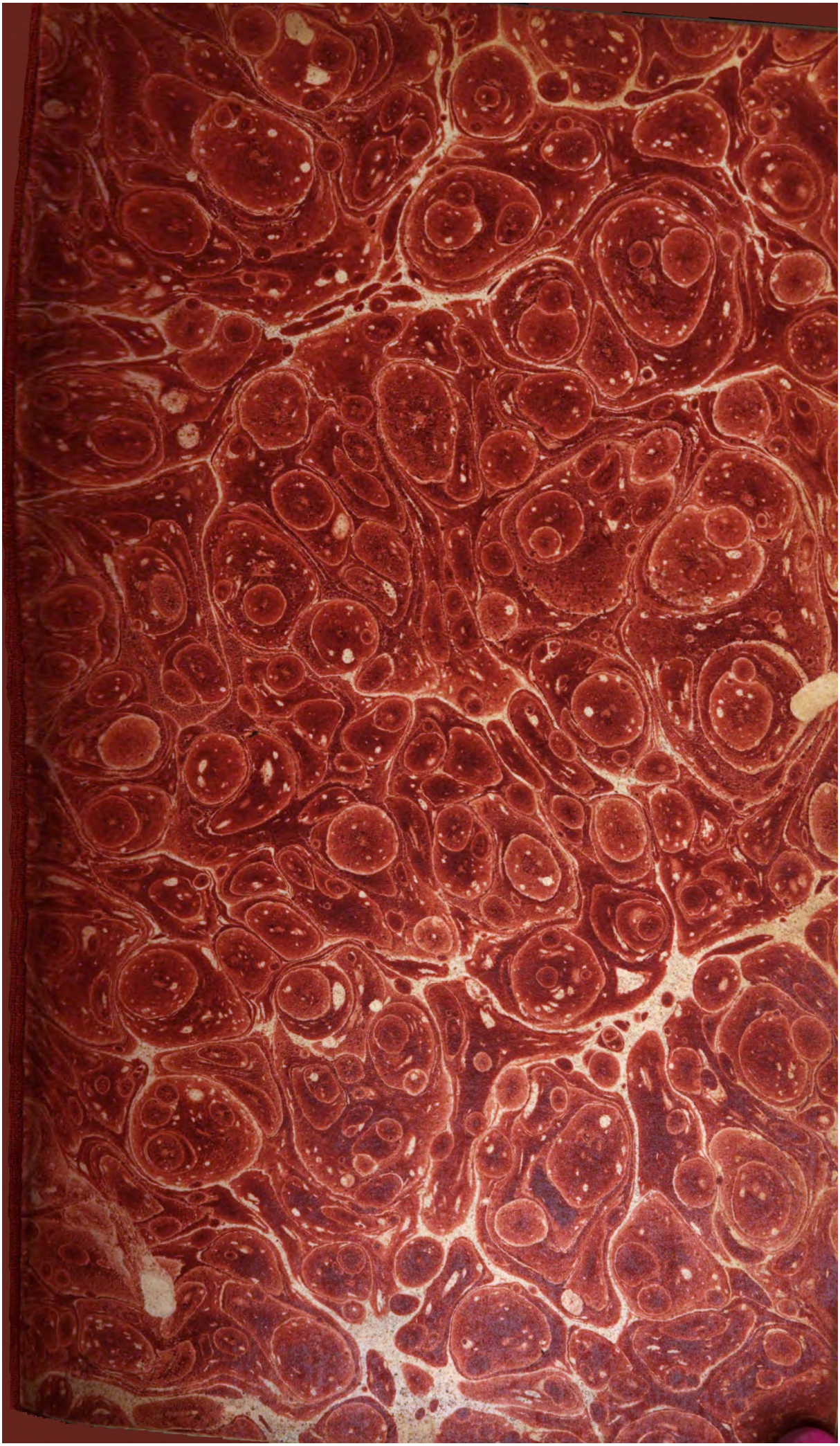

ENGLISH BOTANY;

OR,

COLOURED FIGURES

OF

BRITISH PLANTS,

WITH THEIR

ESSENTIAL CHARACTERS, SYNONYMS, AND PLACES OF GROWTH.

TO WHICH WILL BE ADDED,

OCCASIONAL REMARKS.

BY

JAMES EDWARD SMITH, M.D. F.R.S.

MEMBER OF THE IMP. ACAD. NATURÆ CURIOSORUM, THE ACADEMIES OF STOCKHOLM, UPSAL, TURIN, LISBON, LUND, BERLIN, PHILADELPHIA, AND THE NAT. HIST. SOCIETY OF PARIS;

PRESIDENT OF THE LINNEAN SOCIETY.

THE FIGURES BY

JAMES SOWERBY, F.L.S.

——"VIRESQUE ACQUIRIT EUNDO."——*Virg.*

VOL. XVII.

LONDON:

PRINTED BY J. TAYLOR, BLACK-HORSE-COURT, FLEET-STREET;

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MDCCCIII.

JUNGERMANNIA furcata.

Forked Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Frond linear, branched, entire; the extremities forked and obtuse. Sheaths hairy.

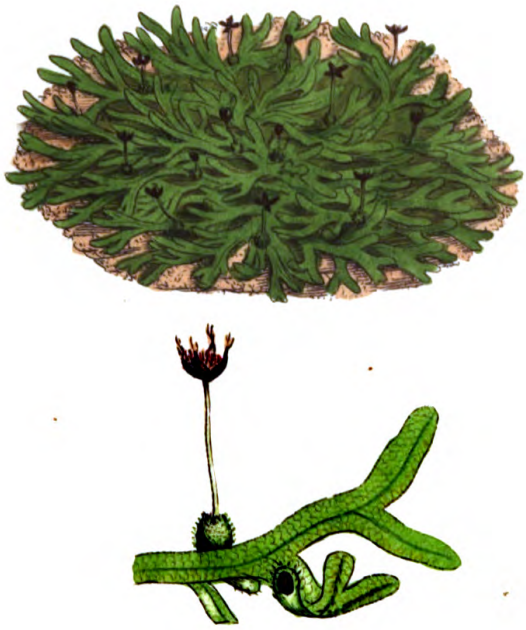
SYN. Jungermannia furcata. *Linn. Sp. Pl.* 1602. *Huds.* 518. *With.* 868. *Hull.* 282. *Relh.* 441. *Sibth.* 313. *Abbot.* 254. *Hedw. Theor. t.* 19, 20.

Lichenastrum tenuifolium furcatum, thecis globosis pilosis. *Dill. Musc.* 512. *t.* 74. *f.* 45.

Ulva saxatilis furcata, latiusculis et tenerioribus segmentis. *Raii Syn.* 63.

NOT rare on stones in damp places, nor among mosses on the bark of trees, where it bears fruit in April and May, but by no means commonly. Dillenius, after having long sought in vain for the capsules, found them on some beech trees in Sussex: our specimens were sent by C. Lyell, Esq. from the New Forest, Hants.

The fronds are of a light pleasant green, and form loose tufts, growing for the most part prostrate. They are known by their linear branched form. The ends are forked and bluntish, the edges entire, and a midrib runs through the whole. From this rib, on the under side, spring the globular hairy sheaths, which turn upwards, round the edge of the frond, and each produces a whitish slender stalk, bearing the brown capsule, which soon splits into 4 valves.



Aug. 1806. Published by Ja.s Sowerby, London.

2.

JUNGERMANNIA fruticulosa.

Tufted Blueish Jungermannia.

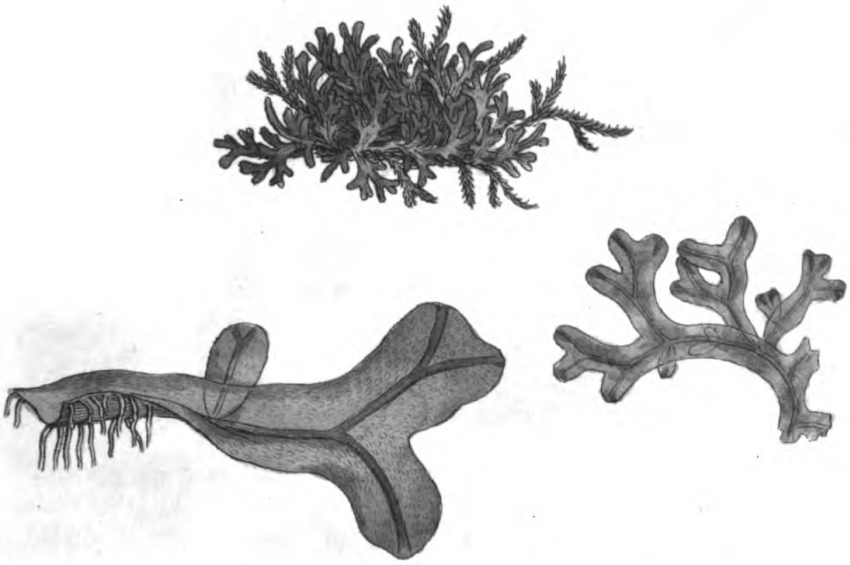
CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Flat, branched, entire; branches upright, forked, obtuse; the extremities blueish.

SYN. Riccia fruticulosa. *Dicks. Crypt. fasc.* 1. 8. *With.* 888. *Hull.* 283. *Fl. Dan. t.* 898. *f.* 3 ?

FOUND by Mr. Dickson, growing on the lower part of the trunks of trees, among moss. It composes dense, crisped, tender and succulent tufts, remarkable for their vivid verdigrise tint. Except in posture and colour, the whole plant wonderfully resembles *Jungermannia furcata, t.* 1632, of which there is much reason to suspect it a variety. Still, in deference to our great British cryptogamist, we are happy to have the means of exhibiting some of his original specimens. We must allow that the synonym of *Fl. Dan.* scarcely, in our opinion, accords with this plant. Nothing is known of the fructification, but we are fully persuaded of its being that of a *Jungermannia,* and therefore make no scruple of removing the plant to that genus, in which we have the sanction of Mr. Hooker's opinion.



Feb. 1813 published by J. Sowerby London

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3.

JUNGERMANNIA epiphylla.

Broad-leaved Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Female on a ſtalk riſing from a ſheath. *Capſ.* with 4 valves. *Seeds* attached to elaſtic filaments.

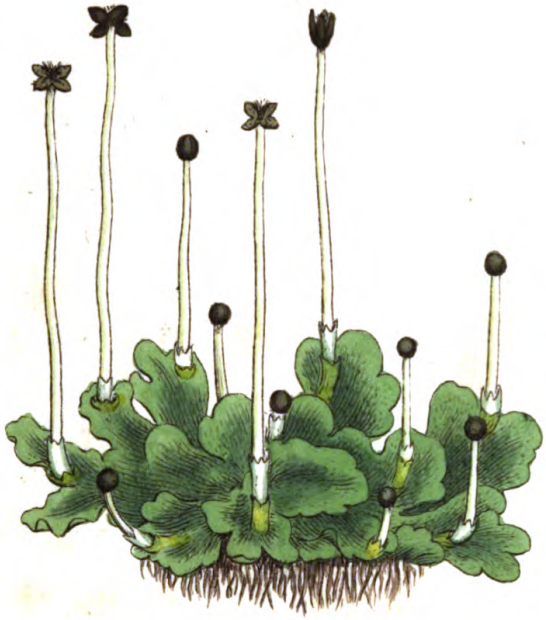
SPEC. CHAR. Stem none. Frond bluntly lobed, bearing the ſheaths on its upper ſurface, with a little leaf at the baſe of each.

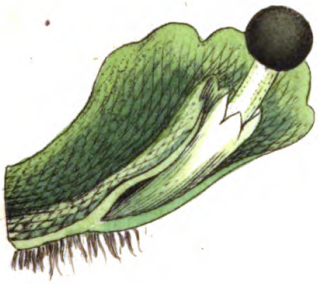
SYN. Jungermannia epiphylla. *Linn. Sp. Pl.* 1602. *Fl. Suec.* 403. *Hudſ.* 517. *With.* 867. *Hull.* 282. *Relh. Suppl.* 3. 11. *Abbot.* 253. *Lightf.* 788. *Dickſ. H. Sicc. faſc.* 7. 22. *Hoffm. Germ. v.* 2. *t.* 4.

Lichenaſtrum capitulis rotundis e foliorum medio enaſcentibus. *Raii Syn.* 110. *Dill. Muſc.* 508. *t.* 74. *f.* 4 1.

THIS Jungermannia may often be found on wet ſhady banks, and damp heaths, flowering in the beginning of winter, and elevating its ripe capſules in the ſpring.

The fronds are cloſely attached to the moiſt earth by innumerable ſoft fibrous perennial roots, except at their extremities, which are a little raiſed, dilated and bluntly lobed. They are of a reticulated texture, and deep dull green hue, ſmooth and ſleek to the touch. The male flowers are deſcribed by Mr. Knapp (an accurate obſerver of this tribe) as appearing like dots on the older leaves. See Withering. Hedwig and Hoffman alſo repreſent them as warts diſcharging pollen. The female ones grow ſolitary from a cavity or groove in the diſk of the frond, accompanied by a ſmall incumbent leaf. The ſheath is cut into 4 or 5 teeth at its margin, and the globular capſule remains latent within it during winter. In the ſpring the capſule riſes up on a white tender ſtalk about 2 inches high, burſts into 4 parts, and ſcatters its ſeeds.





JUNGERMANNIA pinguis.

Slippery Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile. (Hedwig.) Female on a footſtalk riſing from a ſheath. Capſule with 4 valves. Seeds attached to claſtic filaments.

SPEC. CHAR. Stem none. Frond oblong, ſinuated, ſlippery.

SYN. Jungermannia pinguis. *Linn. Sp. Pl.* 1602. *Hudſ. Fl. An.* 517. *With. Bot. Arr. v.* 3. 156. *Relh. Cant.* 420.

Lichenaſtrum capitulis oblongis juxta foliorum diviſuras enaſcentibus. *Raii Syn.* 110. *Dill. Muſc.* 509. *t.* 74. *f.* 42.

FOUND in boggy, marſhy places, commonly producing its ripe capſules in April; this forward ſeaſon (1794), it has been ſomewhat earlier. When very luxuriant, it grows erect in thick tufts, and does not flower; otherwiſe the fronds are horizontal, attached to the moiſt earth by hair-like fibres, and of a very wet, ſlimy, ſlippery ſubſtance, tender like boiled vegetables. From the inciſions of the frond ariſe ſolitary tubular ſheaths, each producing an upright ſimple pellucid ſtalk, terminated by a black oval capſule, called *anthera* by Linnæus, which burſts at the top into 4 valves, and is full of black elaſtic fibres, connected with numerous ſeeds.

We beg leave to point out an inaccuracy in the character of this genus in the *Bot. Arr.* as taken from Linnæus. It ſhould be *Fruit-ſtalk bearing a naked flower*, that is, deſtitute of *calyx* and *corolla*. The Linnæan word *Anthera* is indeed properly changed for *Capſule*; but, by a ſtrange overſight, the deſcription of the real *male* flower is continued as if it were the *female*.

5.

JUNGERMANNIA multifida.

Many-lobed Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

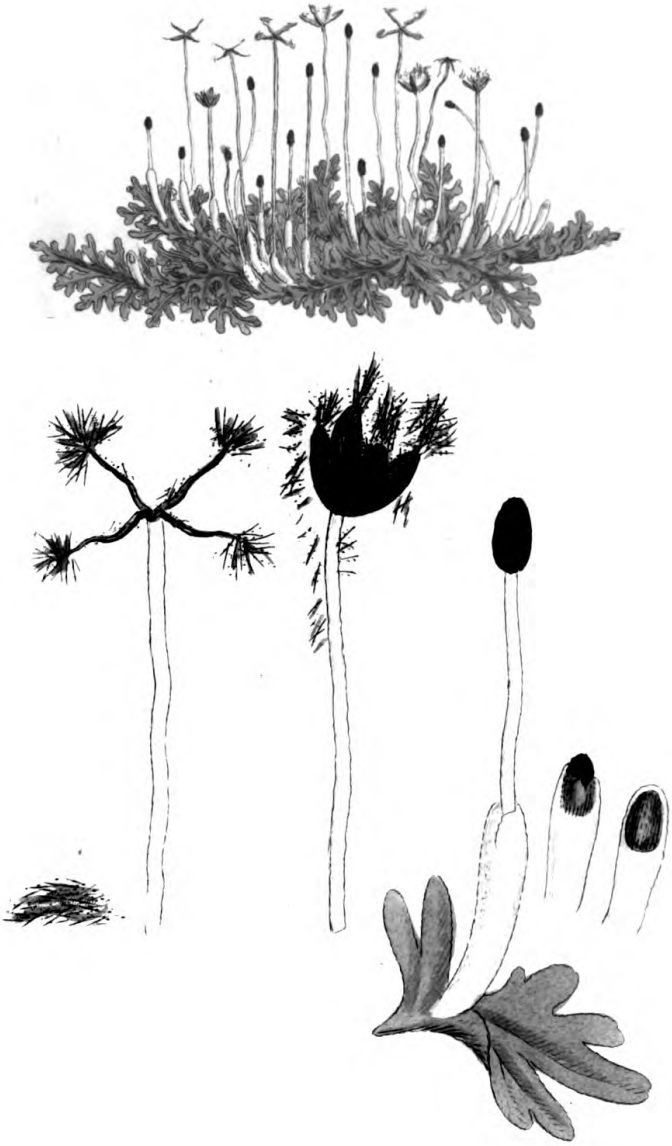
Female on a footſtalk riſing from a ſheath. Capſule with 4 valves. Seeds attached to elaſtic filaments.

SPEC. CHAR. Stem none. Frond bipinnatifid.

SYN. Jungermannia multifida. *Linn. Sp. Pl.* 1602. *Hudſ. Fl. An.* 517. *With. Bot. Arr. v.* 3. 155. Lichenaſtrum Ambroſiæ diviſura. *Raii Syn.* 111. *Dill. Muſc.* 511. *t.* 74. *f.* 43.

THIS was gathered on Epping Foreſt, by Mr. E. Forſter. It loves a moiſt ſhady ſituation like J. pinguis, but is not near ſo common. It flowers about the ſame time.

The fronds grow proſtrate, and are cut into many obtuſe irregular ſegments in a bipinnate order, their ſurface ſomewhat ſlimy to the touch. From towards their baſe ariſe ſolitary flower-ſtalks, clothed at the bottom with a white ſheath, and terminating in a dark brown capſule, which quickly ſcatters its ſeeds, retaining at the laſt a few fibres ſticking to the extremity of its expanded withered valves, as in other ſpecies.



6.

JUNGERMANNIA sinuata.

Jagged Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers sessile.

Female on a footstalk rising from a sheath. *Caps.* with 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Stem none. Frond bipinnatifid, flat, sinuated, its extremities unequally two-lobed. Fruit-stalks shorter than the fronds.

SYN. Jungermannia sinuata. *Dicks. Crypt. fasc.* 2. 16. *With.* 869. *Hull.* 282.

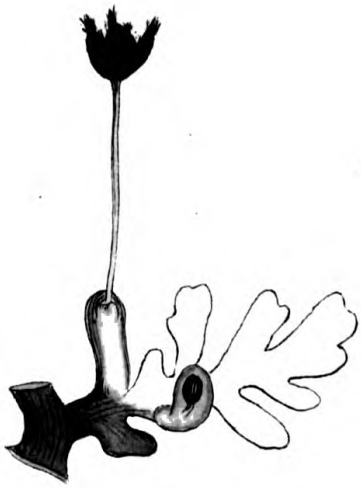
Lichenastrum chamædryos multifidæ divisurâ. *Dill. Musc.* 511. *t.* 74. *f.* 44.

Ulva palustris, foliis ivæ moschatæ instar divisis. *Dill. in Raii Syn.* 64.

GATHERED by S. Hailstone, Esq., last April, at Elm Crag well, in Bellbank wood, near Bingley, Yorkshire, the very same place from whence Richardson originally sent it to Dillenius; but the latter never saw the fructification, and Hudson omitted the plant entirely, perhaps thinking it not distinct from *J. multifida, t.* 186.

The fronds are larger and flatter than in that species, as well as somewhat more compound, with unequally cloven extremities, while the fructification, on the other hand, is smaller, and more scattered. We find no other material distinction.

When moist, the plant has the fine aromatic scent which belongs to many of its genus, and of which we have spoken at *t.* 605. This our highly valued friend Mr. Wood, who found the *J. sinuata* near Leeds, has also remarked. See Withering.



July 1. 1805. Published by Jas. Sowerby, London.

JUNGERMANNIA juniperina.

Juniper Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

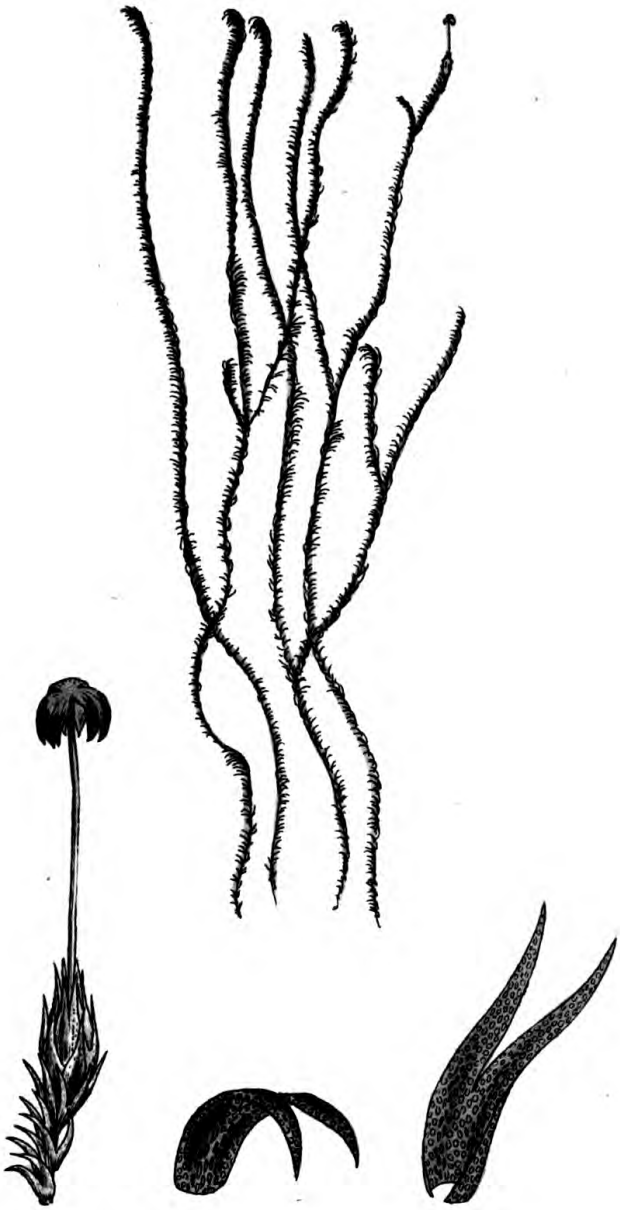
SPEC. CHAR. Shoots erect, but little branched. Leaves in four rows, imbricated every way, curved to one side, in two deep linear-lanceolate segments. Sheaths terminal, ovate, many-cleft.

SYN. Jungermannia juniperina. *Hooker Brit. Jung. t.* 4.
J. adunca. *Dicks. Crypt. fasc.* 3. 12. *t.* 8. *f.* 8. *With.* 881. *Hull.* 280.

COMMUNICATED by Mr. Turner, and Mr. G. Don; as well as by Dr. Wood from Dublin. It is said to be found on shady parts of many Scottish and Irish mountains.

The stems grow in dense tufts, several inches broad, and are very slender, from two to five inches high, simple or somewhat branched, clothed, more or less closely, with four rows of small, pale olive, sickle-shaped leaves, cloven above half-way down into two linear-lanceolate, equal, acute, entire segments. The edges of the leaves are entire; their substance strongly reticulated; and there are no stipulas or scales at their base. The sheaths are terminal, solitary, enveloped in leaves, bell-shaped, cut half-way down into several segments like those of the foliage. Fruitstalk short. Capsule brown, dividing into four ovate recurved valves, which soon split irregularly into more.

Our fructification is taken from a specimen, gathered by Mr. Menzies, at Banks's isles, on the west coast of North America, which exactly agrees with the British ones, and revives slowly in water; in which respect Mr. Hooker says our plant differs from the West Indian *J. juniperina* of Swartz; still he judged it best to consider them as varieties of one species.



May 1, 1812 published by Jas. Sowerby London

8.

JUNGERMANNIA julacea.

Silvery Alpine Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Capſule on a ſtalk riſing from a ſheath, of 4 valves. *Seeds* attached to elaſtic filaments.

SPEC. CHAR. Branches cylindrical, clothed with ovate pointed concave entire leaves, cloſely imbricated on every ſide. Sheaths toothed.

SYN. Jungermannia julacea. *Linn. Sp. Pl.* 1601. *Hudſ.* 516. *With.* 881. *Hull.* 281. *Lightf.* 785.

Lichenaſtrum alpinum, bryi julacei argentei facie. *Dill. Muſc.* 506. *t.* 73. *f.* 38.

FOUND in rivulets on the Scottiſh and Welch mountains, alſo in the mountainous parts of Devonſhire, Weſtmoreland, &c. flowering in the latter part of ſummer, but rarely.

