. One of the valves, with the seed.—Fig. 9. A Seed.—Fig. 10. The Embryo, showing the Radicle and incumbent Cotyledons. —Figs. 1, 3, 6, 7, 8, & 9, of the natural size; the rest more or less magnified.

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* From *isazo*, Gr. *to render equal;* the plant was believed to destroy, by its simple application, all roughness and inequalities of the skin.

† See folio 38, note †. ‡ See folio 107, note ‡. § See folio 38, *a.*

Polwhele.—*Durham;* On the banks of Wear, between Framwell Gate and the New Bridge, where it was noticed by Mr. S. Robson: N. J. Winch, Esq. On the Ballast Hills of Tyne and Wear: N. J. Winch, Esq.—*Kent;* By the church at Long Reach: Dr. Martyn. Woolwich, near the church: *Fl. Metr.* —*Norfolk;* In a field at Barton Bendish, where it is never known to have been cultivated: Rev. R. Forby.—*Northumberland;* Cultivated in the fields near Newburn.—On the Ballast Hills of Tyne: N. J. Winch, Esq.—In *Suffolk*: N. J. Winch, Esq. in N. B. G.—*Surrey;* Stone-pits near Guildford, abundantly: Mr. W. Pamplin, sen.—*Worcestersh.* On a marl cliff, close to the Severn, Mithe Toot Hill, Tewkesbury, where the Severn divides Worcestershire and Gloucestershire: Mr. E. Lees, in N. B. G.—*Yorkshire;* Leeds: Mr. Dinny, ibid.—IRELAND. Fields near Woodlands, county of Dublin: Mr. J. T. Mackay.

Biennial.—Flowers in June and July.

Root tapering, fibrous. *Stem* upright. from 2 to 3 feet high, round, smooth, slightly glaucous, leafy, panicled at top. Radical *leaves* numerous, petiolated, somewhat inversely egg-shaped, tapering at the base, crenate, smooth, or sometimes, as in the specimen figured, slightly hairy; stem *leaves* alternate, sessile, smooth, clasping the stem by their arrow-shaped base, usually entire, but sometimes very finely toothed. *Panicle* of many compound, racemose branches, beset with small, spear-shaped leaves, resembling *bracteas*, all of a yellowish hue, as are the stalks also. *Flowers* numerous, small. *Calyx* of a greenish yellow. *Corolla* bright yellow. *Pouchs* (fig. 7.) on slender capillary stalks, pendulous, oblong, wedge-shaped, blunt, about half an inch long, and two lines wide, compressed at the summit and on the sides into a sharp edge, convex in the middle, smooth, and when ripe of a dark chesnut or blackish colour, a little shining, of 1 cell, and 2 valves; valves (fig. 8.) of a spongy substance, boat-shaped, scarcely opening spontaneously. *Seed* (fig. 9.) smooth, slightly striated, of a brownish-yellow colour when ripe. *Cotyledons* (fig. 10.) egg-shaped, fleshy, a little convex. *Radicle* nearly cylindrical, lying on the back of one of the cotyledons (incumbent o||).

This species was formerly called *glástum*, from the Celtic *glas*, *blue*, whence Glastonbury derived its name. The ancient Britons are reported to have painted their bodies with the blue colour obtained from this plant, whence they received their appellation *Britho*, being the Celtic word for *to paint;* hence *Britons*. From this circumstance it appears probable that the *wóad* may be an original production of our island; though what occurs now and then, about cultivated fields, is supposed to have escaped from the crops occasionally raised, chiefly in the middle part of England. It is a native of south and middle Europe in dry stony places, from Spain and Sicily to the shores of the Baltic sea; also, but probably introduced, in the Canary Islands and Eastern Asia, in cultivated land. It is in occasional cultivation for its leaves, from which a dye, as a substitute for Indigo, is obtained. "It thrives best on sandy and gravelly soils, which must be well pulverised, manured, and formed into beds, as in the case of madder culture. The seeds are sown in March or April, in rows, or broadcast, and harrowed or covered with a rake. All weeds are cleared away and the plants thinned, if a careful culture is followed. The leaves are the part of the plant used by the indigo manufacturer. They should be gathered singly, like those of spinach, as soon as they begin to show signs of maturity, and the mature leaves taken off from time to time as they grow. This operation goes on from June to September in the first year, and from June to August in the second; when the plant, being a biennial, shoots into flower-stems." *Loudon's Encyclop. of Agri.* p. 81. The leaves are pressed, and the juice treated as in making Indigo*; but such is the cheapness of the latter article, that no British farmer can afford to raise any sort of substitute. Don's *Gen. Syst. of Gard. and Bot.;* Smith's *Eng. Fl.*, &c.

* For an account of the manner of making *Indigo*, see Professor Burnett's excellent work, the *Outlines of Botany*, v. ii. p. 651.

[illegible].—Sparingly. On the banks of Wear, between Finchale Priory and the New Bridge, where it was noticed by Mr. S. Hanson: N. J. Winch, Esq. On the Ballast Hills of Tyne and Wear: N. J. Winch, Esq.—Kent: By the church at Lod, Rewick. Dr. Martyn. Woolwich, near the church: Mr. [illegible] [illegible]. In a field at Barnes Bonchurch, where it is never known to have been cultivated: Rev. R. Pulteney.—Northumberland: Cultivated in the fields near Newcastle.—On the Ballast Hills of Tyne: N. J. Winch, Esq.—In the [illegible] N. J. W[illegible] Gard in N. B. G.—Surrey: Stone-pits near Guildford, Mann[illegible] Mr W. Pamplin, sen.—Worcestershire. On a marl cliff, close to the Severn, at the Cast Hill, Tewkesbury, where the Severn divides Worcestershire and Gloucestershire: Mr. E. Lees, in N. B. G.—Yorkshire: Leeds: [illegible] [illegible], Bot.—IRELAND. Fields near Woodlands, county of Dublin: Mr. J. T. Mackay.

Biennial.—Flowers in June and July.

Root tapering, fibrous. *Stem* upright, from 2 to 3 feet high, round, smooth, slightly glaucous, leafy, panicled at top. *Radical leaves* with long petioles, somewhat inversely egg-shaped, tapering at the base, entire, smooth, or sometimes, as in the specimen figured, slightly hairy; *stem leaves* alternate, sessile, smooth, clasping the stem by their arrow-shaped base, usually entire, but sometimes more or less toothed. *Panicle* of many compound, racemose branches, beset with small, spear-shaped leaves, resembling bracteas, all of a glaucous hue, as are the stalks also. *Flowers* numerous, small. *Calyx* of a greenish yellow. *Corolla* bright yellow. *Pouches* (fig. 7.) on slender capillary stalks, pendulous, oblong, wedge-shaped, blunt, about half an inch long, and two lines wide, compressed at the summit and on the sides into a sharp edge, [illegible] [illegible], smooth, and when ripe of a dark chestnut or blackish colour, a little shining, of [illegible] cell, and 2 valves; valves (fig. 8.) of a spongy substance, boat-shaped, scarcely opening spontaneously. *Seed* (fig. 9.) smooth, slightly striated, of a brownish yellow colour when ripe. *Cotyledons* (fig. 10.) egg-shaped, flattish, a little convex. *Radicle* nearly cylindrical, lying on the back of one of the cotyledons [incumbent O||].

This species was formerly called *glastum*, from the Celtic *glas*, blue, whence Glastonbury derived its name. The ancient Britons are reported to have painted their bodies with the blue colour obtained from this plant, whence they received their appellation *Britons*, from the Celtic word for *to paint*; hence Britain. From this circumstance it appears probable that the woad may be an original production of this island, though what occurs now and then, about cultivated fields, is supposed to have escaped from the crops occasionally raised, chiefly in the middle part of England. It is a native of south and middle Europe in stony places, [illegible] Spain and Sicily to the shores of the Baltic sea; also, but probably introduced, in the Canary Islands and Eastern Asia. In cultivated land. It is in occasional cultivation for its leaves, from which a dye, as a substitute for Indigo, is obtained. "It thrives best on sandy and gravelly soils, which must be well pulverised, manured, and formed into beds, as in the mode of [illegible] culture. The seeds are sown in March or April, in rows or broad-cast, and harrowed or covered with a rake. All weeds are cleared away, and the plants thinned, if a careful culture is followed. The leaves are the part of the plant used by the indigo manufacturers. They should be gathered singly, like those of spinach, as soon as they begin to show signs of maturity, and the main leaves taken off from time to time as they grow. This operation [illegible] from June to September in the first year, and from June to August in the second, when the plant, being a biennial, shoots into flower-stalks." Loudon's *Encyclop. of Agri.* p. 81. The leaves are pressed and the juice [illegible] making Indigo*, but such is the cheapness of the latter article that the farmer can afford to raise any sort of substitute. [illegible] Gen. Hist. of [illegible] and Bot. [illegible] Roy. Pl., [illegible]

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* For an account of the manner of making Indigo, see Professor Martyn's excellent work the *Outlines of Botany*, v. ii. p. 881.

Setária verticillata. Rough Bristle-grass. ⊙

C. Mathews Del. Fsc. Pub.d by W.m Baxter Botanic Garden Oxford 1816.

SETA'RIA *.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl p. 28.—Sm. Gram. of Bot. p. 68.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—GRAMINA, *Linn.*—GRAMINA'LES; sect. PANICINÆ; type, MILIACEÆ; Burn. Outl. of Bot. v. i. pp. 359 & 366.

GEN. CHAR. *Panicle* in a dense, cylindrical *spike*. *Involucrum* of many bristles surrounding 2 spikelets. *Calyx* (fig. 2.) imperfectly 2-flowered, of 2 unequal *glumes (valves)*, the lower the smallest. *Corolla* of fertile or perfect *floret*, (see f. 4.) of 2 equal, cartilaginous *paleæ (valves)*; that of the neuter or imperfect one (see fig. 4.) of 1 or 2 *paleæ* or *valves*; the upper smaller and membranous, often wanting. *Filaments* (see fig. 4.) 3, hair-like, as long as the corolla. *Anthers* short, cloven at each end. *Germen* (see fig. 5.) egg-shaped. *Styles* (see fig. 5.) distinct, awl-shaped, as long as the stamens. *Stigmas* feathery, tufted, short. *Seed* (fig. 7.) egg-shaped, flatted on one side, coated with the ribbed hardened corolla (see fig. 6).

The dense, cylindrical, spike-like *panicle*; the bristly *involucrum*, including 2 or 3 flowers; and the *calyx* of 2 very unequal glumes, containing 2 florets, one of which is destitute of stamens and pistils; will distinguish this from other genera in the same class and order.

The bristly involucrum (fig. 2.) will distinguish it from *Panicum*.

Two species British.

SETA'RIA VERTICILLA'TA. Whorled Bristle-grass. Rough Bristle-grass.

SPEC. CHAR. Panicle spiked, cylindrical, lobed below, branches whorled; bristles of the involucrum rough with reversed teeth. Paleæ of the perfect floret slightly uneven.

Beauvois' Agrostographie.—Gray's Nat. Arr. v. ii. p. 156.—Lindl. Syn. p. 309.—Hook. Brit. Fl. p. 39.—*Panicum verticillatum*, Engl. Bot. t. 874.—Curt. Fl. Lond. t. 260.—Knapp's Gram. Brit. t. 9.—Host. Gram. Austr. v. ii. p. 11. t. 13.—Graves' Brit. Gr. t. 10.—Linn. Sp. Pl. p. 82.—Huds. Fl. Angl. (2nd ed.) p. 24.—Sm. Fl. Brit. v. i. p. 64. Engl. Fl. v. i. p. 98.—With. (7th ed.) v. ii. p. 143.—Ait. Hort. Kew. (1st ed.) v. i. p. 88 and (2nd ed.) v. i. p. 139.—Winch's Fl. of North. and Durham, p. 5.—Pamplin's Catal of Pl. of Battersea, p. 4.—*Gramen paniceum, spica aspera*, Ray's Syn. p. 394.—*Gramen geniculatum*, Johnson's Gerarde, p. 15.

LOCALITIES.—In moist cultivated fields: Very rare.—*Durham*; On Sunderland Ballast Hills: Mr. WEIGHELL.—*Middlesex*; Cultivated fields about London, probably not indigenous: Sir W. J. HOOKER. About the banks of the Thames, between London and Putney, in several places; also beyond the neat-

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Fig. 1. One of the branches of the Panicle, with the bristly Involucrums.—Fig. 2. The 2 Glumes of the Calyx, subtended by the bristly, toothed Involucrum.—Fig. 3. Involucrum and its 2 Florets.—Fig. 4. The 2 Florets divested of the Calyx.—Fig. 5. The Germen, Styles, and Stigmas.—Fig. 6. A seed invested by the permanent Corolla.—Fig. 7. A seed without the corolla.—Fig. 8. The top of a sheath to show the hairy stipula.—Figs. 2, 4, and 5, *more or less magnified*.

* From *seta*, a *bristle*; from the bristly involucrum. The true *Millets* belong to this genus, which is the same with that of *Pennisetum* of Dr. R. BROWN.

† See *Phalaris canariensis*, folio 56, note †

houses by the Thames side going from the horse-ferry above Westminster to Chelsea: Mr. NEWTON, in Ray's Syn.—*Norfolk;* cultivated fields about Norwich: Sir J. E. SMITH. Field out of St. Giles's Gate, Norwich: *ibid.*—*Surrey;* In Battersea Fields: Sir J. E. SMITH, and Mr. W. PAMPLIN, jun.—*Worcestersh.* Near Stourbridge? (SCOTT): Mr. E. LEES, in *New Bot. Guide.*

Annual.—Flowers in July and August.

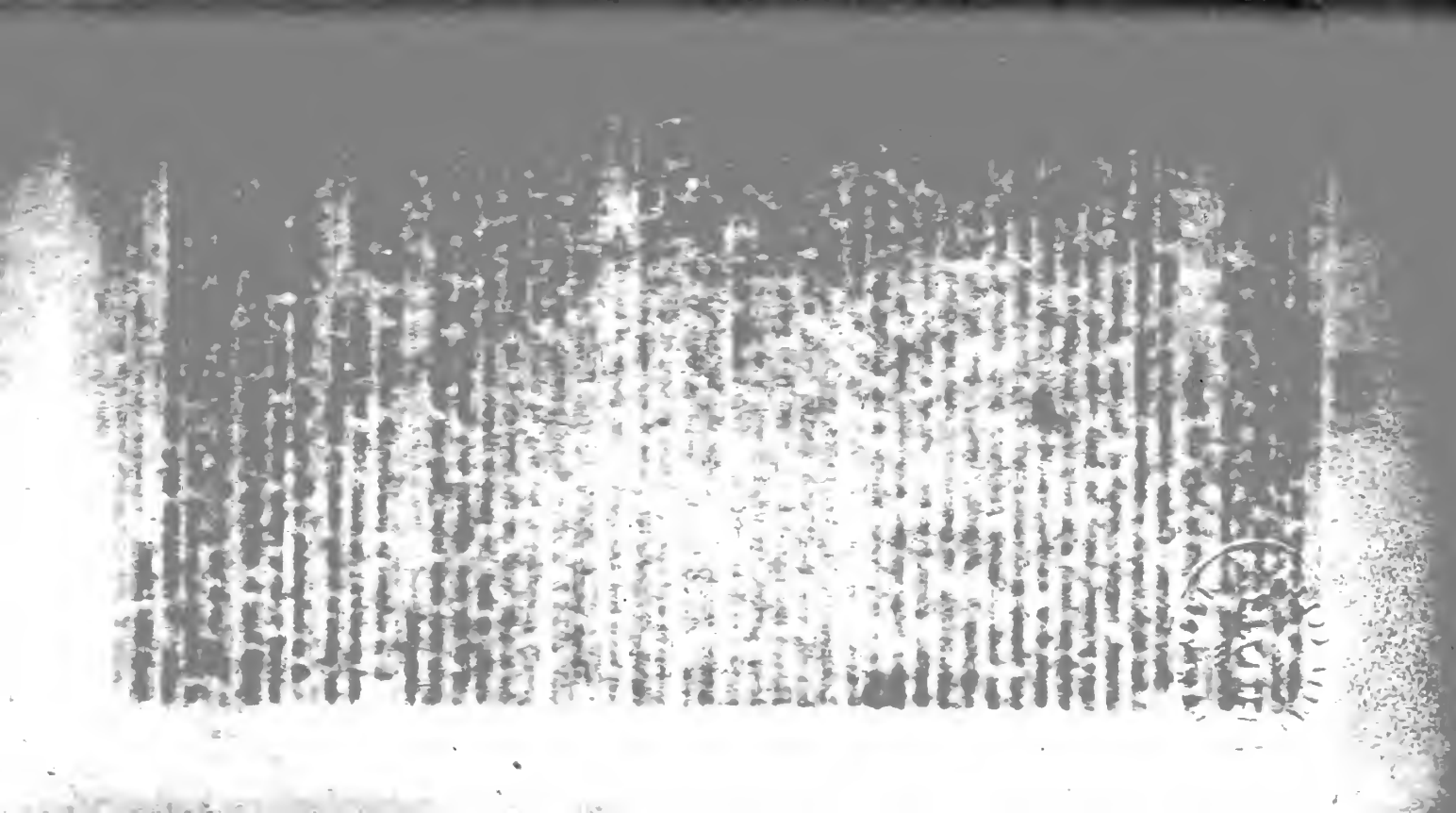
Root fibrous. *Culms (stems)* one or more, from 6 inches to 3 feet high, simple, sometimes branched, spreading, jointed, leafy, striated, angular, rough at the top. *Leaves* strap-spear-shaped, taper pointed, harsh on both sides, very rough on the margins, which are beset with very small transparent teeth, which point towards their summits, and which are readily perceived if the finger and thumb are drawn gently from the summit towards the base of the leaf. *Sheath (vagina)* long, striated, smooth, sometimes compressed. *Stipula (ligula)* (see fig. 8.) of numerous short hairs, which are continued a little way down the margins of the sheath. *Panicle* in the form of a spike, compound, from 2 to 4 inches long, upright, somewhat lobed, the branches short, about 4 in a whorl, lower whorls more distant, each branch of several flowers, every pair of which (fig. 3.) is accompanied by about 2 channelled, angular bristles (see fig. 2.), longer than the whole branch, and rough with minute teeth, which point downwards. *Flowers* (see figs. 3 & 4.) generally in pairs, egg-shaped, one only being perfect, the other generally destitute of both stamens and pistils; each inserted into a little terminal disk or cup, close to the bristles (see fig. 1). *Calyx* (fig. 2.) pale, with green ribs, smooth, even. *Corolla* (fig. 4.) almost as large as the calyx; *paleæ* very minutely wrinkled, or dotted, at least in the perfect floret, and constituting a riged shining coat to the *seed*, enclosed in the permanent, but loose and unaltered, larger glume of the calyx.

This is nearly allied to the other British species *(Setária viridis)*, with which it is often found growing, and when in a dwarf state greatly resembles it, but may be readily distinguished from that by the minute teeth on the bristles of the involucrum pointing backwards, so that the panicle drawn over the back of the hand or the cuff of the coat adheres very strongly; and when several panicles grow near each other, they are very apt, from this cause, to become entangled.

It is subject to considerable variation in the colour of its leaves and panicles; in some soils and situations, the foliage as well as the panicle being strongly tinged with red.

It is indigenous in Europe, the Levant, and Japan; but is considered to be a rather doubtful native of Britain, being generally found here in cultivated fields and garden grounds.

The seeds are greedily devoured by small birds; but the produce of herbage is so small that it is beneath the notice of the Agriculturist. WITHERING says, that in Japan the flour of this plant is made into cakes.



Limosella aquatica. Common Mudwort. ⊙

Pub.d by W. Baxter Botanic Garden Oxford 1836

C. Mathews Del. & Sc.

LIMOSE'LLA *.

Linnean Class and Order. DIDYNA'MIA †, ANGIOSPE'RMIA ‡.

Natural Order. SCROPHULARI'NEÆ §, *Dr. R. Brown.*—Lindl. Syn. p. 187.; Introd. to Nat. Syst. of Bot. p. 228.—SCROPHULA'RINÆ, Rich. by Macgilliv. p. 434.—Sm. Engl. Fl. v. iii. p. 115.—Loud. Hort. Brit. p. 528.—SCROPHULA'RIÆ, Sm. Gram. of Bot. p. 100.—LYSIMACHIÆ, Juss. Gen. Pl. p. 95.—Sm. Gr. of Bot. p. 95.—SYRINGALES; subord. PRIMULOSÆ; sect. MENTHINÆ; type, SCROPHULARIA'CEÆ; Burn. Outl. of Bot. pp. 900, 958, & 978.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, in 5 spear-shaped, pointed, upright, nearly equal segments, permanent. *Corolla* (figs. 2 & 3.) of 1 petal, somewhat bell-shaped; tube (fig. 2, *a.*) cylindrical, the length of the calyx; limb (fig. 2, *b.*) in 5 deep, egg-shaped, spreading, slightly unequal segments, the 2 uppermost concave, lower one smallest. *Filaments* (see fig. 3.) 4, from the mouth of the tube, awl-shaped, almost equal, shorter than the limb, sheltered by its 2 upper segments, but spreading slightly laterally, and converging in pairs. *Anthers* roundish, of 2 lobes. *Germen* (fig. 4.) egg-shaped, blunt. *Style* tapering, short. *Stigma* capitate, globose, cloven. *Capsule* (fig. 5.) egg-shaped, of 2 cells, and 2 valves, the partitions || narrow, from the inflexed margins of the valves. *Seeds* (figs. 8 & 9.) numerous, oblong, furrowed, transversely wrinkled, attached to a large, egg-shaped, central *receptacle* or *placenta*, (see figs. 6 & 7).

The 5-cleft *calyx;* the bell-shaped, nearly equal *corolla;* and the globose, imperfectly 2-celled, 2-valved *capsule;* will distinguish this from other genera in the same class and order.

One species British.

LIMOSE'LLA AQUA'TICA. Water Mudwort. Common Mudwort. Plantain Mudweed. False Plantain.

SPEC. CHAR. Leaves spear-shaped, somewhat spatulate; their stalks (petioles) twice as long as the flower-stalks.

Engl. Bot. t. 357.—Hook. Fl. Lond. t. 62.—Linn. Sp. Pl. p. 881.—Huds. Fl. Angl. (2nd ed.) p. 276.—Sm. Fl. Brit. v. ii. p. 668. Engl. Fl. v. iii. p. 145.—With. (7th ed.) v. iii. p. 742.—Gray's Nat. Arr. v. ii. p. 319.—Lindl. Syn. p. 192.—Hook. Br. Fl. p. 289.—Lightf. Fl. Scot. v. i. p. 331.—Sibth. Fl. Oxon. p. 197.—Abbot's Fl. Bedf. p. 139.—Purt. Midl. Fl. v. i. p. 294. and v. iii. p. 366.—Relh. Fl. Cantab. (3rd ed.) p. 256.—Ait. Hort. Kew. (1st ed.) v. ii. p. 359. and (2nd ed.) v. iv. p. 51.—Hook. Fl. Scot. p. 190.—Winch's Fl. of Northumb. and Durham, p. 42.—Walk. Fl. of Oxf. p. 181.—Perry's Pl. Varv. Selectæ, p. 53.—Mack. Catal. of Pl. of Irel. p. 59. The Irish Flora, p. 125.—*Plantaginella palustris,* Ray's Syn. p. 278.—*Plantago aquatica minima clusii,* Park. Theatr. Bot. p. 1244. n. 4.—Blackst. Spec. Bot. p. 74.

Fig. 1. Calyx.—Fig. 2. Corolla; *a*, the tube; *b*. the limb.—Fig. 3. Corolla opened vertically to show the two pairs of stamens.—Fig. 4. Germen, Style, and Stigma.—Fig. 5. The Capsule.—Fig. 6. The same after the seeds are discharged, showing the two valves, and the central placenta.—Fig. 7. A Capsule divided transversely.—Fig. 8. The Seeds.—Fig. 9. A single ditto.—*All,* except fig. 8, *more or less magnified.*

* From *limus, mud;* the plant growing in muddy places. HOOKER.

† See folio 31, note †. ‡ See folio 72, note ‡. § See folio 50, *a*.

|| The *partitions,* at first connected with the *receptacle,* separate from it as the *capsule* advances to maturity, so that the latter finally consists of but one cell: which is the case in *verbascum,* and more or less with many other seed-vessels similarly constructed. Sir J. E. SMITH.

LOCALITIES.—In muddy places, where water has stood during Winter; not very uncommon.—*Oxfordsh.* Binsey Common; Noke: Dr. SIBTHORP. In Portmeadow, opposite Lower Woolvercott; in Cowley Marsh, near the road to Cowley; and by the side of the towing-path, near Medley Lock: Septemb. 11, 1820, W. B.—*Bedfordsh.* Goldington Green: Rev. C. ABBOT.—*Cambridgesh.* Milton: Rev. R. RELHAN.—*Cheshire;* Near Frodsham: Mr. BRANBURY.—*Durham;* In ditches near Cocken: W. WEIGHELL, MSS. *Fl. North. & Durh.* —*Gloucestersh.* Newnham, and near Westbury: N. J. WINCH, Esq. in N. B. G. —*Leicestersh.* In a road-way, leading from the turnpike at Muston to Woolsthorpe, sparingly: Rev. G. CRABBE.—*Middlesex;* By the sides of the Warren-pond at Breakspears near Harefield; and in bogs on the Common there, plentifully: BLACKSTONE, 1746. Pond at Finchley: Mr. J. WOODS, jun. Hounslow Heath, towards Hampstead: N. J. WINCH, Esq. in N. B. G. Lane near Hornsey: *Fl. Metrop.—Northamptonsh.* Lane at Kelmarsh: MORTON.—In *Nottinghamshire:* COOPER, in N. B. G.—*Somersetsh.* Cart ruts in splashy places about Highbridge: Mr. SOLE, in *Hist. of Somerset.—Suffolk;* On the Denes at Lowestoft: 1808, Mr. (now Dr.) R. BROWN.—*Surrey;* About Coulsdon: Mr. E. WOOD. Near Croydon, plentiful: Mr. DICKSON.—*Sussex;* Near Amberley Castle: W. BORRER, Esq. Between Stovington and Parham Park; Broadmere and Henfield Commons: N. B. G.—*Warwicksh.* On the road near Coleshill Pool: COUNTESS of AYLESFORD.—*Worcestersh.* In ditches and roads about Badsey: RUFFORD.—*Yorksh.* Near Normanby Bridge; wet places near Kirby Moorside: Rev. ARCHDEACON PIERSON. Bolton Beck: J. WARD, in N. B. G.—WALES. *Flintsh.* Rhyd Marsh near Prestatyn: Mr. GRIFFITH.—SCOTLAND. In muddy places where water has stood, but not common: Sir W. J. HOOKER.—IRELAND. Near Ballynahinch, Cunnamara: Dr. WADE.

Annual.—Flowers in July, August, and September.

Root fibrous, throwing out naked, thread-shaped, prostrate runners, which take root at their extremities and form new plants. *Leaves* radical, spear-shaped, somewhat spatulate (battledore-shaped,) entire, smooth, upright or spreading, on long petioles (leaf-stalks), which are somewhat sheathing at the base. *Flowers* very small, on shortish, crowded, simple, axillary *stalks (peduncles)*, about half an inch long, or more, becoming recurved as the fruit ripens. *Corolla* (fig. 2.) pale rose-coloured or white. *Stamens* (see figs. 2 & 3.) almost equal, approximating in pairs towards each side of the corolla. *Anthers* purplish-blue, 1-celled. *Capsule* (fig. 5.) very small, scarcely bigger than a mustard-seed. *Seeds* with a furrow on the back, and numerous transverse striæ.

This plant is probably much more common than it is generally supposed to be, as, from its diminutive size, it is easily overlooked. When it grows in the water it is much larger, and the leaves are more upright, with longer petioles, than when it grows in situations where the water is dried up in the Summer. It is admitted into Mr. MACKAY'S "Catalogue of the Plants found in Ireland," and also into "The Irish Flora," as a native of that country, on the authority of Dr. WADE; but it is omitted in the excellent "Flora Hibernica," by Mr. MACKAY, lately published.

——————"Trees, and Flowers, and streams,
Are social and benevolent; and he
Who oft communeth in their language pure,
Roaming among them at the cool of day,
Shall find, like him who Eden's garden dress'd,
His Maker there, to teach his listening heart."

Mrs. L. H. SIGOURNEY.

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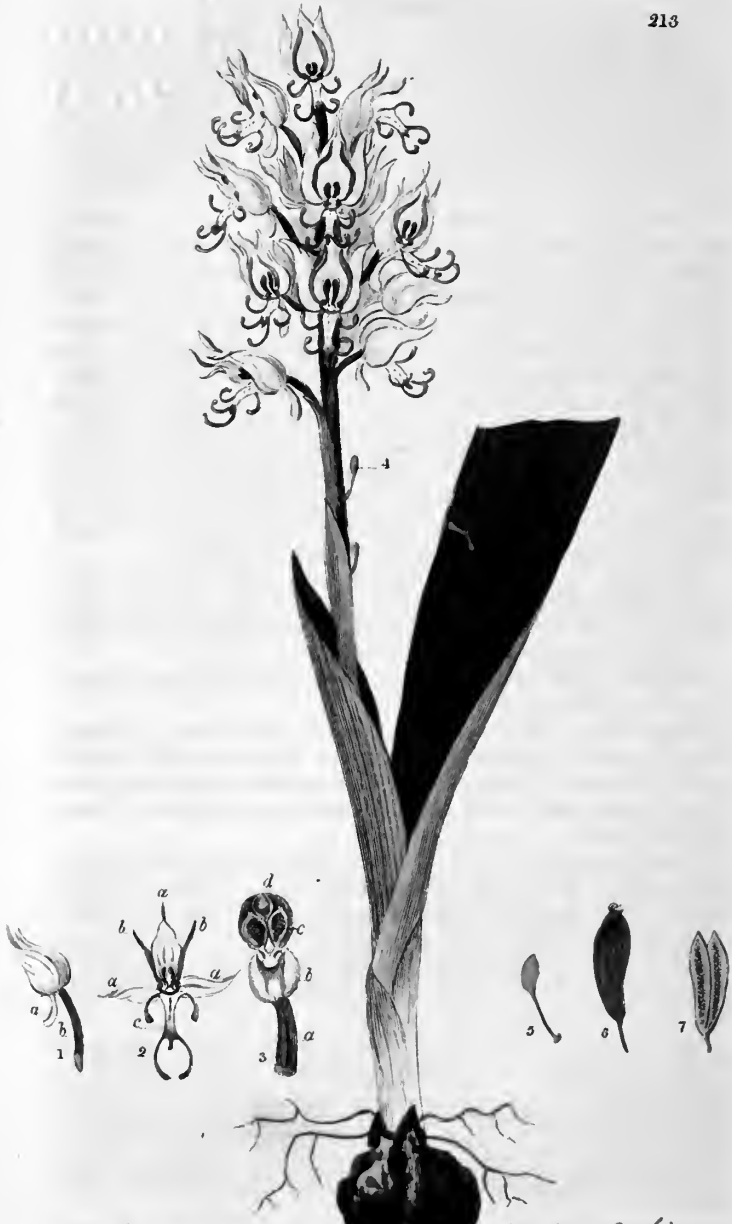

Orchis tephrosanthos. *Monkey Orchis.* 4.

Cusfell. del. Publ.d by W. Baxter Botanic Gard. Oxford. 1837 J.W. sc.

ORCHIS *.

Linnean Class and Order. GYNA'NDRIA †, MONA'NDRIA.

Natural Order. ORCHI'DEÆ, *Linn.*—Juss. Gen. Pl p. 64.—Sm. Gram. of Bot. p. 81. Engl. Fl. v. iv. p. 3.—Lindl. Syn. p. 256.; Introd. to Nat. Syst. of Bot. p. 252.—Rich. by Macgilliv. p. 412.—Loud. Hort. Brit. p. 536.—PALMARES; order, MUSALES; sect. ORCHIDINÆ; type, ORCHIDACEÆ; Burn. Outl. of Bot. v. i. pp. 391, 437, 458, & 461.

GEN. CHAR. *Perianthium* ‡ *(calyx and corolla)* superior. *Sepals* 3, (fig. 2. *a*, *a*, *a*.) egg-shaped, slightly concave, nearly equal, spreading or converging, ribbed, partly coloured. *Petals* 2, (fig. 2, *b*, *b*) oblong, smaller than the sepals, ascending, or converging. *Lip (Nectary* of Linn.) (fig. 2. *c*.) spurred at the base (see fig. 1. *a*.), roundish, or oblong, lobed, larger than the petals, dependent in front, betwixt the lower sepals. *Anthers* of 2 distinct, vertical cells (see fig. 3. *c*.), fixed to the top of the column (fig. 3. *d*.) immediately above the stigma (fig. 3. *b*.). *Pollen-masses* stalked, with 2 glands, enclosed in a common pouch. *Germen* (fig. 1. *b*.) oblong, or nearly cylindrical, furrowed, spirally twisted. *Style* thick and short. *Stigma* (fig. 3. *b*.) a shining moist depression, in front, under the masses of pollen. *Capsule* (fig. 6.) oblong, spiral. *Seeds* minute, very numerous.

The ringent *perianthium;* the lobed *lip*, spurred at the base; and the *pollen-masses* with 2 glands, enclosed in a common pouch; will distinguish this from other genera in the same class and order.

Ten species British.

ORCHIS TEPHROSA'NTHOS. Grey-spiked Orchis. Monkey Orchis. Narrow-lipped Military Orchis.

SPEC. CHAR. Knobs of the root oval. Lip downy, 3-parted, the segments strap-shaped, intermediate one deeply bifid, with a point in the sinus. Sepals acuminate, connivent, including the two lateral petals. Spur obtuse, twice as short as the germen. Bracteas very small.