It forms denſe tufts of ramifying ſtems about an inch high, whoſe branches are alternate, ſlender, uniform, cylindrical, clothed on every ſide with cloſely imbricated leaves, which are ſmall, ovate, ſharply pointed, entire, without nerves, green with a bright ſilvery gloſs when freſh, brown when dry; the uppermoſt, as uſual in other ſpecies of *Jungermannia*, are largeſt, and envelop an ovate green terminal ſheath, whoſe margin is unequally torn or toothed, and from whence riſes a ſmall ſlender ſtalk, bearing the little brown capſule.—When dried the branches ſometimes aſſume a ſquare form, from the leaves being ranged in four rows.—We have never found the leaves cloven, though they ſometimes approach each other ſo as to look like one leaf with two points.

May 1. 1802. Published by Jas. Sowerby, London.

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9.

JUNGERMANNIA Hookeri.

Hookerian Jungermannia.

CRYPTOGAMIA Hepaticæ.

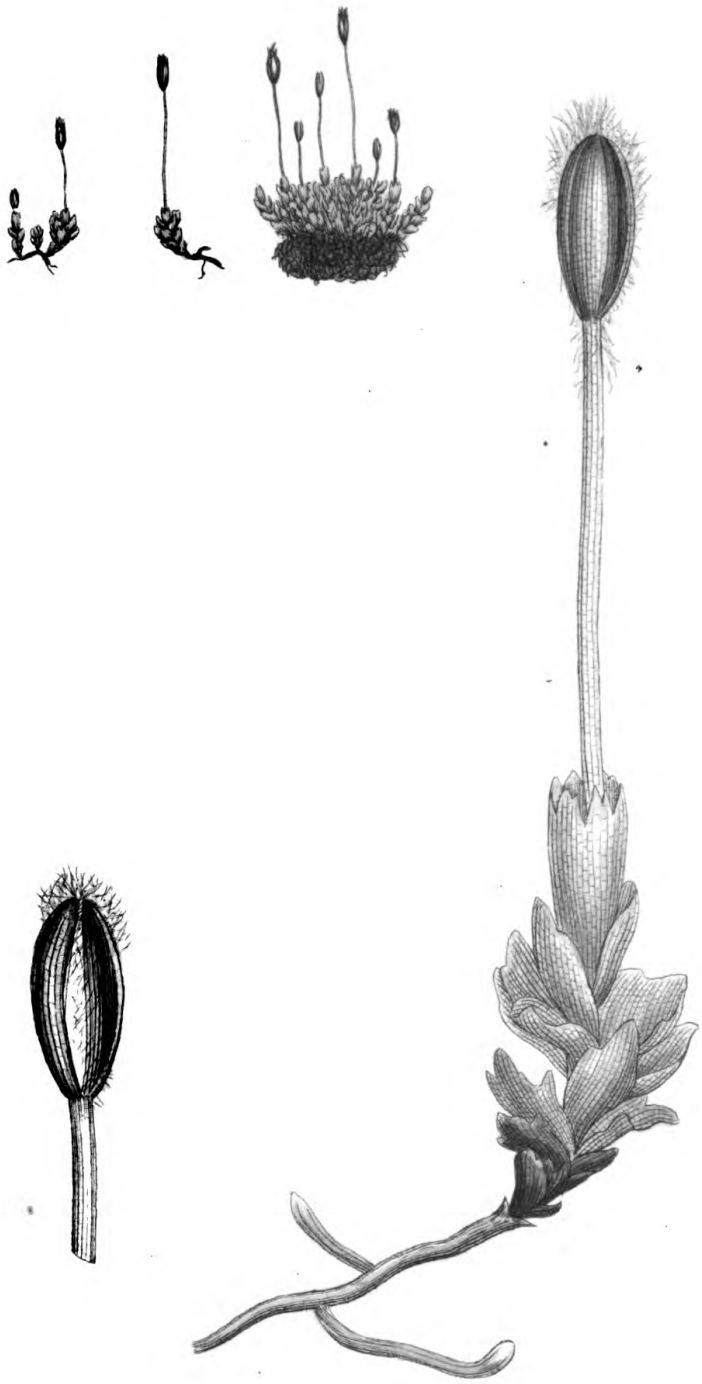
GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Erect, scarcely branched. Leaves imbricated, concave, wavy, two- or three-lobed; the lower ones undivided. Sheaths terminal, cylindrical, jagged. Elastic filaments turned upwards, crowning the open capsule.

FOUND hitherto only by C. Lyell, Esq. to whom we are obliged for this interesting communication, and who, with the consent of Mr. Hooker, gave it the above name, the species being allowed by him to be unquestionably new.

It appears to be extremely rare, growing intermixed with *J. multifida, t.* 186, at the side of a ditch near the private road from Cadnam to Paultons in the New Forest.

The root is creeping, consisting of fleshy branching fibres. Stem simple or branched, erect, of humble growth, surrounded on all sides by loosely imbricated concave leaves, which greatly vary in figure; the lower ones are nearly oval, and entire; upper larger, frequently obovate, pointed, their margin undulated and lobed or bluntly toothed. Anthers axillary. Sheath terminal, cylindrical, torn at the mouth. Fruitstalk rather thick. Capsule oblong, pale brown, bursting into four valves, which, as Mr. Lyell remarks, "frequently appear as but two, their tips being held together by the elastic filaments, which turn upwards, and form a tuft on the open capsule."—These specimens were gathered December 21, 1812.



Sept. 1813 published by Jas. Sowerby, London.

10.

JUNGERMANNIA trichophylla.

Hairy Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

SPEC. CHAR. Stem branched, creeping. Leaves imbricated every way, capillary, acute, ternate. Sheaths terminal, cylindrical, with many capillary teeth.

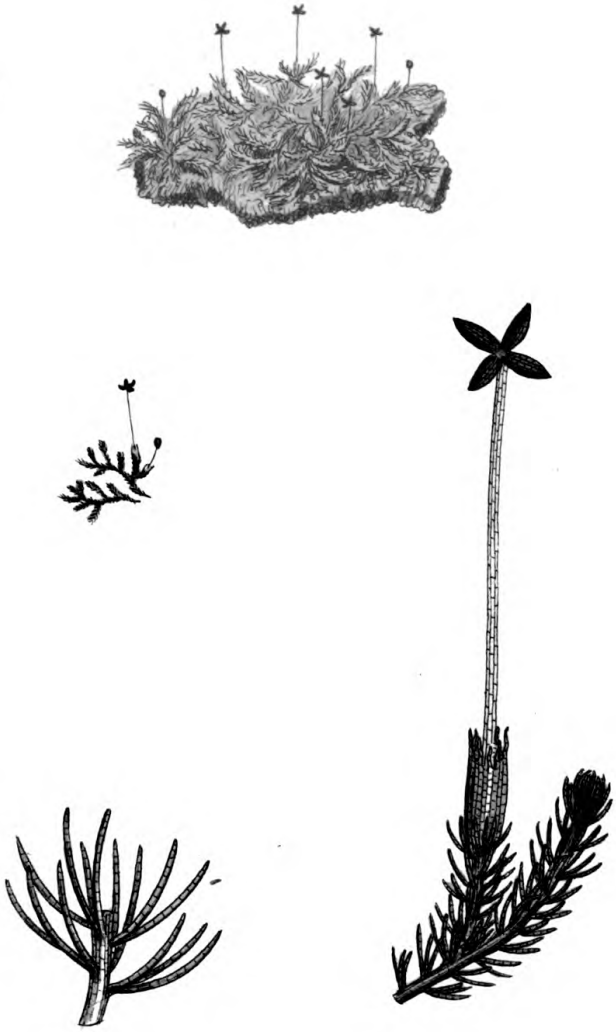
SYN. Jungermannia trichophylla. *Linn. Sp. Pl.* 1601. *Huds.* 516. *With.* 882. *Hull.* 281.

J. sertularioides. *Linn. Suppl.* 449. *Meth. Musc.* 35. *t.* 1. *f.* 6.

Lichenastrum trichodes minimum, in extremitate florens. *Dill. Musc.* 505. *t.* 73. *f.* 37.

FOUND on moist heathy mountainous places, in the North of England and Highlands of Scotland; communicated by Mr. Hooker.

The stems are long and capillary, much branched, growing entangled among mosses, from which they are discernible by their lighter colour, as well as by a mucor-like appearance caused by their minute pale capillary leaves. The latter are imbricated every way, but stand three together, of equal length, moderately spreading, acute, finely jointed. Sheaths terminal, much longer than the leaves, solitary, cylindrical, or slightly inflated, pale, reticulated, their edge fringed with many, erect, very slender teeth. Fruitstalk half an inch long, excessively slender and delicate. Capsule of a chesnut brown, with pointed valves.



Feb. 1 1811 pub. by Jas. Sowerby London.

JUNGERMANNIA setacea.

Bristly Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

SPEC. CHAR. Shoots branched, somewhat pinnate, creeping. Leaves imbricated every way, in pairs, awlshaped, incurved. Sheaths lateral, cylindrical, with many capillary teeth.

SYN. Jungermannia setacea. *Weber.* 155. *Hooker Brit. Jung. t.* 8.

J. pauciflora. *Dicks. Crypt. fasc.* 2. 15. *t.* 5. *f.* 9. *With.* 874. *Hull.* 278.

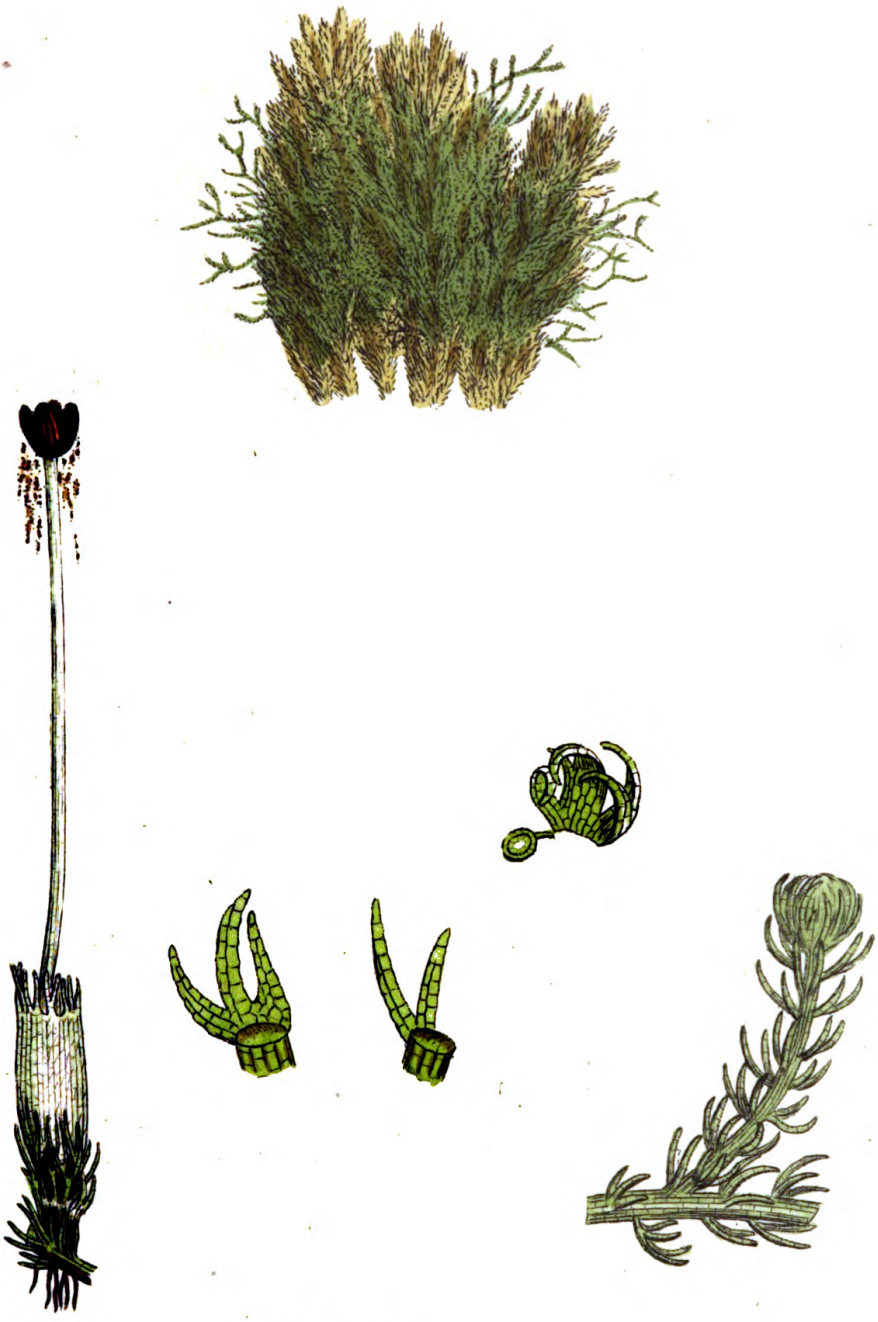
Lichenastrum multiflorum exile, foliis angustissimis. *Dill. Musc.* 481. *t.* 69. *f.* 4; bad.

COMMUNICATED by Mr. Turner. It has been found on bogs in Norfolk and Suffolk, as well as in Ireland, generally among *Sphagnum*, on which the stems creep, being branched in rather a pinnate manner.

This species is nearly related to *trichophylla, t.* 2252, but differs in having shorter, incurved, more awlshaped leaves, and lateral sheaths. Mr. Hooker in his specific character by accident says "*fructu terminali.*"

We gladly submit to the change of the original name, for one of nearly equal date, and of far more correct and appropriate meaning, which surely ought to be considered when neither is become popular.

An anther, with its filament, is shown in our plate. It resembles that of a *Sphagnum.*



Nov. 1812 published by Jas. Sowerby, London.

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[1788]

JUNGERMANNIA asplenioides.

Spleenwort Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

SPEC. CHAR. Shoots somewhat branched. Leaves crowded, in two rows, without auricles, obovate, oblique, finely toothed. Fruitstalks terminal.

SYN. Jungermannia asplenioides. *Linn. Sp. Pl.* 1597. *Huds.* 509. *With.* 870. *Hull.* 277. *Relh.* 437. *Sibth.* 308. *Abbot.* 252. *Hedw. Theor.* 151. *t.* 16, 17.

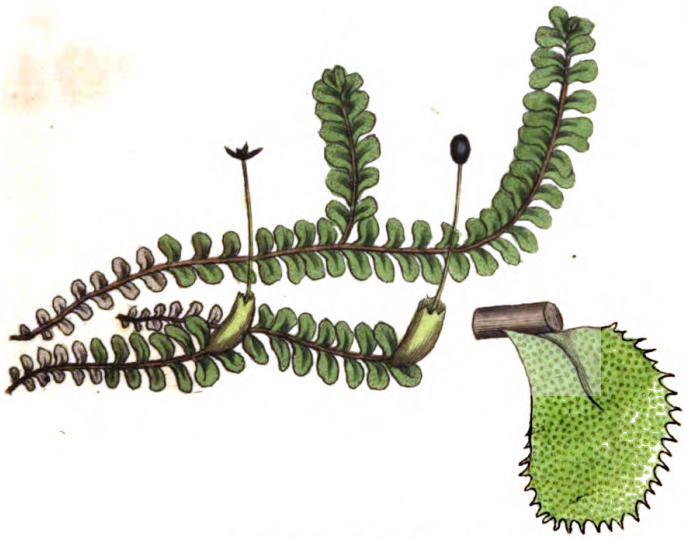
Lichenastrum asplenii facie. *Dill. Musc.* 482, 483. *t.* 69. *f.* 5, 6.

L. trichomanis facie, capitulis e foliorum summitate enascentibus, majus. *Dill. in Raii Syn.* 112.

FOUND in woods and moist shady places, bearing capsules early in the spring, and remarkable, like many of its genus, for diffusing a sweet scent when growing in very wet situations.

Root perennial, creeping, but little branched. Stems procumbent, slightly branched, round, smooth, leafy, not throwing out any radicles. Leaves more or less closely crowded in two ranks, light green, dotted, oblique, unequal, obovate, finely and sharply toothed, without rib or auricles. Sheaths terminal, solitary, tubular, jagged at their orifice, curved when young, then erect. Fruitstalk four times as long as the sheath, white and tender. Capsule black, of 4 acute valves.

1788



Sept.1 1807. Publish'd by Jas. Sowerby, London.

13.

JUNGERMANNIA spinulosa.

Prickly-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stems branched, erect. Leaves rather distant, in two rows, without auricles, obovate, oblique, sharply toothed. Fruitstalks lateral.

SYN. Jungermannia spinulosa. *Dicks. Crypt. fasc.* 2. 14. *With.* 874. *Hull.* 278.
Lichenastrum ramosius, foliis trifidis. *Dill. Musc.* 489. *t.* 70. *f.* 15.

DILLENIUS found this on Snowdon, and Mr. Dickson in the Highlands of Scotland. Mr. Griffith also has met with it on the Welch hills. Nevertheless the fructification has escaped all these acute observers. Mr. Hooker has collected in Scotland, and Miss Hutchins in Ireland, what the former believes to involve the female fructification. These are lateral ovate buds, composed of two or three of the ordinary leaves folded together, in which neither a proper sheath, nor any capsule nor fruitstalk has been found. Most of them on the contrary are empty, but in some we have discovered an apparent tuft of several young tube-like styles, or young *calyptræ*, like those proper to this genus in common with mosses. Whether these be such or not, if the appearance and disposition of these ovate buds be considered, there can be little doubt of the truth of Mr. Hooker's opinion.

This species ought to range next to *J. asplenioides, t.* 1788, from which it differs in its upright stems, and more distant leaves, whose teeth are much fewer, considerably larger, and more unequal. The fruitstalks moreover appear to be lateral, not terminal, and the colour of the plant, in our specimens, is more pale and dull.

Decr. 1818 published by J.s Sowerby London.

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14.

JUNGERMANNIA decipiens.

Deceptive Jungermannia.

CRYPTOGAMIA Hepaticæ.

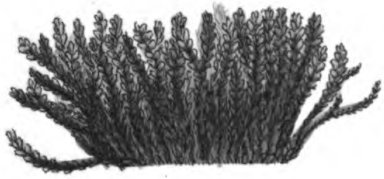
Gen. Char. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

Spec. Char. Upright, wavy, nearly simple. Lower leaves smallest, ovate, entire; upper roundish-ovate or squarish, with one or two distant spinous teeth. *Hooker.*

Syn. Jungermannia decipiens. *Hooker Brit. Jung. t.* 50.

FOUND on rocks in heathy places about Bantry in Ireland, by Miss Hutchins, who sent our specimens to Mr. Turner, and who at first suspected the plant to be a variety of *spinulosa, t.* 2228; but, after three years' attention to its growth, was satisfied of its being permanently distinct. No fructification has been discovered.

The roots are threadshaped and creeping. Stems erect, rigid, slender, wavy, scarcely branched, leafy, composing dense tufts, from half an inch to an inch and a half in height. Leaves alternate, rather distant, spreading in two rows, decurrent; the lower ones very small, upright, ovate, concave, entire; the rest gradually larger, somewhat quadrangular, acute, furnished with one or two distant spinous teeth, placed without any regularity. The upper leaves become gradually smaller, and more elongated.



Nov. 1. 1813 published by Jos. Sowerby London

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15.

JUNGERMANNIA sphagni.

Bog-moss Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

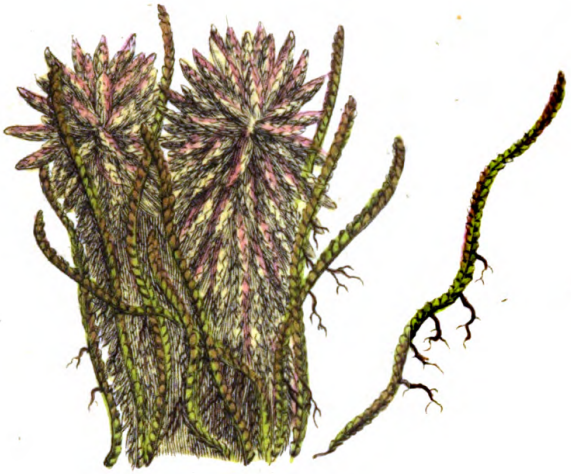
Seeds attached to elastic filaments.

SPEC. CHAR. Shoots slightly branched, creeping. Leaves in two rows, pointing one way, imbricated, roundish, entire. Sheaths lateral.

SYN. Jungermannia sphagni. *Dicks. Crypt. fasc.* 1. 6. *t.* 1. *f.* 10. *With.* 872. *Hull.* 278.

FIRST discovered by Mr. Dickson, in bogs near Croydon, Surrey, growing generally upon the common *Sphagnum palustre*. Our specimens were sent from the New Forest, by Mr. Lyell; but Mr. Dickson alone, amongst all our botanical acquaintance, having seen the fruit, we are obliged to have recourse to his figure, the original drawing of which indeed is in our possession.

This delicate plant creeps over the Bog-moss, like *J. connivens*, *t.* 2436, but in a more erect position, being often quite simple, sometimes furnished with short lateral branches. The leaves are imbricated in two rows, both turned one way, destitute of scales or auricles, sessile, roundish, uniform and entire, of a pale whitish green, with some tincture of red. Sheaths lateral, solitary between the two rows of leaves, near the top or bottom of each shoot, pale, tipped slightly with brown. Capsule and stalk small and delicate.



Oct 1. 1812 published by Jas. Sowerby London.

U

16.

JUNGERMANNIA crenulata.

Crenulated Jungermannia.

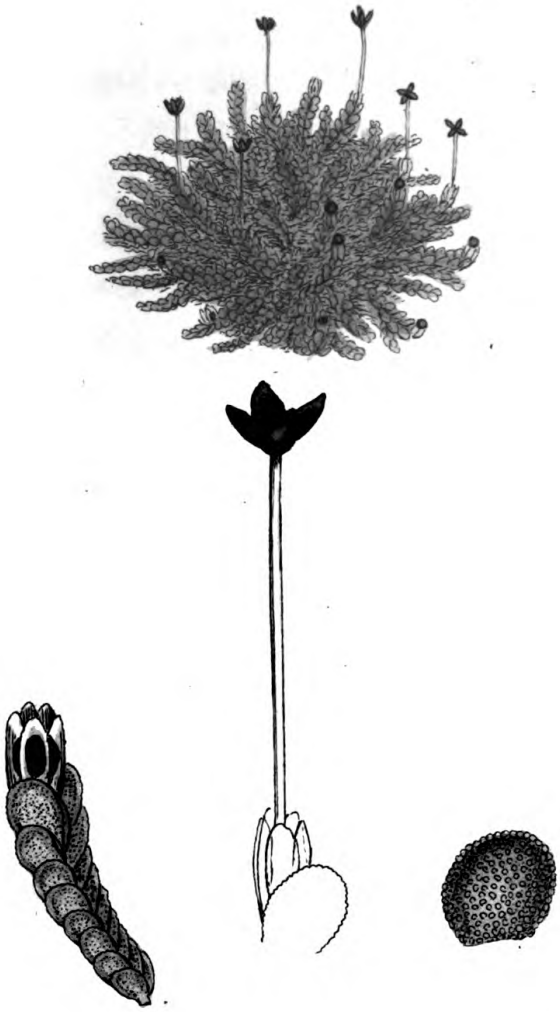
CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stems simple or divided, spreading. Flowers terminal. Leaves two-ranked, imbricated, orbicular, undivided, with a thick crenulated border, without auricles.

THIS elegant and curious *Jungermannia* was sent us last March by Mr. W. Borrer junior, from some bogs at Amberley, Sussex. We can find no description nor specimens with which it agrees, and therefore venture to describe it as new.

It comes near to *J. emarginata, t.* 1022, in many respects, and should be arranged in the same section, having simple imbricated leaves, and terminal fruit-stalks. It differs however in its round undivided leaves, whose margin is very remarkable, being thick and finely crenate, or as it were beaded. The stems grow in tufts, spreading, and are mostly simple, throwing out roots from their under side. Sheath terminal, solitary, with 5 plaits and as many blunt teeth. Fruit-stalk about half an inch long, whitish. Capsule of 4 blackish acute valves. The leaves and sheath have a rich purple hue mixed with pale green, and the former are finely dotted.



June 1. 1806. Published by Jas. Sowerby, London.

17.

JUNGERMANNIA pumila.

Dwarf Simple Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

SPEC. CHAR. Stems simple, short, ascending. Leaves in two rows, curved to one side, roundish-oblong, entire, undivided. Sheath cylindrical, sharply toothed.

SYN. J. pumila. *With.* 883. *t.* 18. *f.* 4. *Hull.* 281.

MR. GRIFFITH first discovered this species in Cwm Idwell, North Wales. Miss Hutchins sent our specimens from Ireland to Mr. Hooker, who kindly gave them to us.

The stems grow either loosely scattered over the ground, or slightly matted together, each about a quarter of an inch high, simple, creeping at the base, ascending and swelling upwards. The leaves are of a dull brownish green, imbricated in a row at each side of the stem, but both rows curved upward. Each leaf is roundish, slightly concave, undivided and entire, ribless, a little elongated at the base, destitute of auricles or appendages. Sheath terminal, solitary, longer than the leaves, often brownish, cylindrical; rather contracted, with sharp unequal teeth, at the orifice. Fruitstalk tall. Capsule with dark-brown elliptical valves.