Hook. Fl. Lond. t. 82!—Willd. Sp. Pl. v. iv. p. 21.—Bicheno, in Tr. of Linn. Society, v. xii. p. 33.—Sm. Engl. Fl. v. iv. p. 16.—Gray's Nat. Arr. v. ii. p. 201.—Lindl. Syn. p. 260.—Hook. Brit. Fl. p. 371.—Walk. Fl. of Oxf. p. 253.—*Orchis militaris*, Engl. Bot. t. 1873.—*O. militaris* ε. Linn. Sp. Pl. p. 1334.—*O. militaris*, var. 3. With. (7th ed.) v. ii. p. 30.—*O. zoophora cercopithecum exprimens oreades*, Columna's Stirp. Ecphr. p. 319. t. 320. f. 2.—*O. flore simiam referens*, Bauh. Pin. p. 82.—Rudb. Elys. v. ii. p. 194. f. 8.—Vaill. Par. p. 148. t. 31. figs. 25 & 26.--Tourn. Inst. p. 433. t. 247. f. A.—*Cynosorchis major altera*, Johnson's Gerarde, p. 205.

Fig. 1. A separate Flower; *a*. the Germen, *b*. the Spur.—Fig. 2. A front view of a flower, the several parts spread out artificially; *a*, *a*, *a*. the 3 Sepals or calyx; *b*, *b*. the 2 petals; *c*. the labellum or lip.—Fig. 3. Germen, Stamen, Style, and Stigma; *a*. upper half of the germen; *b*. the stigma; *c*. the 2 cells which contain the pollen-masses; *d*. the anther, situated on the summit of the style, or column.—Fig. 4. Pollen-masses, fallen from the flowers, and adhering to the stem and leaves by means of their glutinous property.—Fig. 5. A Pollen-mass with its stalk and gland.—Fig. 6. A Capsule.—Fig. 7. The same opened longitudinally.—Figs. 3 & 5, *highly magnified.*

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* From *Orchis*, Gr. *an olive berry;* the roots of this tribe being often found round, so as to resemble that fruit. THORNTON.

† See *Ophrys apifera*, f. 8. n. †. ‡ See *Galanthus nivalis*, f. 33. n. ‡.

Localities.—On chalky hills, and in meadows and pastures on a chalky soil; very rare.—*Oxfordsh.* Among bushes on the rising ground to the West of the great chalk-pit, near Caversham, facing the Thames: J. E. Bicheno, Esq. On Ridgway Hill, near Mapledurham: Dr. Lamb. In a chalk-pit about two miles from Caversham Bridge, up the river on the Caversham side, 1835: Rev. A. Bloxam. Plentiful at Fir Copse; and also at Straw-Hall, near Mapledurham, May 22, 1836: Mr. A. R. Burt. Bank at the edge of Hartlock Wood, near Goring, with *O. militaris*: E. F. Witts, Esq.—*Berks*; Found by Mr. Brown on chalky hills, near the highway from Wallingford to Reading, on the Berkshire side of the river: Merrett, 1666.—*Kent*; Near Dartford: Mr. Peet.

Perennial.—Flowers in May and June.

Root of two roundish egg-shaped knobs, with long brownish fibres from above their common origin. *Stem* from 4 or 5 inches to a foot high, round, smooth, striated, leafy. *Leaves* alternate, somewhat spreading, spear-shaped, striated, sheathing at the base; the upper ones gradually smaller, and appressed to the stem. *Bracteas* very small, much shorter than the germen, the upper ones awl-shaped, pale. *Flowers* in a rather loose, somewhat egg-shaped spike, sweet scented. *Perianth* (fig. 2.) 6-cleft, the 5 outer leaflets adhering to each other, resembling a helmet (see fig 1.); of these the 3 outer ones (the sepals, fig. 2. *a*, *a*, *a*.) are the largest, they are egg-spear-shaped, somewhat pointed, concave, whitish, and generally scattered with purplish dots; the two inner ones (the petals, fig. 2. *b*, *b*.) are much smaller than these, narrow, and purplish; the interior leaflet or *labellum (lip)* is very long, and 3-cleft, the segments incurved, the 2 side ones strap-shaped, the middle one divided into 2 long strap-shaped, purplish segments, with a small point between them. *Spur* (fig. 1. *a*.) scarcely half the length of the germen, somewhat incurved, compressed, blunt, and somewhat dilated at the apex. *Anther* purple, 2-celled (see fig. 3. *c*.). *Pollen-masses* (fig. 5.) yellowish-green, stalked, glandulose at the base. *Stigma* (fig. 3. *b*.) concave, viscid. *Germen* (fig. 3. *a*.) linear-oblong, somewhat spirally twisted.

It varies with white flowers; and Sir W. J. Hooker informs us, that among the specimens communicated to him by Mr. Bicheno, there were some flowers having two opposite horizontal *lips*, two *spurs*, and only two opposite *sepals*. This curious variety is exquisitely figured in the *Flora Londinensis*, t. 82.

The flowers of this species, like those of *Orchis militaris*, (Engl. Bot. t. 2675.), and *O. fusca*, (Engl. Bot. t. 16.), exhale a most delightful fragrance, especially in drying.

In June, 1836, E. F. Witts, Esq. of Slaughter, Gloucestershire, collected a number of specimens of this species, and of *Orchis militaris*, near Goring, Oxfordshire; these specimens were brought to the Botanic Garden, and on carefully examining them, in company with Mr. Witts, I found the segments of the labellum, or lip, to vary remarkably in breadth in different specimens, so that we were able to trace a regular gradation from the broad, dilated, rounded lobes of *Orchis militaris*, to the long, narrow, strap-shaped ones of *O. tephrosanthos*. From this circumstance I am inclined to think that these two constitute but one species; and this appears to have been the opinion of Sir J. E. Smith and Dr. Withering.

The fine specimen from which the drawing was made for the accompanying plate, was kindly communicated to me, from the vicinity of Mapledurham, by my valued and much-esteemed friend, Mr. A. R. Burt, of Reading, Berks.

Betonica officinalis. Wood Betony. ♃

C. Mathews Del. & Sc. Pub.d by W. Baxter, Botanic Garden, Oxford 1837.

BETO'NICA*.

Linnean Class and Order. DIDYNA'MIA †, GYMNOSPE'RMIA ‡.

Natural Order. LABIA'TÆ §, Juss. Gen. Pl. p. 110.—Sm. Gram. of Bot. p. 99. Engl. Fl. v. iii. p. 63.—Bentham, in Bot. Regist. (1829).—Lindl. Syn p. 196.; Introd. to Nat. Syst. of Bot. p. 239.—Rich. by. Macgilliv. p. 439.—Loud. Hort Brit. p 528.—VERTICILLATÆ of *Linnæus*.—SYRINGALES; suborder, PRIMULOSÆ; sect. MENTHINÆ; type, MENTHACEÆ or LABIATÆ; subty. NEPETIDÆ; Burn. Outl. of Bot. v. ii. pp. 900, 958, 968, & 973.

GEN. CHAR. *Calyx* (fig. 1.) inferior, tubular, cylindrical, permanent, with 5 nearly equal, spinous-pointed teeth, shorter than the tube. *Corolla* (fig. 2.) ringent; tube exserted, cylindrical, incurved; upper lip ascending, roundish, undivided, almost flat; lower lip longer, in 3 deep segments, the middle one broadest, roundish, entire, or nearly so. *Filaments* (see fig. 3.) 4, two longer than the other two (didynamous), awl-shaped, scarcely projecting beyond the throat, and turned towards the upper lip. *Anthers* almost orbicular. *Germen* (see fig. 4.) rounded, 4-lobed. *Style* (see fig. 4) thread-shaped, the length of the stamens. *Stigma* cloven, pointed. *Seeds* (figs. 5 & 6.) 4, egg-shaped, in the bottom of the smooth, somewhat converging, calyx.

Distinguished from other genera, with a regular, 5-toothed *calyx*, in the same class and order, by the nearly flat, ascending *upper lip* of the *corolla;* and the cylindrical, incurved tube; with the stamens included in its throat.

One species British.

BETO'NICA OFFICINA'LIS. Wood Betony.

SPEC. CHAR. Spike interrupted, the lowest whorl a little remote. Middle lobe of the lower lip of the corolla somewhat notched. Leaves oblong, crenate, heart-shaped at the base.

Engl. Bot. t. 1142.—Curt. Fl. Lond. t. 154.—Woodv. Med. Bot. Suppl. t. 241.—Curt. Brit. Entom. vol. v. t. 235.—Linn. Sp. Pl. p. 810.—Huds Fl. Angl. (2nd ed.) p. 258.—Sm. Fl. Brit. v. ii. p. 632. Engl. Fl. v. iii. p. 97.—With. (7th ed.) v. iii. p. 713.—Gray's Nat. Arr. v. ii. p. 371.—Lindl. Syn. p. 202.—Hook. Brit. Fl. p. 277.—Lightf. Fl. Scot. v. i. p. 311.—Sibth. Fl. Oxon. p. 185.—Abb. Fl. Bedf. p. 130.—Thornton's Family Herb. p. 584.—Davies' Welsh Bot. p. 58.—Purt. Midl. Fl. v. i. p. 272.—Relh. Fl. Cantab. (3rd ed.) p. 241.—Ait. Hort. Kew. (1st ed.) v. ii. p. 299.—Hook. Fl. Scot. p. 183.—Grev. Fl. Edin. p. 131.—Fl. Devon. pp. 99 & 145.—Johnst. Fl. of Berw. v. i. p. 132‖.—Winch's

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Fig. 1. The Calyx, and a Bractea.—Fig. 2. Corolla.—Fig. 3. The Stamens.—Fig. 4. Germen, Style, and Stigma.—Fig. 5. The 4 Seeds.—Fig. 6. A single Seed.

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* From *Vettonica*, which is derived from the *Vettones*, an ancient people in Spain, who, according to PLINY, first discovered its virtues; or, from *Bentonic*, in Celtic: *Ben*, meaning *head*, and *ton*, *good;* being a good cephalic.

† See *Lamium album*, folio 31, note †. ‡ Ibid, note ‡.

§ See *Ajuga reptans*, folio 94, *a*.

‖ "*A Flora of Berwick-upon-Tweed.* By GEORGE JOHNSTON, M. D. &c. in 2 vols. J. Carpræ and Son, Edinburgh; and Longman, Rees, Orme, Brown, and Green, London. 1829, and 1831." 8vo. 8 Plates.

This is a work of very considerable merit, and reflects great credit upon Dr. Johnston, both as a Botanist and as an Author. The descriptions are clear, easy, and comprehensive, and are accompanied by numerous very valuable remarks and observations. The first volume contains the flowering or Phænogamous plants; the second, the flowerless or Cryptogamous ones, in which it is par-

Fl. of Northumb and Durham, p. 49.—Walk. Fl. of Oxf. p. 167.—Bab. Fl. Bath. p. 40.—Mack. Catal. of Pl. of Irel. p. 56.: Fl. Hiber. pt. i. p. 215.—*Betonica stricta*, Ait. Hort. Kew. (1st ed.) v. ii. p. 299, fide Bentham.—*Betonica hirta*, Leyss. Reichb. Icon. Bot. Eur. 8. 4. t. 710, fide Bentham.—*Betonica*, Ray's Syn. p. 238.—Johnson's Gerarde, p. 714.—*Stachys Betonica*, Bentham's Labiatarum, p. 532.

Localities.—In woods, thickets, and on hedge banks, and heaths, among bushes. Not uncommon in England; less common in Scotland.

Perennial.—Flowers in July and August.

Root somewhat woody, of a yellowish-brown colour, furnished with numerous long, whitish, tough fibres. *Stem* from 1 to 2 feet high, upright, mostly simple, jointed, leafy, 4-cornered, rough with reversed bristles. *Leaves* oblong, somewhat heart-shaped at the base, crenated or bluntly notched, clothed, more or less, with longish hairs, especially on the margin and mid-rib; *lower ones* on long, hairy petioles; *upper ones* opposite, nearly sessile. *Flowers* reddish-purple, or rose-coloured, sometimes white, growing in a terminal, oblong spike, composed of several sessile, close whorls, the lowest of which is usually rather distant from the others, and furnished with a pair of small sessile leaves beneath. *Bracteas* numerous, placed under each whorl, spear-shaped, entire, shorter than the calyx (see fig 1.). *Calyx* hairy within. *Corolla* with the lower lip more or less notched, or slightly cloven. *Filaments* villose. *Seeds* brown, smooth, 3-cornered, the outermost side convex, the innermost gibbous.

Betony was formerly much used in medicine, and considered an universal remedy, but it is discarded from modern practice; perhaps merely from the disappointment of unreasonable expectation. It is, however, not destitute of virtues, for when fresh it intoxicates; and the dried leaves excite sneezing, a quality supposed to be owing only to the rough hairs with which the leaves are clothed. It is often smoaked as tobacco. Both this plant and Eyebright (*Euphrasia officinalis*, t. 72.) enter into the composition of Rowley's British herb tobacco and snuff. An infusion of the leaves was once recommended as a substitute for tea. The root promotes vomiting, and is violently purgative.

Antonius Musa, Physician to the Emperor Augustus, introduced it into such general repute in Italy, that "sell your coat and buy *Betony*, became a prevalent proverb; he states it as a remedy for no less than 47 disorders; and hence the proverbial compliment, "may you have more virtues than Betony." It is said to dye wool of a very fine dark yellow colour.

Puccinia Betónicæ, Hook. Br. Fl. v. ii. pt. ii. p. 362, is parasitic on the leaves of this plant in the vicinity of Oxford, especially in Bagley Wood. It is a fine species, frequently covering nearly the whole of the under surface of the leaves.

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ticularly rich; and Dr. Johnston has arranged and described them in such a manner, as to make this volume an excellent, amusing, and easy guide to the young student of that difficult branch of Botany. On the whole, it is a delightful little work, and is, certainly, one of the very best and most interesting of our local *Floras*.

Sibthórpia europáea. Creeping Sibthorpia. ♃

C. Mathews, Del. & Sc. Publ^d by W. Baxter Botanic Garden Oxford 1837

SIBTHO'RPIA.

Linnean Class and Order. DIDYNA'MIA*, ANGIOSPE'RMIA†.

Natural Order. SCROPHULARI'NEÆ‡, *Dr. R. Brown.*—Lindl. Syn. p. 187.; Introd. to Nat. Syst. of Bot. p. 228.—SCROPHULA'RINÆ, Rich. by Macgilliv. p. 434.—Sm. Eng. Fl. v. iii. p. 115.—Loud. Hort. Brit. p. 528.—SCROPHULA'RIÆ, Sm. Gram. of Bot. p. 100.—PEDICULARES, Juss. Gen. Pl. p. 99—SYRINGALES; subord. PRIMULOSÆ; sect. MENTHINÆ; type, SCROPHULARIA'CEÆ; Burn. Outl. of Bot. pp. 900, 958, & 978.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, turbinate (top-shaped), in 5 deep, egg-shaped, spreading, nearly equal segments, permanent. *Corolla* (figs. 2 & 3.) of 1 petal, irregularly wheel-shaped, equal to the calyx; tube very short; limb in 5, egg-shaped, rounded, spreading segments, alternate with those of the calyx, the two lowermost smallest. *Filaments* (see fig. 2.) 4, (didynamous,) from between the 4 superior segments of the corolla, shorter than the limb, almost equal, awl-shaped, spreading laterally, and converging in pairs. *Anthers* of 2 round lobes. *Germen* (fig. 4.) roundish, compressed. *Style* (see fig. 4.) cylindrical, as long as the filaments, but thicker. *Stigma* (see fig. 4.) blunt, peltate (target-shaped). *Capsule* (figs. 5 & 6.) inversely heart-shaped, compressed, of 2 cells and 2 valves, each with a narrow transverse partition. *Seeds* (figs. 10 & 11.) few, egg-shaped, attached to a globular central *receptacle (placenta)*, (see fig. 8).

The 2-celled, 2-valved *capsule*, with transverse partitions; the nearly wheel-shaped *corolla;* and the *stamens* converging in pairs; will distinguish this from other genera, with a 5-cleft calyx, in the same class and order.

Only one species known.

SIBTHO'RPIA EUROPÆ'A. European Sibthorpia. Creeping Sibthorpia. Cornish Money-wort. Cornish Penny-wort.

SPEC. CHAR.

Engl. Bot. t. 649.—Linn. Sp. Pl. p. 880.—Huds. Fl. Angl. (2nd ed.) p. 276.—Sm. Fl. Brit. v. ii. p. 667. Engl. Fl. v. iii. p. 143.—With. (7th edit.) v. iii. p. 742.—Gray's Nat Arr. v. ii. p. 309.—Lindl. Syn. p. 192.—Hook. Brit. Fl. p. 290.—Prod. Fl. Græcæ, v. i. p. 439.—Fl. Devon. pp. 106 & 148.—Mack. Catal. of Pl. of Irel. p. 59.; Fl. Hibern, pt. 1. p. 205.—Irish Fl. p. 125.—*Sibthorpia prostrata*, Salisbury's Icones Stirpium Rariorum, p. 11. t. 6. fide Engl. Fl.—*Alsine spuria pusilla, foliis Saxifragæ aureæ*, Ray's Syn. p. 352.—Blackst. Spec. Botan. p. 3.—Plukenet's Almagestum Botanicum, p. 23; Phytographia, t. 7. f. 6.—*Cornwall Pennywort*, Petiver's Herbarii Britannici, t. 6. f. 11.

LOCALITIES.—In moist shady places, about springs and rivulets; very rare.—*Cornwall;* Lostwithiel, Falmouth, Penzance, Camelford, &c.: DAWSON TURNER, Esq. Sides of the road about two miles from Fowey; between Fowey and St. Austle; near Ruan Lanyhorne; and Bodmin: Rev. P. JONES, in *Bot. Tour.* Moist banks near Penzance, common; Gulval; Maddern Well; Trereife Road Avenue; Helston; Scilly Islands: Rev. W. T. BREE, in *Mag. Nat.*

Fig. 1. Calyx.—Figs. 2 & 3. Corolla.—Fig. 4. Germen, Style, and Stigma.—Fig. 5, 6, & 7. Capsule.—Fig. 8. A vertical section of ditto.—Fig. 9. A transverse section of the same.—Figs. 10 & 11. Seeds.—Figs. from 5 to 11, from GERTNER.—*All*, except fig. 5, *more or less magnified.*

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* See f. 31, n. †. † See f. 72, n. ‡. ‡ See f. 50, *a*.

Hist. v. iv. p. 161. Near Sennen: H. C. WATSON, Esq. in N. B. G. At Tregaminion, near Fowey: Enw. DUKE, Esq.—*Cumberland;* Glencoin? Gowbarrow Park, by Airey Force? Keswick? N. B. G.—*Devon;* Between Newbridge and Spitchwick Lodge; about the springs in the village of Tor, near Harford: Sir FRANCIS DRAKE and Mr. HUDSON. Marshes at Staverton, Rattery and Sheiford; Cornwood: *Fl. Devon.*—*Hants;* In the Isle of Jersey, 1833: W. C. TREVELYAN, Esq —*Lincolnsh.* In some meadows near Honnington: Mr. HILL, in *Blakst. Sp. Bot.*—*Somersetsh.* Near Nettle ombe: W. C. TREVELYAN, Esq. in N. B. G.—*Sussex;* In a bog, near the nursery ground on Waldron Down, and along the stream that issues from thence, passing Burnthouse Farm, to some distance West of it: N. B. G.—*Westmoreland;* By Buckbarrow-well in Longsledale: Mr. ROBSON.—WALES. *Glamorganshire;* Under a damp shady wall on the left about 200 yards before you come to Pont y Pridd from Cardiff: Sir J. CULLUM.—IRELAND. Under a wall on the North side of Conner-hill, near Dingle, 1835: Mr. J. T. MACKAY.

Perennial.—Flowers from June to September.

Root fibrous. *Stems* prostrate, creeping, thread-shaped, branched, entangled, frequently throwing out small fibres from near the insertion of the leaf-stalks. *Leaves* alternate, on short, ascending leaf-stalks, horizontal, roundish kidney-shaped, the margin in 6 or 7 blunt lobes or crenatures, those nearest the base the smallest, rather succulent, veiny, light green, paler beneath, sprinkled, like the rest of the herbage, with small, simple, scattered, projecting, transparent bristles. *Peduncles (flower-stalks)* thread-shaped, from the axils of the leaves, upright, solitary, single-flowered, short, pendulous after flowering. *Corolla* (f. 2.) minute, whitish, the 3 upper segments more or less tinged with pale red. *Stamens* nearly equal.

This very distinct genus was named by LINNÆUS in honour of HUMPHRY SIBTHORP, D. M., who succeeded the celebrated DILLENIUS in the Botanical chair at Oxford, in 1747. Of this professor little notice is preserved; but his son, JOHN SIBTHORP, D. M., to whom he resigned the Botanical Professorship in 1784, richly earned his inheritance of the honour, by his indefatigable zeal in the pursuit of the same science; his love for which led him to undertake two journeys into Greece and the Archipelago, the first in 1784, the second in 1794. In the first of these journeys he engaged at Vienna, as draughtsman, the celebrated FERDINAND BAUER, with whom he visited Constantinople, Crete, Cyprus, and other islands of the Grecian Archipelago. He also travelled over a considerable part of the Morea, and did not return to England till December, 1787. In March, 1794, he set out a second time for the same country, attended by FRANCIS BORONE, as Botanical Assistant, and accompanied by his friend Mr. HAWKINS. With them he visited Bithynia, Mount Olympus, the Troad, the Isles of Lemnos and Imbros, the Peninsula of Athos, and passing some time in Attica, and two months in the Morea, he parted from his companion Mr. HAWKINS, and returned to his native country in the Autumn of 1795, when, his health being impaired, a long and uncomfortable passage of 24 days from Zante to Otranto, laid the foundation of a complaint in the lungs, which a few months after his return to England proved fatal. He died at Bath, on February the 8th, 1796, in the 38th year of his age. By his will, dated January 12, 1796, he makes over to the Oxford Botanic Garden all his drawings, books of Natural History, and Collections, and gives a freehold estate in Oxfordshire to the University of Oxford, for the purpose, first, of publishing his *Flora Græca*, in 10 folio volumes, with 100 coloured plates in each; and afterwards of endowing a Professorship of Rural Economy in his own University. The publication and editorship of this splendid work was confided to the late Sir J. E. SMITH, who lived to complete six of these volumes, and half the seventh. Since the death of this learned Botanist, which happened on the 17th of March, 1828, it has been conducted by the eminent and highly distinguished Botanist, Dr. JOHN LINDLEY, F. R. S., &c. Professor of Botany in the University of London. Owing to the very expensive manner in which it is got up, few copies of it are sold, but it will remain a magnificent monument of the zeal and science of its author; as the excellent *Flora Oxoniensis*, published in 1794, will bear ample testimony to the knowledge he possessed of the plants of his own country. See *Memorials of Oxford*, and *Life of* SIR J. E. SMITH.

Cynosurus cristatus. Crested dogs-tail-grass. ♃

C. Mathews, Del. & Sc. Publ.d by W. Baxter, Botanic Garden Oxford, 1837.

CYNOSU'RUS*.

Linnean Class and Order. TRIA'NDRIA‡, DIGY'NIA.

Natural Order. GRAMI'NEÆ. Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 68.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—GRAMINA, *Linn.*—GRAMINA'LES; sect. TRITICINÆ; type, HORDEACEÆ; Burn. Out. of Bot. v. i. pp. 359 & 362.

GEN. CHAR. *Panicle* spiked, contracted. *Spikelets* (fig 1.) 2- or many-flowered, resting upon pectinated bracteas or involucrums (fig. 2.). *Calyx* (fig. 3) of 2 spear-shaped, nearly equal, membranous, concave, single-ribbed, keeled, taper-pointed, awned *glumes*, containing 2 or 3 perfect *florets*, the first sessile, the rest stalked, with an occasional rudiment of more. *Corolla* (fig. 4.) of 2 unequal spear-shaped *paleæ;* the outermost concave, keeled, more or less awned at the summit, the awn straight; inner 2-ribbed, inflexed at the edges, cloven at the point, awnless. *Scales* (fig. 5.) spear-shaped, pointed. *Filaments* (see fig. 4, *a.*) 3, hair-like. *Anthers* (see fig. 4, *b.*) strap-shaped, cloven at each end. *Germen* (fig. 6.) elliptical. *Styles* (fig. 6.) very short, distinct. *Stigmas* (see fig. 6.) long, cylindrical, feathery. *Seed* loose, invested with the unchanged *paleæ*, elliptic-oblong, with a furrow along the upper side.

The contracted, spike-like *panicle;* the 2- or many-flowered *spikelets*, with pectinated involucrums; the *calyx* of 2, equal, awned *glumes;* and the *corolla* of 2 spear-shaped, keeled *paleæ*, the lower being awned or mucronate; will distinguish this from other genera in the same class and order.

Two species British.

CYNOSU'RUS CRISTA'TUS. Crested Dog's-tail-grass.

SPEC. CHAR. Raceme spiked, strap-shaped. Florets with a very short awn.

Engl. Bot. t. 316.—Host. Gram. Austr. v. ii. p. 68. t. 96.—Knapp. Gram. Brit. t. 64.—Mart. Fl. Rust. t. 106.—Curt. Obs. on Brit. Grasses, (5th ed.) p. 15. t. 6.—Sincl. Hort. Gram. Wob. p. 23. fig. 16. and p. 152, with a plate.—Schreb. Gram. v. i. p. 69. t. 8. f. 1.—Curt. Brit. Entom. v. iii. t. 135.—Linn. Sp. Pl. p. 105.—Huds. Fl. Angl. (2nd ed.) p. 59.—Leers, (2nd ed.) p. 47. t. 7. f. 4.—Stillingfl. Misc. Tracts, p. 390. t. 11.—Sm. Fl. Brit v. i. p. 111. Engl. Fl. v. i. p. 137.—With. (7th ed.) v. ii. p. 177.—Gray's Nat. Arr. v. ii. p. 126.—Lindl. Syn. p. 306.—Hook. Brit. Fl. p. 45.—Lightf. Fl. Scot. v. i. p. 100.—Sibth. Fl. Oxon. p. 52.—Abb. Fl. Bedf. p. 28.—Davies' Welsh Bot. p. 11.—Purt. Midl. Fl. v. i. p. 90.—Relh. Fl. Cant. (3rd ed.) p. 39.—Hook. Fl. Scot. p. 37.—Grev. Fl Edin. p. 25.—Fl. Devon. pp. 18 & 127.—Johnst. Fl. Berw. v. i. p. 25.—Winch's Fl. of Norhumb. and Durham, p. 7.—Baxter's Lib. of Agricul. and Hort. Knowl. (2nd ed.) p. 300. f. 6.—Loud. Mag. of Nat. Hist. v. i. p. 382. f. 174. *w.*—Walk. Fl. of Oxf. p. 25.—Bab. Fl. Bath. p. 59.—Mack. Cat. Pl. of Ind. p. 14.; Fl. Hibern. pt. 1. p. 307.—*Phleum cristatum*, Scopol. Fl. Carn. (2nd ed.) v. i. p. 57.—*Gramen cristatum*, Ray's Syn. p. 398.—Johnson's Gerarde, p. 29*.

Fig. 1. Two Spikelets, with their Involucrums.—Fig. 2. A separate Involucrum.—Fig. 3. The 2 Glumes of the Calyx.—Fig. 4. The 2 Paleæ of the Corolla, with the Stamens and Pistils; *a.* a filament; *b.* an anther.—Fig. 5. The Scales or Nectary.—Fig. 6. Germen, Styles, and Stigmas.—Fig. 7. One of the feathery appendages of the stigma.—*All, more or less, magnified.*

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* From *kunos*, Gr. *a dog;* and *oura*, Gr. *a tail;* from the shape of the panicle or spike. † See *Phalaris canariensis*, folio 56, note †.

LOCALITIES.—In dry pastures, parks, and lawns, everywhere.

Perennial.—Flowers in June and July.

Root fibrous, tufted. *Culms (stems)* several, from a foot to 18 inches high, simple, upright, rigid, slender, round, smooth and even, having 3 or 4 joints. *Leaves* bright green, narrow, flat, smooth on both sides, scarcely rough at the margins. *Sheaths* long, striated, smooth. *Stipula (ligule)* short, slender, blunt, cloven. *Panicle* spike-like, upright, rigid, strap-shaped, blunt, about 2 inches long, with a wavy, rough rachis or stalk. *Involucrums* (fig. 2.) beautifully pectinated (toothed like a comb), one at the base of each spikelet, their divisions long and awl-shaped, greenish, a little curved, and rough with minute teeth, which point upwards. *Spikelets* from 3- to 5-flowered. *Glumes (valves of the calyx)* (fig. 3.) spear-shaped, nearly equal, membranous, rough at the keel, as long as the floret. *Outer Palea (valve of the corolla)* (fig. 4.) spear-shaped, obscurely nerved, green, scabrous, especially at the keel, terminating in a short, rough awn: *Inner Palea* white, bifid, pubescent at the angles of the fold. *Anthers* (fig. 4, *b.*) prominent, pendulous, purple. *Styles* naked at the base. *Seed* elliptic-oblong, pointed, filling the valves of the *corolla.*

A variety has been observed with a 4-cornered spike; and, another variety, in which the spike is viviperous, is very frequently met with, especially in wet seasons.

This grass is to be met with in abundance on high and exposed situations, and in pastures properly so called, in most parts of England; "for it will continue permanent," Mr. SINCLAIR observes, "in very dry sandy soils, as well as in every gradation of soil from that to the stagnant bog. It arrives at the greatest perfection in soils of a medium quality as to moisture and dryness; in irrigated meadows, judiciously formed so that the water cannot stagnate, the Crested Dog's-tail-grass attains to the largest growth. The produce of early herbage in the Spring is inferior to most other grasses in weight, although its hardy nature, by giving it a superior verdure, may deceive the casual observer in this respect. It forms a dense close sward when combined with other essential grasses; and a superior permanent pasture cannot be formed without a proportion of it being allowed, according to the nature of the soil. In all the most celebrated pastures we have examined, it constituted a considerable portion of the produce."—The *culms* are of a wiry nature, being remarkably hard and tough, and as they shoot up at a season when the *leaves* of all the grasses are very plentiful, they are not cropped by cattle, but are suffered for the most part to perfect their seeds, which keep firm in the husks, and are not easily shed; and hence it is that in Winter, when the ground is covered with snow, we see the seed spikes of this grass above its surface, attracting groups of partridges, pigeons, and smaller birds generally, at a season when their food is very scarce. See BAXTER's *Lib. of Agricul. and Horticul. Knowledge.*

The culms of the crested Dog's-tail-grass are considered amongst the very best of the British Grasses that yield a material for the manufacture of plat for Leghorn bonnets and hats. A list of the British Grasses which have been found most suitable for the purpose of making this plat, together with the method of preparing them for use, &c. may be seen in SINCLAIR's *Hortus Gramineus Woburnensis*, and COBBETT's *Cottage Economy.*

THE GRASSES.

"By these both man and beast are fed: by these
The herds fatten, and with encumbered
Bodies ruminate supine amid
The rich luxur'ant herbage; *hence* flow from
Wide distended udders, nutritious
And milky streams."

Paeónia corallina, entire-leaved Pacony. ♃.

Russell del. Pub.d by W. Baxter Botanic Garden Oxford. 1837. J.W. sc.

PÆO'NIA *.

Linnean Class and Order. POLYA'NDRIA †, PENTAGY'NIA.

Natural Order. RANUNCULA'CEÆ ‡, Juss. Gen. Pl. p. 231.—Sm. Gram. of Bot. p. 136.—Lindl. Syn. p. 7.; Introd. to Nat. Syst. of Bot. p. 6.—Rich. by Macgilliv. p. 465.—Loud. Hort. Brit. p. 495. Mag. of Nat. Hist. v. i. p. 137.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 2.—ROSALES; sect. RANUNCULINÆ; subsect. RANUNCULIANÆ; type, PÆONIACEÆ; subty. PÆONIDÆ; Burn. Out. of Bot. v. ii. pp. 614, 828, 832, & 842.—MULTISILIQUÆ, *Linn.*

GEN. CHAR. *Calyx* (see fig. 1, *a.*) inferior, of 5 roundish, concave, reflexed, unequal, foliaceous, permanent sepals. *Corolla* of 5 roundish, concave, spreading petals, contracted at the base, larger than the sepals. *Filaments* (see fig. 1, *b.*) very numerous, hair-like, much shorter than the corolla. *Anthers* (see fig. 1, *c.*) terminal, upright, oblong, quadrangular, 4-celled, large, bursting inwardly. *Germens* (see fig. 1, *d.*) from 2 to 5, or more, sessile, egg-shaped, downy. *Styles* none. *Stigmas* (see fig. 1, *d.*) oblong, curved, compressed, blunt, coloured. *Follicles (capsules)* as many as the germens, ovate-oblong, spreading widely, coriaceous, of one cell, and one valve, bursting along the inner side. *Seeds* (fig. 3.) numerous, oval, polished, coloured, ranged along the edges of the follicle.

Distinguished from other genera, in the same class and order, by the *calyx* of 5 sepals; the *corolla* of 5 petals; and the many-seeded *follicles*, crowned with the bilamellated *stigmas*.

One species British.

PÆO'NIA CORALLI'NA. Coral Pæony. Entire-leaved Pæony.

SPEC. CHAR. Herbaceous. Leaves twice ternate; leaflets egg-shaped, entire, smooth. Follicles downy, recurved.

Engl. Bot. t. 1513,—Ritz. Obs. fasc. 3. p. 34.—Willd. Sp. Pl. v. ii. p. 1221.—Ait. Hort. Kew. (2nd ed.) v. iii. p. 315.—Anderson in Trans. of Linn. Soc. v. xii. p. 268.—With. (6th ed.) v. iii. p. 605; and 7th ed. v. iii. p. 662.—Sm. Eng. Fl. v. iii. p. 29.—Gray's Nat. Arr. v. ii. p. 710.—Lindl. Syn. p. 14.—Hook. Brit. Fl. p. 261.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 66. fig. 14,—*Pæonia officinalis.* var. *β. mascula*, Linn. Sp. Pl. p. 474.—*Pæonia mas*, Johnson's Gerarde, p. 890.—Park. Parad. pp. 341 & 343. f. 1.—*Pæonia folio nigricante, splendido, quæ mas*, Bauh. Pinax, p. 323. n. 1.—Tournef. Inst. p. 273. t. 146.