This species diffuses a delightfully fragrant scent, whether in a moist or dry state.

Published by Jas. Sowerby, London.

JUNGERMANNIA anomala.

Various-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

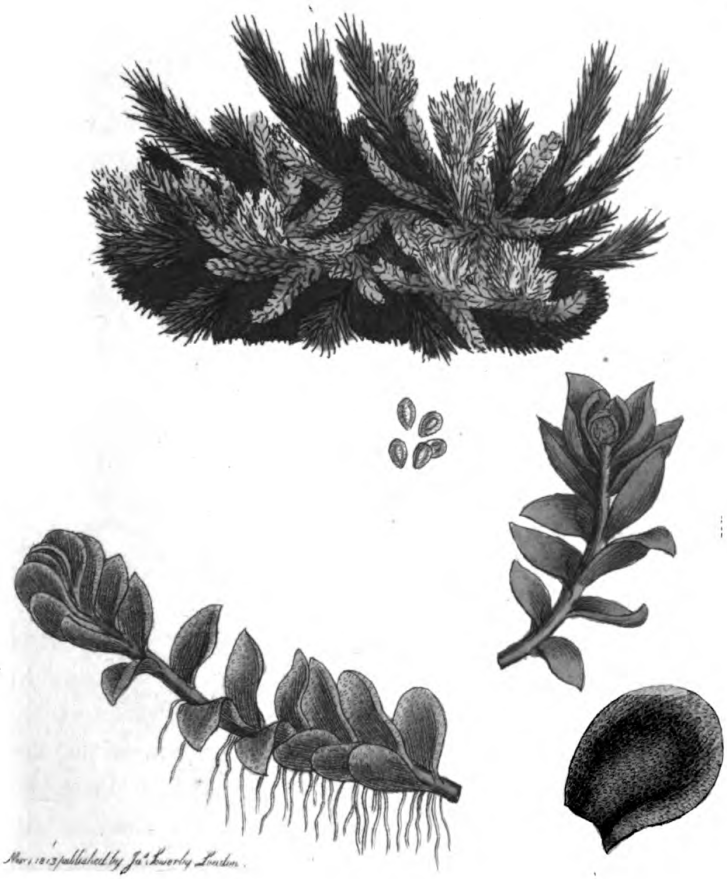
Gen. Char. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

Spec. Char. Procumbent, unbranched. Leaves two-ranked, somewhat ascending, entire, concave, orbicular; some pointed; others blunt. Scales awlshaped.

Syn. Jungermannia anomala. *Hooker Brit. Jung. t.* 34.

A NEW species, first detected by the Rev. R. B. Francis near Holt, Norfolk, in boggy turfy places; and subsequently by various persons in Ireland and elsewhere. Mr. Hooker alone has described it. The female fructification remains hitherto unobserved. The anthers have been found by Mr. Lyell only, in Hampshire.

Ours are gemmiferous plants, communicated by Mr. Turner. They grow dispersed, procumbent on the ground, or more frequently creeping upon Bog-moss, each being from one to two or three inches long, simple, except now and then one or two lateral shoots, but they are more usually elongated at the summit only. Leaves inaccurately two-ranked, rather various in their direction, but for the most part turned to the upper side, all entire. They differ greatly in shape, from an orbicular and very blunt, to an ovate acute figure, the former being most concave. This variableness, and their coarse reticulations, are pointed out by Mr. Hooker as the most striking features of the species. He describes the stipulaceous scales as broadly awlshaped. These we have not observed, nor do they appear in his figure. The colour of the whole is a rich tawny or purplish green. *Gemmæ*, or granular buds, are found amongst the topmost leaves.



Mar. 1813 published by Jas. Sowerby London.

V

19.

JUNGERMANNIA cordifolia.

Heart-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Erect, wavy, subdivided. Leaves in two rows, erect, concave, heartshaped, entire, clasping the stalk, without scales. Sheaths oblong-ovate, somewhat plaited; contracted and finely toothed at the orifice.

SYN. Jungermannia cordifolia. *Hooker Brit. Jung. t.* 32.

MR. HOOKER alone has already described this *Jungermannia*. Our specimens were gathered in Scotland by C. Lyell, Esq., the only person who has met with the sheaths of the female fructification. The perfect capsules are as yet undiscovered.

This plant grows in moist situations, on many mountains in the Highlands, and has also been found, by Mr. Woods, in Ireland. It composes dense tufts, an inch or two wide, conspicuous for the blackish hue, usual in aquatic mosses and *Jungermanniæ*. The stems are from one to three inches high, slender, leafy, erect but wavy, simple or branched. Leaves clasping the stalk and each other by their broad, almost tubular, base; they are heartshaped, bluntish and entire, without any stipulaceous scales. Sheaths terminal or lateral, elliptic-oblong, plaited lengthwise near the top, being much contracted at the orifice, and finely toothed. The young lateral shoots are peculiarly zigzag, with very small close leaves. Mr. Hooker considers this species as so distinct, that he cannot point out any one to which it is allied.

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JUNGERMANNIA Donniana.

Highland Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

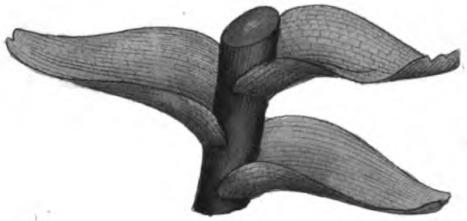
SPEC. CHAR. Erect, nearly simple, slender and wavy. Leaves closely imbricated, almost horizontal, oblong-ovate, concave, curved to one side; with two teeth at the extremity.

SYN. Jungermannia Donniana. *Hooker Brit. Jung. t.* 39.

MR. G. DON alone appears to have gathered this species, which he first observed in 1795, on the highest mountains of Clova, Angusshire. He has subsequently met with the same on many of the loftiest Highland hills; so that it is justly appropriated to the commemoration of himself and his country. No fructification has been detected.

The stems grow erect in dense tufts, and are from one to three inches long, the thickness of horse-hair, wavy, rigid, brittle when dry, brown, scarcely ever throwing out any branches, leafy from top to bottom. Leaves of a dull brownish or tawny green, inserted horizontally in two rows, but curved to one side, crowded, uniform, oblong-ovate, about a line in length, concave; their edges entire, often incurved; the point obtuse, with an acute notch.—This plant is very distinct from every other British Jungermannia.

2566



Drawn & Engraved by Jas. Sowerby F.L.S.

JUNGERMANNIA pusilla.

Dwarf Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stem creeping. Leaves imbricated in two ranks, angular, without auricles. Sheaths plaited, bell-shaped. Valves of the capsule dilated and jagged.

SYN. Jungermannia pusilla. *Linn. Sp. Pl.* 1602. *Huds.* 518. *With.* 868. *Hull.* 282. *Relh.* 440. *Sibth.* 313. *Abbot.* 255. *Hoffm. Fl. Germ. v.* 2. 90.
Lichenastrum exiguum, capitulis nigris lucidis, e cotylis parvis nascentibus. *Dill. Musc.* 513. *t.* 74. *f.* 46.
L. minimum, capitulis nigris lucidis. *Dill. in Raii Syn.* 110.

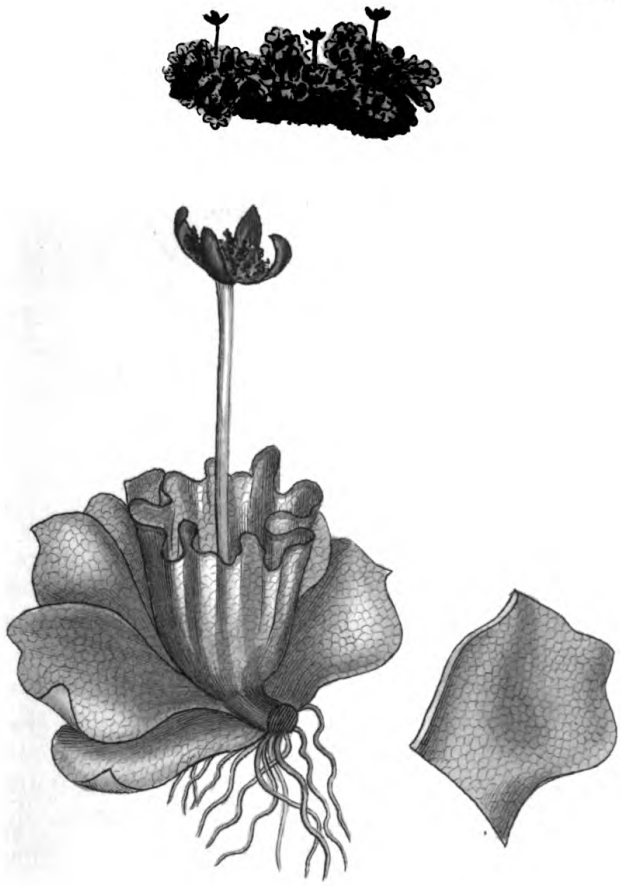
RECEIVED from the neighbourhood of Sheffield, by favour of Mr. Jonathan Salt, in April last. It is not a common species, but occurs now and then on moist shady banks.

The stems are short and creeping, throwing out abundance of dark purplish radicles, and clothed with two rows of crowded, or imbricated, bright green leaves, whose form is irregular, somewhat wedge-shaped, and angular. Several sessile bell-shaped sheaths, very much plaited, stand in a row along the upper side of the stem, each producing a short stalk, with a brown capsule, whose valves are dilated and roundish, jagged or notched, and somewhat unequal. The leaves and sheath are finely marked with roundish reticulations.

It seems to us that Mr. Dickson's *J. angulosa* is rightly united to this by Professor Hoffmann, the figure 46 of Dillenius having been taken from imperfect specimens, and *fig.* 22, C, D, E, copied from Micheli, having been drawn from more luxuriant ones, without due attention to the form of the valves. This point, however, we leave for future decision.

In some of our latter descriptions of this genus, we have accidentally referred it to the order of *Algæ* instead of *Hepaticæ*.

1775



Aug. 1. 1807. Publish'd by Ja.s Sowerby London.

JUNGERMANNIA incisa.

Jagged-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Creeping, prostrate, scarcely divided. Leaves spreading in two rows, squarish, wavy, with about three unequal, often notched, segments. Sheaths terminal, obovate, contracted and torn at the mouth.

SYN. Jungermannia incisa. *Schrad. Samml. fasc.* 2. 5. *Hooker Brit. Jung. t.* 10.

J. n. 1862. *Hall. Hist. v.* 3. 59.

BY no means an uncommon kind of *Jungermannia*, especially in moist places, among Bog-moss and *Marchantiæ*.

The stems are short, creeping, mostly simple, leafy, rather thick, and swelling upward. Leaves spreading, in two ranks, the upper ones most crowded, all light green, with a singularly crisped and jagged aspect; partly clasping the stem with their broad base; their figure very irregular but in some measure square, cut into two or three very unequal and various segments, some of which are acutely notched. Sheath solitary, terminal, obovate, the mouth contracted and finely laciniated.

This is allied to *excisa, t.* 2497, but abundantly distinct.

2528.

Nurzwas published by Jas. Sowerby London.

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JUNGERMANNIA emarginata.

Notched Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Capſule on a ſtalk riſing from a ſheath, of 4 valves. *Seeds* attached to elaſtic filaments.

SPEC. CHAR. Stems ſimple or divided, erect. Flowers terminal. Leaves alternate, roundiſh, bluntly emarginate, entire, ſpreading, without auricles.

SYN. Jungermannia emarginata. *Ehrhart. Beitr. faſc.* 3. 80. *Schrad. Spicil.* 75.

J. macrorhiza. *Dickſ. Crypt. faſc.* 2. 16. *t.* 5. *f.* 10. *With.* 872. *Hull.* 278.

IT appears from the Linnæan herbarium that Dr. Swartz aſcertained and named this *Jungermannia* many years ago, before Profeſſor Ehrhart deſcribed it in his *Beiträge*. Mr. Dickſon, who firſt found it on the Scottiſh mountains, not having had any reaſon to think it already known, publiſhed it in his ſecond Faſciculus by the name of *macrorhiza*. Afterwards Mr. Griffith, who favoured us with theſe ſpecimens, diſcovered it in North Wales.

It grows in alpine moiſt ſtony ſituations, flowering early in ſummer; ſometimes on rocks in rivulets, when it becomes more luxuriant and of a darker green, loſing its purple tints. The roots are large, ſtrong and perennial. Stems erect, in tufts, either ſimple or divided at the baſe, clothed with alternate, rather ſpreading, concave, roundiſh, or ſomewhat wedge-ſhaped, leaves, perfectly entire in their margin, bluntly emarginate or nicked at their extremity, finely dotted with pellucid points when examined under a microſcope; their colour for the moſt part green at the baſe and edges, purple in the middle. No auricles or ſtipulæ accompany the leaves. The ſheath of the fructification we have always found terminal (Dr. Schrader mentions it as occaſionally lateral), blunt, entire. Stalk half an inch long, white. Capſule of four lanceolate brown valves.

May 1. 1802. Published by Jas. Sowerby, London.

JUNGERMANNIA concinnata.

Braided Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

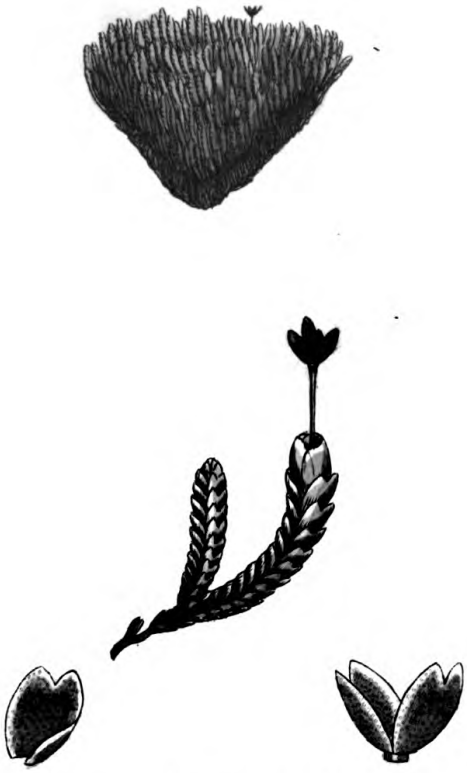
SPEC. CHAR. Stems quadrangular, branched. Leaves in two rows, closely imbricated, elliptical, concave, cloven; the terminal pair largest, concealing the sheath.

SYN. Jungermannia concinnata. *Lightf.* 786. *Huds.* 651. *With.* 881. *Hull.* 281.

COMMUNICATED by Mr. Hooker from Scotland, where Lightfoot first observed it to be frequent on the Highland rocks.

The stems form close tufts, about half an inch high, and are nearly upright, divided at the base; their branches bluntly quadrangular, swelling upwards, entirely covered with numerous, two-ranked, closely imbricated leaves, which are of a dull green, mostly tinged with brownish red, of a broadly elliptical concave figure, entire at the edges, but cloven with a sharp notch at the top. The upper pair are much the largest, enfolding each other, but rather inflated, concealing the sheath, which is very minute. The marginal part of all the leaves is, to a considerable extent, white and pellucid. The fruitstalk is scarcely two lines long, white and tender. Capsule of four elliptical black valves.

J. julacea, to which this has been compared, has its leaves imbricated in every direction.



Decemo published by Jas Sowerby London.

25.

JUNGERMANNIA inflata.

Inflated Jungermannia.

CRYPTOGAMIA Hepaticæ.

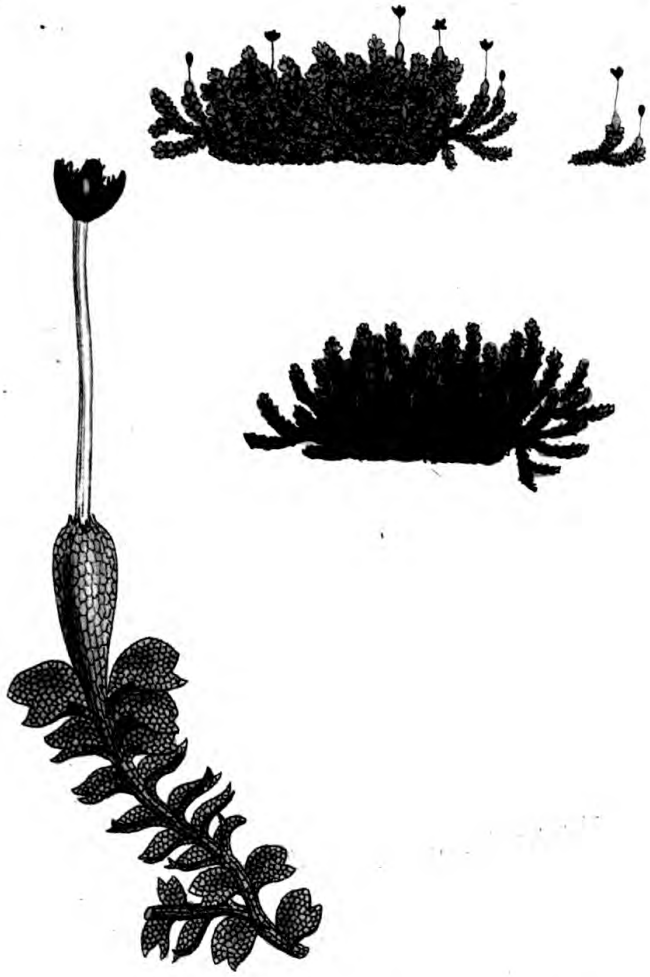
GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Procumbent, branched. Leaves two-ranked, spreading, roundish-wedgeshaped, cloven, with distant bluntish segments: without scales. Sheaths terminal, obovate, inflated; contracted and toothed at the orifice.

SYN. Jungermannia inflata. *Huds.* 511.
J. bidentata var. 2. *With.* 871. *Hull.* 278.
Lichenastrum pinnulis obtusioribus bifidis, minus. *Dill. Musc.* 488. *t.* 70. *f.* 12.

A NATIVE of shady rather moist places, communicated by Mr. Turner. This is evidently very different from the *bidentata*, *t.* 606, of which some have thought it a variety, and which is admirably represented in Mr. Hooker's *t.* 30, with its laciniated stipulaceous scales, omitted in our plate.

The present is a much smaller plant; the leaves more separately and horizontally spreading, without scales. Mr. J. D. Sowerby has found a lateral notch in two or three pair of the uppermost, which are rather larger than the rest of the foliage. The sheaths are terminal, and very distinct, being inflated into an obovate or pear-like figure; quite close, and sharply toothed, at the mouth. Hence Hudson well derived the name. Mr. Hooker informs us that Schmidel has figured this species, in one of his latter plates, not in our possession, by the name of *bicrenata*. Micheli's t. 5. f. 13, quoted by Dillenius, appears by the sheath to be different.



Tab. 1203 published by J. & F. Sowerby London.

26.

JUNGERMANNIA ventricosa.

Tumid Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

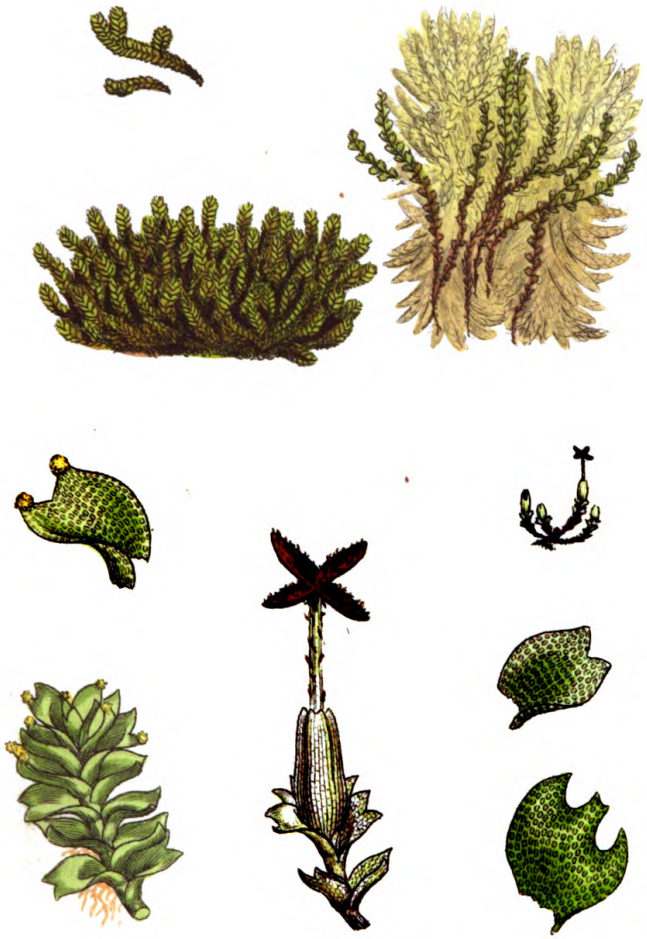
SPEC. CHAR. Creeping, somewhat branched. Leaves spreading in two rows, squarish, bluntly emarginate; concave at the base. Sheaths terminal, nearly spherical; at length elongated; plaited and toothed at the margin.

SYN. Jungermannia ventricosa. *Dicks. Crypt. fasc.* 2. 14. *With.* 874. *Hull.* 278. *Hooker Brit. Jung. t.* 28.

J. bidentata. *Schmid. Jung.* 20. *f.* 14, 15.

J. minima repens, foliis bifidis, vaginâ florum ventricosâ. *Mich. Gen.* 9. *t.* 5. *f.* 15. Copied by Dill. 489. *t.* 70. *f.* 14.

PRECEDING authors have mentioned this as a rare mountain plant. Dillenius was not aware of having seen it. Mr. Hooker however assures us that it is common in various parts of the kingdom, either on a boggy or a loamy soil. Our specimens in fruit were sent by Mr. Lyell to Mr. Hooker, but not in time to appear in his admirable work. He has therefore obligingly communicated them to us. The stems creep frequently on the ground, or over neighbouring mosses, and are generally branched, from half an inch to an inch long, clothed with two rows of crowded, spreading, squarish leaves, whose extremity is cloven into two sharp distant points, by a wide rounded notch, in which last character, its greater size, and more branched habit, this species differs from *excisa*, *t.* 2497, as well as in the great abundance of granulations, now known to be buds, at the tips of the leaves. In consequence of this ample mode of increase, it seems the capsules are rarely perfected, though the plaited, toothed, gradually elongated sheaths often occur, falling off prematurely.



Nov. 1 1813 published by Jas Sowerby Londn.

JUNGERMANNIA excisa.

Notch-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

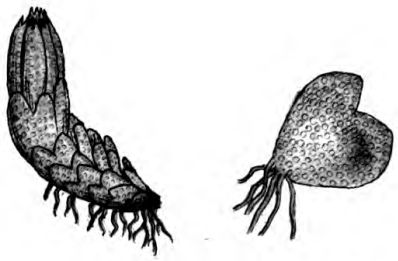
GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Creeping, prostrate, scarcely divided. Leaves spreading, almost square, deeply emarginate. Sheaths terminal, pale, oblong; plaited and toothed at the margin.

SYN. Jungermannia excisa. *Dicks. Crypt. fasc.* 3. 11. *t.* 8. *f.* 7. *With.* 879. *Hull.* 280. *Hooker Brit. Jung. t.* 9.

COMMUNICATED by Mr. Turner, from Holt heath, Norfolk, where it was observed to abound, in wet places, by the Rev. Mr. R. B. Francis. Mr. Hooker found it plentiful near Norwich and Yarmouth, on hedge banks and heathy ground, as well as in the Highlands of Scotland.

Though one of the smallest of its genus, *J. excisa* often composes scattered patches several inches wide. Each plant lies prostrate, creeping, and firmly attached to the earth, by numerous fibrous roots, being usually simple and about half an inch long, sometimes branched, or at least divided. The leaves are closely imbricated in two rows, nearly square, having a broad base; but the extremity has a deep sinus, or acute notch, between two short, distant, bluntish points. The edges are quite entire. There is a variety with more dilated, crumpled, and irregularly shaped foliage, apparently from luxuriance. The sheaths are terminal, solitary, large, oblong, irregularly furrowed or plaited lengthwise, especially at the summit, where they are consequently much contracted, as well as irregularly and sharply toothed. The fruitstalk is shortish. Capsule rather small. The whole plant often assumes a reddish, or a dark brown, hue, but the pale and large sheaths are very conspicuous. Mr. Hooker observed the two uppermost leaves to have generally three teeth.



Jan.y 1813 published by Jas. Sowerby London.

JUNGERMANNIA divaricata.

Spreading-leaved Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Female on a foot-ſtalk riſing from a ſheath. *Capſ.* with 4 valves. *Seeds* attached to elaſtic filaments.

SPEC. CHAR. Fronds unbranched, ſimply pinnate, filiform, flowering at the end. Leaves alternate, deeply cloven; their lobes divaricated, pointed. Sheath toothed.

FOR this minute nondeſcript Jungermannia we are indebted to the Rev. Mr. Francis; who found it on Holt and Edgefield heaths, Norfolk, intermixed with J. *exciſa*, flowering from October to March. Specimens of the ſame are in the rich collection of the late Rev. H. Bryant, now in the poſſeſſion of Miſs Hancock of Norwich; but their name and characters were never determined, the fructification having been unknown till Mr. Francis detected it in October 1798. From his accurate figure and remarks we have aſcertained the following particulars.

The ſhoots are ſimple, ſlender, about a quarter of an inch long, when unſupported trailing and intricate, protruding roots here and there, which ſometimes ſpring from the leaves themſelves. The leaves are alternate, of 2 pointed entire lobes, which in the older ones are remarkably divaricated. Male flowers in ſolitary terminal round heads. Sheath on a ſeparate ſhoot, terminal, ſolitary, ovate, minutely toothed. Stalk ſlender, bearing a minute oval capſule, burſting as uſual into four parts. The colour of the plant in ſhady ſituations is deep green; in expoſed, duſky purple. Sometimes its denſe tufts reſemble ſmall ſpecimens of *Bryum argenteum*.

29.

JUNGERMANNIA Turneri.

Turnerian Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Procumbent, branched and divaricated. Leaves broad-ovate, deeply cloven, folded, with spinous teeth. Sheaths terminal, linear-oblong, plaited longitudinally, minutely toothed.

SYN. Jungermannia Turneri. *Hooker Brit. Jung. t.* 29.

FOUND by Miss Hutchins, on the shady bank of a mountain-rivulet near Bantry, bearing fruit most plentifully about the beginning of March. It is with great propriety dedicated to the honour of one of the first cryptogamic botanists.

This small but very elegant species belongs to the same tribe as *J. connivens, t.* 2436, *bicuspidata, t.* 2239, &c. It forms patches of a pale yellowish green, creeping on the ground, and branching from a centre. The leaves spread in two rows, and are deeply cloven, their lobes folded together, and remarkably blistered or minutely cellular, all over, like the branch itself; their edges strongly and sharply toothed. Sheaths terminal, oblong, longitudinally plaited, in consequence as it seems of the contraction of their mouth, whose edge is finely toothed. Fruitstalk rather long, white, slender and cellular. Capsule of four equal entire valves.

2510.

Feb. 1. 1827. published by Jno. Sowerby London.

JUNGERMANNIA bicuspidata.

Forked Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stems branched, creeping. Leaves in two rows, curved to one side, oblong, cloven half-way down, sharp-pointed. Sheaths terminal, cylindrical, elongated, with many sharp teeth.

SYN. Jungermannia bicuspidata. *Linn. Sp. Pl.* 1598. *Huds.* 511. *With.* 873. *Hull.* 278. *Relh.* 438. *Sibth.* 310. *Abbot.* 252; excluding their citations of *Engl. Bot. t.* 281.

Lichenastrum trichomanis facie, foliolis bifidis, minimum. *Raii Syn.* 113.

L. pinnulis acutissimè bifidis, minimum. *Dill. Musc.* 488. *t.* 70. *f.* 13.

MR. HOOKER, whose authority is so great in this genus, and for whose illustration of it we have long waited, in order to write with more accuracy that part of the *Fl. Brit.*, assures us our *t.* 281 is a mere variety of *J. bidentata, t.* 606. However that may be, the present is certainly the true *bicuspidata*, a plant not uncommon in moist shady places, easily discerned by its long, cylindrical, somewhat curved sheaths, produced abundantly in the early spring.

The stems are creeping, more or less branched, clothed with two rows of small, sessile, squarish, or somewhat oblong leaves, curved upward from the ground, and each divided about half-way down, into two nearly equal, very sharp, spreading lobes. The fructification appears to be always terminal. The sheaths are curiously reticulated, their orifice with many sharp teeth, convoluted when dry. Capsule brown, on a stalk twice or thrice as long as the sheath. The colour of the whole plant, except the capsule, is nearly white, with a tawny tinge here and there.

Ehrhart's *bicuspidata*, Crypt. 292, is different from this, and very like our *t.* 281.

2239.

Jan 1811 published by Jas Sowerby London.

JUNGERMANNIA connivens.

Forcipated Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

SPEC. CHAR. Shoots branched, creeping. Leaves in two rows, ovate, rather concave, cloven, with acute, forceps-like points. Sheaths cylindrical, elongated, many-toothed, terminating very short lateral branches.

SYN. Jungermannia connivens. *Dicks. Crypt. fasc.* 4. 19. *t.* 11. *f.* 15.

GATHERED by C. Lyell, Esq., upon *Sphagnum latifolium*, in a small bog at the north-east corner of Furzy-lawn inclosure, New Forest, in April last.

The whole plant is very delicate, entangled amongst the *Sphagnum*, and nearly agreeing with its pale whitish-green colour. In many respects this species accords with *bicuspidata*, *t.* 2239, near which it ought to be arranged; but the leaves are more rounded, less deeply divided, and remarkable for the incurvation of their acute segments, which in that respect imitate a pair of forceps. The sheaths are long and nearly cylindrical, bordered with many slender parallel teeth, and grow at the ends of short lateral branches, not at the summits of the main shoot or stem.

2436.

July 1812 published by Jas. Sowerby Lond.

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JUNGERMANNIA curvifolia.

Curve-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

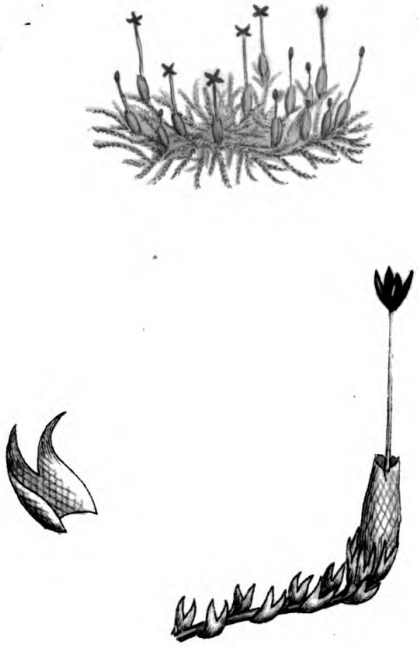
GEN. CHAR. Female, *Cal.* tubular. *Caps.* of 4 valves, on a fruitstalk. *Seeds* attached to elastic filaments.

SPEC. CHAR. Shoots creeping, branched, cylindrical. Leaves imbricated, roundish, with a deeply cloven point; the segments incurved.

SYN. Jungermannia curvifolia. *Dicks. Crypt. fasc.* 2. 15. *t.* 5. *f.* 7. *With.* 883. *Hull.* 281.

FOUND by Mr. Dickson in the Highlands of Scotland, and by Mr. Griffith in North Wales. Our specimens were gathered by Mr. Joseph Woods and Mr. G. Sowerby on dripping rocks at Usgoed-Eynon Garn, South Wales, in May 1803.

The stems grow entangled, forming intricate tufts or patches, and almost prostrate. They are thread-shaped, branched, leafy. Leaves alternate, without stipulæ or any appendages, loosely imbricated, all curved upwards, roundish, concave, finely reticulated, of a pale brownish green, their margins entire, their points deeply cloven, elongated, acute, and (except the uppermost) incurved. Sheath, or female calyx, tubular, reticulated, irregularly torn at the margin. Fruitstalk about half an inch high, whitish and tender. Capsule dark brown, splitting into 4 acute valves, as in other species.



May 1. 1804. Published by Jas. Sowerby, London

JUNGERMANNIA cochleariformis.

Spoon-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Nearly upright. Leaves two-ranked, imbricated, folded together, roundish, concave, somewhat toothed. Auricles pouch-like, oblong.

SYN. Jungermannia cochleariformis. *Weis Gott.* 123. *With.* 876.

J. purpurea. *Scop. Carn. v.* 2. 347. *Lightf.* 778. *Hull.* 279.

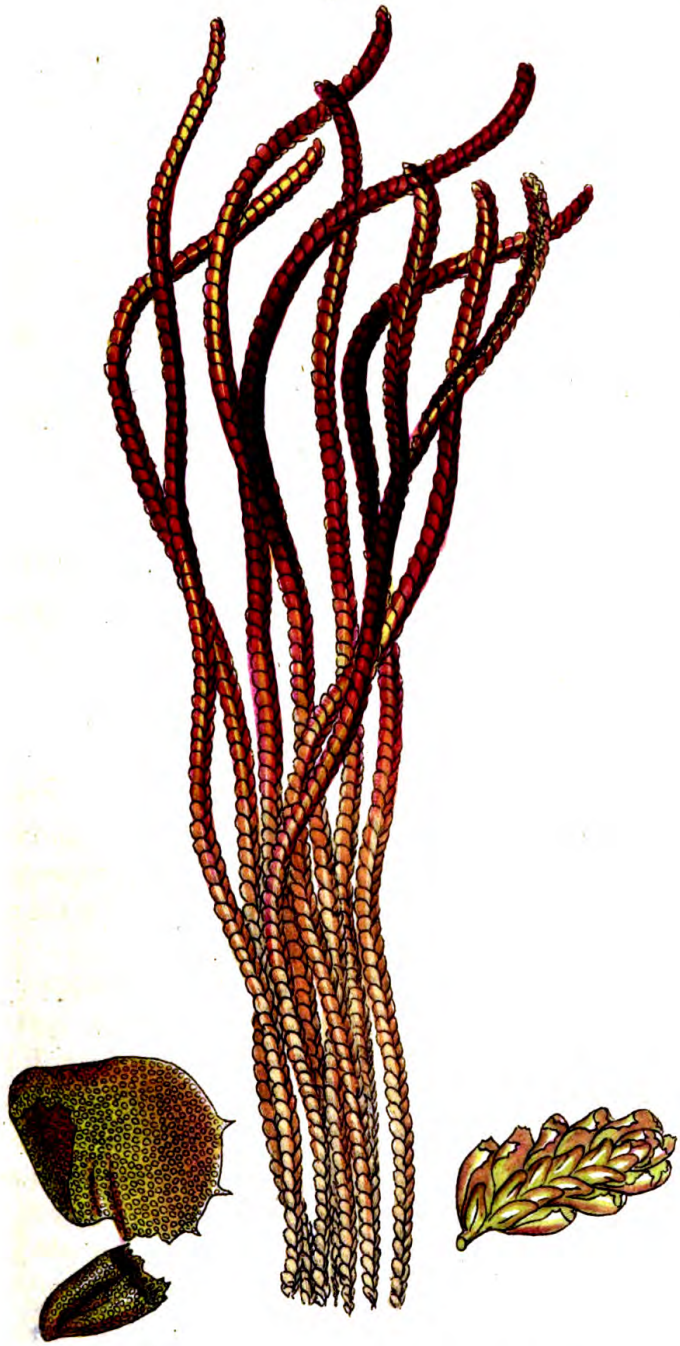
Mnium jungermannia. *Linn. Sp. Pl.* 1579. *Huds.* 473.

Lichenastrum alpinum purpureum, foliis auritis et cochleariformibus. *Dill. Musc.* 479. *t.* 69. *f.* 1.

L. trichomanis facie prælongum, foliis concavis unam partem spectantibus. *Raii Syn.* 112.

As our *t.* 1023 proves only an alpine purple variety of *nemorosa*, see *p.* 2498, we have obtained the intended plant, gathered by Miss Hutchins near Bantry; and at the same time we restore the original name given by Weis, whose prior authority we did not before perceive, owing to Withering's neglect of reference to him.

This is a very fine and remarkable species, sometimes a span high or more, forming dense tufts in alpine bogs, and being mostly simple, clothed entirely with purple or brownish leaves, imbricated in two rows, but all directed to one side. Their form is roundish, but irregular, concave, unequally toothed, chiefly at the extremity. Each is accompanied at its base by an oblong pouch-like appendage, akin to those of *J. Hutchinsiæ*, *t.* 2480, and *tamariscina*, *t.* 2481, but mostly, though perhaps not always, distinct, so that it may well be termed an auricle. The younger plants have flatter leaves, without such accompaniments. We lament having never seen the fructification, of which Dillenius was likewise ignorant. Linnæus had no pretence to make this plant a *Mnium*.



Jan.1. 1813 published by Jas. Sowerby London.

34.

JUNGERMANNIA complanata.

Flat Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Much branched, procumbent, depressed. Leaves two-ranked, rounded, entire; their side-lobes of the same shape, not half so large. Sheaths terminal, compressed, abrupt, entire.

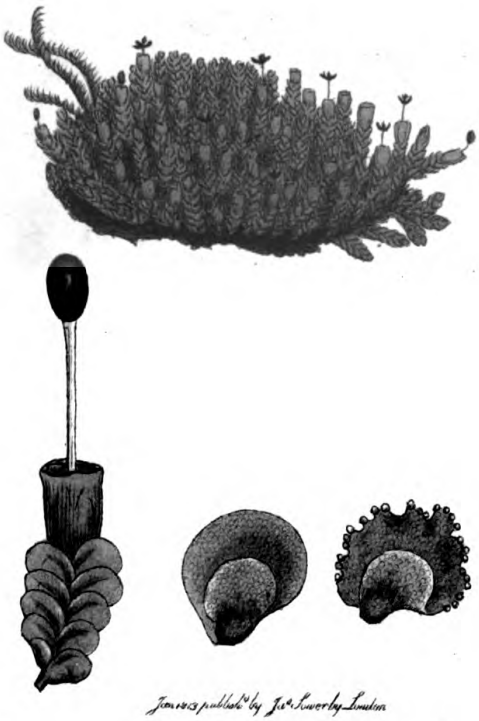
SYN. Jungermannia complanata. *Linn. Sp. Pl.* 1599. *Huds.* 514. *With.* 878. *Hull.* 280. *Lightf.* 780. *Relh.* 439. *Sibth.* 311. *Abbot.* 253. *Curt. Lond. fasc.* 4. *t.* 68. *Ehrh. Crypt.* 97.

Lichenastrum imbricatum majus, squamis compressis et planis. *Dill. Musc.* 496. *t.* 72. *f.* 26.

L. imbricatum majus. *Raii Syn. ed.* 3. 111; excluding the synonym of Bobart.

ABUNDANT on the trunks of trees, in woods and thickets, every where, bearing capsules plentifully in April and May.

This species composes broad dense patches, or cushions, of a light grass-green hue, entangled with mosses, and other plants of the same kind, their forms and colours being often elegantly and richly contrasted. Its shoots are repeatedly branched, the branches spreading, but all flat and depressed, like the foliage, which consists of two opposite rows of imbricated, almost orbicular, entire, slightly convex leaves, each furnished underneath with a close-pressed side-lobe, of their own form, but scarcely half so big. Some few leaves are bordered with granular buds. The copious sheaths grow solitarily at the ends of the branches, being about thrice as long as the leaves, somewhat bell-shaped, compressed upward, the margin abrupt, inflexed and entire. Fruit-stalk usually twice the length of the sheath.



Jones's publish'd by Jas. Sowerby London

35.

JUNGERMANNIA nemorosa.

Fringed Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers sessile.

Female on a footstalk rising from a sheath. *Caps.* with 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Fronds pinnate, auricled; the auricles uppermost, in two ranks, ciliated. Flower-stalk terminal.

SYN. Jungermannia nemorosa. *Linn. Sp. Pl.* 1598. *Hudf.* 512. *With.* 875.

J. nemorea. *Hull.* 279.

Lichenastrum auriculatum, pinnis minoribus crenatis. *Dill. Musc.* 490. *t.* 71. *f.* 18.

GATHERED by the Rev. Mr. Francis in woods near Holt, and communicated to us with its fructification in March 1798. It appears to be a rare species. Dillenius says he had never observed it in England, nor is it mentioned in any of our local Floras. Hudson alone appears to have found it in Westmoreland.

The fronds grow upright, either simple or branched, forming tufts, of a pale green. The leaves are broad, convex, pointed, alternately imbricated, finely ciliated, accompanied on the upper side of the stem by a double row of smaller ciliated leaflets or auricles. The flower-stalks grow solitary, from the end of each stem or branch, out of a very blunt almost entire and naked sheath, which droops toward one side before the flower-stalk is put forth. The capsule is brown, with rather broader valves than in some other species.

JUNGERMANNIA purpurea.

Purple Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Capſule on a ſtalk riſing from a ſheath, of 4 valves. *Seeds* attached to elaſtic filaments.

SPEC. CHAR. Stems nearly upright. Flowers terminal. Leaves two-ranked, ſpreading, roundiſh, auricled beneath; the uppermoſt finely toothed.

SYN. Jungermannia purpurea. *Scop. Carn. v.* 2. 347. *Hull.* 279.

J. cochleariformis. *With.* 876.

Mnium Jungermannia. *Linn. Sp. Pl.* 1579. *Hudſ.* 473.

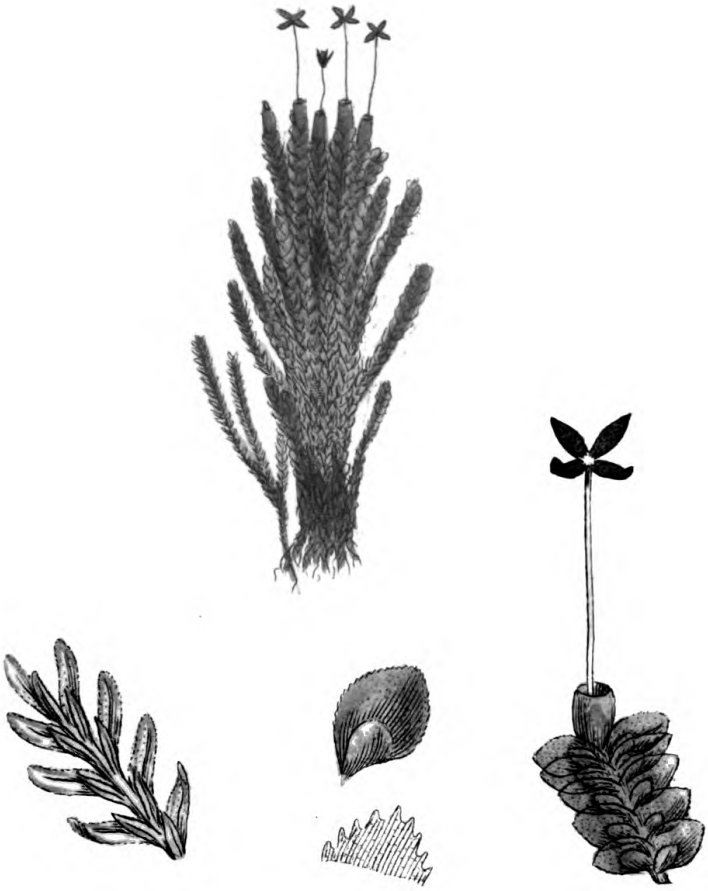
Lichenaſtrum alpinum purpureum, foliis auritis et cochleariformibus. *Dill. Muſc.* 479. *t.* 69. *f.* 1.

L. trichomanis facie, prælongum, foliis concavis unam partem ſpectantibus. *Raii Syn.* 112.

GATHERED by Mr. Griffith in rivulets and bogs on the mountains of North Wales, where indeed it has long been known to grow; but the fructification, ſo perfect in his ſpecimens here delineated, has never been found before in Britain. Dillenius never ſaw the capſules, nor did Micheli, who only knew the plant by a ſpecimen Sherard ſent him. They are produced in dry ſummers only.

Roots perennial. Stems in tufts, 2 to 4 inches high, aſcending, or, when many together, erect, a little branched, thickly clothed with two ranks of ſpreading, rather concave leaves, very various in form, but generally roundiſh, obtuſe; the lowermoſt ſmaller and entire; the upper ones larger, and finely toothed; all more or leſs of a purple hue, and each leaf is accompanied by a ſmaller leaf or auricle, of its own figure, but not toothed. Starved or unhealthy plants have oblong entire leaves and auricles, of a pale or whitiſh hue, and could hardly be ſuppoſed the ſame ſpecies. The ſheaths are terminal, purple, cylindrical, entire, and very obtuſe. Stalk near an inch long when perfect, white and tender. Capſule brown, of 4 lanceolate valves.

We cannot but agree with Dr. Hull in preferring Scopoli's expreſſive name to the recent one of Withering. How ſtrange is it that Linnæus ſuppoſed this plant a *Mnium!*



May 1. 1802. Published by Jas Sowerby, London.

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37

JUNGERMANNIA umbrosa.

Shady Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Ascending, somewhat branched. Leaves two-ranked, acute, serrated; their side-lobes convex, roundish-ovate, not half so large. Sheaths terminal, curved, compressed, abrupt, entire.

SYN. Jungermannia umbrosa. *Schrad. Samml. fasc.* 2.5. *Hooker Brit. Jung. t.* 24.

COMMUNICATED by Mr. Turner, but without fructification, which therefore we have borrowed from Mr. Hooker.

This species is said to grow, in small dense patches, amongst other similar plants, on several Scottish and Irish mountains. The stems are from half an inch to an inch high, rising rather obliquely, and more or less branched. They are reddish, and the pale green foliage has also a similar tint here and there. The leaves are closely imbricated in two rows, like those of *complanata*, *t.* 2499, &c., and like them unequally two-lobed; but the smaller lobes, in the present species, lie uppermost. Both lobes are convex, serrated and acute, of an obliquely roundish-ovate shape, and the plant has altogether a neat braid-like appearance. Sheaths terminal, oblong, curved, with an abrupt entire margin. Schrader says it blossoms in summer

Marc. 1813 published by Jas. Sowerby, London.

38.

JUNGERMANNIA undulata.

Wavy-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stems ascending, branched. Leaves in two rows, rounded, wavy, entire; their side-lobes rhomboid. Sheaths terminal, torn.

SYN. Jungermannia undulata. *Linn. Sp. Pl.* 1598. *Huds.* 512. *With.* 875. *Hull.* 279. *Lightf.* 776. Lichenastrum pinnis auriculatis majoribus et non crenatis. *Dill. Musc.* 490. *t.* 71. *f.* 17.

A NATIVE of shady woods, where it composes dense elastic tufts about the roots of trees. Mr. Hooker gave us these specimens, which are certainly the plant of Dillenius, on which Linnæus originally founded this species, without seeing it. What he subsequently procured and described in his *Syst. Veg.* is of no moment. There is no specimen in his herbarium. He says his agreed with the figure of Vaillant, (*t.* 19. *f.* 6,) better than with that of Dillenius; but the former is of no authority, nor can we refer it with certainty to any thing.

The colour of our plant is much tinged with purple or brown, as Dillenius mentions. The stems are two or three inches high, moderately branched. Leaves alternate, in two ranks, not much crowded, of a roundish somewhat rhomboid figure, bluntly pointed, wavy, and occasionally very slightly lobed, their margin entire, in which they differ from *nemorosa*, *t.* 607, as well as in being more flaccid. The *lobulus*, or side-lobe, of each is rhomboid, folded close to the stem, which it partly covers, all on one side. Sheaths terminal, solitary, cylindrical, unequally sharply toothed and torn. Fruitstalk about an inch long, white and delicate.

Feb. 1. 1811 published by Jas. Sowerby London.

89

nemorosa

JUNGERMANNIA resupinata.

Curled Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Stems ascending, branched, recurved at the summit. Leaves in two rows, roundish, crenate; their side-lobes acute, imbricated. Sheaths scattered, crenate.

SYN. Jungermannia resupinata. *Linn. Sp. Pl.* 1599. *Huds.* 512. *With.* 875. *Hull* 280. *Lightf.* 776.

Lichenastrum auriculatum, pinnulis rotundis, crispum. *Dill. Musc.* 491. *t.* 71. *f.* 19.

L. trichomanis facie, capitulis e foliorum summitate enascentibus, medium. *Dill. in Raii Syn.* 112.

SENT from the New Forest, in April and May, by C. Lyell, Esq. It comes nearest to *J. nemorosa, t.* 607, but has a more curled or turgid appearance, the young extremities of the branches being revolute. The leaves are broad, roundish or obovate, finely crenate, their side-lobes ovate, acute. The sheaths, though sometimes terminal, usually grow from the lower parts of the branches, and are slightly tumid, finely crenate, of a rather large proportion.

JUNGERMANNIA resupinata.

Curled Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

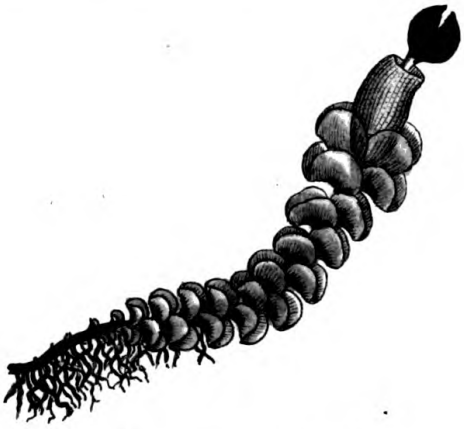
SPEC. CHAR. Procumbent, scarcely branched. Leaves two-ranked, rounded, entire, in two nearly equal lobes folded vertically together. Sheaths terminal, oblong, incurved, compressed, abrupt, nearly entire.

SYN. Jungermannia resupinata. *Hooker Brit. Jung. t.* 23; excluding the synonyms. *Linn. Fl. Suec.* 400?