LOCALITIES.—On islands in the river Severn.—*Somersetshire;* Abundantly in the rocky clefts of the steep Holmes, in the Severn, 1803: Mr. F. WRIGHT, in *Engl. Fl.*—GERARDE reports it to have been found in *Kent*, on a rabbit-warren, in the parish of Southfleet, about two miles from Gravesend; but no other person has found it there.

Perennial.—Flowers in May and June.

Fig. 1. A Flower with the petals taken off; *a.* the Calyx; *b.* the Filaments; *c.* the Anthers; *d.* the Germens, with their purple stigmas.—Fig. 2. A separate Stamen.—Fig. 3. A perfect Seed.—Fig. 4. An abortive one.

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* So named in honour of the Physician PÆON, who is said to have cured PLUTO of a wound received from HERCULES.

† See *Anemone nemorosa.* f. 43. n. †. ‡ See *Clematis vitalba*, f. 129, *a.*

Root of many fleshy, spindle-shaped knobs or tubers. *Stems* from 1 to 2 feet high, annual, simple, cylindrical, leafy, smooth, polished, and more or less tinged with red. *Leaves* twice ternate; leaflets egg-shaped, entire, flat, sometimes veined with red, of a dark shining green above, paler beneath. The uppermost leaf is sometimes ternate only, or simple; rarely pinnate. *Flowers* terminal, solitary, very ornamental. *Sepals* concave, smooth, irregular. *Petals* crimson, regular, roundish, concave, spreading. *Filaments* red; with yellow *anthers*. *Germens* 2, 3, or 4, egg-shaped, white, downy, with recurved, crimson *stigmas*. *Seed-vessels (follicles)* internally reddish and pollished. *Seeds* (fig. 3.) black and shining; the interspersed abortive ones (f. 4.) angular, scarlet.

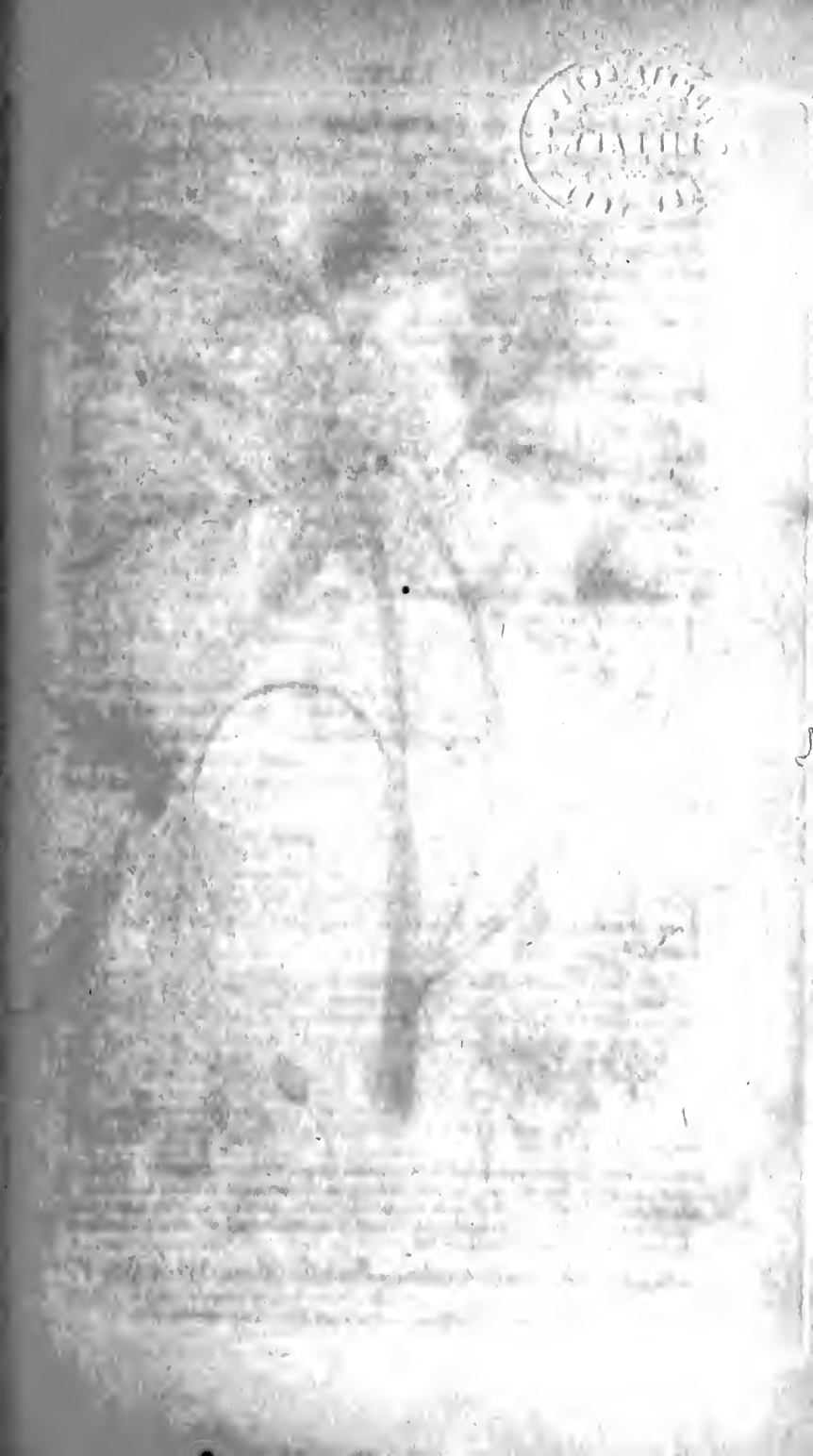
This very handsome and well marked species is a native of many parts of Europe; France, Balearic Islands, Greece, and Siberia. It was first added to the British Flora by F. Bowcher Wright, Esq., who, in 1803, introduced it to the notice of Botanists, as growing undoubtedly wild, and in great profusion, in the rocky clefts of the island called Steep Holmes in the broad part of the river Severn, where it is conjectured to have grown for ages. It is observed by Dr. Withering, that "few aquatic excursions of a day can prove more interesting to the Naturalist, especially the Geologist, Ornithologist, and Botanist, than a sail from Bristol, through the romantic pass of St. Vincent's Rocks, to the Holmes Islands. The Steep Holmes represents the rugged truncated apex of a submarine mountain, whose abruptly precipitous sides are only accessible at one proper landing place. Amidst the shelving rocks and loose shingly stones, a few hundred yards from, and at an elevation of nearly 100 feet above, this spot, at the eastern end of the island,

'There may ye see the *Peony* spread wide,—

together with the scarcely less rare *Allium ampeloprásum*. The latter plant has effected a lodgment below the Light-house on the Flat Holmes; but the *Peony* is altogether peculiar to the sister island."

"The *Pæony* was held in very high esteem by the ancient Greek physicians, but their praises are too extravagant for sober repetition. Among other superstitions, they believed it to be of divine origin, an emanation from the moon, and that it shone during the night; also that it had the power of driving away evil spirits, averting tempests, and protecting harvests from injury, &c. Neither are modern times free from some remnants of these absurdities; for the anodyne necklaces, still sold to prevent convulsions in children, and to ease dentition, are made of beads turned from the root of this species. Its antispasmodic powers, though often dwelt on, are very feeble, and it is chiefly to be regarded as a nauseous and acrid bitter.

The seeds of *Pæonia officinalis* are said to be emetic and cathartic; and the roots of *P. anomala*, and *P. albiflora*, are, according to Pallas, eaten in Siberia, either simply boiled, or as an ingredient in soups. The seeds of the latter are also, he says, used in the same country instead of tea." See Burnett's *Outlines of Botany*, p. 842.



Rubt. M. del.t *Actaea Spicata, Herb Christopher.* W. sc.

24.

Publ.d by W. Baxter, Botanic Garden Oxford. 1837.

ACTÆ'A *.

Linnean Class and Order. POLYA'NDRIA †, MONOGY'NIA.

Natural Order. RANUNCULA'CEÆ ‡, Juss. Gen. Pl. p. 231.—Sm. Gram. of Bot. 136.—Lindl. Syn. p. 7.; Introd. to Nat. Syst. of Bot. p. 6.—Rich. by Macgilliv. p. 465.—Loud. Hort. Brit. p. 495.; Mag. of Nat. Hist. v. i. p. 137.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 2.—ROSALES; sect. RANUNCULINÆ; subsect. RANUNCULIANÆ; type, PÆONIACEÆ; subty. PÆONIDÆ; Burn. Out. of Bot. v. ii. pp. 614, 828, 832, & 842.—MULTISILIQUÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 4 roundish-oblong, concave, blunt, deciduous sepals. *Corolla* (see fig. 3.) of 4 oblong or inversely egg-shaped, unguiculated, deciduous petals, which are larger than the sepals, and alternate with them. *Filaments* (see figs. 3 & 4.) numerous, about 30, cylindrical, swelling upwards. *Anthers* of 2 lobes, sessile on the inner side of the summit of each filament. *Germen* (fig. 5.) superior, egg-shaped. *Style* none. *Stigma* (see fig. 5.) round, thick, obliquely depressed. *Berry* (f. 6.) nearly globular, with a lateral furrow, smooth, of 1 cell, not bursting. *Seeds* numerous, semiorbicular, depressed, ranged vertically over each other in two rows (see figs. 7—9.)

The *calyx* of 4 sepals; the *corolla* of 4 petals; and the *berry* of 1 cell; with numerous depressed *seeds*, in 2 vertical rows; will distinguish this from other genera in the same class and order.

One species British.

ACTÆ'A SPICA'TA. Spiked Bane-berry. Black Bane-berry. Herb Christopher.

SPEC. CHAR. Racemes dense, egg-shaped. Petals the length of the stamens. Berries oblong, on slender pedicels.

Engl. Bot. t. 918.—Linn. Sp. Pl. p. 722.—Huds. Fl. Angl. (2nd ed.) p. 228.—Sm. Fl. Brit. v. ii. p. 562. Engl. Fl. v. iii. p. 3.—With. (7th ed.) v. iii. p. 642.—Gray's Nat. Arr. v. ii. p. 710.—Lindl. Syn. p. 14.—Hook. Br. Fl. p. 257. Fl. Scot. p. 167.—Don's Gen. Syst. of Gard. & Bot. v. i. p. 64.—*Christophoriana*, Ray's Syn. p. 262.—Johnson's Gerarde, p. 979.—Blackst. Spec. Bot. p. 14.—*Aconitum racemosum*, *Actæa quibusdam*, Bauh. Hist. v. ii. pt. II. p. 660.

LOCALITIES.—In bushy places, especially in limestone situations. Very rare. —*Cumberland;* Sandwicke, Ullswater: HUTCHINSON.—*Essex;* In a thick wood, two miles from Thorndon: Mr. HILL, in Black. Sp. Bot.—*Westmoreland;* Mountainous pastures above Troutbeck, near Ambleside: Mr. WOODWARD.—*Yorkshire;* Among the shrubs by Malham Cove: Mr. NEWTON and Mr. LAWSON; before 1690. In the same place, and near Craven, 1836: E. F. WITTS, Esq. At Hildersley; and in Hovingham lanes: TEESDALE. In Whitfell Gill, or Arthur's Moss, near Askrigg: CURTIS. Wensleydale, truly wild: Mr. R. BOWMAN, in N. B. G. At Thorp Arch: Rev. W. WOOD. Fissures of the curious natural pavement of limestone at the foot of Ingleborough: Dr. STOKES. Woods as Hackness, near Scarborough: Rev. A. BLOXAM, in N. B. G.

Fig, 1. Calyx.—Fig. 2. Calyx, with 2 of the sepals fallen off, showing the Germen, &c.—Fig. 3. A separate Flower, showing the Petals, Stamens, Germen, and Stigma.—Fig. 4. Two of the Stamens.—Fig. 5. The Germen and Stigma.—Fig. 6. A Berry.—Figs. 7 & 8. Vertical sections of the same.—Fig. 9. A transverse section of ditto.—Figs. 3 & 4, *slightly magnified.*

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* From *Akte*, the Greek name of the *Elder*, which these plants much resemble in foliage and fruit. DON.

† See folio 43, note †. ‡ See folio 129, *a*.

Liley Wood, near Whitley Hall, 13 miles from Halifax, on the road to Barnsby; rocks between Chapel-in-the-Dale and Mergill; between Darnbrook and Arncliffe: N. J. WINCH, Esq. in N. B. G.—SCOTLAND. Cleish Woods: Mr. ARNOTT.

Perennial.—Flowers in May and June.

Root creeping, somewhat fleshy. *Stem* from 1 to 2 feet high, somewhat triangular, leafy, not much branched, smooth, and somewhat tinged with red. *Leaves* stalked, twice or thrice ternate; *leaflets* egg-shaped, pointed, rather thin and delicate, of a deep shining green, an inch or two long, deeply cut, and serrated. *Flowers* several, white with a slight blush-colour, in a rather close egg-shaped *raceme* or *cluster*, resembling a spike; each flower with a small solitary *bractea*, under its downy partial stalk. *Sepals* concave, falling off very soon after they expand (see fig. 2). *Berries* (fig. 6.) purplish-black, juicy, about the size of currants, poisonous.

This plant is a powerful repellent. The root is useful in some nervous cases, but must be administered with caution. The berries are very poisonous; the juice of them, with alum, yields a black dye. Toads are reported to enjoy the fetid odour of this plant. According to the observations of LINNÆUS, sheep and goats eat it; cows, horses, and swine refuse it.

"He who delights to trace, with serious thought,
In all he sees the noiseless steps of TIME,
Shall find the outward forms of Nature fraught
With ample food for many a lofty rhyme;
Or should he fear such dazzling heights to climb,
And love to tread a less aspiring way,—
Leaving untouch'd the awful and sublime,
And seeking humbler objects to pourtray,
May find in such the theme of many a pleasing Lay.

What though the glorious Sun, enthron'd on high,
May more conspicuously this lesson teach;
Or Moon and Stars, which gem the midnight sky,
A yet more touching homily may preach,
As day to day still utters ceaseless speech,
And night to night yet added knowledge shows,—
Far lowlier objects to the heart may reach,
And wisdom purest precepts may disclose,
Cull'd from *The Lily's* bloom, or gather'd from *The Rose!*

Yes—you, delightful handy-works of HIM,
Who arch'd the Heavens, and spann'd this solid earth,
Before whose glory day's proud light is dim,
And Art's achievements, if not food for mirth,
Display at best its barrenness and dearth,—
You, too, instruct us, and with 'line on line,
Precept on precept,' show us by your birth,
Your bud, your blossoming, and your decline,
TIME's never-ceasing flight, and tell us truths divine.

You, as the changing seasons roll along,
Still wait on each, and added beauties lend:—
Around the smiling *Spring* a lovely throng
With eager rivalry her steps attend;—
Others with *Summer's* brighter glories blend;—
Some grace mild *Autumn's* more majestic mien;—
While some few ling'ring blooms the brow befriend
Of hoary *Winter*, and with grace serene
Enwreathe the king of storms with Mercy's gentler sheen."

B. BARTON.

[illegible] in bushy places, [illegible] between Ingleton and [illegible] in N. [illegible]

[illegible] — [illegible] May and June.

[illegible] Stem from 1 to 2 feet [illegible] not much branched, smooth, [illegible] tinged with purple. Leaves stalked, twice or thrice [illegible] pointed, rather thin and delicate, of a [illegible] deeply cut and serrate [illegible] whitish [illegible] colour, in a rather [illegible] egg-shaped raceme [illegible] resembling a spike; each [illegible] with a small solitary bractea under its downy partial stalk. [illegible] falling off very soon after they expand (see fig. 2). Berries (fig. 3) purplish-black, juicy, about the size of currants, poisonous.

This plant is a powerful repellent. The root is useful in nervous cases, but must be administered with caution. The berries are very poisonous; the juice of them, with alum, yields a black dye. Toads are supposed to enjoy the fetid odour of this plant. [illegible] the observations of Linnæus, sheep and goats [illegible] cows, horses, and swine refuse it.

"He who thoughts to trace with [illegible]
[illegible] the [illegible]
[illegible] the [illegible] of Nature [illegible]
[illegible] many a [illegible]
[illegible] amazing [illegible]
And [illegible] aspiring way,—
[illegible] awful and sublime,
[illegible] to [illegible]
[illegible] many a pleasing line.

[illegible] enthron'd on high,
[illegible] teach;
[illegible] sky,
[illegible] may preach,
[illegible] speech,
[illegible] knowledge shows,
[illegible] may reach,
[illegible] discloses,
[illegible] from [illegible]

[illegible] works of Him,
[illegible] this [illegible]
[illegible] lights is dim,
[illegible] for [illegible]
[illegible] and death,—
[illegible] and [illegible] on [illegible]
[illegible] by your birth,
[illegible] and your [illegible]
[illegible] sight, and tell us [illegible]

[illegible] seasons roll along,
[illegible] and [illegible] lend [illegible]
[illegible] throng
[illegible]
[illegible] glories [illegible]
[illegible] majestic [illegible]
[illegible] the [illegible]
[illegible] and with grace serene
[illegible] Mercy's [illegible]

Rhámnus Frángula Berry-bearing Alder ♄

C. Mathews Del & Sc. Publ.d by W. Baxter Botanic Garden Oxford 1837.

RHA'MNUS*.

Linnean Class and Order. PENTA'NDRIA†, MONOGY'NIA.

Natural Order. RHA'MNEÆ, *De Cand.*—Lindl. Syn. p. 72.; Introd. to Nat. Syst. of Bot. p. 113.—Rich. by Macgilliv. p. 353. Loud. Hort. Brit. p. 508.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 21.—RHAMNA'CEÆ, Loud. Arb. Brit. p. 523.—RHAMNI, Juss. Gen. Pl. p. 376.—Sm. Gram. of Bot. p. 182.—ROSALES; subord. MYRTOSÆ; sect. ILICINE; type, RHAMNACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 617, & 624.—DUMOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, funnel-shaped; coloured internally; limb in 4 or 5 pointed, equal, spreading segments. *Corolla* (see fig. 2.), when present, of as many small, converging petals as there are segments of the calyx, and alternate with them. *Filaments* (see fig. 2.) in the mouth of the calyx, opposite to each petal, awl-shaped, short. *Anthers* roundish, 2-lobed, small. *Germen* (fig. 3.) superior, roundish, seated on a glandular disk. *Style* short, cylindrical, rarely divided. *Stigma* in 2, 3, or 4 lobes. *Berry* (fig. 4.) nearly globular, of 2, 3, or 4 cells. *Seeds* (fig. 6.) one in each cell, rounded externally, flattened at the inner side. The flowers are often more or less diœcious; and the petals are sometimes wanting.

Distinguished from other genera, in the same class and order, by the funnel-shaped *calyx* of 4 or 5 segments, bearing the petals; and by the berry-like *fruit* of from 2 to 4 cells, each cell containing one *seed* or *nut*.

Two species British.

RHA'MNUS FRA'NGULA. Breaking Buckthorn. Alder Buckthorn. Berry-bearing Alder.

SPEC. CHAR. Thorns none. Flowers all perfect. Leaves oval, quite entire, lineated with 10 or 12 lateral nerves, and, as well as the calyx, smooth.

Engl. Bot. t. 250.—Curt. Brit. Entomol. v. vi. t. 286.—Loud. Arbor. Brit. p. 537. t. 62, *a*.—Linn. Sp. Pl. p. 280.—Huds. Fl. Angl. (2nd ed.) p. 98.—Sm. Fl. Brit. v. i. p. 262. Engl. Fl. v. i. p. 328.—With. (7th ed.) v. ii. p. 323.—Lindl. Syn. p. 73.—Hook. Brit. Fl. p. 104.—Abbot's Fl. Bedf. p. 52.—Purt. Midl. Fl. v. i. p. 131.—Relh. Fl. Cant. (3rd ed.) p. 99.—Hook. Fl. Scot. p. 81.—Fl. Dev. pp. 42 & 178.—Rev. G. E. Smith's Pl. of S. Kent, p. 15.—Walk. Fl. of Oxf. p. 66.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 32.—Burn. Outl. of Bot. v. ii. p. 625.—Sylvan Sketches, p. 13.—Perry's Pl. Varvic, Selectæ, p. 22.—E. Lees, in Illust. of Nat. Hist. of Worcest. p. 156.—Mack. Fl. Hibern. pt. 1. p. 71.—*Rhamnus alnoides*, Gray's Nat. Arr. v. ii. p. 621.—*Frangula seu Alnus nigra baccifera*, Ray's Syn. p. 465.—*Alnus nigra, sive Frangula*, Johnson's Gerarde, p. 1470.

Fig. 1. Calyx.—Fig. 2. The same opened vertically to show the Petals, the Stamens, Disk, Germen, &c.—Fig. 3. Germen, Style, and Stigmas.—Fig. 4. A Berry.—Fig. 5. A transverse section of ditto.—Fig. 6. A Seed.—Figs. 1, 2, & 3, *a little magnified.*

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* From the Celtic word *ram*, signifying a tuft of branches; which the Greeks have changed to *rhamnos*, and the Latins to *ramus*. LOUDON.

† See *Anchusa sempervirens*, folio 48, note †.

‡ From *frango*, to *break*; applied to this species from the brittleness of its branches.

Localities.—In woods and thickets; rare. *Bedfordsh.* Eversholt; Aspley Wood: Rev. C. Abbot.—*Cambridgesh.* Closes near the Mill at Fulbourn; Gamlingay Park; and Whitewood: Rev. R. Relhan.—*Cumberland;* Ullock Moss, at the foot of Whinside Hill, near Keswick: H. C. Watson, Esq. in N. B. G.—*Devon;* Ilsington, Tavistock, Moreton, Kingsteignton; and Haywood, near Exmouth: Rev. J. Jervis. Exwick Wood: Mr. Jacob. Widdecombe in the Moor: Rev. A. Neck. Bridford: Rev. P. Welland. Near the Schoolmaster Inn, between Barnstaple and Exeter; and between Barnstaple and Ilfracombe: H. C. Watson, Esq.—*Essex;* About Woodford: Mr. Warner.—*Kent;* In hedges upon Willesboro' Leas: Rev. G. E. Smith. High Rocks: *Fl. Ton.*—Long Bog at Chisehurst; Keston Common: *Fl. Metr.*—*Leicestersh.* Near Glenfield: Rev. A. Bloxam.—*Middlesex;* Caen Wood; Bishop's Wood; about Hornsey; White Heath Wood, near Harefield; and on Harefield Common: *Fl. Metrop.*—*Norfolk;* Horning: J. Paget, in N. B. G. Alder Carrs, Oby, &c.: *Hist. Yarm.*—*Suffolk;* Bungay: Mr. Stock.—*Surrey;* Coulsdon: E. Woon. Wimbledom Common; Norwood: *Fl. Metrop.*—*Warwicksh.* Grafton, Arrow, and Great Alne: T. Purton, Esq. Wood at Smethwick, near Birmingham: Dr. Withering. Woods at Hatton: Mr. W. G. Perry.—*Westmoreland;* Near Rydal Water: N. B. G.—*Worcestersh.* In Wyre Forest: Mr. E. Lees, in *Illust.*—*Yorksh.* Lakeby Car: J. Ward, in N. B. G. Leeds: Denny, ibid. Near Rotherham: *Mag. Nat. Hist.* Malham Cove, and Makershaw Woods: N. J. Winch, Esq.—WALES. *Denbighsh.* Stream sides near Wrexham; and not uncommon in moist hedges: Mr. J. E. Bowman, in N. B. G.—SCOTLAND. *Ayrshire;* Cullum Wood, near Auchincruive: Mr. Smith.—IRELAND. *County of Derry;* in a small Island called the Creagh Bog in Lough Beg: Mr. D. Moore, in *Fl. Hibern.*

Shrub, or small Tree.—Flowers in May.

Stem from 4 to 10 or 12 feet high, with numerous, alternate, leafy, round, smooth branches; covered with blackish bark. *Leaves* alternate, elliptical, or roundish, pointed, quite entire, smooth, deep green, with 10 or 12 parallel transverse nerves. *Stipulas* minute, and, as well as the *petioles*, downy. *Flowers* whitish, on simple, aggregate, axillary, smooth *peduncles*. *Calyx* cup-shaped, with 5 reflexed segments, between which stand the small *petals*, and opposite to them the very minute *stamens*, with dark purple *anthers*. *Style* very short. *Stigma* capitate, cloven. *Berries* dark purple, each with 2 large *seeds*.

This, like most other species of *Rhámnus*, is purgative, if taken internally. Half an ounce of the inner bark or liber, or a few of the berries, boiled in beer, form a brisk cathartic, which is said to be very certain in its action on cattle. The berries gathered before they are ripe dye wool green. The bark dyes yellow; and, with a preparation of iron, black. The flowers are particularly grateful to bees. Goats devour the leaves voraciously, and sheep will eat them. Charcoal prepared from the wood is much esteemed in the manufacture of gunpowder. The juice expressed from the berries being boiled down with some gum arabic and a little alum, and then poured into bladders to harden, is the colour called sap green. *Æcidium crassum*, Hook. Brit. Fl. v. ii. pt. ii. p 373, is sometimes parasitic on the leaves of this species; though it is more frequent on those of *R. Catharticus*.

The *Natural Order* Rhamneæ, is composed of dicotyledonous *shrubs* or small *trees*, which are often spiny. Their *leaves* are simple, alternate, or sometimes, though rarely, opposite; usually furnished with *stipulas*. Their *flowers* are small, axillary, or terminal, and usually of a greenish-yellow. They have a monosepalous, 4- or 5-cleft calyx, the tube of which adheres to the base of the *ovary (germen)*; and the lobes are valvate when in the bud. The *corolla*, which is rarely wanting, consists of 4 or 5 petals, inserted in the mouth of the calyx, and alternate with its segments, often scale-like, with a concave or cucullate limb. The *stamens* are equal in number to the petals and are opposite to them, consequently alternate with the lobes of the calyx. The *anthers* are 2-celled. The *ovary* is sometimes wholly adnate with the calyx, sometimes adherent only with the base, or as far as the middle, and is 2-, 3-, or 4-celled, with 1 erect seed in each cell. The *fruit* is either fleshy and indehiscent, or dry and separating in 3 divisions. The *seeds* are erect; the *albumen* fleshy, seldom wanting; the *embryo* about as long as the seed, with large flat *cotyledons*, and a short inferior *radicle*.

Peplis Portula Water Purslane. ⊙

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C. Mathews. Del. & Sc.

PE'PLIS*.

Linnean Class and Order. HEXA'NDRIA† MONOGY'NIA.

Natural Order. LYTHRARIE'Æ, *Juss.*—Loud. Hort. Brit. p. 514.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 706.—SALICA'RIÆ, Juss. Gen. Pl. p. 330.—Lindl. Syn. p. 71.; Introd. to Nat. Syst. of Bot. p. 59.—Rich. by Macgilliv. p. 527.—ROSALES; sect. ONAGRINÆ; type, LYTHRACEÆ; Burn. Outl. of Bot. pp. 614, 722, & 726.—CALYCANTHEMÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, bell-shaped, with 12 lobes, of which 6 are broader than the rest, and upright; the others spreading, awl-shaped, and alternating with the larger ones. *Corolla* (see fig. 2, *b*, *b*.) of 6 very minute, inversely egg-shaped petals, inserted into the throat of the calyx, between its segments; sometimes wanting. *Filaments* (see fig. 2, *c*. and fig. 4, *a*.) 6, thread-shaped, incurved, shorter than the calyx, alternate with the petals, and opposite to the broader segments of the calyx. *Anthers* (see fig. 4, *b*.) roundish. *Germen* (fig. 5.) superior, globular, furrowed. *Style* very short, cylindrical. *Stigma* capitate, globose. *Capsule* (fig. 6.) globose, membranous, pellucid, of 2 cells, not bursting, with a transverse partition. *Seeds* (figs. 7 & 8.) numerous, minute, obtuse, triangular, inserted into the central column (see fig. 7.).

The bell-shaped *calyx* with 6 large and 6 alternating smaller teeth; and the *corolla* (when present) of 6 minute petals, inserted upon the calyx; will distinguish this from other genera in the same class and order.

One species British.

PE'PLIS PO'RTULA. Common Water Purslane.

SPEC. CHAR. Leaves opposite, inversely egg-shaped, stalked. Flowers axillary, solitary; petals wanting, or scarcely visible.

Engl. Bot. t. 1211.—Curt. Fl. Lond. t. 288. Curt. Brit. Entom. v. x. t. 459.—Linn. Sp. Pl. p. 474.—Huds. Fl. Angl. (2nd ed.) p. 147.—Sm. Fl. Brit. v. i. p. 389. Engl. Fl. v. ii. p. 187.—With. (7th ed.) v. ii. p. 452.—Lind. Syn. p. 72.—Hook. Brit. Fl. p. 151.—Lightf. Fl. Scot. v. i. p. 187.—Sibth. Fl. Oxon. p. 108.—Abbott's Fl. Bedf. p. 78.—Davies' Welsh Bot. p. 35.—Purt. Midl. Fl. v. i. p. 181.—Relh. Fl. Cant. (3rd ed.) p. 146.—Hook. Fl. Scot. p. 111.—Grev. Fl. Edin. p. 82.—Fl. Devon. pp. 63 & 170.—Rev. G. E. Smith's Pl. of S. Kent, p. 23.—Winch's Fl. of Northumb. and Durh. p. 23.—Walk. Fl. of Oxf. p. 101.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 708.—Perry's Pl. Varvic. Selectæ, p. 32.—Mack. Catal. of Pl. of Irel. p. 34. Fl. Hibern. part. I. p. 69.—*Portula palustris*, Gray's Nat. Arr. v. ii. p. 553.—*Portula* Ray's Syn. p. 368.—*Alsine rotundifolia, sive Portulaca aquatica*, Johns. Ger. p. 614.—*Glaucoides palustre, portulacæ folio, flore purpureo*, Mich. Gen. p. 21. t. 18. f. 1.

LOCALITIES.—In marshy and watery places on a sandy or gravelly soil, especially such as become dry in Summer. Not uncommon.

Fig. 1. Calyx.—Fig. 2. The same opened, exhibiting, *a*, the Calyx; *b*, *b*. the Petals; *c*. the Stamens.—Fig. 3. A Petal.—Fig. 4. A Stamen; *a*, the Filament; *b*, the Anther.—Fig. 5. Germen, Style, and Stigma.—Fig. 6. Capsule, accompanied by the permanent Calyx.—Fig. 7. A transverse section of the Capsule.—Fig. 8. A Seed.—*All, more or less, magnified.*

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* From *peplion*, Gr. anciently applied to the genus *Portulaca*, now to one somewhat similar in habit. Sir W. J. HOOKER.

† See *Galanthus nivalis*, folio 33, note †.

Annual.—Flowers from June to September.

Root fibrous. *Stems* prostrate, floating, or creeping, from 4 to 9 inches or a foot long, square, often striking root from the joints, branched, leafy, smooth, reddish. *Leaves* opposite, stalked, inversely egg-shaped, or somewhat spatulate, tapering into the petiole, smooth, quite entire, hardly an inch long, the midrib often reddish. *Flowers* very small, opposite, in the axils of the leaves, solitary, nearly sessile, reddish. *Calyx* greenish-white, tinged with red, very large in proportion to the petals, the limb cut into 12 teeth, of which the alternating ones are smaller and turned back. *Corolla* and *Filaments* of a pinky red, petals inserted on the calyx, very fugacious, sometimes 6, but more frequently only 1, 2, or 3, and very often altogether wanting. *Capsule* small, globular, membranous, very thin and pellucid, of 2 cells, the partition membranous, corresponding with the external groove of the capsule (see fig. 6.). *Receptacle (placenta)* fleshy, roundish, a little compressed, fastened to the partition on both sides. *Seeds* minute, about 30 in each cell, inversely egg-shaped, convex on one side, flat on the other.

Peplis Portula is not unfrequent in most parts of England, as well as in many other parts of Europe, in a sandy or gravelly soil, in places where water has stagnated in the Winter, but which have become dry, or nearly so, in the Summer.

In an excursion made in company with my son, in June 1831, in the neighbourhood of my native place, Rugby in Warwickshire, for the purpose of ascertaining what plants grew wild in its vicinity, with a view of some time publishing a Flora of that part of the county, we found this plant in great abundance in the upper street of the village of Hillmorton, nearly opposite the Plough Public House; and again a little way out of the village we observed it in still greater profusion, in the ditches on the right hand side of the road going from thence towards Barby, just before you come to Mr. Abel's house.—How often is a little simple flower the source of most delightful and pleasing recollections! Hillmorton is the birth-place of my Mother, and the circumstance of merely recording the name of this humble plant, after having seen it in such abundance in the place above mentioned, seems to lead me back to the happy days of my childhood, many of which were spent amongst my relations and friends in that pleasant village.

"It is not through the *eye* alone
We gather either bale or bliss,
From scenes which it may gaze upon:
Their sweetest tint, their deepest tone,
That which most saddens or endears,
Is shed on them by thoughts and feelings,
Which rise at Memory's still revealings,
From dreams of former years!

The scenes that met our early gaze,
The very turf we trod on then,
The trees we climbed; as fancy strays
Back to those long-past hours again,
Revive, and re-appear, as when
The soul with sorrow kept no strife;
But, in its first imaginings,
Unfurled its own ethereal wings,
And sprang to light and life."

B. Barton.

Aquilegia vulgaris. Common Columbine. ♃.

Col. Nic. Vol. Botan. Garden, Oxford.

AQUILE'GIA*.

Linnean Class and Order. POLYA'NDRIA †, PENTAGY'NIA.