WE are obliged to Mr. Turner for these specimens, gathered at Herringfleet, near Yarmouth; and to Mr. Hooker for determining our *t.* 2437 to be but a variety of *J. nemorosa, t.* 607. That *t.* 2437 however, being the plantof Dillenius, *t.* 71. *f.* 19, is unquestionably what Linnæus intended in *Sp. Pl.*, as the character also shows; though the original definition in the *Fl. Suecica* accords better with our present plant. There is nothing in the Linn. Herbarium to help us here. From Mr. Hooker's accurate inquiries, it is evident none of the synonyms he quotes have the shadow of authority, but rather are manifestly wrong. Still, in this dilemma, we readily concur with him in establishing the present very clear species as *J. resupinata*, there being no other distinct one.

It grows in a loamy soil; not unfrequently "under the trailing stems of *Ericæ*," bearing capsules in May and June, after flowering in the early spring. The stems, above half an inch long, form dense tufts, especially when fertile, creeping by numerous radicles. Leaves yellowish-brown, two-ranked, deflexed, of two, nearly equal, folded, roundish lobes, entire, except here and there a small tooth on the upper ones. Sheath terminal, compressed upward, curved, especially before the capsule protrudes; the orifice abrupt, minutely crenate. It seems Dr. Withering and ourselves have been misled concerning *J. purpurea*, our *t.* 1023 being also *nemorosa*; and further, that the fructified specimen of *undulata, t.* 2251, (not 225,) is perhaps *scalaris*. We gratefully acknowledge the communications and corrections of our friends; but that specimen came separately named from the same high authority, and we supposed its fruiting might cause the apparent difference.

2498.



Designed and by Jas Sowerby Lith.

41.

JUNGERMANNIA albicans.

Whitish Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stems ascending, somewhat branched. Leaves in two rows, oblong, recurved, single-ribbed; their side-lobes elliptical, imbricated. Sheaths terminal, inflated, many-toothed.

SYN. Jungermannia albicans. *Linn. Sp. Pl.* 1599. *Huds.* 513. *With.* 876. *Hull.* 279. *Lightf.* 777. *Winch. v.* 2. 27. *Ehrh. Crypt.* 87.

Lichenastrum trichomanis facie, capitulis e foliorum summitate enascentibus, minus. *Dill. in Raii Syn.* 112.

L. auriculatum, pinnulis angustis planis recurvis. *Dill. Musc.* 492. *t.* 71. *f.* 20.

Hepaticoides albescens, foliis pinnatis. *Vaill. Paris.* 100. *t.* 19. *f.* 5.

SPECIMENS of this were communicated to us by Mr. Hooker, as the only *Jungermannia* that has a rib to its leaves, and this indeed is but incomplete, vanishing about the middle, or a little beyond. Dillenius says it is abundant in woods and shady places. Our local writers, except Mr. Winch, mention it not.

The stems are an inch or two tall, sometimes tufted and upright, sometimes more lax and only ascending, though rooted only at their base, and not creeping. They are generally subdivided, and all over clothed with small leaves, of a whitish green tinged with red, imbricated in two rows, but recurved, their form oblong and obtuse, keeled, with a rib chiefly towards their bottom. Their extremities are undivided, but each bears on one side, at its base, a little elliptical side-lobe, and these being all on the same side of the stem, lie imbricated over each other in two rows. The sheaths are terminal, solitary, short and inflated, somewhat plaited, with numerous unequal marginal segments. Fruitstalk white and capillary, an inch long. Capsule brown.

A morsel of a purplish variety of this is by mistake figured in our *t.* 1023 on the left hand.

published by Jos. Sowerby Londinen.

42.

JUNGERMANNIA obtusifolia.

Blunt-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

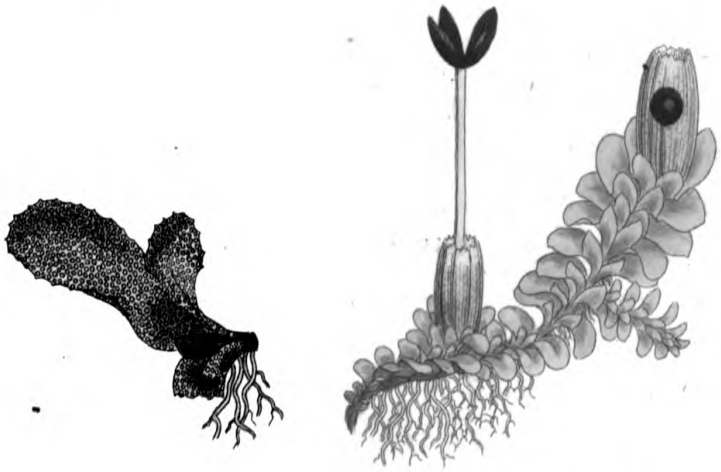
SPEC. CHAR. Ascending, nearly simple. Leaves two-ranked, of two unequal lobes folded together, obtuse, entire; the lower ones somewhat scimitar-shaped. Sheaths terminal, obovate, toothed.

SYN. Jungermannia obtusifolia. *Hooker Brit. Jung. t.* 26.

J. n. 1871. *Hall. Hist. v.* 4. 61? excluding the synonyms.

OUR specimens, from Mr. Turner, were found near Bantry, in Ireland, by Miss Hutchins. Mr. Thornhill first discovered this species, in 1805, near Heddon on the wall, Northumberland.

Numerous, little, more or less crowded, plants, scarcely half an inch high, form dense tufts, two or three inches broad, of a pale, dirty, or brownish, green. Each plant is attached to the earth by innumerable radicles, except the ascending extremity, and is generally quite simple, the female fructification being terminal, though the shoot seems to be now and then subsequently extended beyond it. The leaves spread in two ranks, without stipulaceous scales, and are recurved or scimitar-shaped, consisting of two rounded, very blunt, almost always entire, lobes; the smaller one erect, or rather folded upon the other. Sheath inflated; its mouth toothed and contracted. Fruit-stalk about as long as the whole stem. This species bears fruit in March and April. Mr. Hooker finds it always dioecious. It cannot be confounded with any other.



Feb. 1813 published by Jas. Sowerby London.

V

43

JUNGERMANNIA Dicksoni.

Dicksonian Jungermannia.

CRYPTOGAMIA Hepaticæ.

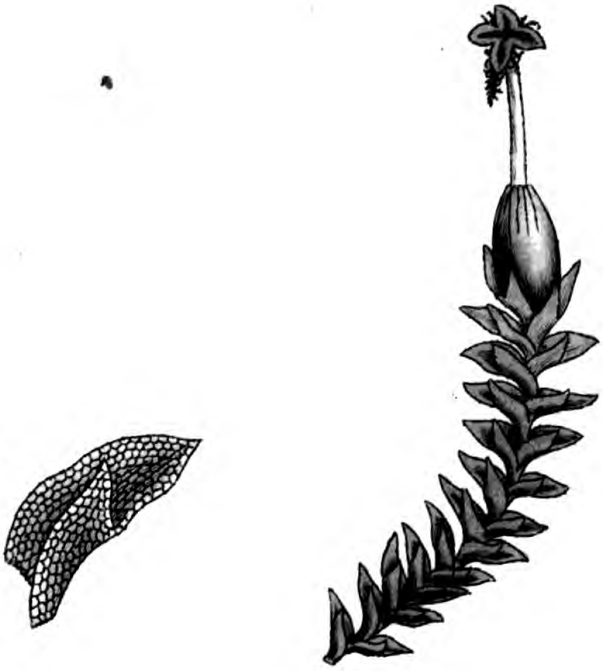
Gen. Char. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

Spec. Char. Ascending, scarcely branched. Leaves two-ranked, unequally two-lobed, folded; lobes ovato-lanceolate, acute, nearly entire. Sheaths terminal, ovate, plaited; contracted and toothed at the orifice.

Syn. Jungermannia Dicksoni. *Hooker Brit. Jung. t.* 48.

THE distinguished cryptogamist, to whom this species is inscribed, met with it many years ago in Scotland, and we have delineated one of his own specimens, communicated by Mr. Turner. The fructification was found there by Mr. Lyell, in August. We have been obliged to borrow it from Mr. Hooker's excellent drawing.

The plant forms small dense tufts, each shoot ascending obliquely, to the height of about half an inch. The hue of the whole is a light tawny, or yellowish, green. Leaves spreading in two ranks, without scales; each of two ovato-lanceolate acute lobes, one twice or thrice as big as the other, which is folded upon it, like *albicans, t.* 2240. The sheath is terminal, solitary, rather large, ovate and inflated, but pursed in, and toothed, at the summit. Capsule reddish brown, on a stalk of moderate length.



Mars 1814 published by Jas. Sowerby Lambeth.

V

444.

JUNGERMANNIA minuta.

Minute Auricled Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

SPEC. CHAR. Stems erect, branched. Leaves two-ranked, alternate, roundish, acute, with a folded acute side-lobe.

SYN. Jungermannia minuta. *Dicks. Crypt. fasc.* 2. 13. *With.* 374. *Hull.* 280.

Lichenastrum pinnulis minutissimis rotundis. *Dill. Musc.* 481. *t.* 69. *f.* 2.

COLLECTED in the Highlands of Scotland by Mr. Hooker, but neither he nor any one else has yet met with the fructification.

The slender wiry stems grow upright, among moss, to the height of an inch or two, and soon become branched. They are leafy throughout, except at the very base, and somewhat wavy and spreading. The leaves are extremely minute, uniform, dull green, spreading in two ranks, alternate, oblique, acute, rounded at the upper edge, furnished at the lower with an acute entire auricle, or side-lobe, folded in towards the leaf.

We have ventured to suggest the propriety of terming the larger half of the leaf in these auricled species in Latin *lobus*, and the smaller one, or auricle, *lobulus*; in English perhaps *leaf* and *side-lobe* may be most intelligible. These parts have not hitherto been well understood or defined by authors.

Jan. 1 1811 published by J.T. Sowerby London.

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JUNGERMANNIA viticulosa.

Straggling Flat Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Shoots branched, spreading. Leaves two-ranked, vertical, flat, entire; with intermediate, roundish, toothed scales. Sheaths lateral.

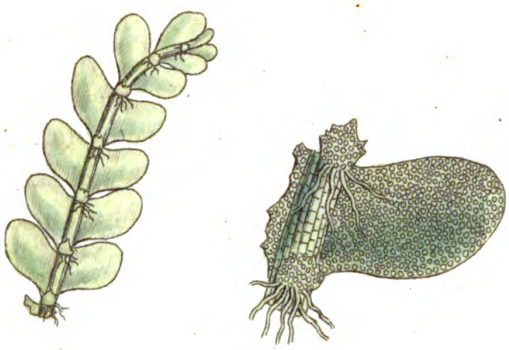
SYN. Jungermannia viticulosa. *Linn. Sp. Pl.* 1597. *Huds.* 509. *With.* 873. *Hull.* 278. *Lightf.* 772. *Relh.* 438. *Sibth.* 308. *Abbot.* 252.

Lichenastrum trichomanis facie, e basi et medio florens. *Dill. Musc.* 484. *t.* 69. *f.* 7.

L. capitulis nudis, trichomanis facie, foliolis densiùs congestis majus. *Dill. in Raii Syn.* 111.

NOT uncommon among tufts of moss in shady woods. The fructification is said to be produced in February and March, but neither Mr. Hooker nor ourselves have yet obtained it. Dillenius represents the sheaths and capsules, in sufficient abundance, all situated on the upper side of the branches, especially towards the bottom.

The shoots are branched and straggling, sticking by their minute radicles to the neighbouring mosses, beset with two close ranks of flat, vertical, entire, opposite, pale and pellucid leaves, which vary in shape and acuteness, and are very tender, shrivelling up as soon as they begin to dry. Between each pair, underneath, is a minute, roundish, sharply-notched scale, accompanied by a little tuft of radicles. The definition in Linnæus, "leaflets awlshaped," is founded in some error, and he has erased it in his own copy of *Sp. Pl.*



Published by J. C. Sowerby London

46.

JUNGERMANNIA lanceolata.

Lanceolate Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.
Female on a footſtalk riſing from a ſheath. *Capſ.* with 4 valves. *Seeds* attached to elaſtic filaments.

SPEC. CHAR. Fronds ſimply pinnate, lanceolate, flowering at the end. Leaves entire.

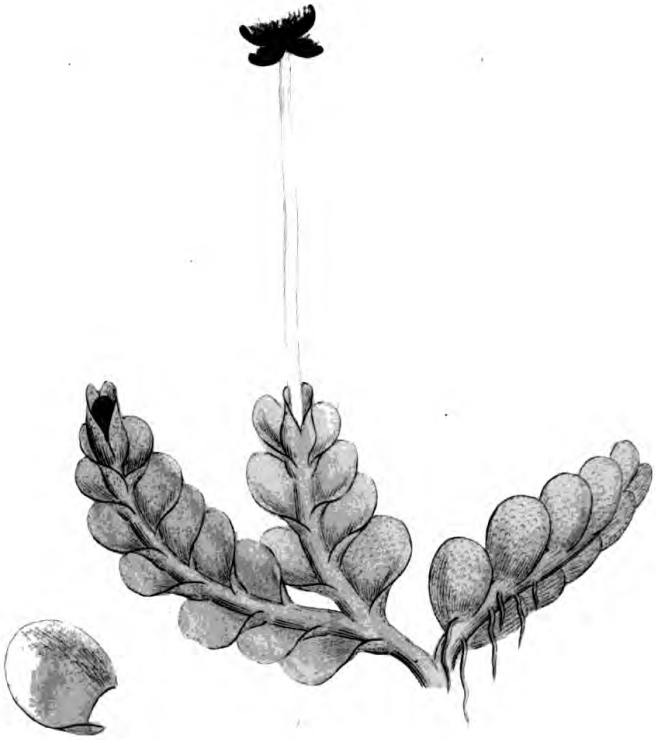
SYN. Jungermannia lanceolata. *Linn. Sp. Pl.* 1597. *Hudſ.* 510. *With.* 871. *Hull.* 277.

Lichenaſtrum capitulis nudis, Trichomanis facie, foliolis denſiùs congeſtis, minus. *Dill. in Raii Syn.* 112.

L. Trichomanis facie minus, ab extremitate florens. *Dill. Muſc.* 486. *t.* 70. *f.* 10.

GREAT elegance of ſtructure is often obſervable in the minute and retired productions of the claſs *Cryptogamia*, and in none more than the *Jungermanniæ*. Theſe humble plants inhabit the receſſes of damp woods, creep over the decaying roots leaves or ſtems of larger vegetables, or fill up the interſtices of the graſs under the ſhade of rocks or evergreen ſhrubs. They flower in the cold wet months of the winter or early ſpring: afterwards ſome, which appear to be annual, entirely decay; others are more or leſs dried up, but revive on the approach of the leaſt moiſture; and when wet, many of them diffuſe a powerful aromatic odour, familiar to moſt people, in a grove, or on a ſhady graſs-plat, after rain, or while the morning dew is upon the ground; yet few perſons are aware of the minute vegetables to which this fragrance is almoſt entirely owing.

The preſent ſpecies was ſent us from Holt, Norfolk, by the Rev. R. B. Francis, who has paid peculiar attention to this genus. It grows in ſmall patches, almoſt proſtrate; the ſtems branching, and taking root in their lower part. The leaves are alternate, imbricated, ſimple, roundiſh, entire, often tinged with purple at their outer edge. The female flower-ſtalk terminates the branch, growing from a cloven ſheath, which Dillenius originally did not conſider as ſuch, probably from its ſhortneſs, and ſimilitude to the leaves. This tender white ſtalk terminates in a black capſule, which ſplits into 4 parts as in the other ſpecies.



47.

JUNGERMANNIA compressa.

Compressed Upright Jungermannia.

CRYPTOGAMIA Hepaticæ.

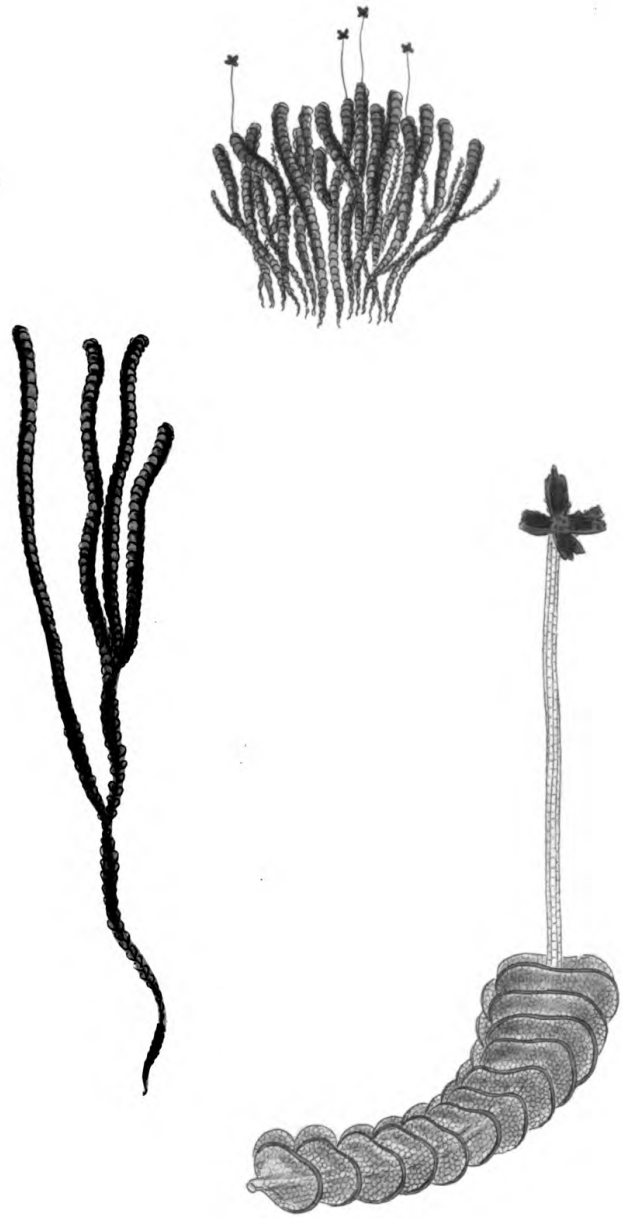
Gen. Char. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

Spec. Char. Erect, subdivided. Leaves in two rows, flat, erect, close-pressed, orbicular; the uppermost somewhat kidney-shaped. Scales minute, remote, on the youngest branches. Sheaths terminal, fleshy, four-toothed, permanent, immersed in the imbricated foliage.

Syn. Jungermannia compressa. *Hooker Brit. Jung. t.* 58.

COMMUNICATED by Dr. Taylor, who found it in Lough Bray; as did Miss Hutchins in mountain rivulets near Bantry, Ireland; producing capsules in June.

The stems are from two to six inches high, erect when not disturbed by a strong current, more or less branched, leafy, forming broad tufts, of a brown or purplish green. Leaves very closely pressed to the stalk, in two erect rows, nearly orbicular, but rather broader than long, entire, pellucid, strongly reticulated; the upper ones largest, more kidney-shaped, and somewhat wavy. Stipulary scales very small and distant, entire or notched, found, according to Dr. Taylor and Mr. Hooker, on the youngest shoots only. Sheaths terminal, solitary, completely concealed by the upper leaves, two or three pair of which are imbricated over and inserted upon them. Each is oblong, four-toothed, fleshy and permanent, being, according to Mr. Hooker's curious remark, a sort of hollow or pouch in the extremity of the stem. We would observe that the lateral exposed pouches of some other species, as *J. trichomanis*, *t.* 1875, and *viticulosa*, *t.* 2513, the fructification of which last is given in Hooker, *t.* 60, are in structure more akin to the above than may at first sight be supposed.



Feb 1 1814 published by Jas Sowerby London

48.

JUNGERMANNIA polyanthos.

Many-flowered Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

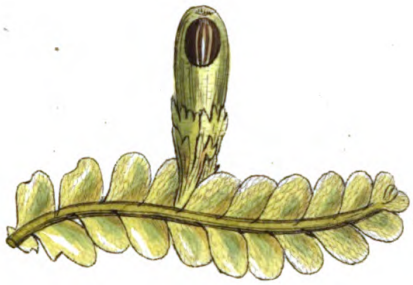
SPEC. CHAR. Shoots branched, creeping. Leaves in two rows, spreading, slightly imbricated, roundish, entire, convex. Sheaths lateral.

SYN. Jungermannia polyanthos. *Linn. Sp. Pl.* 1597. *Huds.* 510. *With.* 873. *Hull.* 278. *Lightf.* 773. *Sibth.* 309.

Lichenastrum trichomanis facie, polyanthemum breve et repens. *Dill. Musc.* 486. *t.* 70. *f.* 9.

THIS species of *Jungermannia* grows in moist shady places amongst moss, bearing fruit in the spring, usually in great plenty. It is however not a very common kind. Dillenius had it from Surry. Our specimen was sent from Ballylickey wood in Ireland, by Miss Hutchins to Mr. Turner.

The stems creep on the ground, and are repeatedly branched, slender, but of a firm rigid texture, clothed with round, entire, rather convex leaves, spreading in two ranks, slightly overlapping each other, their base now and then extended into a minute fold or auricle, pressed close to the stem, but this is not regular nor constant. We find also a notch in one or two of the leaves, but that is accidental. The sheaths grow solitary from the middle part of each branch, and have, as in other species, a few imbricated notched scales, or bracteas, at their base.



Nov. 1. 1812 published by Jas. Sowerby London.

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49.

JUNGERMANNIA minutissima.

Minute Round-leaved Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stems branched, creeping. Leaves alternate, roundish, concave, entire, without auricles. Sheaths turbinate, with five angles.

THIS very beautiful little *Jungermannia* was found by Mr. Lyell in the New Forest, growing on the bark of holly and ash trees near the ground, bearing fruit, which is rare and very short-lived, in April and May. We presume it to be nondescript, and its discoverer is certainly entitled to the praise of great acuteness of observation.

The stems often creep over other species of the same genus, from which this is distinguished by its lighter and brighter colour. They are very slender, much branched, and leafy. Leaves alternate, rather distant, sessile, roundish, concave, entire, destitute of auricles or stipulas. Sheaths axillary, solitary, much larger than the leaves, turbinate or top-shaped, with 5 prominent keels or angles, smooth, accompanied by a pair of bracteas at their base. Fruitstalk and capsule pale brown, or almost white.

July 1806. Published by Jas Sowerby, London.

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JUNGERMANNIA gracillima.

Slender-branched Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

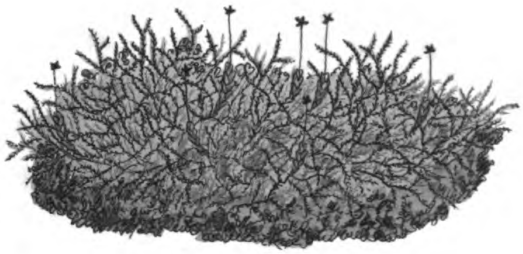
Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

SPEC. CHAR. Stems branched, creeping. Leaves alternate, clasping the stem, roundish, concave, entire, without auricles. Sheaths terminal, cylindrical, obtuse.

FOR this *Jungermannia*, which, as far as we can discover, is a nondescript, we are obliged to Mr. Templeton, who communicated it nine years ago from the neighbourhood of Belfast. The same has been observed by the Rev. Mr. Francis on Edgefield heath, Norfolk, between the two woods.

It ranges near our *minutissima*, *t.* 1633, but is not near so small, and grows on the ground; differing in its stem-clasping leaves, and more essentially in its sheaths, which are terminal, cylindrical, obtuse, subtended by several imbricated leaves larger than the rest, and these leaves, as well as the sheath, are in our specimens tinged with red. The fruitstalk is thrice as tall as in the *minutissima*, and the capsule brown.—The stems are very slender and pellucid, branched, creeping, somewhat zigzag, clothed with small, scattered, pellucid, apparently fleshy leaves, of a roundish concave undivided figure, always more or less embracing the stem with their base, and destitute of any appendages.



Jan. 1822 published by Jas. Sowerby, London.

JUNGERMANNIA trichomanis.

Fern Jungermannia.

CRYPTOGAMIA Hepaticæ.

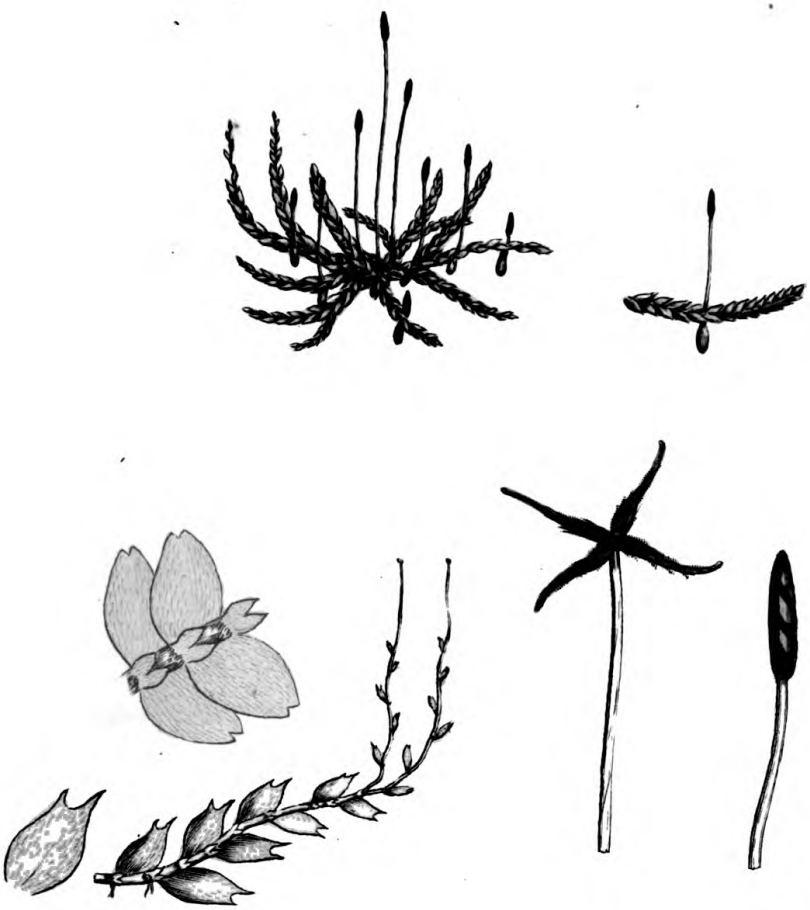
GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Shoots creeping, somewhat branched. Leaves in two rows, auricled, ovate, entire or cloven. Sheaths lateral, pendulous, hairy.

SYN. Jungermannia trichomanis. *Lightf.* 769. *Dicks. Crypt. fasc.* 3. 10. *t.* 8. *f.* 5. *Hull.* 279.
J. scalaris. *With.* 870.
Mnium trichomanis. *Linn. Sp. Pl.* 1578. *Huds.* 473.
M. trichomanis facie, foliolis integris. *Dill. Musc.* 236. *t.* 31. *f.* 5.
β. Jungermannia fissa. *Lightf.* 770. *Hull.* 278. *Sibth.* 310. *Abbot.* 255.
J. sphærocephala. *With.* 872. *Relh.* 438.
Mnium fissum. *Sp. Pl.* 1579. *Huds.* 473.
M. trichomanis facie, foliolis bifidis. *Dill. Musc.* 237. *t.* 31. *f.* 6.

COMMON in moist shady places, where its little powdery heads of barren flowers are often seen, but the capsules are rarely observable. Our much respected friend the Rev. R. B. Francis favoured us with perfect specimens in fruit from near Holt, in March 1798. The opinion of this gentleman, as well as of Mr. W. J. Hooker, decides us to unite two species of Dillenius into one, the leaves being found cloven and entire even on the same shoot, and the figures 5 and 6 of that author are not even supposed to differ in any other respect. It is strange that he should refer these plants to *Mnium*, and that Linnæus should follow him, though Micheli had rightly determined their genus.

The pale shoots creep over the moist earth by means of little tufted roots at the base of the auricles which grow in pairs under each leaf. The leaves are ovate or roundish, entire at the edge, mostly cloven at the point. Fruitstalks from little oblong, hairy, black, lateral, pouch-like sheaths, very remarkable for being pendulous from the branch, of which we have some exotic examples. The valves of the capsule are narrow and acute.



Apr. 1. 1808. Published by Jas. Sowerby London.

JUNGERMANNIA stipulacea.

Stipular Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

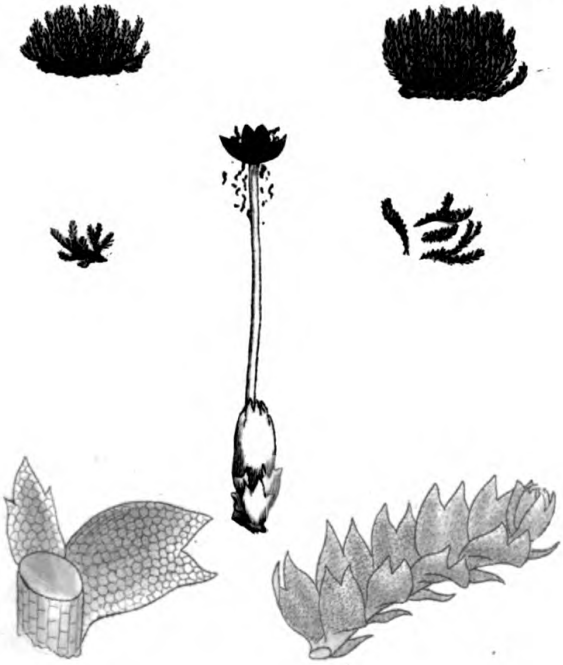
SPEC. CHAR. Creeping, prostrate, scarcely divided. Leaves in two rows, ascending, rounded, acute, with an acute notch. Scales ovate, acute, half as long as the leaves, with a tooth at each side. Sheaths lateral, obovate; their mouth contracted, plaited, bluntly toothed.

SYN. Jungermannia stipulacea. *Hooker Brit. Jung. t.* 41.

COMMUNICATED by Mr. Turner, who received Irish specimens from Miss Hutchins. Mr. G. Don has found the same species in Scotland.

It grows on shady rocks, in dense patches, resembling those of *J. incisa, t.* 2528, of a pale yellowish green, with a brownish tint. Each plant creeps on the ground, attached by numerous radicles, being usually quite simple, scarcely half an inch long. Some of our specimens however show a young shoot, such as Mr. Hooker has now and then observed. The leaves clothe the upper side of the stem, in two ranks, being roundish or ovate, more or less upright, entire except a terminal notch, making an acute angle, between two equal acute points. Beneath is a simple row of projecting stipulaceous scales, each nearly half the length of a leaf, ovate, acute, with a tooth at each side. The sheaths are lateral, solitary, obovate, much drawn in at the orifice, with three or four three-pointed leaves at the base.

2536



Art. 1013 published by Jas. Sowerby

JUNGERMANNIA Francisci.

Holt Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Ascending, simple or branched. Leaves in two rows, turned upwards, ovate, concave, sharply cloven. Stipulas minute, ovate, divided. Sheaths on short branches, terminal, nearly cylindrical, even, toothed.

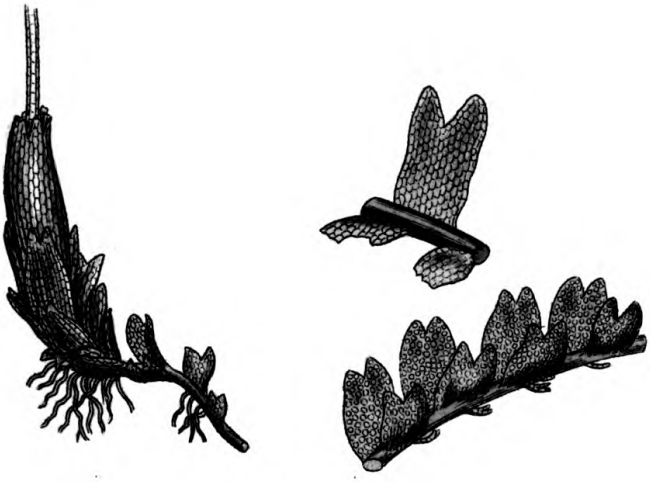
SYN. Jungermannia Francisci. *Hooker Brit. Jung. t.* 49.

THE Rev. R. B. Francis is justly commemorated in the name of this species, as having made several discoveries in the history of the genus to which it belongs, and as having first found the present plant about his residence at Holt and Edgefield, Norfolk. We have it also from Hampshire and Ireland.

The tufts formed by this *Jungermannia* often assume a brownish, or purple, tinge. The stems, about half an inch long, creep in their lower part, then turn upward, and become divided, being of a fleshy texture, clothed with two rows of small ovate leaves, deeply and acutely notched at the ends, all turned more or less into an erect position. Along the under side is a row of small cloven stipulas. At the ends of some short branches, among several enlarged crowded leaves, stand the nearly cylindrical and even sheaths, which are much longer than the leaves, and unequally toothed at the margin.

Mr. Hooker expresses some suspicion that this may be *J. bifida* of Schmidel's *Icones*, t. 62. f. 19, 20, and t. 64. f. 2; but that accurate and laborious author's omission of the stipulas seems to preclude such an idea.

2569.



Nov. 1, 1813 published by Jn. Sowerby London.

54.

JUNGERMANNIA bidentata.

Triangular-ſheathed Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Female on a footſtalk riſing from a ſheath. *Capſ.* with 4 valves. *Seeds* attached to elaſtic filaments.

SPEC. CHAR. Fronds ſimply pinnate, flowering at the end. Leaves with two unequal ſharp teeth.

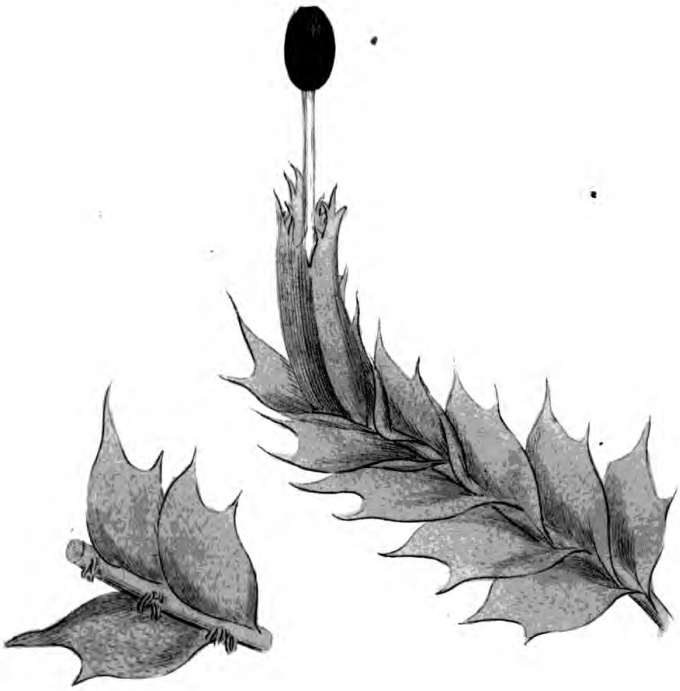
SYN. Jungermannia bidentata. *Linn. Sp. Pl.* 1598. *Hudſ.* 511. *With.* 871. *Hull.* 278. *Relh.* 418. *Abbot.* 252. *Sibth.* 310.

Lichenaſtrum Trichomanis facie, foliolis bifidis, majus. *Raii Syn.* 113.

L. pinnulis acutioribus et concavis, bifidis, majus. *Dill. Muſc.* 487. *t.* 70. *f.* 11.

SENT by Mr. Teeſdale from Yorkſhire. It is not uncommon in heathy places and moiſt groves, often adhering with its long ſhoots to the upper ſurface of *Lichen caninus*. In ſuch a ſituation it however does not bloſſom. When it grows in patches on the damp ground, its branches are ſhorter and more frequent, producing, about October and November, ſolitary flower-ſtalks from their ſummits, bearing brown capſules. The baſe of each ſtalk is enveloped in a longiſh tubular triangular ſheath, unequally lacerated at its orifice. This ſheath, like the whole herb, is of a pale or whitiſh pellucid green, and of a granular ſubſtance throughout. The leaves grow oppoſite or alternate; in the flowering plants imbricated; in the barren ones ſcarcely ſo. They are broad at the baſe, ſomewhat decurrent; at the ſummit ſharply two-lobed, the lobes generally unequal, and the notch between them rounded. Oppoſite to every leaf a ſmall tuft grows from the ſtem, which looks like roots. We have been told that this ſpecies was furniſhed with laciniated ſtipulæ. Have theſe eluded our ſearch? or have thoſe tufts of roots been taken for them?

This kind of *Jungermannia* is highly aromatic.



55.

JUNGERMANNIA bicuspidata.

Forked Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers sessile.

Female on a foot-stalk rising from a sheath. *Capsule* with 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Fronds simply pinnated, bearing the fructification about the middle. Leaflets cloven at the tip.

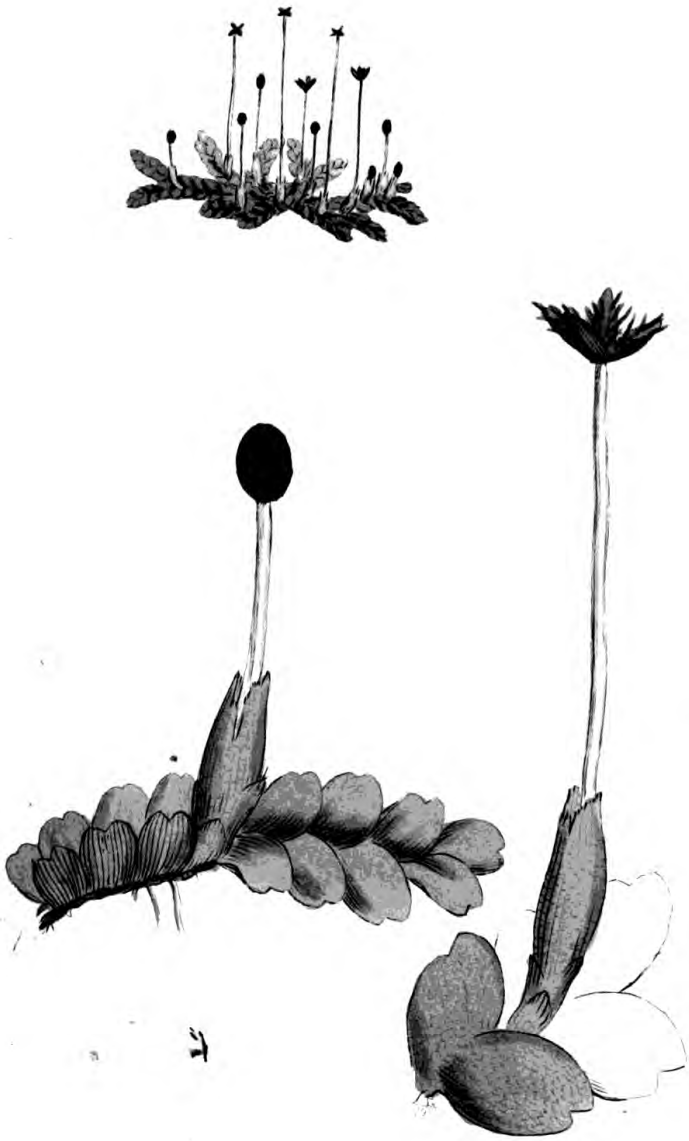
SYN. Jungermannia bicuspidata. *Linn. Sp. Pl.* 1598. *Huds. Fl. An.* 511. *With. Bot. Arr. v.* 3. 142. *Relh. Cant. Supp.* 2. 19. *Sibth. Oxon.* 310.

Lichenastrum Trichomanis facie, foliolis bifidis, minimum. *Raii Syn.* 113.

L. pinnulis acutissimè bifidis, minimum. *Dill. Musc.* 488. *t.* 70. *f.* 13.

GATHERED April 24, 1795, in Hornsey wood in full fructification, as it is not unfrequently found at that season of the year in moist shady places.

It is supposed to be perennial, forming small patches of light green procumbent leafy branches, which are either simple or divided, clothed with little roundish leaves ranged alternately in two rows, the tips of which are cloven with an acutely angulated sinus. The flower-stalks are solitary and lateral about the middle of each branch, each arising from a tubular lacerated green sheath, scaly at its base, and bearing a globose black capsule, which soon bursts into 4 valves. We have not seen the male flowers (described by Hedwig) in this nor any other species, but his fidelity is indubitable.



56.

JUNGERMANNIA reptans.

Creeping Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Female on a footſtalk riſing from a ſheath. *Capſ.* with 4 valves. *Seeds* attached to elaſtic filaments.

SPEC. CHAR. Fronds branching, creeping, pinnate, ſimply auricled beneath, flowering at the baſe. Leaves and auricles four-toothed.

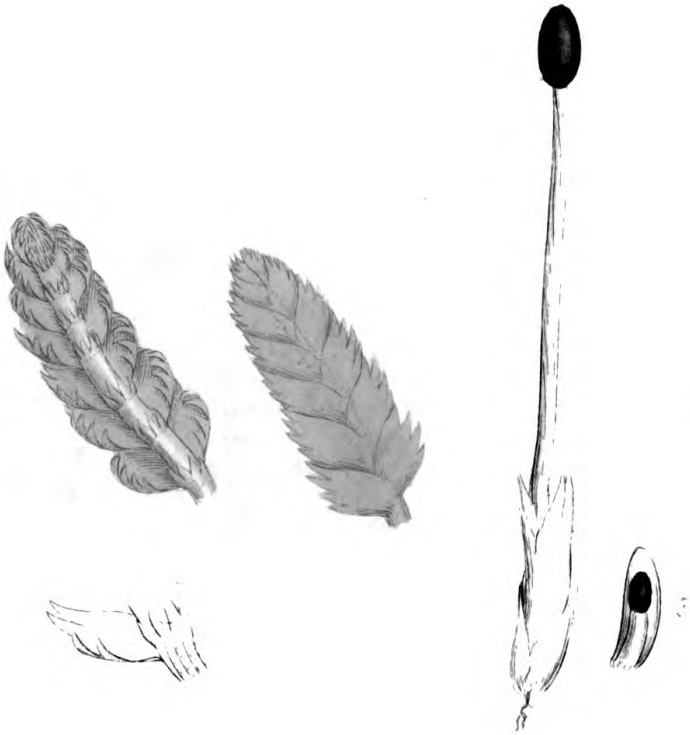
SYN. Jungermannia reptans. *Linn. Sp. Pl.* 1599. *Hudſ.* 513. *With.* 877. *Hull.* 280.

Lichenaſtrum Trichomanis facie, foliolis multifidis, capitulis ex imis cauliculis naſcentibus. *Raii Syn.* 113.

L. multifidum exiguum, ad baſin florens, per ſiccitatem imbricatum. *Dill. Muſc.* 494. *t.* 71. *f.* 24.

THIS pretty ſpecies was alſo received from the Rev. Mr. Francis, having been gathered by himſelf in Edgefield wood, near Holt. It flowers in April and May.

It grows in patches, the fronds being much branched, creeping, throwing out roots here and there to their very extremities. The leaves are ſmall, but greener and leſs tender than in ſome other ſpecies, convex, imbricated, ending in 4 deep ſharp teeth or lobes. They grow nearly oppoſite, and each pair is connected beneath by a ſimple four-toothed auricle or ſtipula. The flower-ſtalks ſpring copiouſly from the beginning of the ſtem, and each is clothed at the baſe with a tubular ſharply-toothed ſheath. The capſules are blackiſh.



57.

JUNGERMANNIA radicans.

Three-toothed Rooty Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stem trailing, branched, pinnate, smooth, with long, scaly radicles. Leaves two-ranked, imbricated; contracted and three-toothed at their ends. Stipulas solitary, rounded, toothed.

SYN. Jungermannia radicans. *Hoffm. Germ. v.* 2. 87.
J. trilobata. *Ehrh. Crypt.* 48. *Web. Goett.* 143.
J. n. 1866. *Hall. Hist. v.* 3. 59.
Muscoides terrestre repens, ex obscuro virescens, foliis superioribus et inferioribus ad extremitatem dentatis. *Mich. Gen.* 10. *t.* 6. *f.* 2.

HOFFMANN alone seems to have been aware of this not being the true *J. trilobata* of Linnæus, with which it has been otherwise universally confounded, but which is a smaller plant, with downy stems, destitute of the long scaly shoots or radicles so remarkable in ours; neither are its leaves imbricated, but parallel, nearly square, with three or four strong teeth or lobes at the outer edge, or extremity. We cannot detect its stipulas described by Dillenius.

Our plant, gathered by Mr. Hooker at Tunbridge, and Miss Hutchins in Ireland, has stems three or four inches long, creeping, repeatedly branched, smooth, throwing out long simple cylindrical scaly shoots or radicles, and pinnated throughout with light bright green leaves, spreading in two directions, of an unequally ovate oblique form, their rounded, dilated, foremost edges imbricated over the leaf beyond them, their points contracted, abrupt, notched with three, rarely four, little sharp teeth. Betwixt each pair of leaves, on the under side of the stem, is one small, round, or somewhat kidney-shaped, crenate, close-pressed stipula. We have never seen any fructification. Haller says it grows on the extreme branches.

J. trilobata of the Linnæan herbarium is Dillenius's *t.* 71, *f.* 22, who having never found the fructification of his plant, copies as such that of a different species from Micheli, *t.* 5. *f.* 10, and has thus misled Linnæus and others.

Jan: 1811 published by Jas. Sowerby London.

58.

JUNGERMANNIA quinquedentata.

Toothed Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Tufted, somewhat branched. Leaves two-ranked, ascending, roundish, undulated, with several distant sharp teeth. Scales acutely toothed. Sheaths terminal, angular.

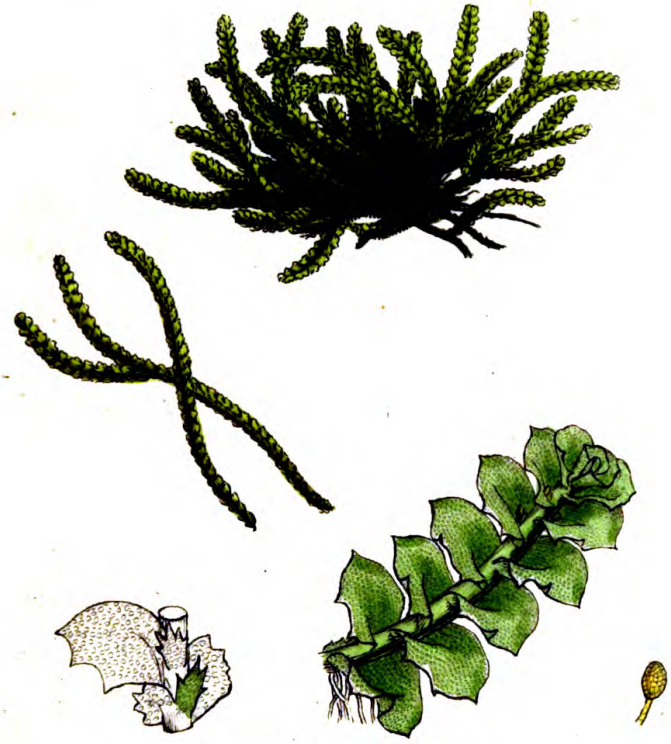
SYN. Jungermannia quinquedentata. *Huds.* 511. *Linn. Sp. Pl.* 1598. *With.* 871. *Hull.* 278. *Lightf.* 775.

Lichenastrum multifidum majus, ab extremitate florens. *Dill. Musc.* 494. *t.* 71. *f.* 23.

L. trichomanis facie, foliolis multifidis, capitulis e summis ramulis nascentibus. *Dill in Raii Syn.* 113.

GATHERED, in August 1788, by the late Mr. R. Teesdale on the high rocks of Cromford moor, near Matlock. Mr. Turner has communicated a specimen with anthers, sent by Miss Hutchins from Bantry. Mr. Hooker observes that it is very common in mountainous countries, but he has never met with the female fructifications; which Dillenius says are found in the spring, the sheaths being angular, with a toothed contracted mouth.

This plant grows in very broad, dense, yellowish-green, soft, cushion-like patches, composed of innumerable crowded ascending leafy stems, about two inches long, simple or branched. Leaves imbricated in two rows, turned to the upper side, alternate, roundish-ovate, undulated, with two, three, four, or five distant, broad, sharp, spreading teeth. Along the under side of the branch is a row of small, acute, finely toothed, stipulaceous scales, not always readily to be seen. Anthers axillary, among the upper leaves. Dillenius quotes, and unjustly criticises, Micheli's t. 6. f. 2, which belongs to a very different species. See *J. radicans, t.* 2232.



Mar 1 1813 published by Jas. Sowerby London.

59.

JUNGERMANNIA Hutchinsiæ.

Hutchinsian Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves.

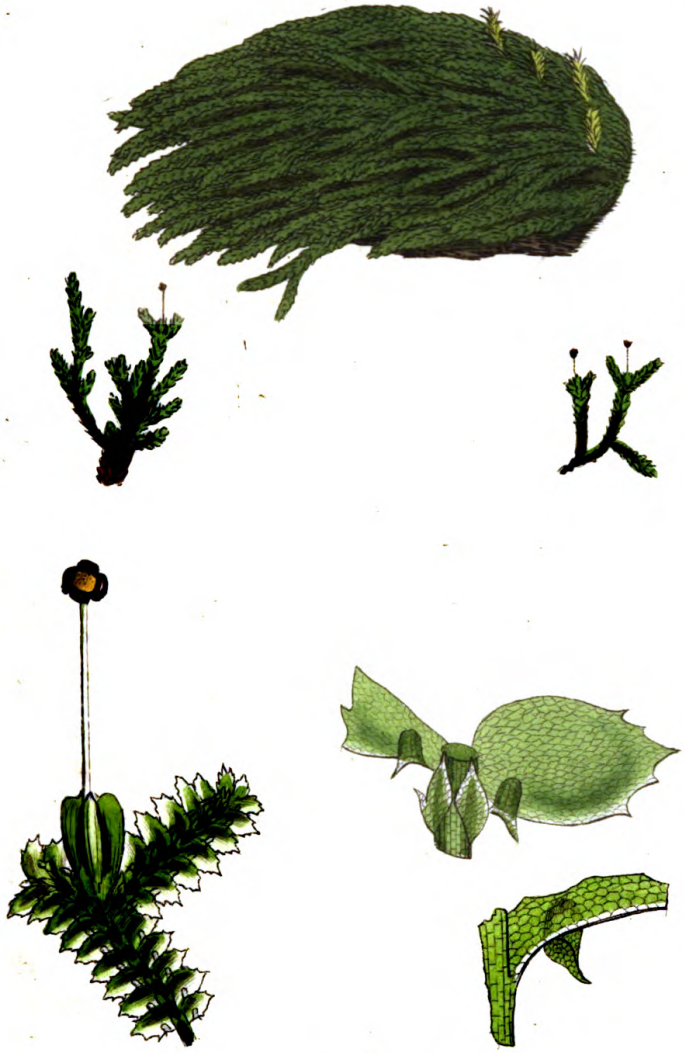
Seeds attached to elastic filaments.