Natural Order. RANUNCULA'CEÆ ‡, Juss. Gen. Pl. p. 231.—Sm. Gram. of Bot. p. 136.—Lindl. Syn. p. 7.; Introd. to Nat. Syst. of Bot. p. 6.—Rich. by Macgilliv. p. 465.—Loud. Hort. Brit. p. 495.; Mag. of Nat. Hist. v. i. p. 137.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 2.—ROSALES; sect. RANUNCULINÆ; subsect. RANUNCULIANÆ; type, RANUNCULACEÆ; subty. HELLEBOREÆ; Burn. Outl. of Bot. v. ii. p. 614, 828, 832, 837, & 839.—MULTISILIQUÆ, *Linn.*

GEN. CHAR. *Calyx* (*Corolla* of Linn.) inferior, of 5 egg-shaped, mostly pointed, nearly flat, equal, spreading, coloured, petal-like, deciduous sepals (fig. 1). *Corolla* (*Nectary* of Linn.) of 5 petals (fig. 2.), gaping upwards, 2-lipped, their upper lip large and flat, their lower very small; each petal elongated downwards into a hollow. horn-shaped spur, which is callous at the apex, and protruding between the sepals. *Filaments* (fig. 3.) numerous, 30 or 40, awl-shaped, upright; the outer ones shortest, innermost abortive, dilated and corrugated (wrinkled or shrivelled), closely enfolding the germens. *Anthers* terminal, heart-shaped, upright. *Germens* (figs. 4 & 5) 5, superior, egg-oblong, terminating in awl-shaped, upright *styles*, which are longer than the *stamens*. *Stigmas* simple. *Capsules (follicles)* (figs. 6 & 7.) 5, upright, cylindrical, pointed, parallel, straight, of 1 valve, bursting at the inner side downwards. *Seeds* (figs. 9 & 10.) numerous, egg-shaped, smooth, keeled, adhering to the edges of the capsule.

The *calyx* of 5 deciduous, coloured sepals; and the *corolla* of 5 petals, each terminating below in a horn-shaped spur, or nectary; will distinguish this from other genera in the same class and order.

One species British.

AQUILE'GIA VULGA'RIS. Common Columbine ||.

SPEC. CHAR. Spur of the petals incurved. Capsules hairy. Stem leafy, many-flowered; leaves nearly smooth. Styles as long as the stamens.

Engl. Bot. t. 297.—Curt. Brit. Entom. v. ix. t. 392.—Linn. Sp. Pl. p. 752.—Huds. Fl. Angl. (2nd ed.) p. 235.—Sm. Fl. Brit. v. ii. p. 578. Engl. Fl. v. iii. p. 33.—With. (7th ed.) v. iii. p. 666.—Gray's Nat. Arr. v. ii. p. 712.—Lindl. Syn. p. 13.—Hook. Brit. Fl. p. 261.—Light. Fl. Scot. v. i. p. 284.—Sibth. Fl. Oxon. p. 169.—Abb. Fl. Bedf. p. 118.—Davies' Welsh Bot. p. 54.—Purt. Midl. Fl. v. i. p. 255; and v. iii. p. 362.—Relh. Fl. Cant. (3rd ed.) p. 217.—Hook. Fl. Scot. p. 170.—Grev. Fl. Edin. p. 121.—Rev. G. E. Smith's Pl. of S. Kent, p. 30.—Fl. Devon. pp. 91 & 194.—Winch's Fl. of Northumb. & Durh. p. 37.—Walk. Fl. of Oxf. p. 152.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 49.—Perry's Pl. Varvic. Selectæ, p. 45.—Bab. Fl. Bath. p. 2.—Mack. Catal. of Pl. of Irel. p. 52.; Fl. Hibern. pt. 1. p. 10.—*Aquilegia flore simplici*, Ray's Syn. p. 273.—*Aquilegia cærulea*, Johnson's Gerarde, p. 1093.

Fig. 1. A Sepal.—Fig. 2. A Petal.—Fig. 3. Stamens and Pistils.—Fig. 4. Germens and Pistils.—Fig. 5. A separate Germen.—Fig. 6. Capsules.—Fig. 7. A separate Capsule.—Figs. 8 & 9. Seeds.

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* From *aquila*, an *eagle*; whose claws the nectaries, or spurs of the petals, represent. † See fol. 43, note †. ‡ See fol. 129, *a*.

|| From *columbus*, a *pigeon*; from the form of each petal, separated with two sepals attached to it.

Localities.—In woods, coppices, meadows, and boggy places; frequent.—*Oxfordsh.* Whichwood Forest; Headington-Wick Copse; and in the bog near it, abundant; Stow Wood; Shotover Hill, near the Ochre Pits; in Sherborne Wood; Stoke great Wood; Ardley and Tusmore Woods; and in a lane near Glympton.—*Berks;* about West Woodhay; in a wood near Besselsleigh; and woods near Streatley.—*Bedfordsh.* In Barton Leat Wood.—*Cambridgesh.* Hinton, Teversham, Triplow, Anglesey Abbey; and Hatley St. George.—*Cornwall;* St. Ives, Lelant, &c. In hedges near Pillaton; near Goldsithney; about Falmouth; and on the side of a common a mile and a half from Bodmin.—*Cumberland;* In woods and on the borders of lakes.—*Derbysh.* The dell in Calke Park.—*Devon*; Near Chudleigh, Ilsington, Lympstone, Holne Chace, and Spitchwick Woods, abundant. Park Hill near Torquay; Bradley Woods, and other spots, near Newton; near Alphington.—*Dorset;* In Eastbury Woods, Gunville.—*Durham;* In the dene below Dalton-le-Dale; near Middleton-in-Teesdale; at Baydales near Darlington; in Castle Eden Dene; by Pontburn near Medomsley; and at Barley Haugh near Ebchester. In Hesledon Dene and in Portrack Lane, half way to Norton. On Ramps Holm, in Derwentwater, and in woods at the head of that lake.—*Essex;* Little Beddow Common; and at Danbury.—*Gloucestersh.* St. Vincent's Rocks, Bristol.—*Kent;* Near Cuxton; in woods above Stowting. In Badgen Wood, and beyond Whitehill, Ospringe.—*Lancash.* Sea shore in Low Furness.—*Middlesex;* Pastures about Harefield.—*Norfolk;* Near Bedingham, and Swaffham.—*Northamptonsh.* Woods between Wansford and Kingscliffe.—*Northumberland;* By the Ousebourn in Heaton Dene; and on the banks of the river Derwent near Allan's-ford. In Willington Dene, by the path from Wallsend; and in Dilston Park near Hexham.—*Notts;* In Asply Close; also in that part of Asply Wood which joins the close.—*Somersetsh.* In a wood by the side of the field behind the farm-house on Claverton Down.—*Staffordsh.* Near Botley.—*Suffolk;* Near Bungay.—*Surrey;* Wimbledon Common; Norwood Common; and Box Hill.—*Warwicksh.* Woods near Allesley.—*Worcestersh.* By the side of a stream near Newland. On the banks of Dowlass Brook, in Wire Forest. In Bewdley Forest, Shrawley Wood, and about Leigh Sinton. *Yorksh.* Upper part of Girling Trough, near Conistone, Kilnsay, and near Wensley.—WALES. *Anglesey;* In Penmon Deer-park; between Pont y Brenin and Llangoed Mill; and in the old Park near Beaumares. Woods of Plas Newydd.—*Flintsh.* On rocks by the Menai, and in the grounds at Penrhyn Castle, near Bangor. Common in *Monmouthshire*.—Not unfrequent in SCOTLAND and IRELAND.

Perennial.—Flowers in June and July.

Root somewhat tuberous. *Stem* upright, 2 to 3 feet high, branched, leafy, round, bearing several flowers. *Leaves* smooth, glaucous beneath, those from the root on long petioles, twice ternate; leaflets broadly wedge-shaped, bluntly lobed and cut; those on the stem more simple, and almost sessile. *Flowers* drooping, generally of a light blue or pale pink in a wild state, on purplish, somewhat downy stalks. *Sepals* pointed. *Petals* much incurved at the end of the spur. *Germens* and *Capsules* hairy. *Seeds* black.

This plant has long been cultivated in our gardens, on account of the beauty of its blossoms, which sport exceedingly in colour. Mr. Phillips observes in *Flora Historica*, v. ii. p. 119, that it is a curious character in the natural history of this plant that it should take three distinct modes of doubling its flowers; viz. by the multiplication of the sepals, to the exclusion of the petals; by the increase of the petals, to the exclusion of the sepals; and frequently by the multiplication of the petals, while the sepals remain. The elongated and incurved spur of the petals seems to bid defiance to the entrance of the bee in search of the hidden treasure; but the admirable ingenuity of the sagacious insect is not to be thus defeated, for on ascertaining the impracticability of effecting his usual admission, with his proboscis, he actually penetrates the petals near the depôt of honey, and thus extracts the latent sweets without further difficulty. Its medicinal qualities were once deemed considerable, but are not well defined, and in some instances it is said to have proved fatal to children. See Withering.—Hudson's *Aquilegia alpina* is only a smaller variety of this, with the spur of the petals extended, and but little incurved; and the stem usually single-flowered. It is quite distinct from *A. alpina* of Linnæus, which has blossoms double the size.

The drawing for the accompanying plate was made from a specimen gathered on Shotover Hill, near Oxford, July, 1836.

Taxus baccata. Common Yew. ♄

C. Mathews Del. & Sc.

Publ.d by W. Baxter Botanic Garden, Oxford. 1837.

TA'XUS *.

Linnean Class and Order. DIŒ'CIA †, MONADE'LPHIA ‡.

Natural Order. CONI'FERÆ, *Linn.*—Juss. Gen. Pl. p. 411.—Sm. Gram. of Bot. p. 190.—Lindl. Syn. p. 240.; Introd. to Nat. Syst. of Bot. p. 247.—Rich. by Macgilliv. p. 546.—Loud. Hort. Brit. p. 535.—PINEALES; sect. TAXINÆ; type, TAXACEÆ; Burn. Outl. of Bot. v. i. pp. 492 & 505.

GEN. CHAR. *Flowers* diœcious or monœcious, surrounded by scales (see figs. 1 & 6). *Barren Flowers* (A. and fig. 1). *Calyx* none (except the scales of the bud, which somewhat resemble a calyx). *Corolla* none. *Filaments* (see figs. 1 & 2.) numerous, 8 or 10, united in their lower part into a column, longer than the bud. *Anthers* depressed, with from 5 to 8 rounded segments, opening all round at the base, afterwards becoming flat and target-shaped (see figs. 3 & 4).

Fertile Flowers (B. and figs. 5 & 6). *Calyx* minute, inferior, cup-shaped, entire; afterwards enlarged, tumid and succulent, permanent. *Corolla* none. *Germen* (fig. 5.) superior, egg-shaped, pointed. *Style* none. *Stigma* blunt. *Berry (drupe)* (fig. 8.) spurious, formed of the enlarged, pulpy, coloured calyx. *Seed* or *Nut* (f. 9.) solitary, egg-oblong, projecting beyond the enlarged calyx.

The target-shaped, lobed anthers of the barren flowers, with from 5 to 8 cells, opening beneath; the entire, cup-shaped calyx, the single pistil, and solitary seed, enclosed in the enlarged, pulpy calyx of the fertile flowers; will distinguish this from other genera in the same class and order.

Two species British.

TA'XUS BACCATA. Berried Yew. Common Yew.

SPEC. CHAR. Leaves strap-shaped, 2-ranked. Fruit roundish.

Engl. Bot. t. 746.—Curt. Brit. Ent. v. i. t. 18.—Hunt. Evelyn's Silva. p. 378, with a plate.—Loud. Arbor. et Frustic. Brit. t. 293 & 293, *a*.—Linn. Sp. Pl. p. 1472.—Willd. v. iv. p. 856.—Huds. Fl. Angl. (2nd ed.) p. 437.—Sm. Fl. Brit. v. iii. p. 1086. Engl. Fl. v. iv. p. 253.—With. (7th ed.) v. iii. p. 811.—Gray's Nat. Arr. v. ii. p. 226.—Lindl. Syn. p 241.—Hook. Brit Fl. p. 439.—Lightf. Fl. Scot. v. ii. p. 626.—Sibth. Fl. Oxon. p. 216.—Davies' Welsh Bot. p. 95.—Purt. Mid. Fl. v. ii. p. 484.—Relh. Fl. Cant. (3rd ed.) p. 412.—Hook Fl. Scot. p. 290.—Johnston's Fl. of Berw. v. i. p. 221.—Winch's Fl. of Northumb. and Durh. p. 65.—Sylvan Sketches, p. 396.—Walk. Fl. of Oxf. p. 300.—Bab. Fl. Bath. p. 46.—Burnett's Outl. of Bot. v. i. p. 505.—Mack. Catal. of Pl. of Irel. p. 87.; Fl. Hibern. pt. 1. p. 259.—*Taxus*, Ray's Syn. p. 445.—Johns. Gerarde, p. 1370.

LOCALITIES.—In mountainous woods, and on the ledges of limestone cliffs.—*Oxfordsh.* Cornbury Quarry.—*Berks;* Near Aldworth.—*Cumberland;* Ulswater.—*Derbysh.* Rocks at Matlock and Dovedale.—*Dorset;* Common in the Eastern part of the Chase; and in a circuit of some miles about Cranbourne.—*Durham;* Shores of the Wear below Hilton Castle; Woods above Derwent

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A. a specimen from a barren-flowered tree.—B. ditto from a fertile-flowered tree.—Fig. 1. A barren Flower.—Fig. 2. The Filaments, united at the base, the anthers, all but one, removed.—Fig. 3. A separate Anther.—Fig. 4. The same, showing the under side.—Figs. 5 & 6. A fertile Flower.—Fig. 7. The green Fruit.—Fig. 8. The same, ripe.—Fig. 9. A Seed.—Figs. 1, 2, 3, 4, & 6, *magnified.*

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* From *toxon*, Gr. *a bow;* it being long celebrated as the best material for making those formidable implements. WITHERING.

† See folio 143, note †. ‡ See folio 106, note †.

Bridge, and Castle Eden Dene; also in Shipley Wood near Eglestone in Teesdale.—*Gloucestersh.* Indigenous to some of the limestone eminences of this county.—*Hants;* Apparently indigenous in this county.—*Herts;* On the mountains.—*Kent;* Between Tunbridge Wells and the High Rocks.—*Lancash.* At Sandside near Millthorpe; on the mountain called Yew-barrow; and in other inaccessible places on Furness.—*Northumb.* In the Cliffs on the western margin of the Allen.—*Shropsh.* Glen north of Colebrook Dale; West side of the Wrekin; and in hedges between Wenlock and Bridgenorth.—*Somersetsh.* In Warley, Hampton, and nther woods.—*Surrey;* On Boxhill, and elsewhere.—*Sussex;* On Harrison's Rocks, and elsewhere at Tunbridge Wells.—*Westmoreland;* On the Rocks of Borrowdale; and on Conzic Scar, near Kendal.—*Wilts:* Apparently indigenous in this county. On Cranborn Chase.—*Worcestersh.* Among the dingles of the hills at Clifton-on-Teme, Woodbury, and Abberly.—*Yorksh.* Rocks above Giggleswick; near Fountains Abbey; and in Gordale.—WALES. In *Anglesey.*—*Denbighsh.* Cefn Rocks: B. G.—SCOTLAND. Found here and there in the Highlands in a truly wild state.—IRELAND. In mountainous woods.

A Tree.—Flowers in March and April.

Trunk straight; *bark* reddish, smooth, deciduous. *Branches* horizontal, spreading in opposite directions. *Leaves* scattered, nearly sessile, 2-ranked, strap-shaped, pointed, entire, about an inch long, persistent; dark green, smooth and shining above; paler beneath. *Flowers* axillary, solitary, each from a scaly imbricated *bud;* the barren flowers light-brown, white with abundant *pollen*, which may often be seen, during the months of March and April, rising above the trees like columns of smoke; fertile flowers green, resembling, with their scaly *bracteas*, a little acorn. *Fruit* drooping, consisting of a sweet, internally glutinous scarlet *berry* or *drupe*, open at the top, enclosing an oval brown *seed*, unconnected with the fleshy part.

A variegated variety is sometimes met with in gardens, but is rather rare.

The Yew is one of the most tonsile trees we have; and hence, when the formal systems of horticulture were in vogue, yew hedges and yew images were in great repute. Few vestiges of this perversion of taste, however, now remain. The wood is hard and beautifully veined, and much valued for cabinet-maker's work; its uncnmmon pliancy, and toughness, made it particularly proper for bows; and those made of yew were esteemed superior to every other; and it is the opinion of some writers that it was nn that account it was so frequently planted in church-yards; but Sir THOMAS BROWNE supposes the planting of this tree in church-yards to derive its origiu from ancient funeral rites, being, on account of its perpetual verdure, used as a symbol of the resurrection. EVELYN is of the same opinion.—The leaves of the Yew are poisonous, especially in a green state. The berries have a sweet mawkish taste, and may be eaten without danger; but the seeds are said to be unwholesome. *Sphæria Taxi*, Hook. Br. Fl. v. ii. pt. ii. p. 272, is common on the leaves of this tree about Oxford.

The Yew is very long-lived, (see *Mag. Nat. Hist.* v. i. new series, pp. 28 and 85.) and often attains to an ennrmous magnitude. LIGHTFOOT tells us of one tree which Mr. PENNANT saw in Fortingal church-yard, whose trunk measured 56 feet and a half in circumference. The most remarkable Yew in the neighbourhood of Oxford, is one in Iffley church-yard, which is supposed to be as old as the church itself (above 700 years). It is 22 feet high; the girt of the trunk, at two feet from the ground, 20 feet; and the diameter of the head 25 feet. The trunk is now (Feb. 15, 1837) little mnre than a shell, with an opening 4 feet square on the East side. A small, but correct, figure of this tree may be seen in the S. W. view of Iffley Church, in the *Memorials of Oxford.*

Much curious and interesting information relating to the Yew, together with the age and dimensions of the most remarkable trees of that kind in Britain, may be seen in MARTYN's ed. of MILLER's *Gardener's and Bot. Dictionary; With. Bot. Arr.* 7th ed; Mr. LEES' *Lect. on the Affinities of Plants with Man and Animals;* and especially in Mr. LOUDON's *Arboretum Brit.;* the several volumes of his *Gardener's Mag.;* and his *Mag. of Nat. History.*—The Irish Yew is elevated to the rank of a species by Dr. LINDLEY; perhaps justly. See *Syn. of Brit. Fl.* p. 241. It is figured in LOUD. *Ar. Brit.* t. 294.

Bartsia Odontites. Red Bartsia. ⊙

(Mathews Del & Sc. Pub.d by W. Baxter Botanic Garden Oxford 1837)

BA'RTSIA*

Linnean Class and Order. DIDYNA'MIA†, ANGIOSPE'RMIA‡.

Natural Order. SCROPHULARI'NEÆ §, *Dr. R. Brown.*—Lindl. Syn. p. 187.; Introd. to Nat. Syst. of Bot. p. 228.—SCROPHULA'RINÆ, Rich. by Macgilliv. p. 434.—Sm. Engl. Fl. v. iii. p. 115.—Loud. Hort. Brit. p. 528.—SCROPHULA'RIÆ, Sm. Gram. of Bot. p. 100.—PEDICULARES, Juss. Gen. Pl. p. 99.—SYRINGALES; subord. PRIMULOSÆ; sect. MENTHINÆ; tye, SCROPHULARIA'CEÆ; Burn. Outl. of Bot. v. ii. pp. 900, 958, & 978.

GEN. CHAR. *Calyx* (fig. 1.) inferior, tubular, not ventricose, mostly coloured; border in 4 acute, nearly equal, segments. *Corolla* (fig. 2.) ringent, rather compressed; tube short; throat funnel-shaped; upper lip longest, concave, entire; lower lip in 3, deep, nearly equal, reflexed lobes. *Filaments* (fig. 3, *a.*) 4, about the length of the upper lip, incurved. *Anthers* (fig. 3, *b.*) incumbent, a little hairy, of 2 cells opening longitudinally in front (see fig. 4.), and all collected together under the upper lip. *Germen* (see fig. 5.) simple, egg-shaped, pointed. *Style* (see fig. 5.) thread-shaped, curved. *Stigma* blunt, undivided. *Capsule* (fig. 6.) egg-shaped, compressed, of 2 cells and 2 valves; the partition contrary to the valves, finally splitting lengthwise, and each portion bearing a longitudinal *receptacle.* *Seeds* (fig. 7.) numerous, small, angular, attached by their inner edge to each receptacle.

Distinguished from other genera, in the same class and order, by the 4-cleft *calyx;* the entire upper lip of the *corolla;* the 2-celled *capsule;* and the angular *seeds.*

Three species British.

BA'RTSIA ODONTI'TES||. Red Bartsia. Wood Chickweed. Eyebright Cow-wheat. Painted Cup.

SPEC. CHAR. Leaves spear-shaped, serrated; upper ones (or bracteas) alternate. Flowers in unilateral racemes. Anthers nearly smooth. Stem square, branched. Root fibrous.

Engl. Bot. t. 1415.—Huds. Fl. Angl. (2nd ed.) p. 268.—Sm. Fl. Brit. v. ii. p. 648.; Eng. Fl. v. iii. p. 119.—With. (7th ed.) v. iii. p. 726.—Lind. Syn. p. 191.—Hook. Brit. Fl. p. 283.—Davies' Welsh Bot. p. 59.—Relh. Fl. Cantab. (3rd ed.)

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. Stamens; *a.* the filaments; *b.* the anthers.—Fig. 4. One of the Anthers more highly magnified.—Fig. 5. Germen and Pistil.—Fig. 6. Capsule.—Fig. 7. A Seed.—*All,* except figs. 1, 2, and 5, *more or less magnified.*

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* So named by LINNÆUS in honour of his beloved friend, Dr. JOHN BARTSCH, of Koningsberg, a most ingenious young man of great promise, devoted to the study of nature, who perished untimely whilst pursuing his researches in Surinam, whither he was sent by the illustrious BOERHAAVE, in 1738. This event is feelingly lamented by LINNÆUS in his *Flora Suecica,* (2nd ed.) p. 211. WITHERING.—See also PULTENEY's *Life of Linnæus,* by MATON, p 50.; STŒVER's *Life of Linnæus,* by TRAPP, p. 100; and Dr. JACOB's very interesting *West Devon and Cornwall Flora,* under *Bartsia Odontites.*

† See f. 31, n. †. ‡ See f. 72, n. ‡. § See f. 50, *a.*

|| *Odontites* was originally the generic name given to this plant by RIVINUS, and was retained by LINNÆUS as a specific appellation when he established the genus. Dr. JACOB.

p. 249.—Hook. Fl. Scot. p. 186.—Grev. Fl. Edin. p. 134.—Fl. Devon. pp. 103 and 147.—Johnston's Fl. of Berw. v. i. p. 135.—Winch. Fl. of Northumb. and Durh. p. 41.—Walk. Fl. of Oxf. p. 173.—Jacob's West Devon and Cornwall Flora.—Bab. Fl. Bath. p. 36.—Mack. Catal. of Pl. of Irel. p. 57.; Fl. Hibern. pt. I. p. 202.—*Euphrasia Odontites*, Linn. Sp. Pl. p. 841.—Curt. Fl. Lond. t. —Mart. Fl. Rust. t. 42.—Willd. Sp. Pl. v. iii. pt. I. p. 194.—Lightf. Fl. Scot. v. i. p. 324.—Sibth. Fl. Oxon. p. 192.—Abbot's Fl. Bedf. p. 135.—Purt. Midl. Fl. v. i. p. 289.—*Euphrasia pratensis rubra*, Ray's Syn. p. *284.—*Odontites rubra*, Gray's Nat. Arr. v. ii. p. 310.—*Cratæogonon Euphrosine*, Johnson's Gerarde, p. 91.

Localities.—In cornfields, pastures, and waste places, especially on a wet clay soil; frequent.

Annual.—Flowers in July and August.

Root simple, fibrous, and somewhat woody. *Stem* from 6 inches to a foot or more high, upright, very much branched, bluntly 4-cornered, and roughish with small deflexed hairs; branches opposite. *Leaves* opposite, sessile, strap-spear-shaped, turning down, toothed, slightly downy, veiny, veins few, and hairy underneath. *Bracteas* spear-shaped, nearly upright, purplish. *Flowers* numerous, in long, unilateral *racemes*, or rather *spikes*. *Calyx* (fig. 1.) finely downy; the segments equal and sharp. *Corolla* (fig. 2.) rose-coloured, (sometimes white,) finely downy, the upper lip concave, scarcely notched; the three lobes of the lower lip shorter than the upper, blunt, equal. *Filaments* hairy in the lower part (see fig. 3, *a*). *Anthers* smooth, except at the back and in the lower part, where they are hairy (see fig. 2, *b*, and fig. 4); their lobes are pointed, but scarcely bristly. *Germen* hairy, surrounded and sheathed at the base by a thin membrane. *Style* (fig. 5.) thread-shaped, bent in under the upper lip of the corolla before the flower opens, but afterwards becoming longer than the corolla; stigma forming a little head. *Seeds* angular, striated.

According to Linnæus, cows, goats, sheep, and horses eat this plant; and swine refuse it. Dr. Martyn observes, in his *Flora Rustica*, that with us it appears to be untouched in pastures; and he informs us that he was assured by an ingenious observer, that when it is in full vigour, cattle, so far from eating it, will abstain from the grass even to the distance of some inches from the plant.

A minute, orange-coloured fungus, *Uredo Rhinanthacearum*, Hook. Brit. Fl. v. ii. pt. II. p. 377, is very common on this plant; and on *Euphrasia officinalis*, in the neighbourhood of Oxford, in the Summer and Autumn. See folio 72.

> "O, Nature! thy minutest works amaze,
> Pose the close search, and lose our thoughts in praise!"
>
> Moses Brown.

[illegible]

[illegible] — [illegible] and [illegible].

[illegible], [illegible], and somewhat [illegible] to [illegible] or more high, upright, very [illegible] covered, and rough with small [illegible] [illegible]. Leaves opposite, small, [illegible] [illegible], slightly downy, veiny, veins [illegible] [illegible] appearance, nearly upright, [illegible] one, in long, [illegible] remote, or [illegible] finely downy; the [illegible] equal and [illegible] two-cornered, (sometimes white,) finely downy [illegible] cave, sharply toothed; the three lobes [illegible] than the upper, blunt, equal. Filaments [illegible] (see fig. 3, a). Anthers smooth, [illegible] lower part, where they are hairy (see [illegible] [illegible] are round, but scarcely hairy. [illegible] and absorbed at its base by a thin membrane. [illegible] closed-tipped, but in order the upper lip of the [illegible] the lower or one, but afterwards becoming [illegible] [illegible] forming a little head. [illegible]

According to Linnæus, [illegible] plant; and [illegible] it. [illegible] flexion, that with its [illegible] be informs us that he was [illegible] when it is in full view, [illegible] from the grass [illegible]

A minute, [illegible] look, first, if, [illegible] and on Equinoxes [illegible] the Summer and Autumn. [illegible]

[illegible]

Parietaria officinalis. Pellitory of the Wall. ♃

C. Mathews. Del. & Sc. Pub.d by W. Baxter. Botanic Garden. Oxford. 1837.

PARIETA'RIA*.

Linnean Class and Order. TETRA'NDRIA†, MONOGY'NIA.

Natural Order. URTI'CEÆ, Lindl. Syn. p. 218.; Introd. to Nat. Syst. of Bot. p. 93.—Rich. by Macgilliv. p. 510.—Loud. Hort. Brit. p. 534.—URTICÆ, Juss. Gen. Pl. p. 400.—QUERNEALES; sect. URTICINÆ; type, URTICACEÆ; subty. URTICIDÆ; Burn. Outl. of Bot. v. ii. pp. 523, 541, & 558.—SCABRIDÆ, *Linn.*

GEN. CHAR. *Involucrum* (fig. 3.) various, 1- or 3-flowered, regular or irregular. *Calyx* (fig. 3.) inferior, of 1 sepal, in 4 deep segments, permanent; enlarged and hardened after flowering, except in flowers that want stamens. *Corolla* none. *Filaments* (see fig. 3.) 4, recurved, strap-shaped, wrinkled, elastic when disturbed. *Anthers* (fig. 4.) of 2 distant lobes. *Germen* (see fig. 5.) egg-shaped. *Style* (see fig. 5.) cylindrical, upright. *Stigma* (see fig. 5.) tufted. *Seed* (figs. 6, 7, 8.) egg-shaped, flattened, polished, invested with the enlarged calyx.

The inferior, 4-cleft *calyx;* the elastic *stamens;* the 1-seeded *fruit*, enclosed by the enlarged calyx; and one or more of the central florets wanting the stamens; will distinguish this from other genera, destitute of a corolla, in the same class and order.

One species British.

PARIETA'RIA OFFICINA'LIS. Common Pellitory of the Wall.

SPEC. CHAR. Leaves egg-spear-shaped, 3-nerved above the base. Involucrum 3-flowered, with 7 egg-shaped segments. Stem ascending.

Engl. Bot. t. 879.—Curt. Fl. Lond. t. 233.—Woodv. Med. Bot. v. iii. p. 384. t. 142.—Linn. Sp. Pl. p. 1492.—Willd. v. iv. pt. II. p. 953.—Huds. Fl. Angl. (2nd edit.) p. 442.—Sm. Fl. Brit. v. i. p. 189.; Engl. Fl. v. i. p. 222.—Wither. (7th edit.) v. ii. p. 237.—Gray's Nat. Arr. v. ii. p. 254.—Lindl. Syn. p. 218.—Hook. Brit. Fl. p. 69.—Lightf. Fl. Scot. v. ii. p. 634.—Sibth. Fl. Oxon. p. 62.—Abb. Fl. Bedf, p. 218.—Davies' Welsh Bot. p. 17.—Purt. Mid. Fl. v. ii. p. 494.—Relh. Fl. Cant. (3rd edit.) p. 65.—Hook. Fl. Scot. p. 56.—Grev. Fl. Edin. p. 39.—Thornt. Fam. Herbal, p. 860.—Fl. Devon. pp. 29 & 136.—Johnst. Fl. of Berw. v. i. p. 39.—Walk. Fl. of Oxf. p. 42.—Perry's Pl. Varv. Selectæ, p. 13.—Bab. Fl. Bath. p. 45.—Mack. Catal. of Pl. of Irel. p 19.—Fl. Hibern. pt. I. p. 232.—*Parietária*, Ray's Syn. p. 158.—Johnson's Gerarde, p. 331.

LOCALITIES.—On old walls, and in waste places among ruins.—Frequent in most parts of Britain; but not generally common. It is plentiful in and about Oxford. In the neighbourhood of Rugby it appears to be rare; the only place in which I observed it there, was in the hedge of a cottage garden, between the Baptist Chapel and the road to Clifton.

Perennial.—Flowers from June to September.

Root somewhat woody, of a reddish colour, and fibrous. *Stems* several, annual, nearly upright, from 6 inches to a foot or more high, much branched, angular, leafy, reddish, hairy, succulent, and

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Fig. 1. Three flowers from one of the involucrums.—Fig. 2. An Involucrum.—Fig. 3. Calyx, and the 4 Stamens.—Fig. 4. An Anther discharging its pollen.—Fig. 5. Germen, Style, and Stigma.—Figs. 6, 7, & 8. Seeds.—*All*, except figs. 1 & 8, *more or less magnified.*

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* From *Paries*, a *wall;* the usual place of its growth. WITHERING.

† See *Asperula odorata*, folio 46, note †.

very impatient of frost. *Leaves* alternate, on short stalks, elliptic-spear-shaped, pointed, entire, hairy, dull green above, paler beneath. *Flowers* very small, numerous, in the axils of the leaves. *Involucrum* (see fig. 2.) stalked, "in 2 portions, of about 7 segments each, and between them is placed a fertile flower, whose perianth (calyx) is entire, closely surrounding the pistil. In each portion of the involucrum are three flowers apparently fertile," (WILSON); but of which the central one has only a pistil. The lateral ones have stamens and pistil, (see fig. 1). *Calyx* (fig. 3.) of one sepal, deeply divided into 4 segments. *Filaments* 4, white, curiously jointed and elastic, by which property the pollen is very copiously discharged. *Germen* (see fig. 5.) green, shining, naked. *Style* thread-shaped. *Stigma* forming a bright scarlet tuft (see fig. 5). *Seed* (figs. 6 & 8.) single, egg-shaped, shining.

"To obtain a perfect idea of the manner in which the fructification is carried on, in this plant, the flowers should be examined at a very early period of their expansion; we shall then find in each involucre three red stigmas, the two outermost of which belong to flowers which have both stamens and a pistil, but whose stamens are not yet visible; the middle one, which is the largest and most conspicuous, to one which has a pistil only. If a view be taken of the same flowers at the time that the elastic filaments by their sudden expansion are scattering the pollen, the styles and stigmas of the perfect flowers, (that is, flowers with both stamens and a pistil,) visible before, will often be fouod wanting, and the germ left naked in the centre of the flower: at this period, the segments of the calyx in the same flowers are nearly of the same length as the filaments, the style and stigma of the fertile or pistilliferus flower remain perfect, and the germ is closely surrounded by a green hairy calyx, which never expands: the period of flowering being now over, a considerable alteration takes place in the calyx of the perfect flowers, each is considerably elongated, becomes more tubular, assumes a redder colour, has its tip pressed down, and soon drops out of the involucre, in which it leaves no appearance of a seed; but on opening them, a seed will be found at the bottom of each, perfectly similar to that produced by, and inclosed in the calyx of the fertile or pistilliferus flower, which does not enlarge as the other does, but partaking more the nature of a capsule, on pressure, divides at top into four parts, and contains a blackish, shining seed.