SPEC. CHAR. Shoots creeping, branched. Leaves in two rows, spreading, crowded, ovate, toothed, with an inflated side-lobe. Scales cloven, acute. Sheaths in the forks of the branches, inversely heartshaped.

SYN. Jungermannia Hutchinsiæ. *Hooker Brit. Jung. t.* 1.

DISCOVERED by the ingenious lady whose name it bears, at "Glengariff, near Bantry; along the banks of the first river, as you go from Bantry above the water-fall; and in gloomy caverns by the side of other mountain rivulets."

The stems compose dense imbricated patches, of a dark or blackish green, some inches broad, and are repeatedly branched. Leaves crowded, spreading in two rows, flat, ovate, acute, strongly toothed, each furnished at one side near the base with a very singular, obtuse, inflated, pouch-like side-lobe, or auricle: we have preferred the former term, because in the Linnæan phraseology an auricle ought to be a distinct leaflet. Our able friend above quoted uses the latter expression, because the part in question is here so very peculiar, and so unlike a common lobe. The sheaths spring from the forks of the branches, accompanied by two cloven, toothed bracteas, and are obcordate, with a longitudinal ridge at one side. Veil, or corolla, concealed by the sheath. Fruitstalk about twice the length of that part.



Nov. 1812 published by Jas. Sowerby London.

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60.

JUNGERMANNIA tamariſcifolia.

Tamariſk Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Capſule on a ſtalk riſing from a ſheath, of 4 valves. *Seeds* attached to elaſtic filaments.

SPEC. CHAR. Fronds procumbent, much branched, ſpreading. Leaves roundiſh, obtuſe, convex, with auricles of the ſame form, and cloven ſtipulæ.

SYN. Jungermannia tamariſcifolia. *Linn. Sp. Pl.* 1600. *Hudſ.* 514. *With.* 879. *Hull.* 280. *Relh.* 394. *Sibth.* 311. *Abbot.* 253.

Lichenaſtrum imbricatum, Tamariſci Narbonenſis facie. *Dill. Muſc.* 499. *t.* 72. *f.* 31.

COMMON on moiſt rocks and the ſtems of trees, which it clothes in large flat brown patches, eaſily ſtripped off. The fronds are cloſely imbricated, rather zigzag, ſubdivided into numerous ſhort divaricated branches, all cloſely covered with ſmall, convex, ſhining, two-ranked, roundiſh, entire leaves, green when young, but ſoon becoming of a mahogany brown. Each of theſe bears underneath a ſmall auricle of its own figure, and adjoining to it on the main ſtem is a ſmall cloven ſcale or ſtipula, for the knowledge of whoſe true form and nature we are obliged to the Rev. Mr. Francis. The capſules appear in March on ſhort ſtalks, each from a terminal, inflated, lobed, granulated ſheath. Theſe capſules are of a paler and redder brown than in moſt other ſpecies, and from that circumſtance are eaſily diſcernible on the dark leaves; but they do not very often occur.

Oct.r 1 1802 Published by Ja.s Sowerby London.

61.

JUNGERMANNIA tamariscina.

Tamarisk Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

Capsule on a stalk rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Shoots creeping, branched and pinnate. Leaves imbricated in two rows, roundish, convex, entire, with an inflated side-lobe. Scales notched, revolute. Sheaths terminal, obovate, bluntly triangular, smooth.

SYN. Jungermannia tamariscina. *Linn. Sp. Pl.* 1600. *Huds.* 514. *With.* 879. *Hull.* 280. *Lightf.* 782. *Relh.* 439. *Sibth.* 311. *Abbot.* 253. *Hooker Brit. Jung. t.* 6.

Lichenastrum imbricatum, Tamarisci Narbonensis facie. *Dill. Musc.* 499. *t.* 72. *f.* 31.

FOUND abundantly on the ground in rather mountainous heathy countries. We hasten to correct an error, pointed out by Mr. Hooker, in our *v.* 16. *t.* 1086, where *J. dilatata* is figured for the present species. They are nearly akin, and both belong to the curious tribe with inflated side-lobes. Both have two rows of round convex entire leaves, along the upper side of the stem, and an obovate terminal sheath; but in the present species the sheath is smooth, not granulated; the stipulaceous scales are flat, and more cut; the pair of bracteas, or perichætial leaves, acute; and the whole plant is of a more glossy copper-colour. These indications mentioned by Mr. Hooker are the more valuable, as Schreber, Schmidel, Roth and Schrader have misunderstood the two species.

We would substitute the following synonyms for

tab. 1086.

JUNGERMANNIA dilatata.

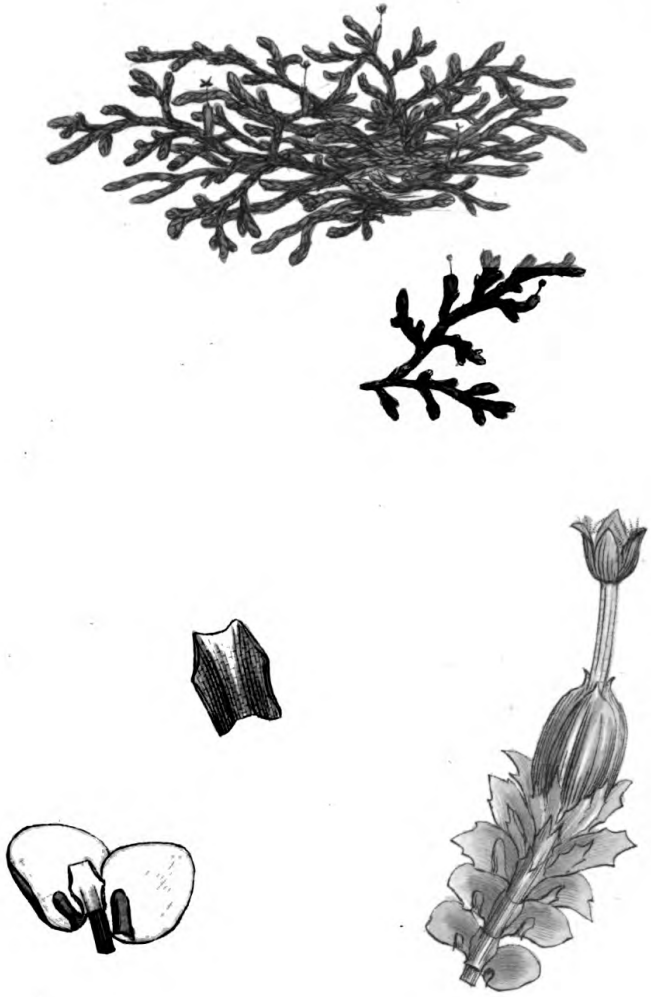
Dilated Jungermannia.

SPEC. CHAR. Shoots creeping, branched. Leaves imbricated in two rows, roundish, rather convex, entire, with an inflated side-lobe. Scales cut, flat. Sheaths terminal, obovate, triangular, tuberculated.

SYN. Jungermannia dilatata. *Linn. Sp. Pl.* 1600. *Huds.* 514. *With.* 878. *Hull.* 280. *Lightf.* 781. *Relh.* 439. *Sibth.* 311. *Abbot.* 253. *Hooker Brit. Jung. t.* 5.

Lichenastrum imbricatum &c. *Dill. Musc.* 497. *t.* 72. *f.* 27.

This is very common on the trunks of trees.



Now first published by Jas. Sowerby, London.

JUNGERMANNIA tomentella.

Spongy Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stems doubly pinnate, tufted. Leaves alternate, twice compound, capillary, closely crowded. Sheaths funnel-shaped, rough.

SYN. Jungermannia tomentella. *Ehrh. Crypt.* 8. *Dicks. Crypt. fasc.* 2. 14. *Hull.* 281.
J. ciliaris. *Weis. Gott.* 129. *Huds.* 515. *With.* 880. *Winch. v.* 2. 27.
Lichenastrum filicinum crispum. *Dill. in Raii Syn.* 111.
L. filicinum pulchrum villosum. *Dill. Musc.* 503. *t.* 73. *f.* 35.

FOUND in places inundated by clear running water, chiefly in the mountainous parts of Britain. We have gathered it abundantly at Hafod, Cardiganshire, at the foot of shady dripping rocks. Mr. Hooker has communicated it from Scotland and Devonshire, and Miss Hutchins from Ireland. For the fructification we are obliged to resort to specimens sent by Schreber to Linnæus, with the proper synonym of Dillenius, which latter, having been misapplied to *J. ciliaris* in the *Species Plantarum*, led our incautious English writers astray.

The plant is pale green, several inches high, growing somewhat imbricated in light elastic tufts which hold water like a sponge, owing to the singular structure of the leaves, each of which is a bipinnate assemblage of minute jointed capillary bristles, and a double series of such leaves, crowded and partly entangled together, covers all the branches, which are themselves elegantly bipinnate. The sheaths are lateral, of a large comparative bulk, and remarkable structure, being funnel-shaped, and externally rough or minutely bristly, their margin lobed. Fruitstalk in our specimens not above twice or thrice the length of the sheath. Dillenius delineates them and the capsules much larger than we have seen either.

Ehrhart's specific name, such as it is, is most commodiously made into an adjective.

Jones published by Jas. Sowerby London.

JUNGERMANNIA ciliaris.

Ciliated Jungermannia.

CRYPTOGAMIA Hepaticæ.

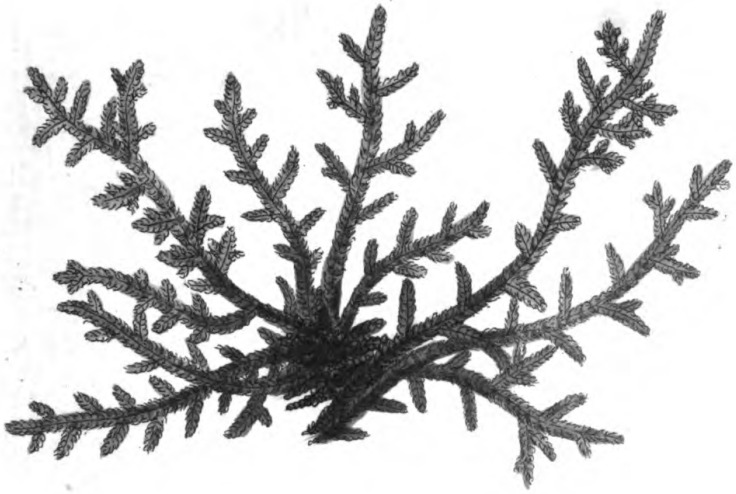
GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

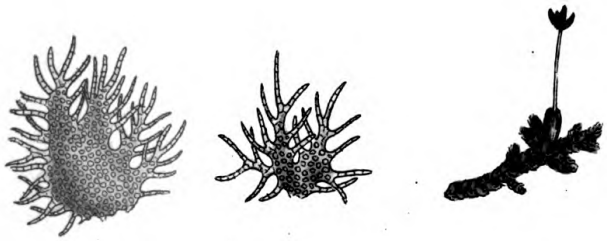
SPEC. CHAR. Stems prostrate, pinnate. Leaves alternate, two-ranked, convex above, irregularly palmate, fringed. Sheaths cylindrical, smooth, obtuse.

SYN. Jungermannia ciliaris. *Linn. Sp. Pl.* 1601. *Dicks. Crypt. fasc.* 2. 14. *Ehrh. Crypt.* 18. *Hull.* 281.
J. pulcherrima. *Linn. Fil. Meth. Musc.* 35. *Dicks. Crypt. fasc.* 1. 7.
Lichenastrum scorpioides pulchrum villosum. *Dill. Musc.* 481. *t.* 69. *f.* 3.

MR. DICKSON first discovered this beautiful species, growing in dry heathy mountainous places in the north. Our specimens were gathered by Mr. Hooker, but the fructification, never yet observed in Britain, was taken from the Linnæan herbarium.

This is among the larger and most branching of the genus, growing prostrate in spreading patches, the stems being once or twice alternately pinnated, and leafy throughout. Leaves in two ranks, alternate, more or less closely imbricated, curved downwards, and concave beneath, convex above. Their shape is very irregular, but always more or less deeply palmate; their margin exquisitely fringed throughout with jointed hairs, or rather processes. There are most usually two principal lobes, one smaller than the other, which perhaps made Linnæus call the leaves auricled; and his son, trusting to that definition, without looking at the authentic specimen in his herbarium, was led to the strange assertion that his and Dr. Swartz's *pulcherrima* was a totally different plant; which perhaps the wrong synonym of Dillenius might confirm.—The sheaths of *J. ciliaris*, terminating the short branches, are cylindrical, obtuse, smooth and simple, irregularly jagged at their margin. Fruit-stalk scarcely an inch high. The predominant colour of the plant is a tawny or brownish green.





Jarman published by Jas. Sowerby London.

JUNGERMANNIA platyphylla.

Wall Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Female on a ſtalk riſing from a ſheath. *Capſ.* with 4 valves. *Seeds* attached to elaſtic filaments.

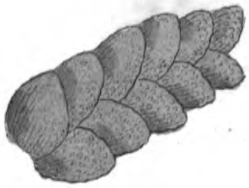
SPEC. CHAR. Fronds procumbent, much branched, ſpreading, triply auricled beneath. Leaves heart-ſhaped, obtuſe. Sheaths toothed.

SYN. Jungermannia platyphylla. *Linn. Sp. Pl.* 1600. *Hudſ.* 515. *With.* 879. *Hull.* 280. *Relh.* 419. *Sibth.* 312. *Abbot.* 254.

Lichenaſtrum imbricatum majus. *Raii Syn.* 111.

L. Arboris vitæ facie, foliis minus rotundis. *Dill. Muſc.* 501. *t.* 72. *f.* 32.

FREQUENT in woods, as well as on old walls that are copiouſly covered with earth. The fructification, produced in March or April, is not of very frequent occurrence. The ripe capſules grow on ſhort ſtalks from a lobed and irregularly toothed ſheath, placed, for the moſt part laterally, on the younger branches. They ſplit into four broad brown valves. The fronds lie one over another forming broad looſe patches of a full graſs green. They are compoſed of numerous ſubdivided ſpreading branches, thickly clothed with two rows of imbricated heart-ſhaped blunt convex entire leaves, connected beneath by a triple row of entire ovate auricles. This is readily known from all our other ſpecies by its general form, ſize, and colour. That to which it has moſt affinity is the *J. complanata.*



65.

JUNGERMANNIA calyptrifolia.

Hooded-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Creeping, branched. Leaves two-ranked, obovate, pointed, convoluted, inflated, with a squarish convoluted side-lobe. Scales linear, cloven. Sheaths lateral, abrupt, five-pointed. Fruitstalk jointed.

SYN. Jungermannia calyptrifolia. *Hooker Brit. Jung. t.* 43.

THIS species, most happily named, by Mr. Hooker, from the curious resemblance of its leaves to the *calyptra*, or veil, of a moss, was discovered by Miss Hutchins, on the base of the stems of *Ulex nanus*, *t.* 743, in heathy mountainous places near Bantry. Mr. Lyell found the same on rocks at Lowdore, Cumberland.

The stems are branched, forming small pale-green tufts about half an inch wide. Leaves indistinctly disposed in two rows, alternate, ascending, each twisted and inflated in a manner to be best understood from the figure, with a square side-lobe enveloping their base, and a remarkable terminal point. Sheaths lateral, with a pair of abrupt leaves at their base, oblong, abrupt, with five angles, each of which terminates in a prominent point at the top. Fruitstalk formed of zigzag compound joints, as in the last, with which species also the erect valves of the capsule, bearing the tubes containing the seeds and spiral filaments, agree.

3538.

Apl. 1813 published by Jas. Sowerby, London.

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JUNGERMANNIA hamatifolia.

Hook-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

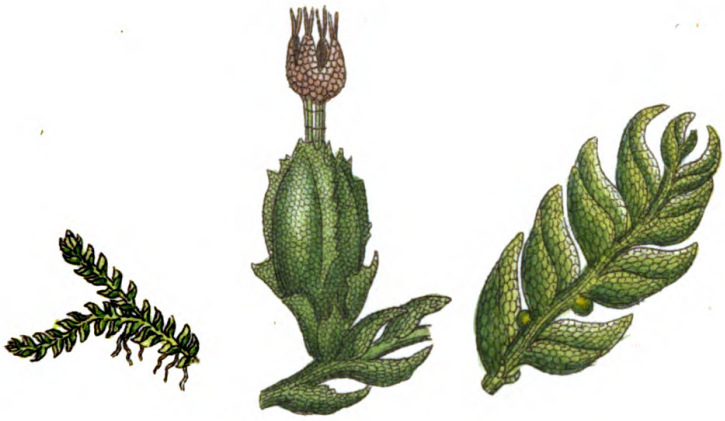
SPEC. CHAR. Creeping, thread-shaped, branched. Leaves two-ranked, unequally two-lobed; the larger lobe ovate, with a curved point; the smaller involute. Scales ovate, acutely cloven. Sheaths lateral, obovate, with five prominent angles; contracted and toothed at the orifice.

SYN. Jungermannia hamatifolia. *Hooker Brit. Jung. t.* 51.

THIS remarkable species has been found in Yorkshire, Cumberland and Devonshire, as well as in Scotland and Ireland, frequently intermixed with its near relation *calyptrifolia*, *t.* 2538, and growing on the stems of *Ulex nanus*, or on Heath; sometimes on trees; bearing fructification early in the spring.

Its green colour, and creeping branching habit, agree with *calyptrifolia;* as well as the disposition of the leaves; but their form is very different. Each may be termed ovate and inflated, with a curved point, and an involute side-lobe, half the size of the leaf. The stipulaceous scales are broadish, deeply and acutely cloven. Sheaths lateral, obovate, contracted and toothed at the mouth, but not abrupt; furnished with five prominent or keeled, occasionally toothed, longitudinal angles. Fruitstalk, and capsule with its tubes, much as in *t.* 2538 and 2537. For these we are obliged to Mr. Hooker.

2592



March 1814 published by J. & T. Sowerby Lincoln.

JUNGERMANNIA serpyllifolia.

Thyme-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

Gen. Char. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

Spec. Char. Creeping, slender, irregularly pinnate, wavy. Leaves spreading in two rows, unequally two-lobed, rounded, tumid at the base; side-lobe minute, involute. Scales deeply and sharply cloven. Sheaths lateral, obovate, with five angles, and a close mouth. Fruitstalk jointed.

Syn. Jungermannia serpyllifolia. *Dicks. Crypt. fasc.* 4. 19. *Hooker Brit. Jung. t.* 42.

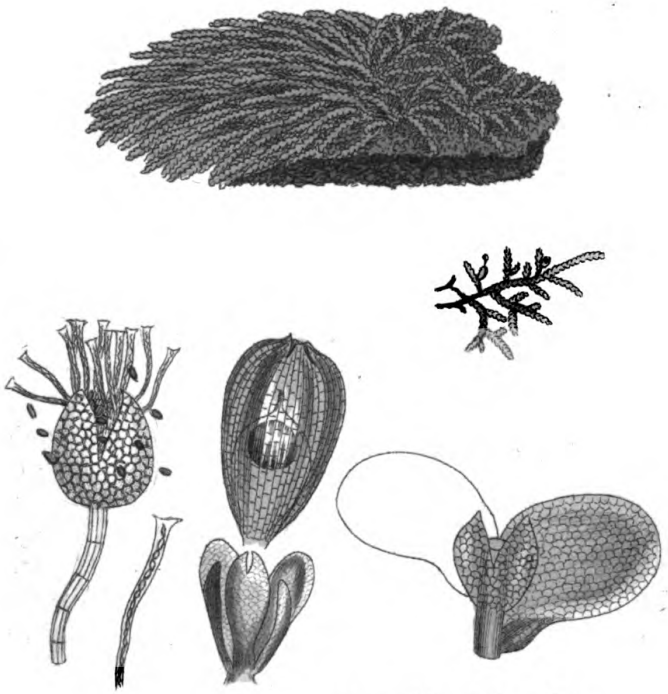
J. minima, foliis auritis ex rotunditate acuminatis, punctatis ac veluti perforatis, floribus virescentibus, vaginâ cordiformi. *Mich. Gen.* 9. *t.* 6. *f.* 19.

Lichenastrum, &c. *Dill. Musc.* 499. *t.* 72. *f.* 30.

On the trunks of trees among mosses, not very uncommon, as it should seem from the various places in Ireland, Scotland, Yorkshire, Cumberland and Hampshire, cited by Mr. Hooker. Our specimens were gathered by Miss Hutchins, near Bantry. Dillenius only copied Micheli, with unauthorized doubts as to his accuracy.

This plant grows in densely imbricated patches, of a light green; each individual repeatedly branched and irregularly pinnate, hardly an inch long, and very slender. Leaves two-ranked, vertical, obovate, rounded, entire; with a small involute side-lobe at the slightly tumid base. Scales rather small, rounded, acute, sharply and deeply cloven. Sheaths lateral, top-shaped, five-angled, abrupt, with a close, slightly toothed orifice; their base accompanied by elongated flattened leaves. Fruitstalk jointed. Capsule pellucid, globular, the valves not spreading. Seeds and their spiral filaments enclosed in tubes, sticking to the valves, as drawn by Micheli, and in the magnified figure which we copy from Mr. Hooker.

2537.



Apl. 1812 published by Jas. Sowerby London.

68.

JUNGERMANNIA Mackaii.

Broad-sheathed Jungermannia.

CRYPTOGAMIA Hepaticæ.

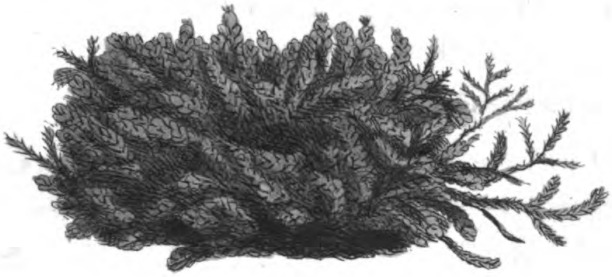
Gen. Char. Male flowers sessile. *Anthers* stalked. *Capsule* on a stalk, rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

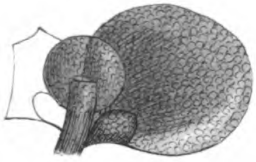
Spec. Char. Creeping, irregularly pinnate. Leaves spreading in two rows, unequally two-lobed, almost orbicular; side-lobe minute, involute. Scales rounded, undivided. Sheaths terminal, inversely heartshaped, with three angles, and a close toothed mouth.

Syn. Jungermannia Mackaii. *Hooker Brit. Jung. t.* 53.

GATHERED near Bantry by Miss Hutchins. Mr. Hooker received it first from Mr. J. T. Mackay of Dublin, to whom the name is justly appropriated. The plant however is not peculiar to Ireland, but abounds in Devonshire and Somersetshire, in rocky heathy places. The capsules are found by Miss Hutchins in November.

The allies, and frequent companions, of this species are *J. dilatata, t.* 1086, *tamariscina, t.* 2481, *serpyllifolia, t.* 2537, and most of all, as to habit perhaps, the common *complanata, t.* 2499. The colour is a dull dirty green. Leaves nearly orbicular; their side-lobe small and involute; their scales also orbicular, or slightly emarginate. The sheaths are remarkable for their broad compressed shape, and their contracted, slightly prominent, toothed orifice. The fruitstalk scarcely extends beyond the sheath. Capsule of four pale spreading valves, to which the spiral filaments, inclosed in tubes, are attached, like those in *t.* 2537.





Dec. 1803 published by Jos. Sowerby London.

69.

BLASIA pusilla.

Dwarf Blasia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male, solitary imbedded in the frond. Female, *Cal.* none. *Caps.* imbedded in the frond, oblique, of 1 cell, with a tubular mouth. *Seeds* numerous.

SPEC. CHAR. . . . . .

SYN. Blasia pusilla. *Linn. Sp. Pl.* 1605. *Huds.* 519. *With.* 886. *Hull.* 283. *Lightf.* 1112. *Hedw. Theor. t.* 28. *f.* 156—164. *Mich. Gen.* 14. *t.* 7.
Mnium lichenis facie. *Dill. Musc.* 237. *t.* 31. *f.* 7.

THE original observer of this plant in England was a Mr. Wm. Harrison, who sent it to Dillenius from the neighbourhood of Manchester. The latter committed a very great error in reducing it to the genus *Mnium*, and deserves the more censure on account of his contemptuous mention of Micheli for making it a new genus. Following botanists have found Micheli a better judge of a genus than Dillenius. Our specimen was sent from Ireland by favour of Mr. Templeton. It grows in shady damp rather sandy places, bearing fruit in October and November, and is of annual duration, the young plants appearing in the following summer.

The roots are fibrous. Fronds spreading circularly on the ground, an inch or more in extent, subdivided, lobed and crenate, of a light grass green, pellucid and shining, smooth, waved at the margin, appearing of a fine reticulated substance when held against the light, like a *Marchantia*. Black sessile depressed warts, agreed on all hands to be the male flowers, are scattered over the frond, and in the middle of each great lobe, towards the end, is placed an ovate oblique capsule, immersed in the substance of the frond, crowned with a long erect tubular mouth, through which the copious seeds are discharged.

July 1. 1804. Published by Jas. Sowerby, London.

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70.

SPHÆROCARPUS terrestris.

Reticulated Sphærocarpus.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Cal.* ventricose, undivided. *Seeds* very numerous, collected into a globe.

SPEC. CHAR. . . . . .

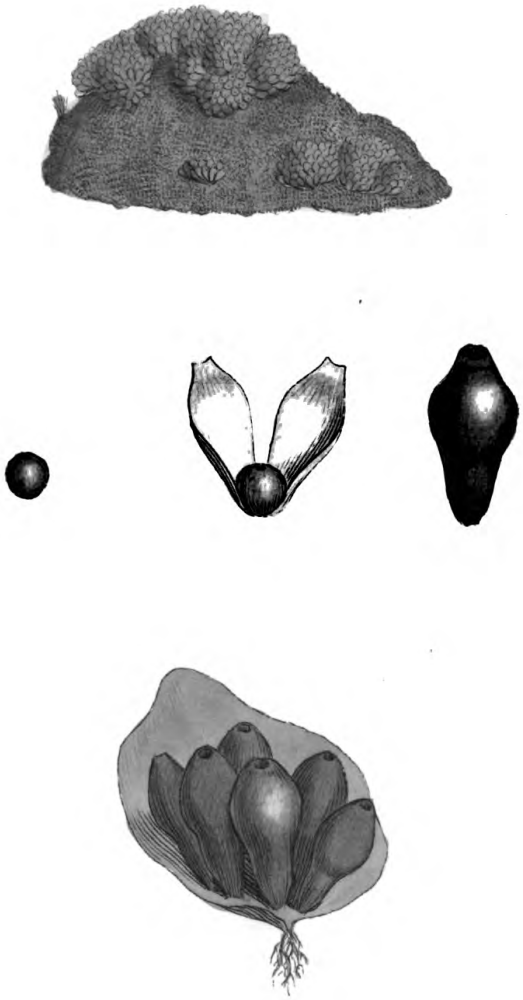
SYN. Sphærocarpus terrestris, minima. *Mich. Gen.* 4. *t.* 3. *Dill. Musc.* 536. *t.* 78. *f.* 17.

Targionia sphærocarpus. *Dicks. Fasc.* 1. 8. *With. Bot. Arr. v.* 3. 157.

OBSERVED by the Rev. Mr. Bryant, Mr. Crowe, and Mr. Woodward, in clover, turnep, and other fields in Norfolk, covering the earth copiously in the moist winter months, particularly on strong land. A certain glaucous hue distinguishes it at first sight to those who have seen it once, though its minuteness and figure may have occasioned its remaining so long undiscovered, from its resemblance to a small *Bryum* without fructification. Even Dillenius never found this plant, but has taken it up on Micheli's authority.

The whole habit is very delicate and membranous, of a pale glaucous green. Fronds in clusters, nearly horizontal, attached to the ground by short radicles, oblong, waved, their disk covered with tufts of the fructification. Calyx of an inverted pear-shape, like a little bottle or vinegar cruet, erect, pellucid, of a finely reticulated structure; its orifice contracted and a little notched. Seeds forming a globe in the bottom of the calyx, clothed with a fine transparent skin, and, as Micheli observes, not intermixed with any fibres.

Mr. Dickson first made this plant known to the English botanist, and reduced it to the genus of *Targionia*. We are very loth to dissent from our great Cryptogamist, but on mature deliberation think it safest to retain Micheli's original genus, the essential character being so very clear, and the habit so totally distinct from the true *Targionia* (see our t. 287), which is of the same natural tribe as *Marchantia*; whereas *Sphærocarpus* is closely allied to *Blasia* in habit, and not far remote in generic character. As to the name, we retain it on the ground of originality, though writers on Fungi have applied it to some genus of their own, and Gmelin in his heedless compilations has called a plant in Monandria *Sphærocarpus*. It is best never to apply any old name (though laid aside) to a new genus; but the sound principles of nomenclature have of late been too much slighted.



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TARGIONIA hypophylla.

Dotted Targionia.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Cal.* of 2 concave valves. *Seeds* very numerous, collected into a globe.

SPEC. CHAR. . . . . .

SYN. Targionia hypophylla. *Linn. Sp. Pl.* 1603. *Huds. Fl. An.* 519. *With. Bot. Arr. v.* 3. 157. *Lightf. Scot.* 792.

Lichenastrum capitulo oroboide. *Raii Syn.* 110.

Lichen petræus minimus, fructu Orobi. *Dill. Musc.* 532. *t.* 78. *f.* 9.

VERY few botanists have gathered this plant in Britain, insomuch that several of the most accurate have doubted whether some Marchantia or Jungermannia had not been mistaken for it. We are enabled to decide this point by means of wild specimens gathered by the Rev. Mr. Kirby, on a bank near Nayland in Suffolk. Hudson found it in Devonshire, a part of the island where it is most to be expected, considering its frequency on rocks and banks in the south of Europe, see Smith's Tour.

The fronds are obcordate, growing somewhat imbricated in thick tufts, attached by dense fibrous roots, and spreading very wide in a circular form. In hot or dry weather their margins are curled in, showing the black under side, when the whole plant seems to be withered; but in moisture they recover their verdure, and are of a deep shining green, sprinkled with whitish projecting points, and marked with a slight longitudinal furrow, which Micheli's figure expresses, but which Dillenius (fond of indulging his spleen towards that excellent author) pretends he could not perceive. On the under side of the frond in its terminal notch stands a solitary fructification, consisting of two blackish concave equal valves, enclosing a ball the size of a small vetch seed, which consists of a fine skin investing innumerable powdery seeds like those of a *Lycoperdon*, in their ripe state dark brown, but yellow when younger, and before they arrive at maturity enveloped in a fluid. We know nothing of the flower or mode of impregnation, but the genus is certainly distinct enough from *Jungermannia* and *Marchantia*, and we think also from *Sphærocarpus*. See Withering.

MARCHANTIA polymorpha.

Star-headed Marchantia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male. *Calyx* ſalver-ſhaped, with numerous *antheræ* imbedded in its diſk.

Female. *Cal.* peltate, flowering beneath. *Capſules* burſting at their ſummit. *Seeds* attached to elaſtic fibres.

SPEC. CHAR. Calyx of the female flowers cloven into about ten narrow ſegments.

SYN. Marchantia polymorpha. *Linn. Sp. Pl.* 1603. *Hudſ. Fl. An.* 519. *With. Bot. Arr. v.* 3. 158. *Sibth. Oxon.* 313. *Relh. Cant.* 420.

Lichen petræus latifolius, ſive Hepatica fontana. *Raii Syn.* 115.

L. fontanus major, ſtellatus æquè, ac umbellatus, et cyathophorus. *Dill. Muſc.* 523. *t.* 76. *f.* 6.

β L. domeſticus minor, &c. *Ibid.* 527. *t.* 77. *f.* 7.

VERY common in damp places, about ſprings, wells, and ſhady moiſt court-yards. Gardeners find it troubleſome in over-running the mould of their garden-pots. It is perennial, flowering about midſummer.

The fronds ſpread horizontally, creeping on the ground by means of denſe fibrous radicles; they are bluntly lobed, of a dark ſhining green, and more or leſs reticulated. In the variety β they are ſmaller, more opake, and ſcarcely reticulated at all. Their upper ſurface is ſtudded with ſeveral pale dentated cups, half-filled with little green lenticular bodies, which are young plants, analogous to the ſtem-bulbs of the Orange Lily, and other viviparous plants, though miſtaken by Dillenius and Linnæus for ſeeds. Hedwig has firſt aſcertained the true nature of the fructification, the parts of which are indeed faithfully delineated by Dillenius, but he did not underſtand their œconomy. We have followed Hedwig's opinion, confirmed by obſervation, in the character given above. The hairs with which the ſeeds are connected appear from their elaſticity to have a kind of ſpontaneous motion, and are well worth notice.

Drawn & Coloured from Nature by Lewis

73

MARCHANTIA hemisphærica.

Hemisphærical Marchantia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male. *Calyx* salver-shaped, with numerous *antheræ* imbedded in its disk.

Female. *Cal.* peltate, flowering beneath. *Capsules* bursting at their summit. *Seeds* attached to elastic fibres.

SPEC. CHAR. Calyx of the female flowers hemisphærical, cloven into about five oval segments. Stalks naked at the base.

SYN. Marchantia hemisphærica. *Linn. Sp. Pl.* 1604. *Huds.* 520. *With.* 885. *Lightf.* 796.

Lichen pileatus parvus, foliis crenatis. *Raii Syn.* 114. *Dill. Musc.* 519. *t.* 75. *f.* 2.

ON the banks of rivers and ditches, about crevices of rocks, in damp but not always shady places, mostly in the mountainous or northern counties, though our specimens were sent (with the following kind) from Norfolk by the Rev. Mr. R. B. Francis, F. L. S. of Holt, a gentleman from whose very accurate examinations of the neighbouring genus *Jungermannia* great information is to be expected.—It is perennial, producing its fructification in March.

Fronds lobed, spreading, and creeping by means of numerous slender fibres originating from the prominent mid-rib; their upper surface is granulated, of a fine green, often purple when exposed to much sun, especially about the margin, and the under side is generally of a dark purple hue. Female fructification in green hemisphærical heads, cut into about five oval segments in the margin, and standing on short stalks, which are totally destitute of any bracteæ or membranes at their base. The seeds are black, and are produced in black capsules with fibres from the under side of the head or calyx. The male flowers we have not seen, nor have we found them described. Micheli figures what appear to be cups of young buds like those in the more common *Marchantia*. See our *t.* 210.

Drawn & Published by Sowerby London

74.

MARCHANTIA conica.
Conical Marchantia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male. *Calyx* salver-shaped, with numerous *antheræ* imbedded in its disk.

Female. *Cal.* peltate, flowering beneath. *Capsules* bursting at their summit. *Seeds* attached to elastic fibres.

SPEC. CHAR. Calyx of the female flowers ovate, pointed, with five marginal notches. Male flowers in sessile warts.

SYN. Marchantia conica. *Linn. Sp. Pl.* 1604. *Huds.* 521. *With.* 885. *Relh.* 421. *Sibth.* 314.

Lichen petræus pileatus. *Raii Syn.* 114.

L. vulgaris major, pileatus et verrucosus. *Dill. Musc.* 516. *t.* 75. *f.* 1.

MUCH more common than the last, growing in damp shady places, but the female fructification is rarely met with. The seeds are perfected in March or April, and the plant is perennial.

The fronds creep as in the other species, and are of a darkish pellucid green, reticulated, bluntly lobed. Stalks from a cleft between the lobes, long, slender, of a delicate texture, so that with the tender conical head they look like small Agarics. The head has five notches, and as many cells, each containing one black capsule. The male flowers, as Hedwig with great probability believes them, are borne on separate plants in the form of sessile warts towards the margin of the frond.

This species is highly aromatic, and combines with some *Jungermanniæ* to give that fragrant odour to the air which is perceived in grassy walks under trees, near fountains, or among damp shady rocks, especially after rain.

75.

MARCHANTIA androgyna.

Four-lobed Marchantia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male, *Calyx* salver-shaped, with numerous *anthers* imbedded in its disk.

Female, *Cal.* peltate, flowering beneath. *Capsules* bursting at their summit. *Seeds* attached to elastic fibres.

SPEC. CHAR. Calyx of the female flowers hemispherical, half four-cleft, of four cells.

SYN. Marchantia androgyna. *Linn. Sp. Pl.* 1605. *Dichs. Crypt. fasc.* 2. 17. *H. Sicc. fasc.* 4. 21. *With.* 886. *Hull.* 277. *Sm. in Rees's Cyclop. n.* 7.

M. quadrata. *Scop. Carn. ed.* 2. 355. *t.* 63.

Hepatica minor angustifolia, capitulo hemisphærico. *Mich. Gen.* 3. *t.* 2. *f.* 3.

Lichen pileatus angustifolius dichotomus. *Dill. Musc.* 520. *t.* 75. *f.* 3.

MR. DICKSON has gathered this species, unknown to preceding British botanists, on wet rocks in Scotland. We found it in that country in 1782, and have since received specimens from the Rev. Dr. Stuart.

The fronds are narrower than in our other species, see *t.* 210, 503, 504; but we find them not so linear as Micheli's figure, and that of Dillenius, express. The essential difference consists in the female calyx being, not, as Linnæus says, entire at the edge, but divided half way into four lobes, each lobe embracing a singularly prominent case, containing several capsules, and opening by numerous longitudinal chinks. At least such is their structure in a Swiss specimen, represented separately in our plate. The Scottish ones are not enough advanced perhaps to show the same thing, yet we find no other difference. Dillenius has engraved a Jamaica specimen, sent him by P. Collinson.

May 1 1805 published by Jas. Sowerby London.

76.

RICCIA glauca.

Glaucous Riccia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male, scattered warts?

Female, *Germen* globose, sunk, with the *style*, in the frond. *Capsule* exposed, globose, crowned with the *style*, of one cell. *Seeds* numerous, elliptical.

SPEC. CHAR. Leaves smooth, channelled, two-lobed, bluntish, glaucous. Capsules towards the base. Seeds pointed at each end.

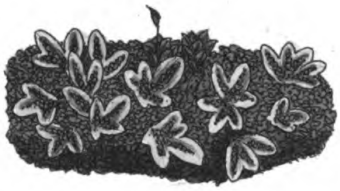
SYN. Riccia glauca. *Linn. Sp. Pl.* 1605. *Huds.* 522. *With.* 887. *v.* 1. 391. *t.* 16. *f.* 76—80. *Hull.* 283. *Relh.* 443. *Sibth.* 314. *Hedw. Theor.* 116. *t.* 29. *Schmid. Ic.* 170. *t.* 44. *f.* 1.

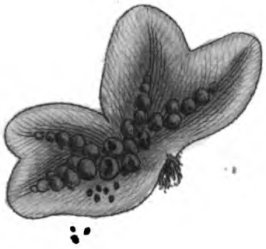
Lichen, sive Hepatica, foliis crassis, rutæ murariæ, aut chamædryos foliis laciniatis quodammodo similibus. *Raii Syn.* 116.

L. minimus, foliis venosis, bifariàm vel trifariàm se dividendo progredientibus. *Dill. Musc.* 533. *t.* 78. *f.* 10.

FOUND on sandy ground, either heathy or cultivated, in the winter and spring. The fronds form roundish patches, conspicuous by their glaucous hue. Their substance is thick and rather fleshy, and the under side is fixed firmly to the earth by fibrous radicles. Each leaf is usually divided deeply, and the segments bluntly two-lobed. A broad furrow runs along the upper side, in which the capsules lie, at first deeply imbedded; but as they ripen they burst through the skin, and display an innumerable quantity of minute black seeds, which Hedwig found to be pointed at each end. The same great botanist observed powdery warts on the plant, in an earlier state, which he presumed to be male blossoms.

2546.





May 1, 1813 published by Jos. Lowe by London.

V

RICCIA natans.

Fringed Riccia.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Cal.* and *Cor.* none. *Anthera* cylindrical, ſeſſile upon the *germen*, and perforated by the *ſtyle*. *Capſule* globoſe, crowned with the withered *anthera*. *Seeds* hemiſpherical, on foot-ſtalks.

SPEC. CHAR. Fronds inverſely heart-ſhaped, ciliated.

SYN. Riccia natans. *Linn. Syſt. Nat. ed.* 12. *v.* 2. 708. *Hudſ. Fl. An.* 522. *With. Bot. Arr. v.* 3. 162. *Relh. Cant. Suppl.* 3. 11.

Lichen parvus vernus cordiformis, ima parte fimbriatus, Lentis paluſtris modo aquæ innatans. *Raii Syn.* 116. *Dill. Muſc.* 536. *t.* 78. *f.* 18.

GATHERED in ponds near Beverley, and ſent with the laſt, by Mr. Teeſdale. This is an extremely rare ſpecies. It was obſerved by Buddle formerly in ponds near Hadleigh (not Henley) in Suffolk (*Raii Syn.*), and has ſince been found by Mr. Relhan near Cambridge, and the Rev. Mr. Bryant, near Heydon in Norfolk. Its fructification is unknown, but from the habit there can be little doubt about the genus.

The fronds float like duck-weed, and are in perfection in autumn. Each is cordate, more or leſs deeply lobed, ſcarcely the diameter of a ſplit pea. Their upper ſurface is minutely ſcaly, their margin fringed, but the numerous lanceolate ſerrated ſcales of the under ſide extend far beyond the fringe. We have delineated it of the natural ſize as well as magnified. Dillenius's figure is a very poor one.

RICCIA fluitans.

Floating branched Riccia.

CRYPTOGAMIA Algæ.

Gen. Char. *Cal.* and *Cor.* none. *Anthera* cylindrical, ſeſſile upon the *germen*, and perforated by the *ſtyle*. *Capſule* globoſe, crowned with the withered *anthera*. *Seeds* hemiſpherical, on foot-ſtalks.

Spec. Char. Frond repeatedly forked, in linear ſegments.

Syn. Riccia fluitans. *Linn. Sp. Pl.* 1606. *Hudſ. Fl. An.* 522. *With. Bot. Arr. v.* 3. 162.

Ulva paluſtris furcata, anguſtioribus et firmioribus ſegmentis. *Raii Syn.* 63.

Lichenaſtrum aquaticum fluitans, tenuifolium, furcatum. *Dill. Muſc.* 514. *t.* 74. *f.* 47.

THE fronds float in little patches among duck-weed, and other ſuch plants, on the ſurface of ponds and ditches, emitting a few ſhort roots from the under ſide. Each frond is forked or branched in an alternate manner ſeveral times, its margin entire, ſubſtance pellucid, but not membranous, the tips blunt, often bifid, with little darkiſh ſpots near the extremity (ſee our magnified figure), which we dare not aſſert to be the ſeed-veſſels, nor has any botaniſt yet ſeen the fructification in any ſhape. There being ſo little hope of diſcovering it muſt be our apology for exhibiting the plant without, more eſpecially as it is a vegetable very little known, and which we beg leave to recommend to the examination of the curious.

Mr. Robert Teeſdale, F. L. S. ſent theſe ſpecimens from near Beverley in Yorkſhire.

ANTHOCEROS punctatus.

Jagged-leaved Anthoceros.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male, sessile warts. Female, *Cal.* tubular. *Caps.* awlshaped, 2-valved. *Seeds* numerous, rough, fixed to the valves or to the partition.

SPEC. CHAR. Frond lobed, sinuated; the segments obtuse.

SYN. Anthoceros punctatus. *Linn. Sp. Pl.* 1606. *Huds.* 523. *With.* 888. *Hull.* 282. *Schmidel. Ic.* 183. *t.* 47. *Hoffm. Germ. v.* 2. 94.

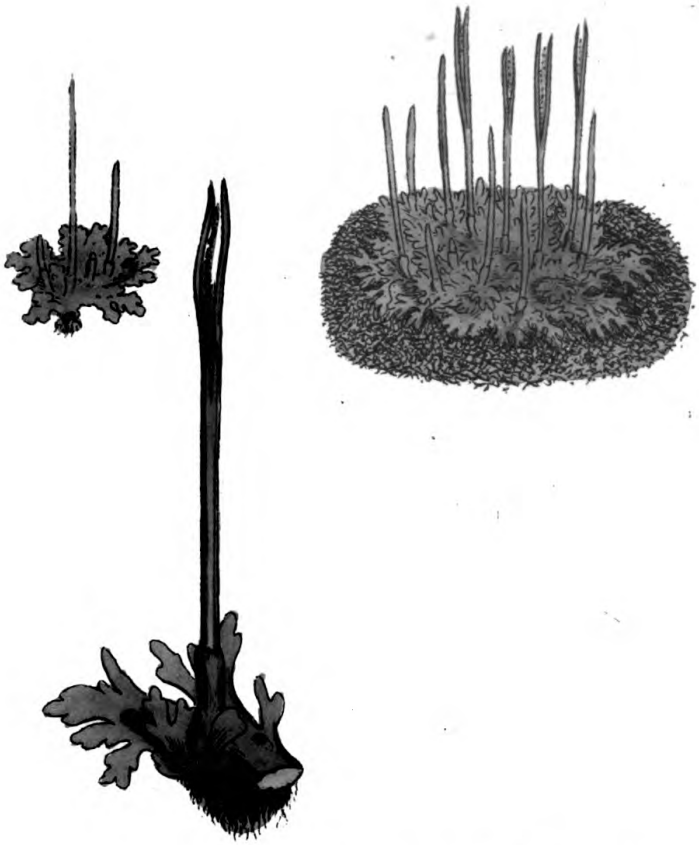
A. foliis minoribus, magis laciniatis. *Dill. Musc.* 476. *t.* 68. *f.* 1.

A. minor, foliis magis carinatis, atque eleganter crenatis, subtus incurvatis. *Mich. Gen.* 11. *t.* 7. *f.* 2.

Lichenastrum gramineo pediculo et capitulo, oblongo, bifurco. *Dill. in Raii Syn.* 109.

THIS plant, not noticed in any of our local Floras, has been found about London, as well as in Sussex, and the north. It grows in damp shady places, and is said by Dillenius to flourish from March to July. Mr. E. Forster gathered our specimens in the fields at Walthamstow on the 1st of October.

The fronds are attached by annual fibrous roots to the moist earth, and spread in a circular manner. Their centre is depressed or concave; their margin lobed, and more or less deeply sinuated or pinnatifid, the segments oblong and obtuse. The colour is a bright shining green. Several dots appear on the surface, which are the male flowers, in the form of black imbedded warts, with a torn margin. The capsules arise like copious blades of grass, each from a sheath, and are cylindrical, tipped with a veil when young, bursting when ripe into 2 valves with a parallel partition. Each cell contains many black rough seeds, fixed to elastic stalks.



Decr 2. 1805. Published by Jas. Sowerby, London.

LYCOPODIUM major.

Brown-leaved Antlercros.

CRYPTOGAMIA. Hepaticæ.

Gen. Char. Male, sessile warts. Female, *Cal.* tubular. *Cor.* awlshaped. 5-valved. *Seed* numerous, rough, inert in the valves or in the partition.

Spec. Char. Frond erect, the segments dilated, toothed and waved.

Syn. Antlercros major. *Mich. Gen.* 11. t. 7. *f.* 1. *Dommee. Fr.* 31. t. 14.

L. repens. *Linn. Sp. P.* 1606. *Hoffm. Germ.* v. 2. 94. *Scop. Theor.* 106. t. 27. *exc. n. With.* v. 1. 387.

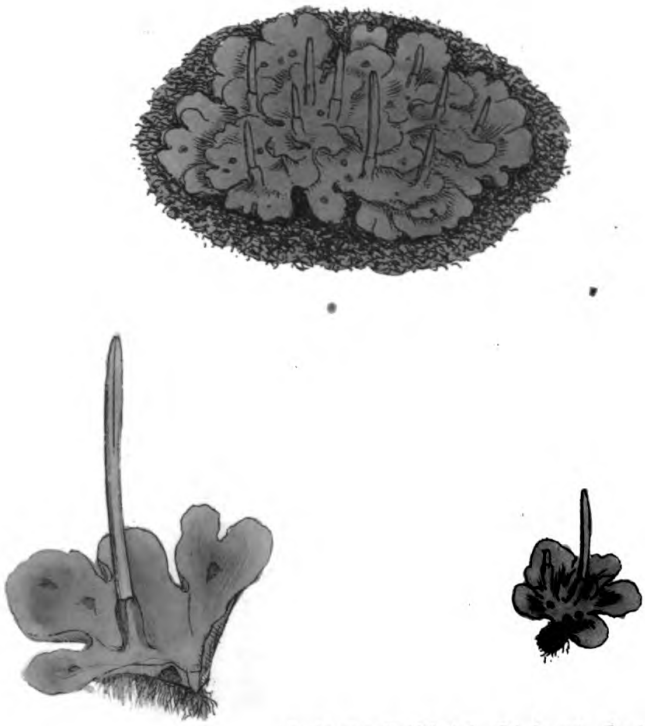
L. punctatus. *F. Lon.* t. 896. bad.

L. foliis majoribus, minus laciniatis. *Dil. Musc.* 476. t. 66. *f.* 1.

SENT to Mr. E. Forster from Walthamstow with the preceding, intermixed with which it is generally reported to grow; and it seems our English writers have not distinguished the two species. Their differences were observed by Mr. J. D. Sowerby.

This has larger leaves than *L. punctatus*, the lobes of which are round and entire, not sinuated. Their colour is a darker green. The male warts, as Schmidel well observes, are more superficial and much sooner obliterated. Hence Dillenius, seeing the plant only in fruit, did not observe them; and hence Linnæus named it *lævis*, supposing it had no warts. But as these are no less essential to one species than to the other, we gladly restore Micheli's original and very expressive name. We should even have changed *punctatus* for some other denomination, had we not always been averse to changing names without necessity. When they give a false idea they ought to be altered.

Our specimens of this are later in fructification than the last.



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