"The manner in which the flowers shed their pollen is curious. The filaments, on their first appearance, all bend inwards; as soon as the pollen is arrived at a proper state to be discharged, the warmth of the sun, or the least touch from the point of a pin, will make them instantly fly back, and discharge a little cloud of dust (see fig. 4). This process is best seen in a morning, when the sun shines on the plant, in July or August: if the plant be large, numbers will be seen exploding at the same instant."—CURTIS, in *Flora Londinensis;* and MARTYN's MILLER's *Gard. Dict.*

This plant was formerly in repute as a medicine; but it does not seem to possess any remarkable qualities. It has been ranked as an emollient, though apparently without reason. Its character as a diuretic is better known. Mr. SOLE, Apothecary of Bath, and an excellent Botanist, relates that he observed remarkably good effects from the juice of this herb in dropsical cases, in which other diuretics had failed; he converted the juice into a thin syrup, and gave two table-spoonfuls or more thrice a day.

The leaves of this plant strewed in granaries are said to destroy the corn-weevil. It contains so great a quantity of nitre, that in making an extract from it, the mass has taken fire. WITHERING.

Pisum maritimum. Sea Pea. ♃.

Pub.d by W. Baxter Botanic Garden Oxford 1837.

PISUM*.

Linnean Class and Order. DIADE'LPHIA†, DECA'NDRIA.

Natural Order. LEGUMINO'SÆ, Juss. Gen. Pl. p. 345.—Sm. Gram. of Bot. p. 174.—Lindl. Syn. p. 75.; Introd. to Nat. Syst. of Bot. p. 87.—Rich. by Macgilliv. p. 532.—Sm. Engl. Fl. v. iii. p. 259.—Loud. Hort. Brit. p. 509.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 91.—LEGUMINA'CEÆ, Loud. Arb. Brit. p. 561.—PAPILIONA'CEÆ‡, *Linn.*—ROSALES; sect. CICERINÆ; subsect. LOTIANÆ; type, LATHYRACEÆ; subtype, VICIDÆ; Burn. Outl. of Bot. pp. 614, 638, 642, 659, & 661.

GEN. CHAR. *Calyx* (fig. 1.) inferior, cup-shaped, permanent; the margin in 5 pointed segments, the 2 superior ones the shortest. *Corolla* (fig. 2.) butterfly-shaped, of 5 petals; standard (fig. 3.) broadest, inversely heart-shaped, reflexed, notched, with a pair of protuberances at the inner side near the bottom, its claw vaulted; wings (figs. 4 & 5, *a*, *a*. and fig. 6.) inversely egg-shaped, converging above, shorter than the standard, with wavy, strap-shaped claws; keel (figs. 4 & 5, *b*) half-moon-shaped, compressed, of 2 oblong, cohering, folded petals, smaller than the wings, and with narrower straight claws. *Filaments* (figs. 7 & 8.) 10, nine united, (fig. 8, *a*.) for more than half their length, into one compressed keeled tube, open along its upper edge, which is closed by the tenth, separate, flattish, awl-shaped filament (see fig. 7. and fig. 8, *b*). *Anthers* (fig. 8, *a*.) small, roundish. *Germen* (fig. 9.) oblong, compressed. *Style* (fig. 8, *c*.) ascending, triangular, membranous at the edges. *Stigma* longitudinal, downy, united to the acute upper edge of the style. *Legume* (figs. 10 & 11.) large, oblong, rather compressed, but not winged; of 1 cell and 2 concave valves. *Seeds* (see f. 11.) globose, numerous, with a roundish hilum.

Distinguished from other genera, in the same class and order, by the leafy segments of the *calyx;* the triangular *style;* and the downy *stigma* attached to the prominent upper edge of the style.

One species British.

PISUM MARI'TIMUM. Sea Pea.

SPEC. CHAR. Stem angular. Petioles flattish on the upper side. Stipulas broad, half-arrow-shaped. Peduncles many-flowered, the length of the leaves.

Engl. Bot. t. 1046.—Hook. Fl. Lond. t. 5.—Linn. Sp. Pl. p. 1027.—Willd. Sp. Pl. v. iii. pt. ii. p. 1071.—Huds. Fl. Angl. (2nd ed.) p. 313.—Ait. Hort. Kew. 1st ed. v. iii. p. 37.; 2nd ed. v. iv. p. 302.—Sm. Fl. Brit. v. ii. p. 760. Eng. Fl. v. iii. p. 270.—With. (7th ed.) v. iii. p. 835.—Gray's Nat. Arr. v. ii. p. 612.—Lindl. Syn. p. 84.—Hook. Brit. Fl. p. 324.—Rev. G. E. Smith's Pl. of S. Kent, p. 39.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 331.—Mack. Catal. of Pl.

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. The Standard.—Figs. 4 & 5, the Wings and Keel; *a*, *a*. the wings; *b*. the keel.—Fig. 6. One of the Wings.—Fig. 7. Calyx and Stamens.—Fig. 8. Stamens, Germen, Style, and Stigma; *a*, 9 of the Stamens, with their filaments united; *b*, the upper, single Stamen.—Fig. 9. Germen, Style, and Stigma.—Fig. 10. A Legume.—Fig. 11. The same opened to show the seeds.

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* *Pis* in Celtic means *a pea;* hence *pisum* in Latin. DON.

† See *Spártium scopárium*, f. 77. n. †. ‡ See *Láthyrus latifólius*, f. 117. n. ‡.

of Irel. p. 66.; Fl. Hibern. pt. 1. p. 82.—*Pisum marinum*, Ray's Syn. p. 319.—Johnson's Gerarde, p. 1250.

LOCALITIES.—On the stony sea shore.—*Cornwall;* Beach near Penzance: HEATH.—*Dorsetshire;* On the sand and naked pebbles of Chesil Bank, running from Portland to Abbotsbury; on the North shore, and eastward of it at Poole, and elsewhere: Dr. PULTENEY.—*Hampshire;* Sandown Beach; Isle of Wight: Dr. PULTENEY. Near Cowes, Isle of Wight: Mr. MARRYAT, Ch. Ch. —*Kent;* On the West side of Dungeness, near Lydd: RAY. Abundant on the beach near Walmer Castle: L. W. DILLWYN, Esq.—*Lincolnshire;* At Ingolm Mills: PARKINSON.—*Suffolk;* On a stony beach between Aldborough and Orford: RAY.—*Sussex;* At Rye and Pevensey: CAMDEN. At Guildford, opposite the Comber: PARKINSON. By William the Conqueror's Table near Hastings: Mr. J. WOODS, jun.—IRELAND. Sand Hill, Bay of Castle-main, County of Kerry: Mr. MACKAY.

Perennial.—Flowers in July and August.

Root creeping, much branched, running very deep among the loose stones. *Stems* about nine inches or a foot long, procumbent, simple, quadrangular, a little compressed, smooth, zigzag, leafy, many-flowered, glaucous, often reddish. *Leaves* numerous, alternate, abruptly pinnate, common stalk flattish, ending in a branched *tendril; leaflets* oval, alternate, sessile, smooth, entire, veiny, of a dark rather glaucous green; on the lower leaves 5 to 7, on the upper 9 to 11, always one more on the outer side of the leafstalk than on the inner, generally cloven, sometimes simple. *Stipulas* in pairs, equal, triangular, half-arrow-shaped, reflexed, toothed towards the base, rather smaller than the leaflets. *Clusters* from the axils of the leaves, solitary, stalked, many-flowered; stalks (peduncles) about as long as the leaves. *Flowers* large, purple, variegated with crimson veins; the prominences in front of the *standard* white; *wings* and *keel* pale blue. *Legumes* oblong, about half the size of the cultivated Pea, obliquely-reticulated, and tipped with the permanent inflexed style. *Seeds* 6 or 8, very bitter.

Sir W. J. HOOKER remarks, that this plant has more the habit of a *Lathyrus* than of a *Pisum*, though the *style* most resembles the latter.

The *Sea Pea* is a native of the sea shore, among stones or in sand, in other parts of Europe as well as in England; as France, Sweden, Lapland, and Denmark. It is said to be also a native of Canada and Japan.

This Pea was taken little notice of before the year 1555; at which time there being nearly a famine, the poor people on the coast of Suffolk about Orford and Aldborough supported themselves with it for some time. It was supposed to spring up opportunely in that year of dearth, from a shipwrecked vessel loaded with Peas; but this species differs from all the varieties of the garden or field Pea, in the length and continuance of its roots, the smallness and bitterness of its seed, and in the whole habit and appearance of the plant. It had probably grown a long time on Orford beach unobserved, till extreme want called it into public notice. The legend of the miraculous arrival of these Peas in a time of extreme scarcity, is still believed among the country people.

Cattle are very fond of the herb.

Rufell del. *Althæa Officinalis. Marsh Mallow. ♃.* N.P. sc.

Publ.d by W. Baxter Botanic Garden Oxford 1837.

ALTHÆ'A*.

Linnean Class and Order. MONADE'LPHIA†, POLYA'NDRIA.

Natural Order. MALVA'CEÆ‡, Juss. Gen Pl p. 271.—Sm. Gram. of Bot. p. 148.—Lindl. Syn. p. 40.; Introd. to Nat. Syst. of Bot. p. 33.—Rich. by Macgilliv. p. 476.—Loud. Hort. Brit. p. 502.—Don's Gen. Syst. of Gard. & Bot. v. i. p. 458.—ROSALES; subord. RHÆADOSÆ; sect. MALVINÆ; Burn. Outl. of Bot. v. ii. pp. 614, 784, & 814.—COLUMNIFERÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, double, permanent. *Outer Calyx* (*Involucrum*, Lindl.) smallest, of 1 sepal, in from 6 to 9 narrow, deep segments; *inner Calyx* of 1 sepal, divided half way down into 5 broader segments. *Corolla* (fig. 2.) of 5, inversely heart-shaped, blunt, rather oblique, flat petals, attached by their broad claws to the bottom of the tube of the stamens. *Filaments* (see fig. 3.) numerous, hair-like, united below into a tube; separate in the upper part, both at the summit and sides. *Anthers* somewhat kidney-shaped. *Germen* (see fig. 3.) orbicular, depressed. *Style* cylindrical, as long as the tube of the filaments. *Stigmas* (see fig. 3.) about 20, bristle-shaped, nearly the length of the style. *Capsules* (fig. 5.) as many as the stigmas, compressed, ranged in a circle round the columnar *receptacle* (see fig. 4), each of 2 valves and 1 cell (see fig. 6.), finally deciduous. *Seeds* (fig. 7.) solitary, kidney-shaped, compressed.

The *outer calyx* or *involucrum* of from 6 to 9 segments; and the numerous, 1-seeded *capsules*, collected in an orbicular head; will distinguish this from other genera in the same class and order.

Two species British.

ALTHÆ'A OFFICINA'LIS. Common Marsh-mallow§. Wymote.

SPEC. CHAR. Leaves clothed with soft white down on both surfaces; heart-shaped or egg-shaped, toothed, undivided or somewhat 5-lobed. Peduncles (flower-stalks) axillary, many-flowered, much shorter than the leaves.

Engl. Bot. t. 147.—Woodv. Med. Bot. v. i. p. 146. t. 53.—Linn. Sp. Pl. p. 966.—Willd. Sp. Pl. v. iii. pt. 1. p. 770.—Huds. Fl. Angl. (2nd ed.) p. 306.—Sm. Fl. Brit. v. ii. p. 738.—Ait. Hort. Kew. (2nd ed.) v. iv. p. 207.—Sm. Engl. Fl. v. iii. p. 244.—With. (7th ed.) v. iii. p. 807.—Gray's Nat. Arr. v. ii. p. 639.—Lindl. Syn. p. 41.—Hook. Brit. Fl. p. 315.—Lightf. Fl. Scot. v. i. p. 373.—Thornt. Family Herb. p. 625.—Purt. Midl. Fl. v. i. p. 322.—Relh. Fl. Cant. (3rd ed.) p. 281.—Hook. Fl. Scot. p. 208.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 466.—Mack. Catal. of Pl. of Irel. p. 64.; Fl. Hib. pt. 1. p. 37.—*Althæa vulgaris*, Ray's Syn. p. 252.—*Althæ'a Ibiscus*, Johnson's Gerarde, p. 933.

LOCALITIES.—In salt marshes, and on the banks of ditches; especially near the sea‖.—*Cambridgesh.* On the bank of a ditch between the Osier-holt near

Fig. 1. The double Calyx.—Fig. 2. The Corolla.—Fig. 3. Germen, Stamens, Style, and Stigmas.—Fig. 4. Fruit, accompanied by the inner permanent Calyx.—Fig. 5. A Capsule.—Fig. 6. Transverse section of ditto.—Fig. 7. A Seed.—Fig. 8. One of the stellated Hairs.—Figs. 1 & 8 *magnified.*

* From *altho*, to *cure*; in allusion to the well known salutary effects of *Althæ'a officinalis.* DON.

† See *Lavatéra arbórea*, folio 106, note †. ‡ See folio 106, *a.*

§ In the *Language of Flowers*, this plant is considered the emblem of Beneficence; and the friend of the poor man.

‖ A solitary plant of *Althæ'a officinális* was found on the margin of a watery ditch in Long Meadow, near Oxford, by Mr. JOSEPH EAST, Aug. 9, 1835. It is probably an escape from the Oxford Garden.

Cow Fen, and Trumpington Meadow. Twenty-feet Drain near March; by a bridge in the road leading to Wisbeach. Near a bridge about two miles from Tydd Gote, in the road to Wisbeach. Ditches by the sides of the road from Wisbeach to Peterborough: Rev. R. RELHAN.—*Cornwall;* Sea shore near Marazion and Penzance: Mr. WATT.—*Cumberland;* Pooley, and Greystock churchyard: N. B. G.—*Hants;* Brading, and Quor Abbey, Isle of Wight: Dr. BOSTOCK. Near Cowes, Isle of Wight: Mr. MARRYAT, Ch. Ch.—*Kent;* In the marshes at Clapgate and Goodnestone, near Faversham: E. JACOB, Esq. In *South Kent:* Rev. G. E. SMITH, in N. B. G.—*Norfolk;* Banks of the Ouse: Miss BELL. Near Borough, near Yarmouth: G. COOPER, in N. B. G.—In *Nottinghamshire:* COOPER, in N. B. G.—*Somersetsh.* Brent: N. J. WINCH, Esq in N. B. G.—*Sussex;* Near St. Leonard's: W. C. TREVELYAN, Esq. in N. B. G. Near Rye, in great abundance: Mr. MARRYAT, Ch. Ch.—SCOTLAND. Near Ardbigland on the Solway Firth: Dr. BURGESS. Marshy places on the Campsie Hills near Glasgow: Mr. HOPKIRK.—IRELAND. Marshy grounds north of the Shaunon a little above Limerick. Cable Island near Youghal, and Cape Clear Islands: Mr. J. DRUMMOND. Road-side between Lahinch and Miltown, county of Clare: Mr. W. ANDREWS.

Perennial.—Flowers in July, August, and September.

Root tap-shaped, much branched, somewhat woody, yellowish on the outside, white within; very mucilaginous. *Stems* several, from 2 to 4 feet high, or more; simple, round, leafy, tough and pliant. *Leaves* alternate, petiolated, egg-shaped or heart-shaped at the base, various in breadth, plaited, unequally serrated, soft and velvety; the upper smaller, usually with 3 imperfect lobes, and 5 ribs underneath; the lower larger, and 7-ribbed. *Flowers* rather large, from the axils of the leaves, in very short, dense panicles, rarely solitary. *Corolla* of a delicate blush colour. *Outer Calyx* or *Involucrum*, with 8, 9, 10, or 12 divisions. *Herb* of a hoary green, and peculiarly soft and downy, with fine starry pubescence (see fig. 8).

The whole plant, but especially the root, abounds with mild mucilage. When the roots are peeled and dried, they are perfectly white; and certain districts of France are celebrated for producing them in fine quality. They contain much mucilage, with saccharine principal. It is used as an emollient and demulcent in diseases attended with irritation and pain, as in various pulmonary complaints, and in affections of the alimentary canal and urinary organs; and it is applied externally in emollient fomentations, gargles, and clysters; and a favourite lozenge is named from it, *Pate de Guimauve.* In France the plant is called *Guimauve, mauve-qui,* that is to say, *Clammy Mallow.* It was anciently called *Malva-visca,* on account of the abundant mucilage in the roots.

Mallows were formerly used to decorate the graves of our ancestors; and so indispensable were they deemed to each domicile of the living, that, as a matter of decided ill omen, the poet exclaims,

"Alas! when *Mallows* in the Garden die."

A variety of *A. officinalis* with rounder leaves, not ending in a point, is described in RAY'S *Synopsis,* and is said to grow in the Isle of Ely.

A. hirsuta, the other British species, is known by the hispid stem; and the single flowered peduncles, longer than the leaves.

Tofieldia Palustris. Scottish Asphodel. ♃

Pub.d by W. Baxter, Botanic Garden, Oxford 1837

TOFIE'LDIA *.

Linnean Class and Order. HEXA'NDRIA †, TRIGY'NIA.

Natural Order. MELANTHA'CEÆ, *Dr. R. Brown.*—Lind Syn. p. 264.; Introd. to Nat. Syst of Bot. p. 272.—Loud. Hort. Brit. p. 539.—COLCHICA'CEÆ, De Cand. Fl. Fr. v. iii. p. 192.—Rich. by Macgilliv. p. 401.—ASPHODELI, Juss. Gen. Pl. p. 51.—Sm. Gr. of Bot. p. 74.—PALMARES; sect. LILIACINÆ; type, COLCHICACEÆ; Burn. Outl. of Bot. v. i. pp. 391, 418, 425, & 434.—CORONARIÆ, *Linn.*

GEN. CHAR. *Calyx (involucre,* Hook.*)* (fig. 1.) inferior, small, of 1 sepal, membranous, 3-cleft, permanent. *Corolla (Perianth,* Hook. and Lindl.*)* (fig. 2.) of 6, oblong, concave, equal, spreading, permanent petals, many times longer than the calyx. *Filaments* (see figs. 2 & 3.) 6, awl-shaped, simple, smooth, the length of the petals, and opposite to them. *Anthers* incumbent, roundish-heart-shaped. *Germens* (see figs. 2, 3, & 4.) 3, superior, converging, pointed. *Styles* 3, very short, vertical, distant. *Stigmas* (see f. 4.) capitate. *Capsules (follicles,* Lindl.*)* (see figs. 4 & 5.) 3 or 6, united at the base, each of 1 cell, and 2 valves, bursting chiefly at the inner edge. *Seeds* (fig. 6.) numerous, elliptic-oblong, angular, attached to the inner margin of the valves at each side.

The minute, 3-cleft *calyx;* the *corolla* of 6 petals; the smooth *filaments;* and the 3 or 6 *capsules* united at their base, each many-*seeded;* will distinguish this from other genera in the same class and order.

One species British.

TOFIE'LDIA PALU'STRIS. Marsh Tofieldia, Scottish Asphodel.

SPEC. CHAR. Spike egg-shaped, or oblong, blunt. Stem smooth, thread-shaped, nearly leafless. Petals inversely egg-shaped, blunt. Germens roundish.

Engl. Bot. t. 536.—Hook. Fl. Lond. t. 100.—Huds. Fl. Ang. (2nd ed.) p. 157.—Sm. Fl. Brit. v. i. p. 397, *excluding all the synonyms but the 1st, 2nd, & 8th.*—Pers. Syn. Pl. v. i. p. 399.—Sm. Engl. Fl. v. ii. p. 198.—With. (7th ed.) v. ii. p. 459.—Gray's Nat. Arr. v. ii. p. 172.—Lind. Syn. p. 264.—Hook. Br. Fl. p. 170.—Hook. Fl. Scot. p. 114.—Winch's Fl. of Northumb. and Durh. p. 24.—*Tofieldia borealis,* Wahlenb. Fl. Lapp. p. 89.—*Anthèricum calyculàtum,* Linn. Sp. Pl. p. 447.; Fl. Lapp. (2nd ed.) p. 106. t. 10. f. 3.—Lightf. Fl. Scot. v. i. p. 181. t. 8. f. 2.—*Helònias boreàlis,* Willd. Sp. Pl. v. ii. pt. 1. p. 274, synonyms greatly confused.—*Phalangium Scoticum palustre minimum, iridis folio,* Ray's Syn. p. 375.

LOCALITIES.—In boggy places, on the mountains of the North of England; of Scotland; and, Sir J. E. SMITH says, of Ireland; but it is not noticed in the new *Flora Hibernica* of Mr. MACKAY.—*Durham;* Near Widdy Bank on Teesdale Forest: N. J. WINCH, Esq.—*Yorkshire;* On Cronkley Fell, at 2000 feet elevation: R. BOWMAN, in N. B. G. Above Middleton in Teesdale: Mr. BRUNTON.—SCOTLAND. Near Berwick: RAY. Dr. JOHNSTON, in his excellent *Flora of Berwick,* says, "We have sought for it in vain, and, perhaps, by the 'Bervico in Scotia' North Berwick may be intended."—About Loch

Fig. 1. Calyx and Bractea.—Fig. 2. Corolla.—Fig. 3. Bractea, Calyx, Stamens, and Germen.—Fig. 4. The three combined Capsules.—Fig. 5. The same, with one of them divided transversely.—Fig. 6. A Seed.—*All, more or less, magnified.*

* So named by Mr. HUDSON after Mr. TOFIELD, an eminent Botanist of Doncaster.

† See *Galanthus nivalis,* folio 33, note †.

Rannoch, in *Perthshire;* also in the Isle of Rum, on a mountain called Baikevall: Rev. J. Lightfoot.—On Glenmore, *Ross shire;* Ben Griham, *Sutherland;* and Bidan-nam-bian in Glencoe: Withering.—In a bog at the back of Invercauld House, *Aberdeenshire,* abundant, and with an uncommon luxuriance. Also on several hills about Invercauld, and on the mountains of Breadalbane: Mr. Brown.—On the summit of the Clova mountains, *Forfarshire:* Mr. Don.

Perennial.—Flowers in July and August.

Root somewhat woody, with many long, zigzag, whitish fibres. *Stem* solitary, nearly leafless, from 4 to 6 inches high, upright, simple, cylindrical, quite smooth. *Leaves* almost wholly radical, about 2 inches long, in tufts, sword-shaped, equitant, ribbed, incurved at the point. *Spike* terminal, solitary, oblong, blunt. *Flowers* very small, yellowish or greenish-white. *Calyx* (fig. 1.) very small, 3-cleft, with a minute bractea at its base. *Petals* (f. 2.) inversely egg-shaped, blunt, concave, a little longer than the stamens. *Germens* united at the base. *Styles* short, spreading. *Stigmas* abrupt, slightly capitate. *Capsules* (figs. 4 & 5.) converging, each crowned by the permanent style. *Seeds* numerous, egg-shaped, tawny-coloured.

The drawing for the accompanying plate was made from a plant which has for many years, probably ever since the time of Dillenius, been cultivated in the Oxford Garden as the *Tofieldia palustris,* and specimens of the same are preserved in the Sherardian Herbarium, and labelled, in Dr. J. Sibthorp's handwriting, *T. palustris,* Huds.; *Anthericum calyculatum,* Linn.; from this I considered it to be the same as the British species, native specimens of which I have not seen; but, since the whole impression of the annexed plate was struck off, and coloured, I have read Sir James E. Smith's paper on the Genus *Tofieldia,* in the 12th vol. of Tr. of the Linn. Soc.; and I am inclined to think that the plant which I have figured is the *T. alpina* of Sir James; *T. palustris* of De Candolle; a plant which, previous to the publication of Sir James's paper, was considered as a variety of the British species, whose greater luxuriance, or more dilated habit, was attributed to its situation in a more favourable climate. The principal differences, as pointed out by Sir J. E. Smith, are as follows:—In *T. palustris,* the flowers are produced in an egg-shaped or oblong spike or head, and are sessile *; and the stem has frequently one leaf at its base. In *T. alpina,* every part of the plant is twice as large; the flowers form a cylindrical cluster, from 1 to 2 inches long, each flower having a short, thick, partial stalk, accompanied by a small, solitary bractea, at its base; and the stem is furnished with two leaves, the uppermost of which is the smallest. Sir J. E. Smith observes, that "notwithstanding what is said in Gerarde's Herbal (p. 96.), there is no authority for this ever having been found in Britain."

The *Natural Order* Melanthiaceæ, is composed of monocotyledonous, herbaceous plants, whose *roots* are fibrous, sometimes fascicled, rarely bulbous. Their *flowers* either rise immediately from the root, or are produced in panicles on tall leafy stems, or in spikes or racemes upon naked scapes. The *perianth* (fig. 2.) is inferior, petaloid, in 6 pieces, or, in consequence of the union of their claws, tubular; the pieces or segments generally involute in the bud. The *stamens* (f. 3.) are 6 in number, with their *anthers* mostly turned outwards. The *ovary* is 3-celled, and many-seeded; the *style* trifid or 3-parted; and the *stigmas* undivided. The *capsule* (f. 4.) is often divisible into 3 pieces; sometimes with the valves bearing the dissepiment in the middle. The *seeds* have a membranous testa; and a dense, fleshy *albumen.* See *Lindl. Syn.*

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* The figures in *Linn. Fl. Lapp.;* and *Lightf. Fl. Scot.;* which are quoted by Sir J. E. Smith, as belonging to *T. palustris,* have the flowers, *not* sessile, but on *slender partial stalks;* and the figure in Engl. Bot. also represents it as having the flowers somewhat pedunculate.

Anthriscus Sylvestris. Wild-beaked Parsley. ♃

Publ.d by W. Baxter Botanic Garden Oxford. 1837.

ANTHRI'SCUS*.

Linnean Class and Order. PENTA'NDRIA†, DIGY'NIA.

Natural Order. UMBELLI'FERÆ, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, SMYRNIACEÆ; subt. SCANDICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 780, & 781.

GEN. CHAR. *Calyx* an obsolete margin. *Corolla* (fig. 1.) superior, of 5, inversely egg-shaped, truncate, or emarginate, inflexed, often very short, petals. *Filaments* (see fig. 1.) 5, thread-shaped, spreading, about as long as the petals. *Anthers* roundish. *Germen* (fig. 2.) inferior, oblong, slightly compressed. *Styles* (see fig. 2.) short, awl-shaped, a little spreading. *Stigmas* simple. *Fruit* (see fig. 2.) contracted on the side, beaked. *Carpella (seed* of Linn.*)* (see figs. 4 & 5.) almost taper, without ridges, the beak alone having 5 ridges. *Seed* taper, deeply furrowed in front. *Universal involucrum* none. *Partial involucrum* (see fig. 3.) of many leaves.

Distinguished from other genera, in the same class and order, by the obsolete *calyx;* the inversely egg-shaped *petals*, with an inflexed, generally short, point; the beaked *fruit*, contracted at the side; the almost taper *carpels*, destitute of ribs, except the beak, which is 5-ribbed; and the taper *seed*, deeply furrowed in front.

Three species British.

ANTHRI'SCUS SYLVE'STRIS. Wild Beaked-Parsley. Wild Chervil. Smooth Cow-Parsley. Cow-Weed.

SPEC. CHAR. Umbels terminal, stalked. Leaflets of the involucels egg-shaped, membranous. Leaves triply pinnate; leaflets egg-shaped, pinnatifid, rough-edged.

Hoffmann's Plant. Umbel. 40—46. t. i. f. 19. p. 210. t. 1. B. f. 17. *fide* DON.—Lindl. Syn. p. 124.—Hook. Brit. Fl. p. 131.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 364.—Bab. Fl. Bath. p. 21.—Mack. Fl. Hibern. pt. I. p. 125.—*Chærophyllum sylvéstre*, Engl. Bot. t. 752.—Curt. Fl. Lond. t. 273.—Mart. Fl. Rust. t. 96.—Jacq. Fl. Austr. t. 149.—Linn. Sp. Pl. p. 369.—Willd. Sp. Pl. v. i. pt. II. p. 1452.—Huds. Fl. Angl. (2nd ed.) p. 124.—Sm. Fl. Brit. v. i. p. 326. Engl. Fl. v. ii. p. 48.—With. (7th ed.) v. ii. p. 388.—Lightf. Fl. Scot. v. i. p. 167.—Sibth. Fl. Oxon. p. 100.—Abbot's Fl. Bedf. p. 66.—Davies' Welsh Bot. p. 29.—Purt. Midl. Fl. v. i. p. 154.—Relh. Fl. Cant. (3rd edit.) p. 123.—Hook. Fl. Scot. p. 93.—Grev. Fl. Edin. p. 68.—Fl. Devon. pp. 52 & 167.—Johnst. Fl. of Berwick, p. 68.—Winch's Fl. of Northumb. & Durham, p. 18.—Walker's Fl. of Oxf. p. 76.—Mack. Catal. of Plants of Irel. p. 29.—*Cerefólium sylvéstre*, Gray's Nat. Arr. v. ii. p. 501.—*Cicutária vulgáris*, Ray's Syn. p. 207.—*Cicutária alba*, Johnson's Gerarde, p. 1038. n. 6.

LOCALITIES.—In hedges, and the borders of pastures, and fields, in a rather fertile soil. Very common.

Fig. 1. A separate Flower.—Fig. 2. Germen, Styles, and Stigmas.—Fig. 3. An Umbellule, showing the fruit, and the partial involucrum.—Fig. 4. The two Carpels which formed the fruit, separated, and suspended by the central, thread-shaped column.—Fig. 5. A separate Carpel.—Fig. 6. A transverse section of the same.—All *a little magnified.*

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* A name given by PLINY to a plant resembling *Scándix.* DON.

† See *Anchusa sempervirens*, folio 48, note †.

Perennial.—Flowers in April, May, and June.

Root spindle-shaped, branched, somewhat milky. *Stem* upright, branched, 3 or 4 feet high, leafy, round, striated, hollow, somewhat swelled below the joints, especially when full grown; the lower part downy; the upper part sleek, and generally devoid of pubescence. *Leaves* large, thrice pinnate, leaflets egg-spear-shaped, deeply cut, the terminating one attenuate, especially in the upper leaves, rough at the margin. *Umbels* smooth, flattish, rather small for the size of the plant, drooping more or less when young, quite upright when in flower and fruit, many-rayed, on long, generally smooth, peduncles. *Partial involucrums* of about 5, egg-shaped, membranous, fringed, reflexed leaves (bracteas). *Flowers* white or reddish; the marginal ones only prolific; petals flat, inversely egg-shaped, those of the central flowers nearly equal, but the outermost of the outer ones largest, and somewhat inversely heart-shaped (see fig. 1). *Filaments* whitish, short, and deciduous. *Anthers* yellowish. *Germen* (fig. 2.) broadest at top, flattish on both sides, shining. *Fruit* (see fig 3.) spear-shaped, with a deep channel on each side, blackish, polished, quite smooth and even, with a short, angular, furrowed beak. Bases of the *styles* almost globular, seated on a scarcely discernible floral *receptacle*.

The snow-white flowers, some of the earliest of their tribe, plentifully adorn the hedges and bushy margins of fields in Spring, and announce the approach of Summer. The whole herb has the flavour of carrots, and is said to be very grateful to rabbits. In some parts of the kingdom, in times of scarcity the young leaves are used as a pot-herb, but the roots are reported to be poisonous. J. BAUHIN mentions instances of two families being poisoned by eating small quantities of them. Authors differ very much in their opinions respecting the usefulness of this plant as food for cattle. LINNÆUS says that horses, sheep, and goats, are not fond of it; and that cows and swine refuse it. According to VILLARS, horses will not eat it, even in the stable; and Mr. MILLER says that there are few animals who care to eat it except the ass. On the contrary, Mr. RAY informs us that it has the name of *Cow-weed*, because it is a grateful food to cows, in the Spring, before it runs up to stalk; and in confirmation of this, Mr. WAINWRIGHT says that cows like it so well, that when a pasture is over-run with it, as is often the case about Dudley, they always turn them in to eat it up.

LINNÆUS remarks, that this plant indicates a fruitful soil; and Dr. WITHERING says that the umbels afford an indifferent yellow dye; the leaves and stems a beautiful green, (see *Mart. Mill. Gard. Dict.*).

A small, brownish-coloured fungus, *Puccinia Umbelliferárum*; Hook. Brit. Fl. v. ii. pt. II. p. 366, is often parasitic on the under surface of the leaves, about June.

Lythrum Salicaria. Purple Loosestrife. 2.

Rafinesque del. Hd.ᵗ by W. Buxton Botanic Garden Oxford 1827 J.N.

LY'THRUM*.

Linnean Class and Order. DODECA'NDRIA†, MONOGY'NIA.

Natural Order. LYTHRARIE'Æ, *Juss.*—Loud. Hort. Brit. p. 514.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 706.—SALICA'RIÆ, Juss. Gen. Pl. p. 330.—Lindl. Syn. p. 71.; Introd. to Nat. Syst. of Bot. p. 59.—Rich. by Macgilliv. p. 527.—ROSALES; sect. ONAGRINÆ; type, LYTHRACEÆ; Burn. Outl. of Bot. pp. 614, 722, & 726.—CALYCANTHEMÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, tubular, striated, with 12 teeth, alternately larger and smaller. *Corolla* (figs. 3 & 4.) of 6 elliptic-oblong, equal, wavy, spreading petals, with short claws, inserted upon the calyx. *Filaments* (see fig. 6.) 12, thread-shaped, from the tube of the calyx, shorter than the corolla, the 6 alternate ones shortest, and sometimes wanting; all incurved while young. *Anthers* roundish, incumbent. *Germen* (fig. 7.) superior, egg-oblong. *Style* (see fig. 7.) thread-shaped, about the length of the longest stamens, a little curved. *Stigma* capitate. *Capsule* inclosed in the tube of the calyx, oblong, membranous, pointed, of 2 cells, (see figs. 8 & 9). *Seeds* (figs. 10 & 11.) numerous, minute, inversely egg-oblong.

The inferior, tubular, 12-toothed *calyx;* the *coralla* of 6 petals, inserted in the orifice of the calyx; and the oblong, 2-celled, many-seeded *capsule*, will distinguish this genus from others in the same class and order.

Two species British.

LY'THRUM SALICA'RIA.‡ Willow Lythrum. Spiked Purple-Loosestrife. Purple Willow-herb. Purple Grasspoly.

SPEC. CHAR. Leaves opposite, lanceolate, heart-shaped at the base. Flowers nearly sessile; in whorled leafy spikes. Stamens 12.

Engl. Bot. t. 1061.—Curt. Fl. Lond. t. 186. Curt. Brit. Entom. v. vi. t. 289.—Linn. Sp. Pl. p. 640.—Willd. Sp. Pl. v. ii. pl. II. p. 865.—Huds. Fl. Angl. (2nd ed.) p. 205.—Sm. Fl. Brit. v. ii. p. 510. Engl. Fl. v. ii. p. 344.—With. (7th ed.) v. ii. p. 573.—Lindl. Syn. p. 72.—Hook. Brit. Fl. p. 217.—Lightf. Fl. Scot. v. i. p. 247.—Sibth. Fl. Oxon. p. 149.—Abb. Fl. Bedf. p. 103.—Davies' Welsh Bot. p. 45.—Purt. Midl. Fl. v. i. p. 226.—Relh. Fl. Cant. (3rd edit.) p. 188.—Hook. Fl. Scot. p. 147.—Fl. Devon. pp. 79 & 169.—Johnst. Fl. of Berw. v. i. p. 105.—Winch's Fl. of Northumb. and Durham, p. 31.—Walk. Fl. of Oxf. p. 132.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 712.—Perry's Pl. Vaivic. Selectæ, p. 42.—Bab. Fl. Bath. p. 18.—Mack. Catal. of Pl. of Irel. p. 46.; Fl. Hibern. pt. I. p. 70.—*Ly'thrum spicátum*, Gray's Nat. Arr. v. i. p. 553.—*Salicária vulgáris purpúrea, foliis oblóngis*, Ray's Syn. p. 367.—*Lysimáchia spicáta purpúrea*, Johnson's Gerarde, p. 276.

LOCALITIES.—On the margins of rivers, ponds, wet ditches, and in watery places; common.

Perennial—Flowers from June to September.

Root thick, branched, woody. *Stems* from 2 to 4 feet, or more,

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Fig. 1. Calyx.—Fig. 2. Ditto, with the Stamens.—Figs. 3 & 4. Calyx and Corolla.—Fig. 5. The same opened vertically, showing the situation of the petals.—Fig. 6. The Calyx opened vertically, showing the Stamens and Pistil.—Fig. 7. Germen, Style, and Stigma.—Fig. 8. A Capsule.—Fig. 9. The same, *a little magnified.*—Fig. 10. A Seed.—Fig. 11. Ditto, *a little magnified.*

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* From *Lythron*, Gr. *black-blood;* from the purple colour of the flower. DON.

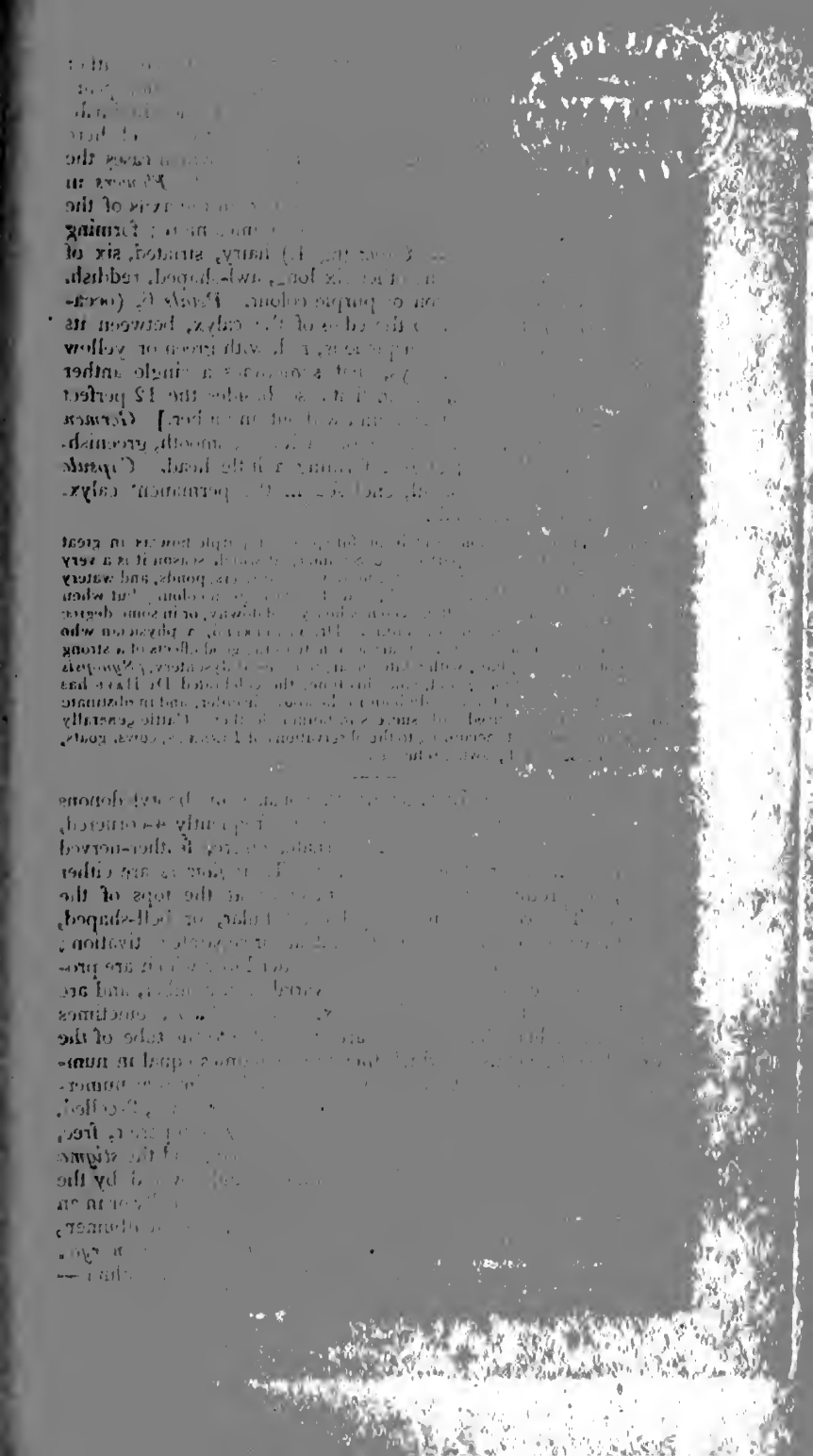
† See *Reséda lútea*, folio 15, note †.

‡ From *salix*, a *willow;* willow-like leaves.

high, upright, sharply 4-angled, usually tinged with red, either smooth or downy, leafy, simple or branched. *Leaves* sessile, spear-shaped, pointed, entire, various in length, the upper ones diminished to *bracteas;* all mostly opposite, sometimes alternate, and there are occasionally 3, or even 4, in each whorl; in which cases the number of angles in the stem is likewise increased. *Flowers* in tufts, placed at a little distance from each other, in the axils of the leaves, each tuft of from 6 to 8 flowers, sometimes more; forming long, whorled, leafy spikes. *Calyx* (fig. 1.) hairy, striated, six of the teeth short and blunt, the other six long, awl-shaped, reddish. *Corolla* of a variable crimson or purple colour. *Petals* 6, (occasionally only 5,) inserted into the edge of the calyx, between its longer segments. *Anthers* conspicuous, red, with green or yellow pollen. [Dr. WITHERING says, that sometimes a single anther grows to one of the petals, and in that case, besides the 12 perfect stamens, a single filament is found without an anther.] *Germen* egg-shaped, pointed, with a groove on each side, smooth, greenish. *Style* cylindrical, white; *stigma* forming a little head. *Capsule* (figs. 8 & 9.) elliptical, small, enclosed in the permanent calyx. *Seeds* numerous, very small.

This plant produces its long and beautiful spikes of purple flowers in great abundance during the latter part of the Summer, at which season it is a very elegant and conspicuous ornament to the margins of our rivers, ponds, and watery ditches. It is generally almost smooth, and of a dark green colour; but when growing in a dry situation, it often becomes hoary and downy, or in some degree hairy, as well as more dwarf in stature. Dr. THREKELD, a physician who flourished somewhat more than a century ago, notices the good effects of a strong decoction of the dried plant, with white sugar, in cases of dysentery, *(Synopsis Stirpium Hibernicarum)*; and, since his time, the celebrated DE HAEN has maintained the credit of the remedy both in the above disorder, and in obstinate diarrhœa. It has been used with success in tanning leather. Cattle generally leave it untouched; yet, according to the observations of LINNÆUS, cows, goats, sheep, and horses eat it; swine refuse it.

The *Natural Order*, LYTHRARIE'Æ, consists of dicotyledonous *herbs*, rarely *shrubs*, with round, or more frequently 4-cornered, *branches;* and opposite, seldom alternate, entire, feather-nerved leaves, without either stipulæ or glands. Their *flowers* are either axillary, or produced in spikes or racemes at the tops of the branches. The *calyx* is monosepalous, tubular, or bell-shaped, lobed at the summit, the lobes with a valvate or separate æstivation; their sinuses sometimes lengthened into other lobes which are produced on the outside. The *petals* are variable in number, and are inserted between the lobes of the calyx, very deciduous, sometimes wanting altogether. The *stamens* are inserted into the tube of the calyx below the petals, to which they are sometimes equal in number; sometimes they are twice, thrice, or even four times as numerous, but they are very seldom fewer; the *anthers* are oval, 2-celled, and inserted by the back. The *ovary (germen)* is superior, free, and from 2 to 4-celled; the *style* is thread-shaped; and the *stigma* usually capitate. The *capsule* is membranous, and covered by the calyx; it is usually 1-celled, and opens either longitudinally or in an irregular manner. The *seeds* are numerous, small, without albumen, and are attached to a central placenta; they have a straight *embryo;* flat, leafy *cotyledons;* and a radicle turned towards the hilum.—See *Lindl. Syn.; and Don's Gen. Syst. of Gard. & Bot.*



Aster Tripolium, Sea Star-wort, ♃.

Russell del.t Publ.d by W. Baxter Botanic Garden, Oxford. 1837. J. Wingfield sc.

ASTER*.

Linnean Class and Order. SYNGENE'SIA†, POLYGA'MIA, SUPE'RFLUA‡.

Natural Order. COMPO'SITÆ §; tribe, CORYMBI'FERÆ‖, *Juss.*—Lindl. Syn. pp. 140 & 142.; Introd. to Nat Syst of Bot. pp. 197 & 199.—COMPOSITÆ; subord. ASTEREÆ; Loud. Hort. Brit. pp. 520 & 521.—SYNANTHEREÆ; tribe, CORYMBI'FERÆ; Rich. by Macgilliv. pp. 454 & 455.—CORYMBI'FERÆ, sect. 2. Juss. Gen. Pl. pp. 177 & 180.—Sm. Gram. of Bot. pp. 121 & 123. Engl. Fl. v. iii. p. 334.—SYRINGALES; subord. ASTEROSÆ; sect ASTERINÆ; subsect. ASTERIANÆ; type, ASTERACEÆ; Burn. Outl. of Bot. pp. 900, 901, 920, 924, & 926.—COMPOSITÆ. *Linn.*

GEN CHAR. *Involucrum (common calyx)* (fig. 1.) imbricated; *scales* strap-shaped, acute; the lowermost spreading (except in *Aster Tripólium*). *Corolla* compound, radiant; *florets* of the disk (fig. 2.) numerous, perfect, tubular, with 5 equal spreading segments; those of the ray (fig. 3.) with a pistil only, in a single row, oblong, 3-toothed, not yellow. *Filaments* (see fig. 4.) 5, in the tubular florets only, hair-like, short. *Anthers* (see fig. 4.) in a cylindrical tube. *Germen* in all the florets fertile, oblong. *Style* thread-shaped. *Stigmas* 2, oblong, spreading; those of the disk rather larger and thicker. *Seed-vessel* none, but the scarcely altered, spreading calyx. *Seed* inversely egg-shaped. *Down (pappus)* (fig. 5.) sessile, hair-like, simple. *Receptacle* (see fig. 7.) naked, almost flat.

Distinguished from other genera, in the same class and order, by the imbricated, strap-shaped, pointed *scales* of the involucrum; the oblong, not yellow, *florets* of the ray; the sessile, simple *pappus;* and the naked *receptacle.*

One species British.

ASTER TRIPO'LIUM¶. Tripoly Star-wort. Sea Star-wort. Blue Daisies. Blue Chamomile.

SPEC. CHAR. Herbaceous. Stem smooth, corymbose. Leaves strap-spear-shaped, fleshy, entire, smooth, obscurely 3-nerved. Scales of the involucrum spear-shaped, membranous, blunt, all upright and imbricated.

Engl. Bot. t. 87.—Flora Danica, t. 615. *(fide Smith).*—Hook. Fl. Lond. t. 196.—Linn. Sp. Pl. p. 1226.—Willd. Sp. Pl. v. iii. pt. III p. 2039.—Huds. Fl. Angl. (2nd ed.) p. 368.—Aiton's Hort. Kew. 1st ed. v. iii. p. 199; 2nd ed. vol. v. p. 58.—Sm. Fl. Brit. v. ii. p. 888.; Engl. Fl. v. iii. p. 436.—With. (7th edit.) v. iii. p. 940.—Lindl. Syn. p. 143.—Hook. Brit. Fl. p. 362.—Lightf. Fl. Scot. v. i. p. 482.—Relh. Fl. Cant. (3rd ed.) p. 344.—Hook. Fl. Scot. p. 244.—Grev. Fl. Edin. p. 179.—Fl. Devon. pp. 139 & 160.—Johnst. Fl. of Berw. v. i. p. 185.—

Fig. 1. Involucrum.—Fig. 2. A Floret of the Disk.—Fig. 3. A Floret of the Ray.—Fig. 4. Stamens, Germen, Style, and Stigmas of a floret of the disk.—Fig. 5. Seed and Pappus.—Fig. 6 Part of one of the Rays of the Pappus.—Fig. 7. Involucrum, and Receptacle.—Figs. 4 & 6 *magnified.*

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* From *aster*, a *star;* which the flowers resemble.

† See *Tussilago farfara*, f. 91. n. †. ‡ See *Achillea ptarmica*, f. 36. n. ‡.

§ See *Prenanthes muralis*, f. 27. *a.* ‖ See *Achillea ptarmica*, f. 36, *a.*

¶ Called *Tripolium*, because, according to DIOSCORIDES, the flower changes its colour thrice in one day; but no such phenomenon is observable in our climate. WITHERING.

Winch's Fl. of Northumb. and Durh. p. 54.—Jacob's West Devon and Cornw. Fl.—Mack. Catal of Pl. of Ircl. p. 73.; Fl. Hibern. pt. i. p. 141.—*Aster maritimus cœruleus Tripolium dictus*, Ray's Syn. p. 175.—*Tripolium vulgare majus et minus*, Johnson's Gerarde, p. 413.—*Eurybia maritima*, Gray's Nat. Arr. v. ii. p. 464.

Localities.—On the muddy sea coast, and in salt-marshes, plentifully.—*Cambridgesh.* Shire Drain, below Wisbeach; and in the ditch on the left hand side of the road leading from Wisbeach to Tydd Gote.—*Cheshire;* Wallasey Pool, Eastham, and elsewhere on the shores of the Mersey: Mr. H. C. Watson, in N. B. G.—*Cornwall;* Shore, abundantly; and very fine in the clefts of rocks about the Logan stone; ibid.—*Devon;* Common on the coast and in salt-marshes: *Fl. Devon.* On the South shore of the Teign, near Combe Cellars: B. Botfield, Esq.; and in small bays opposite, near to Brookfield House: Dr. Withering.—*Dorset;* Frequent in the salt-marshes: Dr. Pulteney.—*Durham;* Jarrow: R. Bowman, in N. B. G. Sea-coast and salt-marshes on Tyne, Wear, and Tees: N. J. Winch, Esq.—*Essex;* Near Walton: *Mag. Nat. Hist.*—*Gloucestersh.* Avon about Bristol: Rev. H. T. Ellicombe.—*Hants;* Common on the coast: Mr. W. Pamplin, jun. Near Southampton: Mr. T. W. Weaver. Brading, Isle of Wight: Dr. Bostock.—*Kent;* Salt-marshes near Faversham, plentifully: E. Jacob, Esq. Marshes between Greenwich and Woolwich: *Fl. Metrop.* Marshes about Erith: Mrs. Gawler. River side near Rochester: *Fl. Metrop.*—*Lancash.* Dickenson's Dingle and Garston, near Liverpool: Dr. Bostock.—In *Norfolk:* Miss Bell.—*Northumberland;* On the sea-coast and in salt-marshes on Tweed, Aln, Blyth, and Tyne: N. J. Winch, Esq.—In *Somersetshire:* Dr. Gapper, in N. B. G.—*Staffordshire;* Near Shirley Wich; in a meadow between the Trent and the Canal: Dr. Stokes.—*Suffolk;* Breydon: J. Paget, in N. B. G.—*Surrey;* On the banks of the Thames, a little above high-water mark, on the way between Richmond and Kew: E. K. in *Mag. Nat. Hist.* v. i. p. 83.—In *Sussex:* Rev. G. E. Smith, in N. B. G.—WALES. *Anglesey:* Muddy sea coasts, not uncommon: Rev. H. Davies.—*Denbighsh.* North coast, not common: J. E. Bowman, Esq. in N. B. G.—*Merionethsh.* Near the mouth of a little stream on the Barmouth side of Glandwr: H. Woollcombe, Esq.—SCOTLAND. Salt-marshes on the sea-coasts, plentiful: Sir W. J. Hooker.—IRELAND. Salt-marshes, frequent: Mr. J. T. Mackay.

Perennial.—Flowers in August and September.

Root of many long, tough fibres. *Stem* from 6 inches to 2 or 3 feet high, usually upright, round, striated, smooth, leafy, branched. *Leaves* very smooth, fleshy, entire, obscurely 3-nerved; those from the root stalked, elliptic-oblong, tapering at each end; those on the stem alternate, sessile, strap-spear-shaped, smaller. *Flowers* in leafy, corymbose clusters, varying in number, slightly scented. *Involucrum* imbricated, shortish, cylindrical; scales in 2 or 3 unequal rows, short, egg-shaped, blunt, scored, green and brown, with reddish-brown tips, and membranous edges. *Florets* of the ray spreading, elliptic-oblong, 3-toothed at the extremity, of a bluish-lilac, seldom white; usually numerous, but occasionally, as in the specimen figured, only 3 or 5, and sometimes entirely wanting, as is the case with a variety found in the Isle of Wight. *Seeds* oblong, compressed, fringed at the edges. *Pappus* reddish, minutely rough, (see fig. 6). Lowermost *scales* of the *involucrum* less decidedly spreading than in any other species.

Dr. Withering says that this plant is not unfrequently gathered and sold for samphire, either by mistake, or from its being collected without hazard; but it is supposed not to possess the like detersive qualities.

According to the observations of Linnæus, goats and horses eat it; cows and swine refuse it; sheep are not fond of it.

The drawing for the accompanying Plate was made from a plant which flowered in the Oxford Garden last Autumn (1836). It was procured from a boggy place near Southampton, in July of the same year, and kindly communicated to me by Mr. T. W. Weaver, gardener to the Rev. the Warden of Winchester College; to whom I am also indebted for some other plants from the same locality. See folio 203, *a*.

Beta maritima. Sea Beet ♂ ?

Pub.d by W. Baxter Botanic Garden Oxford 1837.

BE'TA *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. CHENOPO'DEÆ, *De Cand.*—Lind. Syn. p. 213.; Introd. to Nat. Syst. of Bot. p. 167.—Loud. Hort. Brit. p. 531.—Mack. Fl. Hibern. p. 226.—ATRIPLICES, Juss. Gen. Pl. p. 83.—Sm. Gr. of Bot. p. 91.—Rich. by Macgilliv. p. 425.—QUERNEALES; sect. RUMICINÆ; type, BETACEÆ; subtype, CHENOPODIDÆ; Burn. Outl. of Bot. v. ii. pp. 523, 587, & 591.—HOLORACEÆ, *Linn.*

GEN. CHAR. *Calyx* (see fig. 1.) of 1 sepal, half adherent to the germen at the base, in 5 oblong, blunt segment (fig. 2.), permanent. *Corolla* none. *Filaments* (see figs. 3 & 4.) 5, awl-shaped, opposite the segments of the calyx, and about as long. *Anthers* of 2 roundish lobes. *Germen* (see figs. 3 & 5.) orbicular, depressed, sunk in the calyx lower than the receptacle of the flower. *Styles* (see figs. 3 & 5.) 2, sometimes 3, very short. *Stigmas* simple, pointed. *Seed* (figs. 7 & 9.) solitary, kidney-shaped, naked, horizontal, curved (fig. 10.), imbeded in the fleshy base of the calyx, the segments closing over it (see fig. 6.).

The half-inferior, 5-cleft, permanent *calyx;* and the solitary, kidney-shaped *seed,* imbeded in the fleshy base of the calyx; will distinguish this from other genera, without a *corolla,* in the same class and order.

One species British.

BE'TA MARI'TIMA. Sea Beet.

SPEC. CHAR. Stems procumbent at the base. Flowers in pairs or solitary. Segments of the calyx entire.

Engl. Bot. t. 285.—Fl. Græc. v. iii. t. 254.—Fl. Dan. t. 1571 *(fide Smith).*—Linn. Sp. Pl. p. 322.—Huds. Fl. Angl. (2nd ed.) p. 108.—Willd. Sp. Pl. v. i. pt. ii. p. 1309.—Sm. Fl. Brit. v. i. p. 279. Engl. Fl. v. ii. p. 17.—With. (7th ed.) v. ii. p. 351.—Gray's Nat. Arr. v. ii. p. 279.—Lindl. Syn. p. 216.—Hook. Brit. Fl. p. 139.—Lightf. Fl. Scot. v. i. p. 159.—Davies' Welsh Bot. p. 26.—Relh. Fl. Cant. (3rd ed.) p. 107.—Hook. Fl. Scot. p. 84.—Grev. Fl. Edin. p. 59.—Fl. Devon. pp. 45 & 140.—Winch's Fl. of Northumb & Durh. p. 17.—Mack. Cat. of Pl. of Irel. p. 26.; Fl. Hibern. pt. i. p. 229.—*Béta sylvéstris maritima,* Ray's Syn. p. 157.—Park. Theat. Bot. p. 750, 2.

LOCALITIES.—On the sea shore, in muddy places, and on decayed rocks.—*Cambridgesh.* Salt-marshes, below Wisbeach: Mr. SKRIMSHIRE, in *Fl. Cant.*—*Cornwall;* Kynance Cove, &c.: Mr. H. C. WATSON, in N. B. G.—*Devon;* On the Cliffs near Crafthole: Rev. P. JONES. Banks of the Exe from Topsham to the sea. Beaches at Teignmouth and Dawlish; under the rocks near Sandtown: Dr. WAVELL. Braunton Burroughs: Mr. H. C. WATSON, in N. B. G.—*Dorset;* On the coast: WITHERING.—*Durham;* On the shore near Ryhope and Sunderland: N. J. WINCH, Esq.—*Essex;* At Walton: J. G. in Mag. Nat. Hist. v. iv. p. 446.—*Hants;* Isle of Wight: Dr. STOKES.—*Kent;* On the coast: Mr. W.

Fig. 1. Two of the Flowers.—Fig. 2. A single segment of the Calyx.—Fig. 3. Stamens and Pistils.—Fig. 4. A single Stamen.—Fig. 5. Germen and Styles.—Fig. 6. The Fruit, inclosed in the permanent Calyx, the segments of which are incurved over it.—Fig. 7. The same, with the segments of the calyx removed.—Fig. 8. A transverse section of the same.—Figs 9 & 10. The Seed.—*All,* except figs. 6, 7, & 8. *more or less magnified.*

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* Derived from the Celtic *bett,* according to Theis, which means *red.* Sir W. J. HOOKER.—Dr. WITHERING says the name is derived from the form of the seed-vessel, which, when swollen with seed, resembles the second Greek letter β. (*Beta*).

† See folio 48, note †.

Pamplin, jun. Shores of the Medway, above Rochester, and Cliffs at Ramsgate: N. J. Winch, Esq. S. Kent, near Lydden Spout: Rev. G. E. Smith. Thames side, near Northfleet: *Fl. Metr.* Below Erith, nearly opposite Purfleet: Mr. Milne, in *Fl. Metr.* On the sea walls at Ham and Graveney near Faversham: E. Jacon, Esq.—*Norfolk;* River bank between Runcton Holme and Magdalene: Miss Bell, in N. B. G. Near Lynn, Yarmouth, and Wells: Mr. Woodward.—*Northumberland;* On the sea coast near Hartley Pans, and Newbiggin: N. J. Winch, Esq.—*Notts;* Plentiful about Nottingham: Mr. J. Shenard.—On several parts of Nottingham Common, by the road-side from the Workhouse to the Forest: Dr. Deening.—In *Somersetshire:* Dr. Gapper, in N. B. G.—*Yorksh.* Castle Hill, Scarborough: Rev. A. Bloxam, in N. B. G. Scarborough Castle: E. F. Witts, Esq. Near the South Steel Battery, Scarborough: Mr. Travis.—WALES. *Anglesey;* On the sea-coast, not common: Rev. H. Davies.—SCOTLAND. Boss Island: Dr. Pansons. Opposite Gosford Gate: Mr. P. Neil. Sea-shore near Kirkcaldy: Mr. Maughan, and Mr. Sommenville. Near Cramond: Dr. Willis.—IRELAND. *County of Down;* Between Green Castle and Kirkeel along the gravelly shore. Along the shore from Clontarf to Sutton: *Irish Fl.* At Howth, on the Sutton side, and many other places: Mr. Mackay, in *Fl. Hibern.*

Biennial?—Flowers from July to September.

Root large, thick, and fleshy, blackish on the outside, white within. *Stems* procumbent at the base, from 6 inches to 2 feet long, angular and furrowed, alternately branched, leafy, often reddish. *Root-leaves* large, spreading, slightly succulent, stalked, egg-shaped, veiny, and more or less wavy at the edges. *Stem-leaves* nearly sessile, alternate, and, in consequence of the position of the stem, oblique or vertical. *Flowers* greenish, usually in pairs, rarely solitary, sessile, in the exils of the leaves, of which the uppermost are diminished almost to *bracteas.*—De Candolle says this is biennial, and distinguishes it from the cultivated *Beet*, *Béta vulgáris*, in having only 1 or 2, instead of 3 or 4 flowers, in the axil of the upper leaves. Sir J. E. Smith observes, that, according to Linnæus, it differs from *Béta vulgáris* in the keel of the calyx being entire. Sir W. J. Hooker informs us (Brit. Fl. p. 139), that Mr. W. Wilson finds that there are always 3 styles in this species, and that the germen is 3-seeded, that the flowers are often three together, and that, when the seed is ripe, the germen becomes purple and granulated.

Dr. Withering remarks, that were this plant cultivated, it would probably answer the purpose of an esculent vegetable as well as the other species; and Mr. Mackay tells us (*Fl. Hibern*), that it is a good substitute for spinage in the Winter and Spring months, and is often cultivated at Cork and other places on the coast on that account. Dr. Deering says, if the juice be drawn up the nostrils it will excite sneezing, and thence is judged to clear the head, and cure even an inveterate head-ach.

The *Natural Order*, Chenopo'deæ, consists of dicotyledonous *herbs* or low *shrubs*, whose *leaves* are alternate, or sometimes opposite, without stipulas. Their *flowers* are small, and sometimes Polygamous. The *calyx* is deeply divided, sometimes tubular at the base, permanent, and imbricated in the bud. The *stamens* are inserted into the base of the calyx, opposite its segments, and equal to them in number, or fewer. The *ovary* is single, superior, or occasionally adhering to the tube of the calyx, with a single *ovule* attached to the base of the cavity; the *style*, which is rarely simple, has 2, 3, or 4 divisions, each of which is terminated by an undivided *stigma*. The *fruit* is membranous, without valves, sometimes a berry. The *embryo* is curved round farinaceous albumen; or spiral, or doubled together without albumen; the *radicle* is next the hilum; and the *plumule* inconspicuous. See *Lindl. Syn.*

Carum Carui. Common Caraway. ♂

Pub.d by W. Baxter Botanic Garden Oxford 1837

CA'RUM *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLI'FERÆ, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subt. ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 774.

GEN. CHAR. *Calyx* an obsolete margin. *Corolla* (fig. 1.) of 5 regular, inversely heart-shaped petals, with inflexed points. *Filaments* (see fig. 1.) 5, about as long as the petals, straight, spreading. *Anthers* roundish, 2-lobed. *Germen* (fig. 2.) inferior, egg-shaped, blunt, more or less oblique. *Styles* (see fig. 2.) tumid at the base, very short in the flower, afterwards elongated, thread-shaped, widely spreading. *Stigmas* bluntish. *Floral-receptacle (stylopodium,* Hoffm.*)* annular, depressed. *Fruit* oblong, compressed at the sides, crowned with the floral-receptacle and styles. *Carpels (seeds,* Linn.*)* (figs. 3 & 4.) with 5, filiform, equal *ridges*, their inner faces plane. *Interstices (channels)* with single *vittæ*. *Seeds* terete (taper), convex on the back, flattish in front. *Universal* and *Partial Involucrums* various.

Distinguished from other genera, in the same class and order, by the nearly obsolete *calyx;* the inversely heart-shaped *petals*, with inflexed points; the laterally compressed, oblong *fruit;* the carpels with 5, filiform, equal *ridges*, their inner faces plane; the *channels* with single *vittæ;* and the taper, convex *seed*, flattish in front.

Two species British.

CA'RUM CA'RVI. Common Caraway.

SPEC. CHAR. Root spindle-shaped. Leaves twice pinnate; leaflets decussate (in cross pairs), multifid. Stems furrowed. Partial-involucrum none; general involucrum scarcely any.

Engl. Bot. t. 1503.—Jacq. Fl. Austr. t. 393.—Woodv. Med. Bot. v. i. p. 125. t. 45.—Mart. Fl. Rust. t. 55.—Linn. Spec. Pl. p. 378.—Willd. Sp. Pl. v. i. pt. ii. p. 1470.—Huds. Fl. Angl. (2nd ed.) p. 126.—Sm. Fl. Brit. v. i. p. 330.; Engl. Fl. v. ii. p. 86.—With. (7th ed.) v. ii. p. 394.—Lindl. Syn. p. 122.—Hook. Brit. Fl. p. 127.—Lightf. Fl. Scot. v. i. p. 169.—Abb. Fl. Bedf. p. 67.—Davies' Welsh Bot. p. 30.—Relh. Fl. Cant. (3rd ed.) p. 126.—Hook. Fl. Scot. p. 95.—Grev. Fl. Edin. p. 69.—Winch's Fl. of Northumb. and Durham, p. 20.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 288.—Loud. Encycl. of Gard. (new ed.) p. 877. parag. 4630.—Baxter's Lib. of Agricul. and Horticul. Knowl. (2nd ed.) p. 96.—Thornt. Family Herb. p. 302.—Mack. Catal. of Pl. of Irel. p. 30.; Fl. Hibern. pt. i. p. 122.—*Cárum officinale*, Gray's Nat. Arr. v. ii. p. 515.—*Carum seu Careum*, Ray's Syn. p. 213.—Johnson's Gerarde, p. 1034.

LOCALITIES.—In meadows and pastures. A naturalized plant.—*Bedfordsh.* Pastures, Thurleigh: Mr. JOHN PAYNE.—*Cambridgesh.* Christ College Pieces. Stourbridge Fair Green. Meadows near the Windmills, Wisbeach: Rev. R.

Fig. 1. Corolla, Stamens, and Pistils.—Fig. 2. Germen, Styles, and Stigmas.—Figs. 3 & 4. Carpels.—Fig. 5. A transverse section of the same.—*All*, except fig. 3, *magnified*.

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* From CARIA, a district of Asia Minor; from whence the seeds may have been imported as an article of commerce. WITHERING.

† See *Anchusa sempervirens*, folio 48, note †.

Relhan.—*Durham;* In cornfields, but not very common. Wellington Ballast Hills; and fields at Beamish: N. J. Winch, Esq.—*Lincolnsh.* Swafield Dale, seven miles S. of Grantham: Dr. Martyn. Abundant in the marshes near Boston, on the sides of the Witham, within the banks near the Grand Sluice: Sir J. Banks.—*Norfolk;* Marshy places in the county: Robson. Glebe fields, Stow, probably naturalized: Miss Bell, in N. B. G.—*Northumb.* In cornfields, but not very common: N. J. Winch, Esq.—*Suffolk:* In Westley Bottom near Bury: Sir T. G. Cullum. Fields at Parham: Rev. G. Crabb.—*Worcestersh.* Meadows near Worcester: Mr. E. Lees, in *Illust.*—*Yorksh.* Meadows adjoining the Humber near Hull, so plentifully that the poor people gather the seed to dispose of to the druggists: Teesdale. Near the Black's Head above Grantley: Rev. J. Dalton. By the road-side on Sawley Moor: Mr. Brunton.—WALES. *Anglesey;* On a hedge in the parish of Llansadwrn, between Cefn Côch and the Church: Rev. H. Davies.—SCOTLAND. Under the rocks of Edinburgh Castle towards the West: Dr. Parsons. Between Newhall and South Queensferry, and near the village of Abercorn: Messrs. Maughan and Shuter. In the Isle of Oransa: Lightfoot. In the haugh of Dalbeth, near Glasgow: Hopkirk.—IRELAND. Meadows and pastures, occasionally. Fields near Kilmainham, &c.: Mr. Mackay.

Biennial.—Flowers in May and June.

Root spindle-shaped, branched, fibrous; yellowish on the outside, white within. *Stem* upright, from 1 to 2 feet, or more, high, branched, leafy, furrowed, smooth. *Root-leaves* from 6 to 9 inches long, stalked, doubly pinnate; *leaflets* numerous, finely cut, growing in sixes, in a kind of whorl, two of them longer than the other four. *Stem-leaves* smaller, very unequal; lower on dilated, lax, membranous-edged footstalks; upper sessile. *General Involucrum,* when present, of from 1 to 3 very narrow leaves. *Partial Involucrum.* none. *Umbels* numerous, upright, many-rayed. *Flowers* numerous, white, or pale flesh-coloured, the marginal ones only, perfect and prolific. *Calyx* always extremely minute, and not constantly complete or discernible. *Petals* small, inflexed, in the central flowers nearly equal. *Floral-receptacle* white, undulated, very distinct from the bases of the *styles.* *Fruit* small, somewhat egg-shaped. *Carpels (seeds,* Linn.*)* agreeably aromatic.

The *Caraway* is a native throughout the whole of Europe, in meadows and pastures; and of Altaia, in dry grassy places at the river Tscharaiych; it is admitted into the Floras of Britain, but is considered a naturalized plant. It is cultivated for the sake of its seeds, which are a grateful and wholesome aromatic. They are used in confectionery, and in medicine; and are distilled with spiritous liquors for the flavour they afford. They are said to be no despicable remedy for the tertian agues. They abound with an essential oil, which is antispasmodic and carminative. We are told in the *Phil. Journal,* that one pound of Caraway-seeds, yielding four ounces of oil, also affords about half an ounce of Camphor. In Spring the lower leaves may be boiled with pot-herbs; and in former times the spindle-shaped roots were eaten as parsnips, to which Parkinson gives them the preference. Dr. Anderson says, both the roots and tops may be given to cattle in the Spring. For its culture, both in the garden and the field, see Don's *Gen. Syst. of Gard. & Bot.;* and Loudon's *Encyclopædias of Gardening,* and *of Agriculture.*

[illegible]

Biennial.—Flowers in July and June.

Root spindle-shaped, branched, fibrous, yellowish on the outside, white within. Stem single, from 1 to 2 feet, or more, [illegible], branched, leafy, furrowed, sub-[illegible]. Root-leaves from 6 to [illegible] inches long, stalked, doubly pinnate; leaflets numerous, finely cut, growing in sixes, in a kind of whorl, two of them longer than the other four. Stem-leaves smaller, very unequal, lower on dilated, lax, membranous-edged footstalks; upper sessile. General involucrum, when present, of from 1 to 3 very narrow leaves. Partial involucrum none. Umbels numerous, upright, many-rayed. Flowers numerous, white, or pale flesh-coloured, the marginal ones only, perfect and prolific. Calyx always extremely minute, and in a constantly complete or discernible. Petals small, inflexed, in the central flowers nearly equal. Filaments pale white, undulated, very distinct from the bases of the styles. Fruit small, somewhat egg-shaped. Carpels (seeds) [illegible] agreeably aromatic.

The Caraway is a native throughout the whole of Europe, in meadows and pastures; and of Asia, in dry grassy places at the river Tachanaiych. It is admitted into the Flora of Britain, but is considered a naturalized plant. It is cultivated for the sake of its seeds, which are a grateful and wholesome aromatic. They are used in confectionery, and in medicine; and are distilled with spirituous liquors for the flavour they afford. They are said to be no despicable remedy for the tertian ague. They abound with an essential oil, which is antispasmodic and carminative. We are told in the Phil. Journal, that one pound of Caraway seeds, yielding four ounces of oil, also affords about half an ounce of Camphor. In Spring the lower leaves may be boiled with pot-herbs; and in former times the spindle-shaped roots were eaten as parsnips, to which Parkinson gives them the preference. Dr. Anderson says, both the roots and tops may be given to cattle in the Spring. For its culture, both in the garden and the field, see Dorn's Gen. Syst. of Gard. & Fl.; and Lawson's Encyclopædia of Gardening, and of Agriculture.

Chrysocoma Linosyris, Flax-leaved Goldylocks, n.

Lindsell del. Pub. by Wilmster Botanic Garden Oxford, 1837. W.J.

CHRYSO'COMA *.

Linnean Class and Order. SYNGENE'SIA †, POLYGA'MIA, ÆQUA'LIS ‡.

Natural Order. COMPO'SITÆ §, tribe, CORYMBI'FERÆ, *Juss.*—Lindl. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 & 199.—Mack. Fl. Hibern. pt. I. p. 142.—COMPO'SITÆ; subord. ASTE'REÆ, Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ, Rich. by Macgilliv. p. 454.—CORYMBI'FERÆ, sect. 1. Juss. Gen. Pl. p. 177.—Sm. Gram. of Bot. pp. 121 & 123.—SYRINGALES; sect. ASTERINÆ; subsect. ASTERIANÆ; Burn. Outl. of Bot. pp. 900, 920, & 924.—COMPO'SITÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) imbricated, hemispherical, or egg-shaped; *scales* strap-spear-shaped, convex, pointed, unarmed. *Corolla* (see fig. 1.) compound, uniform, of several tubular, level-topped, perfect, regular *florets* (figs. 2 & 3.), longer than the involucrum; their limb in 5 deep, equal, pointed segments. *Filaments* (see figs. 3 & 4.) 5, hair-like, short. *Anthers* in a cylindrical, 5-pointed tube, shorter than the florets. *Germen* (see fig. 5.) oblong. *Style* (see fig. 4.) thread-shaped, scarcely longer than the florets. *Stigmas* (see figs. 2 to 5.) 2, oblong, spreading, rather tumid. *Seed-vessel* none, except the scarcely altered involucrum. *Seed* (see fig. 6.) inversely egg-shaped, compressed. *Pappus* (see figs. 6 & 7.) sessile, copious, rough, permanent. *Receptacle* (see fig. 8.) flat, slightly cellular, or tuberculated, without scales or hairs.

The imbricated, hemispherical, or egg-shaped *involucrum;* the naked *receptacle;* the rough *pappus;* and the *styles* scarcely longer than the florets; will distinguish this from other genera, with the florets all tubular, parallel, crowded, and nearly on a level at the top, in the same class and order.

One species British.

CHRYSO'COMA LINOSY'RIS. Flax-leaved Goldylocks. German Goldylocks.

SPEC. CHAR. Herbaceous. Leaves strap-shaped, smooth. Scales of the involucrum loosely spreading.

Engl. Bot. t. 2505.—Maund's Botanic Garden, v. iv. No. 358.—Linn. Sp. Pl. p. 1178.—Willd. Sp. Pl. v. iii. pt. III. p. 1791.—Ait. Hort. Kew. 1st edit. v. iii. p. 163.; 2nd edit. v. iv. p. 514.—Sm. Engl. Fl. v. iii. p. 402.—With. (7th edit.) v. iii. t. 35. p. 919.—Lindl. Syn. p. 142.—Hook. Brit. Fl. p. 354.—*Chrysócoma nuperum*, Gray's Nat. Arr. v. ii. p. 467.—*Linaria aurea Tragi*, Johnson's Gerarde, p. 554.

LOCALITIES.—On rocky cliffs, on the sea-coast; rare.—*Devon;* In great plenty amongst coarse grasses, on the rocky cliff of Berryhead, where it was first discovered in the Autumn of 1812, by the Rev. CHARLES HOLBECH, of

Fig. 1. Involucrum and Corolla.—Fig. 2. A separate Floret.—Fig. 3. The same magnified.—Fig. 4. The 5 Stamens, the Germen, Style, and Stigmas, magnified.—Figs. 5 & 6. Seed and Pappus.—Fig. 7. A single Ray of the Pappus, magnified.—Fig. 8. The Receptacle and permanent Involucrum.

* From *Chrysos*, Gr. *gold;* and *kome*, Gr. *hair;* not inapplicable to the general colour of the flower; but probably applied by DIOSCORIDES to plants of which that circumstance was more obviously characteristic. WITHERING.

† See folio 91, n. †. ‡ See folio 147, n. ‡. § See folio 27, *a*.

Farnborough, Warwickshire.—*Somersetsh.* Whorle Hill, near Weston-supra-Mare: W. Christy, in Watson's *New Bot. Guide.* On the South-western extremity of the Mendip Hills: Dr. Wollaston.—*Sussex;* Near Brighton: W. C. Trevelyan, Esq. in *New Bot. Guide.*—WALES. *Carnarvonshire;* Abundant near Llandudno, not far from the Cotoneaster: Mr. Wilson, N. B. G.

Perennial.—Flowers in August and September.

Root of many long, stout fibres. *Stem* upright, from 1 to 2 feet high, leafy, slender, round, rigid, simple, smooth. *Leaves* numerous, scattered, spreading, strap-shaped, tapering at each end, entire, rather fleshy, rough with minute white points. *Flowers* bright yellow, various in number, produced in a corymbose tuft at the top of the stem. *Florets* (see figs. 2 & 3.) about 30, all tubular, and perfect. *Seeds* (fig. 6.) hairy. *Pappus* (fig. 6.) copious, long, and minutely rough (see fig. 7). *Receptacle* (see fig. 8.) somewhat cellular, the cells slightly bordered.

This species is a native of Germany, Switzerland, France, Italy, &c.; it was first discovered as a native of Britain, in 1812, by the Rev. Mr. Holbech, as stated above. In a young state the stems and under surface of the leaves are covered with a soft cottony down, which nearly or quite disappears by the time the plant is in flower. When handled it gives out a faint aromatic smell. It is not a shewy plant, yet its bright yellow flowers, which are produced in abundance in a cultivated state, render it not unworthy a place in the flower-garden.

Those of my readers who are fond of the *Poetry* of flowers, will, I am sure, excuse me for filling up a space which would otherwise have remained blank, by the introduction of the following elegant and beautiful lines, by Mary Howitt.

THE USE OF FLOWERS.

"God might have made the earth bring forth
  Enough for great and small;
The Oak-tree, and the Cedar-tree,
  Without a flower at all.

He might have made enough, enough
  For every want of ours;
For luxury, medicine, and toil,
  And yet have made no flowers.

The ore within the mountain-mine
  Requireth none to grow,
Nor doth it need the Lotus-flower
  To make the river flow.

The clouds might give abundant rain,
  The nightly dews might fall,
And the herb that keepeth life in man
  Might yet have drunk them all.

Then, wherefore, wherefore, were they made,
  All dyed with rainbow-light,
All fashioned with supremest grace,
  Up-springing day and night.

Springing in valleys green and low,
  And on the mountains high,
And in the silent wilderness,
  Where no man passeth by.

Our outward life requires them not:
  Then, wherefore had they birth?
To minister delight to man,—
  To beautify the earth:

To comfort man, to whisper hope,
  Whene'er his faith is dim;
For Whoso careth for the flowers,
  Will care much more for him!"—*Forget Me Not*, 1837.

Carpinus Betulus. Hornbeam. ♄.

Russell del.t Pub.d by W. Baxter Botanic Garden Oxford 1837 J.W. sc.

CARPI'NUS*.

Linnean Class and Order. MONŒ'CIA†, POLYA'NDRIA.

Natural Order. CUPULI'FERÆ, *Richard.*—Lindl. Syn. p. 239; Introd. to Nat. Syst. of Bot. p. 97.—Rich. by Macgilliv. p. 545.—AMENTA'CEÆ, *Linn.*—Juss. Gen. Pl. p. 407.—Sm. Gram. of Bot. p. 189.—Loud. Hort. Brit. p. 534.—QUERNEALES; sect. QUERCINÆ; type, CORYLACEÆ; Burn. Outl. of Bot. v. ii. pp. 523 & 531.

GEN. CHAR. *Barren Flowers* (fig. 3.) in a lateral, long, cylindrical, lax *catkin* (fig. 1.), imbricated every way, with egg-shaped, pointed, concave, fringed, single-flowered *scales*, or *bracteas*. *Corolla* none. *Filaments* (see fig. 3.) 10 or more, hair-like, much shorter than the scale. *Anthers* roundish, compressed, bearded at the tip, 1-celled.

Fertile Flowers (fig. 4.) in a lax, bracteated *catkin; bracteas* of two kinds, outer and inner; outer bracteas entire, soon falling off; inner bracteas in pairs, each 3-lobed, with the side lobes much the smaller, forming an involucrum about the *ovary (germen). Calyx* clothing the ovary to near its tip, and adhering to it; toothed at the tip. *Ovary* with 2 cells, of which 1 is abortive. *Styles* (fig. 5.) very short, permanent. *Stigmas* 2, awl-shaped, upright, deciduous. *Nut* (figs. 7 & 8.) attended by the involucrum, egg-shaped, compressed, ribbed, woody, not bursting, of 1 cell (see fig. 9.), crowned by the calyx, and base of the style. *Kernel* (fig. 10.) 1, with flat fleshy, inversely egg-shaped *cotyledons*, without any separate *albumen; embryo* at the top of the seed, with a very minute *plumule*.

The *barren-flowered catkin* of several roundish, ciliated, 1-flowered scales, with from 8 to 20 stamens; the *fertile-flowered catkin* of several large, foliaceous, 3-lobed, 1-flowered *scales;* the pitcher-shaped, 6-toothed *calyx;* the *ovary* of 2 cells, 1 of which is abortive; the 2 *styles;* and the egg-shaped, striated, 1-seeded *nut;* will distinguish this from other genera in the same class and order.

One species British

CARPI'NUS BE'TULUS. Common Hornbeam. Hornbeech. Hardbeam. Yoke Elm. Wych-hasel.

SPEC. CHAR. Bracteas or Scales of the Fruit oblong, serrated, with 2 smaller lateral lobes (see fig. 7).

Engl. Bot. t. 2032.—Loud. Arbor. et Fruct. Brit. t. 243.—Linn. Sp. Pl. p. 1416.—Willd. Sp. Pl. v. iv. pt. 1. p. 467.—Huds. Fl. Angl. (2nd ed.) p. 422.—Sm. Fl. Brit. v. iii. p. 1029. Engl. Fl. v. iv. p. 155.—With. (7th ed.) v. ii. p. 574.—Lind. Syn. p. 240.—Hook. Brit. Fl. p. 410.—Lightf. Fl. Scot. v. ii. p. 585.—Davies' Welsh Bot. p. 90.—Purt. Midl. Fl. v. ii. p. 466.—Relh. Fl. Cant. (3rd ed.) p. 396.—Hook. Fl. Scot. p. 274.—Grev. Fl. Edin. p. 203.—Sylvan Sketches, p. 170.—Fl. Devon. pp. 155 & 133.—Winch's Fl. of Northumb. and Durham, p. 62.—Loud. Encycl. of Gard. (new ed.) p. 1159. paragr. 6621.—Walker's Fl. of

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Fig. 1. A Barren-flowered Catkin.—Fig. 2. A Fertile-flowered Catkin.—Fig. 3. A staminiferous Flower.—Figs. 4 & 5. Pistiliferous Flowers.—Fig. 6. Germen and Pistils.—Fig. 7. A Nut, with the enlarged 3-lobed Scale.—Fig. 8. A Nut detached from the scale, and enclosed in the permanent calyx.—Fig. 9. A transverse section of the same.—Fig. 10. The Kernel.—Figs. 3, 4, & 5, *magnified.*

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* From *car, wood;* and *pin*, a *head;* in Celtic. Wood employed to make the yokes of oxen. SIR W. J. HOOKER. † See *Bryonia dioica*, f. 83. n. †.

Oxf. p. 284.—Perry's Pl. Var. Selectæ, p. 79.—Bab. Fl. Bath. p. 46.—Mack. Catal. of Pl. of Irel. p. 83. Fl. Hibern. pt. 1. p. 257.— *Carpinus vulgaris*, Hunt. Evel. Sylva, p. 143, with a plate.—*Carpinus ulmoides*, Gray's Nat. Arr. v. ii. p. 245.— *Ostrya ulmo similis, fructu in umbilicis foliaceis*, Ray's Syn. p. 451. —*Betulus sive Carpinus*, Johnson's Gerarde, p. 1479.

Localities.—In woods and hedges, on a meagre, damp, tenaceous soil. Not common in a wild state.

A Tree.—Flowers in April and May.

Rather a small *tree*, with somewhat the habit of an *elm*. *Leaves* alternate, stalked, egg-shaped, pointed, doubly serrated, smooth, about 2 inches long, beautifully plaited when young, having numerous, parallel, transverse, hairy ribs. *Stipulas* oblong, blunt, smooth, reddish, deciduous. *Barren flowers* in drooping catkins, yellowish, with egg-shaped scales, which are delicately fringed at the margin. *Anthers* from 8 to 12, each with a tuft of white transparent hairs at the tip. *Fertile flowers* in terminal, lax, drooping catkins; or rather bracteated clusters. *Styles* 2. *Scales* or *Bracteas* unequally 3-lobed, enlarging as the fruit advances (see fig. 7). *Fruit* an egg-shaped *nut*, closely enveloped by the angular calyx or perianth.

The *Hornbeam* is said to be very common in many parts of England. Sir J. E. Smith informs us *(Engl. Fl.)* that it makes a principal part of the antient forests on the North and East sides of London, as Epping, Finchley, &c.; and that, when standing by itself, and allowed to take its natural form, it makes a much more handsome tree than most people are aware of.—Dr. Hunter tells us *(Evel. Syl.)* he has seen some of them in woods, upon a cold stiff clay, that have been near 70 feet high, with large, noble, fine stems, perfectly straight and sound. A handsome tree of this kind, 45 feet high, is now growing at Chiswick, and is beautifully engraved in Mr. Loudon's admirable work, the *Arboretum Britannicum*, t. 243.—The timber is very white, tough, and flexible, harder than that of Hawthorn, and capable of supporting a great weight. It is useful in turnery-work, and for many implements of husbandry, and was formerly much used for making yokes to yoke oxen; whence the name *Yoke Elm*. It makes cogs for mill wheels, even superior to Yew. The wood is very inflammable, and will burn like a candle, for which purpose it was formerly used. The inner bark is used in Scandinavia to dye yellow. Cattle eat the leaves of this tree, but pasturage will not flourish in its shade. As underwood it affords stakes, edders, and charcoal; but its superior excellence lies in its fitness for skreen-fences for sheltering gardens, nurseries, and young plantations, from the severity of the winter season. It may be trained to almost any height, and by keeping it trimmed on the sides it becomes thick of branches, and consequently thick of leaves, which being by their nature retained upon the plant after they wither, a Hornbeam hedge produces a degree of shelter nearly equal to that of a brick wall, with the advantage of a better regulated temperature.

Dr. Hunter says, that the German husbandman has a peculiar mode of erecting a fence of Hornbeam; he plants the young trees in such a manner as that every two may be brought to intersect each other in the form of a St. Andrew's Cross; in the part where they cross each other, he scrapes off the bark, and binds them closely together with straw; the two plants thus connected form a sort of indissoluble knot, and push from thence horizontal slanting shoots, which form a living palisado; so that such a protection may be called a rural fortification. These hedges being annually and skilfully pruned, will in a few years become a fence impenetrable in every part. It is not uncommon to see high roads in Germany thus fenced for miles together.—See *Hunt. Evel. Syl.; With. Arr.;* and *Loud. Arb. Brit.*, &c.

Sanicula europæa Wood Sanicle ♃

C.M. del & Sc

Pub.d by W. Baxter, Botanic Garden, Oxford. 1837

SANI'CULA*.

Linnean Class and Order. PENTA'NDRIA‡, DIGY'NIA.

Natural Order. UMBELLI'FERÆ, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. & Bot. v. iii. p. 235.—Mack. Fl. Hibern. pt. I. p. 113.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subtype, SANICULIDÆ, Burn. Outl. of Bot. pp. 614, 770, 773, & 774.

GEN. CHAR. *Flowers* separated; the central ones (fig. 3.) barren; marginal ones (fig. 2.) fertile, without stamens. *Calyx* superior; that of the barren flower (fig. 1.) small, in 5, acute segments; that of the fertile flowers (fig. 2.) larger, of 5, nearly equal, internally coloured segments. *Petals* in the barren flower (fig. 3.) 5, upright, nearly equal, spear-shaped, with long inflexed, converging points (see fig. 4.); in the fertile ones, either deciduous, or entirely wanting. *Filaments* 5, hair-like, spreading, twice as long as the petals. *Anthers* roundish. *Germen* roundish, bristly; wanting, or scarcely perceptible, in the central flowers. *Styles* (see figs. 2 & 5.) 2, reflexed, awl-shaped, about as long as the calyx, permanent. *Stigmas* blunt. *Fruit* nearly globose. *Carpels* (see fig. 6.) densely clothed with hooked prickles, destitute of *ribs;* but furnished with many *vittæ*. *Seed* half round (convex on the outer side, flat on the inner). *Universal Involucrum* of few leaves, usually divided. *Partial Involucrum* of many entire leaves.

Distinguished from other genera, in the same class and order, by the 5 leafy teeth of the *calyx;* the upright, spear-shaped *petals*, with long, inflexed, converging points; the nearly globose *fruit;* the *carpels* without ridges, but with many vittæ, and densely clothed with hooked prickles; and by the half round *seed*.

One species British.

SANI'CULA EUROPÆ'A. European Sanicle. Wood Sanicle.

SPEC. CHAR. Radical Leaves simple, deeply lobed. Flowers polygamous, all nearly sessile, in little capitate umbellules.

Engl. Bot. t. 98.—Linn. Sp. Pl p. 339.—Willd. Sp. Pl. v. i. pt. II. p. 1366. Huds. Fl. Angl. (2nd edit.) p. 110.—Sm. Fl. Brit. vol. i. p. 291. Engl. Fl. v. ii. p. 36.—With. (7th edit.) v. ii. p. 362.—Gray's Nat. Arr. v. ii. p. 499.—Lind. Syn. p. 127.—Hook. Brit. Fl. p. 135.—Light. Fl. Scot. v. i. p. 154.—Sibth. Fl. Oxon. p. 91.—Abb. Fl. Bed. p. 57.—Davies' Welsh Bot. p. 27.—Purt. Midl. Fl. v. i. p. 148.—Relh. Fl. Cant. (3rd ed.) p. 110 —Hook. Fl. Scot. p. 87.—Grev. Fl. Edin. p. 61.—Fl. Devon. pp. 47 & 165.—Johnston's Fl. of Berw. v. i. p. 66.—Winch's Fl. of Northumb. & Durham, p. 18.—Walker's Fl. of Oxf. p. 74.—Don's Gen. Syst. of Gard. & Bot. v. iii. p. 264.—Bab. Fl. Bath. p. 22.—Mack. Catal. of Pl. of Ireland; Fl. Hibernica, pt. I. p. 128.—*Sanicula, sive Diapensia*, Ray's Syn. p. 221.—Johnson's Gerarde. p. 948.

LOCALITIES.—In woods and thickets; frequent.

Perennial.—Flowers in May and June.

Fig. 1. Calyx of Barren Flower.—Fig. 2. Germen and Calyx of Fertile Flower.—Fig. 3. Corolla and Stamen of Barren Flower.—Fig. 4. A separate Petal.—Fig. 5. Styles.—Fig. 6. Fruit.

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* From *sano*, to *heal* or *cure;* from the supposed healing effects of the *Sanicula Europæa*. † See *Anchusa sempervirens*, I. 48. n. †.

Root of many black, tufted, rather fleshy fibres. *Stems* ascending, from 9 to 18 inches high, smooth, furrowed, slightly branched; branches alternate. *Leaves* nearly all radical, petiolated, dark shining green above, paler underneath, very smooth; from 5- to 7-lobed; lobes mostly 3-cleft, or irregularly cut, finely serrated, and slightly ciliate, veiny. *Umbels* numerous, simple, capitate, in an irregular, twice compound, partly umbellate, panicle. General *bractea* of 2 pinnatifid leaves; partial *ones* of several spear-shaped leaves. *Flowers* whitish, sometimes tinged with red; the barren *ones*, in the middle of each umbel, most numerous. *Fruit* egg-shaped, rough, with upright, scale-like hooked processes.

This plant is said to be a native throughout the whole of Europe and Caucasus, in woods and groves, and particularly by the sides of rivulets. It was much celebrated formerly as a vulnerary; it has, however, been long discarded in medicine, and in Sir J. E. Smith's opinion it seems to partake of that poisonous acrimony, which is found in most umbelliferous plants growing in a moist rich soil. It discovers to the taste some bitterness and roughness, followed by an impression of acrimony, which affects chiefly the throat; the taste is much weaker in the fresh leaves than in dried ones.

Puccinia Saniculæ, Hook. Brit. Fl. v. ii. pt. ii. p. 336, is not uncommon on the leaves of this plant, in Bagley Wood, near Oxford.

The *Natural Order* Umbelliferæ, is composed of dicotyledonous, *herbaceous plants*, with fistular furrowed stems; and usually divided, or sometimes simple, *leaves*, with dilated and sheathing bases. But what characterizes them best, and gives the name to the Natural Family, is the circumstance of the *flowers*, in almost every instance, being arranged in compound *umbels*, with or without *involucrums*. The *calyx* is superior, either entire (see t. 228. f. 2.) or 5-toothed (see t. 235. figs. 1 & 2). The *corolla* (see t. 151. f. 1.) is composed of 5 *petals*, which are inserted on the outside of a fleshy disk; they are usually inflexed at the point; and are imbricate, rarely valvate, in the bud. The *stamens*, which are 5 in number, are alternate with the petals, at first incurved, afterwards spreading. The *ovary* (see t. 156. f. 2.) is inferior, (inveloped by, and adherent with, the tube of the calyx,) 2-celled, presenting just below where the petals are inserted, a thickened margin, or sometimes teeth or segments, the only free part of the calyx. The *styles* are 2, each of which is terminated by a simple *stigma*. The *fruit* consists of 2 carpels (see t. 151. figs. 4, 5, & 6.), eventually separating, each with its style, and for a time suspended by a central, thread-shaped, and 2-parted *column* or *axis* (see t. 130. f. 6). Each *carpel* is traversed by elevated *ridges* (see t. 176. f. 6, *a*. & t. 180. f. 7.), of which 5 are primary, and 4, alternating with them, secondary; the ridges are separated by *channels* below which are often placed, in the substance of the testa (coat of the carpels), certain linear receptacles of coloured oily matter, called *vittæ* (see t. 176. f. 6, *b*.). The *seed* is pendulous, usually adhering inseparably to the pericarpium, rarely loose; and contains, at the base of abundant horny *albumen*, a minute *embryo*, the radicle of which points to the hilum.

Umbelliferæ is a most extensive and extremely important Natural Order, including many poisonous plants, these being chiefly such as grow in watery places, and many esculent and aromatic ones often yielding gum-resins. The fruit of this family is never dangerous; those of *Coriander*, *Anise*, and *Dill*, being agreeable aromatics. See *Lindl. Syn.* and *Hook. Brit. Fl.*

Lepidium latifolium. Broad-leaved Pepper-Wort ♃

C. Mathews Del & Sc. Publ.d by W. Baxter Botanic Garden Oxford 1837

LEPI'DIUM *.

Linnean Class and Order. TETRADYNA'MIA †, SILICULO'SA ‡.

Natural Order. CRUCI'FERÆ §, Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; subord. NOTORHIZEÆ ||; tribe, LEPIDINEÆ; Lindl. Syn. pp. 20, 21, 29, & 30.; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit. pp. 498 & 499.; Mag. Nat. Hist. v. i. pp. 143 & 240.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 & 201.—Mack. Fl. Hibern. pt. I. pp. 16, 23, & 25.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 784, 847, & 854.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, equal at the base, of 4 elliptical, concave, nearly equal sepals. *Corolla* (see fig. 2.) of 4, undivided, equal petals. *Filaments* (see fig. 2.) 6, simple, 2 shorter than the other 4, all shorter than the petals, sometimes deficient in number. *Anthers* of 2 roundish lobes. *Germen* (see fig. 2.) roundish. *Style* (see figs. 2 & 3.) slender, or wanting. *Stigma* (see figs. 2 & 3.) blunt. *Pouch* (fig. 4.) egg-shaped, or oblong, transversely compressed, either entire or notched at the summit, crowned with the style or stigma, of 2 cells (see fig. 5.); valves keeled, or occasionally ventricose; partition very narrow, crossing the greater diameter of the pouch. *Seeds* 1 in each cell, pendulus, egg-shaped, somewhat angular, or flattened. *Cotyledons* oblong, incumbent (o||), rarely accumbent (o =).

Distinguished from other genera, in the same class and order, by the egg-shaped, or somewhat heart-shaped, dehiscent *pouch*, with keeled, or rarely ventricose valves; the 1-seeded *cells;* and the somewhat triquetrous, or compressed *seeds*, with incumbent cotyledons.

Five species British.

LEPI'DIUM LATIFO'LIUM. Broad-leaved Pepper-wort. Poor Man's Pepper. Dittander.

SPEC. CHAR. Pouch oval, entire, pointed with the stigma. Leaves egg-spear-shaped, undivided, a little serrated; lower ones on long footstalks.

Engl. Bot. t. 182.—Ray's Syn. p. 304.—Linn. Sp. Pl. p. 899.—Willd. Sp. Pl. v. iii. pt. I. p. 436.—Huds. Fl. Angl. (2nd ed.) p. 279.—Sm. Fl. Brit. v. ii. p. 682. Engl. Fl. v. iii. p. 165.—With. (7th ed.) v. iii. p. 757.—Gray's Nat. Arr. v. ii. p. 693.—Lindl. Syn. p. 31.—Hook. Brit. Fl. p. 296.—Lightf. Fl. Scot. v. i. p. 339.—Davies' Welsh Bot. p. 62.—Relh. Fl. Cant. (3rd ed.) p. 261.—Hook. Fl. Scot. p. 194.—Grev. Fl. Edin. p. 140.—Winch's Fl. of Northumb. and Durham, p. 42.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 220.—Mack. Catal. of Pl. of Irel. p. 60.; Fl. Hibern. pt. I. p. 26.—*Raphanus sylvestris officinarum*, Johnson's Gerarde, p. 241.

Fig. 1. Calyx.—Fig. 2. A Flower, showing the Calyx, Corolla, Stamens, and Pistil.—Fig. 3. Germen.—Fig. 4. A Pouch.—Fig. 5. A transverse section of the Pouch.—*All magnified.*

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* From *lepis lepidos*, Gr. a *scale;* in allusion to the form of the pods, which resemble little scales. DON.

† See *Draba verna*, f. 38. n. †. ‡ See *Crambe maritima*, f. 107. n. ‡.

§ See *Draba verna*, f. 38, *a*. || See *Erysimum cheiranthoides*, f. 62. n. ||.

Localities.—In wet shady situations, and under cliffs, near the sea; and in salt marshes.—*Cambridgesh.* Leverington, near Wisbeach: Mr. Skrimshire, in *Fl. Cant.*—*Durham:* Near Seaton, and by the Wear near Durham Abbey: Mr. Robson. In limestone quarries at Hartlepool: J. Hogg, Esq. in *Fl. of Northumb. & Durh.*—*Essex;* At Heybridge near Maldon, by the water side, plentifully: Ray, and Mr. E. Foster, jun. Near the Hythe at Colchester; and by Fulbridge near Maldon Town's End: Ray. Marshes near Grays: Dr. Watson. On the sea walls at Bradwell, near the sea: Mr. Woodward.—*Kent;* Isle of Thanet: Dr. Mantyn.—*Norfolk;* On Sheringham Cliffs: Mr. Humphrey.—*Northumberland;* On the cliffs between Prior's Haven and Tynemouth Castle: N. J. Winch, Esq. On the banks of hedges at the Hermitage near Hexham: Mr. F. Scott.—In *Somersetshire:* Dr. Gapper, in N. B. G.—*Suffolk;* Hedge by the road-side close to the bridge at Blythburgh: Mr. Davy. Snape by the river-side, near the bridge: Rev. G. Crabb.—*Surrey;* In Wimbledon Park: Dr. Mantyn.—*Sussex;* By the Levant, below the garden of St. Mary's Hospital, Chichester, from which, very probably, it originally escaped: T. H. Cooper, Esq. in N. B. G.—*Yorkshire;* Rocks at Plumpton: Teesdale. Rocks at Knaresborough, near the church; Rev. Archdeacon Pierson. Redcar: J. E. Leafe, in N. B. G.—Between Beningborough and Miton, in the North Riding: Dr. Richardson.—WALES. *Anglesey;* In hedges at Aberffraw, and Llanrhuddlad: Rev. H. Davies.—*Denbighshire;* In Denbigh Castle, near the gateway that leads down to Highgate: Mr. Griffith.—*Flintshire;* Hedge-banks near the Store House, between the village of Rhyddlan and the sea: Mr. Griffith.—SCOTLAND. Near the sea coast. By the Castle of Weems, in *Fifeshire,* &c.: Rev. J. Lightfoot. Upon the rock on which Bothwell-Castle is built: Dr. Walker.—IRELAND. Cork-beg, near Cove, 1804, where it had been previously noticed by Smith: Mr. J. T. Mackay.

Perennial.—Flowers in June and July.

Roots acrid, very long, creeping and branched. *Stems* 3 or 4 feet high, upright, alternately branched, tough, round, smooth, leafy, pale, frequently flexuose. *Lower leaves* a span or more in length, egg-shaped, entire, somewhat a little serrated about the middle, on long stalks (petioles); *upper leaves* much smaller, alternate, spear-shaped, or strap-shaped, pointed, nearly sessile, entire. *Flowers* numerous, very small, white, disposed in a racemose, clustered manner at the ends of the branches, intermixed with very small leaves. *Calyx* purplish, white at the edge. *Petals* inversely egg-shaped, entire, longer than the calyx. *Stamens* 6. *Pouch* elliptical, crowned with the sessile stigma.

The whole *herb* is smooth, and of a dull glaucous-green colour. It has a very hot and acrid taste; and was formerly used instead of horseradish. The young leaves are sometimes eaten in salads. An infusion of the plant will vomit. Having a hot biting taste like pepper, and the leaves having been often used by country people to give a relish to their viands instead of pepper, has obtained for it the appellation of *Poor Man's Pepper.*

"Each bursting bud, each opening leaf,
Some emblem yields of joy or grief;
And bears a moral, if we turn
When Nature speaks, to hear and learn."

Cheiranthus Cheiri. Common Wall-flower. ♃

C. Mathews Del. & Sc. Pub.d by W. Baxter, Botanic Garden Oxford 1837.

CHEIRA'NTHUS*.

Linnean Class and Order. TETRADYNA'MIA†, SILIQUO'SA‡.

Natural Order. CRUCI'FERÆ§, Juss. Gen Pl. p. 237.—Sm. Gram. of Bot. p. 138. Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; subord. PLEURORHI'ZEÆ‖; tribe, ARABI'DEÆ¶, Lindl. Syn. pp. 20 & 22; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit. pp. 498 & 499.; Mag. of Nat. Hist. v. i. pp. 143 & 239.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 & 147.—Mack. Fl. Hib. pt. I. p. 16.—ROSALES; subord. RHŒADOSÆ; sect RHÆADINÆ; type, BRASSICACEÆ; subtype, ARABIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 854, & 856.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 4 oblong, concave, upright, converging, deciduous sepals; the 2 opposite ones protuberant at the base. *Corolla* (fig. 2.) cruciform, of 4 inversely egg-shaped, spreading, entire or slightly notched petals (fig. 3.); their claws upright, the length of the calyx. *Filaments* (fig. 4.) 6, awl-shaped, parallel, simple, distinct, the 2 opposite ones shortest, with a nectariferous gland at the base. *Anthers* upright, oblong-arrow-shaped, acute, of 2 strap-shaped lobes. *Germen* (fig. 5.) strap-shaped, compressed, a little tumid at each side, the length of the stamens. *Style* short, nearly cylindrical. *Stigma* (see fig. 5.) either of 2 thick spreading lobes, or capitate and slightly notched, permanent. *Pod (siliqua)* (fig. 6.) strap-shaped, compressed, 2-edged, rather convex at the sides, mostly with an elevated, longitudinal, central line; valves (see fig. 7.) straight; partition membranous. *Seeds* (see figs. 7, 8, & 9.) ranged alternately, in a single row, egg-shaped, compressed, slightly bordered at the summit (see fig. 9.) and often at one side also; *cotyledons* accumbent (fig. 10).

Distinguished from other genera, with accumbent cotyledons (o=), in the same class and order, by the upright converging *calyx*, with the 2 opposite sepals protuberent at the base; the 2-lobed or capitate *stigma;* and the compressed or 2-edged *pod*, with the *seeds* in a single row.

One species British.

CHEIRA'NTHUS CHEIRI. Common Wall-flower. Wild Cheir.

SPEC. CHAR. Leaves spear-shaped, acute, entire, clothed with 2-parted, close-pressed hairs. Pods linear; lobes of the Stigma spreading. Stem shrubby.

Fig. 1. The Calyx.—Fig. 2. The Corolla.—Fig. 3. A separate Petal.—Fig. 4. The 6 Stamens.—Fig. 5. The Germen, Style, and Stigma.—Fig. 6. A Pod.—Fig. 7. A Pod, with the valves separating, showing the Partition, and the Seeds.—Fig. 8. A Seed.—Fig. 9. Ditto.—Fig. 10. The accumbent Cotyledons and Radicle.—Figs. 9 & 10 *magnified.*

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* From *cheiri* or *kheyry*, the Arabic name of a plant, with very red sweet-scented flowers, and *anthos*, Gr. a *flower;* or perhaps from *cheir*, Gr. *the hand*, and *anthos*, Gr. a *flower;* hand-flower. DON.

† See folio 38, note †. ‡ See folio 62, note ‡. § See folio 38, a.

‖ See folio 141, note ‖. ¶ See folio 159, note ¶.

Hook. Fl. Lond. t. 147.—Linn. Sp. Pl. p 924?—Willd. Sp. Pl. v. iii. pt. 1. p. 516?—Huds. Fl. Angl. (2nd ed.) p. 287.—With. (2nd ed.) v. ii. p. 699.—Lindl. Syn. p. 22.—Hook. Brit. Fl. p. 307.—Lightf. Fl. Scot. v. i. p. 357.—Sibth. Fl. Oxon. p. 202.—Abb. Fl. Bedf. p. 144.—Relh. Fl. Cant. (1st ed.) p. 252.—Ait. Hort. Kew. (2nd ed.) v. iv. p. 118.—Purt. Midl. Fl. v. i. p. 311.—Grev. Fl. Edin. p. 145.—Winch's Fl. of Northumb & Durh. p. 44.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 154?—Bab. Fl. Bath. p. 4.—Mack. Fl. Hibern. pt. 1. p. 17.—*Cheiránthus fruticulósus*, Engl. Bot. t. 1934.—Curt. Brit. Entomol. v. vii. t. 325.—Linn. Mant. p. 94.—Sm. Fl. Brit. v. ii. p. 709.—Willd. Sp. Pl. v. iii. pt. 1. p 516.—Sm. Engl. Fl. v. iii. p. 203.—With. (7th ed.) v. iii. p. 776.—Gray's Nat. Arr. v. ii. p. 681.—Davies' Welsh Bot. p. 64.—Relh. Fl. Cant. (3rd edit.) p. 269.—Purt. Midl. Fl. v. iii. p. 368.—Hook. Fl Scot. p. 202.—Rev. G. E. Smith's Pl. of S. Kent. p. 36.—Fl. Devon. pp. 113 & 190.—Johnston's Fl. of Berw. v. i p. 146.—Walker's Fl. of Oxf. p. 192.—Perry's Pl. Varv. Sel p. 56.—Mack. Catal. of Pl. of Irel. p. 62.—*Leucojum luteum, vulgo Cheiri flore simplici*, Ray's Syn. p. 291.—*Viola lutea*, Johnson's Gerarde, p. 456.

Localities.—On old walls, ruins, &c.

Perennial.—Flowers in April, May, and June.

Root woody. *Stem* shrubby, brownish, a foot high, upright, branched; branches angular, leafy, clothed with bristly, silvery hairs, which are 2-parted nearly to the base, each division close pressed to the stem in an opposite direction. *Leaves* numerous, crowded, stalked, spear-shaped, pointed, almost always entire, rigid; deep green above, paler underneath, clothed more or less with 2-parted, silvery, close-pressed hairs, like those on the branches, pods, and calyx. *Flowers* corymbose, very sweet scented. *Calyx* (fig. 1.) reddish-purple. *Corolla* yellow; petals with a long narrow claw, and broad, spreading or recurved limb (see fig. 3). *Style* short. *Stigma* notched at the end. *Pods* racemose, nearly upright, straightish, from 1 to 2 inches long, covered with close, 2-parted hairs; each valve marked with an elevated central line, which often disappears about halfway up. *Seeds* (figs. 8 & 9.) flat, with a narrow, membranous, deciduous border at one side, as well as at the summit, of each.

Several varieties of this plant are cultivated in gardens; as the double yellow—the large-flowered yellow—the large double pale yellow—and the single, and double bloody-flowered—but none of these impart a more delightful fragrance than the wild one. There is a very curious variety sometimes met with, in which the petals are very diminutive, and the anthers changed into carpels *.—In June, 1836, I received, from Mr. J. Denson, jun. some specimens of a very singular variety of the double-flowered yellow Wall-flower; in this variety the pedicels or partial flower-stalks are very much elongated, with joints or constrictions at intervals; the constrictions, as Mr. Denson observes, appear to have been the sites of so many whorls of petals, and perhaps of sepals. If so, the pedicel becomes a common axis to several flowers, which successively develope themselves as the pedicel advances in length, and then fall off in the same order. In one of the specimens received, the fourth constriction has a whorl of 6 petals still attached to it, with a full-flower at the termination of the axis or elongated pedicel. This variety of the Wall-flower is analogous to the proliferous variety of the double-flowered Ranunculus bulbosus, a plant not uncommon in cottage gardens.

"The Wall-flower has been considered the emblem of fidelity in misfortune, because it attaches itself to the desolate, and enlivens the ruins which time and neglect would otherwise render repulsive. It conceals the savage records of feudal times by decorating the castle walls; occupies the painful void of the mouldering abbey; and wreathes a garland on the crumbling monument, deserted even by grateful memory. It is the flower with which the romance-writers embellished all their decaying battlements, falling towers, and monastic ruins; and it seems as necessary to their stories as the dark ivy, the screeching owl, and the gliding spectre itself."

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* An account of this curious variety of the Wall-flower, with some interesting observations on some of the apparent anomalies exhibited in the structure of the floral organs of cruciferous plants, by J. W. Howell, of Bath, may be seen in *The Cheltenham Magazine*, for October, 1836.

Solidágo virgáurea. Common Golden-rod. ♃.

Russell del. Pub.d by W Baxter Botanic Garden Oxford 1837. R Whybell f.

SOLIDA'GO*.

Linnean Class and Order. SYNGENE'SIA†, POLYGA'MIA, SUPE'RFLUA‡.

Natural Order. COMPO'SITÆ§; tribe, CORYMBI'FERÆ||, *Juss.*—Lind. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 & 199.—COMPOSITÆ; subord. ASTEREÆ; Loud Hort. Brit. pp. 520 & 521.—SYNANTHEREÆ; tribe, CORYMBI'FERÆ; Rich. by Macgilliv. pp. 454 & 455.—CORYMBI'FERÆ, sect. 2. Juss. Gen. Pl. pp. 177 & 180.—Sm. Gram. of Bot. pp. 121 & 123. Engl. Fl. v. iii. p. 334.—SYRINGALES; subord. ASTEROSÆ; sect. ASTERINÆ; subsect. ASTERIANÆ; type, ASTERACEÆ; Burn. Outl. of Bot. pp. 900, 901, 920, 924, & 926.—COMPOSITÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (figs. 1 & 2) oblong, closely imbricated; scales oblong, straight, converging. *Corolla* compound, radiant; *florets* of the disk (fig. 3.) numerous, perfect, tubular, with 5 equal spreading segments; *florets* of the ray (fig. 4.) from 5 to 10, with a pistil only, strap-shaped, elliptic-oblong, 3-toothed, yellow. *Filaments* (see fig. 5.) 5, in the tubular florets only, hair-like, short. *Anthers* (see fig. 5.) in a cylindrical tube. *Germen* (see figs. 6 & 7.) in all the florets fertile, oblong. *Style* (see figs. 3—5.) thread-shaped. *Stigmas* 2, revolute; those of the disk rather thicker. *Seed-vessel* none, but the unchanged calyx. *Seed* inversely egg-oblong. *Down (pappus)* (fig. 7.) sessile, hair-like, simple. *Receptacle* (fig. 8.) naked, almost flat, slightly cellular.

Distinguished from other genera, in the same class and order, by the closely imbricated *calyx;* the ray of few yellow *florets;* the sessile, simple *pappus;* and the naked *receptacle.*

Two species British?

SOLIDA'GO VIRGAU'REA. Common Golden-rod. Aaron's Rod. Woundwort.

SPEC. CHAR. Stem slightly zigzag, angular, upright. Lower leaves stalked, elliptic-oblong; those of the stem sessile, spear-shaped, all partly serrated. Clusters downy, panicled, crowded, upright. Flowers yellow.

Engl. Bot. t. 301.—Curt. Brit. Entomol. v. i. t. 45.—Linn. Sp. Pl. p. 1235.—Huds. Fl. Angl. (2nd ed.) p. 367.—Willd. Sp. Pl. v. iii. p. 1111. p. 2065.—Sm. Fl. Brit. v. iii. p. 889. Engl. Fl. v. iii. p. 438.—With. (7th ed.) v. iii. p. 941.—Lindl. Syn. p. 144.—Hook. Brit. Fl. p. 362.—Ait. Hort. Kew. 1st edit. v. iii. p. 218.; 2nd edit. vol. v. p. 70.—Lightf. Fl. Scot. v. i. p. 482.—Sibth. Fl. Oxon. p. 254.—Abbot's Fl. Bedf. p. 183.—Davies' Welsh Bot. p. 79.—Purt. Midl. Fl. v. ii. p. 412.—Relh. Fl. Cant. (3rd edit.) p. 344.—Hook. Fl. Scot. p. 244.—Grev. Fl. Edin. p. 179.—Fl. Devon. pp. 139 & 160.—Johnst. Fl. of Berw. v. i. p. 185.—Winch's Fl. of Northumb. and Durham, p. 54.—Walker's Fl. of Oxf. p. 242.—

Figs. 1 & 2. Involucrum.—Fig 3. A Floret of the Disk.—Fig. 4. A Floret of the Ray.—Fig. 5. The Stamens and Pistil.—Figs. 6 & 7. The Seed, crowned with the Pappus and Style.—Fig. 8. Receptacle.—*All,* except figs. 1 & 6, *a little magnified.*

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* From *solidando vulnera,* or *in solidum ago,* "I consolidate," from its supposed efficacy in healing wounds. PHILLIPS.

† See *Tussilago farfara,* f. 91, n. †. ‡ See *Achillea Ptarmica,* f. 36, n. ‡.

§ See *Prenanthes muralis,* f. 27, a. || See *Achillea Ptarmica,* f. 36, a.

Perry's Pl. Varv. Selectæ, p. 71.—Bab. Fl. Bath. p. 26.—Mack. Catal. of Pl. of Irel. p. 74.; Fl. Hibern. pt. 1. p. 145.—*Solidago vulgaris*, Gray's Nat. Arr. v. ii. p. 465.—*Virga aurea*, Ray's Syn. p. 176.—Johnson's Gerarde, p. 430.

LOCALITIES.—In woods, hedges, copses, grassy lanes, and on heaths and mountains. Not very uncommon in some counties, more rare in others.

Perennial.—Flowers in July, August, and September.

Root woody, with many long, stout, simple fibres. *Stem* from 1 to 2 feet or more high, upright, but often decumbent at the base, variously zigzag, never quite straight, leafy, angular, solid, striated, purple; slightly downy on the lower part, more so on the upper. Lower *leaves* oval-spear-shaped, stalked, more or less pointed, rough at the edges, distantly serrated, but towards the point almost entire, slightly hairy, dark green above, paler underneath, with numerous reticulated veins; upper *leaves* smaller, alternate, nearly sessile, gradually diminishing to *bracteas*, which are downy like the *flower-stalks*. *Flowers* bright yellow, in a terminal, leafy cluster, which is either simple or compound. Scales of the *Involucrum* upright, unequal, spear-shaped, downy, membranous at the edges, and finely fringed. *Florets* of the ray from 5 to 10, elliptic-oblong, unequally 3-toothed, spreading; becoming revolute and tawny in decay; disk prominent. *Seeds* brown, minutely hairy. *Down* rough.

When bruised, the whole herb smells like Wild Carrot. It was formerly esteemed as a good vulnerary and diuretic; but it has latterly fallen into comparative neglect. This plant will flourish in poor soil, and as the abundance of blossoms which it yields during Autumn affords a feast for bees when other flowers fail, it should be cultivated near every apiary. It is well adapted to ornament the banks of lakes and rivulets, where its panicles of bright yellow flowers appear to great advantage when reflected in the water.

Solidago Cambrica of HUDSON, AITON, WILLDENOW, and LINDLEY, is considered by Sir J. E. SMITH, Sir W. J. HOOKER, and some other Botanists, as only a variety of *S. Virgaurea*. These plants, as Dr. WITHERING observes, are so variable in size, and other more proper characteristics, that it is most difficult to determine species and varieties.

THE CLOSE OF SPRING.

"The garlands fade that Spring so lately wove,
  Each simple flower which she has nursed in dew,—
Anemones, that spangled every grove;
  The *Primrose* wan, and *Harebell* mildly blue:
No more shall *Violets* linger in the dell,
  Or purple *Orchis* variegate the plain:
Till Spring again shall call forth every bell,
  And dress with humid hands her wreaths again.
Oh, poor humanity! so frail, so fair,
  Are the fond visions of thy early day;
Till tyrant passion, and corrosive care,
  Bid all thy fairy colours fade away!
Another May new buds and flowers shall bring:
Ah! why has happiness no second Spring?"

C. SMITH.

[illegible] *Fl.* [illegible] p. 75.—[illegible] p. [illegible] [illegible] *Bot.* v. 74. [illegible] p. [illegible] [illegible]—Sowerby, [illegible] [illegible] [illegible] p. 405.—*Flora* [illegible] p. [illegible]—[illegible]

Localities.—In woods, hedges, [illegible] pastures, [illegible] mountains. Not very uncommon. [illegible]

Perennial.—Flowers in July, August, and September.

Root woody, with many long [illegible] fibres. *Stem* from 1 to 2 feet or more high, upright, [illegible] variously [illegible], [illegible] purple; [illegible] downy [illegible]. *Lower leaves* [illegible] stalked, [illegible] rough at the edges, [illegible] entire, slightly hairy, dark [illegible] with numerous reticulated veins; upper leaves [illegible], sessile, gradually diminishing to [illegible], which are downy like the *flower-stalks*. *Flowers* bright yellow, in a terminal, leafy cluster, which is either simple or compound. *Scales of the involucrum* upright, unequal, spear-shaped, downy, membranous at the edges, and finely fringed. *Florets of the ray* from 5 to 10, elliptic-oblong, unequally 3-toothed, spreading, becoming revolute and tawny in decay; disk prominent. *Seeds* brown, [illegible] hairy. *Down* rough.

When bruised, the whole herb smells like [illegible]. It was formerly esteemed as a good vulnerary and diuretic, but it has latterly fallen into comparative neglect. This plant will flourish in poor soil, and as the abundance of flowers which it [illegible] Autumn affords a feast for the [illegible] it [illegible] be cultivated near every apiary. It would also [illegible] the banks of lakes and rivulets where its [illegible] appear to great advantage when [illegible]

Solidago Cambrica of Hudson, [illegible] and Lightfoot, is considered by Sir J. E. Smith, [illegible] Hooker, and some other Botanists, as only a variety [illegible] plants, as Dr. Withering [illegible] other more [illegible] genuine species and [illegible]

THE [illegible]

The garlands fade that Spring [illegible]
Each [illegible]
Anemones, that [illegible]
The Primrose [illegible]
No more shall [illegible]
Or purple [illegible]
Till Spring again shall [illegible]
And decks with [illegible]
Oh, [illegible]
Are the [illegible]
Till tyrant passion and [illegible] care
Bid all my fairy colours fade away!
Another May new buds and flowers shall bring;
Ah! why has happiness no second Spring?

Pyrola Minor. Lesser Winter-green. ♃

H Bidwell Esq.r del. Publ.d by W Baxter Ficanic Garden Oxford 1837

PY'ROLA*.

Linnean Class and Order. DECA'NDRIA†, MONOGY'NIA.

Natural Order. PYROLA'CEÆ, Lindl. Introduction to the Nat. Syst. of Bot. p. 184.—Mack. Fl. Hibern. pt. i. p. 182.—PYRO'LEÆ, Lindl. Syn. p. 175.—MONOTRO'FEÆ, Nutt. Gen. v. i. p. 272, *fide Lindley.*—ERICA'CEÆ; tribe, PYROLIÆ; Don's Gen. Syst. of Gard. & Bot. v. iii. pp. 785 & 789.—ERICI'NEÆ, Rich. by Macgill. p. 450.—ERICÆ, Juss. Gen. Pl. p. 159.—Sm. Gram. of Bot. p. 115.—ERI'CEÆ, sect. PYROLEÆ; Loud. Hort. Brit. p. 523.—SYRINGALES; subord. ERICOSÆ; sect. ERICINÆ; type, ERICACEÆ; subtype, PYROLIDÆ; Burn. Outl. of Bot. pp. 900, 937, 944, 946, and 947.—BICORNES, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, in 5 deep, permanent segments. *Corolla* (fig. 2.) of 5 roundish, concave petals, which are often slightly connected at the base. *Filaments* (see figs. 3 & 4.) 10, awl-shaped, curved, variously directed, shorter than the corolla. *Anthers* (see fig. 4.) large, pendulous, of 2 cells, each opening by a round pore at the summit. *Germen* (see figs. 3 & 6.) superior, roundish, 5-lobed. *Style* (fig. 5.) cylindrical, longer than the stamens, variously directed, permanent. *Stigma* tumid, somewhat annular, notched. *Capsule* orbicular, depressed, with 5 angles, 5 cells, 5 valves, and 5 partitions, from the central column, opposite to the centres of the valves, and alternate with the angles where the cells burst (see figs. 6 & 7); receptacles 5 (see fig. 7), from the central column, compressed, alternate with the partitions. *Seeds* very numerous, covering the receptacles, very small, oval, each in a membranous tunic, elongated at both ends.

Distinguished from other genera, in the same class and order, by the 5-cleft *calyx;* the *corolla* of 5 petals; the *anthers* opening by 2 pores; the superior, 5-celled *capsules;* and the numerous *seeds,* each invested with a membranous, elongated tunic.

Five species British.

PY'ROLA MINOR. Lesser Winter-green.

SPEC. CHAR. Leaves egg-shaped, rounded, crenate. Stamens regularly inflexed, as long as the very short straight style, which is included within the flower. Stigma large, with 5 divergent rays.

Engl. Bot. t. 158. (*bad*).—Dill. in Ray's Syn. p. 363.—Linn. Sp. Pl. p. 567.—Huds. Fl. Angl. (2nd ed.) p. 176.—Willd. Sp. Pl. v. ii. pt. i. p. 621.—Sm. Fl. Brit. v. ii. p. 444. Engl. Fl. v. ii. p. 257.—With. (7th ed.) v. ii. p. 524.—Gray's Nat. Arr. v. ii. p. 403.—Lindl. Syn. p. 175.—Hook. Brit. Fl. p. 187.—Lightf. Fl. Scot. v. i. p. 218.—Sibth. Fl. Oxon. p. 136.—Abb. Fl. Bedf. p. 92.—Davies' Welsh Bot. p. 40.—Purt. Midl. Fl. v. ii. p. 732.—Hook. Fl. Scot. p. 128.—Grev. Fl. Edin. p. 92.—Johnst. Fl. of Berw. v. ii. p. 280.—Winch's Fl. of Northumb. and Durh. p. 27.—Walker's Fl. of Oxf. p. 118.—Mack. Fl. Hibern. pt. i. p. 183.—*Pyrola rosea,* Engl. Bot. t. 2543.

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. Stamens, Germen, Style, and Stigma.—Fig. 4. A separate Stamen.—Fig. 5. Style and Stigma.—Fig. 6. Transverse section of Germen.—Fig. 8. Vertical section of a Capsule of *Pyrola rotundifolia,* showing the receptacles of the seeds. From GÆRTNER.—*All,* except figs. 1 & 2, *more or less magnified.*

* Adopted by LINNÆUS from the older authors. It is a diminutive of *Pyrus,* and alludes to the resemblance of the leaves to those of a pear-tree. WITHERING.

† See *Saponaria officinalis,* folio 37, note †.

Localities.—In mossy woods and thickets, in mountainous situations.—*Oxfordshire;* Scrubby Copse, Mungewell. Woods between Nettlebed and Henley. Among moss in a wood about a mile and a half from Henley on the road to High Wycombe. In Shireborn Wood; and Stokenchurch Woods.—*Beds.* Whipsnade, and woods near Luton.—*Cumberl.* Dunmallet, foot of the Avenue fronting Ullswater. Banks of the Irthing, below the cascade on the moors above Gillsland; by the Eden in Nunnery Walks.—*Durham;* In Gibside Woods near the Friar-gate; also near the Swalwell-gate; and on Teesdale Forest. In Cocken Woods. In Arngill, Cow-close-gill, and Hyndon-gills, which form the Gaunless; also in Skull Wood near South Hamsterley.—Woods in *Gloucestershire.—Northumbl* Near Prudhoe Castle; at Wellington House, and at Roadely; also in East Common Wood near Hexham. In a fir plantation at Catcherside, four miles W. of Wallington. In Willymoteswick Dene; and in Callas Wood near Alnwick.—In *Notts.—Shropsh.* White Cliffe Coppice near Ludlow.—*Worcestersh.* Abberley. Shrawley Wood.—*Yorksh.* Near Halifax; Raydale Wood near Cave End, Wensleydale; Tennant's Wood near Kilnsay; Haslewood; near Clapham; Hackness Woods; Hovingham Woods near Malton; Aske Wood near Richmond; and near Rotherham.—WALES. *Anglesey;* In Lligwy Wood.—In many places in SCOTLAND & IRELAND.

Perennial.—Flowers in July.

Root creeping. *Stem* short, leafy, mostly simple. *Leaves* roundish egg-shaped, crenated, smooth and shining, stalked. *Peduncle (flowerstalk)* from 6 to 8 inches high, with 4 angles, one of which is smaller than the rest, seldom spiral, or but slightly so. *Flowers* in a long, slender, sometimes lax or interrupted cluster, drooping in every direction, each on a short pedicel, with a small spear-shaped bractea at its base. Segments of the *Calyx* short, broad, and pointed. *Petals* pale pink or rose-coloured, orbicular, converging. *Stamens* all equally inclined round the capsule (see fig. 3). *Filaments* white. *Anthers* nearly terminal, dilated and yellowish upward, with 2 large pores. *Style* cylindrical, straight, very short. *Stigma* large, with 5 radiating lobes. *Capsule* rounded, depressed.

Distinguished by its short, straight *style*, and large radiated *stigma*, which is quite included within the concave corolla.

It is observed by Dr. Johnston, in his interesting *Flora of Berwick-upon-Tweed*, that the seeds of the *Pyrolæ* lie imbedded in a thick cottony material, consisting of short erect fibres, arranged parallel and close to one another. When magnified, these fibres are nearly pellucid, linear-oblong, and membranous, not unlike the plants of the parasitical genus *Erineum*.

The plant figured was taken up in Arniston Woods near Edinburgh, July 18, 1836, by H. Bidwell, Esq. of Albrighton, Salop; to whose kindness I am indebted both for the drawing and for the specimen from which it was made.

The *Natural Order* Pyrola'ceæ is composed of dicotyledonous plants, which are mostly *herbaceous*, rarely *shrubby*. Their *leaves* are simple, often wanting. Their *calyx* is inferior, 5-leaved, or deeply 5-cleft, permanent. The *corolla* is monopetalous (in *Pyrola* pentapetalous ?), inferior, regular, deciduous, 4- or 5-toothed, and imbricated in the bud. The *stamens* are hypogynous, twice as numerous as the divisions of the corolla; their *anthers* 2-celled, opening by fissures or pores, with or without appendages. The *ovary* is superior, 4- or 5-celled, many-seeded, with a hypogynous disk; and a single *style*, which is either straight or declinate, with a simple *stigma*. The *fruit* is capsular, 4- or 5-celled, dehiscent, with central placentas. The *seeds* are indefinate, and very minute, with a large, loose, reticulated testa; and a minute, inverted embryo, at the extremity of a fleshy albumen.

Thlaspi perfoliatum. Perfoliate Penny-cress. ⊙

J.R.Del. Pub.d by W.Baxter, Botanic Garden, Oxford, 1837. C.Mathews Sc.

THLA'SPI*.

Linnean Class and Order. TETRADYNA'MIA†, SILICULO'SA‡.

Natural Order. CRUCI'FERÆ§, Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138. Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; subord. PLEURORHIZEÆ‖; tribe, THLASPIDEÆ; Lindl. Syn. pp. 20, 22, & 27.; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit. pp. 498 & 499.; Mag. Nat. Hist. v. i. pp. 143 & 240.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 & 148.—Mack. Fl. Hib. pt. i. p. 16.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subtype, ARABIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 854, & 856.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (see figs. 1 & 2.) inferior, of 4 egg-shaped, concave, moderately spreading, deciduous sepals, equal at the base. *Corolla* (see figs. 1 & 2.) cruciform; of 4 inversely egg-shaped, equal, undivided, or sometimes slightly notched, petals; their claws short and broad (fig. 3). *Filaments* (see fig. 4.) 6, 2 shorter than the other 4, simple, slender. *Anthers* heart-shaped. *Germen* (fig. 5.) roundish, compressed, notched. *Style* (see fig. 4.) short. *Stigma* blunt. *Pouch* or *Silicle* (fig. 6.) laterally compressed, imarginate at the apex; *valves* (see fig. 8.) winged at the back; cells (see fig. 7.) 2- or many-seeded. *Partition (Dissepiment)* (fig. 9.) elliptic-spear-shaped, crossing the greater diameter of the pouch. *Seeds* (see figs. 9 & 10.) 2 or more in each cell, oval. *Cotyledons* (fig. 10.) flat, accumbent (o=).

The laterally compressed *pouch*, emarginate at the apex; the navicular (boat-shaped) *valves*, winged at the back; and the 2-, or many-seeded *cells*; will distinguish this from other genera, with accumbent cotyledons, in the same class and order.—It differs from *Capsélla* (t. 191.) in the valves being winged at the back; and in the *cotyledons* being accumbent (o=), not incumbent (o‖).

Three species British.

THLA'SPI PERFOLIA'TUM. Perfoliate Penny-cress. Perfoliate Shepherd's Purse. Small Thorow-cress.

SPEC. CHAR. Pouch inversely heart-shaped. Style included within the notch. Stem-leaves heart-shaped, rather sharp at the base, clasping the branched stem, somewhat toothed, smooth.

Annual.—Flowers in March and April.

Engl. Bot. t. 2354.—Hook. Fl. Lond. t. 46.—Jacq. Fl. Austr. t. 337.—Linn. Sp. Pl. p. 902.—Huds. Fl. Angl. (1st ed.) p. 246.—Willd. Sp. Pl. v. iii. pt. i. p. 446.—Sm. Fl. Brit. v. ii. p. 685. Engl. Fl. v. iii. p. 172.—With. (7th ed.) v. iii. p. 759.—Gray's Nat. Arr. v. ii. p. 692.—Lindl. Syn. p. 27.—Hook. Brit. Fl. p. 295.—Sibth. Fl. Oxon. p. 199.—Purt. Midl. Fl. v. iii. p. 56.—Walker's Fl. of Oxf. p. 185.—Don's Gen. Syst. of Gard. & Bot. v. i. p. 191.—*Thlaspi*

Figs. 1 & 2. Separate Flowers.—Fig. 3. A Petal.—Fig. 4. Stamens, Germen, Style, and Stigma.—Fig. 5. Germen.—Fig. 6. Pouch.—Fig. 7. Transverse section of ditto.—Fig. 8. One of the Valves.—Fig. 9. The Partition.—Fig. 10. The accumbent Cotyledons.—*All*, except fig. 1, *a little magnified.*

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* From *thalo*, Gr. *to flatten*; on account, probably, of its compressed *seeds* or *seed-vessels*. HOOKER.

† See *Draba verna*, f. 38, n. †. ‡ See *Crambe maritima*, f. 107, n. ‡.

§ See folio 38, *a*. ‖ See folio 141, note ‖.

alpestre, Huds. Fl. Angl. (2nd ed.) p. 282.—*Thlaspi perfoliatum minus*, Ray's Syn. (3rd ed.) p. 305.—*Thlaspi rotundifolium*, Johnson's Gerarde, p. 266.

Localities.—In limestone pastures; very rare.—*Oxfordshire;* In old stone-quarries between Burford and Witney, and on Burford Downs: Bobart and Sibthorp. In the same place in 1818: Sir W. J. Hooker.—*Gloucestershire;* In great abundance in the neighbourhood of Upper Slaughter, particularly at the Seven Wells. It is soon choked by the grass, and therefore is only found in the bare stony parts of the steep valleys of the Cotswolds, growing in the neighbourhood of *Anemone Pulsatilla*, *Thesium linophyllum*, *Cineraria campestris* (t. 206.), *Astragalus hypoglottis*, and *Orchis ustulata*. Abundant on the road-side at Foss Bridge Hill, between Northleach and Cirencester, where the road has been deeply cut through the hill: E. F. Witts, Esq. June 19, 1837.

Annual.—Flowers in April and May.

Root fibrous. *Stem* from 5, to 8 or 9 inches high, branched from the bottom, spreading, roundish, striated, smooth, leafy. *Leaves* slightly toothed, smooth, glaucous; those from the root stalked, egg-shaped, blunt; the rest sessile, arrow-shaped, clasping the stem, either rounded or pointed at the base. *Flowers* very small, white, in rather dense corymbs. *Calyx* often purplish, with white membranous edges. *Petals* about twice as long as the calyx, entire, blunt. *Pouches* (fig. 6.) in not very long clusters, smooth, inversely heart-shaped, the lobes rising above the very short style; *valves* keeled at the back, dilated and rounded at the upper part (see fig. 8). *Seeds* (fig. 10.) oval, yellowish, about 4 in each cell.

The whole herb is smooth, and of a glaucous-green colour. It is a native of Portugal, Spain, France, Switzerland, Germany, Italy, Podolia, Greece, &c. in cultivated fields, especially on a chalky soil. In England, the only locality known for it, till very lately, was among old stone-pits about Burford, in Oxfordshire, where it is now become very rare, in consequence of this station for it having been enclosed, and the ground brought under tillage. Fortunately, however, E. F. Witts, Esq. of Upper Slaughter, Gloucestershire, has very recently found it in great abundance in the localities given above; and it is to the kindness of this gentleman that I am indebted for the specimen from which the drawing for the accompanying plate was made.

Mr. Witts observes, that sheep seem to have a peculiar fondness for this plant, while they never touch the common *Draba verna;* in a field where he observed one day an abundance of it, the next day it had been entirely cropped by sheep, which had in the mean time been turned in upon it. Even when left untouched this plant is of very short duration, it flowers at a very early period of the year, and soon runs to seed, so that before the Summer heat sets in, it has entirely disappeared.—Then

"Spare this flower, this gentle flower,
The slender creature of a day!
Let it bloom out its little hour,
And pass away.
Too soon its fleeting charms must lie
Decayed, unnoticed, overthrown;
Oh, hasten not its destiny,
Too like thy own.

Oh spare this flower! thou know'st not what
Thy undiscerning hand would tear;
A thousand charms thou notest not,
Lie treasured there.
Not Solomon, in all his state,
Was clad like Nature's simplest child;
Nor could the world combined, create
One flow'ret wild.

Spare, then, this humble monument
Of an Almighty's power and skill;
And let it at His shrine present
Its homage still.
He made it, who made nought in vain;
He watches it, who watches thee;
And He can best its date ordain,
Who bade it be."

Rev. F. H. Lyte.